

# e-MS Clinical Document Architecture Implementation Guide

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e-MSIG

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**Abstract:**

The Electronic Medical Summary (e-MS) Clinical Document Architecture (CDA) Implementation Guide (e-MSIG) provides background information on HL7 CDA Release 2 as well as CDA implementation specifics as they relate to the e-MS. An e-MS is a subset of patient data suitable for communication among primary health care practitioners and other health care providers for the purpose of sharing the care of a patient. The Implementation Guide outlines details on each section of the e-MS CDA including data elements with their associated vocabularies (where applicable), schemas, and both human and machine readable XML examples.

**Status:**

This document is a Specification of the British Columbia e-MS Project sponsored by the Ministry of Health Services and British Columbia Medical Association. It is anticipated that, after further testing and review by EMR vendors during an e-MS system trial, this specification will be submitted for adoption as a provincial health care standard by the Health Information Standards Council of BC.

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# 1 Revision History

Rev	Date	By Whom	What
WD-02	2004-08-16 to 2004-09-14	Frieda Kaiser / James Angus	<ul style="list-style-type: none"> <li>Removed Abnormal Result Flag Vocabulary</li> <li>changed Referral Type vocabulary to HL7 as source</li> <li>added information on GUIDs in II definition in datatypes section</li> <li>added missing data type definitions</li> <li>removed repetition of 'cardinality' section</li> <li>updated definition of 'cardinality'</li> <li>added human readable sections where they were missing</li> <li>added reference to related referral document in human readable</li> <li>changed cardinality and description of 'Author' section</li> <li>changed "intendedRecipient.ClassCode" to "ASSIGNED"</li> <li>changed PHN to BC-PHN</li> <li>changed descriptions of all text data elements</li> <li>reorganized data elements in all document sections to reflect schema</li> <li>added definitions for typeCodes, moodCodes, etc. in appropriate sections</li> <li>changed human readable examples (with updates to XML examples)</li> <li>updated conformance section</li> <li>revised vocabularies section</li> <li>added e-MS CDA model as appendix.</li> <li>Added EMS_datatypes.xsd</li> </ul>
WD-03	2004-09-15 to 2004-10-12	Frieda Kaiser / James Angus	<ul style="list-style-type: none"> <li>Modification of human readable document</li> <li>Addition of confidentialityCode to the attributes of ClinicalDocument</li> <li>Reordering of elements under ClinicalDocument and each of the entry choices.</li> <li>Elimination of the 'choice' elements. Creation of XSD groups for RecipientChoice, AuthorChoice, bodyChoice, entryChoice, EntityChoice and DrugOrOtherMaterial.</li> <li>Change of type of Observation.value from xs:anyType to hl7:ANY</li> <li>Change of type of referenceObservationRange.value to IVL_PQ to allow for better coding of lab results.</li> </ul>
Final	2005-01-06	Frieda Kaiser / James Angus	<ul style="list-style-type: none"> <li>Updated Current Medications section with coding suggestions, updated reference to DIN codes, added references to language codes and country codes, added height and weight code restrictions in Examination Measurements section.</li> <li>Updated lab section to accommodate entering normal results ranges as strings AND discrete elements.</li> <li>Added flexibility to code elements in Active Problems and Medication History to allow for entries other than ICD9 codes.</li> <li>Added Schematron schema and business rules needing additional enforcement through this.</li> <li>Updated EMS_Datatypes.xsd, EMS_CDA.xsd and maximum XML instance</li> <li>Comment in vocabularies regarding case-sensitivity.</li> <li>Added xml.xsd schema</li> </ul>
Final	2005-02-01	Frieda Kaiser	<ul style="list-style-type: none"> <li>Updated Current Medications Section - addition of text field for 'Quantity Ordered'</li> </ul>

Rev	Date	By Whom	What
Final	2005-03-04	Frieda Kaiser	<ul style="list-style-type: none"> <li>Updated document to reflect final standard.</li> <li>Update to Medications LOINC code</li> <li>Further details in the ObservationMedia (attachments) section</li> <li>Document and related document ID field changed to require a GUID.</li> </ul>
Final	2005-07-12	Frieda Kaiser	<ul style="list-style-type: none"> <li>Updated PHN field in 'record target' to specify possibility of NullFlavor entry.</li> </ul>
Final	2005-07-26	Frieda Kaiser	<ul style="list-style-type: none"> <li>Updated schematron schema to reflect changes in lab section (allowing for non-integer results), PHN (allowing for UNK NullFlavor) and related document section (allowing typeCode of RPLC).</li> </ul>
Final	2005-01-11	Jessica Arril	<ul style="list-style-type: none"> <li>Updated Exam Measurement Section to reflect that it cannot be a partial date and clarified that values must be 'PQ'</li> </ul>

## 2 Introduction

### 2.1 Purpose

The purpose of the e-MS CDA Implementation Guide (e-MSIG) is to provide a section by section approach to implementing the e-MS implementation of the HL7 Clinical Document Architecture (CDA), which will be used for exchanging clinical documents between electronic medical record (EMR) systems.

### 2.2 Audience

The target audience for this specification is the community of electronic medical records (EMR) systems software developers who will use the e-MS CDA Implementation Guide in order to integrate the capability to send and receive e-MS clinical documents. This capability is needed for integration and interoperability between disparate EMR systems and primary care physicians.

### 2.3 Scope

The scope of the e-MS CDA Implementation Guide is the standardization of clinical documents for exchange of data when sharing the care of individual patients.

The clinical content of CDA documents is defined in the Reference Information Model (RIM). The e-MS clinical content was defined by a working group of care providers and based on the COMPETE II (<http://www.compete-study.com>) core data set.

The CDA standard does not specify the creation, management, or exchange of documents, only their exchange markup. While it may be possible to directly use the CDA Schema in a document authoring environment, such use is outside the CDA specification. Document management is critically interdependent with the CDA specifications, but the specification of document management is outside the scope of the CDA and independent of messaging and transport (please refer to the e-MS Exchange Protocol (e-MSEP) for more information on messaging).

### 2.4 Approach

The following approach was taken to create the e-MS CDA Implementation Guide.

1. Start with the HL7 CDA Domain Refined Message Information Model (CDA:RMIM).
2. Using the HL7 RMIM-Designer tool, constrain the CDA:RMIM to remove functionality not required by e-MS
3. Use the HL7 Schema-Generator to generate the e-MS:RMIM schema
4. Manually modify the e-MS:RMIM schema as required to complete constraints required to validate e-MS business rules.
  - a. Note manual modifications and contribute to HL7 towards improving the RMIM-Designer tool's capabilities.
5. Build an example instance that is compliant to the e-MS:RMIM
6. Build a Schematron schema to validate the e-MS business rules not contained within the e-MS:RMIM schema.

## 2.5 Caveats and Assumptions

Although it is not assumed that the reader has an understanding of HL7 RIM and HL7 CDA Release 2 Ballot 3 standards; the authors recommend that the reader use publicly available documents (available at [www.hl7.org](http://www.hl7.org)) to augment this implementation guide. All examples are to be considered non-normative. If inconsistencies exist between the schema and the examples, the schema supersedes the examples.

## 2.6 Terminology

### ***Electronic Medical Summary (e-MS):***

An electronic medical summary (e-MS) is a subset of patient data suitable for communication among primary health care practitioners and other health care providers for the purpose of sharing the care of a patient.

### ***Electronic Medical Record (EMR):***

Term used to describe a physician office software system that is capable of storing electronic patient charts, replacing the need for paper-based patient records.

### ***Hierarchical Message Description (HMD):***

A metaobject that defines message types. It also defines the linkages of the message types to interactions and the linkages of certain message element types to attributes of the Reference Information Model.

### ***Refined Message Information Model (R-MIM):***

The Refined Information Model (R-MIM) is the information structure that represents the requirements for a set of messages. It contains those classes, attributes, associations and data types that are needed to support one or more Hierarchical Message Descriptions.

## 2.7 Business Rules

Business rules pertaining to each of the individual document sections can be found directly in the respective section.

Please refer to the e-MS Business Requirements Document Phase 2 for details on business rules. A copy of this document can be found at <http://www.e-ms.ca/documentation.php>.

## 2.8 Conformance

To conform to this specification, a system must implement all parts of this specification that are relevant to the interfaces for which conformance is claimed. A system conforming to this specification for the purposes of representing an e-MS Messaging Service must implement this complete specification and must implement a model consistent with the authorization model specified in this specification. The service system must implement an authentication and security model that is consistent with the intent of this specification.

### 2.8.1 Conformance Validation Introduction

This specification is based upon the HL7 CDA Release 2 Ballot 3 (January 2005) standard. The process to develop these specifications has included the identification of the e-MS data requirements (e-MS Core Data Set) and the mapping of these requirements against the HL7 CDA

specification. A constrained version of the CDA specification was developed and is documented in this implementation guide. Conformance to these specifications requires two parallel validation processes. The first validation is a validation of the document instance against the schema documented in this implementation guide. This validation will ensure that the document instance is a compliant CDA document conforming to the CDA constraints defined by the e-MS requirements. A second validation is required to ensure that the document instance reflects the additional business rules and constraints that are documented in the implementation guide, but not reflected within the HL7 CDA Compliant Schema. The process to perform this second validation occurs through a Schematron schema, which is also documented in this guide (please see <http://xml.ascc.net/resource/schematron/schematron.html> for more information). Validation occurs through a web service, which can be exposed to the vendors through a secure login. Both validations must be passed for the document to continue to the broker.

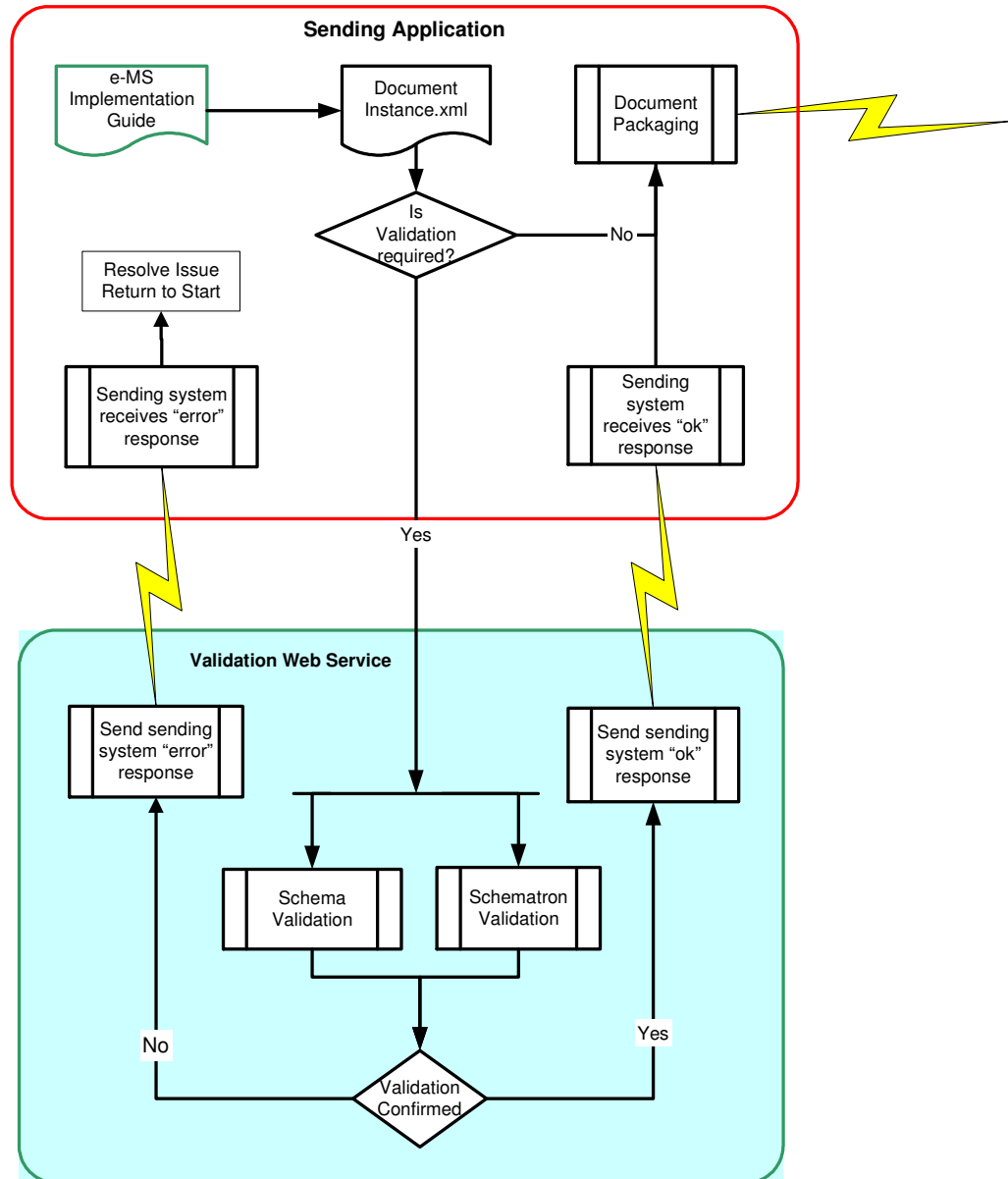
Conformance validation must only necessarily be performed during development and testing of the document generation software. Once the document generation process is validated and stable the originating application may package and transmit the document instance without performing any further validation. The e-MS broker will always perform the parallel validation process on all e-MS documents that it processes and will reject any documents that do not conform to the e-MS document specifications.

## 2.8.2 Originating Application Process

The following flow diagram shows the process that an originating application may follow to ensure that the document instance is validated appropriately prior to communication.

1. A document instance is generated based on the e-MS implementation guide
2. If no validation is required this document may be immediately packaged and transmitted to the e-MS broker.
3. If validation is required (for example during testing of new document generation software) then the instance is validated against the e-MS CDA compliant schema (as documented in this Implementation Guide) and the Schematron schema (also documented in this guide).
4. The web service will accept a document instance and return a pass/fail and if appropriate an error log.
5. Once the validation is confirmed the sending application may package and transmit the document to the e-MS broker confident that it will pass the e-MS broker validation.





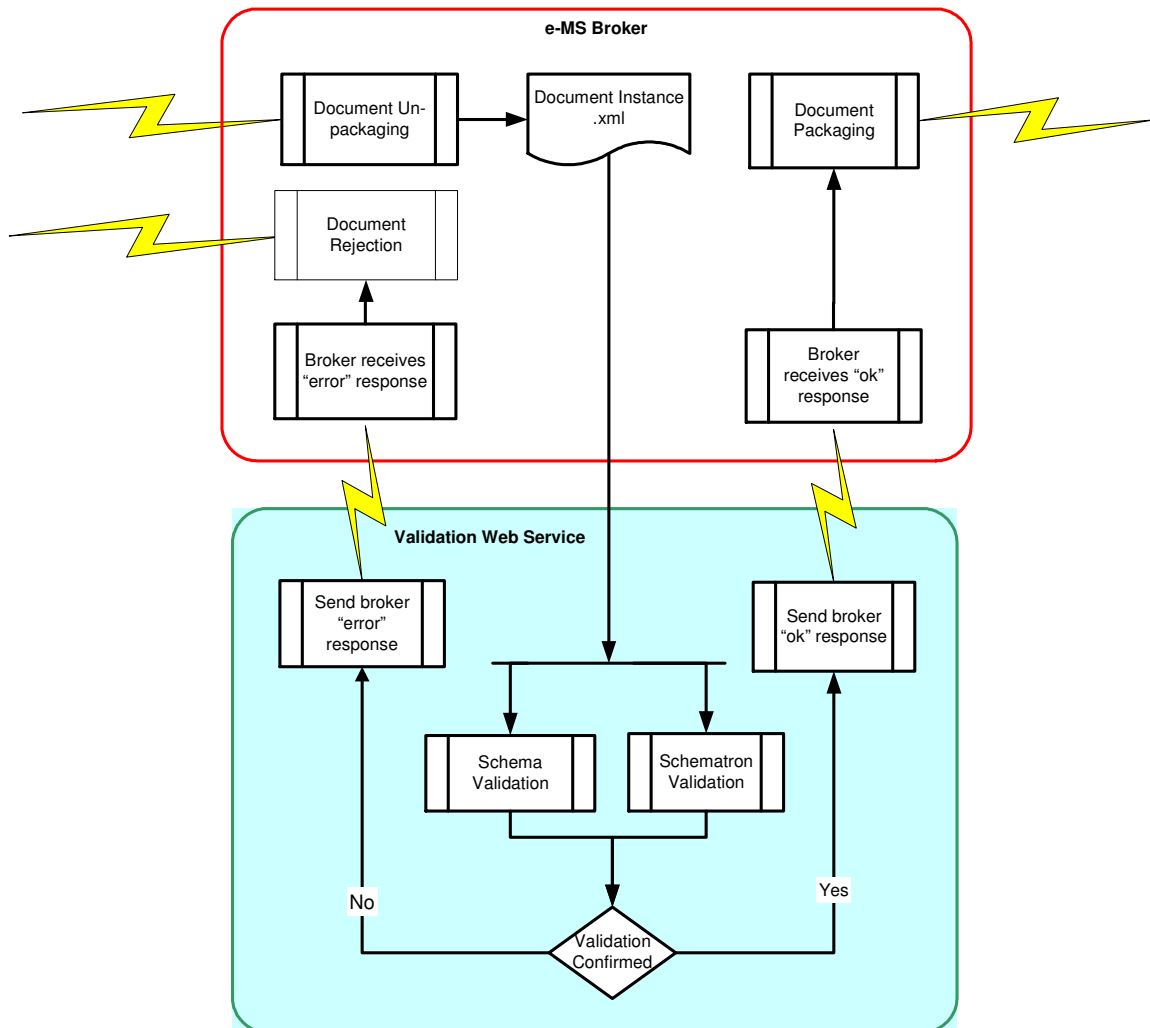
### 2.8.3 e-MS Broker Process

The e-MS Broker performs several functions that are not detailed in this section; please refer to the e-MS Broker technical architecture document (TAD) for details on the full e-MS Broker processing.

The following process will be followed by the e-MS Broker when a document is received to validate the compliance to the e-MS CDA compliant schema.

1. The document is unpackaged from the transportation wrapper. Part of this step is the confirmation that the document is a CDA document and the document type is confirmed.
2. To validate, the instance is validated against the e-MS CDA compliant schema and the Schematron schema.

3. If the document passes the validation it is then repackaged and transmitted on to the recipient application. If the document does not validate correctly an appropriate rejection message is returned to the originating application.



## 3 CDA Rules

### 3.1 CDA Document Sections

A CDA document is comprised of two parts, a header and a body. The CDA document header is consistent across all CDA documents regardless of document type and identifies and classifies the document and provides information on authentication, the encounter, the patient, and the involved providers. The body contains the clinical report, and can be a combination of structured text and/or structured markup.

### 3.2 CDA Document Levels

Each section of a CDA document can be either in the form of just free text or can also be defined to have discrete data elements in addition to the free text representation. The e-MS makes use of CDA Document Levels 2 and 3. A section defined as 'level 2' is one which only supports a free text representation of the section contents. A section defined as 'level 3' is one which supports codification (has discrete data elements and/or structured vocabularies). 'Level 2' of the CDA document is explicitly rendered from 'level 3'. 'Level 1' has a structured header and structured body of message with limited coding capacity for content. The e-MS does not make use of 'Level 1'.

### 3.3 Cardinality

Cardinality rules exist for each section and each individual data element within a section if the section is defined at 'level 3'. Cardinality is represented by a 0, 1, 2 or \* indicating the minimum cardinality, followed by two periods and a 0, 1, 2 or \* indicating the maximum cardinality. For example, 0..\* indicates a minimum cardinality of 0 and maximum cardinality of many.

The following table outlines the different types of cardinalities that may be defined for sections and data elements:

Cardinality	Description
0..1	The section or data element may have zero or one instance.
1..1	The section or data element may have one and only one instance.
0..*	The section or data element may have zero or more instances.
1..*	The section or data element may have one or more instances.
2..2	The section or data element must have two instances.

### 3.4 Mandatory / Optional / Required

Each section and each data element within a section is defined as mandatory, optional or required.

If a section or data element is mandatory (denoted by 'M'), it must be present in the document, otherwise the document is invalid and is non-conformant. The minimum cardinality for all mandatory items is 1.

If a section or data element is required (denoted by 'R'), the sending application must support this field. In other words, if the data is available, then the field must be included in the document. If the minimum cardinality is 0 and the data is not available, the field may be omitted from the document and still be conformant. If the minimum cardinality is 1 and the data is not available, a NullFlavor is required to be sent (e.g. no information, unknown, masked, not asked and asked, but unknown).

If a section or data element is optional (denoted by 'O'), the section or data element may or may not be sent and supported. The receiving application may not assume the presence of this item in a document.

If a section or data element is not supported or encoded (denoted by 'X') the section or data element may not be included in the document. Inclusion of the item in the document would be non-conformant.

The following table provides descriptions of the combinations of levels that could exist for an individual section:

Level	Description
O2 X3	the section is optional at level 2, and not supported/encoded down to level 3.
O2 O3	the section is optional at both levels 2 and 3.
O2 R3	the section is optional at level 2, but encoding at level 3 is required.
O2 M3	the section is optional at level 2, but encoding at level 3 is mandatory.
R2 X3	the section is required at level 2, and not supported/encoded down to level 3.
R2 O3	the section is required at level 2, and encoding at level 3 is optional.
R2 R3	the section is required at level 2, and encoding at level 3 is also required.
R2 M3	the section is required at level 2, and encoding at level 3 is mandatory.
M2 X3	the section is mandatory at level 2, and not supported/encoded down to level 3.
M2 O3	the section is mandatory at level 2, but encoding at level 3 is optional.
M2 R3	the section is mandatory at level 2, and encoding at level 3 is required.
X2 X3	the section is not supported/encoded down to level 2 or level 3.
X2 M3	the section is not supported at level 2, but mandatory at level 3.
X2 R3	the section is not supported at level 2, but required at level 3.

### 3.5 Data Types

Each data element has a data type associated with it. The following table provides a description of the HL7 datatypes used in the e-MS CDA.

Data Type	Name	Description
AD	Postal Address	Mailing and home or office addresses. A sequence of address parts, such as street or post office Box, city, postal code, country. This datatype is of mixed content.
ANY	Any	Defines the basic properties of every data value. This is an abstract type, meaning that no value can be just a data value without belonging to any concrete type. Every concrete type is a specialization of this general abstract DataValue type.
CD	Concept Descriptor	A concept descriptor represents any kind of concept usually by giving a code defined in a code system. A concept descriptor can

Data Type	Name	Description
		contain the original text or phrase that served as the basis of the coding and one or more translations into different coding systems. A concept descriptor can also contain qualifiers to describe, e.g., the concept of a "left foot" as a postcoordinated term built from the primary code "FOOT" and the qualifier "LEFT". In exceptional cases, the concept descriptor need not contain a code but only the original text describing that concept.
CE	Coded with Equivalents	Coded data that consists of a coded value (CV) and, optionally, coded value(s) from other coding systems that identify the same concept. Used when alternative codes may exist.
CS	Coded Simple Value	Coded data in its simplest form, where only the code is not predetermined. The code system and code system version is fixed by the context in which the CS value occurs. CS is used for coded attributes that have a single HL7-defined value set.
ED	Encapsulated Data	Data that is primarily intended for human interpretation or for further machine processing outside the scope of HL7. This includes unformatted or formatted written language, multimedia data, or structured information in as defined by a different standard.
EN	Entity Name	A name for a person, organization, place or thing. A sequence of name parts, such as first name or family name, prefix, suffix, etc.
II	Instance Identifier	An identifier that uniquely identifies a thing or object. Examples are object identifier for HL7 RIM objects, medical record number, order id, service catalog item id, Vehicle Identification Number (VIN), etc. Instance identifiers are defined based on ISO object identifiers. A globally unique identifier (GUID) will be used as the root for instance identifiers in this application.
IVL	Interval	A set of consecutive values of an ordered base data type. Any ordered type can be the basis of an interval; it does not matter whether the base type is discrete or continuous. If the base data type is only partially ordered, all elements of the interval must be elements of a totally ordered subset of the partially ordered data type.
ON	Organization Name	A name for an organization. A sequence of name parts.
PN	Person Name	A name for a person. A sequence of name parts, such as first name or family name, prefix, suffix, etc. A name part is a restriction of entity name part that only allows those entity name parts qualifiers applicable to person names. Since the structure of entity name is mostly determined by the requirements of person name, the restriction is very minor. This data type is of mixed content.
PQ	Physical Quantity	A dimensioned quantity expressing the result of measuring.
RTO	Ratio	A quantity constructed as the quotient of a numerator quantity divided by a denominator quantity. Common factors in the numerator and denominator are not automatically cancelled out. The data type supports titers (e.g., "1:128") and other quantities produced by laboratories that truly represent ratios.
SC	Character String with Code	A character string that optionally may have a code attached. The text must always be present if a code is present. The code is often a local code.
ST	Character String	The character string data type stands for text data, primarily intended for machine processing (e.g., sorting, querying, indexing, etc.) Used for names, symbols, and formal expressions.
TEL	Telecommunication Address	A telephone number (voice or fax), e-mail address, or other locator for a resource mediated by telecommunication equipment. The address is specified as a Universal Resource Locator (URL) qualified by time specification and use codes that help in deciding which address to use for a given time and purpose. Please note that spaces in this datatype aren't valid, however, this is not currently enforced by HL7.
TS	Timestamp	A quantity specifying a point on the axis of natural time. A point in time is most often represented as a calendar expression. Note: An

Data Type	Name	Description
		IVL TS (Interval Timestamp) has to be fully formed, whereas a regular TS can be truncated.

## 4 CDA Header Sections

### 4.1 Clinical Document

Section Level: X2 M3

Cardinality: 1..1

#### 4.1.1 Description

The clinical document section includes audit data that provides detailed information on document creation. Three different types of documents can be sent: referral, consult or medical summary. As can be seen in the human readable example in Appendix A, each clinical document must display the document type, patient's full name, date of birth, and the date the document was sent (Author.time) as a header on each page. The footer of each page must contain the author's full name, the source system and the page number (page X of Y).

The clinical document section is not supported at level 2 but mandatory at level 3 (X2 M3). The cardinality for this section is 1..1.

#### 4.1.2 Data Elements

Schema Data Element	Attributes	e-MS Equivalent	Description	Data type	Vocabulary	R/M/O: Cardinality	Comments
4.1.2.1 ClinicalDocument.id	extension root	Document_ID	Unique ID of the document.	EMS.II .RootE xtensi on		M: 1..1	The ID is unique and generated by the sending application and can be used to match related clinical documents. In the case of multiple related documents and users merging these within the EMR system, it is the responsibility of the sending and receiving systems to handle the correlations. GUIDs must be used.
4.1.2.2 ClinicalDocument.code	code codeSystem codeSystemName displayName	Document_Type	The type of e-MS documents (e.g. referral, consult, medical summary).	EMS. CE.Ful l	LOINC: Document Type	M: 1..1	
4.1.2.3 ClinicalDocument.title		Document_Title	Title of the document	ST		M: 1..1	
4.1.2.4 ClinicalDocument.effectiveTime	value	Send_Date	Date and time that the e-MS document was sent.	EMS.T S		M: 1..1	The send date and time should be the same as the date in the message transport.

4.1.2.5	ClinicalDocument.confidentialityCode	codeSystem	Document_Confidentiality	Level of confidentiality of the document	CE	HL7: ConfidentialityCode	M: 1..1	
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4.1.3 Example

Human Readable	
Since the header section of the CDA doesn't have a human readable component it is required that the vendor display the content of the "ClinicalDocument.Title" element (left justified, bold and large font) as shown here):	
Referral Letter	
XML Instance	
<pre>&lt;ClinicalDocument xmlns:xs="http://www.w3.org/2001/XMLSchema" xmlns="urn:hl7-org:v3" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schemaLocation="urn:hl7-org:v3 ./EMS_CDA.xsd"&gt;   &lt;id extension="6823AC2F-B374-4214-AF1B-407091BBED37" root="2.16.840.1.113883.3.933"/&gt;   &lt;code code="34140-4" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC" displayName="Referral"/&gt;   &lt;title/&gt;   &lt;effectiveTime value="2004080914222"/&gt;   &lt;confidentialityCode code="N" codeSystem="2.16.840.1.113883.5.25"/&gt; &lt;/ClinicalDocument&gt;</pre>	
Schema Links	
ClinicalDocument	



## 4.2 Information Recipient

### 4.2.1 Description

Section Level: X2 M3

Cardinality: 1..1

Information recipient information provides demographic information on the receiver of the e-MS, i.e. the primary care provider who is responsible for the e-MS. If a delegate receives an e-MS on behalf of a primary care provider the primary care provider's information will appear in the information recipient information section; the delegate information is not tracked within the CDA. The information recipient information document section is not supported at level 2 but mandatory at level 3 (X2 M3). The cardinality for this section is 1..1.

### 4.2.2 Data Elements

	Schema Data Element	Attributes	e-MS Equivalent	Description	Data type	Vocabulary	R/M/O: Cardinality	Comments
4.2.2.1	informationRecipient.intendedRecipient.id	extension root	Recipient_ID	User ID of individual that is clinically responsible for the e-MS.	EMS II .RootElement		M: 1..1	An e-MS ID will be created for Phase 2. In the future it is expected that the PRS ID will be used.
4.2.2.2. Recipient Address								
4.2.2.2.a	informationRecipient.intendedRecipient.addressLine		Recipient_Address	An address is where documents are coming from. This information will be available in the provider lookup.	AD		O: 0..1	assignedEntity.address is a mixed content element so if the individual components of an address are not available then the entire address could be put in this element.
4.2.2.2.b	informationRecipient.intendedRecipient.address.city		Recipient_City	The city where the care provider is located	AD		O: 0..1	
4.2.2.2.c	informationRecipient.intendedRecipient.address.state		Recipient_Province_State	The province where the care provider is located	AD	Canada Post: Province	O: 0..1	

Schema Data Element	Attributes	e-MS Equivalent	Description	Data type	Vocabulary Codes/Stat e Codes	R/M/O: Cardinality	Comments
4.2.2.2.d	informationRecipient.intendedRecipient.addr.postalCode	Recipient_Postal_Zip	Location identifier used by Canada Post	AD		O: 0..1	
4.2.2.2.e	informationRecipient.intendedRecipient.addr.country	Recipient_Country	Nation or state within which the care provider is found.	AD	ISO: Country	O: 0..1	
4.2.2.3	informationRecipient.intendedRecipient.telecom	Recipient_Telecom_Us Recipient_Telecom_Value	A classification of the telecommunication type, e.g. Business phone, business fax, home phone, home fax, cell, e-mail together with the phone number or e-mail address of the care provider	EMS.T EL	HL7: TelecommunicationAdd ressUse HL7: URLScheme	O: 0..*	
4.2.2.4. Recipient Name							
4.2.2.4.a	informationRecipient.intendedRecipient.name.prefix	Recipient_Prefix	Title used by the person (i.e. Mr., Mrs., Ms., Dr.).	PN		O: 0..1	assigneePerson.name is a mixed content element so if the individual components of a person's name are not available then the entire name could be put in this element.
4.2.2.4.b	informationRecipient.intendedRecipient.name.given	Recipient_Given_Name	First name, second name, middle name of person.	PN		M: 1..*	
4.2.2.4.c	informationRecipient.intendedRecipient.name.family	Recipient_Family_Name	Last name or family name of person.	PN		M: 1..1	
4.2.2.4.d	informationRecipient.intendedRecipient.name.suffix	Recipient_Suffix	An addition to a surname to distinguish a person (i.e. III, Sr., Jr.).	PN		O: 0..1	
4.2.2.5	informationRecipient.intendedRecipient.receivedOrganization.name	Recipient_Organization	The organization where the receiving care provider is currently working when sending the e-MS.	ON		O: 0..1	
4.2.2.6	InformationRecipient.typeCode		A code specifying the kind		<a href="#">voc.xsd:</a>		

Schema Data Element	Attributes	e-MS Equivalent	Description	Data type	Vocabulary	R/M/O: Cardinality	Comments
nt			of Participation or involvement the Entity playing the Role associated with the Participation has with regard to the associated Act.		x_informati onRecipient		
4.2.2.7 informationRecipie nt.intendedRecipie nt	classCode		A code specifying the major type of Act that this Act- instance represents.		voc.xsd: x_informati onRecipient Role		

## 4.2.3 Example

Human Readable	
<p>Since the header section of the CDA doesn't have a human readable component it is required that the vendor display the content of the following fields (to the right of the Author information), in the specified order, under the words 'Information Recipient:' (bolded):</p> <p><b>Information Recipient:</b>            &lt;prefix&gt;&lt;given&gt;&lt;family&gt;&lt;suffix&gt;            &lt;streetAddressLine&gt;            &lt;city&gt;, &lt;state&gt;            &lt;postalCode&gt;            &lt;country&gt;            &lt;telecom value&gt;            &lt;telecom value&gt;</p> <p>The concrete human readable example would look as such:</p> <p><b>Information Recipient:</b>            Dr. Patrick P. Pump Sr.            4444 Healthcare Drive            Ann Arbor, BC            A1B 2C3            Canada            Phone: (555) 555-1009            Fax: (555) 555-1199</p>	
XML Instance	
<pre>&lt;informationRecipient typeCode="PRCP"&gt;   &lt;intendedRecipient classCode="ASSIGNED"&gt;     &lt;id extension="ppump" root="DCCD2C68-389B-44c4-AD99-B8FB2DAD1493"/&gt;     &lt;addr&gt;       &lt;streetAddressLine&gt;4444 Healthcare Drive&lt;/streetAddressLine&gt;       &lt;city&gt;Ann Arbor&lt;/city&gt;</pre>	

<pre>&lt;state&gt;BC&lt;/state&gt; &lt;postalCode&gt;A1B 2C3&lt;/postalCode&gt; &lt;country&gt;CA&lt;/country&gt; &lt;/addr&gt; &lt;telecom value="tel:(555)555-1009" use="WP"/&gt; &lt;telecom value="fax:(555)555-1199" use="WP"/&gt; &lt;informationRecipient&gt;   &lt;name&gt;     &lt;prefix&gt;Dr.&lt;/prefix&gt;     &lt;given&gt;Patrick&lt;/given&gt;     &lt;given&gt;P.&lt;/given&gt;     &lt;family&gt;Pump&lt;/family&gt;     &lt;suffix&gt;Sr.&lt;/suffix&gt;   &lt;/name&gt;   &lt;informationRecipient&gt;     &lt;receivedOrganization&gt;       &lt;name&gt;Level 7 Healthcare, Inc&lt;/name&gt;     &lt;/receivedOrganization&gt;     &lt;/intendedRecipient&gt;   &lt;/informationRecipient&gt; &lt;/informationRecipient&gt;</pre>	Schema Links
Information Recipient Intended Recipient Organization Person	

## 4.3 Author

Section Level: X2 M3

Cardinality: 1..1

### 4.3.1 Description

Author information provides demographic information on the creator (and sender) of the e-MS, i.e. the primary care provider who is responsible for the e-MS. An e-MS may not be edited and forwarded under the previous author's name. The author will always be the person who last sent the e-MS. If a delegate sends an e-MS on behalf of a primary care provider the clinically responsible person's information will appear in the author information section. Author information also describes the source system that sent the e-MS. The Author document section will occur twice: once for author information and once for source system information. The author information document section is not supported at level 2 but mandatory at level 3 (X2 M3). The cardinality for this section is 2..2.

### 4.3.2 Data Elements

Schema Data Element	Attributes	e-MS Equivalent	Description	Date type	Vocabulary	R/M/O: Cardinality	Comments
4.3.2.1 author.time	value	Create_Date	Date and time stamp when e-MS was created.	EMS.TS		M: 1..1	This may not be a partial date.
4.3.2.2 author.assigned Author.id	extension root	AuthorID	User ID of individual that is clinically responsible for the e-MS.	EMS.II.RootExtension		M: 1..1	An own internal ID will be created at this point with the possibility to use the PRS in the future.
4.3.2.3. Provider Address							
4.3.2.3.a author.assigned Author.addr.streetAddressLine		Provider_Address	An address is where documents are coming from. This information will be available in the provider lookup.	AD		O: 0..1	assignedEntity.addr is a mixed content element so if the individual components of an address are not available then the entire address could be put in this element.
4.3.2.3.b author.assigned Author.addr.city		Provider_City	The city where the care provider is located	AD		O: 0..1	
4.3.2.3.c author.assigned Author.addr.state		Provider_Province_State	The province where the care provider is located	AD	Canada Post: Province Codes/State Codes	O: 0..1	
4.3.2.3.d author.assigned Author.addr.post		Provider_Postal_Zip	Location identifier used by Canada Post	AD		O: 0..1	

	Schema Data Element	Attributes	e-MS Equivalent	Description	Date type	Vocabulary	R/M/O: Cardinality	Comments
	alCode							
4.3.2.3.e	author.assigned Author.addr.country		Provider_Country	Nation or state within which the care provider is found.	AD	ISO: Country	O: 0..1	
4.3.2.4	author.assigned Author.telecom	value use	Provider_Telecom_Use Provider_Telecom_Value	A classification of the telecommunication type, e.g. Business phone, business fax, home phone, home fax, cell, e-mail together with the phone number or e-mail address of the care provider	EMS.T EL	HL7: TelecommunicationAddressUse HL7: URLScheme	O: 0..*	
4.3.2.5. Provider Name								
4.3.2.5.a	author.assigned Author.assigned Person.name.prefix		Provider_Prefix	Title used by the person (i.e. Mr., Mrs., Ms., Dr.).	PN		O: 0..1	assigneePerson.name is a mixed content element so if the individual components of a person's name are not available then the entire name could be put in this element.
4.3.2.5.b	author.assigned Author.assigned Person.name.given		Provider_Given_Name	First name, second name, middle name of person.	PN		M: 1..*	
4.3.2.5.c	author.assigned Author.assigned Person.name.family		Provider_Family_Name	Last name or family name of person.	PN		M: 1..1	
4.3.2.5.d	author.assigned Author.assigned Person.name.suffix		Provider_Suffix	An addition to a surname to distinguish a person (i.e. III, Sr., Jr.).	PN		O: 0..1	
4.3.2.6	author.assigned Author.assigned AuthoringDevice. softwareName		Source_System_Name	Identifies the originating system that generated the e-MS.	SC		M: 1..1	

### 4.3.3 Example

Human Readable	
Since the header section of the CDA doesn't have a human readable component it is required that the vendor display the content of the following fields (left justified), in the specified order, under the word 'Author:' (left justified and bolded):	
<b>Author:</b>	

<pre>&lt;prefix&gt;&lt;given&gt;&lt;family&gt;&lt;suffix&gt; &lt;streetAddressLine&gt; &lt;city&gt;, &lt;state&gt; &lt;postalCode&gt; &lt;country&gt; &lt;telecom value&gt; &lt;telecom value&gt;</pre> <p>The concrete human readable example would look as such:</p> <p><b>Author:</b> Dr. Harold H. Hippocrates the 1st 4444 Healthcare Drive Ann Arbor, BC A1B 2C3 Canada Phone: (555) 555-1003 Fax: (555) 555-1133</p>	XML Instance
<pre>&lt;author&gt;   &lt;time value="20040812120000"/&gt;   &lt;assignedAuthor&gt;     &lt;id extension="hippocrates" root="DCCD2C68-389B-44c4-AD99-B8FB2DAD1493"/&gt;     &lt;addr&gt;       &lt;streetAddressLine&gt;4444 Healthcare Drive&lt;/streetAddressLine&gt;       &lt;city&gt;Ann Arbor&lt;/city&gt;       &lt;state&gt;BC&lt;/state&gt;       &lt;postalCode&gt;A1B 2C3&lt;/postalCode&gt;       &lt;country&gt;CA&lt;/country&gt;     &lt;/addr&gt;     &lt;telecom value="tel:(555)555-1003" use="WP"/&gt;     &lt;telecom value="fax:(555)555-1133" use="WP"/&gt;     &lt;assignedPerson&gt;       &lt;name&gt;         &lt;prefix&gt;Dr.&lt;/prefix&gt;         &lt;given&gt;Harold&lt;/given&gt;         &lt;given&gt;H.&lt;/given&gt;         &lt;family&gt;Hippocrates&lt;/family&gt;         &lt;suffix&gt;the 1st&lt;/suffix&gt;       &lt;/name&gt;     &lt;/assignedPerson&gt;   &lt;/assignedAuthor&gt; &lt;/author&gt; &lt;author&gt;   &lt;time value="20040812120000"/&gt;   &lt;assignedAuthor&gt;</pre>	

<pre>&lt;id extension="hippocrates" root="DCCD2C68-389B-44c4-AD99-B8FB2DAD1493"/&gt; &lt;assignedAuthoringDevice&gt;   &lt;softwareName&gt;e-MS Web&lt;/softwareName&gt; &lt;/assignedAuthoringDevice&gt; &lt;/author&gt;</pre>	
Schema Links	
Author	
AssignedAuthor	
Person	
AuthoringDevice	



## 4.4 Custodian

Section Level: X2 M3

Cardinality: 1..1

### 4.4.1 Description

The custodian section represents the organization from which the document originates and that is in charge of maintaining the document. In the e-MS this is the organization that sends the document. The custodian document section is not supported at level 2 but mandatory at level 3 (X2 M3). The cardinality for this section is 1..1.

### 4.4.2 Data Elements

Schema Data Element	Attributes	e-MS Equivalent	Description	Data type	Vocabulary	R/M/O: Cardinality	Comments
4.4.2.1 custodian.assignedCustodianOrganization.id	extension root	Custodian_ID	ID of the custodian of the document. The custodian represents the organization from which the document originates and that is in charge of maintaining the document. The custodian is the steward that is entrusted with the care of the document.	EMS.II.RootExtension		M: 1..1	The e-MS system will provide this identifier when the organization is first created.
4.4.2.2 custodian.assignedCustodianOrganization.name		Custodian_Name	Name of the custodian of the document. The custodian represents the organization from which the document originates and that is in charge of maintaining the document. The custodian is the steward that is entrusted with the care of the document.	ON		O: 0..1	
4.4.2.3 custodian	typeCode		A code specifying the kind of Participation or involvement the Entity playing the Role associated with the Participation has with regard to the associated Act.		voc.xsd: ParticipationType		

### 4.4.3 Example

Human Readable
N/A
XML Instance
<pre> &lt;custodian typeCode="CST"&gt;   &lt;assignedCustodian&gt;     &lt;id extension="123" root="7EEF0BCC-F03E-4742-A736-8BAC57180C5F"/&gt;           </pre>

<div>&lt;name&gt;Level 7 Healthcare, Inc&lt;/name&gt; &lt;/representedCustodianOrganization&gt; &lt;/assignedCustodian&gt; &lt;/custodian&gt;</div>	
Schema Links	
<div>Custodian AssignedCustodian CustodianOrganization</div>	

## 4.5 Record Target

### 4.5.1 Description

Section Level: X2 M3  
Cardinality: 1..1

Record target outlines patient information, which includes patient identification mechanisms, patient characteristics, the patient's name, address and phone number. The record target document section is not supported at level 2 but mandatory at level 3 (X2 M3). The cardinality for this section is 1..1.

### 4.5.2 Data Elements

Schema Data Element	Attributes	e-MS Equivalent	Description	Data type	Vocabulary	R/M/O: Cardinality	Comments
4.5.2.1 recordTarget.patient.id	extension root assigningAuthorityName	Patient_PHN PHN_Province	Personal Health Number with corresponding province. Numerical lifetime identifier used in the specific identification of an individual client or patient who has any interaction with the (BC) health system.	EMS.II .RootE xtensi onAut hority	Canada Post: Province Codes/State Codes NullFlavor option for extension: UNK- Unknown	R: 0..1	Use the AssigningAuthorityName attribute for the Province. Only use the codes for the Canadian Provinces/Territories.
4.5.2.2 recordTarget.patient.id	extension root assigningAuthorityName	Patient_OtherID_Type Patient_OtherID	Type of secondary identification. Could be Workers Compensation Board Number, Interim Federal Health Number, Veteran Affairs Benefits Number, MRN (unique to each HA or facility) and/or Band Number.	EMS.II .RootE xtensi onAut hority		O: 0..*	Use the AssigningAuthorityName attribute for the type of ID. There must be at least one ID for a patient.
4.5.2.3. Patient Address							
4.5.2.3.a recordTarget.patient.addressLine		Patient_Address	An address is where the patient resides.	AD		O: 0..1	
4.5.2.3.b recordTarget.patient.city		Patient_Address_City	City where the patient resides.	AD		O: 0..1	

Schema Data Element	Attributes	e-MS Equivalent	Description	Data type	Vocabulary	R/M/O: Cardinality	Comments
4.5.2.3.c	recordTarget.patient.address.state	Patient_Address_Province_State	Province or state where the patient resides.	AD	Canada Post: Province Codes/State Codes	O: 0..1	
4.5.2.3.d	recordTarget.patient.address.postalCode	Patient_Address_Postal_Zip	Postal or zip code of where the patient resides.	AD		O: 0..1	
4.5.2.3.e	recordTarget.patient.address.country	Patient_Country	Country where the patient resides.	AD	ISO: Country	O: 0..1	
4.5.2.4	recordTarget.patient.telecom	Patient_Telecom_Use Patient_Telecom_Value	A classification of the telecommunication type and value associated with it.	EMS.T EL	HL7: TelecommunicationAddressUse HL7: URLScheme	O: 0..*	
<b>4.5.2.5. Patient Name</b>							
4.5.2.5.a	recordTarget.patient.name.prefix	Patient_Prefix	The title used by the patient (i.e. Mr. Miss. Ms. Mrs.).	PN		O: 0..1	
4.5.2.5.b	recordTarget.patient.name.given	Patient_Given_Name	First name, second name, middle name of person.	PN		M: 1..*	
4.5.2.5.c	recordTarget.patient.name.family	Patient_Family_Name	Last name or family name of the patient.	PN		M: 1..1	
4.5.2.5.d	recordTarget.patient.name.suffix	Patient_Suffix	An addition to a surname to distinguish a person (e.g. III, Sr., Jr.).	PN		O: 0..1	
4.5.2.6	recordTarget.patient.administrativeGenderCode	Patient_Gender	Patient gender.	CE	HL7: AdministrativeGender NullFlavor Option: UNK - Unknown	R: 1..1	
4.5.2.7	recordTarget.patient.birthTime	Patient_DOB	Patient date of birth.	TS	NullFlavor Option: UNK - Unknown	R: 1..1	The patient DOB may not be a partial date.
4.5.2.8	recordTarget.patient.languageCommunicationCode	Patient_Preferred_Language	Primary language used for patient communication.	CS	ISO: Language	O: 0..1	
4.5.2.9	recordTarget	typeCode	A code specifying the kind of		Voc.xsd:		

Schema Data Element	Attributes	e-MS Equivalent	Description	Data type	Vocabulary	R/M/O: Cardinality	Comments
	contextControlCode		Participation or involvement the Entity playing the Role associated with the Participation has with regard to the associated Act.  A code that specifies how this Participation contributes to the context of the current Act, and whether it may be propagated to descendant Acts whose association allows such propagation.		Participation Type Voc.xsd: ContextCont rol		
4.5.2.10	recordTarget.patientRole	ClassCode	A code specifying the major category of a Role as defined by HL7 vocabulary.		voc.xsd: RoleClass		

4.5.3 Example

Human Readable	
Since the header section of the CDA doesn't have a human readable component it is required that the vendor display the content of the following fields in the form of a table, in the specified order (left justified), under the title "Client Information" (left justified, bolded and underlined). The descriptors on the left side of the table must be entered by the vendor. Note that Name, DOB and age (calculated from the DOB) will repeat after Author and Intended Recipient information at the beginning of the document.	
<b><u>Client Information</u></b>	
Name:	<prefix><given><family><suffix>
DOB:	<birth time>
Gender:	<administrativeGenderCode>
Language:	<languageCode>
Identifiers:	<id>
Address:	<streetAddressLine>
Phone:	<telecom value>
Email:	<telecom value>
<b><u>Patient Information</u></b>	

DOB:	<birth time>
Gender:	<administrativeGenderCode>
Age:	Calculated from <birth time>

The concrete human readable example would look as such

#### Patient Information

Name:	Mrs. Eve E. Everywoman Jr.
DOB:	May 16, 1965
Gender:	F
Language:	English
Identifiers:	BC-PHN: 9999999999 WCB: 99999-9
Address:	2222 Home Street Ann Arbor, BC A1B 2C3 Canada
Phone:	(555) 555-2003
Email:	Eve.Everywoman@eg.net

#### Patient Information

Name:	Mrs. Eve E. Everywoman Jr.
DOB:	May 16, 1965
Gender:	Female
Age:	39

#### XML Instance

```
<recordTarget typeCode="RCT" contextControlCode="OP">
  <patient classCode="PAT">
    <id extension="999999999" root="2BFBA1E9-79C2-4bbb-B589-41B949BD6A3B" assigningAuthorityName="BC-PHN"/>
    <id extension="99999-9" assigningAuthorityName="WCB"/>
    <addr>
      <streetAddressLine>2222 Home Street</streetAddressLine>
      <city>Ann Arbor</city>
      <state>BC</state>
      <postalCode>A1B 2C3</postalCode>
      <country>CA</country>
    </addr>
    <telecom value="ph:555555-2003" use="HP"/>
    <telecom value="email:Eve.Everywoman@eg.net" use="HP"/>
    <patientPatient>
      <name>
        <prefix>Mrs.</prefix>
```

<pre>&lt;given&gt;Eve&lt;/given&gt; &lt;given&gt;E.&lt;/given&gt; &lt;family&gt;Everywoman&lt;/family&gt; &lt;suffix&gt;Jr.&lt;/suffix&gt; &lt;/name&gt; &lt;administrativeGenderCode code="F" codeSystem="2.16.840.1.113883.5.1" codeSystemName="HL7 - Administrative Gender" displayName="Female"/&gt; &lt;birthTime value="19650516"/&gt; &lt;languageCommunication&gt;   &lt;languageCode code="EN"/&gt; &lt;/languageCommunication&gt; &lt;/patient&gt; &lt;/recordTarget&gt;</pre>	Schema Links
RecordTarget PatientRole Patient LanguageCommunication	

## 4.6 Participant

### 4.6.1 Description

Section Level: X2 R3

Cardinality: 0..\*

Participant outlines patient emergency and non-emergency contact information. The participant document section is not supported at level 2 and required at level 3 (X2 R3). The cardinality for this section is 0..\*.

### 4.6.2 Data Elements

Schema Data Element	Attributes	e-MS Equivalent	Description	Data type	Vocabulary	R/M/O: Cardinality	Comments
4.6.2.1	participant.participatingEntity.code	Contact_Relationship_Type	The relationship of the contact to the patient.	EMS.CE.Fully	HL7: PersonalRelationshipRoleType	R: 0..1	
4.6.2.2. Contact Address							
4.6.2.2.a	participant.participatingEntity.addr.streetAddressLine	Contact_Address	An address where the contact person resides.	AD		O: 0..1	
4.6.2.2.b	participant.participatingEntity.addr.city	Contact_Address_City	The city where the contact person resides.	AD		O: 0..1	
4.6.2.2.c	participant.participatingEntity.addr.state	Contact_Address_Province_State	The province or state where the contact person resides.	AD	Canada Post: Province Codes/State Codes	O: 0..1	
4.6.2.2.d	participant.participatingEntity.addr.postalCode	Contact_Address_Postal_Zip	The postal or zip code where the contact person resides.	AD		O: 0..1	
4.6.2.2.e	participant.participatingEntity.addr.country	Contact_Country	The country where the contact person resides.	AD	ISO: Country	O: 0..1	
4.6.2.3	participant.participatingEntity.telecom	Contact_Telecom_Use Contact_Telecom_Value	A classification of the telecommunication type and value associated with it.	EMS.TEL	HL7: TelecommunicationAddressUse HL7: URLScheme	O: 0..*	
4.6.2.4. Contact Name							



Schema Data Element	Attributes	e-MS Equivalent	Description	Data type	Vocabulary	R/M/O: Cardinality	Comments
4.6.2.4.a participant.participatingEntity.associatedPerson.name.prefix		Contact_Prefix	The title used by the contact (e.g. Mr., Mrs., Miss., Ms.).	PN		O: 0..1	
4.6.2.4.a participant.participatingEntity.associatedPerson.name.given		Contact_Given_Name	First name, second name, middle name of the contact.	PN		R: 0..1	
4.6.2.4.b participant.participatingEntity.associatedPerson.name.family		Contact_Family_Name	Last name or family name of the contact.	PN		R: 0..1	
4.6.2.4.c participant.participatingEntity.associatedPerson.name.suffix		Contact_Suffix	An addition to a surname to distinguish a contact person (i.e. III, Sr., Jr.).	PN		O: 0..1	
4.6.2.5 participant	typeCode		A code specifying the kind of Participation or involvement the Entity playing the Role associated with the Participation has with regard to the associated Act.		Voc.xsd: ParticipationType		
4.6.2.6 participant.participatingEntity	classCode		A code specifying the major category of a Role as defined by HL7 vocabulary.		Voc.xsd: RoleClassAssociative		

### 4.6.3 Example

Human Readable																									
<p>Since the header section of the CDA doesn't have a human readable component it is required that the vendor display the content of the following fields in the form of tables, in the specified order (left justified), under the title "Contact Information" (left justified, bolded and underlined). The descriptors on the left side of the table and the table headers (Contact 1, Contact 2...) must be entered by the vendor.</p>																									
<b>Contact Information</b>																									
<table> <tr><td>Contact 1</td><td></td></tr> <tr><td>Name</td><td>&lt;prefix&gt;&lt;given&gt;&lt;family&gt;&lt;suffix&gt;</td></tr> <tr><td>Relationship</td><td>&lt;ParticipatingEntity.Code&gt;</td></tr> <tr><td>Address</td><td>&lt;streetAddressLine&gt; &lt;city&gt;, &lt;state&gt; &lt;postalCode&gt; &lt;country&gt;</td></tr> <tr><td>Phone</td><td>&lt;telecom value&gt;</td></tr> <tr><td>Email</td><td>&lt;telecom value&gt;</td></tr> </table>	Contact 1		Name	<prefix><given><family><suffix>	Relationship	<ParticipatingEntity.Code>	Address	<streetAddressLine> <city>, <state> <postalCode> <country>	Phone	<telecom value>	Email	<telecom value>	<table> <tr><td>Contact 2</td><td></td></tr> <tr><td>Name</td><td>&lt;prefix&gt;&lt;given&gt;&lt;family&gt;&lt;suffix&gt;</td></tr> <tr><td>Relationship</td><td>&lt;ParticipatingEntity.Code&gt;</td></tr> <tr><td>Address</td><td>&lt;streetAddressLine&gt; &lt;city&gt;, &lt;state&gt; &lt;postalCode&gt; &lt;country&gt;</td></tr> <tr><td>Phone</td><td>&lt;telecom value&gt;</td></tr> <tr><td>Email</td><td>&lt;telecom value&gt;</td></tr> </table>	Contact 2		Name	<prefix><given><family><suffix>	Relationship	<ParticipatingEntity.Code>	Address	<streetAddressLine> <city>, <state> <postalCode> <country>	Phone	<telecom value>	Email	<telecom value>
Contact 1																									
Name	<prefix><given><family><suffix>																								
Relationship	<ParticipatingEntity.Code>																								
Address	<streetAddressLine> <city>, <state> <postalCode> <country>																								
Phone	<telecom value>																								
Email	<telecom value>																								
Contact 2																									
Name	<prefix><given><family><suffix>																								
Relationship	<ParticipatingEntity.Code>																								
Address	<streetAddressLine> <city>, <state> <postalCode> <country>																								
Phone	<telecom value>																								
Email	<telecom value>																								
The concrete human readable example would look as such:																									

Contact Information			
Contact 1		Contact 2	
Name	Mr. Neville N. Nuclear III	Name	Ms. Nancy N. Nuclear Sr.
Relationship	Husband	Relationship	Daughter
Address	2222 Home Street Ann Arbor, BC A1B 2C3 Canada	Address	6666 Home Street. Ann Arbor, BC A1B 2C3 Canada
Phone	(555) 555-5001	Phone	(250) 555-5001
Email	Neville.Nuclear@eg.net	Email	Nancy.Nuclear@eg.net
XML Instance			
<pre> &lt;participant typeCode="NOT"&gt;   &lt;participatingEntity classCode="CON"&gt;     &lt;code code="HUSB" codeSystem="F05716F7-BA77-4641-A8D8-6E3948CCD321" codeSystemName="HL7: PersonalRelationshipRoleType" displayName="Husband"/&gt;   &lt;/add&gt;   &lt;streetAddressLine&gt;2222 Home Street&lt;/streetAddressLine&gt;   &lt;city&gt;Ann Arbor&lt;/city&gt;   &lt;state&gt;BC&lt;/state&gt;   &lt;postalCode&gt;A1B 2C3&lt;/postalCode&gt;   &lt;country&gt;CA&lt;/country&gt; &lt;/addr&gt;   &lt;telecom value="tel:(555)555-5001" use="H"/&gt;   &lt;telecom value="mailto:Neville.Nuclear@eg.net" use="H"/&gt;   &lt;associatedPerson&gt;     &lt;name&gt;       &lt;prefix&gt;Mr.&lt;/prefix&gt;       &lt;given&gt;Neville&lt;/given&gt;       &lt;given&gt;N.&lt;/given&gt;       &lt;family&gt;Nuclear&lt;/family&gt;       &lt;suffix&gt;III&lt;/suffix&gt;     &lt;/name&gt;     &lt;/associatedPerson&gt;   &lt;/participatingEntity&gt; &lt;/participant&gt; &lt;participant typeCode="NOT"&gt;   &lt;participatingEntity classCode="CON"&gt;     &lt;code code="NCHLD" codeSystem="F05716F7-BA77-4641-A8D8-6E3948CCD321" codeSystemName="HL7: PersonalRelationshipRoleType" displayName="Natural Child"/&gt;   &lt;/add&gt;   &lt;streetAddressLine&gt;6666 Home Street&lt;/streetAddressLine&gt;   &lt;city&gt;Ann Arbor&lt;/city&gt;   &lt;state&gt;BC&lt;/state&gt;   &lt;postalCode&gt;A1B 2C3&lt;/postalCode&gt;   &lt;country&gt;CA&lt;/country&gt; &lt;/addr&gt; </pre>			

<pre>&lt;telecom value="tel:(555)555-5001" use="H"/&gt; &lt;telecom value="mailto:Nancy.Nuclear@eg.net" use="H"/&gt; &lt;associatedPerson&gt;   &lt;name&gt;     &lt;prefix&gt;Ms.&lt;/prefix&gt;     &lt;given&gt;Nancy&lt;/given&gt;     &lt;given&gt;N.&lt;/given&gt;     &lt;family&gt;Nuclear&lt;/family&gt;     &lt;suffix&gt;Sr.&lt;/suffix&gt;   &lt;/name&gt;   &lt;/associatedPerson&gt; &lt;/participant&gt;</pre>	
Schema Links	
Participant1	ParticipatingEntity
Person	

## 4.7 Related Document

Section Level: X2 O3

Cardinality: 0..\*

### 4.7.1 Description

The related document section allows an e-MS document to be related to one or more other e-MS documents. This would be used for example when a Consult letter needs to be related to a Referral. The typeCode for a consultation letter being sent in response to referral would be APND. The related document section is not supported at level 2 but is optional at level 3 (X2 O3). The cardinality for this section is 0..\*.

### 4.7.2 Data Elements

	Schema Data Element	Attributes	e-MS Equivalent	Description	Data type	Vocabulary	R/M/O: Cardinality	Comments
4.7.2.1	relatedDocument.parentDocument.id	extension root	Related_Document_ID	The ID of another e-MS document that this document is related to.	EMS.II.RootExtension		M: 1..1	Must be a GUID
4.7.2.2	relatedDocument.parentDocument.code	code codeSystem codeSystemName displayName	Related_Document_Type	The type of another e-MS document that this document is related to.	EMS.CE.Full	LOINC: Document Type	M: 1..1	
4.7.2.3	relatedDocument.parentDocument.text		Related_Document_Text	The description of the document that is related	ED		M: 1..1	
4.7.2.4	relatedDocument	typeCode		A code specifying the meaning and purpose of every ActRelationship instance. Each of its values implies specific constraints to what kinds of Act objects can be related and in which way.		Voc.xsd: x_ActRelationshipDocument		APND is used when the document is in response to a previous document and RPLC is used when the document is replacing another document.

### 4.7.3 Example

Human Readable
N/A
XML Instance
<pre> &lt;relatedDocument typeCode="APND"&gt;   &lt;parentDocument&gt;     &lt;id extension="C7F36C19-64F0-4a8d-859B-2404F07A2434" root="2.16.840.1.113883.3.933"/&gt;           </pre>

<pre>&lt;code code="34140-4" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC" displayName="Referral"/&gt; &lt;text&gt;A previous referral is related to this document&lt;/text&gt; &lt;/parentDocument&gt; &lt;/relatedDocument&gt;</pre>
Schema Links
<a href="#">RelatedDocument</a> <a href="#">ParentDocument</a>

## 5 CDA Body Sections

### 5.1 Purpose

Section Level: M2 O3

Cardinality: 1..1

e-MS Document Section Code: 001

#### 5.1.1 Description

The purpose provides high-level information on the background of the clinical document (e.g. referral request or consultation report). It provides information on the reason for the referral, its urgency and whom the other providers involved in the care of the patient are.

The purpose document section is mandatory at level 3 (M2 O3). The cardinality for this section is 1..1. The e-MS document section code for purpose is 001.

Please note that Component.Section.Entry.Observation.Code is not used in this section. However it is a required element in the schema, therefore the nullFlavor of “NA” should be used.

Please refer to section 5.16 (Observation Media) for the data elements that are used if an attachment is added to this section.

#### 5.1.2 Data Elements

Schema Data Element		Attributes	e-MS Equivalent	Description	Data type	Vocabulary	R/M/O: Cardinality	Comments
<b>Level 2 Data Elements</b>								
5.1.2.1	component.section.code	code codeSystem codeSystemName displayName	Document_Purpose_Section_Code	Code identifying the Purpose section. The value in this field should always be the LOINC code given.	EMS_CE.Fully	e-MS Document Section Code: 001	M: 1..1	
5.1.2.2	component.section.title		Document_Purpose_Section_Title	Human readable title of the section	ST		M: 1..1	
5.1.2.3	component.section.text		Document_Purpose_Section_Text	This field will be used to enter all of the data for this section.	TEXT		M: 1..1	
<b>Level 3 Data Elements</b>								
5.1.2.4	component.section.entry.o		eMS_Purpose_Reason	Reason for the referral request.	ED		O: 0..1	

	Schema Data Element	Attributes	e-MS Equivalent	Description	Data type	Vocabulary	R/M/O: Cardinality	Comments
	bservation.text component.section.entry.o bservation.priorityCode	code codeSystem codeSystemName displayName	eMS_Purpose_Urgency	Urgency for appointment booking and/or referral request.	CE	e-MS: Urgency	O: 0..1	
5.1.2.6	component.section.entry.o bservation.value	xs:type					O: 0..1	
5.1.2.7	component.section.entry.o bservation.value.originalText/reference	value	eMS_Purpose_Comments	Additional comments about the referral request.	ANY		O: 0..1	
5.1.2.8	component.section.entry.o bservation.participant.participantRole.playingEntity.name		eMS_Purpose_Other_Provider	List of other providers currently involved in the care of the patient.	EN		O: 0..*	
5.1.2.9	component.section.entry.o bservation.participant.participantRole.playingEntity.desc		eMS_Purpose_Other_Provider_Reason	Reason for which each additional provider is involved in the care of the patient.	ED		O: 0..*	
5.1.2.10	component.section.entry	typeCode		A code specifying the meaning and purpose of every ActRelationship instance. Each of its values implies specific constraints to what kinds of Act objects can be related and in which way.		Voc.xsd: ParticipationInformationGenerator_X		
5.1.2.11	component.section.entry.o bservation	classCode moodCode		A code distinguishing whether an Act is conceived of as a factual statement or in some other manner as a command, possibility, goal, etc.		Voc.xsd: x_ActMoodDocumentObservation_X	classCode is mandatory	
5.1.2.11	component.section.entry.o bservation.participant	typeCode		A code specifying the kind of Participation or involvement the Entity playing the Role associated with the Participation has with regard to the associated Act.		Voc.xsd: ParticipationType		

### 5.1.3 Example

Human Readable	
<b>Purpose</b>	(Note: although it is outside the scope of the CDA, it is required that the vendor make the title element bold and underlined.)
Please see this patient regarding occasional occurrences of arrhythmia at rest accompanied with mild shortness of breath. Mild exercise leads to faintness and mild chest pain.	
<b>Urgency:</b>	expedite.

Comments: The patient expressed that this problem has gradually been getting worse over the course of the past year and a half.

Providers currently involved in the care of the patient: (Note: although it is outside the scope of the CDA, it is required that the vendor make this line bold and underlined.)

Other Provider	Reason
Dr. Vera V. Valve at Level 7 Healthcare, Inc	High blood pressure in the past
Dr. Sara S. Specialize at Good Health Hospital	24 Hour ECG recording

<component>

<section>

<code code="001" codeSystem="7BA9BFFD-D25F-44e8-A7B0-0DF214D6845B" codeSystemName="e-MS Document Section Codes" displayName="Purpose"/>

<title>Referral Purpose</title>

<text>

<paragraph>

Please see this patient regarding occasional occurrences of arrhythmia at rest accompanied with mild shortness of breath. Mild exercise leads to faintness and mild chest pain.

</paragraph>

<paragraph>

Urgency: expedite

</paragraph>

<table border="1">

<tbody>

<tr>

<th>Other Provider</th>

<th>Reason</th>

</tr>

<tr>

<td>Dr. Vera V. Valve at Level 7 Healthcare, Inc</td>

<td>High blood pressure in the past</td>

</tr>

<tr>

<td>Dr. Sara S. Specialize at Good Health Hospital</td>

<td>24 Hour ECG recording</td>

</tr>

</tbody>

</table>

<paragraph>

Comments: The patient expressed that this problem has gradually been getting worse over the course of the past year and a half.

</text>

<entry typeCode="DRIV">

<observation classCode="OBS" moodCode="EVN">

<code nullFlavor="NA"/>

</observation>

</entry>

</text>

</



<p>mild chest pain. &lt;/text&gt; &lt;priorityCode code="E" codeSystem="1261620F-C09D-4825-96E4-E808DCFA4D17" codeSystemName="eMS_Purpose_Urgency" displayName="Expedite (call)"/&gt; &lt;value xsi:type="ST"&gt;The patient expressed that this problem has gradually been getting worse over the course of the past year and a half.&lt;/value&gt; &lt;participant typeCode="SPRF"&gt;   &lt;participantRole&gt;     &lt;playingPlayingEntity&gt;       &lt;name&gt;Dr. Vera V. Valve at Level 7 Healthcare&lt;/name&gt;       &lt;desc&gt;High blood pressure in the past&lt;/desc&gt;     &lt;/playingPlayingEntity&gt;   &lt;/participantRole&gt; &lt;/participant&gt; &lt;participant typeCode="SPRF"&gt;   &lt;participantRole&gt;     &lt;playingPlayingEntity&gt;       &lt;name&gt;Dr. Sara S. Specialize at Good Health Hospital&lt;/name&gt;       &lt;desc&gt;24 Hour ECG recording&lt;/desc&gt;     &lt;/playingPlayingEntity&gt;   &lt;/participantRole&gt;   &lt;/participant&gt; &lt;/observation&gt; &lt;/entry&gt; &lt;/section&gt; &lt;/component&gt;</p>	<p>Schema Links</p> <p>Component2 StructuredBody Component3 Section Entry Observation Participant2 ParticipantRole PlayingEntity</p>
---	--

## 5.2 Alerts

Section Level: O2 O3

Cardinality: 0..\*

e-MS Document Section Code: 002

### 5.2.1 Description

Alerts indicate some condition about which a care provider should be aware. In the case of the e-MS, the existence of an advance directive would also be considered a distinct alert (it would be entered in ‘alert type’). This section should also be used to mention that important information, for example medication information, has been withheld. The alerts document section is optional at level 2 and optional at level 3 (O2 O3). The cardinality for this section is 0..\*. The e-MS document section code is 002.

Please note that Component.Section.Entry.Observation.Code is not used in this section. However it is a required element in the schema, therefore the nullFlavor of “NA” should be used.

Please refer to section 5.16 (Observation Media) for the data elements that are used if an attachment is added to this section.

### 5.2.2 Data Elements

	Schema Data Element	Attributes	e-MS Equivalent	Description	Data type	Vocabulary	R/M/O: Cardinality	Comments
<b>Level 2 Data Elements</b>								
5.2.2.1	component.section.code	code codeSystem codeSystemName displayName	Alert_Section_Code	Code identifying the Alerts section. The value in this field should always be the LOINC code given.	EMS.CE: Full	e-MS Document Section Code: 002	M: 1..1	
5.2.2.2	component.section.title		Alert_Section_Title	Human readable title of the section	ST		M: 1..1	
5.2.2.3	component.section.text		Alert_Section_Text	This field will be used to enter all of the data for this section.	TEXT		M: 1..1	
<b>Level 3 Data Elements</b>								
5.2.2.4	component.section.entry.observation.text		Alert_Type	Type of warning (i.e. history of violence, mental health, etc)	ED		O: 0..1	
5.2.2.5	component.section.entry.observation.effectiveTime	value	Alert_Date	Date when the alert was first recorded on the patient chart.	IVL_TS		O: 0..1	This may be a partial date
5.2.2.6	component.section.e	xsi:type					O: 0..1	

	Schema Data Element	Attributes	e-MS Equivalent	Description	Data type	Vocabulary	R/M/O: Cardinality	Comments
	ntry.observation.value							
5.2.2.7	component.section.entry.observation.value.originalText/reference	Reference has attribute of value	Alert_Comments	Additional comments regarding the alert.	ANY		O: 0..1	
5.2.2.8	component.section.entry	typeCode		A code specifying the meaning and purpose of every ActRelationship instance. Each of its values implies specific constraints to what kinds of Act objects can be related and in which way.		Voc.xsd:ParticipationInformationGenerator_X		
5.2.2.9	component.section.entry.observation	classCode moodCode		Mood code indicates whether an Act has happened (an event), or is a request for something to happen, or a goal or even a criterion.		Voc.xsd:ActMoodDocumentObservation_X	classCode is mandatory	

### 5.2.3 Example

Human Readable		
<b>Alerts</b> (Note: although it is outside the scope of the CDA, it is required that the vendor make the title element bold and underlined.)		
<b>Alert</b>	<b>Comments</b>	<b>Date</b>
History of violence	Mostly towards family members	1999
History of mental illness	Mild anxiety disorder	August 2000
XML Instance		
<pre>&lt;component&gt; &lt;section&gt; &lt;code code="002" codeSystem="7BA9BFFD-D25F-44e8-A7B0-0DF214D6845B" codeSystemName="e-MS Document Section Codes" displayName="Alerts"/&gt; &lt;title&gt;Alerts&lt;/title&gt; &lt;text&gt; &lt;table border="1"&gt; &lt;tbody&gt; &lt;tr&gt; &lt;th&gt;Alert&lt;/th&gt; &lt;th&gt;Comments&lt;/th&gt; &lt;th&gt;Date&lt;/th&gt; &lt;/tr&gt; &lt;tr&gt; &lt;td&gt;History of violence&lt;/td&gt; &lt;td&gt;Mostly towards family members&lt;/td&gt; &lt;td&gt;1999&lt;/td&gt; &lt;/tr&gt; </pre>		

<pre>&lt;/tr&gt; &lt;tr&gt; &lt;td&gt;History of mental illness&lt;/td&gt; &lt;td&gt;Mild anxiety disorder&lt;/td&gt; &lt;td&gt;August 2000&lt;/td&gt; &lt;/tr&gt; &lt;/tbody&gt; &lt;/table&gt; &lt;/text&gt; &lt;entry typeCode="COMP"&gt; &lt;observation classCode="OBS" moodCode="EVN"&gt; &lt;code nullFlavor="NA"/&gt; &lt;text&gt;History of violence&lt;/text&gt; &lt;effectiveTime value="1999"/&gt; &lt;value xsi:type="ST"&gt;Mostly towards family members&lt;/value&gt; &lt;/observation&gt; &lt;/entry&gt; &lt;entry typeCode="COMP"&gt; &lt;observation classCode="OBS" moodCode="EVN"&gt; &lt;code nullFlavor="NA"/&gt; &lt;text&gt;History of mental illness&lt;/text&gt; &lt;effectiveTime value="200008"/&gt; &lt;value xsi:type="ST"&gt;Mild anxiety disorder&lt;/value&gt; &lt;/observation&gt; &lt;/entry&gt; &lt;/section&gt; &lt;/component&gt;</pre>	
Schema Links	
Component2	
StructuredBody	
Component3	
Section	
Entry	
Observation	

## 5.3 Social History/Risks

Section Level: O2 O3

Cardinality: 0..\*

LOINC document section code: 29762-2

### 5.3.1 Description

Social history and risks identify factors that may have a (usually) medical impact on the course of care of the patient. The social history and risks document section is optional at level 2 and optional at level 3 (O2 O3). The cardinality for this section is 0..\*. The LOINC document section code for social history is 29762-2.

Please note that Component.Section.Entry.Observation.Code is not used in this section. However it is a required element in the schema, therefore the nullFlavor of “NA” should be used.

Please refer to section 5.16 (Observation Media) for the data elements that are used if an attachment is added to this section.

### 5.3.2 Data Elements

Schema Data Element		Attributes	e-MS Equivalent	Description	Data type	Vocabulary	R/M/O: Cardinality	Comments
<b>Level 2 Data Elements</b>								
5.3.2.1	component.section.code	code codeSystem codeSystemName displayName	Risk_Section_Code	Code identifying the Social History/Risks section. The value in this field should always be the LOINC code given.	EMS. CE.Ful I	LOINC: 29762-2	M: 1..1	
5.3.2.2	component.section.title		Risk_Section_Title	Human readable title of the section.	ST		M: 1..1	
5.3.2.3	component.section.text		Risk_Section_Text	This field will be used to enter all of the data for this section.	TEXT		M: 1..1	
<b>Level 3 Data Elements</b>								
5.3.2.4	component.section.entry.observation.text		Risk_Type	Type of risk factor (usually has a medical impact). Examples may include alcohol use or smoking.	ED		O: 0..1	
5.3.2.5	component.section.entry.observation.effectiveTime	value	Risk_Date Risk_End_Date	Date when the risk was first recorded on the patient chart and date when the risk ended.	IVL_T S		O: 0..1	This may be a partial date
5.3.2.6	component.section.entry.observation.value	xsi:type					O: 0..1	
5.3.2.7	component.section.entry	Reference has	Risk_Comments	Additional comments regarding the risk	ANY		O: 0..1	

	Schema Data Element	Attributes	e-MS Equivalent	Description	Data type	Vocabulary	R/M/O: Cardinality	Comments
	y.observation.value.originalText/reference	attribute of value		factor.				
5.3.2.8	component.section.entry	typeCode		A code specifying the meaning and purpose of every ActRelationship instance. Each of its values implies specific constraints to what kinds of Act objects can be related and in which way.		Voc.xsd:ParticipationInformationGenerator_X		
5.3.2.9	component.section.entry.Observation	classCode moodCode		Mood code indicates whether an Act has happened (an event), or is a request for something to happen, or a goal or even a criterion.		Voc.xsd:ActMoodDocumentObservation_X	classCode is mandatory	

### 5.3.3 Example

Human Readable		
<b>Social History/Risks</b> (Note: although it is outside the scope of the CDA, it is required that the vendor make the title element bold and underlined.)		
<b>Social History/Risk</b>	<b>Comments</b>	<b>Date</b>
Smoking	2 packs of cigarettes per day in her early teens	1979-1982
Alcohol consumption	3 glasses of wine per day	January 2000

XML Instance		
<pre>&lt;component&gt; &lt;section&gt; &lt;code code="29762-2" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC" displayName="Social History/Risks"/&gt; &lt;title&gt;Social History/Risks&lt;/title&gt; &lt;text&gt; &lt;table border="1"&gt; &lt;tbody&gt; &lt;tr&gt; &lt;th&gt;Social History/Risk&lt;/th&gt; &lt;th&gt;Comments&lt;/th&gt; &lt;th&gt;Date&lt;/th&gt; &lt;/tr&gt; &lt;tr&gt; &lt;td&gt;Smoking&lt;/td&gt; &lt;td&gt;2 packs of cigarettes per day in her early teens&lt;/td&gt; &lt;td&gt;1979-1982&lt;/td&gt; &lt;/tr&gt; &lt;tr&gt; &lt;td&gt;Alcohol consumption&lt;/td&gt; &lt;td&gt;3 glasses of wine per day&lt;/td&gt; &lt;td&gt;January 2000&lt;/td&gt; &lt;/tr&gt; &lt;/tbody&gt; &lt;/table&gt; </pre>		

<pre>&lt;/tr&gt; &lt;/tbody&gt; &lt;/table&gt; &lt;/text&gt; &lt;entry typeCode="COMP"&gt;   &lt;observation classCode="OBS" moodCode="EVN"&gt;     &lt;code nullFlavor="NA"/&gt;     &lt;text&gt;Smoking&lt;/text&gt;     &lt;effectiveTime value="19790000000000.19820000000000"/&gt;     &lt;value xsi:type="ST"&gt;2 packs of cigarettes per day starting in her early teens.&lt;/value&gt;   &lt;/observation&gt; &lt;/entry&gt; &lt;entry typeCode="COMP"&gt;   &lt;observation classCode="OBS" moodCode="EVN"&gt;     &lt;code nullFlavor="NA"/&gt;     &lt;text&gt;Alcohol consumption&lt;/text&gt;     &lt;effectiveTime value="200001"/&gt;     &lt;value xsi:type="ST"&gt;3 glasses of wine per day.&lt;/value&gt;   &lt;/observation&gt; &lt;/entry&gt; &lt;/section&gt; &lt;/component&gt;</pre>	
Schema Links	
Component2	
StructuredBody	
Component3	
Section	
Entry	
Observation	

## 5.4 Examination Measurements

Section Level: O2 O3

Cardinality: 0..\*

e-MS Document Section Code: 003

### 5.4.1 Description

Examination measurements provide information on the patients' height, weight, blood pressure and pulse. The examination measurements document section is optional at level 2 and optional at level 3 (O2 O3). The cardinality for this section is 0..\*. The e-MS document section code for examination measurements is 003.

Please refer to section 5.16 (Observation Media) for the data elements that are used if an attachment is added to this section.

### 5.4.2 Data Elements

	Schema Data Element	Attributes	e-MS Equivalent	Description	Data type	Vocabulary	R/M/O: Cardinality	Comments
<b>Level 2 Data Elements</b>								
5.4.2.1	component.section.code	code codeSystem codeSystemName displayName	Obs_Section_Code	Code identifying the Examination Measurements section. The value in this field should always be the LOINC code given.	EMS. CE.Ful I	e-MS Document Section Code: 003	M: 1..1	
5.4.2.2	component.section.title		Obs_Section_Title	Human readable title of the section	ST		M: 1..1	
5.4.2.3	component.section.text		Obs_Section_Text	This field will be used to enter all of the data for this section.	TEXT		M: 1..1	
<b>Level 3 Data Elements</b>								
5.4.2.4	component.section.entry.observation.code	code codeSystem codeSystemName displayName	Obs_Height_Code	Code identifying height	CD	LOINC: 8302-2	O: 0..1	
5.4.2.5	component.section.entry.observation.effectiveTime	value	Obs_Height_Eff_Date	Effective date of the height observation.	IVL_T S		O: 0..1	
5.4.2.6	Component.Section.Entry.observation.value	xsi:type value unit	Obs_Height	Patient height consisting of numeric height values and unit of measurement.	PQ	e-MS Height	O: 0..1	Enter height in inches or centimeters but not both.



	Schema Data Element	Attributes	e-MS Equivalent	Description	Data type	Vocabulary	R/M/O: Cardinality	Comments
5.4.2.7	component.section.entry.observation.code	code codeSystem codeSystemName displayName value	Obs_Weight_Code	Code identifying weight	CD	LOINC: 3141-9	O: 0..1	
5.4.2.8	component.section.entry.observation.effectiveTime		Obs_Weight_Eff_Date	Effective date of the weight observation.	IVL_TS		O: 0..1	
5.4.2.9	component.section.entry.observation.value	xsi:type value unit	Obs_Weight	Patient weight consisting of numeric weight value and unit of measurement.	PQ	<a href="#">e-MS Weight</a>	O: 0..1	Enter weight in pounds or kilograms but not both.
5.4.2.10	component.section.entry.observation.code	code codeSystem codeSystemName displayName value	Obs_Pulse_Code	Code identifying pulse	CD	LOINC: 11328-2	O: 0..1	
5.4.2.11	component.section.entry.observation.effectiveTime		Obs_Pulse_Eff_Date	Effective date of the pulse observation.	IVL_TS		O: 0..1	
5.4.2.12	component.section.entry.observation.value	xsi:type value unit	Obs_Pulse	Patient pulse.	PQ		O: 0..1	
5.4.2.13	component.section.entry.observation.code	code codeSystem codeSystemName displayName value	Obs_BP_Code	Code identifying blood pressure	CD	<a href="#">e-MS data element code: 004</a>	O: 0..1	
5.4.2.14	component.section.entry.observation.effectiveTime		Obs_BP_Eff_Date	Effective date of the blood pressure observation.	IVL_TS		O: 0..1	
5.4.2.15	component.section.entry.observation.relationship.observation.code	code codeSystem codeSystemName displayName	Obs_Diastolic or Systolic	Code identifying if it's referring to the diastolic or systolic blood pressure.	CD	<a href="#">e-MS data element code: 005 or 006</a>	O: 0..1	
5.4.2.16	component.section.entry.observation.relationship.observation.value	xsi:type value unit	Obs_BP_Value (Diastolic or systolic)	Patient diastolic or systolic blood pressure	PQ		O: 0..1	
5.4.2.17	component.	typeCode		A code specifying the		<a href="#">Voc.xsd:Partic</a>		

Schema Data Element	Attributes	e-MS Equivalent	Description	Data type	Vocabulary	R/M/O: Cardinality	Comments
			meaning and purpose of every ActRelationship instance. Each of its values implies specific constraints to what kinds of Act objects can be related and in which way.		ipationInforma tionGenerator_X		
5.4.2.18	classCode moodCode		Mood code indicates whether an Act has happened (an event), or is a request for something to happen, or a goal or even a criterion.		Voc.xsd: x_ActMoodDo cumentObserv ation_X	classCode is mandatory	
5.4.2.19	typeCode		A code specifying the meaning and purpose of every ActRelationship instance. Each of its values implies specific constraints to what kinds of Act objects can be related and in which way.		Voc.xsd:Partic ipationInforma tionGenerator_X		
5.4.2.20	classCode moodCode		Mood code indicates whether an Act has happened (an event), or is a request for something to happen, or a goal or even a criterion.		Voc.xsd: x_ActMoodDo cumentObserv ation_X	ClassCode is mandatory	

### 5.4.3 Example

Human Readable				
<b>Examination Measurements</b> (Note: although it is outside the scope of the CDA, it is required that the vendor make the title element bold and underlined.) The table must expand or decrease in size depending on the amount of entries.				
	Height	Weight	Blood Pressure	Pulse
January 13, 2000	172 cm	65 kg	130/80	80 BPM
March 18, 2001	172 cm	70 Kg	145/95	90 BPM
September 22, 2003	172 cm	78 Kg	160/110	92 BPM
August 9, 2004	172 cm	80 Kg	160/130	94 BPM
XML Instance				
<pre>&lt;component&gt; &lt;section&gt;   &lt;code code="003" codeSystem="7BA9BFFD-D25F-44e8-A7B0-0DF214D6845B" codeSystemName="e-MS Document Section Codes" displayName="Examination</pre>				

```
Measurements'>
<title>Examination Measurements</title>
<text>
<table border="1">
<tbody>
<tr>
<th>Height</th>
<th>Weight</th>
<th>Blood Pressure</th>
<th>Pulse</th>
</tr>
<tr>
<td>
<content styleCode="Bold">January 13, 2000</content>
</td>
<td>172 cm</td>
<td>65 Kg</td>
<td>130/80</td>
<td>80 BPM</td>
</tr>
<tr>
<td>
<content styleCode="Bold">March 18, 2001</content>
</td>
<td>172 cm</td>
<td>70 Kg</td>
<td>145/95</td>
<td>90 BPM</td>
</tr>
<tr>
<td>
<content styleCode="Bold">September 22, 2003</content>
</td>
<td>172 cm</td>
<td>78 Kg</td>
<td>160/110</td>
<td>92 BPM</td>
</tr>
<tr>
<td>
<content styleCode="Bold">August 9, 2004</content>
</td>
<td>172 cm</td>
<td>80 Kg</td>
<td>160/130</td>
</tr>

```

```

<id>94 BPM</id>
</tr>
</tbody>
</table>
</text>
<entry typeCode="COMP">
  <observation classCode="OBS" moodCode="EVN">
    <code code="8302-2" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC" displayName="Height"/>
    <effectiveTime value="20000113"/>
    <value xsi:type="PQ" value="172" unit="cm"/>
  </observation>
</entry>
<entry typeCode="COMP">
  <observation classCode="OBS" moodCode="EVN">
    <code code="3141-9" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC" displayName="Weight"/>
    <effectiveTime value="20000113"/>
    <value xsi:type="PQ" value="65" unit="kg"/>
  </observation>
</entry>
<entry typeCode="COMP">
  <observation classCode="OBS" moodCode="EVN">
    <code code="11328-2" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC" displayName="Pulse"/>
    <effectiveTime value="20000113"/>
    <value xsi:type="PQ" value="80" unit="bpm"/>
  </observation>
</entry>
<entry typeCode="COMP">
  <observation classCode="OBS" moodCode="EVN">
    <code code="004" codeSystem="7BA9BFFD-D25F-44e8-A7B0-0DF214D6845B" codeSystemName="e-MS Data Element Code" displayName="Blood Pressure"/>
    <effectiveTime value="20000113"/>
    <entryRelationship typeCode="COMP">
      <observation classCode="OBS" moodCode="EVN">
        <code code="005" codeSystem="7BA9BFFD-D25F-44e8-A7B0-0DF214D6845B" codeSystemName="e-MS Data Element Code" displayName="Systolic Blood Pressure"/>
        <value xsi:type="PQ" value="130" unit="mm[Hg]"/>
      </observation>
    </entryRelationship>
    <entryRelationship typeCode="COMP">
      <observation classCode="OBS" moodCode="EVN">
        <code code="006" codeSystem="7BA9BFFD-D25F-44e8-A7B0-0DF214D6845B" codeSystemName="e-MS Data Element Code" displayName="Diastolic Blood Pressure"/>
        <value xsi:type="PQ" value="80" unit="mm[Hg]"/>
      </observation>
    </entryRelationship>
  </observation>
</entry>

```

```

<entry typeCode="COMP">
  <observation classCode="OBS" moodCode="EVN">
    <code code="8302-2" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC" displayName="Height"/>
    <effectiveTime value="20010318"/>
    <value xsi:type="PQ" value="172" unit="cm"/>
  </observation>
</entry>
<entry typeCode="COMP">
  <observation classCode="OBS" moodCode="EVN">
    <code code="3141-9" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC" displayName="Weight"/>
    <effectiveTime value="20010318"/>
    <value xsi:type="PQ" value="70" unit="kg"/>
  </observation>
</entry>
<entry typeCode="COMP">
  <observation classCode="OBS" moodCode="EVN">
    <code code="11328-2" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC" displayName="Pulse"/>
    <effectiveTime value="20010318"/>
    <value xsi:type="PQ" value="90" unit="bpm"/>
  </observation>
</entry>
<entry typeCode="COMP">
  <observation classCode="OBS" moodCode="EVN">
    <code code="004" codeSystem="7BA9BFFD-D25F-44e8-A7B0-0DF214D6845B" codeSystemName="e-MS Data Element Code" displayName="Blood Pressure"/>
    <effectiveTime value="20010318"/>
    <entryRelationship typeCode="COMP">
      <observation classCode="OBS" moodCode="EVN">
        <code code="005" codeSystem="7BA9BFFD-D25F-44e8-A7B0-0DF214D6845B" codeSystemName="e-MS Data Element Code" displayName="Systolic Blood Pressure"/>
        <value xsi:type="PQ" value="145" unit="mm[Hg]"/>
      </observation>
    </entryRelationship>
    <entryRelationship typeCode="COMP">
      <observation classCode="OBS" moodCode="EVN">
        <code code="006" codeSystem="7BA9BFFD-D25F-44e8-A7B0-0DF214D6845B" codeSystemName="e-MS Data Element Code" displayName="Diastolic Blood Pressure"/>
        <value xsi:type="PQ" value="95" unit="mm[Hg]"/>
      </observation>
    </entryRelationship>
  </observation>
</entry>
<entry typeCode="COMP">
  <observation classCode="OBS" moodCode="EVN">
    <code code="8302-2" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC" displayName="Height"/>
    <effectiveTime value="20030922"/>
    <value xsi:type="PQ" value="172" unit="cm"/>
  </observation>
</entry>

```

```

</observation>
</entry>
<entry typeCode="COMP">
  <observation classCode="OBS" moodCode="EVN">
    <code code="3141-9" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC" displayName="Weight"/>
    <effectiveTime value="20030922"/>
    <value xsi:type="PQ" value="78" unit="kg"/>
  </observation>
</entry>
<entry typeCode="COMP">
  <observation classCode="OBS" moodCode="EVN">
    <code code="11328-2" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC" displayName="Pulse"/>
    <effectiveTime value="20030922"/>
    <value xsi:type="PQ" value="92" unit="bpm"/>
  </observation>
</entry>
<entry typeCode="COMP">
  <observation classCode="OBS" moodCode="EVN">
    <code code="004" codeSystem="7BA9BFFD-D25F-44e8-A7B0-0DF214D6845B" codeSystemName="e-MS Data Element Code" displayName="Blood Pressure"/>
    <effectiveTime value="20030922"/>
    <entryRelationship typeCode="COMP">
      <observation classCode="OBS" moodCode="EVN">
        <code code="005" codeSystem="7BA9BFFD-D25F-44e8-A7B0-0DF214D6845B" codeSystemName="e-MS Data Element Code" displayName="Systolic Blood Pressure"/>
        <value xsi:type="PQ" value="160" unit="mm[Hg]"/>
      </observation>
    </entryRelationship>
    <entryRelationship typeCode="COMP">
      <observation classCode="OBS" moodCode="EVN">
        <code code="006" codeSystem="7BA9BFFD-D25F-44e8-A7B0-0DF214D6845B" codeSystemName="e-MS Data Element Code" displayName="Diastolic Blood Pressure"/>
        <value xsi:type="PQ" value="110" unit="mm[Hg]"/>
      </observation>
    </entryRelationship>
  </entry>
<entry typeCode="COMP">
  <observation classCode="OBS" moodCode="EVN">
    <code code="8302-2" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC" displayName="Height"/>
    <effectiveTime value="20040809"/>
    <value xsi:type="PQ" value="172" unit="cm"/>
  </observation>
</entry>
<entry typeCode="COMP">
  <observation classCode="OBS" moodCode="EVN">
    <code code="3141-9" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC" displayName="Weight"/>

```

```

<effectiveTime value="20040809"/>
  <value xsi:type="PQ" value="80" unit="kg"/>
</observation>
</entry>
<entry typeCode="COMP">
  <observation classCode="OBS" moodCode="EVN">
    <code code="11328-2" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC" displayName="Pulse"/>
    <effectiveTime value="20040809"/>
    <value xsi:type="PQ" value="94" unit="bpm"/>
  </observation>
</entry>
<entry typeCode="COMP">
  <observation classCode="OBS" moodCode="EVN">
    <code code="004" codeSystem="7BA9BFFD-D25F-44e8-A7B0-0DF214D6845B" codeSystemName="e-MS Data Element Code" displayName="Blood Pressure"/>
    <effectiveTime value="20040809"/>
    <entryRelationship typeCode="COMP">
      <observation classCode="OBS" moodCode="EVN">
        <code code="005" codeSystem="7BA9BFFD-D25F-44e8-A7B0-0DF214D6845B" codeSystemName="e-MS Data Element Code" displayName="Systolic Blood Pressure"/>
        <value xsi:type="PQ" value="160" unit="mm[Hg]"/>
      </observation>
    </entryRelationship>
    <entryRelationship typeCode="COMP">
      <observation classCode="OBS" moodCode="EVN">
        <code code="006" codeSystem="7BA9BFFD-D25F-44e8-A7B0-0DF214D6845B" codeSystemName="e-MS Data Element Code" displayName="Diastolic Blood Pressure"/>
        <value xsi:type="PQ" value="130" unit="mm[Hg]"/>
      </observation>
    </entryRelationship>
  </observation>
</entry>
</section>
</component>

```

Schema Links

Component2  
StructuredBody  
Component3  
Section  
Entry  
Observation  
EntryRelationship

## 5.5 Active Problem List

Section Level: O2 O3

Cardinality: 0..\*

LOINC Document Section Code: 11450-4

### 5.5.1 Description

The active problem list provides information on current problems / diagnoses that may affect the care of the patient. The active problem list document section is optional at level 2 and optional at level 3 (R2 R3). The cardinality for this section is 0..\*. The LOINC document section code for problem list is 11450-4.

Please refer to section 5.16 (Observation Media) for the data elements that are used if an attachment is added to this section.

### 5.5.2 Data Elements

Schema Data Element	Attributes	e-MS Equivalent	Description	Data type	Vocabulary	R/M/O: Cardinality	Comments
<b>Level 2 Data Elements</b>							
5.5.2.1 component.section.code	code codeSystem codeSystemName displayName	Active_Condition_Section_Code	Code identifying the Active Problem List section. The value in this field should always be the LOINC code given.	EMS. CE.Fu II	LOINC: 11450-4	M: 1..1	
5.5.2.2 component.section.title		Active_Condition_Section_Title	Human readable title of the section.	ST		M: 1..1	
5.5.2.3 component.section.text		Active_Condition_Section_Text	This field will be used to enter all of the data for this section.	TEXT		M: 1..1	
<b>Level 3 Data Elements</b>							
5.5.2.4 component.section.entry.observatio n.code	code codeSystem codeSystemName displayName	Active_Condition_Diagnosis	Diagnosis of a current problem.	CE	ICD-9 diagnostic codes	O: 0..1	This code element may be used more loosely – for example, the element could contain only 'displayName', and it doesn't necessarily have to be an ICD9 description. However, if ICD9 is used, the



Schema Data Element	Attributes	e-MS Equivalent	Description	Data type	Vocabulary	R/M/O: Cardinality	Comments
5.5.2.5 component.section.entry.observatio n.effectiveTime	value	Active_Condition_Onset _Date	Date of the onset of the problem.	IVL_T S		O: 0..1	code set should be adhered to.  This may be a partial date.
5.5.2.6 component.section.entry.observatio n.value	xsi:type					O: 0..1	
5.5.2.7 component.section.entry.observatio n.value.originalText/reference	Reference has attribute of value	Active_Condition_Comm ents	Additional comments regarding the current problem.	ANY		O: 0..1	
5.5.2.8 component.section.entry	typeCode		A code specifying the meaning and purpose of every ActRelationship instance. Each of its values implies specific constraints to what kinds of Act objects can be related and in which way.		Voc.xsd:ParticipationInformationGenerator_X		
5.5.2.9 component.section.entry.observatio n	classCode moodCode		Mood code indicates whether an Act has happened (an event), or is a request for something to happen, or a goal or even a criterion.		Voc.xsd:DocumentObservation_X	classCode is mandatory	

### 5.5.3 Example

Human Readable		
<b>Active Problem List</b> <i>(Note: although it is outside the scope of the CDA, it is required that the vendor make the title element bold and underlined.)</i>		
Active Problem	Description	Date
Hypertension	Continuing to increase in severity.	December 2002
XML Instance		
<pre>&lt;component&gt; &lt;section&gt; &lt;code code="11450-4" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC" displayName="Active Problem List"/&gt; &lt;title&gt;Active Problem List&lt;/title&gt; &lt;text&gt; &lt;table border="1"&gt; &lt;tbody&gt; &lt;tr&gt; &lt;th&gt;Active Problem&lt;/th&gt; &lt;th&gt;Description&lt;/th&gt; &lt;th&gt;Date&lt;/th&gt; &lt;/tr&gt; &lt;tr&gt; &lt;td&gt;Hypertension&lt;/td&gt; &lt;td&gt;Continuing to increase in severity.&lt;/td&gt; &lt;td&gt;December 2002&lt;/td&gt; &lt;/tr&gt; &lt;/tbody&gt; &lt;/table&gt; </pre>		

<pre>&lt;th&gt;Date&lt;/th&gt; &lt;/tr&gt; &lt;tr&gt; &lt;td&gt;Hypertension &lt;/td&gt; &lt;td&gt;Continuing to increase in severity.&lt;/td&gt; &lt;td&gt;December 2002&lt;/td&gt; &lt;/tr&gt; &lt;/tbody&gt; &lt;/table&gt; &lt;text&gt; &lt;entry typeCode="COMP"&gt;   &lt;observation classCode="OBS" moodCode="EVN"&gt;     &lt;code code="401" codeSystem="2.16.840.1.113883.6.2" codeSystemName="ICD-9" displayName="Hypertension"/&gt;     &lt;effectiveTime value="200212"/&gt;     &lt;value xsi:type="ST"&gt;This is continuing to increase in severity.&lt;/value&gt;   &lt;/observation&gt; &lt;/entry&gt; &lt;/section&gt; &lt;/component&gt;</pre>	Schema Links
Component2	
StructuredBody	
Component3	
Section	
Entry	
Observation	

## 5.6 Current Medications

Section Level: O2 O3

Cardinality: 0..\*

LOINC Document Section Code: 19013-2

### 5.6.1 Description

The current medications information provides details on the medications the patient is currently taking. If medication information is being withheld it would be important to mention this in this section, or in the alerts section. The current medications document section is optional at level 2 and optional at level 3 (O2 O3). The cardinality for this section is 0..\*. The LOINC document section code for medications is 19013-2.

Please refer to section 5.16 (Observation Media) for the data elements that are used if an attachment is added to this section.

### 5.6.2 Data Elements

	Schema Data Element	Attributes	e-MS Equivalent	Description	Data type	Vocabulary	R/M/O: Cardinality	Comments
<b>Level 2 Data Elements</b>								
5.6.2.1	component.section.code	code codeSystem codeSystemName displayName	Med_Section_Code	Code identifying the Current Medications section. The value in this field should always be the LOINC code given.	EMS. CE.Ful I	LOINC: 19013-2	M: 1..1	
5.6.2.2	component.section.title		Med_Section_Title	Human readable title of the section.	ST		M: 1..1	
5.6.2.3	component.section.text		Med_Section_Text	This field will be used to enter all of the data for this section.at level 2.	TEXT		M: 1..1	
<b>Level 3 Data Elements</b>								
5.6.2.4	component.section.entry. substanceAdministration.te xt		Med_Quantity_Ordere d	The total amount of medications ordered by the physician	TEXT		O:0..1	
5.6.2.5	component.section.entry. substanceAdministration.ef fectiveTime	value	Med_Effective_Date Med_Stop_Date	The date that the medication was ordered and the date when the patient ended taking the medication.	IVL_T S		O: 0..1	
5.6.2.6	component.section.entry. substanceAdministration.re peatNumber	value	Med_Repeats	Number of repeats for the prescribed medication.	IVL_IN T		O: 0..1	
5.6.2.7	component.section.entry. substanceAdministration.re peatNumber.low	value inclusive		Minimum value of medication repeats	INT		O: 0..1	
5.6.2.8	component.section.entry..	value		Maximum value of medication	INT		O: 0..1	

Schema Data Element	Attributes	e-MS Equivalent	Description	Data type	Vocabulary	R/M/O: Cardinality	Comments
substanceAdministration.repeatNumber.high	inclusive		repeats				
5.6.2.9 component.section.entry. substanceAdministration.routeCode	code codeSystem codeSystemName displayName value unit	Med_Administration_Route	The route the prescribe medication is to be administered (e.g. oral, nasal, needle, etc.).	CE	HL7: MedAdministrationRoute	O: 0..1	
5.6.2.10 component.section.entry. substanceAdministration.doseQuantity.center	code codeSystem codeSystemName displayName value unit	Med_Dose	The dosage of the prescribed medication (e.g. 250 mg)	PQ	PIN: MedicationDoseUnit	O: 0..1	
5.6.2.11 component.section.entry. substanceAdministration.doseQuantity.width	unit	Med_Frequency	The frequency of the prescription (e.g. BID, Q2H, etc)	PQ	PIN: MedicationFrequency	O: 0..1	
5.6.2.12 component.section.entry. substanceAdministration.consumable.manufacturedProduct.manufacturedLabel.edDrug.code	code codeSystem codeSystemName displayName	Med_DIN_ID Med_DIN_Name	The Drug Identification Number for the prescribed medication.	CE	Drug Identification Number (DIN)	O: 0..1	
5.6.2.13 component.section.entry. substanceAdministration.consumable.manufacturedProduct.manufacturedLabel.edDrug.name		Med_Name	The other name (brand or generic) of the prescribed medication.	EN		O: 0..1	
5.6.2.14 component.section.entry	typeCode		A code specifying the meaning and purpose of every ActRelationship instance. Each of its values implies specific constraints to what kinds of Act objects can be related and in which way.		Voc.xsd:ParticipationInformationGenerator_X		
5.6.2.15 component.section.entry. substanceAdministration	classCode moodCode		Mood code indicates whether an Act has happened (an event), or is a request for something to happen, or a goal or even a criterion.		Voc.xsd:ActMoodDocumentObservation_X	classCode is mandatory	

### 5.6.3 Example

Human Readable									
<b>Current Medications</b> (Note: although it is outside the scope of the CDA, it is required that the vendor make the title element bold and underlined.)									
Medication Name	DIN	DIN Name	Dose	Quantity Ordered	Admin Route	Frequency	Repeats	Effective Date	
Accupril 5 mg	01947664	Quinapril	5 mg	100	Orally	BID	2	Jan 15, 2003	
<b>XML Instance</b>									
<component>									

```

<section>
  <code code="19013-2" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC" displayName="Current Medications"/>
  <title>Current Medications</title>
  <text>
    <table border="1">
      <tbody>
        <tr>
          <th>Medication Name</th>
          <th>DIN</th>
          <th>DIN Name</th>
          <th>Dose</th>
          <th>Admin Route</th>
          <th>Frequency</th>
          <th>Repeats</th>
          <th>Effective Date</th>
        </tr>
        <tr>
          <td>Accupril 5 mg</td>
          <td>01947664</td>
          <td>Quinapril</td>
          <td>10 mg</td>
          <td>Orally</td>
          <td>2 per day</td>
          <td>2</td>
          <td>Jan 15, 2003</td>
        </tr>
      </tbody>
    </table>
  </text>
  <entry typeCode="COMP">
    <substanceAdministration classCode="SBADM" moodCode="EVN">
      <effectiveTime value="20030115"/>
      <repeatNumber value="2">
        <low/>
        <high/>
      </repeatNumber>
      <routeCode code="PO" codeSystem="2.16.840.1.113883.5.112" codeSystemName="RouteOfAdministration" displayName="per os"/>
      <doseQuantity>
        <center value="5" unit="mg"/>
        <width unit="BID"/>
      </doseQuantity>
      <consumable>
        <manufacturedProduct>
          <manufacturedLabeledDrug>
            <code code="01947664" codeSystem="36F030E1-180A-4c53-AEF6-7EEA32B531B3" codeSystemName="DIN" displayName="Quinapril"/>
            <name>Accupril 5 mg</name>
          </manufacturedLabeledDrug>
        </manufacturedProduct>
      </consumable>
    </substanceAdministration>
  </entry>

```

<a href="#">&lt;/manufacturedLabeledDrug&gt;</a> <a href="#">&lt;/manufacturedProduct&gt;</a> <a href="#">&lt;/consumable&gt;</a> <a href="#">&lt;/substanceAdministration&gt;</a> <a href="#">&lt;/entry&gt;</a> <a href="#">&lt;/section&gt;</a> <a href="#">&lt;/component&gt;</a>	
Schema Links	
<a href="#">Component2</a> <a href="#">StructuredBody</a> <a href="#">Component3</a> <a href="#">Section</a> <a href="#">Entry</a> <a href="#">SubstanceAdministration</a> <a href="#">Consumable</a> <a href="#">ManufacturedProduct</a>	

## 5.7 Medical History

Section Level: O2 O3

Cardinality: 0..\*

LOINC Document Section Code: 11348-0

### 5.7.1 Description

The medical history information provides details on the past conditions or diagnosis that the patient may have had which would have an affect on their care. This includes information on pregnancies. The medical history document section is optional at level 2 and optional at level 3 (O2 O3). The cardinality for this section is 0..\*. The LOINC document section code for history of past illness is 11348-0.

Please refer to section 5.16 (Observation Media) for the data elements that are used if an attachment is added to this section.

### 5.7.2 Data Elements

	Schema Data Element	Attributes	e-MS Equivalent	Description	Data type	Vocabulary	R/M/O: Cardinality	Comments
<b>Level 2 Data Elements</b>								
5.7.2.1	component.section.code	code codeSystem codeSystemName displayName	Past_Condition_Section_Code	Code identifying the Medical History section. The value in this field should always be the LOINC code given.	EMS. CE.Ful l	LOINC: 11348-0	M: 1..1	
5.7.2.2	component.section.title		Past_Condition_Section_Title	Human readable title of the section.	ST		M: 1..1	
5.7.2.3	component.section.text		Past_Condition_Section_Text	This field will be used to enter all of the data for this section.	TEXT		M: 1..1	
<b>Level 3 Data Elements</b>								
5.7.2.4	component.section.entry. observation.code	code codeSystem codeSystemName displayName	Past_Condition_Diagnosis	The diagnosis of a past condition.	CE	ICD-9 diagnostic codes	O: 0..1	This code element may be used more loosely – for example, the element could contain only 'displayName', and it doesn't

Schema Data Element	Attributes	e-MS Equivalent	Description	Data type	Vocabulary	R/M/O: Cardinality	Comments
							necessarily have to be an ICD9 description. However, if ICD9 is used, the code set should be adhered to.
5.7.2.5	component.section.entry.observation.effectiveTime						
5.7.2.6	component.section.entry.observation.value	value	The date of the past condition onset / occurrence / incident and the date the condition was resolved.	IVL_TS		O: 0..1	This may be a partial date.
5.7.2.7	component.section.entry.observation.value.originalText.reference/originalText	xs:type Reference has attribute of value				O: 0..1	
5.7.2.8	component.section.entry	typeCode	Additional comments regarding the past condition.	ANY		O: 0..1	
5.7.2.9	component.section.entry.observation	classCode moodCode	A code specifying the meaning and purpose of every ActRelationship instance. Each of its values implies specific constraints to what kinds of Act objects can be related and in which way. Mood code indicates whether an Act has happened (an event), or is a request for something to happen, or a goal or even a criterion.		Voc.xsd:ParticipationInformationGenerator_X  Voc.xsd:ActMoodDocumentObservation_X	classCode is mandatory	

### 5.7.3 Example

Human Readable			
<b>Medical History</b> (Note: although it is outside the scope of the CDA, it is required that the vendor make the title element bold and underlined.)			
<b>Problem</b>	<b>Comments</b>	<b>Date</b>	
Meningitis	No permanent effects.	1975	
Closed fractured rib	Patient is unsure of which rib it was.	1994	
XML Instance			
<code>&lt;component&gt;</code> <code>&lt;section&gt;</code>			



<pre> &lt;code code="11348-0" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC" displayName="Medical History"/&gt; &lt;title&gt;Medical History&lt;/title&gt; &lt;text&gt;   &lt;table border="1"&gt;     &lt;tbody&gt;       &lt;tr&gt;         &lt;th&gt;Problem&lt;/th&gt;         &lt;th&gt;Comments&lt;/th&gt;         &lt;th&gt;Date&lt;/th&gt;       &lt;/tr&gt;       &lt;tr&gt;         &lt;td&gt;Meningitis&lt;/td&gt;         &lt;td&gt;No permanent effects.&lt;/td&gt;         &lt;td&gt;1975&lt;/td&gt;       &lt;/tr&gt;       &lt;tr&gt;         &lt;td&gt;Closed fractured rib&lt;/td&gt;         &lt;td&gt;Patient is unsure of which rib it was.&lt;/td&gt;         &lt;td&gt;1994&lt;/td&gt;       &lt;/tr&gt;     &lt;/tbody&gt;   &lt;/table&gt; &lt;/text&gt; &lt;entry typeCode="COMP"&gt;   &lt;observation classCode="OBS" moodCode="EVN"&gt;     &lt;code code="322.9" codeSystem="2.16.840.1.113883.6.2" codeSystemName="ICD-9" displayName="meningitis"/&gt;     &lt;effectiveTime value="1975"/&gt;     &lt;value xsi:type="ST"&gt;No permanent effects.&lt;/value&gt;   &lt;/observation&gt; &lt;/entry&gt; &lt;entry typeCode="COMP"&gt;   &lt;observation classCode="OBS" moodCode="EVN"&gt;     &lt;code code="807.01" codeSystem="2.16.840.1.113883.6.2" codeSystemName="ICD-9" displayName="closed fractured rib"/&gt;     &lt;effectiveTime value="1994"/&gt;     &lt;value xsi:type="ST"&gt;Patient is unsure of which rib it was.&lt;/value&gt;   &lt;/observation&gt; &lt;/entry&gt; &lt;/section&gt; &lt;/component&gt; </pre>		Schema Links
Component2	StructuredBody	
Component3	Section	
Entry	Observation	

## 5.8 Surgical History

Section Level: O2 O3

Cardinality: 0..\*

LOINC Document Section Code: 10167-5

### 5.8.1 Description

The surgical history information provides details on past-completed surgical procedures that may have an affect on the care of the patient. This includes information on surgical procedures related to pregnancies (e.g. C-sections). The surgical history document section is optional at level 2 and optional at level 3 (O2 O3). The cardinality for this section is 0..\*. The LOINC document section code for history of surgical procedures is 10167-5.

Please refer to section 5.16 (Observation Media) for the data elements that are used if an attachment is added to this section.

### 5.8.2 Data Elements

Schema Data Element	Attributes	e-MS Equivalent	Description	Data type	Vocabulary	R/M/O: Cardinality	Comments
<b>Level 2 Data Elements</b>							
5.8.2.1 component.section.code	code codeSystem codeSystemName displayName	Surgical_Section_Code	Code identifying the Surgical History section. The value in this field should always be the LOINC code given.	EMS. CE.Ful I	LOINC: 10167-5	M: 1..1	
5.8.2.2 component.section.title		Surgical_Section_Title	Human readable title of the section.	ST		M: 1..1	
5.8.2.3 component.section.text		Surgical_Section_Text	This field will be used to enter all of the data for this section.	TEXT		M: 1..1	
<b>Level 3 Data Elements</b>							
5.8.2.4 Component.section.entry.procedure.text		Surgical_Procedure_Description	A description of the surgical procedure.	ED		O: 0..1	
5.8.2.5 component.section.entry.procedure.effectiveTime	value	Surgical_Procedure_Date	The date of the completed surgical procedure.	IVL_T S		O: 0..1	This may be a partial date.
5.8.2.6 component.section.entry	typeCode		A code specifying the meaning and purpose of every ActRelationship instance. Each of its values implies specific constraints		Voc.xsd:ParticipationInformationGenerator_X		

Schema Data Element	Attributes	e-MS Equivalent	Description	Data type	Vocabulary	R/M/O: Cardinality	Comments
5.8.2.7 component.section. entry.procedure	classCode moodCode		to what kinds of Act objects can be related and in which way. Mood code indicates whether an Act has happened (an event), or is a request for something to happen, or a goal or even a criterion.		Voc.xsd: x_ActMood DocumentO bservation_ X	classCode is mandatory	

### 5.8.3 Example

Human Readable							
<b><u>Surgical History</u></b> (Note: although it is outside the scope of the CDA, it is required that the vendor make the title element bold and underlined.)							
<table><tr><th>Description</th><th>Date</th></tr><tr><td>Appendectomy</td><td>June 1970</td></tr><tr><td>Cholelithotomy</td><td>January 17, 2004</td></tr></table>	Description	Date	Appendectomy	June 1970	Cholelithotomy	January 17, 2004	
Description	Date						
Appendectomy	June 1970						
Cholelithotomy	January 17, 2004						
XML Instance							
<pre>&lt;component&gt; &lt;section&gt; &lt;code code="10167-5" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC" displayName="Surgical History"/&gt; &lt;title&gt;Surgical History&lt;/title&gt; &lt;text&gt; &lt;table border="1"&gt; &lt;tbody&gt; &lt;tr&gt; &lt;th&gt;Description&lt;/th&gt; &lt;th&gt;Date&lt;/th&gt; &lt;/tr&gt; &lt;tr&gt; &lt;td&gt;Appendectomy&lt;/td&gt; &lt;td&gt;June 1970&lt;/td&gt; &lt;/tr&gt; &lt;tr&gt; &lt;td&gt;Cholelithotomy&lt;/td&gt; &lt;td&gt;January 17, 2004&lt;/td&gt; &lt;/tr&gt; &lt;/tbody&gt; &lt;/table&gt; &lt;/text&gt; &lt;entry typeCode="COMP"&gt; &lt;procedure classCode="PROC" moodCode="EVN"&gt;</pre>							

<pre>&lt;text&gt;Appendectomy&lt;/text&gt; &lt;effectiveTime value="197006"/&gt; &lt;/procedure&gt; &lt;/entry&gt; &lt;entry typeCode="COMP"&gt; &lt;procedure classCode="PROC" moodCode="EVN"&gt; &lt;text&gt;Cholelithotomy&lt;/text&gt; &lt;effectiveTime value="20040117"/&gt; &lt;/procedure&gt; &lt;/entry&gt; &lt;/section&gt; &lt;/component&gt;</pre>	Schema Links
Component2 StructuredBody Component3 Section Entry Procedure	

## 5.9 Medical Imaging History

Section Level: O2 O3

Cardinality: 0..\*

LOINC Document Section Code: 35090-0

### 5.9.1 Description

The medical imaging history information provides details on past-completed medical imaging procedures such as, for example, x-rays, CT Scans, MRI's, etc. that may have an affect on the care of the patient. The medical imaging history document section is optional at level 2 and optional at level 3 (O2 O3). The cardinality for this section is 0..\*. The LOINC document section code for history of medical imaging is 35090-0.

Please note that Component.Section.Entry.Choice.Observation.Code is not used in this section. However it is a required element in the schema, therefore the nullFlavor of "NA" should be used.

Please refer to section 5.16 (Observation Media) for the data elements that are used if an attachment is added to this section.

### 5.9.2 Data Elements

Schema Data Element		Attributes	e-MS Equivalent	Description	Data type	Vocabulary	R/M/O: Cardinality	Comments
<b>Level 2 Data Elements</b>								
5.9.2.1	component.section.code	code codeSystem codeSystemName displayName	MI_Procedure_Section_ Code	Code identifying the Medical Imaging History section. The value in this field should always be the LOINC code given.	EMS. CE.Ful I	LOINC: 35090-0	M: 1..1	
5.9.2.2	component.section.title		MI_Procedure_Section_ Title	Human readable title of the section.	ST		M: 1..1	
5.9.2.3	component.section.text		MI_Procedure_Section_ Text	This field will be used to enter all of the data for this section.	TEXT		M: 1..1	
<b>Level 3 Data Elements</b>								
5.9.2.4	component.section.entry.observation.text		MI_Procedure_Descripti on	A description of the medical imaging procedure that was performed.	ED		O: 0..1	
5.9.2.5	component.section.entry.observation.effectiveTime	value	MI_Procedure_Date	The date that the medical imaging procedure was performed.	IVL_T S		O: 0..1	This may be a partial date.
5.9.2.6	component.section.entry.observation.value	xs:type					O: 0..1	
5.9.2.7	component.section.entry	Reference has	MI_Procedure_Results	Additional comments regarding the	ANY		O: 0..1	

	Schema Data Element	Attributes	e-MS Equivalent	Description	Data type	Vocabulary	R/M/O: Cardinality	Comments
	ry.observation.value.reference/originalText	attribute of value		radiology procedure and/or findings.				
5.9.2.8	component.section.entropy	typeCode		A code specifying the meaning and purpose of every ActRelationship instance. Each of its values implies specific constraints to what kinds of Act objects can be related and in which way.	CS	Voc.xsd: Participatio nInformatio nGenerator_X		
5.9.2.9	component.section.entropy.observation	classCode moodCode		Mood code indicates whether an Act has happened (an event), or is a request for something to happen, or a goal or even a criterion.		Voc.xsd: x_ActMood DocumentOb servation_X	classCode is mandatory	

### 5.9.3 Example

Human Readable			
<b>Medical Imaging History</b> (Note: although it is outside the scope of the CDA, it is required that the vendor make the title element bold and underlined.)			
Procedure	Results	Date	
Chest x-ray	Nothing unusual could be observed. X-ray image is attached.	July 14, 2004	
XML Instance			
<pre> &lt;component&gt; &lt;section&gt; &lt;code code="35090-0" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC" displayName="Medical Imaging History"/&gt; &lt;text&gt; &lt;table border="1"&gt; &lt;tbody&gt; &lt;tr&gt; &lt;th&gt;Procedure&lt;/th&gt; &lt;th&gt;Results&lt;/th&gt; &lt;th&gt;Date&lt;/th&gt; &lt;/tr&gt; &lt;tr&gt; &lt;td&gt;Chest x-ray&lt;/td&gt; &lt;td&gt;Nothing unusual could be observed. X-ray image is attached.&lt;/td&gt; &lt;td&gt;July 14, 2004&lt;/td&gt; &lt;/tr&gt; &lt;/tbody&gt; &lt;/table&gt; &lt;text&gt; &lt;entry typeCode="COMP"&gt; </pre>			

<pre>&lt;observation classCode="OBS" moodCode="EVN"&gt;   &lt;code nullFlavor="NA"/&gt;   &lt;text&gt;Chest x-ray&lt;/text&gt;   &lt;effectiveTime value="20040714"/&gt;   &lt;value xsi:type="ST"&gt;Nothing unusual could be observed. X-ray image is attached.&lt;/value&gt;   &lt;entryRelationship typeCode="COMP"&gt;     &lt;observationMedia classCode="OBS" moodCode="EVN"&gt;       &lt;value mediaType="image/jpeg"&gt;         &lt;reference value="test.jpg"/&gt;       &lt;/value&gt;     &lt;/observationMedia&gt;   &lt;/entryRelationship&gt; &lt;/observation&gt; &lt;/entry&gt; &lt;/section&gt; &lt;/component&gt;</pre>	Schema Links
Component2 StructuredBody Component3 Section Entry Observation	

## 5.10 Other Treatments

Section Level: O2 O3

Cardinality: 0..\*

e-MS Document Section Code: 007

### 5.10.1 Description

The other treatments information provides details on other types of therapy or treatment that the patient may have received or is receiving and that may have an affect on the care of the patient. The other treatments document section is optional at level 2 and optional at level 3 (O2 O3). The cardinality for this section is 0..\*. The e-MS document section code for other treatments is 007.

Please note that Component.Section.Entry.Choice.Observation.Code is not used in this section. However it is a required element in the schema, therefore the nullFlavor of "NA" should be used.

Please refer to section 5.16 (Observation Media) for the data elements that are used if an attachment is added to this section.

### 5.10.2 Data Elements

Schema Data Element		Attributes	e-MS Equivalent	Description	Data type	Vocabulary	R/M/O: Cardinality	Comments
<b>Level 2 Data Elements</b>								
5.10.2.1	component.section.code	code codeSystem codeSystemName displayName	Other_Treatment_Se ction_Code	Code identifying the Other Treatments section. The value in this field should always be the LOINC code given.	EMS. CE.Ful l	e-MS Document Section Code: 007	M: 1..1	
5.10.2.2	component.section.title		Other_Treatment_Se ction_Title	Human readable title of the section.	ST		M: 1..1	
5.10.2.3	component.section.text		Other_Treatment_Se ction_Text	This field will be used to enter all of the data for this section.	TEXT		M: 1..1	
<b>Level 3 Data Elements</b>								
5.10.2.4	component.section.entry. observation.text		Other_Treatment_Ty pe	Other treatment options that the patient has tried (other than medication and procedures).	ED		O: 0..1	
5.10.2.5	component.section.entry. observation.effectiveTime	value	Other_Treatment_Da te	The date when the other treatment was ordered or when the provider was notified by the patient of the alternative therapy decision.	IVL_T S		O: 0..1	This may be a partial date.
5.10.2.6	component.section.entry.	xsi:type					O: 0..1	



Schema Data Element	Attributes	e-MS Equivalent	Description	Data type	Vocabulary	R/M/O: Cardinality	Comments
5.10.2.7 observation.value component.section.entry.ob servation.value.reference /originalText	Reference has attribute of value	Other_Treatment_ Outcome	The outcome of the other treatment.	ANY		O: 0..1	
5.10.2.8 component.section.entry	typeCode		A code specifying the meaning and purpose of every ActRelationship instance. Each of its values implies specific constraints to what kinds of Act objects can be related and in which way.		Voc.xsd: Participatio nInformatio nGenerator _X		
5.10.2.9 component.section.entry. observation	classCode moodCode		Mood code indicates whether an Act has happened (an event), or is a request for something to happen, or a goal or even a criterion.		Voc.xsd: x_ActMood DocumentO bservation_ X		

### 5.10.3 Example

Human Readable		
<b><u>Other Treatments</u></b> (Note: although it is outside the scope of the CDA, it is required that the vendor make the title element bold and underlined,)		
Other Treatment	Outcome	Date
Herbal remedy	The patient did not experience any improvement in her condition	November 2003-February 2004
XML Instance		
<pre>&lt;component&gt; &lt;section&gt; &lt;code code="007" codeSystem="7BA9BFFD-D25F-44e8-A7B0-0DF214D6845B" codeSystemName="e-MS Document Section Codes" displayName="Other Treatments"/&gt; &lt;title&gt;Other Treatments&lt;/title&gt; &lt;text&gt; &lt;table border="1"&gt; &lt;tbody&gt; &lt;tr&gt; &lt;th&gt;Other Treatment&lt;/th&gt; &lt;th&gt;Outcome&lt;/th&gt; &lt;th&gt;Date&lt;/th&gt; &lt;/tr&gt; &lt;tr&gt; &lt;td&gt;Herbal remedy&lt;/td&gt; &lt;td&gt;The patient did not experience any improvement in her condition&lt;/td&gt; &lt;td&gt;November 2003-February 2004&lt;/td&gt; &lt;/tr&gt; &lt;/tbody&gt; &lt;/table&gt;</pre>		

<pre>&lt;/text&gt; &lt;entry typeCode="COMP"&gt;   &lt;observation classCode="OBS" moodCode="EVN"&gt;     &lt;code nullFlavor="NA"/&gt;     &lt;text&gt;Herbal remedy&lt;/text&gt;     &lt;effectiveTime value="20031100000000.20040200000000"/&gt;     &lt;value xsi:type="ST"&gt;The patient did not experience any improvement in her condition.&lt;/value&gt;   &lt;/observation&gt; &lt;/entry&gt; &lt;/section&gt; &lt;/component&gt;</pre>	Schema Links
Component2 StructuredBody Component3 Section Entry Observation	

## 5.11 Allergies

Section Level: O2 O3

Cardinality: 0..\*

e-MS Document Section Code: 008

### 5.11.1 Description

The allergies information provides details on different allergies or adverse reactions that a patient may have or have had. The allergies document section is optional at level 2 and optional at level 3 (O2 O3). The cardinality for this section is 0..\*. The e-MS document section code for allergies is 006.

Please refer to section 5.16 (Observation Media) for the data elements that are used if an attachment is added to this section.

### 5.11.2 Data Elements

	Schema Data Element	Attributes	e-MS Equivalent	Description	Data type	Vocabulary	R/M/O: Cardinality	Comments
<b>Level 2 Data Elements</b>								
5.11.2.1	component.section.code	code codeSystem codeSystemName displayName	Allergy_Section_Code	Code identifying the Allergies section. The value in this field should always be the LOINC code given.	EMS.CE.F ull	e-MS Document Section Code: 008	M: 1..1	
5.11.2.2	component.section.title		Allergy_Section_Title	Human readable title of the section.	ST		M: 1..1	
5.11.2.3	component.section.text		Allergy_Section_Text	This field will be used to enter all of the data for this section.	TEXT		M: 1..1	
<b>Level 3 Data Elements</b>								
5.11.2.4	component.section.entry.observation.code	code codeSystem codeSystemName value	Allergy_Type	A description of the allergy or adverse reaction.	CE	HL7: Allergy Type	O: 0..1	
5.11.2.5	component.section.entry.observation.effectiveTime		Allergy_Date Allergy_End_Date	The date when the allergy or adverse reaction was recorded on the patient chart and the date that the allergy problem or adverse reaction was resolved.	IVL_TS		O: 0..1	This may be a partial date.
5.11.2.6	component.section.entry.observation	xsi:type					O: 0..1	

	Schema Data Element	Attributes	e-MS Equivalent	Description	Data type	Vocabulary	R/M/O: Cardinality	Comments
5.11.2.7	n.value component.section n.entry.observation n.value.reference/ originalText	Reference has attribute of value	Allergy_Comments	Any additional comments regarding the allergy or adverse reaction including the allergen.	ANY		O: 0..1	
5.11.2.8	component.section n.entry.observation n.entryRelationship p. Observation.code	code codeSystem codeSystemName displayName	Allergy_Severity	The severity of the allergy or adverse reaction.	CE	HL7: Allergy Severity	O: 0..1	
5.11.2.9	component.section n.entry	typeCode		A code specifying the meaning and purpose of every ActRelationship instance. Each of its values implies specific constraints to what kinds of Act objects can be related and in which way.		Voc.xsd: ParticipationIn formationGen erator_X		
5.11.2.10	component.section n.entry. observation	classCode moodCode		Mood code indicates whether an Act has happened (an event), or is a request for something to happen, or a goal or even a criterion.		Voc.xsd: x_ActMoodDo cumentObserv ation_X		

## 5.11.3 Example

Human Readable			
<b>Allergies</b> (Note: although it is outside the scope of the CDA, it is required that the vendor make the title element bold and underlined.)			
Allergy Type	Severity	Comments (Allergen, reaction)	Date
Drug Allergy	Mild	Penicillin. Resulting in hives. Patient hasn't been tested recently to see if this is still an active allergy	1965
Food Allergy	Moderate	Dairy. Resulting in puffy eyes	1970-1985
XML Instance			
<pre>&lt;component&gt;   &lt;section&gt;     &lt;code code="008" codeSystem="7BA9BFFD-D25F-44e8-A7B0-0DF214D6845B" codeSystemName="e-MS Document Section Codes" displayName="Allergies"/&gt;     &lt;title&gt;Allergies&lt;/title&gt;     &lt;text&gt;       &lt;table border="1"&gt;         &lt;tr&gt;           &lt;th&gt;Allergy Type&lt;/th&gt;           &lt;th&gt;Severity&lt;/th&gt;           &lt;th&gt;Comments (Allergen, reaction)&lt;/th&gt;           &lt;th&gt;Date&lt;/th&gt;         &lt;/tr&gt;         &lt;tr&gt;           &lt;td&gt;Drug Allergy&lt;/td&gt;           &lt;td&gt;Mild&lt;/td&gt;           &lt;td&gt;Penicillin. Resulting in hives. Patient hasn't been tested recently to see if this is still an active allergy&lt;/td&gt;           &lt;td&gt;1965&lt;/td&gt;         &lt;/tr&gt;         &lt;tr&gt;           &lt;td&gt;Food Allergy&lt;/td&gt;           &lt;td&gt;Moderate&lt;/td&gt;           &lt;td&gt;Dairy. Resulting in puffy eyes&lt;/td&gt;           &lt;td&gt;1970-1985&lt;/td&gt;         &lt;/tr&gt;       &lt;/table&gt;     &lt;/text&gt;   &lt;/section&gt; &lt;/component&gt;</pre>			

```

<th>Comments</th>
<th>Date</th>
</tr>
<tr>
<td>Penicillin</td>
<td>Mild</td>
<td>Penicillin. Resulting in hives. Patient hasn't been tested recently to see if this is still an active allergy</td>
<td>1965</td>
</tr>
<tr>
<td>Dairy products</td>
<td>Moderate</td>
<td>Dairy. Resulting in puffy eyes</td>
<td>1970-1985</td>
</tr>
</tbody>
</table>
</text>
<entry typeCode="COMP">
  <observation classCode="OBS" moodCode="EVN">
    <code code="DA" codeSystem="2A9DDF65-2465-4cf7-903C-832A33B22F5D" codeSystemName="AllergyType" displayName="Drug Allergy"/>
    <effectiveTime value="19650516"/>
    <value xsi:type="ST">Penicillin. Resulting in hives. Patient hasn't been tested recently to see if this is still an active allergy</value>
    <entryRelationship typeCode="COMP">
      <observation moodCode="EVN" classCode="OBS">
        <code code="MI" codeSystem="2.16.840.1.113883.12.128" codeSystemName="AllergySeverity" displayName="Mild"/>
      </observation>
    </entryRelationship>
  </observation>
</entry>
<entry typeCode="COMP">
  <observation classCode="OBS" moodCode="EVN">
    <code code="FA" codeSystem="2A9DDF65-2465-4cf7-903C-832A33B22F5D" codeSystemName="AllergyType" displayName="Food Allergy"/>
    <effectiveTime value="1970000000000.1985000000000"/>
    <value xsi:type="ST">Dairy. Resulting in puffy eyes</value>
    <entryRelationship typeCode="COMP">
      <observation moodCode="EVN" classCode="OBS">
        <code code="MO" codeSystem="2.16.840.1.113883.12.128" codeSystemName="AllergySeverity" displayName="Moderate"/>
      </observation>
    </entryRelationship>
  </observation>
</entry>
</section>
</component>

```

Component2

Schema Links

StructuredBody  
Component3  
Section  
Entry  
Observation  
EntryRelationship

## 5.12 Immunization

Section Level: O2 O3

Cardinality: 0..\*

LOINC Document Section Code: 11369-6

### 5.12.1 Description

The immunization information provides details on different immunizations that a patient may have or have had. The immunizations document section is optional at level 2 and optional at level 3 (O2 O3). The cardinality for this section is 0..\*. The LOINC document section code for immunization is 11369-6.

Please refer to section 5.16 (Observation Media) for the data elements that are used if an attachment is added to this section.

### 5.12.2 Data Elements

	Schema Data Element	Attributes	e-MS Equivalent	Description	Data type	Vocabulary	R/M/O: Cardinality	Comments
<b>Level 2 Data Elements</b>								
5.12.2.1	component.section.code	code codeSystem codeSystemName displayName	Immunization_Section_Code	Code identifying the Immunization section. The value in this field should always be the LOINC code given.	EMS. CE.Fu II	LOINC: 11369-6	M: 1..1	
5.12.2.2	component.section.title		Immunization_Section_Title	Human readable title of the section.	ST		M: 1..1	
5.12.2.3	component.section.text		Immunization_Section_Text	This field will be used to enter all of the data for this section.	TEXT		M: 1..1	
<b>Level 3 Data Elements</b>								
5.12.2.4	component.section.entry.observation.code	code codeSystem codeSystemName displayName	Immunization_Code	The code of the immunization that was administered.	CE	BCCDC: BC Vaccination Codes	O: 0..1	
5.12.2.5	component.section.entry.observation.effectiveTime		Immunization_Date	The date that the immunization was administered.	IVL_T S		O: 0..1	This may be a partial date.
5.12.2.6	component.section.entry	typeCode		A code specifying the meaning and purpose of every ActRelationship instance. Each of its values		Voc.xsd: ParticipationI nformationG enerator_X		

Schema Data Element	Attributes	e-MS Equivalent	Description	Data type	Vocabulary	R/M/O: Cardinality	Comments
5.12.2.7	component.section.entry.observation	classCode moodCode	implies specific constraints to what kinds of Act objects can be related and in which way. Mood code indicates whether an Act has happened (an event), or is a request for something to happen, or a goal or even a criterion.		Voc.xsd: x_ActMoodDocumentObservation_X	classCode is mandatory	

### 5.12.3 Example

Human Readable											
<u><b>Immunization</b></u> (Note: although it is outside the scope of the CDA, it is required that the vendor make the title element bold and underlined.)											
<table><tr><th>Immunization</th><th>Date</th></tr><tr><td>Hepatitis A</td><td>September 24, 2000</td></tr><tr><td>Hepatitis A</td><td>January 27, 2002</td></tr><tr><td>Inactivated Polio Vaccine (study)</td><td>March 13, 1985</td></tr><tr><td>Measles Mumps Rubella</td><td>April 30, 1995</td></tr></table>	Immunization	Date	Hepatitis A	September 24, 2000	Hepatitis A	January 27, 2002	Inactivated Polio Vaccine (study)	March 13, 1985	Measles Mumps Rubella	April 30, 1995	<b>XML Instance</b>
Immunization	Date										
Hepatitis A	September 24, 2000										
Hepatitis A	January 27, 2002										
Inactivated Polio Vaccine (study)	March 13, 1985										
Measles Mumps Rubella	April 30, 1995										
<pre>&lt;component&gt; &lt;section&gt; &lt;code code="11369-6" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC" displayName="Immunization"/&gt; &lt;title&gt;Immunization&lt;/title&gt; &lt;text&gt; &lt;table border="1"&gt; &lt;tbody&gt; &lt;tr&gt; &lt;th&gt;Immunization&lt;/th&gt; &lt;th&gt;Date&lt;/th&gt; &lt;td&gt;Hepatitis A &lt;/td&gt; &lt;td&gt;September 24, 2000&lt;/td&gt; &lt;/tr&gt; &lt;tr&gt; &lt;td&gt;Hepatitis A&lt;/td&gt; &lt;td&gt;January 27, 2002&lt;/td&gt; &lt;/tr&gt; &lt;tr&gt; &lt;td&gt;Inactivated Polio Vaccine (study)&lt;/td&gt; &lt;td&gt;March 13, 1985&lt;/td&gt; &lt;/tr&gt; &lt;tr&gt; &lt;td&gt;Measles Mumps Rubella&lt;/td&gt; &lt;td&gt;April 30, 1995&lt;/td&gt; &lt;/tr&gt; &lt;/tbody&gt; &lt;/table&gt; </pre>											



<pre> &lt;/tr&gt; &lt;tr&gt; &lt;td&gt;Measles Mumps Rubella&lt;/td&gt; &lt;td&gt;April 30, 1995&lt;/td&gt; &lt;/tr&gt; &lt;/tbody&gt; &lt;/table&gt; &lt;text&gt; &lt;entry typeCode="COMP"&gt; &lt;observation moodCode="EVN" classCode="OBS"&gt; &lt;code code="HA" codeSystem="FC1AFD51-7DC6-404c-9B06-C3234B850B65" codeSystemName="BCCDC - ImmunizationCode" displayName="Hepatitis A"/&gt; &lt;effectiveTime value="20000924"/&gt; &lt;/observation&gt; &lt;/entry&gt; &lt;entry typeCode="COMP"&gt; &lt;observation classCode="OBS" moodCode="EVN"&gt; &lt;code code="HA" codeSystem="FC1AFD51-7DC6-404c-9B06-C3234B850B65" codeSystemName="BCCDC - ImmunizationCode" displayName="Hepatitis A"/&gt; &lt;effectiveTime value="20020127"/&gt; &lt;/observation&gt; &lt;/entry&gt; &lt;entry typeCode="COMP"&gt; &lt;observation classCode="OBS" moodCode="EVN"&gt; &lt;code code="IPV" codeSystem="FC1AFD51-7DC6-404c-9B06-C3234B850B65" codeSystemName="BCCDC - ImmunizationCode" displayName="Injectable Polio Vaccine"/&gt; &lt;effectiveTime value="19850313"/&gt; &lt;/observation&gt; &lt;/entry&gt; &lt;entry typeCode="COMP"&gt; &lt;observation classCode="OBS" moodCode="EVN"&gt; &lt;code code="MMR" codeSystem="FC1AFD51-7DC6-404c-9B06-C3234B850B65" codeSystemName="BCCDC - ImmunizationCode" displayName="Measles Mumps Rubella"/&gt; &lt;effectiveTime value="19950430"/&gt; &lt;/observation&gt; &lt;/entry&gt; &lt;/section&gt; &lt;/component&gt; </pre>	Schema Links
<pre> Component2 StructuredBody Component3 Section Entry Observation </pre>	

## 5.13 Labs

Section Level: O2 O3

Cardinality: 0..\*

LOINC Document Section Code: 11502-2

### 5.13.1 Description

The laboratory information provides details on different laboratory tests or procedures that were performed on the patient that may have an affect on the treatment of the patient. The labs document section is optional at level 2 and optional at level 3 (O2 O3). The cardinality for this section is 0..\*. The LOINC document section code for labs is 11502-2.

Please refer to section 5.16 (Observation Media) for the data elements that are used if an attachment is added to this section.

### 5.13.2 Data Elements

Schema Data Element		Attributes	e-MS Equivalent	Description	Data type	Vocabulary	R/M/O: Cardinality	Comments
<b>Level 2 Data Elements</b>								
5.13.2.1	component.section.code	code codeSystem codeSystemName displayName	Labs_Section_Code	Code identifying the Labs section. The value in this field should always be the LOINC code given.	EMS. CE.Ful l	LOINC: 11502-2	M	
5.13.2.2	component.section.title		Labs_Section_Title	Human readable title of the section.	ST		M	
5.13.2.3	component.section.text		Labs_Section_Text	This field will be used to enter all of the data for this section.	TEXT		M	
<b>Level 3 Data Elements</b>								
5.13.2.4	component.section.entry.observation.code	code codeSystem codeSystemName displayName	Labs_Test_Type	The type of test that was ordered.	CE		R: 0..1	The lab test type originally sent by the lab should be used. Not all attributes need to be used, however if

Schema Data Element	Attributes	e-MS Equivalent	Description	Data type	Vocabulary	R/M/O: Cardinality	Comments
							the code system that the lab is using is know it would be beneficial to enter this information.
5.13.2.5	value	Labs_Test_Specimen_Collected_Date/ Time	The date and time that the specimen was collected for the test.	IVL_TS		O: 0..1	
5.13.2.6	xs:type value unit	Labs_Test_Result	The result of the test.	ANY		O: 0..1	
5.13.2.7	code codeSystem codeSystemName displayName	Labs_Abnormal_Result_Flag	Identifies if the lab result is abnormal / normal	ED		O: 0..1	The abnormal flag originally sent by the lab should be used. Not all attributes need to be used, however if the code system that the lab is using is know it would be beneficial to enter this information.
5.13.2.8		Labs_Normal_Result_Range	The value range, which is considered normal for the specific laboratory test. If a string is entered this element should be used. If the discrete elements are sent/received, the 'high' and 'low' elements (following 2 elements) should be used.	IVL_PQ		O: 0..1	The normal results range originally sent by the lab should be used. This

Schema Data Element	Attributes	e-MS Equivalent	Description	Data type	Vocabulary	R/M/O: Cardinality	Comments
5.13.2.9	value unit inclusive	Labs_Normal_Result_Range	The value range, which is considered normal for the specific laboratory test. This element should be used (in combination with low) if the range is sent/received as discrete elements.				element should be used if the range comes in the form of a string. The normal results range originally sent by the lab should be used. This element should be used (in combination with 'low') if the range comes in the form of discrete elements.
5.13.2.10	value unit inclusive	Labs_Normal_Result_R	The value range, which is considered normal for the specific laboratory test. This element should be used (in combination with high) if the range is sent/received as discrete elements.				The normal results range originally sent by the lab should be used. This element should be used (in combination with 'high') if the range comes in the form of discrete elements.
5.13.2.11	displayable	Labs_Source	The laboratory where the result	II	BC Lab	O: 1..1	

Schema Data Element	Attributes	e-MS Equivalent	Description	Data type	Vocabulary	R/M/O: Cardinality	Comments
entry.observation.P erformer.assignedE ntity.id	root assigningAuthority Name extension		originated / test was performed.		Standard: Diagnostic Facilities Listing		
5.13.2.12 component.section. entry	typeCode		A code specifying the meaning and purpose of every ActRelationship instance. Each of its values implies specific constraints to what kinds of Act objects can be related and in which way.		Voc.xsd: Participatio nInformatio nGenerator _X		
5.13.2.13 component.section. entry.observation	classCode moodCode		Mood code indicates whether an Act has happened (an event), or is a request for something to happen, or a goal or even a criterion.		Voc.xsd: x_ActMood DocumentO bservation_ X	classCode is mandatory	

### 5.13.3 Example

Human Readable				
<b>Labs</b> (Note: although it is outside the scope of the CDA, it is required that the vendor make the title element bold and underlined.)				
Type	Collection Date	Result/Unit	Normal Result Range	Abnormal?
troponin I (TnI)	February 26, 2004	0.5 ng/mL	< 0.5 ng/mL	No
creatine phosphokinase (CPK)	February 26, 2004	180 u/L	5-200 u/L	No
lactate dehydrogenase (LDH)	February 26, 2004	400 u/L	200-650 u/L	No
XML Instance				
<pre>&lt;component&gt; &lt;section&gt; &lt;code code="11502-2" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC" displayName="Labs"/&gt; &lt;title&gt;Labs&lt;/title&gt; &lt;text&gt; &lt;table border="1"&gt; &lt;tbody&gt; &lt;tr&gt; &lt;th&gt;Type&lt;/th&gt; &lt;th&gt;Collection Date&lt;/th&gt; &lt;th&gt;Result/Unit&lt;/th&gt; &lt;th&gt;Normal Result Range&lt;/th&gt; &lt;th&gt;Abnormal?&lt;/th&gt; &lt;/tr&gt; &lt;tr&gt; &lt;td&gt;troponin I (TnI)&lt;/td&gt;</pre>				

```

<td>February 26, 2004</td>
<td>0.5 ng/mL</td>
<td>less than 0.5 ng/mL</td>
<td>No</td>
</tr>
<tr>
<td>creatinine phosphokinase (CPK)</td>
<td>February 26, 2004</td>
<td>180 u/L</td>
<td>5-200 u/L</td>
<td>No</td>
</tr>
<tr>
<td>lactate dehydrogenase (LDH)</td>
<td>February 26, 2004</td>
<td>400 u/L</td>
<td>200-650 u/L</td>
<td>No</td>
</tr>
</tbody>
</table>
</text>
<entry typeCode="COMP">
  <observation moodCode="EVN" classCode="OBS">
    <code code="Tnl" codeSystemName="Lab Observation Table" displayName="troponin I"/>
    <effectiveTime value="20040226"/>
    <value xsi:type="PQ" value="0.5" unit="ng/mL"/>
    <interpretationCode code="N" codeSystem="03B429EA-4C1A-4656-9F29-2E5A61B118B9" codeSystemName="EMLabsResult" displayName="Normal"/>
    <referenceRange>
      <referenceObservationRange>
        <value xsi:type="IVL_PQ">
          <high value="0.5" unit="ng/mL" inclusive="false"/>
        </value>
      </referenceObservationRange>
    </referenceRange>
    <performer>
      <assignedEntity>
        <id displayable="true" root="476CAE01-D4E8-4894-A007-EF55064175D0" assigningAuthorityName="MSP" extension="B0219 MDS METRO, ISLAND" />
      </assignedEntity>
    </performer>
  </observation>
</entry>
<entry typeCode="COMP">
  <observation moodCode="EVN" classCode="OBS">
    <code code="CPK" codeSystemName="Lab Observation Table" displayName="creatinine phosphokinase"/>

```

DIVISION - SCS"/>

```

<effectiveTime value="20040226"/>
<value xsi:type="PQ" value="180" unit="u/L"/>
<interpretationCode code="N" codeSystem="03B429EA-4C1A-4656-9F29-2E5A61B118B9" codeSystemName="EMLabsResult" displayName="Normal"/>
</referenceRange>
<referenceObservationRange>
  <value xsi:type="IVL_PQ">
    <low value="5" unit="u/L" inclusive="true"/>
    <high value="200" unit="u/L" inclusive="true"/>
  </value>
</referenceObservationRange>
</referenceRange>
<performer>
  <assignedEntity>
    <id displayable="true" root="476CAE01-D4E8-4894-A007-EF55064175D0" assigningAuthorityName="MSP" extension="B0219 MDS METRO, ISLAND" />
  </assignedEntity>
</performer>
</entry>
<entry typeCode="COMP">
  <observation classCode="OBS" moodCode="EVN">
    <code code="LDH" codeSystemName="Lab Observation Table" displayName="lactate dehydrogenase"/>
    <effectiveTime value="20040226"/>
    <value xsi:type="PQ" value="400" unit="u/L"/>
    <interpretationCode code="N" codeSystem="03B429EA-4C1A-4656-9F29-2E5A61B118B9" codeSystemName="EMLabsResult" displayName="Normal"/>
    </referenceRange>
    <referenceObservationRange>
      <value xsi:type="IVL_PQ">
        <low value="200" unit="u/L" inclusive="true"/>
        <high value="650" unit="u/L" inclusive="true"/>
      </value>
    </referenceObservationRange>
    </referenceRange>
    <performer>
      <assignedEntity>
        <id displayable="true" root="476CAE01-D4E8-4894-A007-EF55064175D0" assigningAuthorityName="MSP" extension="B0219 MDS METRO, ISLAND" />
      </assignedEntity>
    </performer>
    </observation>
  </entry>
</component>

```

Schema Links

Component2  
StructuredBody

Component3
Section
Entry
Performer2
AssignedEntity
Observation
ReferenceRange
ObservationRange



## 5.14 Past Referrals and/or Hospitalizations

Section Level: O2 O3

Cardinality: 0..\*

LOINC Document Section Code: 11336-5

### 5.14.1 Description

The past referrals and/or hospitalizations information provides details on past referrals or hospitalizations that may have an affect on the treatment of the patient. The past referrals and/or hospitalizations document section is optional at level 2 and optional at level 3 (O2 O3). The cardinality for this section is 0..\*. The LOINC document section code for history of hospitalizations is 11336-5.

Please refer to section 5.16 (Observation Media) for the data elements that are used if an attachment is added to this section.

### 5.14.2 Data Elements

Schema Data Element	Attributes	e-MS Equivalent	Description	Data type	Vocabulary	R/M/O: Cardinality	Comments
<b>Level 2 Data Elements</b>							
5.14.2.1 component.section.code	code codeSystem codeSystemName displayName	Referral_Section_Code	Code identifying the Past Referrals and/or Hospitalizations section. The value in this field should always be the LOINC code given.	EMS. CE.Ful I	LOINC: 11336-5	M: 1..1	
5.14.2.2 component.section.title		Referral_Section_Title	Human readable title of the section.	ST		M: 1..1	
5.14.2.3 component.section.text		Referral_Section_Text	This field will be used to enter all of the data for this section.	TEXT		M: 1..1	
<b>Level 3 Data Elements</b>							
5.14.2.4 component.section.entry.encoder.id	extension	Referral_Location	Location where the referral took place (e.g. name of a hospital).	II		O: 0..1	
5.14.2.5 component.section.entry.encoder.code	code codeSystem codeSystemName displayName	Referral_Type	The type of referral that was made	CE	HL7: ActEncounterCode	O: 0..1	
5.14.2.6 component.section.entry.encoder.text		Referral_Reason	The reason for the past referral or hospitalization.	ED		O: 0..1	
5.14.2.7 component.section.entry.encoder.effectiveTime	value	Referral_Date	The date of the past referral or hospitalization.	IVL_TS		O: 0..1	This may be a partial date.

Schema Data Element	Attributes	e-MS Equivalent	Description	Data type	Vocabulary	R/M/O: Cardinality	Comments
5.14.2.8	component.section.entry	typeCode	A code specifying the meaning and purpose of every ActRelationship instance. Each of its values implies specific constraints to what kinds of Act objects can be related and in which way.		Voc.xsd: Participatio nInformatio nGenerator_X		
5.14.2.9	component.section.entry.enco unter	moodCode	Mood code indicates whether an Act has happened (an event), or is a request for something to happen, or a goal or even a criterion.		Voc.xsd: x_ActMood DocumentO bservation_X		

### 5.14.3 Example

Human Readable				
<b><u>Past Referrals / Hospitalizations</u></b> (Note: although it is outside the scope of the CDA, it is required that the vendor make the title element bold and underlined.)				
Location / Person	Type	Reason	Date	
Good Health Hospital	Specialist	Pneumonia	1996	
XML Instance				
<pre>&lt;component&gt; &lt;section&gt; &lt;code code="11336-5" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC" displayName="Past Referrals and Hospitalizations"/&gt; &lt;title&gt;Past Referrals and Hospitalizations&lt;/title&gt; &lt;text&gt; &lt;table border="1"&gt; &lt;tbody&gt; &lt;tr&gt; &lt;th&gt;Location/Person&lt;/th&gt; &lt;th&gt;Type&lt;/th&gt; &lt;th&gt;Reason&lt;/th&gt; &lt;th&gt;Date&lt;/th&gt; &lt;/tr&gt; &lt;tr&gt; &lt;td&gt;Good Health Hospital&lt;/td&gt; &lt;td&gt;Specialist&lt;/td&gt; &lt;td&gt;Pneumonia&lt;/td&gt; &lt;td&gt;1996&lt;/td&gt; &lt;/tr&gt; &lt;/tbody&gt; &lt;/table&gt; &lt;/text&gt;</pre>				

<pre>&lt;entry typeCode="COMP"&gt;   &lt;encounter classCode="ENC" moodCode="EVN"&gt;     &lt;id extension="Good Health Hospital"/&gt;     &lt;code code="SP" codeSystem="4FE1CC50-FBDC-44a6-A005-A49E9F7A6DA9" codeSystemName="HL7 - Act Encounter Code" displayName="Specialist"/&gt;     &lt;text&gt;Pneumonia.&lt;/text&gt;     &lt;effectiveTime value="1996"/&gt;   &lt;/encounter&gt; &lt;/entry&gt; &lt;/section&gt; &lt;/component&gt;</pre>	Schema Links
Component2 StructuredBody Component3 Section Entry Encounter Performer2 AssignedEntity	

## 5.15 Family History

Section Level: O2 X3

Cardinality: 0..\*

LOINC Document Section Code: 10157-6

### 5.15.1 Description

The family history information provides details on conditions that family members have or have had in the past that may affect on the treatment of the patient. The family history document section is optional at level 2 and not supported at level 3 (O2 X3). Since this section is not supported at level 3, suggestions for what could be entered into the level 2 text field are: condition description, family relationship type, age of onset of the condition, age and cause of death of the family member. The cardinality for this section is 0..\*. The LOINC document section code for family history is 10157-6.

Please refer to section 5.16 (Observation Media) for the data elements that are used if an attachment is added to this section.

### 5.15.2 Data Elements

Schema Data Element	Attributes	e-MS Equivalent	Description	Data type	Vocabulary	R/M/O: Cardinality	Comments
5.15.2.1	section.code	Fam_Hist_Section_Code	Code identifying the Family History section. The value in this field should always be the LOINC code given.	EMS. CE.Ful I	LOINC: 10157-6	M: 1..1	
5.15.2.2	section.title	Fam_Hist_Section_Title	Human readable title of the section.	ST		M: 1..1	
5.15.2.3	section.text	Fam_Hist_Section_Text	This field will be used to enter all of the data for this section.	TEXT		M: 1..1	

### 5.15.3 Example

Human Readable	XML Instance
<b>Family History</b> (Note: although it is outside the scope of the CDA, it is required that the vendor make the title element bold and underlined.)	
The patient's father died of a myocardial infarction at the age of 65.	
<component> <section> <code code="10157-6" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC" displayName="Family History"/>	

<div>&lt;title&gt;Family History&lt;/title&gt; &lt;text&gt;The patient's father died of a myocardial infarction at the age of 65.&lt;/text&gt; &lt;/section&gt; &lt;/component&gt;</div>	
Schema Links	
Component2 StructuredBody Component3 Section	

## 5.16 Observation Media

Section Level: X2 R3  
Cardinality: 0..\*

### 5.16.1 Description

Observation Media (attachments) is not an individual section in the CDA document. The attachment document section is required at level 3 (X2 R3) and forms part of another section through an EntryRelationship. Observation Media includes any document that is relevant to the care of the patient (e.g. lab results, x-ray images, etc). Attachments must be from a list of valid MIME types. The cardinality for this section is 0..\*. An attachment may be in the mandatory 'Purpose' or any other section of the CDA body that contains a reference to the attachment in the MessageSend wrapper, or the literal payload of the base64 binary attachment may be directly in the observationMedia body.

### 5.16.2 Data Elements

	Schema Data Element	Attributes	e-MS Equivalent	Description	Data type	Vocabulary	R/M/O: Cardinality	Comments
5.16.2.1	entryRelationship	typeCode		A code specifying the meaning and purpose of every ActRelationship instance. Each of its values implies specific constraints to what kinds of Act objects can be related and in which way				
5.16.2.2	entryRelationship.ObservationMedia	classCode moodCode					classCode is mandatory	
5.16.2.3	entryRelationship.ObservationMedia.value	mediaType		Type of attachment	ED			
5.16.2.4	entryRelationship.ObservationMedia.value.reference	value		Reference to the file attachment.	URL		R: 0..*	

### 5.16.3 Example

Human Readable
N/A
XML Instance
<pre> &lt;entryRelationship typeCode="COMP"&gt;   &lt;observationMedia classCode="OBS" moodCode="EVN"&gt;     &lt;value mediaType="image/jpeg"&gt;       &lt;reference value="test.jpg"/&gt;     &lt;/value&gt;   &lt;/observationMedia&gt; &lt;/entryRelationship&gt; </pre>

</value> </observationMedia> </entryRelationship>
Schema Links
Component2 StructuredBody Component3 Section Entry ObservationMedia

## 6 Additional Enforcement for Validation

This section outlines business rules that aren't automatically enforced by the e-MS CDA Schema and will therefore need additional enforcement through another mechanism (in this case the Schematron schema).

### 6.1 CDA Header Sections

#### 6.1.1 Clinical Document

	Element	Required additional enforcement
1.	clinicalDocument.id	The root attribute must be 2.16.840.1.113883.3.933.
2.	clinicalDocument.code	The code, code system, code system name and display name attributes must always be one of the following combinations: <code code="34140-4" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC" displayName="Referral"/> <code code="11488-4" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC" displayName="Consultation"/> <code code="28616-1" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC" displayName="Summary"/>
3.	clinicalDocument.effectiveTime	The value attribute must include both a valid date and time.
4.	clinicalDocument.confidentialityCode	The codeSystem attribute must always be 2.16.840.1.113883.5.25. The code attribute must always be N, R, or V.

#### 6.1.2 Information Recipient

	Element	Required additional enforcement
5.	informationRecipient.intendedRecipient.addr.state	If state is entered it must be a Canada Post: Province Codes/State Code
6.	informationRecipient.intendedRecipient.addr.country	If country is entered it must be a ISO: Country Code
7.	informationRecipient.intendedRecipient.informationRecipientPers	If the name is written as one large string it must be present or if the elements are separated then there must be a given name.



8.	on.name.given informationRecipient.intendedRe cipient.informationRecipientPers on.name.family	If the name is written as one large string it must be present or if the elements are separated then there must be a family name.
9.	informationRecipient	If the typeCode attribute is present it must be set to PRCP.
10.	informationRecipient.intendedRe cipient	If the classCode attribute is present it must be set to ASSIGNED.

### 6.1.3 Author

	Element	Required additional enforcement
11.	author.time	The value attribute must contain both a date AND timestamp.
12.	author.assignedAuthor.addr.state	If state is entered it must be a Canada Post: Province Codes/State Code
13.	author.assignedAuthor.addr.coun try	If country is entered it must be a ISO: Country Code
14.	author.assignedAuthor.assigned Person.name.given	If the name is written as one large string it must be present or if the elements are separated then there must be a given name.
15.	author.assignedAuthor.assigned Person.name.family	If the name is written as one large string it must be present or if the elements are separated then there must be a family name.
16.	author.assignedAuthor.assigned AuthoringDevice.softwareName	There must be exactly one software name.

### 6.1.4 Custodian

	Element	Required additional enforcement
17.	custodian	If the typeCode attribute is present it must be set to CST.

### 6.1.5 Record Target

	Element	Required additional enforcement
18.	recordTarget.patientRole.id	If the ID is the BC PHN number, the root becomes a mandatory attribute and the extension must be composed of 10

		numerical digits. For all other PHNs, the province of the PHN is entered in the assigningAuthority attribute in the format: province-PHN. The province code must come from the Canada Post: Province Codes/State Codes (while only using the province codes)
19.	recordTarget.patientRole.addr.state	If state is entered it must be a Canada Post: Province Codes/State Code
20.	recordTarget.patientRole.addr.country	If country is entered it must be a ISO: Country Code
21.	recordTarget.patientRole.patientName.given	If the name is written as one large string it must be present or if the elements are separated then there must be a given name.
22.	recordTarget.patientRole.patientName.family	If the name is written as one large string it must be present or if the elements are separated then there must be a family name.
23.	recordTarget.patientRole.patientAdministrativeGenderCode	<p>The only valid entries are:</p> <p>&lt;administrativeGenderCode code="F" codeSystem="2.16.840.1.113883.5.1" codeSystemName="HL7 - Administrative Gender" displayName="Female"/&gt;</p> <p>&lt;administrativeGenderCode code="M" codeSystem="2.16.840.1.113883.5.1" codeSystemName="HL7 - Administrative Gender" displayName="Male"/&gt;</p> <p>&lt;administrativeGenderCode code="U" codeSystem="2.16.840.1.113883.5.1" codeSystemName="HL7 - Administrative Gender" displayName="Undifferentiated"/&gt;</p> <p>&lt;administrativeGenderCode nullFlavor="UNK"/&gt;</p>
24.	recordTarget.patientRole.patientBirthTime	BirthTime requires an attribute of value if it is known. The birthTime value must be a complete date including the year, month and day. If the birthTime is not known, a nullFlavor attribute of UNK (only UNK, no other options allowed) must be entered
25.	recordTarget.patientRole.patientLanguageCode	LanguageCode is optional, however if it is entered it is entered in the code attribute and it must be from the ISO: Language code set
26.	recordTarget	The typeCode attribute must either not be present or set to RCT. The contextControlCode attribute must either not be present or set to OP.
27.	recordTarget.patientRole	The classCode attribute must either not be present or set to PAT.

## 6.1.6 Participant

Element	Required additional enforcement
28. participant.participatingEntity.code	<p>The code attribute must come from the HL7: PersonalRelationshipRoleType codes, displayName must be the long form of the respective code as also defined in the code set and the codeSystemName must be HL7: PersonalRelationshipRoleType.</p>

29.	participant.participatingEntity.address	If state is entered it must be a Canada Post: Province Codes/State Code
30.	participant.participatingEntity.address.country	If country is entered it must be a ISO: Country Code
31.	participant.participatingEntity.associatedPerson.name.given	If the name is written as one large string it must be present or if the elements are separated then there must be a given name.
32.	participant.participatingEntity.associatedPerson.name.family	If the name is written as one large string it must be present or if the elements are separated then there must be a family name.
33.	participant	The typeCode attribute must either not be present or set to NOT.
34.	participant.participatingEntity	The classCode attribute must either not be present or set to CON.

## 6.1.7 Related Document

Element	Required additional enforcement
35. relatedDocument.parentDocument.id	The root attribute must be 2.16.840.1.113883.3.933.
36. relatedDocument.parentDocument.code	The code, code system, code system name and display name attributes must always be one of the following combinations: <code>&lt;code code="34140-4" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC" displayName="Referral"/&gt;</code> <code>&lt;code code="11488-4" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC" displayName="Consultation"/&gt;</code> <code>&lt;code code="28616-1" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC" displayName="Summary"/&gt;</code>
37. relatedDocument	The typeCode attribute must either not be present or set to APND.

## 6.2 CDA Body Sections

### 6.2.1 Purpose

*A separate document section is mandatory for purpose.*

	Element	Required additional enforcement
38.	component.section.code	The code, code system name and display name attributes must always be the following combination: <code>&lt;code code="001" codeSystemName="e-MS Document Section Codes" displayName="Purpose"/&gt;</code> .
39.	component.section.entry.Observation.code	Only the nullFlavor of NA is permissible.
40.	component.section.entry.Observation.priorityCode	PriorityCode is optional, but if an entry is made, Code, code system name and display name attributes must always be one of the following combinations: <code>&lt;priorityCode code="E" codeSystemName="eMS_Purpose_Urgency" displayName="Expedite (call)"/&gt;</code> <code>&lt;priorityCode code="U" codeSystemName="eMS_Purpose_Urgency" displayName="Urgent (call)"/&gt;</code> <code>&lt;priorityCode code="R" codeSystemName="eMS_Purpose_Urgency" displayName="Routine"/&gt;</code> .
41.	component.section.entry	The typeCode attribute must either not be present or set to DRIV.
42.	component.section.entry.Observation	The moodCode attribute must either not be present or set to EVN.
43.	component.section.entry.Observation.participant1	The typeCode attribute must either not be present or set to SPRF.

### 6.2.2 Alerts

*Although the alerts section is optional at both levels 2 and 3, if an entry is made, a separate document section is required. If an entry is made, the following business rules apply:*

	Element	Required additional enforcement
44.	component.section.code	The code, code system name and display name attributes must always be the following combination: <code>&lt;code code="002" codeSystemName="e-MS Document Section Codes" displayName="Alerts"/&gt;</code> .
45.	component.section.entry	The typeCode attribute must either not be present or set to COMP.
46.	component.section.entry.Observation	The moodCode attribute must either not be present or set to EVN.
47.	component.section.entry.Observation	Only the nullFlavor of NA is permissible.

	n.code
--	--------

### 6.2.3 Social History/Risks

Although the social history/risks section is optional at both levels 2 and 3, if an entry is made, a separate document section is required. If an entry is made, the following business rules apply:

	Element	Required additional enforcement
48.	component.section.code	The code, code system, code system name and display name attributes must always be the following combination: <code>&lt;code code="29762-2" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC" displayName="Social History/Risks"/&gt;</code> .
49.	component.section.entry	The typeCode attribute must either not be present or set to COMP.
50.	component.section.entry.Observation	The moodCode attribute must either not be present or set to EVN.
51.	component.section.entry.Observation.code	Only the nullFlavor of NA is permissible.

### 6.2.4 Examination Measurements

Although the Examination Measurements section is optional at both levels 2 and 3, if an entry is made, a separate document section is required. If an entry is made, the following business rules apply:

	Element	Required additional enforcement
52.	component.section.code	The code, code system name and display name attributes must always be the following combination: <code>&lt;code code="003" codeSystemName="e-MS Document Section Codes" displayName="Examination Measurements"/&gt;</code> .
53.	component.section.entry.Observation.code	If an entry is made, the code, code system, code system name and display name attributes must always be one of the following combinations: <code>&lt;code code="8302-2" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC" displayName="Height"/&gt;</code> <code>&lt;code code="3141-9" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC" displayName="Weight"/&gt;</code> <code>&lt;code code="11328-2" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC" displayName="Pulse"/&gt;</code> <code>&lt;code code="004" codeSystemName="e-MS Data Element Code" displayName="Blood Pressure"/&gt;</code> .
54.	component.section.entry.Observation.effectiveTime	There must be an effectiveTime for each examination measurement.

55.	component.section.entry.Observation.value	There must be a value for a height measurement. A height value must have an xsi:type of "PQ" and a unit of either "in" (inches) or "cm" (centimeters). There must be a value for a weight measurement. A weight value must have an xsi:type of "PQ" and a unit of either "lb" (pounds) or "kg" (kilograms). There must be a value for a pulse measurement. A pulse value must have an xsi:type of "PQ" and a unit of "bpm" (beats per minute).
56.	component.section.entry.Observation.entryRelationship.Observation.code	If a blood pressure measurement exists, there must be a code for the systolic blood pressure as follows: <code>&lt;code code="005" codeSystemName="e-MS Data Element Code" displayName="Systolic Blood Pressure"/&gt;</code> and a code for diastolic blood pressure as follows: <code>&lt;code code="006" codeSystemName="e-MS Data Element Code" displayName="Diastolic Blood Pressure"/&gt;</code> .
57.	component.section.entry.Observation.entryRelationship.Observation.value	Value is required for the systolic and diastolic blood pressure and must have an xsi:type of "PQ" and a unit of "mm[Hg]".
58.	component.section.entry	Entry has the attribute typeCode. The typeCode attribute must either not be present or set to COMP.
59.	component.section.entry.Observation	The moodCode attribute must either not be present or set to EVN.
60.	component.section.entry.Observation.entryRelationship	The typeCode attribute must either not be present or set to COMP.
61.	component.section.entry.Observation.entryRelationship.Observation	The moodCode attribute must either not be present or set to EVN.

## 6.2.5 Active Problem List

*Although the Active Problem List section is optional at both levels 2 and 3, if an entry is made, a separate document section is required. If an entry is made, the following business rules apply:*

Required additional enforcement	
62.	component.section.code The code, code system, code system name and display name attributes must always be the following combination: <code>&lt;code code="11450-4" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC" displayName="Active Problem List"/&gt;</code> .
63.	component.section.entry.Observation.code If an ICD-9 code is used, the code attribute must be an ICD-9 code composed of three leading characters [0..9, A..Z] followed by an optional period and up to two numeric characters, the codeSystem must be '2.16.840.1.113883.6.2' and the codeSystemName must be 'ICD-9'.
64.	component.section.entry.Observation xsi:type must always be ST.

	ation.value	
65.	component.section.entry	The typeCode attribute must either not be present or set to COMP.
66.	component.section.entry.Observation	The moodCode attribute must either not be present or set to EVN.

## 6.2.6 Current Medications

*Although the Current Medications section is optional at both levels 2 and 3, if an entry is made, a separate document section is required. If an entry is made, the following business rules apply:*

	Element	Required additional enforcement
67.	component.section.code	The code, code system, code system name and display name attributes must always be the following combination: <code>&lt;code code="19789-7" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC" displayName="Current Medications"/&gt;</code> .
68.	component.section.entry.SubstanceAdministration.routeCode	If an entry is made, the only entries permitted are the following: Code: from the "HL7-MedAdministrationRoute" code set CodeSystem: 2.16.840.1.113883.5.112 CodeSystemName: RouteOfAdministration DisplayName: name corresponding to the 'code' – question about if it's made mandatory with schematron, shouldn't be.
69.	component.section.entry.SubstanceAdministration.doseQuantity.center	The center element is required (with both value and unit attributes)
70.	component.section.entry.SubstanceAdministration.consumable.manufacturedProduct.manufacturedLabeledDrug.code	If one or more of effectiveTime, repeatNumber, routeCode or doseQuantity is present then either consumable/manufacturedProduct/manufacturedLabeledDrug/code or consumable/manufacturedProduct/manufacturedLabeledDrug/name must be present and vice versa.  The code attribute for a DIN must consist of 8 numerical digits. The codeSystem must be 36F030E1-180A-4c53-AEF6-7EEA32B531B3 and the codeSystemName must be DIN.
71.	component.section.entry.SubstanceAdministration.consumable.manufacturedProduct.manufacturedLabeledDrug.name	If one or more of effectiveTime, repeatNumber, routeCode or doseQuantity is present then either consumable/manufacturedProduct/manufacturedLabeledDrug/code or consumable/manufacturedProduct/manufacturedLabeledDrug/name must be present and vice versa.
72.	component.section.entry	The typeCode attribute must either not be present or set to COMP.
73.	component.section.entry.SubstanceAdministration	The moodCode attribute must either not be present or set to EVN.



## 6.2.7 Medical History

Although the Medical History section is optional at both levels 2 and 3, if an entry is made, a separate document section is required. If an entry is made, the following business rules apply:

	Element	Required additional enforcement
74.	component.section.code	The code, code system, code system name and display name attributes must always be the following combination: <code>&lt;code code="11348-0" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC" displayName="Medical History"/&gt;</code> .
75.	component.section.entry.Observation.code	If an ICD-9 code is used, the code attribute must be an ICD-9 code composed of three leading characters [0..9, A..Z] followed by an optional period and up to two numeric characters, the codeSystem must be '2.16.840.1.113883.6.2' and the codeSystemName must be 'ICD-9'.
76.	component.section.entry.Observation.value	the xsi:type must always be ST
77.	component.section.entry	The typeCode attribute must either not be present or set to COMP.
78.	component.section.entry.Observation	The moodCode attribute must either not be present or set to EVN.

## 6.2.8 Surgical History

Although the Surgical History section is optional at both levels 2 and 3, if an entry is made, a separate document section is required. If an entry is made, the following business rules apply:

	Element	Required additional enforcement
79.	component.section.code	The code, code system, code system name and display name attributes must always be the following combination: <code>&lt;code code="10167-5" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC" displayName="Surgical History"/&gt;</code> .
80.	component.section.entry.Procedure.text	If an effectiveTime is entered then there must be a text entry
81.	component.section.entry	The typeCode attribute must either not be present or set to COMP.
82.	component.section.entry.Procedure	The moodCode attribute must either not be present or set to EVN.



## 6.2.9 Medical Imaging History

Although the Medical Imaging History section is optional at both levels 2 and 3, if an entry is made, a separate document section is required. If an entry is made, the following business rules apply:

	Element	Required additional enforcement
83.	component.section.code	The code, code system, code system name and display name attributes must always be the following combination: <code>&lt;code code="35090-0" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC" displayName="Medical Imaging History"/&gt;</code> .
84.	component.section.entry.Observation.code	Only the nullFlavor of NA is permissible.
85.	component.section.entry.Observation.text	If an effectiveTime is entered then there must be a text entry.
86.	component.section.entry.Observation.value	The xsi:type must always be ST.
87.	component.section.entry	The typeCode attribute must either not be present or set to COMP.
88.	component.section.entry.Observation	The moodCode attribute must either not be present or set to EVN.

## 6.2.10 Other Treatments

Although the Medical Treatments section is optional at both levels 2 and 3, if an entry is made, a separate document section is required. If an entry is made, the following business rules apply:

	Element	Required additional enforcement
89.	component.section.code	The code, code system name and display name attributes must always be the following combination: <code>&lt;code code="007" codeSystemName="e-MS Document Section Codes" displayName="Other Treatments"/&gt;</code> .
90.	component.section.entry.Observation.code	Only the nullFlavor of NA is permissible.
91.	component.section.entry.Observation.text	If an effectiveTime is entered then there must be a text entry
92.	component.section.entry.Observation.value	The xsi:type must always be ST.
93.	component.section.entry	The typeCode attribute must either not be present or set to COMP.
94.	component.section.entry.Observation	The moodCode attribute must either not be present or set to EVN.

## 6.2.11 Allergies

Although the Allergies section is optional at both levels 2 and 3, if an entry is made, a separate document section is required. If an entry is made, the following business rules apply:

	Element	Required additional enforcement
95.	component.section.code	The code, code system name and display name attributes must always be the following combination: <code>&lt;code code="008" codeSystemName="e-MS Document Section Codes" displayName="Allergies"/&gt;</code> .
96.	component.section.entry.Observation.code	This element is optional but if an entry is made, the following options exist for the attributes: <code>&lt;code code="DA" codeSystemName="AllergyType" displayName="Drug Allergy"/&gt;</code> <code>&lt;code code="FA" codeSystemName="AllergyType" displayName="Food Allergy"/&gt;</code> <code>&lt;code code="MA" codeSystemName="AllergyType" displayName="Miscellaneous Allergy"/&gt;</code> <code>&lt;code code="MC" codeSystemName="AllergyType" displayName="Miscellaneous Contraindication"/&gt;</code>
97.	component.section.entry.Observation.value	the xsi:type must always be ST
98.	component.section.entry.Observation.entryRelationship.Observation.code	This element is optional but if an entry is made, the following options exist for the attributes: <code>&lt;code code="MI" codeSystem="2.16.840.1.113883.12.128" codeSystemName="AllergySeverity" displayName="Mild"/&gt;</code> <code>&lt;code code="MO" codeSystem="2.16.840.1.113883.12.128" codeSystemName="AllergySeverity" displayName="Moderate"/&gt;</code> <code>&lt;code code="SV" codeSystem="2.16.840.1.113883.12.128" codeSystemName="AllergySeverity" displayName="Severe"/&gt;</code>
99.	component.section.entry	The typeCode attribute must either not be present or set to COMP.
100.	component.section.entry.Observation	The moodCode attribute must either not be present or set to EVN.
101.	component.section.entry.Observation.entryRelationship	The typeCode attribute must either not be present or set to COMP.
102.	component.section.entry.Observation.entryRelationship.Observation	The moodCode attribute must either not be present or set to EVN.

## 6.2.12 Immunization

Although the Immunizations section is optional at both levels 2 and 3, if an entry is made, a separate document section is required. If an entry is made, the following business rules apply:

	Element	Required additional enforcement
103.	component.section.code	The code, code system, code system name and display name attributes must always be the following combination: <code>&lt;code code="11369-6" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC" displayName="Immunization"/&gt;</code> .

104.	component.section.entry.Observation.code	If an entry is made, the following options exist for the attributes: Code: must be an entry from the BCCDC:BC Vaccination Codes Code Set CodeSystemName: BCCDC - ImmunizationCode DisplayName: the immunization corresponding to the code specified under the 'code' attribute. The typeCode attribute must either not be present or set to COMP. The moodCode attribute must either not be present or set to EVN.
105.	component.section.entry	
106.	component.section.entry.Observation	

## 6.2.13 Labs

*Although the labs section is optional at both levels 2 and 3, if an entry is made, a separate document section is required. If an entry is made, the following business rules apply:*

Required additional enforcement		
107.	component.section.code	The code, code system, code system name and display name attributes must always be the following combination: <code>&lt;code code="11502-2" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC" displayName="Labs"/&gt;</code> .
108.	component.section.entry.Observation.code	The code element has attributes code and displayName and is optional unless any of the other Labs section elements is present.
109.	component.section.entry.Observation.value	The xsi:type must be PQ and there must be value and unit attributes.
110.	component.section.entry.Observation.referenceRange.referenceObservationRange.value ('high', 'low')	Value must contain either a string or elements high and/or low.
111.	component.section.entry.Observation.performer.assignedEntity.id	The attributes must be as follows: <code>displayable="true"</code> , <code>assigningAuthorityName="MSP"</code> , extension may not be blank.
112.	component.section.entry	The typeCode attribute must either not be present or set to COMP.
113.	component.section.entry.Observation	The moodCode attribute must either not be present or set to EVN.

## 6.2.14 Past Referrals and/or Hospitalizations

*Although the Past Referrals and/or Hospitalizations section is optional at both levels 2 and 3, if an entry is made, a separate document section is required. If an entry is made, the following business rules apply:*

	Element	Required additional enforcement
114.	component.section.code	The code, code system, code system name and display name attributes must always be the following combination: <code>&lt;code code="11336-5" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC" displayName="Past Referrals and Hospitalizations"/&gt;</code> .
115.	component.section.entry.Encounter.code	If an entry is made, the following options exist for the attributes: code=from the HL7 - Act Encounter Code code set, codeSystemName="HL7 - Act Encounter Code", displayName=the name corresponding to the code specified in code.
116.	component.section.entry	The typeCode attribute must either not be present or set to COMP.
117.	component.section.entry.Encounter.ter	The moodCode attribute must either not be present or set to EVN.

## 6.2.15 Family History

*Although the Family History section is optional at levels 2 and not supported 3, if an entry is made, a separate document section is required. If an entry is made, the following business rules apply:*

	Element	Required additional enforcement
118.	component.section.code	The code, code system, code system name and display name attributes must always be the following combination: <code>&lt;code code="10157-6" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC" displayName="Family History"/&gt;</code> .

## 6.2.16 Observation Media

	Element	Required additional enforcement
119.	entry.Relationship	The typeCode attribute must either not be present or set to COMP.

## **Appendix A – Human Readable Referral Example**

## Referral Letter

**Author:**

Dr. Harold H. Hippocrates the 1<sup>st</sup>  
Level 7 Healthcare, Inc  
4444 Healthcare Drive  
Ann Arbor, BC  
A1B 2C3  
Canada  
Phone: (555) 555-1003  
Fax: (555) 555-1133

**Information Recipient:**

Dr. Patrick P. Pump Sr.  
Level 7 Healthcare, Inc  
4444 Healthcare Drive  
Ann Arbor, BC  
A1B 2C3  
Canada  
Phone: (555) 555-1009  
Fax: (555) 555-1199

**Client Information**

Name:	Mrs. Eve E. Everywoman Jr.
DOB:	May 16, 1965
Gender:	Female
Age:	39

**Purpose**

Please see this patient regarding occasional occurrences of arrhythmia at rest accompanied with mild shortness of breath. Mild exercise leads to faintness and mild chest pain.

**Urgency:** expedite.

**Comments:** The patient expressed that this problem has gradually been getting worse over the course of the past year and a half.

**Providers currently involved in the care of the patient:**

Other Provider	Reason
Dr. Vera V. Valve at Level 7 Healthcare, Inc	High blood pressure in the past
Dr. Sara S. Specialize at Good Health Hospital	24 Hour ECG recording

**Medical History**

Problem	Comments	Date
Meningitis	No permanent effects.	1975
Closed fractured rib	Patient is unsure of which rib it was.	1994

**Surgical History**

Description	Date
Appendectomy	June 1970
Cholelithotomy	January 17, 2004

**Social History / Risks**

Social History/Risk	Comments	Date
Smoking	2 packs of cigarettes per day in her early teens	1979-1982

Alcohol consumption	3 glasses of wine per day	January 2000
---------------------	---------------------------	--------------

### **Family History**

The patient's father died of a myocardial infarction at the age of 65.

### **Past Referrals / Hospitalizations**

Location	Type	Reason	Date
Good Health Hospital	Specialist	Pneumonia	1996

### **Other Treatments**

Other Treatment	Outcome	Date
Herbal remedy	The patient did not experience any improvement in her condition	November 2003-February 2004

### **Allergies**

Allergy Type	Severity	Comments (Allergen, reaction)	Date
Drug Allergy	Mild	Penicillin. Resulting in hives. Patient hasn't been tested recently to see if this is still an active allergy	1965
Food Allergy	Moderate	Dairy. Resulting in puffy eyes	1970-1985

### **Alerts**

Alert	Comments	Date
History of violence	Mostly towards family members	1999
History of mental illness	Mild anxiety disorder	August 2000

### **Active Problem List**

Active Problem	Description	Date
Hypertension	Continuing to increase in severity.	December 2002

### **Current Medications**

Medication Name	DIN	DIN Name	Dose	Quantity Ordered	Admin Route	Frequency	Repeats	Effective Date
Accupril 5 mg	01947664	Quinapril	5 mg	100	Orally	BID	2	Jan 15, 2003

### **Examination Measurements**

	Height	Weight	Blood Pressure	Pulse
January 13, 2000	172 cm	65 kg	130/80	80 BPM
March 18, 2001	172 cm	70 Kg	145/95	90 BPM
September 22, 2003	172 cm	78 Kg	160/110	92 BPM
August 9, 2004	172 cm	80 Kg	160/130	94 BPM

### **Labs**

Type	Collection Date	Result/ Unit	Normal Result Range	Abnormal?
troponin I (Tnl)	February 26, 2004	0.5 ng/mL	< 0.5 ng/mL	No
creatine phosphokinase (CPK)	February 26, 2004	180 u/L	5-200 u/L	No
lactate dehydrogenase (LDH)	February 26, 2004	400 u/L	200-650 u/L	No

### **Medical Imaging History**

Procedure	Results	Date
Chest x-ray	Nothing unusual could be observed. X-ray image is attached.	July 14, 2004

### **Immunizations**

Immunization	Date
Hepatitis A	September 24, 2000
Hepatitis A	January 27, 2002
Inactivated Polio Vaccine (study)	March 13, 1985
Measles Mumps Rubella	April 30, 1995

### **Patient Information**

Name:	Mrs. Eve E. Everywoman Jr.
DOB:	May 16, 1965
Age:	39
Gender:	Female
Language:	English
Identifiers:	BC-PHN: 9999999999 WCB: 99999-9
Address:	2222 Home Street Ann Arbor, BC A1B 2C3 Canada
Phone:	(555) 555-2003
Email:	Eve.Everywoman@eg.net

### **Patient Contact Information**

#### **Contact 1**

Name: Mr. Neville N. Nuclear III  
Relationship: Husband  
Address: 2222 Home Street  
Ann Arbor, BC  
A1B 2C3  
Canada  
Phone: (555) 555-5001  
Email: Neville.Nuclear@eg.net

#### **Contact 2**

Name: Ms. Nancy N. Nuclear Sr.  
Relationship: Daughter  
Address: 6666 Home Street.  
Ann Arbor, BC  
A1B 2C3  
Canada  
Phone: (250) 555-5001  
Email: Nancy.Nuclear@eg.net

### **Attachments**

Chest x-ray



## Appendix B – Schemas

The following schemas are part of the validation web service (together with the Schematron schema). CDA documents must pass through both the EMS\_CDA schema and the Schematron schema without error in order to be considered valid.

### e-MS Schema (EMS\_CDA.xsd)

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<!-- edited with XMLSpy v2005 sp2 U (http://www.altova.com) by Brad Head (Sierra Systems) -->
<xs:schema targetNamespace="urn:hl7-org:v3" xmlns="urn:hl7-org:v3" xmlns:hl7="urn:hl7-org:v3"
xmlns:xs="http://www.w3.org/2001/XMLSchema" elementFormDefault="qualified" attributeFormDefault="unqualified">
  <xs:include schemaLocation="cda/dt/datatypes.xsd"/>
  <xs:include schemaLocation="cda/dt/more_datatypes_cda.xsd"/>
  <xs:include schemaLocation="cda/dt/datatypes_cda.xsd"/>
  <xs:include schemaLocation="cda/voc/voc.xsd"/>
  <xs:include schemaLocation="cda/StrucDoc.ActText.MembershipBallot01.Dec.2004.xsd"/>
  <xs:include schemaLocation="dt/EMS_datatypes.xsd"/>
  <xs:annotation>
    <xs:documentation>Generated by cloning the cda schema.
    This was NOT generated using the tooling, but was generated by hand-tuning
    a cloned set of datatypes from the reference XSD distributed as:
    MembershipBallot01.Dec.2004.
```

The schema here does not wholly represent our constrained model. The additional model constraints are enforced using an set of SchemaTron assertions located in EMS\_CDA.sch, which contains a schematron schema. The two files make up the template model for the e-MS CDA standard.

```
</xs:documentation>
</xs:annotation>
<!--
*****
* XML schema for message type EMS_MT000030 cloned and restricted version of POCD_MT000030.
*
* Original POCD_MT000030 was Generated by XMLITS version 1.21q2, Copyright (C) 2002, 2003 by Health Level 7, Inc.
*
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* SUCH DAMAGE.
*
*****
```

This is a CDA TEMPLATE based upon the CDA Release 2, Member Ballot 01, January 2005 edition of the CDA draft standard. It is hoped that this Member Ballot is very close to what will be put forth by the HL7 Structured Documents Committee for recommendation as a ASTM standard.

Once the CDA Release 2 standard is published, this template will be updated to comply with the

standard.

\*\* The CDA Template Rules require that all instances (XML documents) that validate against this template, must ALSO validate against the published reference CDA.xsd schema document. This is to ensure the highest level of interoperability for a CDA interchange, since even without knowing the level 3 codings and vocabularies, the Level 2 (narrative block) will still contain human-readable data that can be rendered by applying a stylesheet that applies to the base CDA.xsd standard.

Modifications to the CDA schema contained herein are the copyright of VIHA. Use is granted with permission. Copyright (c) 2004, 2005 by Vancouver Island Health Authority. All Rights Reserved.

```
=====
Rev.   Date.   Author. Description
0.1    20050225   bhead  [1] Modified to be a clone of the latest balloted CDA specification. This was done by
                                directly applying the changes to the published schema to match the changes
                                modeled
                                using the HL7 visio model. We skipped the Visio model this time, due to several
                                bugs in the
                                current set of HL7 tools. In addition, hand-tuning is necessary here to apply
                                custom constrained
                                datatypes to the model, that help enforce our business rules.
                                [2] Modified to allow optional values for Organization recipient.
                                [3] Left intendedRecipient.id optional to support delivery to organizations
                                (without an ID)

                                The schema here does not wholly represent our constrained model. The
                                additional model constraints
                                are enforced using an set of SchemaTron assertions located in EMS_CDA.sch,
                                which contains a
                                schematron schema. The two files make up the template model for the e-MS
                                CDA standard.
```

```
-->
<xs:element name="ClinicalDocument" type="EMS_MT000030.ClinicalDocument"/>
<xs:complexType name="EMS_MT000030.ClinicalDocument">
  <xs:sequence>
    <xs:element name="id" type="hl7:EMS.II.RootExtension"/>
    <xs:element name="code" type="hl7:EMS.CE.Full"/>
    <xs:element name="title" type="ST"/>
    <xs:element name="effectiveTime" type="hl7:EMS.TS"/>
    <xs:element name="confidentialityCode" type="CE"/>
    <xs:element name="setId" type="II" minOccurs="0"/>
    <xs:element name="versionNumber" type="INT" minOccurs="0"/>
    <xs:element name="informationRecipient" type="EMS_MT000030.InformationRecipient"/>
    <xs:element name="author" type="EMS_MT000030.Author" minOccurs="2" maxOccurs="2"/>
    <xs:element name="custodian" type="EMS_MT000030.Custodian"/>
    <xs:element name="recordTarget" type="EMS_MT000030.RecordTarget"/>
    <xs:element name="participant" type="EMS_MT000030.Participant1" minOccurs="0"
maxOccurs="unbounded"/>
    <xs:element name="relatedDocument" type="EMS_MT000030.RelatedDocument" minOccurs="0"
maxOccurs="unbounded"/>
    <xs:element name="component" type="EMS_MT000030.Component2"/>
  </xs:sequence>
  <xs:attribute name="type" type="Classes" default="Document"/>
  <xs:attribute name="classCode" type="ActClass" use="optional" default="DOCCLIN"/>
  <xs:attribute name="moodCode" type="ActMood" use="optional" default="EVN"/>
  <xs:attribute name="templateId" use="optional">
    <xs:simpleType>
      <xs:list itemType="oid"/>
    </xs:simpleType>
  </xs:attribute>
  <xs:attribute name="typeIdRoot" type="xs:string" default="2.16.840.1.113883.1.3"/>
  <xs:attribute name="typeIdExtension" type="xs:string" default="_HD000030"/>
  <xs:attribute name="realmCode" use="optional">
    <xs:simpleType>
      <xs:list itemType="cs"/>
    </xs:simpleType>
  </xs:attribute>
  <xs:attribute name="nullFlavor" type="cs" use="optional"/>
</xs:complexType>
```

```
133 <xs:complexType name="EMS_MT000030.AssignedEntity">
134   <xs:sequence>
135     <xs:element name="id" type="II" maxOccurs="unbounded"/>
136   </xs:sequence>
137   <xs:attribute name="type" type="Classes" default="RoleHeir"/>
138   <xs:attribute name="classCode" type="RoleClass" use="optional" default="ASSIGNED"/>
139   <xs:attribute name="templateId" use="optional">
140     <xs:simpleType>
141       <xs:list itemType="oid"/>
142     </xs:simpleType>
143   </xs:attribute>
144   <xs:attribute name="typeIdRoot" type="xs:string" use="optional"/>
145   <xs:attribute name="typeIdExtension" type="xs:string" use="optional"/>
146   <xs:attribute name="realmCode" use="optional">
147     <xs:simpleType>
148       <xs:list itemType="cs"/>
149     </xs:simpleType>
150   </xs:attribute>
151   <xs:attribute name="nullFlavor" type="cs" use="optional"/>
152 </xs:complexType>
153 <xs:complexType name="EMS_MT000030.Person">
154   <xs:sequence>
155     <xs:element name="name" type="PN" minOccurs="0" maxOccurs="unbounded"/>
156   </xs:sequence>
157   <xs:attribute name="type" type="Classes" default="Person"/>
158   <xs:attribute name="classCode" type="EntityClass" use="optional" default="PSN"/>
159   <xs:attribute name="determinerCode" type="EntityDeterminer" use="optional" default="INSTANCE"/>
160   <xs:attribute name="templateId" use="optional">
161     <xs:simpleType>
162       <xs:list itemType="oid"/>
163     </xs:simpleType>
164   </xs:attribute>
165   <xs:attribute name="typeIdRoot" type="xs:string" use="optional"/>
166   <xs:attribute name="typeIdExtension" type="xs:string" use="optional"/>
167   <xs:attribute name="realmCode" use="optional">
168     <xs:simpleType>
169       <xs:list itemType="cs"/>
170     </xs:simpleType>
171   </xs:attribute>
172   <xs:attribute name="nullFlavor" type="cs" use="optional"/>
173 </xs:complexType>
174 <xs:complexType name="EMS_MT000030.Organization">
175   <xs:sequence>
176     <xs:element name="id" type="II" minOccurs="0" maxOccurs="unbounded"/>
177     <xs:element name="name" type="ON" minOccurs="0" maxOccurs="unbounded"/>
178     <xs:element name="telecom" type="TEL" minOccurs="0" maxOccurs="unbounded"/>
179     <xs:element name="addr" type="AD" minOccurs="0" maxOccurs="unbounded"/>
180   </xs:sequence>
181   <xs:attribute name="type" type="Classes" default="Organization"/>
182   <xs:attribute name="classCode" type="EntityClass" use="optional" default="ORG"/>
183   <xs:attribute name="determinerCode" type="EntityDeterminer" use="optional" default="INSTANCE"/>
184   <xs:attribute name="templateId" use="optional">
185     <xs:simpleType>
186       <xs:list itemType="oid"/>
187     </xs:simpleType>
188   </xs:attribute>
189   <xs:attribute name="typeIdRoot" type="xs:string" use="optional"/>
190   <xs:attribute name="typeIdExtension" type="xs:string" use="optional"/>
191   <xs:attribute name="realmCode" use="optional">
192     <xs:simpleType>
193       <xs:list itemType="cs"/>
194     </xs:simpleType>
195   </xs:attribute>
196   <xs:attribute name="nullFlavor" type="cs" use="optional"/>
197 </xs:complexType>
198 <xs:complexType name="EMS_MT000030.InformationRecipient">
199   <xs:sequence>
200     <xs:element name="intendedRecipient" type="EMS_MT000030.IntendedRecipient"/>
201   </xs:sequence>
202   <xs:attribute name="type" type="Classes" default="Participation"/>
```

```
203 <xs:attribute name="typeCode" type="x_InformationRecipient" use="optional" default="PRCP"/>
204 <xs:attribute name="templateId" use="optional">
205   <xs:simpleType>
206     <xs:list itemType="oid"/>
207   </xs:simpleType>
208 </xs:attribute>
209 <xs:attribute name="typeIdRoot" type="xs:string" use="optional"/>
210 <xs:attribute name="typeIdExtension" type="xs:string" use="optional"/>
211 <xs:attribute name="realmCode" use="optional">
212   <xs:simpleType>
213     <xs:list itemType="cs"/>
214   </xs:simpleType>
215 </xs:attribute>
216 <xs:attribute name="nullFlavor" type="cs" use="optional"/>
217 </xs:complexType>
218 <xs:complexType name="EMS_MT000030.IntendedRecipient">
219   <xs:sequence>
220     <xs:element name="id" type="hl7:EMS.II.RootExtension" minOccurs="0" maxOccurs="unbounded"/>
221     <xs:element name="addr" type="AD" minOccurs="0"/>
222     <xs:element name="telecom" type="hl7:EMS.TEL" minOccurs="0" maxOccurs="unbounded"/>
223     <xs:element name="informationRecipient" type="EMS_MT000030.Person" minOccurs="0"/>
224     <xs:element name="receivedOrganization" type="EMS_MT000030.Organization" minOccurs="0"/>
225   </xs:sequence>
226   <xs:attribute name="type" type="Classes" default="RoleHeir"/>
227   <xs:attribute name="classCode" type="x_InformationRecipientRole" use="optional" default="ASSIGNED"/>
228   <xs:attribute name="templateId" use="optional">
229     <xs:simpleType>
230       <xs:list itemType="oid"/>
231     </xs:simpleType>
232   </xs:attribute>
233   <xs:attribute name="typeIdRoot" type="xs:string" use="optional"/>
234   <xs:attribute name="typeIdExtension" type="xs:string" use="optional"/>
235   <xs:attribute name="realmCode" use="optional">
236     <xs:simpleType>
237       <xs:list itemType="cs"/>
238     </xs:simpleType>
239   </xs:attribute>
240   <xs:attribute name="nullFlavor" type="cs" use="optional"/>
241 </xs:complexType>
242 <xs:complexType name="EMS_MT000030.Author">
243   <xs:sequence>
244     <xs:element name="time" type="TS"/>
245     <xs:element name="assignedAuthor" type="EMS_MT000030.AssignedAuthor"/>
246   </xs:sequence>
247   <xs:attribute name="type" type="Classes" default="Participation"/>
248   <xs:attribute name="typeCode" type="ParticipationType" use="optional" default="AUT"/>
249   <xs:attribute name="contextControlCode" type="ContextControl" use="optional" default="OP"/>
250   <xs:attribute name="templateId" use="optional">
251     <xs:simpleType>
252       <xs:list itemType="oid"/>
253     </xs:simpleType>
254   </xs:attribute>
255   <xs:attribute name="typeIdRoot" type="xs:string" use="optional"/>
256   <xs:attribute name="typeIdExtension" type="xs:string" use="optional"/>
257   <xs:attribute name="realmCode" use="optional">
258     <xs:simpleType>
259       <xs:list itemType="cs"/>
260     </xs:simpleType>
261   </xs:attribute>
262   <xs:attribute name="nullFlavor" type="cs" use="optional"/>
263 </xs:complexType>
264 <xs:complexType name="EMS_MT000030.AssignedAuthor">
265   <xs:sequence>
266     <xs:element name="id" type="EMS.II.RootExtension" maxOccurs="unbounded"/>
267     <xs:element name="addr" type="AD" minOccurs="0"/>
268     <xs:element name="telecom" type="TEL" minOccurs="0" maxOccurs="unbounded"/>
269     <xs:choice>
270       <xs:element name="assignedPerson" type="EMS_MT000030.Person" minOccurs="0"/>
271       <xs:element name="assignedAuthoringDevice" type="EMS_MT000030.AuthoringDevice"
272 minOccurs="0"/>
```

```
273     </xs:choice>
274   </xs:sequence>
275   <xs:attribute name="type" type="Classes" default="RoleHeir"/>
276   <xs:attribute name="classCode" type="RoleClass" use="optional" default="ASSIGNED"/>
277   <xs:attribute name="templateId" use="optional">
278     <xs:simpleType>
279       <xs:list itemType="oid"/>
280     </xs:simpleType>
281   </xs:attribute>
282   <xs:attribute name="typeIdRoot" type="xs:string" use="optional"/>
283   <xs:attribute name="typeIdExtension" type="xs:string" use="optional"/>
284   <xs:attribute name="realmCode" use="optional">
285     <xs:simpleType>
286       <xs:list itemType="cs"/>
287     </xs:simpleType>
288   </xs:attribute>
289   <xs:attribute name="nullFlavor" type="cs" use="optional"/>
290 </xs:complexType>
291 <xs:complexType name="EMS_MT000030.AuthoringDevice">
292   <xs:sequence>
293     <xs:element name="softwareName" type="SC" minOccurs="0"/>
294   </xs:sequence>
295   <xs:attribute name="type" type="Classes" default="Device"/>
296   <xs:attribute name="classCode" type="EntityClass" use="optional" default="DEV"/>
297   <xs:attribute name="determinerCode" type="EntityDeterminer" use="optional" default="INSTANCE"/>
298   <xs:attribute name="templateId" use="optional">
299     <xs:simpleType>
300       <xs:list itemType="oid"/>
301     </xs:simpleType>
302   </xs:attribute>
303   <xs:attribute name="typeIdRoot" type="xs:string" use="optional"/>
304   <xs:attribute name="typeIdExtension" type="xs:string" use="optional"/>
305   <xs:attribute name="realmCode" use="optional">
306     <xs:simpleType>
307       <xs:list itemType="cs"/>
308     </xs:simpleType>
309   </xs:attribute>
310   <xs:attribute name="nullFlavor" type="cs" use="optional"/>
311 </xs:complexType>
312 <xs:complexType name="EMS_MT000030.Custodian">
313   <xs:sequence>
314     <xs:element name="assignedCustodian" type="EMS_MT000030.AssignedCustodian"/>
315   </xs:sequence>
316   <xs:attribute name="type" type="Classes" default="Participation"/>
317   <xs:attribute name="typeCode" type="ParticipationType" use="optional" default="CST"/>
318   <xs:attribute name="templateId" use="optional">
319     <xs:simpleType>
320       <xs:list itemType="oid"/>
321     </xs:simpleType>
322   </xs:attribute>
323   <xs:attribute name="typeIdRoot" type="xs:string" use="optional"/>
324   <xs:attribute name="typeIdExtension" type="xs:string" use="optional"/>
325   <xs:attribute name="realmCode" use="optional">
326     <xs:simpleType>
327       <xs:list itemType="cs"/>
328     </xs:simpleType>
329   </xs:attribute>
330   <xs:attribute name="nullFlavor" type="cs" use="optional"/>
331 </xs:complexType>
332 <xs:complexType name="EMS_MT000030.AssignedCustodian">
333   <xs:sequence>
334     <xs:element name="representedCustodianOrganization" type="EMS_MT000030.CustodianOrganization"/>
335   </xs:sequence>
336   <xs:attribute name="type" type="Classes" default="RoleHeir"/>
337   <xs:attribute name="classCode" type="RoleClass" use="optional" default="ASSIGNED"/>
338   <xs:attribute name="templateId" use="optional">
339     <xs:simpleType>
340       <xs:list itemType="oid"/>
341     </xs:simpleType>
342   </xs:attribute>
```



```
343     <xs:attribute name="typeIdRoot" type="xs:string" use="optional"/>
344     <xs:attribute name="typeIdExtension" type="xs:string" use="optional"/>
345     <xs:attribute name="realmCode" use="optional">
346       <xs:simpleType>
347         <xs:list itemType="cs"/>
348       </xs:simpleType>
349     </xs:attribute>
350     <xs:attribute name="nullFlavor" type="cs" use="optional"/>
351 </xs:complexType>
352 <xs:complexType name="EMS_MT000030.CustodianOrganization">
353   <xs:sequence>
354     <xs:element name="id" type="EMS.II.RootExtension" maxOccurs="unbounded"/>
355     <xs:element name="name" type="ON" minOccurs="0"/>
356   </xs:sequence>
357   <xs:attribute name="type" type="Classes" default="Organization"/>
358   <xs:attribute name="classCode" type="EntityClass" use="optional" default="ORG"/>
359   <xs:attribute name="determinerCode" type="EntityDeterminer" use="optional" default="INSTANCE"/>
360   <xs:attribute name="templateId" use="optional">
361     <xs:simpleType>
362       <xs:list itemType="oid"/>
363     </xs:simpleType>
364   </xs:attribute>
365   <xs:attribute name="typeIdRoot" type="xs:string" use="optional"/>
366   <xs:attribute name="typeIdExtension" type="xs:string" use="optional"/>
367   <xs:attribute name="realmCode" use="optional">
368     <xs:simpleType>
369       <xs:list itemType="cs"/>
370     </xs:simpleType>
371   </xs:attribute>
372   <xs:attribute name="nullFlavor" type="cs" use="optional"/>
373 </xs:complexType>
374 <xs:complexType name="EMS_MT000030.RecordTarget">
375   <xs:sequence>
376     <xs:element name="patient" type="EMS_MT000030.PatientRole"/>
377   </xs:sequence>
378   <xs:attribute name="type" type="Classes" default="Participation"/>
379   <xs:attribute name="typeCode" type="ParticipationType" use="optional" default="RCT"/>
380   <xs:attribute name="contextControlCode" type="ContextControl" use="optional" default="OP"/>
381   <xs:attribute name="templateId" use="optional">
382     <xs:simpleType>
383       <xs:list itemType="oid"/>
384     </xs:simpleType>
385   </xs:attribute>
386   <xs:attribute name="typeIdRoot" type="xs:string" use="optional"/>
387   <xs:attribute name="typeIdExtension" type="xs:string" use="optional"/>
388   <xs:attribute name="realmCode" use="optional">
389     <xs:simpleType>
390       <xs:list itemType="cs"/>
391     </xs:simpleType>
392   </xs:attribute>
393   <xs:attribute name="nullFlavor" type="cs" use="optional"/>
394 </xs:complexType>
395 <xs:complexType name="EMS_MT000030.PatientRole">
396   <xs:sequence>
397     <xs:element name="id" type="hl7:EMS.II.RootExtensionAuthority" maxOccurs="unbounded"/>
398     <xs:element name="addr" type="AD" minOccurs="0"/>
399     <xs:element name="telecom" type="TEL" minOccurs="0" maxOccurs="unbounded"/>
400     <xs:element name="patientPatient" type="EMS_MT000030.Patient" minOccurs="0"/>
401   </xs:sequence>
402   <xs:attribute name="type" type="Classes" default="Patient"/>
403   <xs:attribute name="classCode" type="RoleClass" use="optional" default="PAT"/>
404   <xs:attribute name="templateId" use="optional">
405     <xs:simpleType>
406       <xs:list itemType="oid"/>
407     </xs:simpleType>
408   </xs:attribute>
409   <xs:attribute name="typeIdRoot" type="xs:string" use="optional"/>
410   <xs:attribute name="typeIdExtension" type="xs:string" use="optional"/>
411   <xs:attribute name="realmCode" use="optional">
412     <xs:simpleType>
```

```
413         <xs:list itemType="cs"/>
414     </xs:simpleType>
415 </xs:attribute>
416 <xs:attribute name="nullFlavor" type="cs" use="optional"/>
417 </xs:complexType>
418 <xs:complexType name="EMS_MT000030.Patient">
419     <xs:sequence>
420         <xs:element name="name" type="PN"/>
421         <xs:element name="administrativeGenderCode" type="CE"/>
422         <xs:element name="birthTime" type="TS"/>
423         <xs:element name="languageCommunication" type="EMS_MT000030.LanguageCommunication"
424 minOccurs="0"/>
425     </xs:sequence>
426     <xs:attribute name="type" type="Classes" default="Person"/>
427     <xs:attribute name="classCode" type="EntityClass" use="optional" default="PSN"/>
428     <xs:attribute name="determinerCode" type="EntityDeterminer" use="optional" default="INSTANCE"/>
429     <xs:attribute name="templateId" use="optional">
430         <xs:simpleType>
431             <xs:list itemType="oid"/>
432         </xs:simpleType>
433     </xs:attribute>
434     <xs:attribute name="typeIdRoot" type="xs:string" use="optional"/>
435     <xs:attribute name="typeIdExtension" type="xs:string" use="optional"/>
436     <xs:attribute name="realmCode" use="optional">
437         <xs:simpleType>
438             <xs:list itemType="cs"/>
439         </xs:simpleType>
440     </xs:attribute>
441     <xs:attribute name="nullFlavor" type="cs" use="optional"/>
442 </xs:complexType>
443 <xs:complexType name="EMS_MT000030.LanguageCommunication">
444     <xs:sequence>
445         <xs:element name="languageCode" type="CS" minOccurs="0"/>
446     </xs:sequence>
447     <xs:attribute name="type" type="Classes" default="LanguageCommunication"/>
448     <xs:attribute name="templateId" use="optional">
449         <xs:simpleType>
450             <xs:list itemType="oid"/>
451         </xs:simpleType>
452     </xs:attribute>
453     <xs:attribute name="typeIdRoot" type="xs:string" use="optional"/>
454     <xs:attribute name="typeIdExtension" type="xs:string" use="optional"/>
455     <xs:attribute name="realmCode" use="optional">
456         <xs:simpleType>
457             <xs:list itemType="cs"/>
458         </xs:simpleType>
459     </xs:attribute>
460     <xs:attribute name="nullFlavor" type="cs" use="optional"/>
461 </xs:complexType>
462 <xs:complexType name="EMS_MT000030.Participant1">
463     <xs:sequence>
464         <xs:element name="participatingEntity" type="EMS_MT000030.ParticipatingEntity"/>
465     </xs:sequence>
466     <xs:attribute name="type" type="Classes" default="Participation"/>
467     <xs:attribute name="typeCode" type="ParticipationType" use="required"/>
468     <xs:attribute name="contextControlCode" type="ContextControl" use="optional" default="OP"/>
469     <xs:attribute name="templateId" use="optional">
470         <xs:simpleType>
471             <xs:list itemType="oid"/>
472         </xs:simpleType>
473     </xs:attribute>
474     <xs:attribute name="typeIdRoot" type="xs:string" use="optional"/>
475     <xs:attribute name="typeIdExtension" type="xs:string" use="optional"/>
476     <xs:attribute name="realmCode" use="optional">
477         <xs:simpleType>
478             <xs:list itemType="cs"/>
479         </xs:simpleType>
480     </xs:attribute>
481     <xs:attribute name="nullFlavor" type="cs" use="optional"/>
482 </xs:complexType>
```

```
483 <xs:complexType name="EMS_MT000030.ParticipatingEntity">
484 <xs:sequence>
485 <xs:element name="id" type="II" minOccurs="0" maxOccurs="unbounded"/>
486 <xs:element name="code" type="hl7:EMS.CE.Full" minOccurs="0"/>
487 <xs:element name="addr" type="AD" minOccurs="0"/>
488 <xs:element name="telecom" type="hl7:EMS.TEL" minOccurs="0" maxOccurs="unbounded"/>
489 <xs:element name="associatedPerson" type="EMS_MT000030.Person" minOccurs="0"/>
490 </xs:sequence>
491 <xs:attribute name="type" type="Classes" default="RoleHeir"/>
492 <xs:attribute name="classCode" type="RoleClassAssociative" use="required"/>
493 <xs:attribute name="templateId" use="optional"/>
494 <xs:simpleType>
495 <xs:list itemType="oid"/>
496 </xs:simpleType>
497 </xs:attribute>
498 <xs:attribute name="typeIdRoot" type="xs:string" use="optional"/>
499 <xs:attribute name="typeIdExtension" type="xs:string" use="optional"/>
500 <xs:attribute name="realmCode" use="optional"/>
501 <xs:simpleType>
502 <xs:list itemType="cs"/>
503 </xs:simpleType>
504 </xs:attribute>
505 <xs:attribute name="nullFlavor" type="cs" use="optional"/>
506 </xs:complexType>
507 <xs:complexType name="EMS_MT000030.RelatedDocument">
508 <xs:sequence>
509 <xs:element name="parentDocument" type="EMS_MT000030.ParentDocument"/>
510 </xs:sequence>
511 <xs:attribute name="type" type="Classes" default="ActRelationship"/>
512 <xs:attribute name="typeCode" type="x_ActRelationshipDocument" use="required"/>
513 <xs:attribute name="templateId" use="optional"/>
514 <xs:simpleType>
515 <xs:list itemType="oid"/>
516 </xs:simpleType>
517 </xs:attribute>
518 <xs:attribute name="typeIdRoot" type="xs:string" use="optional"/>
519 <xs:attribute name="typeIdExtension" type="xs:string" use="optional"/>
520 <xs:attribute name="realmCode" use="optional"/>
521 <xs:simpleType>
522 <xs:list itemType="cs"/>
523 </xs:simpleType>
524 </xs:attribute>
525 <xs:attribute name="nullFlavor" type="cs" use="optional"/>
526 </xs:complexType>
527 <xs:complexType name="EMS_MT000030.ParentDocument">
528 <xs:sequence>
529 <xs:element name="id" type="EMS.II.RootExtension"/>
530 <xs:element name="code" type="CD"/>
531 <xs:element name="text" type="ED"/>
532 <xs:element name="setId" type="II" minOccurs="0"/>
533 <xs:element name="versionNumber" type="INT" minOccurs="0"/>
534 </xs:sequence>
535 <xs:attribute name="type" type="Classes" default="Document"/>
536 <xs:attribute name="classCode" type="ActClass" use="optional" default="DOCCLIN"/>
537 <xs:attribute name="moodCode" type="ActMood" use="optional" default="EVN"/>
538 <xs:attribute name="templateId" use="optional"/>
539 <xs:simpleType>
540 <xs:list itemType="oid"/>
541 </xs:simpleType>
542 </xs:attribute>
543 <xs:attribute name="typeIdRoot" type="xs:string" use="optional"/>
544 <xs:attribute name="typeIdExtension" type="xs:string" use="optional"/>
545 <xs:attribute name="realmCode" use="optional"/>
546 <xs:simpleType>
547 <xs:list itemType="cs"/>
548 </xs:simpleType>
549 </xs:attribute>
550 <xs:attribute name="nullFlavor" type="cs" use="optional"/>
551 </xs:complexType>
552 <xs:complexType name="EMS_MT000030.Component2">
```



```
553 <xs:sequence>
554 <xs:choice>
555 <xs:element name="structuredBody" type="EMS_MT000030.StructuredBody"/>
556 </xs:choice>
557 </xs:sequence>
558 <xs:attribute name="type" type="Classes" default="ActRelationship"/>
559 <xs:attribute name="typeCode" type="ActRelationshipType" use="optional" default="COMP"/>
560 <xs:attribute name="contextConductionInd" type="bl" use="optional" default="true"/>
561 <xs:attribute name="templateId" use="optional">
562 <xs:simpleType>
563 <xs:list itemType="oid"/>
564 </xs:simpleType>
565 </xs:attribute>
566 <xs:attribute name="typeIdRoot" type="xs:string" use="optional"/>
567 <xs:attribute name="typeIdExtension" type="xs:string" use="optional"/>
568 <xs:attribute name="realmCode" use="optional">
569 <xs:simpleType>
570 <xs:list itemType="cs"/>
571 </xs:simpleType>
572 </xs:attribute>
573 <xs:attribute name="nullFlavor" type="cs" use="optional"/>
574 </xs:complexType>
575 <xs:complexType name="EMS_MT000030.StructuredBody">
576 <xs:sequence>
577 <xs:element name="component" type="EMS_MT000030.Component3" maxOccurs="unbounded"/>
578 </xs:sequence>
579 <xs:attribute name="type" type="Classes" default="ActHeir"/>
580 <xs:attribute name="classCode" type="ActClass" use="optional" default="DOCBODY"/>
581 <xs:attribute name="moodCode" type="ActMood" use="optional" default="EVN"/>
582 <xs:attribute name="templateId" use="optional">
583 <xs:simpleType>
584 <xs:list itemType="oid"/>
585 </xs:simpleType>
586 </xs:attribute>
587 <xs:attribute name="typeIdRoot" type="xs:string" use="optional"/>
588 <xs:attribute name="typeIdExtension" type="xs:string" use="optional"/>
589 <xs:attribute name="realmCode" use="optional">
590 <xs:simpleType>
591 <xs:list itemType="cs"/>
592 </xs:simpleType>
593 </xs:attribute>
594 <xs:attribute name="nullFlavor" type="cs" use="optional"/>
595 </xs:complexType>
596 <xs:complexType name="EMS_MT000030.Component3">
597 <xs:sequence>
598 <xs:element name="section" type="EMS_MT000030.Section"/>
599 </xs:sequence>
600 <xs:attribute name="type" type="Classes" default="ActRelationship"/>
601 <xs:attribute name="typeCode" type="ActRelationshipType" use="optional" default="COMP"/>
602 <xs:attribute name="contextConductionInd" type="bl" use="optional" default="true"/>
603 <xs:attribute name="templateId" use="optional">
604 <xs:simpleType>
605 <xs:list itemType="oid"/>
606 </xs:simpleType>
607 </xs:attribute>
608 <xs:attribute name="typeIdRoot" type="xs:string" use="optional"/>
609 <xs:attribute name="typeIdExtension" type="xs:string" use="optional"/>
610 <xs:attribute name="realmCode" use="optional">
611 <xs:simpleType>
612 <xs:list itemType="cs"/>
613 </xs:simpleType>
614 </xs:attribute>
615 <xs:attribute name="nullFlavor" type="cs" use="optional"/>
616 </xs:complexType>
617 <xs:complexType name="EMS_MT000030.Section">
618 <xs:sequence>
619 <xs:element name="id" type="II" minOccurs="0"/>
620 <xs:element name="code" type="hl7:EMS.CE.Full"/>
621 <xs:element name="title" type="ST"/>
622 <xs:element name="text" type="text"/>
```

```
623     <xs:element name="entry" type="EMS_MT000030.Entry" minOccurs="0" maxOccurs="unbounded"/>
624   </xs:sequence>
625   <xs:attribute name="ID" type="xs:ID"/>
626   <xs:attribute name="type" type="Classes" default="ActHeir"/>
627   <xs:attribute name="classCode" type="ActClass" use="optional" default="DOCSECT"/>
628   <xs:attribute name="moodCode" type="ActMood" use="optional" default="EVN"/>
629   <xs:attribute name="templateId" use="optional">
630     <xs:simpleType>
631       <xs:list itemType="oid"/>
632     </xs:simpleType>
633   </xs:attribute>
634   <xs:attribute name="typeIdRoot" type="xs:string" use="optional"/>
635   <xs:attribute name="typeIdExtension" type="xs:string" use="optional"/>
636   <xs:attribute name="realmCode" use="optional">
637     <xs:simpleType>
638       <xs:list itemType="cs"/>
639     </xs:simpleType>
640   </xs:attribute>
641   <xs:attribute name="nullFlavor" type="cs" use="optional"/>
642 </xs:complexType>
643 <xs:complexType name="EMS_MT000030.Entry">
644   <xs:sequence>
645     <xs:choice>
646       <xs:element name="encounter" type="EMS_MT000030.Encounter"/>
647       <xs:element name="observation" type="EMS_MT000030.Observation"/>
648       <xs:element name="observationMedia" type="EMS_MT000030.ObservationMedia"/>
649       <xs:element name="procedure" type="EMS_MT000030.Procedure"/>
650       <xs:element name="substanceAdministration" type="EMS_MT000030.SubstanceAdministration"/>
651     </xs:choice>
652   </xs:sequence>
653   <xs:attribute name="type" type="Classes" default="ActRelationship"/>
654   <xs:attribute name="typeCode" type="cs" use="optional" default="COMP"/>
655   <xs:attribute name="contextConductionInd" type="bl" use="optional" default="true"/>
656   <xs:attribute name="templateId" use="optional">
657     <xs:simpleType>
658       <xs:list itemType="oid"/>
659     </xs:simpleType>
660   </xs:attribute>
661   <xs:attribute name="typeIdRoot" type="xs:string" use="optional"/>
662   <xs:attribute name="typeIdExtension" type="xs:string" use="optional"/>
663   <xs:attribute name="realmCode" use="optional">
664     <xs:simpleType>
665       <xs:list itemType="cs"/>
666     </xs:simpleType>
667   </xs:attribute>
668   <xs:attribute name="nullFlavor" type="cs" use="optional"/>
669 </xs:complexType>
670 <xs:complexType name="EMS_MT000030.Performer2">
671   <xs:sequence>
672     <xs:element name="time" type="IVL_TS" minOccurs="0"/>
673     <xs:element name="modeCode" type="CE" minOccurs="0"/>
674     <xs:element name="assignedEntity" type="EMS_MT000030.AssignedEntity"/>
675   </xs:sequence>
676   <xs:attribute name="type" type="Classes" default="Participation"/>
677   <xs:attribute name="typeCode" type="ParticipationType" use="optional" default="PRF"/>
678   <xs:attribute name="templateId" use="optional">
679     <xs:simpleType>
680       <xs:list itemType="oid"/>
681     </xs:simpleType>
682   </xs:attribute>
683   <xs:attribute name="typeIdRoot" type="xs:string" use="optional"/>
684   <xs:attribute name="typeIdExtension" type="xs:string" use="optional"/>
685   <xs:attribute name="realmCode" use="optional">
686     <xs:simpleType>
687       <xs:list itemType="cs"/>
688     </xs:simpleType>
689   </xs:attribute>
690   <xs:attribute name="nullFlavor" type="cs" use="optional"/>
691 </xs:complexType>
692 <xs:complexType name="EMS_MT000030.PlayingEntity">
```

```
693 <xs:sequence>
694   <xs:element name="name" type="PN" minOccurs="0" maxOccurs="unbounded"/>
695   <xs:element name="desc" type="ED" minOccurs="0"/>
696 </xs:sequence>
697 <xs:attribute name="type" type="Classes" default="EntityHeir"/>
698 <xs:attribute name="classCode" type="EntityClass" use="optional" default="ENT"/>
699 <xs:attribute name="determinerCode" type="EntityDeterminer" use="optional" default="INSTANCE"/>
700 <xs:attribute name="templateId" use="optional">
701   <xs:simpleType>
702     <xs:list itemType="oid"/>
703   </xs:simpleType>
704 </xs:attribute>
705 <xs:attribute name="typeIdRoot" type="xs:string" use="optional"/>
706 <xs:attribute name="typeIdExtension" type="xs:string" use="optional"/>
707 <xs:attribute name="realmCode" use="optional">
708   <xs:simpleType>
709     <xs:list itemType="cs"/>
710   </xs:simpleType>
711 </xs:attribute>
712 <xs:attribute name="nullFlavor" type="cs" use="optional"/>
713 </xs:complexType>
714 <xs:complexType name="EMS_MT000030.Participant2">
715   <xs:sequence>
716     <xs:element name="time" type="IVL_TS" minOccurs="0"/>
717     <xs:element name="participantRole" type="EMS_MT000030.ParticipantRole"/>
718   </xs:sequence>
719   <xs:attribute name="type" type="Classes" default="Participation"/>
720   <xs:attribute name="typeCode" type="ParticipationType" use="required"/>
721   <xs:attribute name="contextControlCode" type="ContextControl" use="optional" default="OP"/>
722   <xs:attribute name="templateId" use="optional">
723     <xs:simpleType>
724       <xs:list itemType="oid"/>
725     </xs:simpleType>
726   </xs:attribute>
727   <xs:attribute name="typeIdRoot" type="xs:string" use="optional"/>
728   <xs:attribute name="typeIdExtension" type="xs:string" use="optional"/>
729   <xs:attribute name="realmCode" use="optional">
730     <xs:simpleType>
731       <xs:list itemType="cs"/>
732     </xs:simpleType>
733   </xs:attribute>
734   <xs:attribute name="nullFlavor" type="cs" use="optional"/>
735 </xs:complexType>
736 <xs:complexType name="EMS_MT000030.ParticipantRole">
737   <xs:sequence>
738     <xs:choice>
739       <xs:element name="playingPlayingEntity" type="EMS_MT000030.PlayingEntity" minOccurs="0"/>
740     </xs:choice>
741   </xs:sequence>
742   <xs:attribute name="type" type="Classes" default="RoleHeir"/>
743   <xs:attribute name="classCode" type="RoleClass" use="optional" default="ROL"/>
744   <xs:attribute name="templateId" use="optional">
745     <xs:simpleType>
746       <xs:list itemType="oid"/>
747     </xs:simpleType>
748   </xs:attribute>
749   <xs:attribute name="typeIdRoot" type="xs:string" use="optional"/>
750   <xs:attribute name="typeIdExtension" type="xs:string" use="optional"/>
751   <xs:attribute name="realmCode" use="optional">
752     <xs:simpleType>
753       <xs:list itemType="cs"/>
754     </xs:simpleType>
755   </xs:attribute>
756   <xs:attribute name="nullFlavor" type="cs" use="optional"/>
757 </xs:complexType>
758 <xs:complexType name="EMS_MT000030.EntryRelationship">
759   <xs:sequence>
760     <xs:element name="sequenceNumber" type="INT" minOccurs="0"/>
761     <xs:choice>
762       <xs:element name="encounter" type="EMS_MT000030.Encounter"/>
```

```
763         <xs:element name="observation" type="EMS_MT000030.Observation"/>
764         <xs:element name="observationMedia" type="EMS_MT000030.ObservationMedia"/>
765         <xs:element name="procedure" type="EMS_MT000030.Procedure"/>
766         <xs:element name="substanceAdministration" type="EMS_MT000030.SubstanceAdministration"/>
767     </xs:choice>
768 </xs:sequence>
769 <xs:attribute name="type" type="Classes" default="ActRelationship"/>
770 <xs:attribute name="typeCode" type="cs" use="required"/>
771 <xs:attribute name="inversionInd" type="bl" use="optional"/>
772 <xs:attribute name="contextConductionInd" type="bl" use="optional" default="true"/>
773 <xs:attribute name="negationInd" type="bl" use="optional"/>
774 <xs:attribute name="templateId" use="optional">
775     <xs:simpleType>
776         <xs:list itemType="oid"/>
777     </xs:simpleType>
778 </xs:attribute>
779 <xs:attribute name="typeIdRoot" type="xs:string" use="optional"/>
780 <xs:attribute name="typeIdExtension" type="xs:string" use="optional"/>
781 <xs:attribute name="realmCode" use="optional">
782     <xs:simpleType>
783         <xs:list itemType="cs"/>
784     </xs:simpleType>
785 </xs:attribute>
786 <xs:attribute name="nullFlavor" type="cs" use="optional"/>
787 </xs:complexType>
788 <xs:complexType name="EMS_MT000030.Encounter">
789     <xs:sequence>
790         <xs:element name="id" type="II" minOccurs="0" maxOccurs="unbounded"/>
791         <xs:element name="code" type="CD" minOccurs="0"/>
792         <xs:element name="text" type="ED" minOccurs="0"/>
793         <xs:element name="effectiveTime" type="IVL_TS" minOccurs="0"/>
794         <xs:element name="performer" type="EMS_MT000030.Performer2" minOccurs="0"
795 maxOccurs="unbounded"/>
796         <xs:element name="participant" type="EMS_MT000030.Participant2" minOccurs="0"
797 maxOccurs="unbounded"/>
798         <xs:element name="entryRelationship" type="EMS_MT000030.EntryRelationship" minOccurs="0"
799 maxOccurs="unbounded"/>
800     </xs:sequence>
801     <xs:attribute name="type" type="Classes" default="PatientEncounter"/>
802     <xs:attribute name="classCode" type="ActClass" use="required"/>
803     <xs:attribute name="moodCode" type="cs" use="required"/>
804     <xs:attribute name="templateId" use="optional">
805         <xs:simpleType>
806             <xs:list itemType="oid"/>
807         </xs:simpleType>
808     </xs:attribute>
809     <xs:attribute name="typeIdRoot" type="xs:string" use="optional"/>
810     <xs:attribute name="typeIdExtension" type="xs:string" use="optional"/>
811     <xs:attribute name="realmCode" use="optional">
812         <xs:simpleType>
813             <xs:list itemType="cs"/>
814         </xs:simpleType>
815     </xs:attribute>
816     <xs:attribute name="nullFlavor" type="cs" use="optional"/>
817 </xs:complexType>
818 <xs:complexType name="EMS_MT000030.Observation">
819     <xs:sequence>
820         <xs:element name="id" type="II" minOccurs="0" maxOccurs="unbounded"/>
821         <xs:element name="code" type="CD"/>
822         <xs:element name="text" type="ED" minOccurs="0"/>
823         <xs:element name="effectiveTime" type="IVL_TS" minOccurs="0"/>
824         <xs:element name="priorityCode" type="CE" minOccurs="0"/>
825         <xs:element name="value" type="ANY" minOccurs="0" maxOccurs="unbounded"/>
826         <xs:element name="interpretationCode" type="CE" minOccurs="0"/>
827         <xs:element name="referenceRange" type="EMS_MT000030.ReferenceRange" minOccurs="0"
828 maxOccurs="unbounded"/>
829         <xs:element name="performer" type="EMS_MT000030.Performer2" minOccurs="0"
830 maxOccurs="unbounded"/>
831         <xs:element name="participant" type="EMS_MT000030.Participant2" minOccurs="0"
832 maxOccurs="unbounded"/>
```

```
833         <xs:element name="entryRelationship" type="EMS_MT000030.EntryRelationship" minOccurs="0"
834 maxOccurs="unbounded"/>
835     </xs:sequence>
836     <xs:attribute name="type" type="Classes" default="Observation"/>
837     <xs:attribute name="classCode" type="ActClass" use="required"/>
838     <xs:attribute name="moodCode" type="x_ActMoodDocumentObservation" use="required"/>
839     <xs:attribute name="negationInd" type="bl" use="optional"/>
840     <xs:attribute name="templateId" use="optional">
841         <xs:simpleType>
842             <xs:list itemType="oid"/>
843         </xs:simpleType>
844     </xs:attribute>
845     <xs:attribute name="typeIdRoot" type="xs:string" use="optional"/>
846     <xs:attribute name="typeIdExtension" type="xs:string" use="optional"/>
847     <xs:attribute name="realmCode" use="optional">
848         <xs:simpleType>
849             <xs:list itemType="cs"/>
850         </xs:simpleType>
851     </xs:attribute>
852     <xs:attribute name="nullFlavor" type="cs" use="optional"/>
853 </xs:complexType>
854 <xs:complexType name="EMS_MT000030.ReferenceRange">
855     <xs:sequence>
856         <xs:element name="referenceObservationRange" type="EMS_MT000030.ObservationRange"/>
857     </xs:sequence>
858     <xs:attribute name="type" type="Classes" default="ActRelationship"/>
859     <xs:attribute name="typeCode" type="ActRelationshipType" use="optional" default="REFV"/>
860     <xs:attribute name="templateId" use="optional">
861         <xs:simpleType>
862             <xs:list itemType="oid"/>
863         </xs:simpleType>
864     </xs:attribute>
865     <xs:attribute name="typeIdRoot" type="xs:string" use="optional"/>
866     <xs:attribute name="typeIdExtension" type="xs:string" use="optional"/>
867     <xs:attribute name="realmCode" use="optional">
868         <xs:simpleType>
869             <xs:list itemType="cs"/>
870         </xs:simpleType>
871     </xs:attribute>
872     <xs:attribute name="nullFlavor" type="cs" use="optional"/>
873 </xs:complexType>
874 <xs:complexType name="EMS_MT000030.ObservationRange">
875     <xs:sequence>
876         <xs:element name="value" type="ANY" minOccurs="0"/>
877     </xs:sequence>
878     <xs:attribute name="type" type="Classes" default="Observation"/>
879     <xs:attribute name="classCode" type="ActClass" use="optional" default="OBS"/>
880     <xs:attribute name="moodCode" type="ActMood" use="optional" default="EVN.CRT"/>
881     <xs:attribute name="templateId" use="optional">
882         <xs:simpleType>
883             <xs:list itemType="oid"/>
884         </xs:simpleType>
885     </xs:attribute>
886     <xs:attribute name="typeIdRoot" type="xs:string" use="optional"/>
887     <xs:attribute name="typeIdExtension" type="xs:string" use="optional"/>
888     <xs:attribute name="realmCode" use="optional">
889         <xs:simpleType>
890             <xs:list itemType="cs"/>
891         </xs:simpleType>
892     </xs:attribute>
893     <xs:attribute name="nullFlavor" type="cs" use="optional"/>
894 </xs:complexType>
895 <xs:complexType name="EMS_MT000030.ObservationMedia">
896     <xs:sequence>
897         <xs:element name="id" type="II" minOccurs="0" maxOccurs="unbounded"/>
898         <xs:element name="value" type="ED"/>
899         <xs:element name="performer" type="EMS_MT000030.Performer2" minOccurs="0"
900 maxOccurs="unbounded"/>
901         <xs:element name="participant" type="EMS_MT000030.Participant2" minOccurs="0"
902 maxOccurs="unbounded"/>
```



```
903         <xs:element name="entryRelationship" type="EMS_MT000030.EntryRelationship" minOccurs="0"
904 maxOccurs="unbounded"/>
905     </xs:sequence>
906     <xs:attribute name="ID" type="xs:ID"/>
907     <xs:attribute name="type" type="Classes" default="Observation"/>
908     <xs:attribute name="classCode" type="ActClass" use="required"/>
909     <xs:attribute name="moodCode" type="ActMood" use="required"/>
910     <xs:attribute name="templateId" use="optional">
911         <xs:simpleType>
912             <xs:list itemType="oid"/>
913         </xs:simpleType>
914     </xs:attribute>
915     <xs:attribute name="typeIdRoot" type="xs:string" use="optional"/>
916     <xs:attribute name="typeIdExtension" type="xs:string" use="optional"/>
917     <xs:attribute name="realmCode" use="optional">
918         <xs:simpleType>
919             <xs:list itemType="cs"/>
920         </xs:simpleType>
921     </xs:attribute>
922     <xs:attribute name="nullFlavor" type="cs" use="optional"/>
923 </xs:complexType>
924 <xs:complexType name="EMS_MT000030.Procedure">
925     <xs:sequence>
926         <xs:element name="id" type="II" minOccurs="0" maxOccurs="unbounded"/>
927         <xs:element name="text" type="ED" minOccurs="0"/>
928         <xs:element name="effectiveTime" type="IVL_TS" minOccurs="0"/>
929         <xs:element name="performer" type="EMS_MT000030.Performer2" minOccurs="0"
930 maxOccurs="unbounded"/>
931         <xs:element name="participant" type="EMS_MT000030.Participant2" minOccurs="0"
932 maxOccurs="unbounded"/>
933         <xs:element name="entryRelationship" type="EMS_MT000030.EntryRelationship" minOccurs="0"
934 maxOccurs="unbounded"/>
935     </xs:sequence>
936     <xs:attribute name="type" type="Classes" default="Procedure"/>
937     <xs:attribute name="classCode" type="ActClass" use="required"/>
938     <xs:attribute name="moodCode" type="cs" use="required"/>
939     <xs:attribute name="negationInd" type="bl" use="optional"/>
940     <xs:attribute name="templateId" use="optional">
941         <xs:simpleType>
942             <xs:list itemType="oid"/>
943         </xs:simpleType>
944     </xs:attribute>
945     <xs:attribute name="typeIdRoot" type="xs:string" use="optional"/>
946     <xs:attribute name="typeIdExtension" type="xs:string" use="optional"/>
947     <xs:attribute name="realmCode" use="optional">
948         <xs:simpleType>
949             <xs:list itemType="cs"/>
950         </xs:simpleType>
951     </xs:attribute>
952     <xs:attribute name="nullFlavor" type="cs" use="optional"/>
953 </xs:complexType>
954 <xs:complexType name="EMS_MT000030.SubstanceAdministration">
955     <xs:sequence>
956         <xs:element name="id" type="II" minOccurs="0" maxOccurs="unbounded"/>
957         <xs:element name="text" type="ED" minOccurs="0"/>
958         <xs:element name="effectiveTime" type="SXCM_TS" minOccurs="0" maxOccurs="unbounded"/>
959         <xs:element name="repeatNumber" type="IVL_INT" minOccurs="0"/>
960         <xs:element name="routeCode" type="CE" minOccurs="0"/>
961         <xs:element name="doseQuantity" type="IVL_PQ" minOccurs="0"/>
962         <xs:element name="rateQuantity" type="IVL_PQ" minOccurs="0"/>
963         <xs:element name="consumable" type="EMS_MT000030.Consumable"/>
964         <xs:element name="performer" type="EMS_MT000030.Performer2" minOccurs="0"
965 maxOccurs="unbounded"/>
966         <xs:element name="participant" type="EMS_MT000030.Participant2" minOccurs="0"
967 maxOccurs="unbounded"/>
968         <xs:element name="entryRelationship" type="EMS_MT000030.EntryRelationship" minOccurs="0"
969 maxOccurs="unbounded"/>
970     </xs:sequence>
971     <xs:attribute name="type" type="Classes" default="SubstanceAdministration"/>
972     <xs:attribute name="classCode" type="ActClass" use="required"/>
```

```
973 <xs:attribute name="moodCode" type="cs" use="required"/>
974 <xs:attribute name="negationInd" type="bl" use="optional"/>
975 <xs:attribute name="templateId" use="optional">
976   <xs:simpleType>
977     <xs:list itemType="oid"/>
978   </xs:simpleType>
979 </xs:attribute>
980 <xs:attribute name="typeIdRoot" type="xs:string" use="optional"/>
981 <xs:attribute name="typeIdExtension" type="xs:string" use="optional"/>
982 <xs:attribute name="realmCode" use="optional">
983   <xs:simpleType>
984     <xs:list itemType="cs"/>
985   </xs:simpleType>
986 </xs:attribute>
987 <xs:attribute name="nullFlavor" type="cs" use="optional"/>
988 </xs:complexType>
989 <xs:complexType name="EMS_MT000030.Consumable">
990   <xs:sequence>
991     <xs:element name="manufacturedProduct" type="EMS_MT000030.ManufacturedProduct"/>
992   </xs:sequence>
993   <xs:attribute name="type" type="Classes" default="Participation"/>
994   <xs:attribute name="typeCode" type="ParticipationType" use="optional" default="CSM"/>
995   <xs:attribute name="templateId" use="optional">
996     <xs:simpleType>
997       <xs:list itemType="oid"/>
998     </xs:simpleType>
999   </xs:attribute>
1000   <xs:attribute name="typeIdRoot" type="xs:string" use="optional"/>
1001   <xs:attribute name="typeIdExtension" type="xs:string" use="optional"/>
1002   <xs:attribute name="realmCode" use="optional">
1003     <xs:simpleType>
1004       <xs:list itemType="cs"/>
1005     </xs:simpleType>
1006   </xs:attribute>
1007   <xs:attribute name="nullFlavor" type="cs" use="optional"/>
1008 </xs:complexType>
1009 <xs:complexType name="EMS_MT000030.ManufacturedProduct">
1010   <xs:sequence>
1011     <xs:choice>
1012       <xs:element name="manufacturedLabeledDrug" type="EMS_MT000030.LabeledDrug"/>
1013     </xs:choice>
1014   </xs:sequence>
1015   <xs:attribute name="type" type="Classes" default="RoleHeir"/>
1016   <xs:attribute name="classCode" type="RoleClass" use="optional" default="MANU"/>
1017   <xs:attribute name="templateId" use="optional">
1018     <xs:simpleType>
1019       <xs:list itemType="oid"/>
1020     </xs:simpleType>
1021   </xs:attribute>
1022   <xs:attribute name="typeIdRoot" type="xs:string" use="optional"/>
1023   <xs:attribute name="typeIdExtension" type="xs:string" use="optional"/>
1024   <xs:attribute name="realmCode" use="optional">
1025     <xs:simpleType>
1026       <xs:list itemType="cs"/>
1027     </xs:simpleType>
1028   </xs:attribute>
1029   <xs:attribute name="nullFlavor" type="cs" use="optional"/>
1030 </xs:complexType>
1031 <xs:complexType name="EMS_MT000030.LabeledDrug">
1032   <xs:sequence>
1033     <xs:element name="code" type="CE" minOccurs="0"/>
1034     <xs:element name="name" type="EN" minOccurs="0"/>
1035   </xs:sequence>
1036   <xs:attribute name="type" type="Classes" default="ManufacturedMaterial"/>
1037   <xs:attribute name="classCode" type="EntityClass" use="optional" default="MMAT"/>
1038   <xs:attribute name="determinerCode" type="EntityDeterminer" use="optional" default="KIND"/>
1039   <xs:attribute name="templateId" use="optional">
1040     <xs:simpleType>
1041       <xs:list itemType="oid"/>
1042     </xs:simpleType>
```

```
1043     </xs:attribute>
1044     <xs:attribute name="typeIdRoot" type="xs:string" use="optional"/>
1045     <xs:attribute name="typeIdExtension" type="xs:string" use="optional"/>
1046     <xs:attribute name="realmCode" use="optional">
1047         <xs:simpleType>
1048             <xs:list itemType="cs"/>
1049         </xs:simpleType>
1050     </xs:attribute>
1051     <xs:attribute name="nullFlavor" type="cs" use="optional"/>
1052 </xs:complexType>
1053 </xs:schema>
1054
1055
1056
1057
```



## e-MS Datatypes (EMS\_datatypes.xsd)

```
<?xml version="1.0" encoding="UTF-8"?>
<!--
  This schema supplements the HL7 v3 datatypes schema. It restricts the datatypes further for the purposes
  of the e-MS project.
-->
<xs:schema targetNamespace="urn:hl7-org:v3" xmlns:xs="http://www.w3.org/2001/XMLSchema" xmlns:hl7="urn:hl7-
org:v3" xmlns="urn:hl7-org:v3" elementFormDefault="qualified">
  <xs:include schemaLocation="..cda/dt/datatypes.xsd"/>
  <xs:include schemaLocation="..cda/dt/datatypes_cda.xsd"/>
  <xs:include schemaLocation="..cda/dt/more_datatypes_cda.xsd"/>
  <!-- EMS.II.RootExtension -->
  <xs:complexType name="EMS.II.RootExtension">
    <xs:complexContent>
      <xs:restriction base="II">
        <xs:attribute name="root" type="uid" use="required"/>
        <xs:attribute name="extension" type="st" use="required"/>
      </xs:restriction>
    </xs:complexContent>
  </xs:complexType>
  <!-- EMS.II.RootExtensionAuthority -->
  <xs:complexType name="EMS.II.RootExtensionAuthority">
    <xs:complexContent>
      <xs:restriction base="II">
        <xs:attribute name="extension" type="st" use="required"/>
        <xs:attribute name="assigningAuthorityName" type="st" use="required"/>
      </xs:restriction>
    </xs:complexContent>
  </xs:complexType>
  <!-- EMS.CE.Full -->
  <xs:complexType name="EMS.CE.Full">
    <xs:complexContent>
      <xs:restriction base="CE">
        <xs:attribute name="code" type="cs" use="required"/>
        <xs:attribute name="codeSystem" type="uid" use="required"/>
        <xs:attribute name="codeSystemName" type="st" use="required"/>
        <xs:attribute name="displayName" type="st" use="required"/>
      </xs:restriction>
    </xs:complexContent>
  </xs:complexType>
  <!-- E-MS Restricted set of Valid Document Codes. e-MS document coding MUST use LOINC -->
  <xs:simpleType name="EMS.ValidDocCode.cs">
    <xs:annotation>
      <xs:documentation>
        The valid ClinicalDocument codes. These MUST be based on the LOINC codeSystem, and are constrained to be these
        types only
      </xs:documentation>
    </xs:annotation>
    <xs:restriction base="cs">
      <xs:enumeration value="34140-4"/>
      <xs:enumeration value="11488-4"/>
      <xs:enumeration value="28616-1"/>
    </xs:restriction>
  </xs:simpleType>
  <xs:simpleType name="EMS.ValidDocName.st">
    <xs:annotation>
      <xs:documentation>
        The valid ClinicalDocument codes. These MUST be based on the LOINC codeSystem, and are constrained to be these
        types only
      </xs:documentation>
    </xs:annotation>
    <xs:restriction base="st">
      <xs:enumeration value="Referral"/>
      <xs:enumeration value="Consultation"/>
      <xs:enumeration value="Summary"/>
    </xs:restriction>
  </xs:simpleType>
</xs:schema>
```

```
1124     </xs:restriction>
1125   </xs:simpleType>
1126   <xs:complexType name="EMS.CE.ClinicalDocument">
1127     <xs:annotation>
1128       <xs:documentation>
1129         This CE complexType is used to constrain the document coding. e-MS limited to the use of LOINC codes for document
1130         and limited to these LOINC types.
1131       </xs:documentation>
1132     <xs:appinfo/>
1133   </xs:annotation>
1134   <xs:complexContent>
1135     <xs:restriction base="CE">
1136       <xs:attribute name="code" type="EMS.ValidDocCode.cs" use="required"/>
1137       <xs:attribute name="codeSystem" type="uid" use="required" fixed="2.16.840.1.113883.6.1"/>
1138       <xs:attribute name="codeSystemName" type="st" use="required" fixed="LOINC"/>
1139       <xs:attribute name="displayName" type="EMS.ValidDocName.st" use="required"/>
1140     </xs:restriction>
1141   </xs:complexContent>
1142 </xs:complexType>
1143 <!-- EMS.TS -->
1144 <xs:complexType name="EMS.TS">
1145   <xs:complexContent>
1146     <xs:restriction base="TS">
1147       <xs:attribute name="value" type="ts" use="required"/>
1148     </xs:restriction>
1149   </xs:complexContent>
1150 </xs:complexType>
1151 <xs:simpleType name="EMS.tel.url">
1152   <xs:annotation>
1153     <xs:documentation>Regular Express rule restricting telecom url value to contain valid prefix only. See 2.18.1
1154     in HL7 V3 Datatypes - Abstract Spec.</xs:documentation>
1155   </xs:annotation>
1156   <xs:restriction base="url">
1157     <xs:pattern value="(tel|fax|mailto|http|ftp|mlp|file|nfs|telnet|modem):.+"/>
1158   </xs:restriction>
1159 </xs:simpleType>
1160 <!-- EMS.TEL -->
1161 <xs:complexType name="EMS.TEL">
1162   <xs:complexContent>
1163     <xs:restriction base="EMS.URL">
1164       <xs:attribute name="use" type="set_cs_TelecommunicationAddressUse" use="required"/>
1165       <xs:attribute name="value" type="EMS.tel.url" use="required"/>
1166     </xs:restriction>
1167   </xs:complexContent>
1168 </xs:complexType>
1169 <!-- EMS.URL -->
1170 <xs:complexType name="EMS.URL">
1171   <xs:complexContent>
1172     <xs:restriction base="URL">
1173       <xs:attribute name="value" type="url" use="required"/>
1174     </xs:restriction>
1175   </xs:complexContent>
1176 </xs:complexType>
1177 </xs:schema>
```

## Datatypes (datatypes.xsd)

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<!-- edited with XMLSpy v2005 sp2 U (http://www.altova.com) by Brad Head (Sierra Systems) -->
<xs:schema targetNamespace="urn:hl7-org:v3" xmlns="urn:hl7-org:v3" xmlns:hl7="urn:hl7-org:v3"
xmlns:xs="http://www.w3.org/2001/XMLSchema" elementFormDefault="qualified" attributeFormDefault="unqualified">
  <xs:include schemaLocation="cda/dt/datatypes.xsd"/>
  <xs:include schemaLocation="cda/dt/more_datatypes_cda.xsd"/>
  <xs:include schemaLocation="cda/dt/datatypes_cda.xsd"/>
  <xs:include schemaLocation="cda/voc/voc.xsd"/>
  <xs:include schemaLocation="cda/StrucDoc.ActText.MembershipBallot01.Dec.2004.xsd"/>
  <xs:include schemaLocation="dt/EMS_datatypes.xsd"/>
  <xs:annotation>
```

```
    <xs:documentation>Generated by cloning the cda schema.
    This was NOT generated using the tooling, but was generated by hand-tuning
    a cloned set of datatypes from the reference XSD distributed as:
    MembershipBallot01.Dec.2004.
  </xs:annotation>
```

The schema here does not wholly represent our constrained model. The additional model constraints are enforced using an set of SchemaTron assertions located in EMS\_CDA.sch, which contains a schematron schema. The two files make up the template model for the e-MS CDA standard.

```
</xs:documentation>
</xs:annotation>
<!--
```

```
*****
* XML schema for message type EMS_MT000030 cloned and restricted version of POCD_MT000030.
*
```

```
*
* Original POCD_MT000030 was Generated by XMLITS version 1.21q2, Copyright (C) 2002, 2003 by Health Level 7, Inc.
*
```

```
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```

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```

```
*****
This is a CDA TEMPLATE based upon the CDA Release 2, Member Ballot 01, January 2005 edition
of the CDA draft standard. It is hoped that this Member Ballot is very close to what will be put forth
by the HL7 Structured Documents Committee for recommendation as a ASTM standard.
```

Once the CDA Release 2 standard is published, this template will be updated to comply with the standard.

\*\* The CDA Template Rules require that all instances (XML documents) that validate against this template, must ALSO validate against the published reference CDA.xsd schema document. This is to ensure the highest level of interoperability for a CDA interchange, since even without knowing the level 3 codings and vocabularies, the Level 2 (narrative block) will still contain human-readable data that can be rendered by applying a stylesheet that applies to the base CDA.xsd standard.

Modifications to the CDA schema contained herein are the copyright of VIHA. Use is granted with permission.  
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=====  
Rev. Date. Author. Description  
0.1 20050225 bhead [1] Modified to be a clone of the latest balloted CDA specification. This was done by  
directly applying the changes to the published schema to match the changes  
modeled  
using the HL7 visio model. We skipped the Visio model this time, due to several  
bugs in the  
current set of HL7 tools. In addition, hand-tuning is necessary here to apply  
custom constrained  
datatypes to the model, that help enforce our business rules.  
[2] Modified to allow optional values for Organization recipient.  
[3] Left intendedRecipient.id optional to support delivery to organizations  
(without an ID)  
The schema here does not wholly represent our constrained model. The  
additional model constraints  
are enforced using an set of SchemaTron assertions located in EMS\_CDA.sch,  
which contains a  
schematron schema. The two files make up the template model for the e-MS  
CDA standard.

```
-->
<xs:element name="ClinicalDocument" type="EMS_MT000030.ClinicalDocument"/>
<xs:complexType name="EMS_MT000030.ClinicalDocument">
  <xs:sequence>
    <xs:element name="id" type="hl7:EMS.II.RootExtension"/>
    <xs:element name="code" type="hl7:EMS.CE.Full"/>
    <xs:element name="title" type="ST"/>
    <xs:element name="effectiveTime" type="hl7:EMS.TS"/>
    <xs:element name="confidentialityCode" type="CE"/>
    <xs:element name="setId" type="II" minOccurs="0"/>
    <xs:element name="versionNumber" type="INT" minOccurs="0"/>
    <xs:element name="informationRecipient" type="EMS_MT000030.InformationRecipient"/>
    <xs:element name="author" type="EMS_MT000030.Author" minOccurs="2" maxOccurs="2"/>
    <xs:element name="custodian" type="EMS_MT000030.Custodian"/>
    <xs:element name="recordTarget" type="EMS_MT000030.RecordTarget"/>
    <xs:element name="participant" type="EMS_MT000030.Participant1" minOccurs="0"
maxOccurs="unbounded"/>
    <xs:element name="relatedDocument" type="EMS_MT000030.RelatedDocument" minOccurs="0"
maxOccurs="unbounded"/>
    <xs:element name="component" type="EMS_MT000030.Component2"/>
  </xs:sequence>
  <xs:attribute name="type" type="Classes" default="Document"/>
  <xs:attribute name="classCode" type="ActClass" use="optional" default="DOCCLIN"/>
  <xs:attribute name="moodCode" type="ActMood" use="optional" default="EVN"/>
  <xs:attribute name="templateId" use="optional">
    <xs:simpleType>
      <xs:list itemType="oid"/>
    </xs:simpleType>
  </xs:attribute>
  <xs:attribute name="typeIdRoot" type="xs:string" default="2.16.840.1.113883.1.3"/>
  <xs:attribute name="typeIdExtension" type="xs:string" default="_HD000030"/>
  <xs:attribute name="realmCode" use="optional">
    <xs:simpleType>
      <xs:list itemType="cs"/>
    </xs:simpleType>
  </xs:attribute>
  <xs:attribute name="nullFlavor" type="cs" use="optional"/>
</xs:complexType>
<xs:complexType name="EMS_MT000030.AssignedEntity">
  <xs:sequence>
    <xs:element name="id" type="II" maxOccurs="unbounded"/>
  </xs:sequence>
  <xs:attribute name="type" type="Classes" default="RoleHeir"/>
  <xs:attribute name="classCode" type="RoleClass" use="optional" default="ASSIGNED"/>
  <xs:attribute name="templateId" use="optional">
    <xs:simpleType>
```

```
1318     <xs:list itemType="oid"/>
1319   </xs:simpleType>
1320 </xs:attribute>
1321 <xs:attribute name="typeldRoot" type="xs:string" use="optional"/>
1322 <xs:attribute name="typeldExtension" type="xs:string" use="optional"/>
1323 <xs:attribute name="realmCode" use="optional"/>
1324   <xs:simpleType>
1325     <xs:list itemType="cs"/>
1326   </xs:simpleType>
1327 </xs:attribute>
1328   <xs:attribute name="nullFlavor" type="cs" use="optional"/>
1329 </xs:complexType>
1330 <xs:complexType name="EMS_MT000030.Person">
1331   <xs:sequence>
1332     <xs:element name="name" type="PN" minOccurs="0" maxOccurs="unbounded"/>
1333   </xs:sequence>
1334   <xs:attribute name="type" type="Classes" default="Person"/>
1335   <xs:attribute name="classCode" type="EntityClass" use="optional" default="PSN"/>
1336   <xs:attribute name="determinerCode" type="EntityDeterminer" use="optional" default="INSTANCE"/>
1337   <xs:attribute name="templateId" use="optional">
1338     <xs:simpleType>
1339       <xs:list itemType="oid"/>
1340     </xs:simpleType>
1341   </xs:attribute>
1342   <xs:attribute name="typeldRoot" type="xs:string" use="optional"/>
1343   <xs:attribute name="typeldExtension" type="xs:string" use="optional"/>
1344   <xs:attribute name="realmCode" use="optional"/>
1345     <xs:simpleType>
1346       <xs:list itemType="cs"/>
1347     </xs:simpleType>
1348   </xs:attribute>
1349   <xs:attribute name="nullFlavor" type="cs" use="optional"/>
1350 </xs:complexType>
1351 <xs:complexType name="EMS_MT000030.Organization">
1352   <xs:sequence>
1353     <xs:element name="id" type="II" minOccurs="0" maxOccurs="unbounded"/>
1354     <xs:element name="name" type="ON" minOccurs="0" maxOccurs="unbounded"/>
1355     <xs:element name="telecom" type="TEL" minOccurs="0" maxOccurs="unbounded"/>
1356     <xs:element name="addr" type="AD" minOccurs="0" maxOccurs="unbounded"/>
1357   </xs:sequence>
1358   <xs:attribute name="type" type="Classes" default="Organization"/>
1359   <xs:attribute name="classCode" type="EntityClass" use="optional" default="ORG"/>
1360   <xs:attribute name="determinerCode" type="EntityDeterminer" use="optional" default="INSTANCE"/>
1361   <xs:attribute name="templateId" use="optional">
1362     <xs:simpleType>
1363       <xs:list itemType="oid"/>
1364     </xs:simpleType>
1365   </xs:attribute>
1366   <xs:attribute name="typeldRoot" type="xs:string" use="optional"/>
1367   <xs:attribute name="typeldExtension" type="xs:string" use="optional"/>
1368   <xs:attribute name="realmCode" use="optional">
1369     <xs:simpleType>
1370       <xs:list itemType="cs"/>
1371     </xs:simpleType>
1372   </xs:attribute>
1373   <xs:attribute name="nullFlavor" type="cs" use="optional"/>
1374 </xs:complexType>
1375 <xs:complexType name="EMS_MT000030.InformationRecipient">
1376   <xs:sequence>
1377     <xs:element name="intendedRecipient" type="EMS_MT000030.IntendedRecipient"/>
1378   </xs:sequence>
1379   <xs:attribute name="type" type="Classes" default="Participation"/>
1380   <xs:attribute name="typeCode" type="x_InformationRecipient" use="optional" default="PRCP"/>
1381   <xs:attribute name="templateId" use="optional">
1382     <xs:simpleType>
1383       <xs:list itemType="oid"/>
1384     </xs:simpleType>
1385   </xs:attribute>
1386   <xs:attribute name="typeldRoot" type="xs:string" use="optional"/>
1387   <xs:attribute name="typeldExtension" type="xs:string" use="optional"/>
```

```
1388     <xs:attribute name="realmCode" use="optional">
1389       <xs:simpleType>
1390         <xs:list itemType="cs"/>
1391       </xs:simpleType>
1392     </xs:attribute>
1393     <xs:attribute name="nullFlavor" type="cs" use="optional"/>
1394   </xs:complexType>
1395   <xs:complexType name="EMS_MT000030.IntendedRecipient">
1396     <xs:sequence>
1397       <xs:element name="id" type="hl7:EMS.II.RootExtension" minOccurs="0" maxOccurs="unbounded"/>
1398       <xs:element name="addr" type="AD" minOccurs="0"/>
1399       <xs:element name="telecom" type="hl7:EMS.TEL" minOccurs="0" maxOccurs="unbounded"/>
1400       <xs:element name="informationRecipient" type="EMS_MT000030.Person" minOccurs="0"/>
1401       <xs:element name="receivedOrganization" type="EMS_MT000030.Organization" minOccurs="0"/>
1402     </xs:sequence>
1403     <xs:attribute name="type" type="Classes" default="RoleHeir"/>
1404     <xs:attribute name="classCode" type="x_InformationRecipientRole" use="optional" default="ASSIGNED"/>
1405     <xs:attribute name="templateId" use="optional">
1406       <xs:simpleType>
1407         <xs:list itemType="oid"/>
1408       </xs:simpleType>
1409     </xs:attribute>
1410     <xs:attribute name="typeIdRoot" type="xs:string" use="optional"/>
1411     <xs:attribute name="typeIdExtension" type="xs:string" use="optional"/>
1412     <xs:attribute name="realmCode" use="optional">
1413       <xs:simpleType>
1414         <xs:list itemType="cs"/>
1415       </xs:simpleType>
1416     </xs:attribute>
1417     <xs:attribute name="nullFlavor" type="cs" use="optional"/>
1418   </xs:complexType>
1419   <xs:complexType name="EMS_MT000030.Author">
1420     <xs:sequence>
1421       <xs:element name="time" type="TS"/>
1422       <xs:element name="assignedAuthor" type="EMS_MT000030.AssignedAuthor"/>
1423     </xs:sequence>
1424     <xs:attribute name="type" type="Classes" default="Participation"/>
1425     <xs:attribute name="typeCode" type="ParticipationType" use="optional" default="AUT"/>
1426     <xs:attribute name="contextControlCode" type="ContextControl" use="optional" default="OP"/>
1427     <xs:attribute name="templateId" use="optional">
1428       <xs:simpleType>
1429         <xs:list itemType="oid"/>
1430       </xs:simpleType>
1431     </xs:attribute>
1432     <xs:attribute name="typeIdRoot" type="xs:string" use="optional"/>
1433     <xs:attribute name="typeIdExtension" type="xs:string" use="optional"/>
1434     <xs:attribute name="realmCode" use="optional">
1435       <xs:simpleType>
1436         <xs:list itemType="cs"/>
1437       </xs:simpleType>
1438     </xs:attribute>
1439     <xs:attribute name="nullFlavor" type="cs" use="optional"/>
1440   </xs:complexType>
1441   <xs:complexType name="EMS_MT000030.AssignedAuthor">
1442     <xs:sequence>
1443       <xs:element name="id" type="EMS.II.RootExtension" maxOccurs="unbounded"/>
1444       <xs:element name="addr" type="AD" minOccurs="0"/>
1445       <xs:element name="telecom" type="TEL" minOccurs="0" maxOccurs="unbounded"/>
1446       <xs:choice>
1447         <xs:element name="assignedPerson" type="EMS_MT000030.Person" minOccurs="0"/>
1448         <xs:element name="assignedAuthoringDevice" type="EMS_MT000030.AuthoringDevice"
1449 minOccurs="0"/>
1450       </xs:choice>
1451     </xs:sequence>
1452     <xs:attribute name="type" type="Classes" default="RoleHeir"/>
1453     <xs:attribute name="classCode" type="RoleClass" use="optional" default="ASSIGNED"/>
1454     <xs:attribute name="templateId" use="optional">
1455       <xs:simpleType>
1456         <xs:list itemType="oid"/>
1457       </xs:simpleType>
```



```
1458     </xs:attribute>
1459     <xs:attribute name="typeIdRoot" type="xs:string" use="optional"/>
1460     <xs:attribute name="typeIdExtension" type="xs:string" use="optional"/>
1461     <xs:attribute name="realmCode" use="optional">
1462       <xs:simpleType>
1463         <xs:list itemType="cs"/>
1464       </xs:simpleType>
1465     </xs:attribute>
1466     <xs:attribute name="nullFlavor" type="cs" use="optional"/>
1467   </xs:complexType>
1468   <xs:complexType name="EMS_MT000030.AuthoringDevice">
1469     <xs:sequence>
1470       <xs:element name="softwareName" type="SC" minOccurs="0"/>
1471     </xs:sequence>
1472     <xs:attribute name="type" type="Classes" default="Device"/>
1473     <xs:attribute name="classCode" type="EntityClass" use="optional" default="DEV"/>
1474     <xs:attribute name="determinerCode" type="EntityDeterminer" use="optional" default="INSTANCE"/>
1475     <xs:attribute name="templateId" use="optional">
1476       <xs:simpleType>
1477         <xs:list itemType="oid"/>
1478       </xs:simpleType>
1479     </xs:attribute>
1480     <xs:attribute name="typeIdRoot" type="xs:string" use="optional"/>
1481     <xs:attribute name="typeIdExtension" type="xs:string" use="optional"/>
1482     <xs:attribute name="realmCode" use="optional">
1483       <xs:simpleType>
1484         <xs:list itemType="cs"/>
1485       </xs:simpleType>
1486     </xs:attribute>
1487     <xs:attribute name="nullFlavor" type="cs" use="optional"/>
1488   </xs:complexType>
1489   <xs:complexType name="EMS_MT000030.Custodian">
1490     <xs:sequence>
1491       <xs:element name="assignedCustodian" type="EMS_MT000030.AssignedCustodian"/>
1492     </xs:sequence>
1493     <xs:attribute name="type" type="Classes" default="Participation"/>
1494     <xs:attribute name="typeCode" type="ParticipationType" use="optional" default="CST"/>
1495     <xs:attribute name="templateId" use="optional">
1496       <xs:simpleType>
1497         <xs:list itemType="oid"/>
1498       </xs:simpleType>
1499     </xs:attribute>
1500     <xs:attribute name="typeIdRoot" type="xs:string" use="optional"/>
1501     <xs:attribute name="typeIdExtension" type="xs:string" use="optional"/>
1502     <xs:attribute name="realmCode" use="optional">
1503       <xs:simpleType>
1504         <xs:list itemType="cs"/>
1505       </xs:simpleType>
1506     </xs:attribute>
1507     <xs:attribute name="nullFlavor" type="cs" use="optional"/>
1508   </xs:complexType>
1509   <xs:complexType name="EMS_MT000030.AssignedCustodian">
1510     <xs:sequence>
1511       <xs:element name="representedCustodianOrganization" type="EMS_MT000030.CustodianOrganization"/>
1512     </xs:sequence>
1513     <xs:attribute name="type" type="Classes" default="RoleHeir"/>
1514     <xs:attribute name="classCode" type="RoleClass" use="optional" default="ASSIGNED"/>
1515     <xs:attribute name="templateId" use="optional">
1516       <xs:simpleType>
1517         <xs:list itemType="oid"/>
1518       </xs:simpleType>
1519     </xs:attribute>
1520     <xs:attribute name="typeIdRoot" type="xs:string" use="optional"/>
1521     <xs:attribute name="typeIdExtension" type="xs:string" use="optional"/>
1522     <xs:attribute name="realmCode" use="optional">
1523       <xs:simpleType>
1524         <xs:list itemType="cs"/>
1525       </xs:simpleType>
1526     </xs:attribute>
1527     <xs:attribute name="nullFlavor" type="cs" use="optional"/>
```

```
1528 </xs:complexType>
1529 <xs:complexType name="EMS_MT000030.CustodianOrganization">
1530   <xs:sequence>
1531     <xs:element name="id" type="EMS.II.RootExtension" maxOccurs="unbounded"/>
1532     <xs:element name="name" type="ON" minOccurs="0"/>
1533   </xs:sequence>
1534   <xs:attribute name="type" type="Classes" default="Organization"/>
1535   <xs:attribute name="classCode" type="EntityClass" use="optional" default="ORG"/>
1536   <xs:attribute name="determinerCode" type="EntityDeterminer" use="optional" default="INSTANCE"/>
1537   <xs:attribute name="templateId" use="optional">
1538     <xs:simpleType>
1539       <xs:list itemType="oid"/>
1540     </xs:simpleType>
1541   </xs:attribute>
1542   <xs:attribute name="typeldRoot" type="xs:string" use="optional"/>
1543   <xs:attribute name="typeldExtension" type="xs:string" use="optional"/>
1544   <xs:attribute name="realmCode" use="optional">
1545     <xs:simpleType>
1546       <xs:list itemType="cs"/>
1547     </xs:simpleType>
1548   </xs:attribute>
1549   <xs:attribute name="nullFlavor" type="cs" use="optional"/>
1550 </xs:complexType>
1551 <xs:complexType name="EMS_MT000030.RecordTarget">
1552   <xs:sequence>
1553     <xs:element name="patient" type="EMS_MT000030.PatientRole"/>
1554   </xs:sequence>
1555   <xs:attribute name="type" type="Classes" default="Participation"/>
1556   <xs:attribute name="typeCode" type="ParticipationType" use="optional" default="RCT"/>
1557   <xs:attribute name="contextControlCode" type="ContextControl" use="optional" default="OP"/>
1558   <xs:attribute name="templateId" use="optional">
1559     <xs:simpleType>
1560       <xs:list itemType="oid"/>
1561     </xs:simpleType>
1562   </xs:attribute>
1563   <xs:attribute name="typeldRoot" type="xs:string" use="optional"/>
1564   <xs:attribute name="typeldExtension" type="xs:string" use="optional"/>
1565   <xs:attribute name="realmCode" use="optional">
1566     <xs:simpleType>
1567       <xs:list itemType="cs"/>
1568     </xs:simpleType>
1569   </xs:attribute>
1570   <xs:attribute name="nullFlavor" type="cs" use="optional"/>
1571 </xs:complexType>
1572 <xs:complexType name="EMS_MT000030.PatientRole">
1573   <xs:sequence>
1574     <xs:element name="id" type="hl7:EMS.II.RootExtensionAuthority" maxOccurs="unbounded"/>
1575     <xs:element name="addr" type="AD" minOccurs="0"/>
1576     <xs:element name="telecom" type="TEL" minOccurs="0" maxOccurs="unbounded"/>
1577     <xs:element name="patientPatient" type="EMS_MT000030.Patient" minOccurs="0"/>
1578   </xs:sequence>
1579   <xs:attribute name="type" type="Classes" default="Patient"/>
1580   <xs:attribute name="classCode" type="RoleClass" use="optional" default="PAT"/>
1581   <xs:attribute name="templateId" use="optional">
1582     <xs:simpleType>
1583       <xs:list itemType="oid"/>
1584     </xs:simpleType>
1585   </xs:attribute>
1586   <xs:attribute name="typeldRoot" type="xs:string" use="optional"/>
1587   <xs:attribute name="typeldExtension" type="xs:string" use="optional"/>
1588   <xs:attribute name="realmCode" use="optional">
1589     <xs:simpleType>
1590       <xs:list itemType="cs"/>
1591     </xs:simpleType>
1592   </xs:attribute>
1593   <xs:attribute name="nullFlavor" type="cs" use="optional"/>
1594 </xs:complexType>
1595 <xs:complexType name="EMS_MT000030.Patient">
1596   <xs:sequence>
1597     <xs:element name="name" type="PN"/>
```



```
1598     <xs:element name="administrativeGenderCode" type="CE"/>
1599     <xs:element name="birthTime" type="TS"/>
1600     <xs:element name="languageCommunication" type="EMS_MT000030.LanguageCommunication"
minOccurs="0"/>
1601   </xs:sequence>
1602   <xs:attribute name="type" type="Classes" default="Person"/>
1603   <xs:attribute name="classCode" type="EntityClass" use="optional" default="PSN"/>
1604   <xs:attribute name="determinerCode" type="EntityDeterminer" use="optional" default="INSTANCE"/>
1605   <xs:attribute name="templateId" use="optional"/>
1606   <xs:simpleType>
1607     <xs:list itemType="oid"/>
1608   </xs:simpleType>
1609 </xs:attribute>
1610 <xs:attribute name="typeIdRoot" type="xs:string" use="optional"/>
1611 <xs:attribute name="typeIdExtension" type="xs:string" use="optional"/>
1612 <xs:attribute name="realmCode" use="optional"/>
1613   <xs:simpleType>
1614     <xs:list itemType="cs"/>
1615   </xs:simpleType>
1616 </xs:attribute>
1617 <xs:attribute name="nullFlavor" type="cs" use="optional"/>
1618 </xs:complexType>
1619 <xs:complexType name="EMS_MT000030.LanguageCommunication">
1620   <xs:sequence>
1621     <xs:element name="languageCode" type="CS" minOccurs="0"/>
1622   </xs:sequence>
1623   <xs:attribute name="type" type="Classes" default="LanguageCommunication"/>
1624   <xs:attribute name="templateId" use="optional"/>
1625   <xs:simpleType>
1626     <xs:list itemType="oid"/>
1627   </xs:simpleType>
1628 </xs:attribute>
1629 <xs:attribute name="typeIdRoot" type="xs:string" use="optional"/>
1630 <xs:attribute name="typeIdExtension" type="xs:string" use="optional"/>
1631 <xs:attribute name="realmCode" use="optional"/>
1632   <xs:simpleType>
1633     <xs:list itemType="cs"/>
1634   </xs:simpleType>
1635 </xs:attribute>
1636 <xs:attribute name="nullFlavor" type="cs" use="optional"/>
1637 </xs:complexType>
1638 <xs:complexType name="EMS_MT000030.Participant1">
1639   <xs:sequence>
1640     <xs:element name="participatingEntity" type="EMS_MT000030.ParticipatingEntity"/>
1641   </xs:sequence>
1642   <xs:attribute name="type" type="Classes" default="Participation"/>
1643   <xs:attribute name="typeCode" type="ParticipationType" use="required"/>
1644   <xs:attribute name="contextControlCode" type="ContextControl" use="optional" default="OP"/>
1645   <xs:attribute name="templateId" use="optional"/>
1646   <xs:simpleType>
1647     <xs:list itemType="oid"/>
1648   </xs:simpleType>
1649 </xs:attribute>
1650 <xs:attribute name="typeIdRoot" type="xs:string" use="optional"/>
1651 <xs:attribute name="typeIdExtension" type="xs:string" use="optional"/>
1652 <xs:attribute name="realmCode" use="optional"/>
1653   <xs:simpleType>
1654     <xs:list itemType="cs"/>
1655   </xs:simpleType>
1656 </xs:attribute>
1657 <xs:attribute name="nullFlavor" type="cs" use="optional"/>
1658 </xs:complexType>
1659 <xs:complexType name="EMS_MT000030.ParticipatingEntity">
1660   <xs:sequence>
1661     <xs:element name="id" type="II" minOccurs="0" maxOccurs="unbounded"/>
1662     <xs:element name="code" type="hl7:EMS.CE.Full" minOccurs="0"/>
1663     <xs:element name="addr" type="AD" minOccurs="0"/>
1664     <xs:element name="telecom" type="hl7:EMS.TEL" minOccurs="0" maxOccurs="unbounded"/>
1665     <xs:element name="associatedPerson" type="EMS_MT000030.Person" minOccurs="0"/>
1666   </xs:sequence>
1667
```

```
1668 <xs:attribute name="type" type="Classes" default="RoleHeir"/>
1669 <xs:attribute name="classCode" type="RoleClassAssociative" use="required"/>
1670 <xs:attribute name="templateId" use="optional">
1671   <xs:simpleType>
1672     <xs:list itemType="oid"/>
1673   </xs:simpleType>
1674 </xs:attribute>
1675 <xs:attribute name="typeldRoot" type="xs:string" use="optional"/>
1676 <xs:attribute name="typeldExtension" type="xs:string" use="optional"/>
1677 <xs:attribute name="realmCode" use="optional">
1678   <xs:simpleType>
1679     <xs:list itemType="cs"/>
1680   </xs:simpleType>
1681 </xs:attribute>
1682 <xs:attribute name="nullFlavor" type="cs" use="optional"/>
1683 </xs:complexType>
1684 <xs:complexType name="EMS_MT000030.RelatedDocument">
1685   <xs:sequence>
1686     <xs:element name="parentDocument" type="EMS_MT000030.ParentDocument"/>
1687   </xs:sequence>
1688   <xs:attribute name="type" type="Classes" default="ActRelationship"/>
1689   <xs:attribute name="typeCode" type="x_ActRelationshipDocument" use="required"/>
1690   <xs:attribute name="templateId" use="optional">
1691     <xs:simpleType>
1692       <xs:list itemType="oid"/>
1693     </xs:simpleType>
1694   </xs:attribute>
1695   <xs:attribute name="typeldRoot" type="xs:string" use="optional"/>
1696   <xs:attribute name="typeldExtension" type="xs:string" use="optional"/>
1697   <xs:attribute name="realmCode" use="optional">
1698     <xs:simpleType>
1699       <xs:list itemType="cs"/>
1700     </xs:simpleType>
1701   </xs:attribute>
1702   <xs:attribute name="nullFlavor" type="cs" use="optional"/>
1703 </xs:complexType>
1704 <xs:complexType name="EMS_MT000030.ParentDocument">
1705   <xs:sequence>
1706     <xs:element name="id" type="EMS.II.RootExtension"/>
1707     <xs:element name="code" type="CD"/>
1708     <xs:element name="text" type="ED"/>
1709     <xs:element name="setId" type="II" minOccurs="0"/>
1710     <xs:element name="versionNumber" type="INT" minOccurs="0"/>
1711   </xs:sequence>
1712   <xs:attribute name="type" type="Classes" default="Document"/>
1713   <xs:attribute name="classCode" type="ActClass" use="optional" default="DOCCLIN"/>
1714   <xs:attribute name="moodCode" type="ActMood" use="optional" default="EVN"/>
1715   <xs:attribute name="templateId" use="optional">
1716     <xs:simpleType>
1717       <xs:list itemType="oid"/>
1718     </xs:simpleType>
1719   </xs:attribute>
1720   <xs:attribute name="typeldRoot" type="xs:string" use="optional"/>
1721   <xs:attribute name="typeldExtension" type="xs:string" use="optional"/>
1722   <xs:attribute name="realmCode" use="optional">
1723     <xs:simpleType>
1724       <xs:list itemType="cs"/>
1725     </xs:simpleType>
1726   </xs:attribute>
1727   <xs:attribute name="nullFlavor" type="cs" use="optional"/>
1728 </xs:complexType>
1729 <xs:complexType name="EMS_MT000030.Component2">
1730   <xs:sequence>
1731     <xs:choice>
1732       <xs:element name="structuredBody" type="EMS_MT000030.StructuredBody"/>
1733     </xs:choice>
1734   </xs:sequence>
1735   <xs:attribute name="type" type="Classes" default="ActRelationship"/>
1736   <xs:attribute name="typeCode" type="ActRelationshipType" use="optional" default="COMP"/>
1737   <xs:attribute name="contextConductionInd" type="bl" use="optional" default="true"/>
```

```
1738 <xs:attribute name="templateId" use="optional">
1739 <xs:simpleType>
1740 <xs:list itemType="oid"/>
1741 </xs:simpleType>
1742 </xs:attribute>
1743 <xs:attribute name="typeIdRoot" type="xs:string" use="optional"/>
1744 <xs:attribute name="typeIdExtension" type="xs:string" use="optional"/>
1745 <xs:attribute name="realmCode" use="optional">
1746 <xs:simpleType>
1747 <xs:list itemType="cs"/>
1748 </xs:simpleType>
1749 </xs:attribute>
1750 <xs:attribute name="nullFlavor" type="cs" use="optional"/>
1751 </xs:complexType>
1752 <xs:complexType name="EMS_MT000030.StructuredBody">
1753 <xs:sequence>
1754 <xs:element name="component" type="EMS_MT000030.Component3" maxOccurs="unbounded"/>
1755 </xs:sequence>
1756 <xs:attribute name="type" type="Classes" default="ActHeir"/>
1757 <xs:attribute name="classCode" type="ActClass" use="optional" default="DOCBODY"/>
1758 <xs:attribute name="moodCode" type="ActMood" use="optional" default="EVN"/>
1759 <xs:attribute name="templateId" use="optional">
1760 <xs:simpleType>
1761 <xs:list itemType="oid"/>
1762 </xs:simpleType>
1763 </xs:attribute>
1764 <xs:attribute name="typeIdRoot" type="xs:string" use="optional"/>
1765 <xs:attribute name="typeIdExtension" type="xs:string" use="optional"/>
1766 <xs:attribute name="realmCode" use="optional">
1767 <xs:simpleType>
1768 <xs:list itemType="cs"/>
1769 </xs:simpleType>
1770 </xs:attribute>
1771 <xs:attribute name="nullFlavor" type="cs" use="optional"/>
1772 </xs:complexType>
1773 <xs:complexType name="EMS_MT000030.Component3">
1774 <xs:sequence>
1775 <xs:element name="section" type="EMS_MT000030.Section"/>
1776 </xs:sequence>
1777 <xs:attribute name="type" type="Classes" default="ActRelationship"/>
1778 <xs:attribute name="typeCode" type="ActRelationshipType" use="optional" default="COMP"/>
1779 <xs:attribute name="contextConductionInd" type="bl" use="optional" default="true"/>
1780 <xs:attribute name="templateId" use="optional">
1781 <xs:simpleType>
1782 <xs:list itemType="oid"/>
1783 </xs:simpleType>
1784 </xs:attribute>
1785 <xs:attribute name="typeIdRoot" type="xs:string" use="optional"/>
1786 <xs:attribute name="typeIdExtension" type="xs:string" use="optional"/>
1787 <xs:attribute name="realmCode" use="optional">
1788 <xs:simpleType>
1789 <xs:list itemType="cs"/>
1790 </xs:simpleType>
1791 </xs:attribute>
1792 <xs:attribute name="nullFlavor" type="cs" use="optional"/>
1793 </xs:complexType>
1794 <xs:complexType name="EMS_MT000030.Section">
1795 <xs:sequence>
1796 <xs:element name="id" type="II" minOccurs="0"/>
1797 <xs:element name="code" type="hl7:EMS.CE.Full"/>
1798 <xs:element name="title" type="ST"/>
1799 <xs:element name="text" type="text"/>
1800 <xs:element name="entry" type="EMS_MT000030.Entry" minOccurs="0" maxOccurs="unbounded"/>
1801 </xs:sequence>
1802 <xs:attribute name="ID" type="xs:ID"/>
1803 <xs:attribute name="type" type="Classes" default="ActHeir"/>
1804 <xs:attribute name="classCode" type="ActClass" use="optional" default="DOCSECT"/>
1805 <xs:attribute name="moodCode" type="ActMood" use="optional" default="EVN"/>
1806 <xs:attribute name="templateId" use="optional">
1807 <xs:simpleType>
```

```
1808         <xs:list itemType="oid"/>
1809     </xs:simpleType>
1810 </xs:attribute>
1811 <xs:attribute name="typeIdRoot" type="xs:string" use="optional"/>
1812 <xs:attribute name="typeIdExtension" type="xs:string" use="optional"/>
1813 <xs:attribute name="realmCode" use="optional"/>
1814     <xs:simpleType>
1815         <xs:list itemType="cs"/>
1816     </xs:simpleType>
1817 </xs:attribute>
1818 <xs:attribute name="nullFlavor" type="cs" use="optional"/>
1819 </xs:complexType>
1820 <xs:complexType name="EMS_MT000030.Entry">
1821     <xs:sequence>
1822         <xs:choice>
1823             <xs:element name="encounter" type="EMS_MT000030.Encounter"/>
1824             <xs:element name="observation" type="EMS_MT000030.Observation"/>
1825             <xs:element name="observationMedia" type="EMS_MT000030.ObservationMedia"/>
1826             <xs:element name="procedure" type="EMS_MT000030.Procedure"/>
1827             <xs:element name="substanceAdministration" type="EMS_MT000030.SubstanceAdministration"/>
1828         </xs:choice>
1829     </xs:sequence>
1830     <xs:attribute name="type" type="Classes" default="ActRelationship"/>
1831     <xs:attribute name="typeCode" type="cs" use="optional" default="COMP"/>
1832     <xs:attribute name="contextConductionInd" type="bl" use="optional" default="true"/>
1833     <xs:attribute name="templateId" use="optional"/>
1834     <xs:simpleType>
1835         <xs:list itemType="oid"/>
1836     </xs:simpleType>
1837 </xs:attribute>
1838 <xs:attribute name="typeIdRoot" type="xs:string" use="optional"/>
1839 <xs:attribute name="typeIdExtension" type="xs:string" use="optional"/>
1840 <xs:attribute name="realmCode" use="optional"/>
1841     <xs:simpleType>
1842         <xs:list itemType="cs"/>
1843     </xs:simpleType>
1844 </xs:attribute>
1845 <xs:attribute name="nullFlavor" type="cs" use="optional"/>
1846 </xs:complexType>
1847 <xs:complexType name="EMS_MT000030.Performer2">
1848     <xs:sequence>
1849         <xs:element name="time" type="IVL_TS" minOccurs="0"/>
1850         <xs:element name="modeCode" type="CE" minOccurs="0"/>
1851         <xs:element name="assignedEntity" type="EMS_MT000030.AssignedEntity"/>
1852     </xs:sequence>
1853     <xs:attribute name="type" type="Classes" default="Participation"/>
1854     <xs:attribute name="typeCode" type="ParticipationType" use="optional" default="PRF"/>
1855     <xs:attribute name="templateId" use="optional"/>
1856     <xs:simpleType>
1857         <xs:list itemType="oid"/>
1858     </xs:simpleType>
1859 </xs:attribute>
1860 <xs:attribute name="typeIdRoot" type="xs:string" use="optional"/>
1861 <xs:attribute name="typeIdExtension" type="xs:string" use="optional"/>
1862 <xs:attribute name="realmCode" use="optional"/>
1863     <xs:simpleType>
1864         <xs:list itemType="cs"/>
1865     </xs:simpleType>
1866 </xs:attribute>
1867 <xs:attribute name="nullFlavor" type="cs" use="optional"/>
1868 </xs:complexType>
1869 <xs:complexType name="EMS_MT000030.PlayingEntity">
1870     <xs:sequence>
1871         <xs:element name="name" type="PN" minOccurs="0" maxOccurs="unbounded"/>
1872         <xs:element name="desc" type="ED" minOccurs="0"/>
1873     </xs:sequence>
1874     <xs:attribute name="type" type="Classes" default="EntityHeir"/>
1875     <xs:attribute name="classCode" type="EntityClass" use="optional" default="ENT"/>
1876     <xs:attribute name="determinerCode" type="EntityDeterminer" use="optional" default="INSTANCE"/>
1877     <xs:attribute name="templateId" use="optional"/>
```

```
1878     <xs:simpleType>
1879         <xs:list itemType="oid"/>
1880     </xs:simpleType>
1881 </xs:attribute>
1882 <xs:attribute name="typeIdRoot" type="xs:string" use="optional"/>
1883 <xs:attribute name="typeIdExtension" type="xs:string" use="optional"/>
1884 <xs:attribute name="realmCode" use="optional">
1885     <xs:simpleType>
1886         <xs:list itemType="cs"/>
1887     </xs:simpleType>
1888 </xs:attribute>
1889 <xs:attribute name="nullFlavor" type="cs" use="optional"/>
1890 </xs:complexType>
1891 <xs:complexType name="EMS_MT000030.Participant2">
1892     <xs:sequence>
1893         <xs:element name="time" type="IVL_TS" minOccurs="0"/>
1894         <xs:element name="participantRole" type="EMS_MT000030.ParticipantRole"/>
1895     </xs:sequence>
1896     <xs:attribute name="type" type="Classes" default="Participation"/>
1897     <xs:attribute name="typeCode" type="ParticipationType" use="required"/>
1898     <xs:attribute name="contextControlCode" type="ContextControl" use="optional" default="OP"/>
1899     <xs:attribute name="templateId" use="optional">
1900         <xs:simpleType>
1901             <xs:list itemType="oid"/>
1902         </xs:simpleType>
1903     </xs:attribute>
1904     <xs:attribute name="typeIdRoot" type="xs:string" use="optional"/>
1905     <xs:attribute name="typeIdExtension" type="xs:string" use="optional"/>
1906     <xs:attribute name="realmCode" use="optional">
1907         <xs:simpleType>
1908             <xs:list itemType="cs"/>
1909         </xs:simpleType>
1910     </xs:attribute>
1911     <xs:attribute name="nullFlavor" type="cs" use="optional"/>
1912 </xs:complexType>
1913 <xs:complexType name="EMS_MT000030.ParticipantRole">
1914     <xs:sequence>
1915         <xs:choice>
1916             <xs:element name="playingPlayingEntity" type="EMS_MT000030.PlayingEntity" minOccurs="0"/>
1917         </xs:choice>
1918     </xs:sequence>
1919     <xs:attribute name="type" type="Classes" default="RoleHeir"/>
1920     <xs:attribute name="classCode" type="RoleClass" use="optional" default="ROL"/>
1921     <xs:attribute name="templateId" use="optional">
1922         <xs:simpleType>
1923             <xs:list itemType="oid"/>
1924         </xs:simpleType>
1925     </xs:attribute>
1926     <xs:attribute name="typeIdRoot" type="xs:string" use="optional"/>
1927     <xs:attribute name="typeIdExtension" type="xs:string" use="optional"/>
1928     <xs:attribute name="realmCode" use="optional">
1929         <xs:simpleType>
1930             <xs:list itemType="cs"/>
1931         </xs:simpleType>
1932     </xs:attribute>
1933     <xs:attribute name="nullFlavor" type="cs" use="optional"/>
1934 </xs:complexType>
1935 <xs:complexType name="EMS_MT000030.EntryRelationship">
1936     <xs:sequence>
1937         <xs:element name="sequenceNumber" type="INT" minOccurs="0"/>
1938         <xs:choice>
1939             <xs:element name="encounter" type="EMS_MT000030.Encounter"/>
1940             <xs:element name="observation" type="EMS_MT000030.Observation"/>
1941             <xs:element name="observationMedia" type="EMS_MT000030.ObservationMedia"/>
1942             <xs:element name="procedure" type="EMS_MT000030.Procedure"/>
1943             <xs:element name="substanceAdministration" type="EMS_MT000030.SubstanceAdministration"/>
1944         </xs:choice>
1945     </xs:sequence>
1946     <xs:attribute name="type" type="Classes" default="ActRelationship"/>
1947     <xs:attribute name="typeCode" type="cs" use="required"/>
```



```
1948 <xs:attribute name="inversionInd" type="bl" use="optional"/>
1949 <xs:attribute name="contextConductionInd" type="bl" use="optional" default="true"/>
1950 <xs:attribute name="negationInd" type="bl" use="optional"/>
1951 <xs:attribute name="templateId" use="optional">
1952   <xs:simpleType>
1953     <xs:list itemType="oid"/>
1954   </xs:simpleType>
1955 </xs:attribute>
1956 <xs:attribute name="typeIdRoot" type="xs:string" use="optional"/>
1957 <xs:attribute name="typeIdExtension" type="xs:string" use="optional"/>
1958 <xs:attribute name="realmCode" use="optional">
1959   <xs:simpleType>
1960     <xs:list itemType="cs"/>
1961   </xs:simpleType>
1962 </xs:attribute>
1963 <xs:attribute name="nullFlavor" type="cs" use="optional"/>
1964 </xs:complexType>
1965 <xs:complexType name="EMS_MT000030.Encounter">
1966   <xs:sequence>
1967     <xs:element name="id" type="II" minOccurs="0" maxOccurs="unbounded"/>
1968     <xs:element name="code" type="CD" minOccurs="0"/>
1969     <xs:element name="text" type="ED" minOccurs="0"/>
1970     <xs:element name="effectiveTime" type="IVL_TS" minOccurs="0"/>
1971     <xs:element name="performer" type="EMS_MT000030.Performer2" minOccurs="0"
1972 maxOccurs="unbounded"/>
1973     <xs:element name="participant" type="EMS_MT000030.Participant2" minOccurs="0"
1974 maxOccurs="unbounded"/>
1975     <xs:element name="entryRelationship" type="EMS_MT000030.EntryRelationship" minOccurs="0"
1976 maxOccurs="unbounded"/>
1977   </xs:sequence>
1978   <xs:attribute name="type" type="Classes" default="PatientEncounter"/>
1979   <xs:attribute name="classCode" type="ActClass" use="required"/>
1980   <xs:attribute name="moodCode" type="cs" use="required"/>
1981   <xs:attribute name="templateId" use="optional">
1982     <xs:simpleType>
1983       <xs:list itemType="oid"/>
1984     </xs:simpleType>
1985   </xs:attribute>
1986   <xs:attribute name="typeIdRoot" type="xs:string" use="optional"/>
1987   <xs:attribute name="typeIdExtension" type="xs:string" use="optional"/>
1988   <xs:attribute name="realmCode" use="optional">
1989     <xs:simpleType>
1990       <xs:list itemType="cs"/>
1991     </xs:simpleType>
1992   </xs:attribute>
1993   <xs:attribute name="nullFlavor" type="cs" use="optional"/>
1994 </xs:complexType>
1995 <xs:complexType name="EMS_MT000030.Observation">
1996   <xs:sequence>
1997     <xs:element name="id" type="II" minOccurs="0" maxOccurs="unbounded"/>
1998     <xs:element name="code" type="CD"/>
1999     <xs:element name="text" type="ED" minOccurs="0"/>
2000     <xs:element name="effectiveTime" type="IVL_TS" minOccurs="0"/>
2001     <xs:element name="priorityCode" type="CE" minOccurs="0"/>
2002     <xs:element name="value" type="ANY" minOccurs="0" maxOccurs="unbounded"/>
2003     <xs:element name="interpretationCode" type="CE" minOccurs="0"/>
2004     <xs:element name="referenceRange" type="EMS_MT000030.ReferenceRange" minOccurs="0"
2005 maxOccurs="unbounded"/>
2006     <xs:element name="performer" type="EMS_MT000030.Performer2" minOccurs="0"
2007 maxOccurs="unbounded"/>
2008     <xs:element name="participant" type="EMS_MT000030.Participant2" minOccurs="0"
2009 maxOccurs="unbounded"/>
2010     <xs:element name="entryRelationship" type="EMS_MT000030.EntryRelationship" minOccurs="0"
2011 maxOccurs="unbounded"/>
2012   </xs:sequence>
2013   <xs:attribute name="type" type="Classes" default="Observation"/>
2014   <xs:attribute name="classCode" type="ActClass" use="required"/>
2015   <xs:attribute name="moodCode" type="x_ActMoodDocumentObservation" use="required"/>
2016   <xs:attribute name="negationInd" type="bl" use="optional"/>
2017   <xs:attribute name="templateId" use="optional">
```

```
2018      <xs:simpleType>
2019          <xs:list itemType="oid"/>
2020      </xs:simpleType>
2021  </xs:attribute>
2022  <xs:attribute name="typeIdRoot" type="xs:string" use="optional"/>
2023  <xs:attribute name="typeIdExtension" type="xs:string" use="optional"/>
2024  <xs:attribute name="realmCode" use="optional"/>
2025      <xs:simpleType>
2026          <xs:list itemType="cs"/>
2027      </xs:simpleType>
2028  </xs:attribute>
2029  <xs:attribute name="nullFlavor" type="cs" use="optional"/>
2030 </xs:complexType>
2031 <xs:complexType name="EMS_MT000030.ReferenceRange">
2032     <xs:sequence>
2033         <xs:element name="referenceObservationRange" type="EMS_MT000030.ObservationRange"/>
2034     </xs:sequence>
2035     <xs:attribute name="type" type="Classes" default="ActRelationship"/>
2036     <xs:attribute name="typeCode" type="ActRelationshipType" use="optional" default="REFV"/>
2037     <xs:attribute name="templateId" use="optional"/>
2038         <xs:simpleType>
2039             <xs:list itemType="oid"/>
2040         </xs:simpleType>
2041     </xs:attribute>
2042     <xs:attribute name="typeIdRoot" type="xs:string" use="optional"/>
2043     <xs:attribute name="typeIdExtension" type="xs:string" use="optional"/>
2044     <xs:attribute name="realmCode" use="optional"/>
2045         <xs:simpleType>
2046             <xs:list itemType="cs"/>
2047         </xs:simpleType>
2048     </xs:attribute>
2049     <xs:attribute name="nullFlavor" type="cs" use="optional"/>
2050 </xs:complexType>
2051 <xs:complexType name="EMS_MT000030.ObservationRange">
2052     <xs:sequence>
2053         <xs:element name="value" type="ANY" minOccurs="0"/>
2054     </xs:sequence>
2055     <xs:attribute name="type" type="Classes" default="Observation"/>
2056     <xs:attribute name="classCode" type="ActClass" use="optional" default="OBS"/>
2057     <xs:attribute name="moodCode" type="ActMood" use="optional" default="EVN.CRT"/>
2058     <xs:attribute name="templateId" use="optional"/>
2059         <xs:simpleType>
2060             <xs:list itemType="oid"/>
2061         </xs:simpleType>
2062     </xs:attribute>
2063     <xs:attribute name="typeIdRoot" type="xs:string" use="optional"/>
2064     <xs:attribute name="typeIdExtension" type="xs:string" use="optional"/>
2065     <xs:attribute name="realmCode" use="optional"/>
2066         <xs:simpleType>
2067             <xs:list itemType="cs"/>
2068         </xs:simpleType>
2069     </xs:attribute>
2070     <xs:attribute name="nullFlavor" type="cs" use="optional"/>
2071 </xs:complexType>
2072 <xs:complexType name="EMS_MT000030.ObservationMedia">
2073     <xs:sequence>
2074         <xs:element name="id" type="II" minOccurs="0" maxOccurs="unbounded"/>
2075         <xs:element name="value" type="ED"/>
2076         <xs:element name="performer" type="EMS_MT000030.Performer2" minOccurs="0"
2077 maxOccurs="unbounded"/>
2078         <xs:element name="participant" type="EMS_MT000030.Participant2" minOccurs="0"
2079 maxOccurs="unbounded"/>
2080         <xs:element name="entryRelationship" type="EMS_MT000030.EntryRelationship" minOccurs="0"
2081 maxOccurs="unbounded"/>
2082     </xs:sequence>
2083     <xs:attribute name="ID" type="xs:ID"/>
2084     <xs:attribute name="type" type="Classes" default="Observation"/>
2085     <xs:attribute name="classCode" type="ActClass" use="required"/>
2086     <xs:attribute name="moodCode" type="ActMood" use="required"/>
2087     <xs:attribute name="templateId" use="optional"/>
```

```
2088         <xs:simpleType>
2089             <xs:list itemType="oid"/>
2090         </xs:simpleType>
2091     </xs:attribute>
2092     <xs:attribute name="typeIdRoot" type="xs:string" use="optional"/>
2093     <xs:attribute name="typeIdExtension" type="xs:string" use="optional"/>
2094     <xs:attribute name="realmCode" use="optional">
2095         <xs:simpleType>
2096             <xs:list itemType="cs"/>
2097         </xs:simpleType>
2098     </xs:attribute>
2099     <xs:attribute name="nullFlavor" type="cs" use="optional"/>
2100 </xs:complexType>
2101 <xs:complexType name="EMS_MT000030.Procedure">
2102     <xs:sequence>
2103         <xs:element name="id" type="II" minOccurs="0" maxOccurs="unbounded"/>
2104         <xs:element name="text" type="ED" minOccurs="0"/>
2105         <xs:element name="effectiveTime" type="IVL_TS" minOccurs="0"/>
2106         <xs:element name="performer" type="EMS_MT000030.Performer2" minOccurs="0"
2107 maxOccurs="unbounded"/>
2108         <xs:element name="participant" type="EMS_MT000030.Participant2" minOccurs="0"
2109 maxOccurs="unbounded"/>
2110         <xs:element name="entryRelationship" type="EMS_MT000030.EntryRelationship" minOccurs="0"
2111 maxOccurs="unbounded"/>
2112     </xs:sequence>
2113     <xs:attribute name="type" type="Classes" default="Procedure"/>
2114     <xs:attribute name="classCode" type="ActClass" use="required"/>
2115     <xs:attribute name="moodCode" type="cs" use="required"/>
2116     <xs:attribute name="negationInd" type="bl" use="optional"/>
2117     <xs:attribute name="templateId" use="optional">
2118         <xs:simpleType>
2119             <xs:list itemType="oid"/>
2120         </xs:simpleType>
2121     </xs:attribute>
2122     <xs:attribute name="typeIdRoot" type="xs:string" use="optional"/>
2123     <xs:attribute name="typeIdExtension" type="xs:string" use="optional"/>
2124     <xs:attribute name="realmCode" use="optional">
2125         <xs:simpleType>
2126             <xs:list itemType="cs"/>
2127         </xs:simpleType>
2128     </xs:attribute>
2129     <xs:attribute name="nullFlavor" type="cs" use="optional"/>
2130 </xs:complexType>
2131 <xs:complexType name="EMS_MT000030.SubstanceAdministration">
2132     <xs:sequence>
2133         <xs:element name="id" type="II" minOccurs="0" maxOccurs="unbounded"/>
2134         <xs:element name="text" type="ED" minOccurs="0"/>
2135         <xs:element name="effectiveTime" type="SXCM_TS" minOccurs="0" maxOccurs="unbounded"/>
2136         <xs:element name="repeatNumber" type="IVL_INT" minOccurs="0"/>
2137         <xs:element name="routeCode" type="CE" minOccurs="0"/>
2138         <xs:element name="doseQuantity" type="IVL_PQ" minOccurs="0"/>
2139         <xs:element name="rateQuantity" type="IVL_PQ" minOccurs="0"/>
2140         <xs:element name="consumable" type="EMS_MT000030.Consumable"/>
2141         <xs:element name="performer" type="EMS_MT000030.Performer2" minOccurs="0"
2142 maxOccurs="unbounded"/>
2143         <xs:element name="participant" type="EMS_MT000030.Participant2" minOccurs="0"
2144 maxOccurs="unbounded"/>
2145         <xs:element name="entryRelationship" type="EMS_MT000030.EntryRelationship" minOccurs="0"
2146 maxOccurs="unbounded"/>
2147     </xs:sequence>
2148     <xs:attribute name="type" type="Classes" default="SubstanceAdministration"/>
2149     <xs:attribute name="classCode" type="ActClass" use="required"/>
2150     <xs:attribute name="moodCode" type="cs" use="required"/>
2151     <xs:attribute name="negationInd" type="bl" use="optional"/>
2152     <xs:attribute name="templateId" use="optional">
2153         <xs:simpleType>
2154             <xs:list itemType="oid"/>
2155         </xs:simpleType>
2156     </xs:attribute>
2157     <xs:attribute name="typeIdRoot" type="xs:string" use="optional"/>
```



```
2158     <xs:attribute name="typeldExtension" type="xs:string" use="optional"/>
2159     <xs:attribute name="realmCode" use="optional">
2160       <xs:simpleType>
2161         <xs:list itemType="cs"/>
2162       </xs:simpleType>
2163     </xs:attribute>
2164     <xs:attribute name="nullFlavor" type="cs" use="optional"/>
2165   </xs:complexType>
2166   <xs:complexType name="EMS_MT000030.Consumable">
2167     <xs:sequence>
2168       <xs:element name="manufacturedProduct" type="EMS_MT000030.ManufacturedProduct"/>
2169     </xs:sequence>
2170     <xs:attribute name="type" type="Classes" default="Participation"/>
2171     <xs:attribute name="typeCode" type="ParticipationType" use="optional" default="CSM"/>
2172     <xs:attribute name="templated" use="optional">
2173       <xs:simpleType>
2174         <xs:list itemType="oid"/>
2175       </xs:simpleType>
2176     </xs:attribute>
2177     <xs:attribute name="typeldRoot" type="xs:string" use="optional"/>
2178     <xs:attribute name="typeldExtension" type="xs:string" use="optional"/>
2179     <xs:attribute name="realmCode" use="optional">
2180       <xs:simpleType>
2181         <xs:list itemType="cs"/>
2182       </xs:simpleType>
2183     </xs:attribute>
2184     <xs:attribute name="nullFlavor" type="cs" use="optional"/>
2185   </xs:complexType>
2186   <xs:complexType name="EMS_MT000030.ManufacturedProduct">
2187     <xs:sequence>
2188       <xs:choice>
2189         <xs:element name="manufacturedLabeledDrug" type="EMS_MT000030.LabeledDrug"/>
2190       </xs:choice>
2191     </xs:sequence>
2192     <xs:attribute name="type" type="Classes" default="RoleHeir"/>
2193     <xs:attribute name="classCode" type="RoleClass" use="optional" default="MANU"/>
2194     <xs:attribute name="templated" use="optional">
2195       <xs:simpleType>
2196         <xs:list itemType="oid"/>
2197       </xs:simpleType>
2198     </xs:attribute>
2199     <xs:attribute name="typeldRoot" type="xs:string" use="optional"/>
2200     <xs:attribute name="typeldExtension" type="xs:string" use="optional"/>
2201     <xs:attribute name="realmCode" use="optional">
2202       <xs:simpleType>
2203         <xs:list itemType="cs"/>
2204       </xs:simpleType>
2205     </xs:attribute>
2206     <xs:attribute name="nullFlavor" type="cs" use="optional"/>
2207   </xs:complexType>
2208   <xs:complexType name="EMS_MT000030.LabeledDrug">
2209     <xs:sequence>
2210       <xs:element name="code" type="CE" minOccurs="0"/>
2211       <xs:element name="name" type="EN" minOccurs="0"/>
2212     </xs:sequence>
2213     <xs:attribute name="type" type="Classes" default="ManufacturedMaterial"/>
2214     <xs:attribute name="classCode" type="EntityClass" use="optional" default="MMAT"/>
2215     <xs:attribute name="determinerCode" type="EntityDeterminer" use="optional" default="KIND"/>
2216     <xs:attribute name="templated" use="optional">
2217       <xs:simpleType>
2218         <xs:list itemType="oid"/>
2219       </xs:simpleType>
2220     </xs:attribute>
2221     <xs:attribute name="typeldRoot" type="xs:string" use="optional"/>
2222     <xs:attribute name="typeldExtension" type="xs:string" use="optional"/>
2223     <xs:attribute name="realmCode" use="optional">
2224       <xs:simpleType>
2225         <xs:list itemType="cs"/>
2226       </xs:simpleType>
2227     </xs:attribute>
```

```
2228         <xs:attribute name="nullFlavor" type="cs" use="optional"/>
2229     </xs:complexType>
2230 </xs:schema>
2231
2232
2233
```

## Vocabularies (voc.xsd)

```
<?xml version="1.0" encoding="utf-8"?>
<xs:schema targetNamespace="urn:hl7-org:v3" xmlns:mifVoc="urn:hl7-org:v3/mif" xmlns="urn:hl7-org:v3"
  xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:simpleType name="Classes">
    <xs:restriction base="cs"/>
  </xs:simpleType>
  <xs:simpleType name="ActMood_X">
    <xs:restriction base="cs"/>
  </xs:simpleType>
  <xs:simpleType name="ActMood">
    <xs:annotation>
      <xs:documentation/>
    </xs:annotation>
    <xs:union memberTypes="ActMood_X x_ActMoodDefEvn x_ActMoodRqoPrpAptArq
x_ActMoodDefEvnRqoPrmsPrp ActMoodCompletionTrack ActMoodPredicate x_ActMoodDocumentObservation
x_ActMoodEvnOrdPrmsPrp x_ActMoodOrdPrmsEvn x_ActMoodOrdPrms x_ActMoodIntentEvent"/>
  </xs:simpleType>
  <xs:simpleType name="ActMoodCompletionTrack_X">
    <xs:restriction base="cs">
      <xs:enumeration value="DEF"/>
      <xs:enumeration value="EVN"/>
    </xs:restriction>
  </xs:simpleType>
  <xs:simpleType name="ActMoodCompletionTrack">
    <xs:annotation>
      <xs:documentation/>
    </xs:annotation>
    <xs:union memberTypes="ActMoodCompletionTrack_X ActMoodIntent"/>
  </xs:simpleType>
  <xs:simpleType name="ActMoodPredicate_X">
    <xs:restriction base="cs">
      <xs:enumeration value="EVN.CRT"/>
      <xs:enumeration value="GOL"/>
      <xs:enumeration value="OPT"/>
    </xs:restriction>
  </xs:simpleType>
  <xs:simpleType name="ActMoodPredicate">
    <xs:annotation>
      <xs:documentation/>
    </xs:annotation>
    <xs:union memberTypes="ActMoodPredicate_X"/>
  </xs:simpleType>
  <xs:simpleType name="x_ActMoodOrdPrmsEvn_X">
    <xs:restriction base="cs">
      <xs:enumeration value="PRMS"/>
      <xs:enumeration value="EVN"/>
      <xs:enumeration value="RQO"/>
    </xs:restriction>
  </xs:simpleType>
  <xs:simpleType name="x_ActMoodOrdPrmsEvn">
    <xs:annotation>
      <xs:documentation/>
    </xs:annotation>
    <xs:union memberTypes="x_ActMoodOrdPrmsEvn_X"/>
  </xs:simpleType>
  <xs:simpleType name="x_ActMoodOrdPrms_X">
    <xs:restriction base="cs">
      <xs:enumeration value="PRMS"/>
      <xs:enumeration value="RQO"/>
    </xs:restriction>
  </xs:simpleType>
  <xs:simpleType name="x_ActMoodOrdPrms">
    <xs:annotation>
      <xs:documentation/>
    </xs:annotation>
```

```
2300     <xs:union memberTypes="x_ActMoodOrdPrms_X"/>
2301 </xs:simpleType>
2302 <xs:simpleType name="x_ActMoodIntentEvent_X">
2303     <xs:restriction base="cs">
2304         <xs:enumeration value="EVN"/>
2305     </xs:restriction>
2306 </xs:simpleType>
2307 <xs:simpleType name="x_ActMoodIntentEvent">
2308     <xs:annotation>
2309         <xs:documentation/>
2310     </xs:annotation>
2311     <xs:union memberTypes="x_ActMoodIntentEvent_X ActMoodIntent"/>
2312 </xs:simpleType>
2313 <xs:simpleType name="ActMoodIntent_X">
2314     <xs:restriction base="cs">
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2316         <xs:enumeration value="PRP"/>
2317         <xs:enumeration value="APT"/>
2318         <xs:enumeration value="ARQ"/>
2319         <xs:enumeration value="RQO"/>
2320         <xs:enumeration value="SLOT"/>
2321     </xs:restriction>
2322 </xs:simpleType>
2323 <xs:simpleType name="ActMoodIntent">
2324     <xs:annotation>
2325         <xs:documentation/>
2326     </xs:annotation>
2327     <xs:union memberTypes="ActMoodIntent_X"/>
2328 </xs:simpleType>
2329 <xs:simpleType name="x_ActMoodDocumentObservation_X">
2330     <xs:restriction base="cs">
2331         <xs:enumeration value="EVN"/>
2332         <xs:enumeration value="GOL"/>
2333         <xs:enumeration value="INT"/>
2334     </xs:restriction>
2335 </xs:simpleType>
2336 <xs:simpleType name="x_ActMoodDocumentObservation">
2337     <xs:annotation>
2338         <xs:documentation/>
2339     </xs:annotation>
2340     <xs:union memberTypes="x_ActMoodDocumentObservation_X"/>
2341 </xs:simpleType>
2342 <xs:simpleType name="x_ActMoodEvnOrdPrmsPrp_X">
2343     <xs:restriction base="cs">
2344         <xs:enumeration value="EVN"/>
2345         <xs:enumeration value="RQO"/>
2346         <xs:enumeration value="PRMS"/>
2347         <xs:enumeration value="PRP"/>
2348     </xs:restriction>
2349 </xs:simpleType>
2350 <xs:simpleType name="x_ActMoodEvnOrdPrmsPrp">
2351     <xs:annotation>
2352         <xs:documentation/>
2353     </xs:annotation>
2354     <xs:union memberTypes="x_ActMoodEvnOrdPrmsPrp_X"/>
2355 </xs:simpleType>
2356 <xs:simpleType name="x_ActMoodDefEvnRqoPrmsPrp_X">
2357     <xs:restriction base="cs">
2358         <xs:enumeration value="RQO"/>
2359         <xs:enumeration value="PRMS"/>
2360         <xs:enumeration value="PRP"/>
2361         <xs:enumeration value="EVN"/>
2362         <xs:enumeration value="DEF"/>
2363     </xs:restriction>
2364 </xs:simpleType>
2365 <xs:simpleType name="x_ActMoodDefEvnRqoPrmsPrp">
2366     <xs:annotation>
2367         <xs:documentation/>
2368     </xs:annotation>
2369     <xs:union memberTypes="x_ActMoodDefEvnRqoPrmsPrp_X"/>
```

```
2370 </xs:simpleType>
2371 <xs:simpleType name="x_ActMoodRqoPrpAptArq_X">
2372   <xs:restriction base="cs">
2373     <xs:enumeration value="RQO"/>
2374     <xs:enumeration value="PRP"/>
2375     <xs:enumeration value="APT"/>
2376     <xs:enumeration value="ARQ"/>
2377   </xs:restriction>
2378 </xs:simpleType>
2379 <xs:simpleType name="x_ActMoodRqoPrpAptArq">
2380   <xs:annotation>
2381     <xs:documentation/>
2382   </xs:annotation>
2383   <xs:union memberTypes="x_ActMoodRqoPrpAptArq_X"/>
2384 </xs:simpleType>
2385 <xs:simpleType name="x_ActMoodDefEvn_X">
2386   <xs:restriction base="cs">
2387     <xs:enumeration value="EVN"/>
2388     <xs:enumeration value="DEF"/>
2389   </xs:restriction>
2390 </xs:simpleType>
2391 <xs:simpleType name="x_ActMoodDefEvn">
2392   <xs:annotation>
2393     <xs:documentation/>
2394   </xs:annotation>
2395   <xs:union memberTypes="x_ActMoodDefEvn_X"/>
2396 </xs:simpleType>
2397 <xs:simpleType name="ActRelationshipType_X">
2398   <xs:restriction base="cs"/>
2399 </xs:simpleType>
2400 <xs:simpleType name="ActRelationshipType">
2401   <xs:annotation>
2402     <xs:documentation/>
2403   </xs:annotation>
2404   <xs:union memberTypes="ActRelationshipType_X x_ActRelationshipPertinentInfo ActRelationshipConditional
2405 ActRelationshipHasComponent ActRelationshipOutcome ActRelationshipPertains ActRelationshipSequel
2406 x_ActRelationshipDocument x_ActRelationshipExternalReference x_ActRelationshipPatientTransport"/>
2407 </xs:simpleType>
2408 <xs:simpleType name="ActRelationshipHasComponent_X">
2409   <xs:restriction base="cs">
2410     <xs:enumeration value="DEP"/>
2411     <xs:enumeration value="ARR"/>
2412     <xs:enumeration value="CTRLV"/>
2413   </xs:restriction>
2414 </xs:simpleType>
2415 <xs:simpleType name="ActRelationshipHasComponent">
2416   <xs:annotation>
2417     <xs:documentation/>
2418   </xs:annotation>
2419   <xs:union memberTypes="ActRelationshipHasComponent_X"/>
2420 </xs:simpleType>
2421 <xs:simpleType name="ActRelationshipOutcome_X">
2422   <xs:restriction base="cs">
2423     <xs:enumeration value="RISK"/>
2424     <xs:enumeration value="OBJC"/>
2425     <xs:enumeration value="OBJF"/>
2426     <xs:enumeration value="GOAL"/>
2427   </xs:restriction>
2428 </xs:simpleType>
2429 <xs:simpleType name="ActRelationshipOutcome">
2430   <xs:annotation>
2431     <xs:documentation/>
2432   </xs:annotation>
2433   <xs:union memberTypes="ActRelationshipOutcome_X"/>
2434 </xs:simpleType>
2435 <xs:simpleType name="ActRelationshipPertains_X">
2436   <xs:restriction base="cs">
2437     <xs:enumeration value="NAME"/>
2438     <xs:enumeration value="AUTH"/>
2439     <xs:enumeration value="COVBY"/>
```

```
2440      <xs:enumeration value="EXPL"/>
2441      <xs:enumeration value="PREV"/>
2442      <xs:enumeration value="REFV"/>
2443      <xs:enumeration value="SUBJ"/>
2444      <xs:enumeration value="CAUS"/>
2445      <xs:enumeration value="DRIV"/>
2446      <xs:enumeration value="MFST"/>
2447      <xs:enumeration value="LIMIT"/>
2448      <xs:enumeration value="REFR"/>
2449      <xs:enumeration value="SUMM"/>
2450    </xs:restriction>
2451  </xs:simpleType>
2452  <xs:simpleType name="ActRelationshipPertains">
2453    <xs:annotation>
2454      <xs:documentation/>
2455    </xs:annotation>
2456    <xs:union memberTypes="ActRelationshipPertains_X ActRelationshipPosts hassupport"/>
2457  </xs:simpleType>
2458  <xs:simpleType name="hassupport_X">
2459    <xs:restriction base="cs">
2460      <xs:enumeration value="SPRTBND"/>
2461    </xs:restriction>
2462  </xs:simpleType>
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2503 ActRelationshipReplacement"/>
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2583     <xs:enumeration value="VRXCRPT"/>
2584     <xs:enumeration value="XCRPT"/>
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2588   </xs:restriction>
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2591   <xs:annotation>
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2647   <xs:restriction base="cs"/>
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2662       <xs:documentation/>
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EntityClassOrganization EntityClassPlace EntityClassDocumentReceiving"/>
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2799 ParticipationIndirectTarget ParticipationInformationGenerator ParticipationInformationRecipient
2800 ParticipationPhysicalPerformer ParticipationTargetDirect ParticipationTargetLocation ParticipationVerifier
2801 x_EncounterPerformerParticipation x_ParticipationAuthorPerformer x_ParticipationVrfRespSprfWit"/>
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3027  ActDocumentStructureClass ActClassContract"/>
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3045  ActClassObservationSeries"/>
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3049        <xs:enumeration value="OUTB"/>
3050      </xs:restriction>
3051    </xs:simpleType>
3052    <xs:simpleType name="ActClassPublicHealthCase">
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3057    </xs:simpleType>
3058    <xs:simpleType name="ActClassROI_X">
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3066        <xs:documentation/>
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3068      <xs:union memberTypes="ActClassROI_X"/>
3069    </xs:simpleType>
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3072 <xs:enumeration value="OBSCOR"/>
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3074 </xs:simpleType>
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3107 <xs:enumeration value="DOCBODY"/>
3108 <xs:enumeration value="DOCCNTNT"/>
3109 <xs:enumeration value="DOCLSTITM"/>
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3111 <xs:enumeration value="DOCSECT"/>
3112 <xs:enumeration value="DOCTBL"/>
3113 <xs:enumeration value="LINKHTML"/>
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3116 </xs:restriction>
3117 </xs:simpleType>
3118 <xs:simpleType name="ActDocumentStructureClass">
3119 <xs:annotation>
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3122 <xs:union memberTypes="ActDocumentStructureClass_X ActClassDocument DocumentTableStructure
3123 DocumentList"/>
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3126 <xs:restriction base="cs"/>
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3133 DocumentTableColumnStructure"/>
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3138 <xs:enumeration value="TBLHDR"/>
3139 </xs:restriction>
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3143     <xs:documentation/>
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3145   <xs:union memberTypes="DocumentTableCell_X"/>
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3148   <xs:restriction base="cs">
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3152 <xs:simpleType name="DocumentTableRowStructure">
3153   <xs:annotation>
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3159   <xs:restriction base="cs"/>
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3172   </xs:restriction>
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3178   <xs:union memberTypes="TableRowGroupType_X"/>
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3180 <xs:simpleType name="DocumentTableColumnStructure_X">
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3187   <xs:annotation>
3188     <xs:documentation/>
3189   </xs:annotation>
3190   <xs:union memberTypes="DocumentTableColumnStructure_X"/>
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3193   <xs:restriction base="cs"/>
3194 </xs:simpleType>
3195 <xs:simpleType name="DocumentList">
3196   <xs:annotation>
3197     <xs:documentation/>
3198   </xs:annotation>
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3201 <xs:simpleType name="ListType_X">
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3204     <xs:enumeration value="unordered"/>
3205   </xs:restriction>
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3208   <xs:annotation>
3209     <xs:documentation/>
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3213     <xs:simpleType name="ActClassDocument_X">
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3218             <xs:documentation/>
3219         </xs:annotation>
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3221     </xs:simpleType>
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3226     </xs:simpleType>
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3258             <xs:documentation/>
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3263         <xs:restriction base="cs"/>
3264     </xs:simpleType>
3265     <xs:simpleType name="RoleClassRoot">
3266         <xs:annotation>
3267             <xs:documentation/>
3268         </xs:annotation>
3269         <xs:union memberTypes="RoleClassRoot_X x_RoleClassPayeePolicyRelationship
3270 x_RoleClassAccommodationRequestor x_DocumentSubject x_DocumentEntrySubject RoleClassOntological
3271 RoleClassAssociative RoleClassPartitive x_InformationRecipientRole x_RoleClassCoverage
3272 x_RoleClassCoverageInvoice x_RoleClassCredentialedEntity"/>
3273     </xs:simpleType>
3274     <xs:simpleType name="RoleClassOntological_X">
3275         <xs:restriction base="cs">
3276             <xs:enumeration value="SUBY"/>
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3278             <xs:enumeration value="INST"/>
3279         </xs:restriction>
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3285   <xs:union memberTypes="RoleClassOntological_X RoleClassIsSpeciesEntity"/>
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3289     <xs:enumeration value="GRIC"/>
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3293   <xs:annotation>
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3296   <xs:union memberTypes="RoleClassIsSpeciesEntity_X"/>
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3301     <xs:enumeration value="MBR"/>
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3306   <xs:annotation>
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3308   </xs:annotation>
3309   <xs:union memberTypes="RoleClassPartitive_X RoleClassIngredientEntity RoleClassLocatedEntity
3310 RoleClassSpecimen"/>
3311 </xs:simpleType>
3312 <xs:simpleType name="RoleClassIngredientEntity_X">
3313   <xs:restriction base="cs">
3314     <xs:enumeration value="ACTI"/>
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3317     <xs:enumeration value="BASE"/>
3318   </xs:restriction>
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3321   <xs:annotation>
3322     <xs:documentation/>
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3339 </xs:simpleType>
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3345 </xs:simpleType>
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3348     <xs:documentation/>
3349   </xs:annotation>
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3351    </xs:simpleType>
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3356    </xs:simpleType>
3357    <xs:simpleType name="RoleClassLocatedEntity">
3358      <xs:annotation>
3359        <xs:documentation/>
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3362  </xs:simpleType>
3363  <xs:simpleType name="x_RoleClassCoverage_X">
3364    <xs:restriction base="cs">
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3367      <xs:enumeration value="SPNSR"/>
3368      <xs:enumeration value="UNDWRT"/>
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3370  </xs:simpleType>
3371  <xs:simpleType name="x_RoleClassCoverage">
3372    <xs:annotation>
3373      <xs:documentation/>
3374    </xs:annotation>
3375    <xs:union memberTypes="x_RoleClassCoverage_X"/>
3376  </xs:simpleType>
3377  <xs:simpleType name="x_RoleClassCoverageInvoice_X">
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3381    </xs:restriction>
3382  </xs:simpleType>
3383  <xs:simpleType name="x_RoleClassCoverageInvoice">
3384    <xs:annotation>
3385      <xs:documentation/>
3386    </xs:annotation>
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3388  </xs:simpleType>
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3391      <xs:enumeration value="ASSIGNED"/>
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3393    </xs:restriction>
3394  </xs:simpleType>
3395  <xs:simpleType name="x_InformationRecipientRole">
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3397      <xs:documentation/>
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3400  </xs:simpleType>
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3417    <xs:annotation>
3418      <xs:documentation/>
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3430         <xs:enumeration value="MNT"/>
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3432         <xs:enumeration value="RGPR"/>
3433         <xs:enumeration value="TERR"/>
3434         <xs:enumeration value="WRTE"/>
3435     </xs:restriction>
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3438     <xs:annotation>
3439         <xs:documentation/>
3440     </xs:annotation>
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3442 RoleClassServiceDeliveryLocation"/>
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3493       <xs:enumeration value="CRSPNSR"/>
3494       <xs:enumeration value="COVPTY"/>
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3498       <xs:enumeration value="PAYEE"/>
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3512 RoleClassEmployee"/>
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3521       <xs:documentation/>
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3528     </xs:restriction>
3529   </xs:simpleType>
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3532       <xs:documentation/>
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3551     </xs:restriction>
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3573     <xs:restriction base="cs">
3574       <xs:enumeration value="PRS"/>
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3577     </xs:restriction>
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3584   </xs:simpleType>
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3589     </xs:restriction>
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3606     <xs:annotation>
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3612     <xs:restriction base="cs">
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3615       <xs:enumeration value="POLHOLD"/>
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3620     <xs:annotation>
3621       <xs:documentation/>
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3626     <xs:restriction base="cs"/>
3627   </xs:simpleType>
3628   <xs:simpleType name="RoleLinkType">
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3637     </xs:restriction>
3638 </xs:simpleType>
3639 <xs:simpleType name="RoleStatus">
3640     <xs:annotation>
3641         <xs:documentation/>
3642     </xs:annotation>
3643     <xs:union memberTypes="RoleStatus_X RoleStatusNormal"/>
3644 </xs:simpleType>
3645 <xs:simpleType name="RoleStatusNormal_X">
3646     <xs:restriction base="cs">
3647         <xs:enumeration value="terminated"/>
3648         <xs:enumeration value="suspended"/>
3649         <xs:enumeration value="active"/>
3650     </xs:restriction>
3651 </xs:simpleType>
3652 <xs:simpleType name="RoleStatusNormal">
3653     <xs:annotation>
3654         <xs:documentation/>
3655     </xs:annotation>
3656     <xs:union memberTypes="RoleStatusNormal_X"/>
3657 </xs:simpleType>
3658 <xs:simpleType name="EntityStatus_X">
3659     <xs:restriction base="cs">
3660         <xs:enumeration value="nullified"/>
3661     </xs:restriction>
3662 </xs:simpleType>
3663 <xs:simpleType name="EntityStatus">
3664     <xs:annotation>
3665         <xs:documentation/>
3666     </xs:annotation>
3667     <xs:union memberTypes="EntityStatus_X EntityStatusNormal"/>
3668 </xs:simpleType>
3669 <xs:simpleType name="EntityStatusNormal_X">
3670     <xs:restriction base="cs">
3671         <xs:enumeration value="terminated"/>
3672         <xs:enumeration value="active"/>
3673     </xs:restriction>
3674 </xs:simpleType>
3675 <xs:simpleType name="EntityStatusNormal">
3676     <xs:annotation>
3677         <xs:documentation/>
3678     </xs:annotation>
3679     <xs:union memberTypes="EntityStatusNormal_X"/>
3680 </xs:simpleType>
3681 <xs:simpleType name="ContextControl_X">
3682     <xs:restriction base="cs"/>
3683 </xs:simpleType>
3684 <xs:simpleType name="ContextControl">
3685     <xs:annotation>
3686         <xs:documentation/>
3687     </xs:annotation>
3688     <xs:union memberTypes="ContextControl_X ContextControlAdditive ContextControlOverriding
3689 ContextControlPropagating ContextControlNonPropagating"/>
3690 </xs:simpleType>
3691 <xs:simpleType name="ContextControlAdditive_X">
3692     <xs:restriction base="cs">
3693         <xs:enumeration value="AN"/>
3694         <xs:enumeration value="AP"/>
3695     </xs:restriction>
3696 </xs:simpleType>
3697 <xs:simpleType name="ContextControlAdditive">
3698     <xs:annotation>
3699         <xs:documentation/>
```

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3700         </xs:annotation>
3701         <xs:union memberTypes="ContextControlAdditive_X"/>
3702     </xs:simpleType>
3703     <xs:simpleType name="ContextControlOverriding_X">
3704         <xs:restriction base="cs">
3705             <xs:enumeration value="ON"/>
3706             <xs:enumeration value="OP"/>
3707         </xs:restriction>
3708     </xs:simpleType>
3709     <xs:simpleType name="ContextControlOverriding">
3710         <xs:annotation>
3711             <xs:documentation/>
3712         </xs:annotation>
3713         <xs:union memberTypes="ContextControlOverriding_X"/>
3714     </xs:simpleType>
3715     <xs:simpleType name="ContextControlPropagating_X">
3716         <xs:restriction base="cs">
3717             <xs:enumeration value="AP"/>
3718             <xs:enumeration value="OP"/>
3719         </xs:restriction>
3720     </xs:simpleType>
3721     <xs:simpleType name="ContextControlPropagating">
3722         <xs:annotation>
3723             <xs:documentation/>
3724         </xs:annotation>
3725         <xs:union memberTypes="ContextControlPropagating_X"/>
3726     </xs:simpleType>
3727     <xs:simpleType name="ContextControlNonPropagating_X">
3728         <xs:restriction base="cs">
3729             <xs:enumeration value="AN"/>
3730             <xs:enumeration value="ON"/>
3731         </xs:restriction>
3732     </xs:simpleType>
3733     <xs:simpleType name="ContextControlNonPropagating">
3734         <xs:annotation>
3735             <xs:documentation/>
3736         </xs:annotation>
3737         <xs:union memberTypes="ContextControlNonPropagating_X"/>
3738     </xs:simpleType>
3739 </xs:schema>
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3807         </xs:attribute>
3808     </xs:complexType>
3809 </xs:element>
3810 <xs:element name="colgroup">
3811     <xs:complexType>
3812         <xs:sequence minOccurs="0" maxOccurs="unbounded">
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3814         </xs:sequence>
3815         <xs:attribute name="ID" type="xs:ID"/>
3816         <xs:attribute ref="xml:lang"/>
3817         <xs:attribute name="span" type="xs:string" default="1"/>
3818         <xs:attribute name="width" type="xs:string"/>
3819         <xs:attribute name="align">
3820             <xs:simpleType>
3821                 <xs:restriction base="xs:NMTOKEN">
3822                     <xs:enumeration value="left"/>
3823                     <xs:enumeration value="center"/>
3824                     <xs:enumeration value="right"/>
3825                     <xs:enumeration value="justify"/>
3826                     <xs:enumeration value="char"/>
3827                 </xs:restriction>
3828             </xs:simpleType>
3829         </xs:attribute>
3830         <xs:attribute name="char" type="xs:string"/>
3831         <xs:attribute name="charoff" type="xs:string"/>
3832         <xs:attribute name="valign">
3833             <xs:simpleType>
3834                 <xs:restriction base="xs:NMTOKEN">
3835                     <xs:enumeration value="top"/>
3836                     <xs:enumeration value="middle"/>
3837                     <xs:enumeration value="bottom"/>
3838                     <xs:enumeration value="baseline"/>
3839                 </xs:restriction>
3840             </xs:simpleType>
3841         </xs:attribute>
3842     </xs:complexType>
3843 </xs:element>
3844 <xs:element name="content">
3845     <xs:complexType mixed="true">
3846         <xs:choice minOccurs="0" maxOccurs="unbounded">
3847             <xs:element ref="content"/>
3848             <xs:element ref="link"/>
3849             <xs:element ref="sub"/>
3850             <xs:element ref="sup"/>
3851             <xs:element ref="br"/>
3852             <xs:element ref="renderMultiMedia"/>
3853         </xs:choice>
3854         <xs:attribute name="ID" type="xs:ID"/>
3855         <xs:attribute ref="xml:lang"/>
3856         <xs:attribute name="emphasis">
3857             <xs:simpleType>
3858                 <xs:restriction base="xs:NMTOKEN">
3859                     <xs:enumeration value="bold"/>
3860                     <xs:enumeration value="underline"/>
3861                     <xs:enumeration value="italics"/>
3862                     <xs:enumeration value="yes"/>
3863                 </xs:restriction>
3864             </xs:simpleType>
3865         </xs:attribute>
3866         <xs:attribute name="revised">
3867             <xs:simpleType>
3868                 <xs:restriction base="xs:NMTOKEN">
3869                     <xs:enumeration value="insert"/>
3870                     <xs:enumeration value="delete"/>
3871                 </xs:restriction>
3872             </xs:simpleType>
3873         </xs:attribute>
3874     </xs:complexType>
3875 </xs:element>
3876 <xs:element name="item">
```

```
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3879 <xs:element name="caption" minOccurs="0"/>
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3881 <xs:element ref="content"/>
3882 <xs:element ref="link"/>
3883 <xs:element ref="sub"/>
3884 <xs:element ref="sup"/>
3885 <xs:element ref="br"/>
3886 <xs:element ref="renderMultiMedia"/>
3887 <xs:element ref="paragraph"/>
3888 <xs:element ref="list"/>
3889 <xs:element ref="table"/>
3890 </xs:choice>
3891 </xs:sequence>
3892 <xs:attribute name="ID" type="xs:ID"/>
3893 <xs:attribute ref="xml:lang"/>
3894 </xs:complexType>
3895 </xs:element>
3896 <xs:element name="link">
3897 <xs:complexType>
3898 <xs:sequence>
3899 <xs:element ref="linkHtml"/>
3900 </xs:sequence>
3901 <xs:attribute name="ID" type="xs:ID"/>
3902 <xs:attribute ref="xml:lang"/>
3903 </xs:complexType>
3904 </xs:element>
3905 <xs:element name="linkHtml">
3906 <xs:complexType>
3907 <xs:simpleContent>
3908 <xs:extension base="xs:string">
3909 <xs:attribute name="name" type="xs:string"/>
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3911 <xs:attribute name="rel" type="xs:string"/>
3912 <xs:attribute name="rev" type="xs:string"/>
3913 <xs:attribute name="title" type="xs:string"/>
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3915 <xs:attribute ref="xml:lang"/>
3916 </xs:extension>
3917 </xs:simpleContent>
3918 </xs:complexType>
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3921 <xs:complexType>
3922 <xs:sequence>
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3925 </xs:sequence>
3926 <xs:attribute name="ID" type="xs:ID"/>
3927 <xs:attribute ref="xml:lang"/>
3928 <xs:attribute name="listType" default="unordered">
3929 <xs:simpleType>
3930 <xs:restriction base="xs:NMTOKEN">
3931 <xs:enumeration value="ordered"/>
3932 <xs:enumeration value="unordered"/>
3933 </xs:restriction>
3934 </xs:simpleType>
3935 </xs:attribute>
3936 </xs:complexType>
3937 </xs:element>
3938 <xs:element name="localCaptionCode">
3939 <xs:complexType>
3940 <xs:attribute name="code" type="xs:string"/>
3941 <xs:attribute name="codeSystem" type="xs:string"/>
3942 <xs:attribute name="displayName" type="xs:string"/>
3943 <xs:attribute name="ID" type="xs:ID"/>
3944 <xs:attribute ref="xml:lang"/>
3945 </xs:complexType>
3946 </xs:element>
```

```
3947 <xs:element name="paragraph">
3948   <xs:complexType mixed="true">
3949     <xs:sequence>
3950       <xs:element name="caption" minOccurs="0"/>
3951       <xs:choice minOccurs="0" maxOccurs="unbounded">
3952         <xs:element ref="content"/>
3953         <xs:element ref="link"/>
3954         <xs:element ref="sub"/>
3955         <xs:element ref="sup"/>
3956         <xs:element ref="br"/>
3957         <xs:element ref="renderMultiMedia"/>
3958       </xs:choice>
3959     </xs:sequence>
3960     <xs:attribute name="ID" type="xs:ID"/>
3961     <xs:attribute ref="xml:lang"/>
3962   </xs:complexType>
3963 </xs:element>
3964 <xs:element name="renderMultiMedia">
3965   <xs:complexType>
3966     <xs:sequence>
3967       <xs:element ref="caption" minOccurs="0"/>
3968     </xs:sequence>
3969     <xs:attribute name="referencedObject" type="xs:IDREFS" use="required"/>
3970     <xs:attribute name="ID" type="xs:ID"/>
3971     <xs:attribute ref="xml:lang"/>
3972   </xs:complexType>
3973 </xs:element>
3974 <xs:element name="sub" type="xs:string"/>
3975 <xs:element name="sup" type="xs:string"/>
3976 <xs:element name="table">
3977   <xs:complexType>
3978     <xs:sequence>
3979       <xs:element ref="caption" minOccurs="0"/>
3980       <xs:choice>
3981         <xs:element ref="col" minOccurs="0" maxOccurs="unbounded"/>
3982         <xs:element ref="colgroup" minOccurs="0" maxOccurs="unbounded"/>
3983       </xs:choice>
3984       <xs:element ref="thead" minOccurs="0"/>
3985       <xs:element ref="tfoot" minOccurs="0"/>
3986       <xs:choice>
3987         <xs:element ref="tbody" maxOccurs="unbounded"/>
3988         <xs:element ref="tr" maxOccurs="unbounded"/>
3989       </xs:choice>
3990     </xs:sequence>
3991     <xs:attribute name="ID" type="xs:ID"/>
3992     <xs:attribute ref="xml:lang"/>
3993     <xs:attribute name="summary" type="xs:string"/>
3994     <xs:attribute name="width" type="xs:string"/>
3995     <xs:attribute name="border" type="xs:string"/>
3996     <xs:attribute name="frame">
3997       <xs:simpleType>
3998         <xs:restriction base="xs:NMTOKEN">
3999           <xs:enumeration value="void"/>
4000           <xs:enumeration value="above"/>
4001           <xs:enumeration value="below"/>
4002           <xs:enumeration value="hsides"/>
4003           <xs:enumeration value="lhs"/>
4004           <xs:enumeration value="rhs"/>
4005           <xs:enumeration value="vsides"/>
4006           <xs:enumeration value="box"/>
4007           <xs:enumeration value="border"/>
4008         </xs:restriction>
4009       </xs:simpleType>
4010     </xs:attribute>
4011     <xs:attribute name="rules">
4012       <xs:simpleType>
4013         <xs:restriction base="xs:NMTOKEN">
4014           <xs:enumeration value="none"/>
4015           <xs:enumeration value="groups"/>
4016           <xs:enumeration value="rows"/>

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4017         <xs:enumeration value="cols"/>
4018         <xs:enumeration value="all"/>
4019     </xs:restriction>
4020 </xs:simpleType>
4021 </xs:attribute>
4022 <xs:attribute name="cellspacing" type="xs:string"/>
4023 <xs:attribute name="cellpadding" type="xs:string"/>
4024 </xs:complexType>
4025 </xs:element>
4026 <xs:element name="tbody">
4027     <xs:complexType>
4028         <xs:sequence maxOccurs="unbounded">
4029             <xs:element ref="tr"/>
4030         </xs:sequence>
4031         <xs:attribute name="ID" type="xs:ID"/>
4032         <xs:attribute ref="xml:lang"/>
4033         <xs:attribute name="align">
4034             <xs:simpleType>
4035                 <xs:restriction base="xs:NMTOKEN">
4036                     <xs:enumeration value="left"/>
4037                     <xs:enumeration value="center"/>
4038                     <xs:enumeration value="right"/>
4039                     <xs:enumeration value="justify"/>
4040                     <xs:enumeration value="char"/>
4041                 </xs:restriction>
4042             </xs:simpleType>
4043         </xs:attribute>
4044         <xs:attribute name="char" type="xs:string"/>
4045         <xs:attribute name="charoff" type="xs:string"/>
4046         <xs:attribute name="valign">
4047             <xs:simpleType>
4048                 <xs:restriction base="xs:NMTOKEN">
4049                     <xs:enumeration value="top"/>
4050                     <xs:enumeration value="middle"/>
4051                     <xs:enumeration value="bottom"/>
4052                     <xs:enumeration value="baseline"/>
4053                 </xs:restriction>
4054             </xs:simpleType>
4055         </xs:attribute>
4056     </xs:complexType>
4057 </xs:element>
4058 <xs:element name="td">
4059     <xs:complexType mixed="true">
4060         <xs:choice minOccurs="0" maxOccurs="unbounded">
4061             <xs:element ref="content"/>
4062             <xs:element ref="link"/>
4063             <xs:element ref="sub"/>
4064             <xs:element ref="sup"/>
4065             <xs:element ref="br"/>
4066             <xs:element ref="renderMultiMedia"/>
4067             <xs:element ref="paragraph"/>
4068             <xs:element ref="list"/>
4069         </xs:choice>
4070         <xs:attribute name="ID" type="xs:ID"/>
4071         <xs:attribute ref="xml:lang"/>
4072         <xs:attribute name="abbr" type="xs:string"/>
4073         <xs:attribute name="axis" type="xs:string"/>
4074         <xs:attribute name="headers" type="xs:IDREFS"/>
4075         <xs:attribute name="scope">
4076             <xs:simpleType>
4077                 <xs:restriction base="xs:NMTOKEN">
4078                     <xs:enumeration value="row"/>
4079                     <xs:enumeration value="col"/>
4080                     <xs:enumeration value="rowgroup"/>
4081                     <xs:enumeration value="colgroup"/>
4082                 </xs:restriction>
4083             </xs:simpleType>
4084         </xs:attribute>
4085         <xs:attribute name="rowspan" type="xs:string" default="1"/>
4086         <xs:attribute name="colspan" type="xs:string" default="1"/>
```

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4087     <xs:attribute name="align">
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4089         <xs:restriction base="xs:NMTOKEN">
4090           <xs:enumeration value="left"/>
4091           <xs:enumeration value="center"/>
4092           <xs:enumeration value="right"/>
4093           <xs:enumeration value="justify"/>
4094           <xs:enumeration value="char"/>
4095         </xs:restriction>
4096       </xs:simpleType>
4097     </xs:attribute>
4098     <xs:attribute name="char" type="xs:string"/>
4099     <xs:attribute name="charoff" type="xs:string"/>
4100     <xs:attribute name="valign">
4101       <xs:simpleType>
4102         <xs:restriction base="xs:NMTOKEN">
4103           <xs:enumeration value="top"/>
4104           <xs:enumeration value="middle"/>
4105           <xs:enumeration value="bottom"/>
4106           <xs:enumeration value="baseline"/>
4107         </xs:restriction>
4108       </xs:simpleType>
4109     </xs:attribute>
4110   </xs:complexType>
4111 </xs:element>
4112 <xs:element name="text">
4113   <xs:complexType mixed="true">
4114     <xs:choice minOccurs="0" maxOccurs="unbounded">
4115       <xs:element ref="content"/>
4116       <xs:element ref="link"/>
4117       <xs:element ref="sub"/>
4118       <xs:element ref="sup"/>
4119       <xs:element ref="br"/>
4120       <xs:element ref="renderMultiMedia"/>
4121       <xs:element ref="paragraph"/>
4122       <xs:element ref="list"/>
4123       <xs:element ref="table"/>
4124     </xs:choice>
4125   </xs:complexType>
4126 </xs:element>
4127 <xs:element name="tfoot">
4128   <xs:complexType>
4129     <xs:sequence maxOccurs="unbounded">
4130       <xs:element ref="tr"/>
4131     </xs:sequence>
4132     <xs:attribute name="ID" type="xs:ID"/>
4133     <xs:attribute ref="xml:lang"/>
4134     <xs:attribute name="align">
4135       <xs:simpleType>
4136         <xs:restriction base="xs:NMTOKEN">
4137           <xs:enumeration value="left"/>
4138           <xs:enumeration value="center"/>
4139           <xs:enumeration value="right"/>
4140           <xs:enumeration value="justify"/>
4141           <xs:enumeration value="char"/>
4142         </xs:restriction>
4143       </xs:simpleType>
4144     </xs:attribute>
4145     <xs:attribute name="char" type="xs:string"/>
4146     <xs:attribute name="charoff" type="xs:string"/>
4147     <xs:attribute name="valign">
4148       <xs:simpleType>
4149         <xs:restriction base="xs:NMTOKEN">
4150           <xs:enumeration value="top"/>
4151           <xs:enumeration value="middle"/>
4152           <xs:enumeration value="bottom"/>
4153           <xs:enumeration value="baseline"/>
4154         </xs:restriction>
4155       </xs:simpleType>
4156     </xs:attribute>
```



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4157     </xs:complexType>
4158 </xs:element>
4159 <xs:element name="th">
4160   <xs:complexType mixed="true">
4161     <xs:choice minOccurs="0" maxOccurs="unbounded">
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4163       <xs:element ref="sub"/>
4164       <xs:element ref="sup"/>
4165       <xs:element ref="localCaptionCode"/>
4166     </xs:choice>
4167     <xs:attribute name="ID" type="xs:ID"/>
4168     <xs:attribute ref="xml:lang"/>
4169     <xs:attribute name="abbr" type="xs:string"/>
4170     <xs:attribute name="axis" type="xs:string"/>
4171     <xs:attribute name="headers" type="xs:IDREFS"/>
4172     <xs:attribute name="scope">
4173       <xs:simpleType>
4174         <xs:restriction base="xs:NMTOKEN">
4175           <xs:enumeration value="row"/>
4176           <xs:enumeration value="col"/>
4177           <xs:enumeration value="rowgroup"/>
4178           <xs:enumeration value="colgroup"/>
4179         </xs:restriction>
4180       </xs:simpleType>
4181     </xs:attribute>
4182     <xs:attribute name="rowspan" type="xs:string" default="1"/>
4183     <xs:attribute name="colspan" type="xs:string" default="1"/>
4184     <xs:attribute name="align">
4185       <xs:simpleType>
4186         <xs:restriction base="xs:NMTOKEN">
4187           <xs:enumeration value="left"/>
4188           <xs:enumeration value="center"/>
4189           <xs:enumeration value="right"/>
4190           <xs:enumeration value="justify"/>
4191           <xs:enumeration value="char"/>
4192         </xs:restriction>
4193       </xs:simpleType>
4194     </xs:attribute>
4195     <xs:attribute name="char" type="xs:string"/>
4196     <xs:attribute name="charoff" type="xs:string"/>
4197     <xs:attribute name="valign">
4198       <xs:simpleType>
4199         <xs:restriction base="xs:NMTOKEN">
4200           <xs:enumeration value="top"/>
4201           <xs:enumeration value="middle"/>
4202           <xs:enumeration value="bottom"/>
4203           <xs:enumeration value="baseline"/>
4204         </xs:restriction>
4205       </xs:simpleType>
4206     </xs:attribute>
4207   </xs:complexType>
4208 </xs:element>
4209 <xs:element name="thead">
4210   <xs:complexType>
4211     <xs:sequence maxOccurs="unbounded">
4212       <xs:element ref="tr"/>
4213     </xs:sequence>
4214     <xs:attribute name="ID" type="xs:ID"/>
4215     <xs:attribute ref="xml:lang"/>
4216     <xs:attribute name="align">
4217       <xs:simpleType>
4218         <xs:restriction base="xs:NMTOKEN">
4219           <xs:enumeration value="left"/>
4220           <xs:enumeration value="center"/>
4221           <xs:enumeration value="right"/>
4222           <xs:enumeration value="justify"/>
4223           <xs:enumeration value="char"/>
4224         </xs:restriction>
4225       </xs:simpleType>
4226     </xs:attribute>
```

```
4227     <xs:attribute name="char" type="xs:string"/>
4228     <xs:attribute name="charoff" type="xs:string"/>
4229     <xs:attribute name="valign">
4230       <xs:simpleType>
4231         <xs:restriction base="xs:NMTOKEN">
4232           <xs:enumeration value="top"/>
4233           <xs:enumeration value="middle"/>
4234           <xs:enumeration value="bottom"/>
4235           <xs:enumeration value="baseline"/>
4236         </xs:restriction>
4237       </xs:simpleType>
4238     </xs:attribute>
4239   </xs:complexType>
4240 </xs:element>
4241 <xs:element name="tr">
4242   <xs:complexType>
4243     <xs:choice maxOccurs="unbounded">
4244       <xs:element ref="th"/>
4245       <xs:element ref="td"/>
4246     </xs:choice>
4247     <xs:attribute name="ID" type="xs:ID"/>
4248     <xs:attribute ref="xml:lang"/>
4249     <xs:attribute name="align">
4250       <xs:simpleType>
4251         <xs:restriction base="xs:NMTOKEN">
4252           <xs:enumeration value="left"/>
4253           <xs:enumeration value="center"/>
4254           <xs:enumeration value="right"/>
4255           <xs:enumeration value="justify"/>
4256           <xs:enumeration value="char"/>
4257         </xs:restriction>
4258       </xs:simpleType>
4259     </xs:attribute>
4260     <xs:attribute name="char" type="xs:string"/>
4261     <xs:attribute name="charoff" type="xs:string"/>
4262     <xs:attribute name="valign">
4263       <xs:simpleType>
4264         <xs:restriction base="xs:NMTOKEN">
4265           <xs:enumeration value="top"/>
4266           <xs:enumeration value="middle"/>
4267           <xs:enumeration value="bottom"/>
4268           <xs:enumeration value="baseline"/>
4269         </xs:restriction>
4270       </xs:simpleType>
4271     </xs:attribute>
4272   </xs:complexType>
4273 </xs:element>
4274 </xs:schema>
4275
```



## XML (xml.xsd)

```
<?xml version="1.0"?>
<xs:schema targetNamespace="http://www.w3.org/XML/1998/namespace"
  xmlns:xs="http://www.w3.org/2001/XMLSchema" xml:lang="en">
  <xs:annotation>
    <xs:documentation>
      See http://www.w3.org/XML/1998/namespace.html and
      http://www.w3.org/TR/REC-xml for information about this namespace.
    </xs:documentation>
  </xs:annotation>
  <xs:annotation>
    <xs:documentation>This schema defines attributes and an attribute group
      suitable for use by
      schemas wishing to allow xml:base, xml:lang or xml:space attributes
      on elements they define.

      To enable this, such a schema must import this schema
      for the XML namespace, e.g. as follows:
      &lt;schema . . . >
        . . .
        &lt;import namespace="http://www.w3.org/XML/1998/namespace"
          schemaLocation="http://www.w3.org/2001/03/xml.xsd"/>

      Subsequently, qualified reference to any of the attributes
      or the group defined below will have the desired effect, e.g.

      &lt;type . . . >
        . . .
        &lt;attributeGroup ref="xml:specialAttrs"/>

      will define a type which will schema-validate an instance
      element with any of those attributes</xs:documentation>
    </xs:annotation>
  </xs:annotation>
  <xs:documentation>In keeping with the XML Schema WG's standard versioning
    policy, this schema document will persist at
    http://www.w3.org/2001/03/xml.xsd.
    At the date of issue it can also be found at
    http://www.w3.org/2001/xml.xsd.
    The schema document at that URI may however change in the future,
    in order to remain compatible with the latest version of XML Schema
    itself. In other words, if the XML Schema namespace changes, the version
    of this document at
    http://www.w3.org/2001/xml.xsd will change
    accordingly; the version at
    http://www.w3.org/2001/03/xml.xsd will not change.
  </xs:documentation>
  </xs:annotation>
  <xs:attribute name="lang" type="xs:language">
    <xs:annotation>
      <xs:documentation>In due course, we should install the relevant ISO 2- and 3-letter
        codes as the enumerated possible values . . . </xs:documentation>
      </xs:annotation>
    </xs:attribute>
  <xs:attribute name="space" default="preserve">
    <xs:simpleType>
      <xs:restriction base="xs:NCName">
        <xs:enumeration value="default"/>
        <xs:enumeration value="preserve"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:attribute>
  <xs:attribute name="base" type="xs:anyURI">
    <xs:annotation>
      <xs:documentation>See http://www.w3.org/TR/xmlbase/ for
        information about this attribute.</xs:documentation>
    </xs:annotation>
  </xs:attribute>
```

```
4342         </xs:annotation>
4343     </xs:attribute>
4344     <xs:attributeGroup name="specialAttrs">
4345         <xs:attribute ref="xml:base"/>
4346         <xs:attribute ref="xml:lang"/>
4347         <xs:attribute ref="xml:space"/>
4348     </xs:attributeGroup>
4349 </xs:schema>
4350
```

## Appendix C – Schematron Schema

This schema is part of the validation web service (together with the EMS\_CDA Schema). CDA documents must pass through both these schemas without error in order to be considered valid.

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<!--
  e-MS Project: Schematron validation rules for EMS_CDA schema.
  This file contains the Schematron validation rules for the Clinical
  Document Architecture (CDA) schema.

  See http://xml.ascc.net/resource/schematron/schematron.html for
  information about Schematron and the e-MS document SchematronBusinessRules.doc
  for information about the business rules that have been implemented.

  Author: James Angus <mailto:james.angus@viha.ca>
  Author: Brad Head <mailto:bhead@sierrasystems.com>
  Version: 1.1 Draft
  Date: December 2004, Revised February 2005

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=====
Rev.   Date.   Author. Description
0.1   20050225   bhead   [1] Modified XPath expressions to match Member Ballot 01 syntax.
                                     [2] Added xsi:schemaLocation and location for schematron xsd so that
                                     we can validate this document against the schematron schema.
                                     [3] Renamed the namespace "cda" to "hl7" to match the required namespace
for HL7 artefacts.
                                     [4] Removed the assertion on Telecom.value. This is now constrained by a
facet patten on the data type.
                                     [5] Removed asserting that limited the name the softwareName was allowed to
be. This would be a BIG
                                     mistake as we add other vendors, such as Osler, MedAccess, etc.
-->
<schema xmlns="http://www.ascc.net/xml/schematron" xmlns:sch="http://www.ascc.net/xml/schematron"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schemaLocation="http://www.ascc.net/xml/schematron
    http://www.ascc.net/xml/schematron/schematron1-5.xsd" xmlns:hl7="urn:hl7-org:v3">
  <title>e-MS CDA Schematron Rule Definitions</title>
  <ns uri="urn:hl7-org:v3" prefix="hl7"/>
  <ns uri="http://www.w3.org/2001/XMLSchema-instance" prefix="xsi"/>
  <!-- Rules that pertain to multiple sections of the CDA -->
  <pattern name="0.1 Global Rules">
    <rule context="/">
      <assert test="hl7:ClinicalDocument">
        ClinicalDocument must be the root node with the namespace urn:hl7-org:v3.
      </assert>
    </rule>
    <rule context="hl7:addr/hl7:state">
      <assert test="
        .= 'AB' or .= 'BC' or .= 'MB' or .= 'NB' or .= 'NF' or .= 'NS' or
        .= 'NT' or .= 'ON' or .= 'PE' or .= 'QC' or .= 'SK' or .= 'YT' or
        .= 'NU' or .= 'AK' or .= 'AL' or .= 'AR' or .= 'AS' or .= 'AZ' or
        .= 'CA' or .= 'CO' or .= 'CT' or .= 'DC' or .= 'DE' or .= 'FL' or
        .= 'FM' or .= 'GA' or .= 'GU' or .= 'HI' or .= 'IA' or .= 'ID' or
        .= 'IL' or .= 'IN' or .= 'KS' or .= 'KY' or .= 'LA' or .= 'MA' or
        .= 'MD' or .= 'ME' or .= 'MH' or .= 'MI' or .= 'MN' or .= 'MO' or
        .= 'MP' or .= 'MS' or .= 'MT' or .= 'NC' or .= 'ND' or .= 'NE' or
        .= 'NH' or .= 'NJ' or .= 'NM' or .= 'NV' or .= 'NY' or .= 'OH' or
        .= 'OK' or .= 'OR' or .= 'PA' or .= 'PR' or .= 'PW' or .= 'RI' or
        .= 'SC' or .= 'SD' or .= 'TN' or .= 'TX' or .= 'UT' or .= 'VA' or
        .= 'VI' or .= 'VT' or .= 'WA' or .= 'WI' or .= 'WV' or .= 'WY'
      ">
        If <name/> is entered it must be a Canada Post: Province Codes/State Code (see vocabularies).
      </assert>
    </rule>
  </pattern>
</schema>
```

```
4416 <rule context="hl7:addr/hl7:country">
4417   <assert test="
4418     .='AF' or .='AX' or .='AL' or .='DZ' or .='AS' or .='AD' or
4419     .='AO' or .='AI' or .='AQ' or .='AG' or .='AR' or .='AM' or
4420     .='AW' or .='AU' or .='AT' or .='AZ' or .='BS' or .='BH' or
4421     .='BD' or .='BB' or .='BY' or .='BE' or .='BZ' or .='BJ' or
4422     .='BM' or .='BT' or .='BO' or .='BA' or .='BW' or .='BV' or
4423     .='BR' or .='IO' or .='BN' or .='BG' or .='BF' or .='BI' or
4424     .='KH' or .='CM' or .='CA' or .='CV' or .='KY' or .='CF' or
4425     .='TD' or .='CL' or .='CN' or .='CX' or .='CC' or .='CO' or
4426     .='KM' or .='CG' or .='CD' or .='CK' or .='CR' or .='CI' or
4427     .='HR' or .='CU' or .='CY' or .='CZ' or .='DK' or .='DJ' or
4428     .='DM' or .='DO' or .='EC' or .='EG' or .='SV' or .='GQ' or
4429     .='ER' or .='EE' or .='ET' or .='FK' or .='FO' or .='FJ' or
4430     .='FI' or .='FR' or .='GF' or .='PF' or .='TF' or .='GA' or
4431     .='GM' or .='GE' or .='DE' or .='GH' or .='GI' or .='GR' or
4432     .='GL' or .='GD' or .='GP' or .='GU' or .='GT' or .='GN' or
4433     .='GW' or .='GY' or .='HT' or .='HM' or .='VA' or .='HN' or
4434     .='HK' or .='HU' or .='IS' or .='IN' or .='ID' or .='IR' or
4435     .='IQ' or .='IE' or .='IL' or .='IT' or .='JM' or .='JP' or
4436     .='JO' or .='KZ' or .='KE' or .='KI' or .='KP' or .='KR' or
4437     .='KW' or .='KG' or .='LA' or .='LV' or .='LB' or .='LS' or
4438     .='LR' or .='LY' or .='LI' or .='LT' or .='LU' or .='MO' or
4439     .='MK' or .='MG' or .='MW' or .='MY' or .='MV' or .='ML' or
4440     .='MT' or .='MH' or .='MQ' or .='MR' or .='MU' or .='YT' or
4441     .='MX' or .='FM' or .='MD' or .='MC' or .='MN' or .='MS' or
4442     .='MA' or .='MZ' or .='MM' or .='NA' or .='NR' or .='NP' or
4443     .='NL' or .='AN' or .='NC' or .='NZ' or .='NI' or .='NE' or
4444     .='NG' or .='NU' or .='NF' or .='MP' or .='NO' or .='OM' or
4445     .='PK' or .='PW' or .='PS' or .='PA' or .='PG' or .='PY' or
4446     .='PE' or .='PH' or .='PN' or .='PL' or .='PT' or .='PR' or
4447     .='QA' or .='RE' or .='RO' or .='RU' or .='RW' or .='SH' or
4448     .='KN' or .='LC' or .='PM' or .='VC' or .='WS' or .='SM' or
4449     .='ST' or .='SA' or .='SN' or .='CS' or .='SC' or .='SL' or
4450     .='SG' or .='SK' or .='SI' or .='SB' or .='SO' or .='ZA' or
4451     .='GS' or .='ES' or .='LK' or .='SD' or .='SR' or .='SJ' or
4452     .='SZ' or .='SE' or .='CH' or .='SY' or .='TW' or .='TJ' or
4453     .='TZ' or .='TH' or .='TL' or .='TG' or .='TK' or .='TO' or
4454     .='TT' or .='TN' or .='TR' or .='TM' or .='TC' or .='TV' or
4455     .='UG' or .='UA' or .='AE' or .='GB' or .='US' or .='UM' or
4456     .='UY' or .='UZ' or .='VU' or .='VE' or .='VN' or .='VG' or
4457     .='VI' or .='WF' or .='EH' or .='YE' or .='ZM' or .='ZW'
4458   ">
4459   If <name/> is entered it must be a ISO: Country Code (see vocabularies).
4460   </assert>
4461 </rule>
4462 <rule
4463 context="hl7:informationRecipient/hl7:name|hl7:assignedPerson/hl7:name|hl7:patientPatient/hl7:name|hl7:associatedPers
4464 on/hl7:name">
4465   <assert test="((string-length(.)>0) and not(*)) or (* and hl7:given)">
4466     The <name/> is missing or if the elements are separated then there must be a given name.
4467   </assert>
4468   <assert test="((string-length(.)>0) and not(*)) or (* and hl7:family)">
4469     The <name/> is missing or if the elements are separated then there must be a family name.
4470   </assert>
4471 </rule>
4472 <rule
4473 context="hl7:patientPatient/hl7:birthTime|hl7:component/hl7:section/hl7:code[@code='003']/../hl7:entry/hl7:observation/hl7
4474 :effectiveTime">
4475   <assert test="
4476     (not(@value) and @nullFlavor='UNK') or
4477     (not(@nullFlavor) and string-length(@value)=8 and number(substring(@value,1,4))>1800 and
4478     ((number(substring(@value,5,2))=1 and number(substring(@value,7,2))>=1 and
4479     number(substring(@value,7,2))<=31) or
4480     (number(substring(@value,5,2))=2 and number(substring(@value,7,2))>=1 and
4481     number(substring(@value,7,2))<=29) or
4482     (number(substring(@value,5,2))=3 and number(substring(@value,7,2))>=1 and
4483     number(substring(@value,7,2))<=31) or
4484     (number(substring(@value,5,2))=4 and number(substring(@value,7,2))>=1 and
4485     number(substring(@value,7,2))<=30) or
```

```
4486         (number(substring(@value,5,2))=5 and number(substring(@value,7,2))>=1 and
4487 number(substring(@value,7,2))&lt;=31) or
4488         (number(substring(@value,5,2))=6 and number(substring(@value,7,2))>=1 and
4489 number(substring(@value,7,2))&lt;=30) or
4490         (number(substring(@value,5,2))=7 and number(substring(@value,7,2))>=1 and
4491 number(substring(@value,7,2))&lt;=31) or
4492         (number(substring(@value,5,2))=8 and number(substring(@value,7,2))>=1 and
4493 number(substring(@value,7,2))&lt;=31) or
4494         (number(substring(@value,5,2))=9 and number(substring(@value,7,2))>=1 and
4495 number(substring(@value,7,2))&lt;=30) or
4496         (number(substring(@value,5,2))=10 and number(substring(@value,7,2))>=1 and
4497 number(substring(@value,7,2))&lt;=31) or
4498         (number(substring(@value,5,2))=11 and number(substring(@value,7,2))>=1 and
4499 number(substring(@value,7,2))&lt;=30) or
4500         (number(substring(@value,5,2))=12 and number(substring(@value,7,2))>=1 and
4501 number(substring(@value,7,2))&lt;=31)))
4502     ">
4503     <name/> requires an attribute of value if <name/> is known. The <name/> value must be a complete date
4504 including the year, month and day. If the <name/> is not known, a nullFlavor attribute of UNK (only UNK, no other options
4505 allowed) must be entered.
4506     </assert>
4507 </rule>
4508 <rule context="hl7:author/hl7:time">
4509     <assert test="
4510 (not(@nullFlavor) and string-length(@value)=14 and number(substring(@value,1,4))>1800 and
4511 ((number(substring(@value,5,2))=1 and number(substring(@value,7,2))>=1 and
4512 number(substring(@value,7,2))&lt;=31) or
4513 (number(substring(@value,5,2))=2 and number(substring(@value,7,2))>=1 and
4514 number(substring(@value,7,2))&lt;=29) or
4515 (number(substring(@value,5,2))=3 and number(substring(@value,7,2))>=1 and
4516 number(substring(@value,7,2))&lt;=31) or
4517 (number(substring(@value,5,2))=4 and number(substring(@value,7,2))>=1 and
4518 number(substring(@value,7,2))&lt;=30) or
4519 (number(substring(@value,5,2))=5 and number(substring(@value,7,2))>=1 and
4520 number(substring(@value,7,2))&lt;=31) or
4521 (number(substring(@value,5,2))=6 and number(substring(@value,7,2))>=1 and
4522 number(substring(@value,7,2))&lt;=30) or
4523 (number(substring(@value,5,2))=7 and number(substring(@value,7,2))>=1 and
4524 number(substring(@value,7,2))&lt;=31) or
4525 (number(substring(@value,5,2))=8 and number(substring(@value,7,2))>=1 and
4526 number(substring(@value,7,2))&lt;=31) or
4527 (number(substring(@value,5,2))=9 and number(substring(@value,7,2))>=1 and
4528 number(substring(@value,7,2))&lt;=30) or
4529 (number(substring(@value,5,2))=10 and number(substring(@value,7,2))>=1 and
4530 number(substring(@value,7,2))&lt;=31) or
4531 (number(substring(@value,5,2))=11 and number(substring(@value,7,2))>=1 and
4532 number(substring(@value,7,2))&lt;=30) or
4533 (number(substring(@value,5,2))=12 and number(substring(@value,7,2))>=1 and
4534 number(substring(@value,7,2))&lt;=31))) and
4535 ((substring(@value,9,2)>=0) and (substring(@value,9,2)&lt;=23)) and
4536 ((substring(@value,11,2)>=0) and (substring(@value,11,2)&lt;=59)) and
4537 ((substring(@value,13,2)>=0) and (substring(@value,13,2)&lt;=59))
4538     ">
4539     The <name/> value attribute must include both a valid date and time.
4540     </assert>
4541 </rule>
4542 <rule context="hl7:component/hl7:section/hl7:code[@code='11450-
4543 4']/../hl7:entry/hl7:observation/hl7:code/hl7:component/hl7:section/hl7:code[@code='11348-
4544 0']/../hl7:entry/hl7:observation/hl7:code">
4545     <assert test="
4546 ((string-length(@code)=3 or string-length(substring-before(@code,''))=3)
4547 and
4548 ((number(substring(@code,1,1))>=0 and number(substring(@code,1,1))&lt;=9) or
4549 substring(@code,1,1)='A' or substring(@code,1,1)='B' or substring(@code,1,1)='C' or
4550 substring(@code,1,1)='D' or
4551 substring(@code,1,1)='E' or substring(@code,1,1)='F' or substring(@code,1,1)='G' or
4552 substring(@code,1,1)='H' or
4553 substring(@code,1,1)='I' or substring(@code,1,1)='J' or substring(@code,1,1)='K' or
4554 substring(@code,1,1)='L' or
```

```
4555         substring(@code,1,1)='M' or substring(@code,1,1)='N' or substring(@code,1,1)='O' or
4556 substring(@code,1,1)='P' or
4557         substring(@code,1,1)='Q' or substring(@code,1,1)='R' or substring(@code,1,1)='S' or
4558 substring(@code,1,1)='T' or
4559         substring(@code,1,1)='U' or substring(@code,1,1)='V' or substring(@code,1,1)='W' or
4560 substring(@code,1,1)='X' or
4561         substring(@code,1,1)='Y' or substring(@code,1,1)='Z')
4562     and
4563     ((number(substring(@code,2,1))>=0 and number(substring(@code,2,1))<=9) or
4564     substring(@code,2,1)='A' or substring(@code,2,1)='B' or substring(@code,2,1)='C' or
4565     substring(@code,2,1)='D' or
4566     substring(@code,2,1)='E' or substring(@code,2,1)='F' or substring(@code,2,1)='G' or
4567     substring(@code,2,1)='H' or
4568     substring(@code,2,1)='I' or substring(@code,2,1)='J' or substring(@code,2,1)='K' or
4569     substring(@code,2,1)='L' or
4570     substring(@code,2,1)='M' or substring(@code,2,1)='N' or substring(@code,2,1)='O' or
4571     substring(@code,2,1)='P' or
4572     substring(@code,2,1)='Q' or substring(@code,2,1)='R' or substring(@code,2,1)='S' or
4573     substring(@code,2,1)='T' or
4574     substring(@code,2,1)='U' or substring(@code,2,1)='V' or substring(@code,2,1)='W' or
4575     substring(@code,2,1)='X' or
4576     substring(@code,2,1)='Y' or substring(@code,2,1)='Z')
4577     and
4578     ((number(substring(@code,3,1))>=0 and number(substring(@code,3,1))<=9) or
4579     substring(@code,3,1)='A' or substring(@code,3,1)='B' or substring(@code,3,1)='C' or
4580     substring(@code,3,1)='D' or
4581     substring(@code,3,1)='E' or substring(@code,3,1)='F' or substring(@code,3,1)='G' or
4582     substring(@code,3,1)='H' or
4583     substring(@code,3,1)='I' or substring(@code,3,1)='J' or substring(@code,3,1)='K' or
4584     substring(@code,3,1)='L' or
4585     substring(@code,3,1)='M' or substring(@code,3,1)='N' or substring(@code,3,1)='O' or
4586     substring(@code,3,1)='P' or
4587     substring(@code,3,1)='Q' or substring(@code,3,1)='R' or substring(@code,3,1)='S' or
4588     substring(@code,3,1)='T' or
4589     substring(@code,3,1)='U' or substring(@code,3,1)='V' or substring(@code,3,1)='W' or
4590     substring(@code,3,1)='X' or
4591     substring(@code,3,1)='Y' or substring(@code,3,1)='Z')
4592     and
4593     (string-length(substring-after(@code,''))=0 or (number(substring-after(@code,''))>=0 and number(substring-
4594 after(@code,''))<=99))
4595     and
4596     @codeSystem='2.16.840.1.113883.6.2'
4597     and
4598     @codeSystemName='ICD-9')
4599     or
4600     (not(@codeSystemName) and not(@codeSystemName) and not(@code))
4601     or
4602     (@codeSystemName!='ICD-9')
4603     ">
4604     For <name/>, the code attribute must be an ICD-9 code composed of three leading characters [0..9, A..Z]
4605     followed by an optional period and up to two numeric characters, the codeSystem must be '2.16.840.1.113883.6.2' and
4606     the codeSystemName must be 'ICD-9'.
4607     </assert>
4608 </rule>
4609 </pattern>
4610 <!-- Rules that pertain to the observation Media sections of the CDA -->
4611 <pattern name="0.2 observation Media">
4612     <rule context="hl7:entryRelationship/hl7:observationMedia">
4613         <assert test="../@typeCode='COMP'">
4614             For <name/>, the entryRelationship typeCode attribute must be COMP.
4615         </assert>
4616     </rule>
4617     <rule context="hl7:entryRelationship/hl7:observationMedia/hl7:value/hl7:reference">
4618         <assert test="string-length(normalize-space(@value))>0">
4619             For observationMedia <name/>, the value attribute must be set.
4620         </assert>
4621     </rule>
4622 </pattern>
4623 <!-- Rules that pertain to the Clinical Document section of the CDA -->
4624 <pattern name="1.1 Clinical Document">
```



```
4625 <rule context="hl7:ClinicalDocument/hl7:id">
4626 <assert test="@root='2.16.840.1.113883.3.933'">
4627 The <name/> root attribute must be 2.16.840.1.113883.3.933.
4628 </assert>
4629 </rule>
4630 <rule context="hl7:ClinicalDocument/hl7:code">
4631 <assert test="(@codeSystem='2.16.840.1.113883.6.1' and @codeSystemName='LOINC') and
4632 ((@code='34140-4' and @displayName='Referral') or
4633 (@code='11488-4' and @displayName='Consultation') or
4634 (@code='28616-1' and @displayName='Summary'))">
4635 The code, code system, code system name and display name attributes must always be one of the
4636 following combinations:
4637 <hl7:code code="34140-4" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC"
4638 displayName="Referral"/>
4639 <hl7:code code="11488-4" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC"
4640 displayName="Consultation"/>
4641 <hl7:code code="28616-1" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC"
4642 displayName="Summary"/>.
4643 </assert>
4644 </rule>
4645 <rule context="hl7:ClinicalDocument/hl7:effectiveTime">
4646 <assert test="(string-length(@value)=14) and
4647 ((substring(@value,9,2)>=0) and (substring(@value,9,2)&lt;=23)) and
4648 ((substring(@value,11,2)>=0) and (substring(@value,11,2)&lt;=59)) and
4649 ((substring(@value,13,2)>=0) and (substring(@value,13,2)&lt;=59))">
4650 The <name/> value attribute must include both a valid date and time.
4651 </assert>
4652 </rule>
4653 <rule context="hl7:ClinicalDocument/hl7:confidentialityCode">
4654 <assert test="@codeSystem='2.16.840.1.113883.5.25'">
4655 The <name/> codeSystem attribute must always be 2.16.840.1.113883.5.25.
4656 </assert>
4657 <assert test="@code='N' or @code='R' or @code='V'">
4658 The <name/> code attribute must always be N, R, or V.
4659 </assert>
4660 </rule>
4661 <rule context="hl7:component/hl7:structuredBody/hl7:component/hl7:section/hl7:code">
4662 <assert test="
4663 (@code='001' and @codeSystemName='e-MS Document Section Codes' and @displayName='Purpose') or
4664 (@code='002' and @codeSystemName='e-MS Document Section Codes' and @displayName='Alerts') or
4665 (@code='29762-2' and @codeSystem='2.16.840.1.113883.6.1' and @codeSystemName='LOINC' and
4666 @displayName='Social History/Risks') or
4667 (@code='003' and @codeSystemName='e-MS Document Section Codes' and @displayName='Examination
4668 Measurements') or
4669 (@code='11450-4' and @codeSystem='2.16.840.1.113883.6.1' and @codeSystemName='LOINC' and
4670 @displayName='Active Problem List') or
4671 (@code='19013-2' and @codeSystem='2.16.840.1.113883.6.1' and @codeSystemName='LOINC' and
4672 @displayName='Current Medications') or
4673 (@code='11348-0' and @codeSystem='2.16.840.1.113883.6.1' and @codeSystemName='LOINC' and
4674 @displayName='Medical History') or
4675 (@code='10167-5' and @codeSystem='2.16.840.1.113883.6.1' and @codeSystemName='LOINC' and
4676 @displayName='Surgical History') or
4677 (@code='35090-0' and @codeSystem='2.16.840.1.113883.6.1' and @codeSystemName='LOINC' and
4678 @displayName='Medical Imaging History') or
4679 (@code='007' and @codeSystemName='e-MS Document Section Codes' and @displayName='Other
4680 Treatments') or
4681 (@code='008' and @codeSystemName='e-MS Document Section Codes' and @displayName='Allergies') or
4682 (@code='11369-6' and @codeSystem='2.16.840.1.113883.6.1' and @codeSystemName='LOINC' and
4683 @displayName='Immunization') or
4684 (@code='11502-2' and @codeSystem='2.16.840.1.113883.6.1' and @codeSystemName='LOINC' and
4685 @displayName='Labs') or
4686 (@code='11336-5' and @codeSystem='2.16.840.1.113883.6.1' and @codeSystemName='LOINC' and
4687 @displayName='Past Referrals and Hospitalizations') or
4688 (@code='10157-6' and @codeSystem='2.16.840.1.113883.6.1' and @codeSystemName='LOINC' and
4689 @displayName='Family History')
4690 ">
4691 Invalid <name/> detected in the CDA body.
4692 </assert>
4693 </rule>
4694 </pattern>
```

```
4695 <!-- Rules that pertain to the Information Recipient section of the CDA -->
4696 <pattern name="1.2 Information Recipient">
4697   <rule context="hl7:informationRecipient">
4698     <assert test="@typeCode='PRCP' or not(@typeCode)">
4699       If the <name/> typeCode attribute is present it must be set to PRCP.
4700     </assert>
4701   </rule>
4702   <rule context="hl7:intendedRecipient">
4703     <assert test="@classCode='ASSIGNED' or not(@classCode)">
4704       If the <name/> classCode attribute is present it must be set to ASSIGNED.
4705     </assert>
4706   </rule>
4707 </pattern>
4708 <!-- Rules that pertain to the Author section of the CDA -->
4709 <pattern name="1.3 Author">
4710   <rule context="hl7:ClinicalDocument">
4711     <assert test="count(hl7:author/hl7:assignedAuthor/hl7:assignedAuthoringDevice/hl7:softwareName)=1">
4712       There must be exactly one author/assignedAuthor/assignedAuthoringDevice/softwareName.
4713     </assert>
4714   </rule>
4715 </pattern>
4716 <!-- Rules that pertain to the Custodian section of the CDA -->
4717 <pattern name="1.4 Custodian">
4718   <rule context="hl7:custodian">
4719     <assert test="@typeCode='CST' or not(@typeCode)">
4720       If the <name/> typeCode attribute is present it must be set to CST.
4721     </assert>
4722   </rule>
4723 </pattern>
4724 <!-- Rules that pertain to the Record Target section of the CDA -->
4725 <pattern name="1.5 Record Target">
4726   <rule context="hl7:recordTarget/hl7:patient/hl7:id">
4727     <assert test="
4728       (@assigningAuthorityName='BC-PHN' and string-length(@extension)=10 and number(@extension)>0)
4729       or
4730       ((substring-before(@assigningAuthorityName,'-')='AB' or
4731        substring-before(@assigningAuthorityName,'-')='MB' or
4732        substring-before(@assigningAuthorityName,'-')='NB' or
4733        substring-before(@assigningAuthorityName,'-')='NF' or
4734        substring-before(@assigningAuthorityName,'-')='NS' or
4735        substring-before(@assigningAuthorityName,'-')='NT' or
4736        substring-before(@assigningAuthorityName,'-')='ON' or
4737        substring-before(@assigningAuthorityName,'-')='PE' or
4738        substring-before(@assigningAuthorityName,'-')='QC' or
4739        substring-before(@assigningAuthorityName,'-')='SK' or
4740        substring-before(@assigningAuthorityName,'-')='YT' or
4741        substring-before(@assigningAuthorityName,'-')='NU') and
4742        substring-after(@assigningAuthorityName,'-')='PHN')
4743       or
4744       (substring-after(@assigningAuthorityName,'-')='PHN')
4745     ">
4746     If the ID is the BC-PHN number, the root becomes a mandatory attribute and the extension must be
4747     composed of 10 numerical digits. For all other PHNs, the province of the PHN is entered in the assigningAuthority
4748     attribute in the format: province-PHN. The province code must come from the Canada Post: Province Codes/State Codes
4749     (while only using the province codes).
4750   </assert>
4751 </rule>
4752   <rule context="hl7:patientPatient/hl7:administrativeGenderCode">
4753     <assert test="
4754       (not(@nullFlavor) and @code='F' and @codeSystem='2.16.840.1.113883.5.1' and
4755        @codeSystemName='HL7 - Administrative Gender' and @displayName='Female') or
4756       (not(@nullFlavor) and @code='M' and @codeSystem='2.16.840.1.113883.5.1' and
4757        @codeSystemName='HL7 - Administrative Gender' and @displayName='Male') or
4758       (not(@nullFlavor) and @code='U' and @codeSystem='2.16.840.1.113883.5.1' and
4759        @codeSystemName='HL7 - Administrative Gender' and @displayName='Undifferentiated') or
4760       (@nullFlavor='UNK' and not(@code) and not(@codeSystem) and not(@codeSystemName) and
4761        not(@displayName))
4762     ">
4763     If the gender is entered, the attributes code, codeSystem, codeSystemName and displayName are
4764     required attributes. The code must be either F, M or U, the codeSystem must be 2.16.840.1.113883.5.1, the
```



codeSystemName must be HL7 - Administrative Gender, and displayName must be Female, Male or Undifferentiated. If the gender is not entered a NullFlavor attribute of UNK (only UNK, no other options allowed) must be entered.

```
</assert>
</rule>
<rule context="hl7:languageCommunication/hl7:languageCode/@code">
  <assert test="
    .='AA' or .='AB' or .='AF' or .='AM' or .='AR' or .='AS' or
    .='AY' or .='AZ' or .='BA' or .='BE' or .='BG' or .='BH' or
    .='BI' or .='BN' or .='BO' or .='BR' or .='CA' or .='CO' or
    .='CS' or .='CY' or .='DA' or .='DE' or .='DZ' or .='EL' or
    .='EN' or .='EO' or .='ES' or .='ET' or .='EU' or .='FA' or
    .='FI' or .='FJ' or .='FO' or .='FR' or .='FY' or .='GA' or
    .='GD' or .='GL' or .='GN' or .='GU' or .='HA' or .='HI' or
    .='HR' or .='HU' or .='HY' or .='IA' or .='IE' or .='IK' or
    .='IN' or .='IS' or .='IT' or .='IW' or .='JA' or .='JI' or
    .='JW' or .='KA' or .='KK' or .='KL' or .='KM' or .='KN' or
    .='KO' or .='KS' or .='KU' or .='KY' or .='LA' or .='LN' or
    .='LO' or .='LT' or .='LV' or .='MG' or .='MI' or .='MK' or
    .='ML' or .='MN' or .='MO' or .='MR' or .='MS' or .='MT' or
    .='MY' or .='NA' or .='NE' or .='NL' or .='NO' or .='OC' or
    .='OM' or .='OR' or .='PA' or .='PL' or .='PS' or .='PT' or
    .='QU' or .='RM' or .='RN' or .='RO' or .='RU' or .='RW' or
    .='SA' or .='SD' or .='SG' or .='SH' or .='SI' or .='SK' or
    .='SL' or .='SM' or .='SN' or .='SO' or .='SQ' or .='SR' or
    .='SS' or .='ST' or .='SU' or .='SV' or .='SW' or .='TA' or
    .='TE' or .='TG' or .='TH' or .='TI' or .='TK' or .='TL' or
    .='TN' or .='TO' or .='TR' or .='TS' or .='TT' or .='TW' or
    .='UK' or .='UR' or .='UZ' or .='VI' or .='VO' or .='WO' or
    .='XH' or .='YO' or .='ZH' or .='ZU'
  ">
    LanguageCode is optional, however if it is entered it is entered in the code attribute and it must be from
    the ISO: Language code set.
```

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</assert>
</rule>
<rule context="hl7:recordTarget">
  <assert test="not(@typeCode) or @typeCode='RCT'">
    The typeCode attribute must either not be present or set to RCT.
  </assert>
  <assert test="not(@contextControlCode) or @contextControlCode='OP'">
    The contextControlCode attribute must either not be present or set to OP.
  </assert>
</rule>
<rule context="hl7:recordTarget/hl7:patient">
  <assert test="not(@classCode) or @classCode='PAT'">
    The classCode attribute must either not be present or set to PAT.
  </assert>
</rule>
</pattern>
<!-- Rules that pertain to the Participant section of the CDA -->
<pattern name="1.6 Participant">
  <rule context="hl7:ClinicalDocument/hl7:participant/hl7:participatingEntity/hl7:code">
    <assert test="@codeSystemName='HL7: PersonalRelationshipRoleType' and
      ((@code='AUNT' and @displayName='Aunt') or
      (@code='CHLDADOPT' and @displayName='Adopted Child') or
      (@code='CHLDFOST' and @displayName='Foster Child') or
      (@code='CHLDINLAW' and @displayName='Child in law') or
      (@code='NCHLD' and @displayName='Natural Child') or
      (@code='STPCHLD' and @displayName='Step Child') or
      (@code='COUSIN' and @displayName='Cousin') or
      (@code='DOMPART' and @displayName='Domestic Partner') or
      (@code='GGRFTH' and @displayName='Great Grandfather') or
      (@code='GGRMTH' and @displayName='Great Grandmother') or
      (@code='GRNDDAU' and @displayName='Granddaughter') or
      (@code='GRNDSOIN' and @displayName='Grandson') or
      (@code='GRFTH' and @displayName='Grandfather') or
      (@code='GRMTH' and @displayName='Grandmother') or
      (@code='NEPHEW' and @displayName='Nephew') or
      (@code='NIECE' and @displayName='Niece') or
      (@code='FTH' and @displayName='Father') or
      (@code='MTH' and @displayName='Mother') or
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4835      (@code='NFTH' and @displayName='Natural Father') or
4836      (@code='NMTH' and @displayName='Natural Mother') or
4837      (@code='FTHINLAW' and @displayName='Father-in-law') or
4838      (@code='MTHINLAW' and @displayName='Mother-in-law') or
4839      (@code='STPFTH' and @displayName='Stepfather') or
4840      (@code='STPMTH' and @displayName='Stepmother') or
4841      (@code='ROOM' and @displayName='Roommate') or
4842      (@code='BRO' and @displayName='Brother') or
4843      (@code='HBRO' and @displayName='Half brother') or
4844      (@code='HSIS' and @displayName='Half sister') or
4845      (@code='NBRO' and @displayName='Natural Brother') or
4846      (@code='NSIS' and @displayName='Natural Sister') or
4847      (@code='BROINLAW' and @displayName='Brother-in-law') or
4848      (@code='SISINLAW' and @displayName='Sister-in-law') or
4849      (@code='SIS' and @displayName='Sister') or
4850      (@code='STPBRO' and @displayName='Step brother') or
4851      (@code='STPSIS' and @displayName='Step sister') or
4852      (@code='SIGOTHR' and @displayName='Significant other') or
4853      (@code='HUSB' and @displayName='Husband') or
4854      (@code='WIFE' and @displayName='Wife') or
4855      (@code='UNCLE' and @displayName='Uncle') or
4856      (@code='FRND' and @displayName='Unrelated friend') or
4857      (@code='NBOR' and @displayName='Neighbor'))
4858    ">
4859    The code attribute must come from the HL7: PersonalRelationshipRoleType codes, displayName must
4860    be the long form of the respective code as also defined in the code set, and the codeSystemName must be HL7:
4861    PersonalRelationshipRoleType.
4862    </assert>
4863  </rule>
4864  <rule context="hl7:ClinicalDocument/hl7:participant">
4865    <assert test="not(@typeCode) or @typeCode='NOT'">
4866      The typeCode attribute must either not be present or set to NOT.
4867    </assert>
4868  </rule>
4869  <rule context="hl7:ClinicalDocument/hl7:participant/hl7:participatingEntity">
4870    <assert test="not(@classCode) or @classCode='CON'">
4871      The classCode attribute must either not be present or set to CON.
4872    </assert>
4873  </rule>
4874 </pattern>
4875 <!-- Rules that pertain to the Related Document section of the CDA -->
4876 <pattern name="1.7 Related Document">
4877   <rule context="hl7:relatedDocument/hl7:parentDocument/hl7:id">
4878     <assert test="@root='2.16.840.1.113883.3.933'">
4879       The <name/> root attribute must be 2.16.840.1.113883.3.933.
4880     </assert>
4881   </rule>
4882   <rule context="hl7:relatedDocument/hl7:parentDocument/hl7:code">
4883     <assert test="(@codeSystem='2.16.840.1.113883.6.1' and @codeSystemName='LOINC') and
4884     ((@code='34140-4' and @displayName='Referral') or
4885     (@code='11488-4' and @displayName='Consultation') or
4886     (@code='28616-1' and @displayName='Summary'))">
4887       The code, code system, code system name and display name attributes must always be one of the
4888       following combinations:
4889       <hl7:code code="34140-4" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC"
4890       displayName="Referral"/>
4891       <hl7:code code="11488-4" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC"
4892       displayName="Consultation"/>
4893       <hl7:code code="28616-1" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC"
4894       displayName="Summary"/>.
4895     </assert>
4896   </rule>
4897   <rule context="hl7:relatedDocument">
4898     <assert test="not(@typeCode) or @typeCode='APND' or @typeCode='RPLC'">
4899       The typeCode attribute must either not be present or set to APND or RPLC.
4900     </assert>
4901   </rule>
4902 </pattern>
4903 <!-- Rules that pertain to the Purpose section of the CDA -->
4904 <pattern name="2.1 Purpose">

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4905 <rule context="hl7:ClinicalDocument/hl7:component/hl7:structuredBody">
4906 <assert test="count(hl7:component/hl7:section/hl7:code[@code='001'])=1">
4907     The CDA Purpose section must be present exactly once.
4908 </assert>
4909 </rule>
4910 <rule context="hl7:component/hl7:section/hl7:code[@code='001']">
4911 <assert test="@codeSystemName='e-MS Document Section Codes' and @displayName='Purpose'">
4912     For the Purpose section <name/>, the CODE, code system name and display name attributes must
4913 always be the following: <hl7:code code="001" codeSystemName="e-MS Document Section Codes"
4914 displayName="Purpose"/>.
4915 </assert>
4916 </rule>
4917 <rule context="hl7:component/hl7:section/hl7:code[@code='001']/..hl7:entry/hl7:observation/hl7:priorityCode">
4918 <assert test="@codeSystemName='eMS_Purpose_Urgency' and
4919 ((@code='E' and @displayName='Expedite (call)') or
4920 (@code='U' and @displayName='Urgent (call)') or
4921 (@code='R' and @displayName='Routine'))">
4922     For the Purpose section <name/>, the code, code system name and display name attributes must always
4923 be one of the following combinations: <hl7:priorityCode code="E"
4924 codeSystemName="eMS_Purpose_Urgency" displayName="Expedite (call)"/>
4925 <hl7:priorityCode code="U" codeSystemName="eMS_Purpose_Urgency" displayName="Urgent (call)"/>
4926 <hl7:priorityCode code="R" codeSystemName="eMS_Purpose_Urgency" displayName="Routine"/>.
4927 </assert>
4928 </rule>
4929 <rule context="hl7:component/hl7:section/hl7:code[@code='001']/..hl7:entry">
4930 <assert test="not(@typeCode) or @typeCode='DRIV'">
4931     For the Purpose section <name/>, the typeCode attribute must either not be present or set to DRIV.
4932 </assert>
4933 </rule>
4934 <rule context="hl7:component/hl7:section/hl7:code[@code='001']/..hl7:entry/hl7:observation">
4935 <assert test="not(@moodCode) or @moodCode='EVN'">
4936     For the Purpose section <name/>, the moodCode attribute must either not be present or set to EVN.
4937 </assert>
4938 </rule>
4939 <rule context="hl7:component/hl7:section/hl7:code[@code='001']/..hl7:entry/hl7:observation/hl7:participant">
4940 <assert test="not(@typeCode) or @typeCode='SPRF'">
4941     For the Purpose section <name/>, the typeCode attribute must either not be present or set to SPRF.
4942 </assert>
4943 </rule>
4944 <rule context="hl7:component/hl7:section/hl7:code[@code='001']/..hl7:entry/hl7:observation/hl7:code">
4945 <assert test="not(@code) and not(@codeSystem) and not(@codeSystemName) and not(@displayName)
4946 and @nullFlavor='NA'">
4947     For the Purpose section observation <name/>, only the nullFlavor of NA is permissible.
4948 </assert>
4949 </rule>
4950 </pattern>
4951 <!-- Rules that pertain to the Alerts section of the CDA -->
4952 <pattern name="2.2 Alerts">
4953 <rule context="hl7:ClinicalDocument/hl7:component/hl7:structuredBody">
4954 <assert test="count(hl7:component/hl7:section/hl7:code[@code='002'])<2">
4955     The CDA Alerts section may be present at most once.
4956 </assert>
4957 </rule>
4958 <rule context="hl7:component/hl7:section/hl7:code[@code='002']">
4959 <assert test="@codeSystemName='e-MS Document Section Codes' and @displayName='Alerts'">
4960     For the Alerts section <name/>, the code, code system name and display name attributes must always
4961 be the following combination: <hl7:code code="002" codeSystemName="e-MS Document Section Codes"
4962 displayName="Alerts"/>.
4963 </assert>
4964 </rule>
4965 <rule context="hl7:component/hl7:section/hl7:code[@code='002']/..hl7:entry">
4966 <assert test="not(@typeCode) or @typeCode='COMP'">
4967     For the Alerts section <name/>, the typeCode attribute must either not be present or set to COMP.
4968 </assert>
4969 </rule>
4970 <rule context="hl7:component/hl7:section/hl7:code[@code='002']/..hl7:entry/hl7:observation">
4971 <assert test="not(@moodCode) or @moodCode='EVN'">
4972     For the Alerts section <name/>, the moodCode attribute must either not be present or set to EVN.
4973 </assert>
4974 </rule>
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<rule context="hl7:component/hl7:section/hl7:code[@code='002']/../hl7:entry/hl7:observation/hl7:code">
  <assert test="not(@code) and not(@codeSystem) and not(@codeSystemName) and not(@displayName)
and @nullFlavor='NA'">
    For the Alerts section observation <name/>, only the nullFlavor of NA is permissible.
  </assert>
</rule>
</pattern>
<!-- Rules that pertain to the Social History/Risks section of the CDA -->
<pattern name="2.3 Social History/Risks">
  <rule context="hl7:ClinicalDocument/hl7:component/hl7:structuredBody">
    <assert test="count(hl7:component/hl7:section/hl7:code[@code='29762-2'])<2">
      The CDA Social History/Risks section may be present at most once.
    </assert>
  </rule>
  <rule context="hl7:component/hl7:section/hl7:code[@code='29762-2']">
    <assert test="@codeSystem='2.16.840.1.113883.6.1' and @codeSystemName='LOINC' and
@displayName='Social History/Risks'">
      For the Social History/Risks section <name/>, the code, code system, code system name and display
name attributes must always be the following combination: <hl7:code code="29762-2"
codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC" displayName="Social History/Risks"/>.
    </assert>
  </rule>
  <rule context="hl7:component/hl7:section/hl7:code[@code='29762-2']/../hl7:entry">
    <assert test="not(@typeCode) or @typeCode='COMP'">
      For the Social History/Risks section <name/>, the typeCode attribute must either not be present or set to
COMP.
    </assert>
  </rule>
  <rule context="hl7:component/hl7:section/hl7:code[@code='29762-2']/../hl7:entry/hl7:observation">
    <assert test="not(@moodCode) or @moodCode='EVN'">
      For the Social History/Risks section <name/>, the moodCode attribute must either not be present or set
to EVN.
    </assert>
  </rule>
  <rule context="hl7:component/hl7:section/hl7:code[@code='29762-2']/../hl7:entry/hl7:observation/hl7:code">
    <assert test="not(@code) and not(@codeSystem) and not(@codeSystemName) and not(@displayName)
and @nullFlavor='NA'">
      For the Social History/Risks section observation <name/>, only the nullFlavor of NA is permissible.
    </assert>
  </rule>
</pattern>
<!-- Rules that pertain to the Examination Measurements section of the CDA -->
<pattern name="2.4 Examination Measurements">
  <rule context="hl7:ClinicalDocument/hl7:component/hl7:structuredBody">
    <assert test="count(hl7:component/hl7:section/hl7:code[@code='003'])<2">
      The CDA Examination Measurements section may be present at most once.
    </assert>
  </rule>
  <rule context="hl7:component/hl7:section/hl7:code[@code='003']">
    <assert test="@codeSystemName='e-MS Document Section Codes' and @displayName='Examination
Measurements'">
      For the Examination Measurements section <name/>, the code, code system name and display name
attributes must always be the following combination: <hl7:code code="003" codeSystemName="e-MS Document Section
Codes" displayName="Examination Measurements"/>.
    </assert>
  </rule>
  <rule context="hl7:component/hl7:section/hl7:code[@code='003']/../hl7:entry/hl7:observation/hl7:code">
    <assert test="
(@codeSystem='2.16.840.1.113883.6.1' and @codeSystemName='LOINC' and @code='8302-2' and
@displayName='Height') or
(@codeSystem='2.16.840.1.113883.6.1' and @codeSystemName='LOINC' and @code='3141-9' and
@displayName='Weight') or
(@codeSystem='2.16.840.1.113883.6.1' and @codeSystemName='LOINC' and @code='11328-2' and
@displayName='Pulse') or
(@codeSystemName='e-MS Data Element Code' and @code='004' and @displayName='Blood Pressure')">
      For the Examination Measurements section <name/>, the code, code system, code system name and
display name attributes must always be one of the following combinations: <hl7:code code="8302-2"
codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC" displayName="Height"/>
      <hl7:code code="3141-9" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC"
displayName="Weight"/>
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5045 <hl7:code code="11328-2" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC"
5046 displayName="Pulse"/>
5047 <hl7:code code="004" codeSystemName="e-MS Data Element Code" displayName="Blood Pressure"/>.
5048 </assert>
5049 </rule>
5050 <rule context="hl7:component/hl7:section/hl7:code[@code='003']/../hl7:entry/hl7:observation">
5051 <assert test="hl7:effectiveTime">
5052 For the Examination Measurements section there must be an effectiveTime for each examination
5053 measurement.
5054 </assert>
5055 <assert test="not(../@typeCode) or ../@typeCode='COMP'">
5056 For the Examination Measurements section entry, the typeCode attribute must either not be present or
5057 set to COMP.
5058 </assert>
5059 <assert test="not(@moodCode) or @moodCode='EVN'">
5060 For the Examination Measurements section <name/>, the moodCode attribute must either not be present
5061 or set to EVN.
5062 </assert>
5063 </rule>
5064 <rule
5065 context="hl7:component/hl7:section/hl7:code[@code='003']/../hl7:entry/hl7:observation/hl7:code[@code='8302-2']/../..">
5066 <assert test="hl7:observation/hl7:value">
5067 For the Examination Measurements section there must be a value for a height measurement.
5068 </assert>
5069 <assert test="hl7:observation/hl7:value[@xsi:type='PQ'] and (hl7:observation/hl7:value[@unit='in'] or
5070 hl7:observation/hl7:value[@unit='cm'])">
5071 For the Examination Measurements section a height value must have an xsi:type of "PQ" and a unit of
5072 either "in" (inches) or "cm" (centimeters).
5073 </assert>
5074 </rule>
5075 <rule
5076 context="hl7:component/hl7:section/hl7:code[@code='003']/../hl7:entry/hl7:observation/hl7:code[@code='3141-9']/../..">
5077 <assert test="hl7:observation/hl7:value">
5078 For the Examination Measurements section there must be a value for a weight measurement.
5079 </assert>
5080 <assert test="hl7:observation/hl7:value[@xsi:type='PQ'] and (hl7:observation/hl7:value[@unit='lb'] or
5081 hl7:observation/hl7:value[@unit='kg'])">
5082 For the Examination Measurements section a weight value must have an xsi:type of "PQ" and a unit of
5083 either "lb" (pounds) or "kg" (kilograms).
5084 </assert>
5085 </rule>
5086 <rule
5087 context="hl7:component/hl7:section/hl7:code[@code='003']/../hl7:entry/hl7:observation/hl7:code[@code='11328-2']/../..">
5088 <assert test="hl7:observation/hl7:value">
5089 For the Examination Measurements section there must be a value for a pulse measurement.
5090 </assert>
5091 <assert test="hl7:observation/hl7:value[@xsi:type='PQ'] and hl7:observation/hl7:value[@unit='bpm']">
5092 For the Examination Measurements section a pulse value must have an xsi:type of "PQ" and a unit of
5093 "bpm" (beats per minute).
5094 </assert>
5095 </rule>
5096 <rule
5097 context="hl7:component/hl7:section/hl7:code[@code='003']/../hl7:entry/hl7:observation/hl7:code[@code='004']/../..">
5098 <assert test="count(hl7:observation/hl7:entryRelationship/hl7:observation/hl7:code[@code='005' and
5099 @codeSystemName='e-MS Data Element Code' and @displayName='Systolic Blood Pressure'])=1">
5100 For the Examination Measurements section there must be a code for the systolic blood pressure as
5101 follows: <hl7:code code="005" codeSystemName="e-MS Data Element Code" displayName="Systolic Blood Pressure"/>.
5102 </assert>
5103 <assert test="count(hl7:observation/hl7:entryRelationship/hl7:observation/hl7:code[@code='006' and
5104 @codeSystemName='e-MS Data Element Code' and @displayName='Diastolic Blood Pressure'])=1">
5105 For the Examination Measurements section there must be a code for the diastolic blood pressure as
5106 follows: <hl7:code code="006" codeSystemName="e-MS Data Element Code" displayName="Diastolic Blood Pressure"/>.
5107 </assert>
5108 <assert test="not(hl7:observation/hl7:entryRelationship/hl7:observation/hl7:effectiveTime)">
5109 For the Examination Measurements section effectiveTime is not permitted in the systolic or diastolic
5110 blood pressure observations, only in the parent blood pressure observation.
5111 </assert>
5112 <assert test="count(hl7:observation/hl7:entryRelationship/hl7:observation/hl7:value[@xsi:type='PQ' and
5113 @unit='mm[Hg]'])=2">
```



For the Examination Measurements section value is required for the systolic and diastolic blood pressure and must have an xsi:type of "PQ" and a unit of "mm[Hg]".

```
</assert>
</rule>
<rule
context="hl7:component/hl7:section/hl7:code[@code='003']/../hl7:entry/hl7:observation/hl7:entryRelationship">
  <assert test="not(@typeCode) or @typeCode='COMP'">
    For the Examination Measurements section <name/>, the typeCode attribute must either not be present
    or set to COMP.
```

```
  </assert>
  <assert test="not(hl7:observation[@moodCode]) or hl7:observation[@moodCode='EVN']">
    For the Examination Measurements section <name/>, the moodCode attribute must either not be present
    or set to EVN.
```

```
  </assert>
</rule>
</pattern>
<!-- Rules that pertain to the Active Problem List section of the CDA -->
<pattern name="2.5 Active Problem List">
  <rule context="hl7:ClinicalDocument/hl7:component/hl7:structuredBody">
    <assert test="count(hl7:component/hl7:section/hl7:code[@code='11450-4'])&lt;2">
      The CDA Active Problem List section may be present at most once.
    </assert>
  </rule>
  <rule context="hl7:component/hl7:section/hl7:code[@code='11450-4']">
    <assert test="@codeSystem='2.16.840.1.113883.6.1' and @codeSystemName='LOINC' and
@displayName='Active Problem List'">
      For the Active Problem List section <name/>, the code, code system, code system name and display
      name attributes must always be the following combination: <hl7:code code="11450-4"
      codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC" displayName="Active Problem List"/>.
```

```
    </assert>
  </rule>
  <rule context="hl7:component/hl7:section/hl7:code[@code='11450-4']/../hl7:entry/hl7:observation/hl7:value">
    <assert test="@xsi:type='ST'">
      For the Active Problem List section <name/>, the xsi:type must always be ST.
```

```
    </assert>
  </rule>
  <rule context="hl7:component/hl7:section/hl7:code[@code='11450-4']/../hl7:entry">
    <assert test="not(@typeCode) or @typeCode='COMP'">
      For the Active Problem List section <name/>, the typeCode attribute must either not be present or set to
      COMP.
```

```
    </assert>
  </rule>
  <rule context="hl7:component/hl7:section/hl7:code[@code='11450-4']/../hl7:entry/hl7:observation">
    <assert test="not(@moodCode) or @moodCode='EVN'">
      For the Active Problem List section <name/>, the moodCode attribute must either not be present or set to
      EVN.
```

```
    </assert>
  </rule>
</pattern>
```

```
<!-- Rules that pertain to the Current Medications section of the CDA -->
<pattern name="2.6 Current Medications">
  <rule context="hl7:ClinicalDocument/hl7:component/hl7:structuredBody">
    <assert test="count(hl7:component/hl7:section/hl7:code[@code='19013-2'])&lt;2">
      The CDA Current Medications section may be present at most once.
    </assert>
  </rule>
  <rule context="hl7:component/hl7:section/hl7:code[@code='19013-2']">
    <assert test="@codeSystem='2.16.840.1.113883.6.1' and @codeSystemName='LOINC' and
@displayName='Current Medications'">
      For the Current Medications section <name/>, the code, code system, code system name and display
      name attributes must always be the following combination: <hl7:code code="19013-2"
      codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC" displayName="Current Medications"/>.
```

```
    </assert>
  </rule>
  <rule context="hl7:component/hl7:section/hl7:code[@code='19013-2']/../hl7:entry/hl7:substanceAdministration/hl7:routeCode">
    <assert test="@codeSystem='2.16.840.1.113883.5.112' and @codeSystemName='RouteOfAdministration'
and
((@code='PO' and @displayName='per os') or
(@code='SL' and @displayName='sublingual') or
```

```
5184      (@code='PR' and @displayName='rectal') or
5185      (@code='IH' and @displayName='per inhalation') or
5186      (@code='OP' and @displayName='ophthalmic') or
5187      (@code='NS' and @displayName='nasal') or
5188      (@code='OT' and @displayName='otic') or
5189      (@code='VG' and @displayName='vaginal') or
5190      (@code='ID' and @displayName='intra-dermal') or
5191      (@code='SC' and @displayName='subcutaneous') or
5192      (@code='IV' and @displayName='intra-venous') or
5193      (@code='IC' and @displayName='intra-cardial'))
5194    ">
5195    For the Current Medications section <name/>, the only entries permitted for the attributes are the
5196    following: code: from the HL7-MedAdministrationRoute code set, codeSystem: 2.16.840.1.113883.5.112,
5197    codeSystemName: RouteOfAdministration, displayName: name corresponding to the code.
5198    </assert>
5199  </rule>
5200  <rule context="hl7:component/hl7:section/hl7:code[@code='19013-
5201  2']/..hl7:entry/hl7:substanceAdministration/hl7:doseQuantity">
5202    <assert test="(hl7:center and not(hl7:width)) or (hl7:center and hl7:width)) and hl7:center[@value] and
5203    hl7:center[@unit]">
5204      For the Current Medications section <name/>, the center element is required (with both value and unit
5205      attributes) and the width element is optional.
5206    </assert>
5207  </rule>
5208  <rule context="hl7:component/hl7:section/hl7:code[@code='19013-2']/..hl7:entry/hl7:substanceAdministration">
5209    <assert test="
5210    (hl7:effectiveTime or hl7:repeatNumber or hl7:routeCode or hl7:doseQuantity) and
5211    (hl7:consumable/hl7:manufacturedProduct/hl7:manufacturedLabeledDrug/hl7:code or
5212    hl7:consumable/hl7:manufacturedProduct/hl7:manufacturedLabeledDrug/hl7:name))
5213    or
5214    (not(hl7:effectiveTime) and not(hl7:repeatNumber) and not(hl7:routeCode) and not(hl7:doseQuantity) and
5215    not(hl7:consumable/hl7:manufacturedProduct/hl7:manufacturedLabeledDrug/hl7:code) and
5216    not(hl7:consumable/hl7:manufacturedProduct/hl7:manufacturedLabeledDrug/hl7:name))
5217    ">
5218    For the Current Medications section, if one or more of effectiveTime, repeatNumber, routeCode or
5219    doseQuantity is present then either consumable/manufacturedProduct/manufacturedLabeledDrug/code or
5220    consumable/manufacturedProduct/manufacturedLabeledDrug/name must be present and vice versa.
5221    </assert>
5222  </rule>
5223  <rule context="hl7:component/hl7:section/hl7:code[@code='19013-
5224  2']/..hl7:entry/hl7:substanceAdministration/hl7:consumable/hl7:manufacturedProduct/hl7:manufacturedLabeledDrug/hl7:c
5225  ode">
5226    <assert test="string-length(@code)=8 and number(@code)>=0">
5227      For the Current Medications section <name/>, the code attribute for a DIN must consist of 8 numerical
5228      digits.
5229    </assert>
5230    <assert test="@codeSystemName='DIN'">
5231      For the Current Medications section <name/>, the codeSystemName must be DIN.
5232    </assert>
5233  </rule>
5234  <rule context="hl7:component/hl7:section/hl7:code[@code='19013-2']/..hl7:entry">
5235    <assert test="not(@typeCode) or @typeCode='COMP'">
5236      For the Current Medications section <name/>, the typeCode attribute must either not be present or set to
5237      COMP.
5238    </assert>
5239  </rule>
5240  <rule context="hl7:component/hl7:section/hl7:code[@code='19013-
5241  2']/..hl7:entry/hl7:substanceAdministration/hl7:consumable">
5242    <assert test="..../hl7:substanceAdministration[@moodCode='EVN']">
5243      For the Current Medications section <name/>, the moodCode attribute must either not be present or set
5244      to EVN.
5245    </assert>
5246  </rule>
5247  </pattern>
5248  <!-- Rules that pertain to the Medical History section of the CDA -->
5249  <pattern name="2.7 Medical History">
5250    <rule context="hl7:ClinicalDocument/hl7:component/hl7:structuredBody">
5251      <assert test="count(hl7:component/hl7:section/hl7:code[@code='11348-0'])<2">
5252        The CDA Medical History section may be present at most once.
5253      </assert>
```

```
5254     </rule>
5255     <rule context="hl7:component/hl7:section/hl7:code[@code='11348-0']">
5256       <assert test="@codeSystem='2.16.840.1.113883.6.1' and @codeSystemName='LOINC' and
5257 @displayName='Medical History'">
5258         For the Medical History section <name/>, the code, code system, code system name and display name
5259 attributes must always be the following combination: <hl7:code code="11348-0" codeSystem="2.16.840.1.113883.6.1"
5260 codeSystemName="LOINC" displayName="Medical History"/>.
5261       </assert>
5262     </rule>
5263     <rule context="hl7:component/hl7:section/hl7:code[@code='11348-0']/../hl7:entry/hl7:observation/hl7:value">
5264       <assert test="@xsi:type='ST'">
5265         For the Medical History section <name/>, the xsi:type must always be ST.
5266       </assert>
5267     </rule>
5268     <rule context="hl7:component/hl7:section/hl7:code[@code='11348-0']/../hl7:entry">
5269       <assert test="not(@typeCode) or @typeCode='COMP'">
5270         For the Medical History section <name/>, the typeCode attribute must either not be present or set to
5271 COMP.
5272       </assert>
5273     </rule>
5274     <rule context="hl7:component/hl7:section/hl7:code[@code='11348-0']/../hl7:entry/hl7:observation">
5275       <assert test="not(@moodCode) or @moodCode='EVN'">
5276         For the Medical History section <name/>, the moodCode attribute must either not be present or set to
5277 EVN.
5278       </assert>
5279     </rule>
5280   </pattern>
5281   <!-- Rules that pertain to the Surgical History section of the CDA -->
5282   <pattern name="2.8 Surgical History">
5283     <rule context="hl7:ClinicalDocument/hl7:component/hl7:structuredBody">
5284       <assert test="count(hl7:component/hl7:section/hl7:code[@code='10167-5'])<2">
5285         The CDA Surgical History section may be present at most once.
5286       </assert>
5287     </rule>
5288     <rule context="hl7:component/hl7:section/hl7:code[@code='10167-5']">
5289       <assert test="@codeSystem='2.16.840.1.113883.6.1' and @codeSystemName='LOINC' and
5290 @displayName='Surgical History'">
5291         For the Surgical History section <name/>, the code, code system, code system name and display name
5292 attributes must always be the following combination: <hl7:code code="10167-5" codeSystem="2.16.840.1.113883.6.1"
5293 codeSystemName="LOINC" displayName="Surgical History"/>.
5294       </assert>
5295     </rule>
5296     <rule context="hl7:component/hl7:section/hl7:code[@code='10167-5']/../hl7:entry/hl7:procedure">
5297       <assert test="not(@moodCode) or @moodCode='EVN'">
5298         For the Surgical History section <name/>, the moodCode attribute must either not be present or set to
5299 EVN.
5300       </assert>
5301       <assert test="not(hl7:effectiveTime) or (hl7:effectiveTime and string-length(hl7:text)>0)">
5302         For the Surgical History section <name/>, if an effectiveTime is entered then there must be a text entry.
5303       </assert>
5304     </rule>
5305     <rule context="hl7:component/hl7:section/hl7:code[@code='10167-5']/../hl7:entry">
5306       <assert test="not(@typeCode) or @typeCode='COMP'">
5307         For the Surgical History section <name/>, the typeCode attribute must either not be present or set to
5308 COMP.
5309       </assert>
5310     </rule>
5311   </pattern>
5312   <!-- Rules that pertain to the Medical Imaging History section of the CDA -->
5313   <pattern name="2.9 Medical Imaging History">
5314     <rule context="hl7:ClinicalDocument/hl7:component/hl7:structuredBody">
5315       <assert test="count(hl7:component/hl7:section/hl7:code[@code='35090-0'])<2">
5316         The CDA Medical Imaging History section may be present at most once.
5317       </assert>
5318     </rule>
5319     <rule context="hl7:component/hl7:section/hl7:code[@code='35090-0']">
5320       <assert test="@codeSystem='2.16.840.1.113883.6.1' and @codeSystemName='LOINC' and
5321 @displayName='Medical Imaging History'">
```



For the Medical Imaging History section `<name/>`, the code, code system, code system name and display name attributes must always be the following combination: `<hl7:code code="35090-0" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC" displayName="Medical Imaging History"/>`.

```
</assert>
</rule>
<rule context="hl7:component/hl7:section/hl7:code[@code='35090-0']/../hl7:entry/hl7:observation/hl7:code">
  <assert test="not(@code) and not(@codeSystem) and not(@codeSystemName) and not(@displayName)
and @nullFlavor='NA'">
    For the Medical Imaging History section observation <name/>, only the nullFlavor of NA is permissible.
  </assert>
</rule>
<rule context="hl7:component/hl7:section/hl7:code[@code='35090-0']/../hl7:entry/hl7:observation">
  <assert test="not(@moodCode) or @moodCode='EVN'">
    For the Medical Imaging History section <name/>, the moodCode attribute must either not be present or
set to EVN.
  </assert>
  <assert test="not(hl7:effectiveTime) or (hl7:effectiveTime and string-length(hl7:text)>0)">
    For the Medical Imaging History section <name/>, if an effectiveTime is entered then there must be a text
entry.
  </assert>
</rule>
<rule context="hl7:component/hl7:section/hl7:code[@code='35090-0']/../hl7:entry/hl7:observation/hl7:value">
  <assert test="@xsi:type='ST'">
    For the Medical Imaging History section <name/>, the xsi:type must always be ST.
  </assert>
</rule>
<rule context="hl7:component/hl7:section/hl7:code[@code='35090-0']/../hl7:entry">
  <assert test="not(@typeCode) or @typeCode='COMP'">
    For the Medical Imaging History section <name/>, the typeCode attribute must either not be present or
set to COMP.
  </assert>
</rule>
</pattern>
<!-- Rules that pertain to the Other Treatments section of the CDA -->
<pattern name="2.10 Other Treatments">
  <rule context="hl7:ClinicalDocument/hl7:component/hl7:structuredBody">
    <assert test="count(hl7:component/hl7:section/hl7:code[@code='007'])&lt;2">
      The CDA Other Treatments section may be present at most once.
    </assert>
  </rule>
  <rule context="hl7:component/hl7:section/hl7:code[@code='007']">
    <assert test="@codeSystemName='e-MS Document Section Codes' and @displayName='Other
Treatments'">
      For the Other Treatments section <name/>, the code, code system name and display name attributes
must always be the following combination: <hl7:code code="007" codeSystemName="e-MS Document Section Codes"
displayName="Other Treatments"/>.
    </assert>
  </rule>
  <rule context="hl7:component/hl7:section/hl7:code[@code='007']/../hl7:entry/hl7:observation/hl7:code">
    <assert test="not(@code) and not(@codeSystem) and not(@codeSystemName) and not(@displayName)
and @nullFlavor='NA'">
      For the Other Treatments section observation <name/>, only the nullFlavor of NA is permissible.
    </assert>
  </rule>
  <rule context="hl7:component/hl7:section/hl7:code[@code='007']/../hl7:entry/hl7:observation">
    <assert test="not(@moodCode) or @moodCode='EVN'">
      For the Other Treatments section <name/>, the moodCode attribute must either not be present or set to
EVN.
    </assert>
    <assert test="not(hl7:effectiveTime) or (hl7:effectiveTime and string-length(hl7:text)>0)">
      For the Other Treatments section <name/>, if an effectiveTime is entered then there must be a text entry.
    </assert>
  </rule>
  <rule context="hl7:component/hl7:section/hl7:code[@code='007']/../hl7:entry/hl7:observation/hl7:value">
    <assert test="@xsi:type='ST'">
      For the Other Treatments section <name/>, the xsi:type must always be ST.
    </assert>
  </rule>
  <rule context="hl7:component/hl7:section/hl7:code[@code='007']/../hl7:entry">
    <assert test="not(@typeCode) or @typeCode='COMP'">
```

For the Other Treatments section `<name/>`, the typeCode attribute must either not be present or set to COMP.

```

</assert>
</rule>
</pattern>
<!-- Rules that pertain to the Allergies section of the CDA -->
<pattern name="2.11 Allergies">
  <rule context="hl7:ClinicalDocument/hl7:component/hl7:structuredBody">
    <assert test="count(hl7:component/hl7:section/hl7:code[@code='008'])&lt;2">
      The CDA Allergies section may be present at most once.
    </assert>
  </rule>
  <rule context="hl7:component/hl7:section/hl7:code[@code='008']">
    <assert test="@codeSystemName='e-MS Document Section Codes' and @displayName='Allergies'">
      For the Allergies section <name/>, the code, code system name and display name attributes must
      always be the following combination: <hl7:code code="008" codeSystemName="e-MS Document Section Codes"
      displayName="Allergies"/>.
    </assert>
  </rule>
  <rule context="hl7:component/hl7:section/hl7:code[@code='008']/../hl7:entry/hl7:observation/hl7:code">
    <assert test="@codeSystemName='AllergyType' and
    ((@code='DA' and @displayName='Drug Allergy') or
    (@code='FA' and @displayName='Food Allergy') or
    (@code='MA' and @displayName='Miscellaneous Allergy') or
    (@code='MC' and @displayName='Miscellaneous Contraindication'))"
    ">
      For the Allergies section, <name/> is optional but if an entry is made the following options exist for the
      attributes: <hl7:code code="DA" codeSystemName="AllergyType" displayName="Drug Allergy"/>
      <hl7:code code="FA" codeSystemName="AllergyType" displayName="Food Allergy"/>
      <hl7:code code="MA" codeSystemName="AllergyType" displayName="Miscellaneous Allergy"/>
      <hl7:code code="MC" codeSystemName="AllergyType" displayName="Miscellaneous
      Contraindication"/>.
    </assert>
  </rule>
  <rule
    context="hl7:component/hl7:section/hl7:code[@code='008']/../hl7:entry/hl7:observation/hl7:entryRelationship/hl7:observati
    on/hl7:code">
    <assert test="@codeSystem='2.16.840.1.113883.12.128' and @codeSystemName='AllergySeverity' and
    ((@code='MI' and @displayName='Mild') or
    (@code='MO' and @displayName='Moderate') or
    (@code='SV' and @displayName='Severe'))"
    ">
      For the Allergies section, <name/> is optional but if an entry is made, the following options exist for the
      attributes: <hl7:code code="MI" codeSystem="2.16.840.1.113883.12.128" codeSystemName="AllergySeverity"
      displayName="Mild"/>
      <hl7:code code="MO" codeSystem="2.16.840.1.113883.12.128" codeSystemName="AllergySeverity"
      displayName="Moderate"/>
      <hl7:code code="SV" codeSystem="2.16.840.1.113883.12.128" codeSystemName="AllergySeverity"
      displayName="Severe"/>.
    </assert>
  </rule>
  <rule context="hl7:component/hl7:section/hl7:code[@code='008']/../hl7:entry/hl7:observation/hl7:value">
    <assert test="@xsi:type='ST'">
      For the Allergies section <name/>, the xsi:type must always be ST.
    </assert>
  </rule>
  <rule
    context="hl7:component/hl7:section/hl7:code[@code='008']/../hl7:entry/hl7:component/hl7:section/hl7:code[@code='008']/
    ../hl7:entry/hl7:observation/hl7:entryRelationship">
    <assert test="not(@typeCode) or @typeCode='COMP'">
      For the Allergies section <name/>, the typeCode attribute must either not be present or set to COMP.
    </assert>
  </rule>
  <rule
    context="hl7:component/hl7:section/hl7:code[@code='008']/../hl7:entry/hl7:observation/hl7:component/hl7:section/hl7:cod
    e[@code='008']/../hl7:entry/hl7:observation/hl7:entryRelationship/hl7:observation">
    <assert test="not(@moodCode) or @moodCode='EVN'">
      For the Allergies section <name/>, the moodCode attribute must either not be present or set to EVN.
    </assert>
  </rule>

```

```
5462 </pattern>
5463 <!-- Rules that pertain to the Immunization section of the CDA -->
5464 <pattern name="2.12 Immunization">
5465   <rule context="hl7:ClinicalDocument/hl7:component/hl7:structuredBody">
5466     <assert test="count(hl7:component/hl7:section/hl7:code[@code='11369-6'])&lt;2">
5467       The CDA Immunization section may be present at most once.
5468     </assert>
5469   </rule>
5470   <rule context="hl7:component/hl7:section/hl7:code[@code='11369-6']">
5471     <assert test="@codeSystem='2.16.840.1.113883.6.1' and @codeSystemName='LOINC' and
5472 @displayName='Immunization'">
5473       For the Immunization section <name/>, the code, code system, code system name and display name
5474 attributes must always be the following combination: <hl7:code code="11369-6" codeSystem="2.16.840.1.113883.6.1"
5475 codeSystemName="LOINC" displayName="Immunization"/>.
5476     </assert>
5477   </rule>
5478   <rule context="hl7:component/hl7:section/hl7:code[@code='11369-6']/../hl7:entry/hl7:observation">
5479     <assert test="not(@moodCode) or @moodCode='EVN'">
5480       For the Immunization section <name/>, the moodCode attribute must either not be present or set to EVN.
5481     </assert>
5482   </rule>
5483   <rule context="hl7:component/hl7:section/hl7:code[@code='11369-6']/../hl7:entry/hl7:observation/hl7:code">
5484     <assert test="@codeSystemName='BCCDC - ImmunizationCode' and
5485 (@code='aP' and @displayName='Acellular Pertussis') or
5486 (@code='RHOGAM' and @displayName='Anti-Rho (D) Immune Globulin') or
5487 (@code='BAtox' and @displayName='Botulism Antitoxin') or
5488 (@code='CHOL' and @displayName='Cholera') or
5489 (@code='CHOL+ETEC' and @displayName='Cholera and Enterotoxigenic E.Coli') or
5490 (@code='D' and @displayName='Diphtheria') or
5491 (@code='DAtox' and @displayName='Diphtheria Antitoxin') or
5492 (@code='DT' and @displayName='Diphtheria Tetanus - Paediatric') or
5493 (@code='DTP' and @displayName='Diphtheria Tetanus Polio - Paed') or
5494 (@code='DTwP-P' and @displayName='Diphtheria Tetanus wPertussis, iPolio') or
5495 (@code='SCHK' and @displayName='Diphtheria Toxin for Schick Test') or
5496 (@code='DTwP' and @displayName='Diphtheria, Tetanus wPertussis - Paed') or
5497 (@code='DTaP' and @displayName='Diphtheria, Tetanus, acellular Pertussis') or
5498 (@code='DTaP-P' and @displayName='Diphtheria, Tetanus, aPertussis, iPolio') or
5499 (@code='DTaP-P-Hib' and @displayName='Diphtheria, Tetanus, aPertussis, iPolio, Hib') or
5500 (@code='DTwP-P-s' and @displayName='Diphtheria, Tetanus, Pertussis, iPolio (study)') or
5501 (@code='DTwP-P-H-s' and @displayName='Diphtheria, Tetanus, wPertussis, iPolio, Hib (study)') or
5502 (@code='DTwP-P-Hib' and @displayName='Diphtheria, Tetanus, wPertussis, iPolio, Hib') or
5503 (@code='Hib' and @displayName='Haemophilus influenzae type b') or
5504 (@code='HA' and @displayName='Hepatitis A') or
5505 (@code='HAHB' and @displayName='Hepatitis A and B') or
5506 (@code='HB' and @displayName='Hepatitis B') or
5507 (@code='HB-study' and @displayName='Hepatitis B (study)') or
5508 (@code='HBIG' and @displayName='Hepatitis B Immune Globulin') or
5509 (@code='Hib-study' and @displayName='Hib study') or
5510 (@code='Ig' and @displayName='Immune Globulin') or
5511 (@code='IPV-study' and @displayName='Inactivated Polio Vaccine (study)') or
5512 (@code='FLU' and @displayName='Influenza') or
5513 (@code='IPV' and @displayName='Injectable Polio Vaccine') or
5514 (@code='E' and @displayName='Japanese Encephalitis') or
5515 (@code='M' and @displayName='Measles') or
5516 (@code='MMR' and @displayName='Measles Mumps Rubella') or
5517 (@code='MR' and @displayName='Measles Rubella') or
5518 (@code='MEN-C-C' and @displayName='Meningococcal-Conjugate-C') or
5519 (@code='MEN-P-AC' and @displayName='Meningococcal-Polysaccharide-AC') or
5520 (@code='MEN-P-ACWY' and @displayName='Meningococcal-Polysaccharide-ACWY') or
5521 (@code='Mu' and @displayName='Mumps') or
5522 (@code='PLAG' and @displayName='Plague') or
5523 (@code='PNEU-C-7' and @displayName='Pneumococcal Conjugate C-7') or
5524 (@code='PNEU-P-23' and @displayName='Pneumococcal-Polysaccharide-23') or
5525 (@code='OPV' and @displayName='Polio') or
5526 (@code='MEN-ACWY-s' and @displayName='Quadravalent Meningococcal (study)') or
5527 (@code='RAB' and @displayName='Rabies') or
5528 (@code='RIG' and @displayName='Rabies Immune Globulin') or
5529 (@code='RSVlg' and @displayName='Respiratory Syncytial Virus Immune Globulin') or
5530 (@code='R' and @displayName='Rubella') or
5531 (@code='SnakAven' and @displayName='Snake Antivenom') or
```

```
5532      (@code='spidAven' and @displayName='Spider Antivenom') or
5533      (@code='T' and @displayName='Tetanus') or
5534      (@code='TdaP' and @displayName='Tetanus Diphtheria aPertussis - adults') or
5535      (@code='TIG' and @displayName='Tetanus Immune Globulin') or
5536      (@code='Td' and @displayName='Tetanus, Diphtheria - adult') or
5537      (@code='TdcP-s' and @displayName='Tetanus, Diphtheria, control Pertussis (study)') or
5538      (@code='TdP' and @displayName='Tetanus, Diphtheria, Polio - adults') or
5539      (@code='TdwP-s' and @displayName='Tetanus, Diphtheria, wPertussis - (study)') or
5540      (@code='TBN' and @displayName='Tuberculin Purified Protein Derivative') or
5541      (@code='BCG' and @displayName='Tuberculosis Vaccine (Bacille Calmette-Guerin)') or
5542      (@code='TYPH-IM' and @displayName='Typhoid Intramuscular') or
5543      (@code='TYPH-O' and @displayName='Typhoid Oral') or
5544      (@code='TYPH' and @displayName='Typhoid Vaccine (discontinued)') or
5545      (@code='VZ' and @displayName='Varicella Zoster') or
5546      (@code='VZIG' and @displayName='Varicella Zoster Immune Globulin') or
5547      (@code='wP' and @displayName='wPertussis') or
5548      (@code='YF' and @displayName='Yellow Fever')
5549    ">
5550    For the Immunization section <name/>, the attributes must be code=an entry from the BCCDC:BC
5551    Vaccination Codes Code Set, codeSystemName="BCCDC - ImmunizationCode", displayName=the immunization
5552    corresponding to the code specified under the code attribute.
5553    </assert>
5554  </rule>
5555  <rule context="hl7:component/hl7:section/hl7:code[@code='11369-6']/../hl7:entry">
5556    <assert test="not(@typeCode) or @typeCode='COMP'">
5557      For the Immunization section <name/>, the typeCode attribute must either not be present or set to
5558      COMP.
5559    </assert>
5560  </rule>
5561 </pattern>
5562 <!-- Rules that pertain to the Labs section of the CDA -->
5563 <pattern name="2.13 Labs">
5564   <rule context="hl7:ClinicalDocument/hl7:component/hl7:structuredBody">
5565     <assert test="count(hl7:component/hl7:section/hl7:code[@code='11502-2'])<2">
5566       The CDA Labs section may be present at most once.
5567     </assert>
5568   </rule>
5569   <rule context="hl7:component/hl7:section/hl7:code[@code='11502-2']">
5570     <assert test="@codeSystem='2.16.840.1.113883.6.1' and @codeSystemName='LOINC' and
5571     @displayName='Labs'">
5572       For the Labs section <name/>, the code, code system, code system name and display name attributes
5573       must always be the following combination: <hl7:code code="11502-2" codeSystem="2.16.840.1.113883.6.1"
5574       codeSystemName="LOINC" displayName="Labs"/>.
5575     </assert>
5576   </rule>
5577   <rule context="hl7:component/hl7:section/hl7:code[@code='11502-2']/../hl7:entry/hl7:observation">
5578     <assert test="(not(hl7:effectiveTime) and not(hl7:value) and not(hl7:interpretationCode) and
5579     not(hl7:referenceRange) and
5580     not(hl7:performer)) or (hl7:code[@code] and hl7:code[@displayName])">
5581       For the Labs section <name/>, the code element has attributes code and displayName and is optional
5582       unless any of the other Labs section elements is present.
5583     </assert>
5584     <assert test="not(@moodCode) or @moodCode='EVN'">
5585       For the Labs section <name/>, the moodCode attribute must either not be present or set to EVN.
5586     </assert>
5587   </rule>
5588   <rule context="hl7:component/hl7:section/hl7:code[@code='11502-2']/../hl7:entry/hl7:observation/hl7:value">
5589     <assert test="(@xsi:type='PQ' and @value and @unit) or
5590     (@xsi:type='ST')">
5591       For the Labs section <name/>, the xsi:type must be PQ and there must be value and unit attributes.
5592     </assert>
5593   </rule>
5594   <rule context="hl7:component/hl7:section/hl7:code[@code='11502-
5595   2']/../hl7:entry/hl7:observation/hl7:referenceRange/hl7:referenceObservationRange">
5596     <assert test="(hl7:value/hl7:high or hl7:value/hl7:low) and normalize-space(hl7:value)=) or
5597     (not(hl7:value/hl7:high) and not(hl7:value/hl7:low) and string-length(normalize-space(hl7:value))>0)">
5598       For the Labs section <name/>, value must contain either a string or elements high and/or low.
5599     </assert>
5600  </rule>
```

```
5601      <rule context="hl7:component/hl7:section/hl7:code[@code='11502-  
5602 2']/../hl7:entry/hl7:observation/hl7:performer/hl7:assignedEntity/hl7:id">  
5603      <assert test="@displayable='true' and @assigningAuthorityName='MSP' and  
5604      string-length(normalize-space(@extension))>0">  
5605          For the Labs section <name/>, the attributes must be as follows: displayable="true",  
5606      assigningAuthorityName="MSP", extension may not be blank.  
5607      </assert>  
5608      </rule>  
5609      <rule context="hl7:component/hl7:section/hl7:code[@code='11502-2']/../hl7:entry">  
5610      <assert test="not(@typeCode) or @typeCode='COMP'">  
5611          For the Labs section <name/>, the typeCode attribute must either not be present or set to COMP.  
5612      </assert>  
5613      </rule>  
5614      </pattern>  
5615      <!-- Rules that pertain to the Past Referrals and Hospitalizations section of the CDA -->  
5616      <pattern name="2.14 Past Referrals and Hospitalizations">  
5617          <rule context="hl7:ClinicalDocument/hl7:component/hl7:structuredBody">  
5618              <assert test="count(hl7:component/hl7:section/hl7:code[@code='11336-5'])<2">  
5619                  The CDA Past Referrals and Hospitalizations section may be present at most once.  
5620              </assert>  
5621          </rule>  
5622          <rule context="hl7:component/hl7:section/hl7:code[@code='11336-5']">  
5623              <assert test="@codeSystem='2.16.840.1.113883.6.1' and @codeSystemName='LOINC' and  
5624      @displayName='Past Referrals and Hospitalizations'">  
5625                  For the Past Referrals and Hospitalizations section <name/>, the code, code system, code system name  
5626      and display name attributes must always be the following combination: <hl7:code code="11336-5"  
5627      codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC" displayName="Past Referrals and Hospitalizations"/>.  
5628              </assert>  
5629          </rule>  
5630          <rule context="hl7:component/hl7:section/hl7:code[@code='11336-5']/../hl7:entry/hl7:encounter/hl7:code">  
5631              <assert test="@codeSystemName='HL7 - Act Encounter Code' and  
5632      ((@code='AMB' and @displayName='Ambulatory') or  
5633      (@code='EMER' and @displayName='Emergency') or  
5634      (@code='FLD' and @displayName='Field') or  
5635      (@code='HH' and @displayName='Home Health') or  
5636      (@code='ACUTE' and @displayName='Inpatient Acute') or  
5637      (@code='NONAC' and @displayName='Inpatient non-acute') or  
5638      (@code='VR' and @displayName='Virtual') or  
5639      (@code='SP' and @displayName='Specialist'))  
5640              ">  
5641                  For the Past Referrals and Hospitalizations section <name/>, the following options exist for the attributes:  
5642      code=from the HL7 - Act Encounter Code code set, codeSystemName="HL7 - Act Encounter Code", displayName=the  
5643      name corresponding to the code specified in code.  
5644              </assert>  
5645          </rule>  
5646          <rule context="hl7:component/hl7:section/hl7:code[@code='11336-5']/../hl7:entry">  
5647              <assert test="not(@typeCode) or @typeCode='COMP'">  
5648                  For the Past Referrals and Hospitalizations section <name/>, the typeCode attribute must either not be  
5649      present or set to COMP.  
5650              </assert>  
5651          </rule>  
5652          <rule context="hl7:component/hl7:section/hl7:code[@code='11336-5']/../hl7:entry/hl7:encounter">  
5653              <assert test="not(@moodCode) or @moodCode='EVN'">  
5654                  For the Past Referrals and Hospitalizations section <name/>, the moodCode attribute must either not be  
5655      present or set to EVN.  
5656              </assert>  
5657          </rule>  
5658      </pattern>  
5659      <!-- Rules that pertain to the Family History section of the CDA -->  
5660      <pattern name="2.15 Family History">  
5661          <rule context="hl7:ClinicalDocument/hl7:component/hl7:structuredBody">  
5662              <assert test="count(hl7:component/hl7:section/hl7:code[@code='10157-6'])<2">  
5663                  The CDA Family History section may be present at most once.  
5664              </assert>  
5665          </rule>  
5666          <rule context="hl7:component/hl7:section/hl7:code[@code='10157-6']">  
5667              <assert test="@codeSystem='2.16.840.1.113883.6.1' and @codeSystemName='LOINC' and  
5668      @displayName='Family History'">
```



For the Family History section `<name/>`, the code, code system, code system name and display name attributes must always be the following combination: `<hl7:code code="10157-6" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC" displayName="Family History"/>`.

```
</assert>
</rule>
</pattern>
</schema>
```

## Appendix D – Maximum XML Instance

```
<?xml version="1.0" encoding="UTF-8"?>
<ClinicalDocument xmlns:hl7="urn:hl7-org:v3" xmlns="urn:hl7-org:v3" xmlns:xs="http://www.w3.org/2001/XMLSchema"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schemaLocation="urn:hl7-org:v3 ../EMS_CDA.xsd">
  <!--
  *****
  e-MS CDA Header
  *****
  -->
  <id extension="6823AC2F-B374-4214-AF1B-407091BBED37" root="2.16.840.1.113883.3.933"/>
  <code code="34140-4" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC" displayName="Referral"/>
  <title/>
  <effectiveTime value="20040809142222"/>
  <confidentialityCode code="N" codeSystem="2.16.840.1.113883.5.25"/>
  <!--
  *****
  Information Recipient
  *****
  -->
  <informationRecipient typeCode="PRCP">
    <intendedRecipient classCode="ASSIGNED">
      <id extension="ppump" root="DCCD2C68-389B-44c4-AD99-B8FB2DAD1493"/>
      <addr>
        <streetAddressLine>4444 Healthcare Drive</streetAddressLine>
        <city>Ann Arbor</city>
        <state>BC</state>
        <postalCode>A1B 2C3</postalCode>
        <country>CA</country>
      </addr>
      <telecom value="tel:1-555-555-1009" use="WP"/>
      <telecom value="fax:1(555)5551199" use="WP"/>
      <informationRecipient>
        <name>
          <prefix>Dr.</prefix>
          <given>Patrick</given>
          <given>P.</given>
          <family>Pump</family>
          <suffix>Sr.</suffix>
        </name>
      </informationRecipient>
      <receivedOrganization>
        <name>Level 7 Healthcare, Inc</name>
      </receivedOrganization>
    </intendedRecipient>
  </informationRecipient>
  <!--
  *****
  Author
  *****
  -->
  <author>
    <time value="20040812120000"/>
    <assignedAuthor>
      <id extension="hhippocrates" root="DCCD2C68-389B-44c4-AD99-B8FB2DAD1493"/>
      <addr>
        <streetAddressLine>4444 Healthcare Drive</streetAddressLine>
        <city>Ann Arbor</city>
        <state>BC</state>
        <postalCode>A1B 2C3</postalCode>
        <country>CA</country>
      </addr>
      <telecom value="tel:(555)555-1003" use="WP"/>
      <telecom value="fax:(555)555-1133" use="WP"/>
      <assignedPerson>
        <name>
```

```
5743         <prefix>Dr.</prefix>
5744         <given>Harold</given>
5745         <given>H.</given>
5746         <family>Hippocrates</family>
5747         <suffix>the 1st</suffix>
5748     </name>
5749 </assignedPerson>
5750 </assignedAuthor>
5751 </author>
5752 <author>
5753     <time value="20040812120000"/>
5754     <assignedAuthor>
5755         <id extension="hhippocrates" root="DCCD2C68-389B-44c4-AD99-B8FB2DAD1493"/>
5756         <assignedAuthoringDevice>
5757             <softwareName>e-MS Web</softwareName>
5758         </assignedAuthoringDevice>
5759     </assignedAuthor>
5760 </author>
5761 <!--
5762 *****
5763 Custodian
5764 *****
5765 -->
5766     <custodian typeCode="CST">
5767         <assignedCustodian>
5768             <representedCustodianOrganization>
5769                 <id extension="123" root="7EEF0BCC-F03E-4742-A736-8BAC57180C5F"/>
5770                 <name>Level 7 Healthcare, Inc</name>
5771             </representedCustodianOrganization>
5772         </assignedCustodian>
5773     </custodian>
5774 <!--
5775 *****
5776 Record Target
5777 *****
5778 -->
5779     <recordTarget typeCode="RCT" contextControlCode="OP">
5780         <patient classCode="PAT">
5781             <id extension="999999999" root="2BFBA1E9-79C2-4bbb-B589-41B949BD6A3B"
5782 assigningAuthorityName="BC-PHN"/>
5783             <id extension="99999-9" assigningAuthorityName="WCB"/>
5784             <addr>
5785                 <streetAddressLine>2222 Home Street</streetAddressLine>
5786                 <city>Ann Arbor</city>
5787                 <state>BC</state>
5788                 <postalCode>A1B 2C3</postalCode>
5789                 <country>CA</country>
5790             </addr>
5791             <telecom value="ph:555555-2003" use="HP"/>
5792             <telecom value="email:Eve.Everywoman@eg.net" use="HP"/>
5793             <patientPatient>
5794                 <name>
5795                     <prefix>Mrs.</prefix>
5796                     <given>Eve</given>
5797                     <given>E.</given>
5798                     <family>Everywoman</family>
5799                     <suffix>Jr.</suffix>
5800                 </name>
5801                 <administrativeGenderCode code="F" codeSystem="2.16.840.1.113883.5.1" codeSystemName="HL7 -
5802 Administrative Gender" displayName="Female"/>
5803                 <birthTime value="19650516"/>
5804                 <languageCommunication>
5805                     <languageCode code="EN"/>
5806                 </languageCommunication>
5807             </patientPatient>
5808         </patient>
5809     </recordTarget>
5810 <!--
5811 *****
5812 Participant - Contact
```



```
*****
-->
  <participant typeCode="NOT">
    <participatingEntity classCode="CON">
      <code code="HUSB" codeSystem="F05716F7-BA77-4641-A8D8-6E3948CCD321" codeSystemName="HL7:
PersonalRelationshipRoleType" displayName="Husband"/>
      <addr>
        <streetAddressLine>2222 Home Street</streetAddressLine>
        <city>Ann Arbor</city>
        <state>BC</state>
        <postalCode>A1B 2C3</postalCode>
        <country>CA</country>
      </addr>
      <telecom value="tel:(555)555-5001" use="H"/>
      <telecom value="mailto:Neville.Nuclear@eg.net" use="H"/>
      <associatedPerson>
        <name>
          <prefix>Mr.</prefix>
          <given>Neville</given>
          <given>N.</given>
          <family>Nuclear</family>
          <suffix>III</suffix>
        </name>
      </associatedPerson>
    </participatingEntity>
  </participant>
  <participant typeCode="NOT">
    <participatingEntity classCode="CON">
      <code code="NCHLD" codeSystem="F05716F7-BA77-4641-A8D8-6E3948CCD321"
codeSystemName="HL7: PersonalRelationshipRoleType" displayName="Natural Child"/>
      <addr>
        <streetAddressLine>6666 Home Street</streetAddressLine>
        <city>Ann Arbor</city>
        <state>BC</state>
        <postalCode>A1B 2C3</postalCode>
        <country>CA</country>
      </addr>
      <telecom value="tel:(555)555-5001" use="H"/>
      <telecom value="mailto:Nancy.Nuclear@eg.net" use="H"/>
      <associatedPerson>
        <name>
          <prefix>Ms.</prefix>
          <given>Nancy</given>
          <given>N.</given>
          <family>Nuclear</family>
          <suffix>Sr.</suffix>
        </name>
      </associatedPerson>
    </participatingEntity>
  </participant>
<!--
*****
Related Document
*****
-->
  <relatedDocument typeCode="APND">
    <parentDocument>
      <id extension="C7F36C19-64F0-4a8d-859B-2404F07A2434" root="2.16.840.1.113883.3.933"/>
      <code code="34140-4" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC"
displayName="Referral"/>
      <text>A previous referral is related to this document</text>
    </parentDocument>
  </relatedDocument>
<!--
*****
e-MS CDA Structured Body
*****
-->
  <component>
    <structuredBody>
```

```
5883 <!--
5884 *****
5885 Purpose
5886 *****
5887 -->
5888 <component>
5889 <section>
5890 <code code="001" codeSystem="7BA9BFFD-D25F-44e8-A7B0-0DF214D6845B"
5891 codeSystemName="e-MS Document Section Codes" displayName="Purpose"/>
5892 <title>Referral Purpose</title>
5893 <text>
5894 <paragraph>
5895 Please see this patient regarding occasional occurrences of arrhythmia at rest
5896 accompanied with mild shortness of breath. Mild exercise leads to faintness and mild chest pain.
5897 </paragraph>
5898 <paragraph>
5899 Urgency: expedite
5900 </paragraph>
5901 <table border="1">
5902 <tbody>
5903 <tr>
5904 <th>Other Provider</th>
5905 <th>Reason</th>
5906 </tr>
5907 <tr>
5908 <td>Dr. Vera V. Valve at Level 7 Healthcare, Inc </td>
5909 <td>High blood pressure in the past</td>
5910 </tr>
5911 <tr>
5912 <td>Dr. Sara S. Specialize at Good Health Hospital</td>
5913 <td>24 Hour ECG recording</td>
5914 </tr>
5915 </tbody>
5916 </table>
5917 <paragraph>
5918 Comments: The patient expressed that this problem has gradually been getting worse
5919 over the course of the past year and a half.
5920 </paragraph>
5921 </text>
5922 <entry typeCode="DRIV">
5923 <observation classCode="OBS" moodCode="EVN">
5924 <code nullFlavor="NA"/>
5925 <text>Please see this patient regarding occasional occurrences of arrhythmia at rest
5926 accompanied with mild shortness of breath. Mild exercise leads to faintness and mild chest pain. </text>
5927 <priorityCode code="E" codeSystem="1261620F-C09D-4825-96E4-E808DCFA4D17"
5928 codeSystemName="eMS_Purpose_Urgency" displayName="Expedite (call)"/>
5929 <value xsi:type="ST">The patient expressed that this problem has gradually been getting
5930 worse over the course of the past year and a half.</value>
5931 <participant typeCode="SPRF">
5932 <participantRole>
5933 <playingPlayingEntity>
5934 <name>Dr. Vera V. Valve at Level 7 Healthcare</name>
5935 <desc>High blood pressure in the past</desc>
5936 </playingPlayingEntity>
5937 </participantRole>
5938 </participant>
5939 <participant typeCode="SPRF">
5940 <participantRole>
5941 <playingPlayingEntity>
5942 <name>Dr. Sara S. Specialize at Good Health Hospital</name>
5943 <desc>24 Hour ECG recording</desc>
5944 </playingPlayingEntity>
5945 </participantRole>
5946 </participant>
5947 </observation>
5948 </entry>
5949 </section>
5950 </component>
5951 <!--
5952 *****
```

## Alerts

\*\*\*\*\*

--&gt;

```
<component>
  <section>
    <code code="002" codeSystem="7BA9BFFD-D25F-44e8-A7B0-0DF214D6845B"
codeSystemName="e-MS Document Section Codes" displayName="Alerts"/>
    <title>Alerts</title>
    <text>
      <table border="1">
        <tbody>
          <tr>
            <th>Alert</th>
            <th>Comments</th>
            <th>Date</th>
          </tr>
          <tr>
            <td>History of violence</td>
            <td>Mostly towards family members</td>
            <td>1999</td>
          </tr>
          <tr>
            <td>History of mental illness</td>
            <td>Mild anxiety disorder</td>
            <td>August 2000</td>
          </tr>
        </tbody>
      </table>
    </text>
    <entry typeCode="COMP">
      <observation classCode="OBS" moodCode="EVN">
        <code nullFlavor="NA"/>
        <text>History of violence</text>
        <effectiveTime value="1999"/>
        <value xsi:type="ST">Mostly towards family members</value>
      </observation>
    </entry>
    <entry typeCode="COMP">
      <observation classCode="OBS" moodCode="EVN">
        <code nullFlavor="NA"/>
        <text>History of mental illness</text>
        <effectiveTime value="200008"/>
        <value xsi:type="ST">Mild anxiety disorder</value>
      </observation>
    </entry>
  </section>
</component>
<!--
```

\*\*\*\*\*

## Social History/Risks

\*\*\*\*\*

--&gt;

```
<component>
  <section>
    <code code="29762-2" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC"
displayName="Social History/Risks"/>
    <title>Social History/Risks</title>
    <text>
      <table border="1">
        <tbody>
          <tr>
            <th>Social History/Risk</th>
            <th>Comments</th>
            <th>Date</th>
          </tr>
          <tr>
            <td>Smoking</td>
            <td>2 packs of cigarettes per day in her early teens</td>
            <td>1979-1982</td>
          </tr>
        </tbody>
      </table>
    </text>
  </section>
</component>
```

```
6023         <tr>
6024             <td>Alcohol consumption</td>
6025             <td>3 glasses of wine per day</td>
6026             <td>January 2000</td>
6027         </tr>
6028     </tbody>
6029 </table>
6030 </text>
6031 <entry typeCode="COMP">
6032     <observation classCode="OBS" moodCode="EVN">
6033         <code nullFlavor="NA"/>
6034         <text>Smoking</text>
6035         <effectiveTime value="19790000000000.19820000000000"/>
6036         <value xsi:type="ST">2 packs of cigarettes per day starting in her early teens.</value>
6037     </observation>
6038 </entry>
6039 <entry typeCode="COMP">
6040     <observation classCode="OBS" moodCode="EVN">
6041         <code nullFlavor="NA"/>
6042         <text>Alcohol consumption</text>
6043         <effectiveTime value="200001"/>
6044         <value xsi:type="ST">3 glasses of wine per day.</value>
6045     </observation>
6046 </entry>
6047 </section>
6048 </component>
6049 <!--
6050 *****
6051 Examination Measurements
6052 *****
6053 -->
6054 <component>
6055     <section>
6056         <code code="003" codeSystem="7BA9BFFD-D25F-44e8-A7B0-0DF214D6845B"
6057         codeSystemName="e-MS Document Section Codes" displayName="Examination Measurements"/>
6058         <title>Examination Measurements</title>
6059         <text>
6060             <table border="1">
6061                 <tbody>
6062                     <tr>
6063                         <th/>
6064                         <th>Height</th>
6065                         <th>Weight</th>
6066                         <th>Blood Pressure</th>
6067                         <th>Pulse</th>
6068                     </tr>
6069                     <tr>
6070                         <td>
6071                             <content styleCode="Bold">January 13, 2000</content>
6072                         </td>
6073                         <td>172 cm</td>
6074                         <td>65 Kg</td>
6075                         <td>130/80</td>
6076                         <td>80 BPM</td>
6077                     </tr>
6078                     <tr>
6079                         <td>
6080                             <content styleCode="Bold">March 18, 2001</content>
6081                         </td>
6082                         <td>172 cm</td>
6083                         <td>70 Kg</td>
6084                         <td>145/95</td>
6085                         <td>90 BPM</td>
6086                     </tr>
6087                     <tr>
6088                         <td>
6089                             <content styleCode="Bold">September 22, 2003</content>
6090                         </td>
6091                         <td>172 cm</td>
6092                         <td>78 Kg</td>
```

```
6093         <td>160/110</td>
6094         <td>92 BPM</td>
6095     </tr>
6096     <tr>
6097         <td>
6098             <content styleCode="Bold">August 9, 2004</content>
6099         </td>
6100         <td>172 cm </td>
6101         <td>80 Kg</td>
6102         <td>160/130</td>
6103         <td>94 BPM</td>
6104     </tr>
6105 </tbody>
6106 </table>
6107 </text>
6108 <entry typeCode="COMP">
6109     <observation classCode="OBS" moodCode="EVN">
6110         <code code="8302-2" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC"
6111         displayName="Height"/>
6112         <effectiveTime value="20000113"/>
6113         <value xsi:type="PQ" value="172" unit="cm"/>
6114     </observation>
6115 </entry>
6116 <entry typeCode="COMP">
6117     <observation classCode="OBS" moodCode="EVN">
6118         <code code="3141-9" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC"
6119         displayName="Weight"/>
6120         <effectiveTime value="20000113"/>
6121         <value xsi:type="PQ" value="65" unit="kg"/>
6122     </observation>
6123 </entry>
6124 <entry typeCode="COMP">
6125     <observation classCode="OBS" moodCode="EVN">
6126         <code code="11328-2" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC"
6127         displayName="Pulse"/>
6128         <effectiveTime value="20000113"/>
6129         <value xsi:type="PQ" value="80" unit="bpm"/>
6130     </observation>
6131 </entry>
6132 <entry typeCode="COMP">
6133     <observation classCode="OBS" moodCode="EVN">
6134         <code code="004" codeSystem="7BA9BFFD-D25F-44e8-A7B0-0DF214D6845B"
6135         codeSystemName="e-MS Data Element Code" displayName="Blood Pressure"/>
6136         <effectiveTime value="20000113"/>
6137         <entryRelationship typeCode="COMP">
6138             <observation classCode="OBS" moodCode="EVN">
6139                 <code code="005" codeSystem="7BA9BFFD-D25F-44e8-A7B0-0DF214D6845B"
6140                 codeSystemName="e-MS Data Element Code" displayName="Systolic Blood Pressure"/>
6141                 <value xsi:type="PQ" value="130" unit="mm[Hg]"/>
6142             </observation>
6143         </entryRelationship>
6144         <entryRelationship typeCode="COMP">
6145             <observation classCode="OBS" moodCode="EVN">
6146                 <code code="006" codeSystem="7BA9BFFD-D25F-44e8-A7B0-0DF214D6845B"
6147                 codeSystemName="e-MS Data Element Code" displayName="Diastolic Blood Pressure"/>
6148                 <value xsi:type="PQ" value="80" unit="mm[Hg]"/>
6149             </observation>
6150         </entryRelationship>
6151     </observation>
6152 </entry>
6153 <entry typeCode="COMP">
6154     <observation classCode="OBS" moodCode="EVN">
6155         <code code="8302-2" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC"
6156         displayName="Height"/>
6157         <effectiveTime value="20010318"/>
6158         <value xsi:type="PQ" value="172" unit="cm"/>
6159     </observation>
6160 </entry>
6161 <entry typeCode="COMP">
6162     <observation classCode="OBS" moodCode="EVN">
```

```
6163         <code code="3141-9" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC"
6164 displayName="Weight"/>
6165         <effectiveTime value="20010318"/>
6166         <value xsi:type="PQ" value="70" unit="kg"/>
6167     </observation>
6168 </entry>
6169 <entry typeCode="COMP">
6170     <observation classCode="OBS" moodCode="EVN">
6171         <code code="11328-2" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC"
6172 displayName="Pulse"/>
6173         <effectiveTime value="20010318"/>
6174         <value xsi:type="PQ" value="90" unit="bpm"/>
6175     </observation>
6176 </entry>
6177 <entry typeCode="COMP">
6178     <observation classCode="OBS" moodCode="EVN">
6179         <code code="004" codeSystem="7BA9BFFD-D25F-44e8-A7B0-0DF214D6845B"
6180 codeSystemName="e-MS Data Element Code" displayName="Blood Pressure"/>
6181         <effectiveTime value="20010318"/>
6182         <entryRelationship typeCode="COMP">
6183             <observation classCode="OBS" moodCode="EVN">
6184                 <code code="005" codeSystem="7BA9BFFD-D25F-44e8-A7B0-0DF214D6845B"
6185 codeSystemName="e-MS Data Element Code" displayName="Systolic Blood Pressure"/>
6186                 <value xsi:type="PQ" value="145" unit="mm[Hg]"/>
6187             </observation>
6188         </entryRelationship>
6189         <entryRelationship typeCode="COMP">
6190             <observation classCode="OBS" moodCode="EVN">
6191                 <code code="006" codeSystem="7BA9BFFD-D25F-44e8-A7B0-0DF214D6845B"
6192 codeSystemName="e-MS Data Element Code" displayName="Diastolic Blood Pressure"/>
6193                 <value xsi:type="PQ" value="95" unit="mm[Hg]"/>
6194             </observation>
6195         </entryRelationship>
6196     </observation>
6197 </entry>
6198 <entry typeCode="COMP">
6199     <observation classCode="OBS" moodCode="EVN">
6200         <code code="8302-2" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC"
6201 displayName="Height"/>
6202         <effectiveTime value="20030922"/>
6203         <value xsi:type="PQ" value="172" unit="cm"/>
6204     </observation>
6205 </entry>
6206 <entry typeCode="COMP">
6207     <observation classCode="OBS" moodCode="EVN">
6208         <code code="3141-9" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC"
6209 displayName="Weight"/>
6210         <effectiveTime value="20030922"/>
6211         <value xsi:type="PQ" value="78" unit="kg"/>
6212     </observation>
6213 </entry>
6214 <entry typeCode="COMP">
6215     <observation classCode="OBS" moodCode="EVN">
6216         <code code="11328-2" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC"
6217 displayName="Pulse"/>
6218         <effectiveTime value="20030922"/>
6219         <value xsi:type="PQ" value="92" unit="bpm"/>
6220     </observation>
6221 </entry>
6222 <entry typeCode="COMP">
6223     <observation classCode="OBS" moodCode="EVN">
6224         <code code="004" codeSystem="7BA9BFFD-D25F-44e8-A7B0-0DF214D6845B"
6225 codeSystemName="e-MS Data Element Code" displayName="Blood Pressure"/>
6226         <effectiveTime value="20030922"/>
6227         <entryRelationship typeCode="COMP">
6228             <observation classCode="OBS" moodCode="EVN">
6229                 <code code="005" codeSystem="7BA9BFFD-D25F-44e8-A7B0-0DF214D6845B"
6230 codeSystemName="e-MS Data Element Code" displayName="Systolic Blood Pressure"/>
6231                 <value xsi:type="PQ" value="160" unit="mm[Hg]"/>
6232             </observation>
```



```
6233         </entryRelationship>
6234     <entryRelationship typeCode="COMP">
6235         <observation classCode="OBS" moodCode="EVN">
6236             <code code="006" codeSystem="7BA9BFFD-D25F-44e8-A7B0-0DF214D6845B"
6237 codeSystemName="e-MS Data Element Code" displayName="Diastolic Blood Pressure"/>
6238             <value xsi:type="PQ" value="110" unit="mm[Hg]"/>
6239         </observation>
6240     </entryRelationship>
6241 </observation>
6242 </entry>
6243 <entry typeCode="COMP">
6244     <observation classCode="OBS" moodCode="EVN">
6245         <code code="8302-2" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC"
6246 displayName="Height"/>
6247         <effectiveTime value="20040809"/>
6248         <value xsi:type="PQ" value="172" unit="cm"/>
6249     </observation>
6250 </entry>
6251 <entry typeCode="COMP">
6252     <observation classCode="OBS" moodCode="EVN">
6253         <code code="3141-9" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC"
6254 displayName="Weight"/>
6255         <effectiveTime value="20040809"/>
6256         <value xsi:type="PQ" value="80" unit="kg"/>
6257     </observation>
6258 </entry>
6259 <entry typeCode="COMP">
6260     <observation classCode="OBS" moodCode="EVN">
6261         <code code="11328-2" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC"
6262 displayName="Pulse"/>
6263         <effectiveTime value="20040809"/>
6264         <value xsi:type="PQ" value="94" unit="bpm"/>
6265     </observation>
6266 </entry>
6267 <entry typeCode="COMP">
6268     <observation classCode="OBS" moodCode="EVN">
6269         <code code="004" codeSystem="7BA9BFFD-D25F-44e8-A7B0-0DF214D6845B"
6270 codeSystemName="e-MS Data Element Code" displayName="Blood Pressure"/>
6271         <effectiveTime value="20040809"/>
6272         <entryRelationship typeCode="COMP">
6273             <observation classCode="OBS" moodCode="EVN">
6274                 <code code="005" codeSystem="7BA9BFFD-D25F-44e8-A7B0-0DF214D6845B"
6275 codeSystemName="e-MS Data Element Code" displayName="Systolic Blood Pressure"/>
6276                 <value xsi:type="PQ" value="160" unit="mm[Hg]"/>
6277             </observation>
6278         </entryRelationship>
6279         <entryRelationship typeCode="COMP">
6280             <observation classCode="OBS" moodCode="EVN">
6281                 <code code="006" codeSystem="7BA9BFFD-D25F-44e8-A7B0-0DF214D6845B"
6282 codeSystemName="e-MS Data Element Code" displayName="Diastolic Blood Pressure"/>
6283                 <value xsi:type="PQ" value="130" unit="mm[Hg]"/>
6284             </observation>
6285         </entryRelationship>
6286     </observation>
6287 </entry>
6288 </section>
6289 </component>
6290 <!--
6291 *****
6292 Active Problem List
6293 *****
6294 -->
6295     <component>
6296         <section>
6297             <code code="11450-4" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC"
6298 displayName="Active Problem List"/>
6299             <title>Active Problem List</title>
6300             <text>
6301                 <table border="1">
6302                     <tbody>
```

```
6303         <tr>
6304             <th>Active Problem</th>
6305             <th>Description</th>
6306             <th>Date</th>
6307         </tr>
6308     </tr>
6309         <td>Hypertension </td>
6310         <td>Continuing to increase in severity.</td>
6311         <td>December 2002</td>
6312     </tr>
6313 </tbody>
6314 </table>
6315 </text>
6316 <entry typeCode="COMP">
6317     <observation classCode="OBS" moodCode="EVN">
6318         <code code="401" codeSystem="2.16.840.1.113883.6.2" codeSystemName="ICD-9"
6319         displayName="Hypertension"/>
6320         <effectiveTime value="200212"/>
6321         <value xsi:type="ST">This is continuing to increase in severity.</value>
6322     </observation>
6323 </entry>
6324 </section>
6325 </component>
6326 <!--
6327 *****
6328 Current Medications
6329 *****
6330 -->
6331     <component>
6332         <section>
6333             <code code="19789-7" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC"
6334             displayName="Current Medications"/>
6335             <title>Current Medications</title>
6336             <text>
6337                 <table border="1">
6338                     <tbody>
6339                         <tr>
6340                             <th>Medication Name</th>
6341                             <th>DIN</th>
6342                             <th>DIN Name</th>
6343                             <th>Dose</th>
6344                             <th>Admin Route</th>
6345                             <th>Frequency</th>
6346                             <th>Repeats</th>
6347                             <th>Effective Date</th>
6348                         </tr>
6349                         <tr>
6350                             <td>Accupril 5 mg</td>
6351                             <td>01947664</td>
6352                             <td>Quinapril</td>
6353                             <td>10 mg</td>
6354                             <td>Orally</td>
6355                             <td>2 per day</td>
6356                             <td>2</td>
6357                             <td>Jan 15, 2003</td>
6358                         </tr>
6359                     </tbody>
6360                 </table>
6361             </text>
6362             <entry typeCode="COMP">
6363                 <substanceAdministration classCode="SBADM" moodCode="EVN">
6364                     <effectiveTime value="20030115"/>
6365                     <repeatNumber value="2">
6366                         <low/>
6367                         <high/>
6368                     </repeatNumber>
6369                     <routeCode code="PO" codeSystem="2.16.840.1.113883.5.112"
6370                     codeSystemName="RouteOfAdministration" displayName="per os"/>
6371                     <doseQuantity>
6372                         <center value="5" unit="mg"/>
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```
6373         <width unit="BID"/>
6374     </doseQuantity>
6375     <consumable>
6376         <manufacturedProduct>
6377             <manufacturedLabeledDrug>
6378                 <code code="01947664" codeSystem="36F030E1-180A-4c53-AEF6-
6379 7EEA32B531B3" codeSystemName="DIN" displayName="Quinapril"/>
6380                 <name>Accupril 5 mg.</name>
6381             </manufacturedLabeledDrug>
6382         </manufacturedProduct>
6383     </consumable>
6384 </substanceAdministration>
6385 </entry>
6386 </section>
6387 </component>
6388 <!--
6389 *****
6390 Medical History
6391 *****
6392 -->
6393     <component>
6394         <section>
6395             <code code="11348-0" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC"
6396 displayName="Medical History"/>
6397             <title>Medical History</title>
6398             <text>
6399                 <table border="1">
6400                     <tbody>
6401                         <tr>
6402                             <th>Problem</th>
6403                             <th>Comments</th>
6404                             <th>Date</th>
6405                         </tr>
6406                         <tr>
6407                             <td>Meningitis</td>
6408                             <td>No permanent effects.</td>
6409                             <td>1975</td>
6410                         </tr>
6411                         <tr>
6412                             <td>Closed fractured rib</td>
6413                             <td>Patient is unsure of which rib it was.</td>
6414                             <td>1994</td>
6415                         </tr>
6416                     </tbody>
6417                 </table>
6418             </text>
6419             <entry typeCode="COMP">
6420                 <observation classCode="OBS" moodCode="EVN">
6421                     <code code="322.9" codeSystem="2.16.840.1.113883.6.2" codeSystemName="ICD-9"
6422 displayName="meningitis"/>
6423                     <effectiveTime value="1975"/>
6424                     <value xsi:type="ST">No permanent effects.</value>
6425                 </observation>
6426             </entry>
6427             <entry typeCode="COMP">
6428                 <observation classCode="OBS" moodCode="EVN">
6429                     <code code="807.01" codeSystem="2.16.840.1.113883.6.2" codeSystemName="ICD-9"
6430 displayName="closed fractured rib"/>
6431                     <effectiveTime value="1994"/>
6432                     <value xsi:type="ST">Patient is unsure of which rib it was.</value>
6433                 </observation>
6434             </entry>
6435         </section>
6436     </component>
6437 <!--
6438 *****
6439 Surgical History
6440 *****
6441 -->
6442     <component>
```

```
6443         <section>
6444             <code code="10167-5" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC"
6445             displayName="Surgical History"/>
6446             <title>Surgical History</title>
6447             <text>
6448                 <table border="1">
6449                     <tbody>
6450                         <tr>
6451                             <th>Description</th>
6452                             <th>Date</th>
6453                         </tr>
6454                         <tr>
6455                             <td>Appendectomy</td>
6456                             <td>June 1970</td>
6457                         </tr>
6458                         <tr>
6459                             <td>Cholelithotomy</td>
6460                             <td>January 17, 2004</td>
6461                         </tr>
6462                     </tbody>
6463                 </table>
6464             </text>
6465             <entry typeCode="COMP">
6466                 <procedure classCode="PROC" moodCode="EVN">
6467                     <text>Appendectomy</text>
6468                     <effectiveTime value="197006"/>
6469                 </procedure>
6470             </entry>
6471             <entry typeCode="COMP">
6472                 <procedure classCode="PROC" moodCode="EVN">
6473                     <text>Cholelithotomy</text>
6474                     <effectiveTime value="20040117"/>
6475                 </procedure>
6476             </entry>
6477         </section>
6478     </component>
6479     <!--
6480     *****
6481     Medical Imaging History
6482     *****
6483     -->
6484     <component>
6485         <section>
6486             <code code="35090-0" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC"
6487             displayName="Medical Imaging History"/>
6488             <title>Medical Imaging History</title>
6489             <text>
6490                 <table border="1">
6491                     <tbody>
6492                         <tr>
6493                             <th>Procedure</th>
6494                             <th>Results</th>
6495                             <th>Date</th>
6496                         </tr>
6497                         <tr>
6498                             <td>Chest x-ray</td>
6499                             <td>Nothing unusual could be observed. X-ray image is attached.</td>
6500                             <td>July 14, 2004</td>
6501                         </tr>
6502                     </tbody>
6503                 </table>
6504             </text>
6505             <entry typeCode="COMP">
6506                 <observation classCode="OBS" moodCode="EVN">
6507                     <code nullFlavor="NA"/>
6508                     <text>Chest x-ray</text>
6509                     <effectiveTime value="20040714"/>
6510                     <value xsi:type="ST">Nothing unusual could be observed. X-ray image is attached.</value>
6511                     <entryRelationship typeCode="COMP">
6512                         <observationMedia classCode="OBS" moodCode="EVN">
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6513         <value mediaType="image/jpeg">
6514             <reference value="test.jpg"/>
6515         </value>
6516     </observationMedia>
6517 </entryRelationship>
6518 </observation>
6519 </entry>
6520 </section>
6521 </component>
6522 <!--
6523 *****
6524 Other Treatments
6525 *****
6526 -->
6527     <component>
6528         <section>
6529             <code code="007" codeSystem="7BA9BFFD-D25F-44e8-A7B0-0DF214D6845B"
6530 codeSystemName="e-MS Document Section Codes" displayName="Other Treatments"/>
6531             <title>Other Treatments</title>
6532             <text>
6533                 <table border="1">
6534                     <tbody>
6535                         <tr>
6536                             <th>Other Treatment</th>
6537                             <th>Outcome</th>
6538                             <th>Date</th>
6539                         </tr>
6540                         <tr>
6541                             <td>Herbal remedy</td>
6542                             <td>The patient did not experience any improvement in her condition</td>
6543                             <td>November 2003-February 2004</td>
6544                         </tr>
6545                     </tbody>
6546                 </table>
6547             </text>
6548             <entry typeCode="COMP">
6549                 <observation classCode="OBS" moodCode="EVN">
6550                     <code nullFlavor="NA"/>
6551                     <text>Herbal remedy</text>
6552                     <effectiveTime value="20031100000000.20040200000000"/>
6553                     <value xsi:type="ST">The patient did not experience any improvement in her
6554 condition.</value>
6555                 </observation>
6556             </entry>
6557         </section>
6558     </component>
6559 <!--
6560 *****
6561 Allergies
6562 *****
6563 -->
6564     <component>
6565         <section>
6566             <code code="008" codeSystem="7BA9BFFD-D25F-44e8-A7B0-0DF214D6845B"
6567 codeSystemName="e-MS Document Section Codes" displayName="Allergies"/>
6568             <title>Allergies</title>
6569             <text>
6570                 <table border="1">
6571                     <tbody>
6572                         <tr>
6573                             <th>Allergy Type</th>
6574                             <th>Severity</th>
6575                             <th>Comments</th>
6576                             <th>Date</th>
6577                         </tr>
6578                         <tr>
6579                             <td>Penicillin</td>
6580                             <td>Mild</td>
6581                             <td>Penicillin. Resulting in hives. Patient hasn't been tested recently to see if this is
6582 still an active allergy</td>
```

```
6583         <td>1965</td>
6584     </tr>
6585 </tr>
6586         <td>Dairy products</td>
6587         <td>Moderate</td>
6588         <td>Dairy. Resulting in puffy eyes</td>
6589         <td>1970-1985</td>
6590     </tr>
6591 </tbody>
6592 </table>
6593 </text>
6594 <entry typeCode="COMP">
6595     <observation classCode="OBS" moodCode="EVN">
6596         <code code="DA" codeSystem="2A9DDF65-2465-4cf7-903C-832A33B22F5D"
codeSystemName="AllergyType" displayName="Drug Allergy"/>
6597         <effectiveTime value="19650516"/>
6598         <value xsi:type="ST">Penicillin. Resulting in hives. Patient hasn't been tested recently to
6600 see if this is still an active allergy</value>
6601     <entryRelationship typeCode="COMP">
6602         <observation moodCode="EVN" classCode="OBS">
6603             <code code="MI" codeSystem="2.16.840.1.113883.12.128"
codeSystemName="AllergySeverity" displayName="Mild"/>
6604             </observation>
6605         </entryRelationship>
6606     </observation>
6607 </entry>
6608 <entry typeCode="COMP">
6609     <observation classCode="OBS" moodCode="EVN">
6610         <code code="FA" codeSystem="2A9DDF65-2465-4cf7-903C-832A33B22F5D"
codeSystemName="AllergyType" displayName="Food Allergy"/>
6611         <effectiveTime value="19700000000000.19850000000000"/>
6612         <value xsi:type="ST">Dairy. Resulting in puffy eyes</value>
6613         <entryRelationship typeCode="COMP">
6614             <observation moodCode="EVN" classCode="OBS">
6615                 <code code="MO" codeSystem="2.16.840.1.113883.12.128"
codeSystemName="AllergySeverity" displayName="Moderate"/>
6616                 </observation>
6617             </entryRelationship>
6618         </observation>
6619     </entry>
6620 </section>
6621 </component>
6622 </section>
6623 </component>
6624 <!--
6625 *****
6626 Immunization
6627 *****
6628 -->
6629 <component>
6630 <section>
6631     <code code="11369-6" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC"
displayName="Immunization"/>
6632     <title>Immunization</title>
6633     <text>
6634         <table border="1">
6635             <tbody>
6636                 <tr>
6637                     <th>Immunization</th>
6638                     <th>Date</th>
6639                 </tr>
6640                 <tr>
6641                     <td>Hepatitis A</td>
6642                     <td>September 24, 2000</td>
6643                 </tr>
6644                 <tr>
6645                     <td>Hepatitis A</td>
6646                     <td>January 27, 2002</td>
6647                 </tr>
6648                 <tr>
6649                     <td>Inactivated Polio Vaccine (study)</td>
6650                     <td>March 13, 1985</td>
6651                 </tr>
6652             </tbody>
6653         </table>
6654     </text>
6655 </section>
6656 </component>
```

```
6653         </tr>
6654     </tr>
6655         <td>Measles Mumps Rubella</td>
6656         <td>April 30, 1995</td>
6657     </tr>
6658 </tbody>
6659 </table>
6660 </text>
6661 <entry typeCode="COMP">
6662     <observation moodCode="EVN" classCode="OBS">
6663         <code code="HA" codeSystem="FC1AFD51-7DC6-404c-9B06-C3234B850B65"
6664 codeSystemName="BCCDC - ImmunizationCode" displayName="Hepatitis A"/>
6665         <effectiveTime value="20000924"/>
6666     </observation>
6667 </entry>
6668 <entry typeCode="COMP">
6669     <observation classCode="OBS" moodCode="EVN">
6670         <code code="HA" codeSystem="FC1AFD51-7DC6-404c-9B06-C3234B850B65"
6671 codeSystemName="BCCDC - ImmunizationCode" displayName="Hepatitis A"/>
6672         <effectiveTime value="20020127"/>
6673     </observation>
6674 </entry>
6675 <entry typeCode="COMP">
6676     <observation classCode="OBS" moodCode="EVN">
6677         <code code="IPV" codeSystem="FC1AFD51-7DC6-404c-9B06-C3234B850B65"
6678 codeSystemName="BCCDC - ImmunizationCode" displayName="Injectable Polio Vaccine"/>
6679         <effectiveTime value="19850313"/>
6680     </observation>
6681 </entry>
6682 <entry typeCode="COMP">
6683     <observation classCode="OBS" moodCode="EVN">
6684         <code code="MMR" codeSystem="FC1AFD51-7DC6-404c-9B06-C3234B850B65"
6685 codeSystemName="BCCDC - ImmunizationCode" displayName="Measles Mumps Rubella"/>
6686         <effectiveTime value="19950430"/>
6687     </observation>
6688 </entry>
6689 </section>
6690 </component>
6691 <!--
6692 *****
6693 Labs
6694 *****
6695 -->
6696 <component>
6697     <section>
6698         <code code="11502-2" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC"
6699 displayName="Labs"/>
6700         <title>Labs</title>
6701         <text>
6702             <table border="1">
6703                 <tbody>
6704                     <tr>
6705                         <th>Type</th>
6706                         <th>Collection Date</th>
6707                         <th>Result/Unit</th>
6708                         <th>Normal Result Range</th>
6709                         <th>Abnormal?</th>
6710                     </tr>
6711                     <tr>
6712                         <td>troponin I (Tnl)</td>
6713                         <td>February 26, 2004</td>
6714                         <td>0.5 ng/mL</td>
6715                         <td>less than 0.5 ng/mL</td>
6716                         <td>No</td>
6717                     </tr>
6718                     <tr>
6719                         <td>creatine phosphokinase (CPK)</td>
6720                         <td>February 26, 2004</td>
6721                         <td>180 u/L</td>
6722                         <td>5-200 u/L</td>
```

```
6723         <td>No</td>
6724     </tr>
6725     <tr>
6726         <td>lactate dehydrogenase (LDH)</td>
6727         <td>February 26, 2004</td>
6728         <td>400 u/L</td>
6729         <td>200-650 u/L</td>
6730         <td>No</td>
6731     </tr>
6732 </tbody>
6733 </table>
6734 </text>
6735 <entry typeCode="COMP">
6736     <observation moodCode="EVN" classCode="OBS">
6737         <code code="Tnl" codeSystemName="Lab Observation Table" displayName="troponin I"/>
6738         <effectiveTime value="20040226"/>
6739         <value xsi:type="PQ" value="0.5" unit="ng/mL"/>
6740         <interpretationCode code="N" codeSystem="03B429EA-4C1A-4656-9F29-2E5A61B118B9"
6741 codeSystemName="EMSLabsResult" displayName="Normal"/>
6742         <referenceRange>
6743             <referenceObservationRange>
6744                 <value xsi:type="IVL_PQ">
6745                     <high value="0.5" unit="ng/mL" inclusive="false"/>
6746                 </value>
6747             </referenceObservationRange>
6748         </referenceRange>
6749         <performer>
6750             <assignedEntity>
6751                 <id displayable="true" root="476CAE01-D4E8-4894-A007-EF55064175D0"
6752 assigningAuthorityName="MSP" extension="B0219 MDS METRO, ISLAND DIVISION - SCS"/>
6753             </assignedEntity>
6754         </performer>
6755     </observation>
6756 </entry>
6757 <entry typeCode="COMP">
6758     <observation moodCode="EVN" classCode="OBS">
6759         <code code="CPK" codeSystemName="Lab Observation Table" displayName="creatinine
6760 phosphokinase"/>
6761         <effectiveTime value="20040226"/>
6762         <value xsi:type="PQ" value="180" unit="u/L"/>
6763         <interpretationCode code="N" codeSystem="03B429EA-4C1A-4656-9F29-2E5A61B118B9"
6764 codeSystemName="EMSLabsResult" displayName="Normal"/>
6765         <referenceRange>
6766             <referenceObservationRange>
6767                 <value xsi:type="IVL_PQ">
6768                     <low value="5" unit="u/L" inclusive="true"/>
6769                     <high value="200" unit="u/L" inclusive="true"/>
6770                 </value>
6771             </referenceObservationRange>
6772         </referenceRange>
6773         <performer>
6774             <assignedEntity>
6775                 <id displayable="true" root="476CAE01-D4E8-4894-A007-EF55064175D0"
6776 assigningAuthorityName="MSP" extension="B0219 MDS METRO, ISLAND DIVISION - SCS"/>
6777             </assignedEntity>
6778         </performer>
6779     </observation>
6780 </entry>
6781 <entry typeCode="COMP">
6782     <observation classCode="OBS" moodCode="EVN">
6783         <code code="LDH" codeSystemName="Lab Observation Table" displayName="lactate
6784 dehydrogenase"/>
6785         <effectiveTime value="20040226"/>
6786         <value xsi:type="PQ" value="400" unit="u/L"/>
6787         <interpretationCode code="N" codeSystem="03B429EA-4C1A-4656-9F29-2E5A61B118B9"
6788 codeSystemName="EMSLabsResult" displayName="Normal"/>
6789         <referenceRange>
6790             <referenceObservationRange>
6791                 <value xsi:type="IVL_PQ">
6792                     <low value="200" unit="u/L" inclusive="true"/>
```

```
6793         <high value="650" unit="u/L" inclusive="true"/>
6794     </value>
6795     </referenceObservationRange>
6796 </referenceRange>
6797 </performer>
6798     <assignedEntity>
6799         <id displayable="true" root="476CAE01-D4E8-4894-A007-EF55064175D0"
6800 assigningAuthorityName="MSP" extension="B0219 MDS METRO, ISLAND DIVISION - SCS"/>
6801     </assignedEntity>
6802 </performer>
6803 </observation>
6804 </entry>
6805 </section>
6806 </component>
6807 <!--
6808 *****
6809 Past Referrals and Hospitalizations
6810 *****
6811 -->
6812     <component>
6813         <section>
6814             <code code="11336-5" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC"
6815 displayName="Past Referrals and Hospitalizations"/>
6816             <title>Past Referrals and Hospitalizations</title>
6817             <text>
6818                 <table border="1">
6819                     <tbody>
6820                         <tr>
6821                             <th>Location/Person</th>
6822                             <th>Type</th>
6823                             <th>Reason</th>
6824                             <th>Date</th>
6825                         </tr>
6826                         <tr>
6827                             <td>Good Health Hospital</td>
6828                             <td>Specialist</td>
6829                             <td>Pneumonia</td>
6830                             <td>1996</td>
6831                         </tr>
6832                     </tbody>
6833                 </table>
6834             </text>
6835             <entry typeCode="COMP">
6836                 <encounter classCode="ENC" moodCode="EVN">
6837                     <id extension="Good Health Hospital"/>
6838                     <code code="SP" codeSystem="4FE1CC50-FBDC-44a6-A005-A49E9F7A6DA9"
6839 codeSystemName="HL7 - Act Encounter Code" displayName="Specialist"/>
6840                     <text>Pneumonia.</text>
6841                     <effectiveTime value="1996"/>
6842                 </encounter>
6843             </entry>
6844         </section>
6845     </component>
6846 <!--
6847 *****
6848 Family History
6849 *****
6850 -->
6851     <component>
6852         <section>
6853             <code code="10157-6" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC"
6854 displayName="Family History"/>
6855             <title>Family History</title>
6856             <text>The patient's father died of a myocardial infarction at the age of 65.</text>
6857         </section>
6858     </component>
6859 </structuredBody>
6860 </component>
6861 </ClinicalDocument>
6862
```



## Appendix E – Minimum XML Instance

```
<?xml version="1.0" encoding="UTF-8"?>
<ClinicalDocument xmlns="urn:hl7-org:v3" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="urn:hl7-org:v3 ../eMS_CDA.xsd">
  <!--
*****
e-MS CDA Header
*****
-->
  <id extension="6823AC2F-B374-4214-AF1B-407091BBED37" root="2.16.840.1.113883.3.933"/>
  <code code="34140-4" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC" displayName="Referral"/>
  <title>Level 7 Healthcare, Inc Referral Letter</title>
  <effectiveTime value="20040809142222"/>
  <confidentialityCode code="N" codeSystem="2.16.840.1.113883.5.25"/>
  <!--
*****
Information Recipient
*****
-->
  <informationRecipient typeCode="PRCP">
    <intendedRecipient classCode="ASSIGNED">
      <id extension="ppump" root="DCCD2C68-389B-44c4-AD99-B8FB2DAD1493"/>
      <informationRecipient>
        <name>
          <prefix>Dr.</prefix>
          <given>Patrick</given>
          <given>P.</given>
          <family>Pump</family>
          <suffix>Sr.</suffix>
        </name>
      </informationRecipient>
    </intendedRecipient>
  </informationRecipient>
  <!--
*****
Author
*****
-->
  <author>
    <time value="20040812120000"/>
    <assignedAuthor>
      <id extension="hhipocrates" root="DCCD2C68-389B-44c4-AD99-B8FB2DAD1493"/>
    </assignedAuthor>
  </author>
  <author>
    <time value="20040812120000"/>
    <assignedAuthor>
      <id extension="hhipocrates" root="DCCD2C68-389B-44c4-AD99-B8FB2DAD1493"/>
      <assignedAuthoringDevice>
        <softwareName>e-MS Web</softwareName>
      </assignedAuthoringDevice>
    </assignedAuthor>
  </author>
  <!--
*****
Custodian
*****
-->
  <custodian typeCode="CST">
    <assignedCustodian>
      <representedCustodianOrganization>
        <id extension="123" root="7EEF0BCC-F03E-4742-A736-8BAC57180C5F"/>
      </representedCustodianOrganization>
    </assignedCustodian>
  </custodian>
```



```
6928 <!--
6929 *****
6930 Record Target
6931 *****
6932 -->
6933 <recordTarget typeCode="RCT" contextControlCode="OP">
6934 <patient classCode="PAT">
6935 <id extension="9999999999" root="2BFBA1E9-79C2-4bbb-B589-41B949BD6A3B"
6936 assigningAuthorityName="PHN"/>
6937 <patientPatient>
6938 <name>
6939 <prefix>Mrs.</prefix>
6940 <given>Eve</given>
6941 <given>E.</given>
6942 <family>Everywoman</family>
6943 <suffix>Jr.</suffix>
6944 </name>
6945 <administrativeGenderCode code="F" codeSystem="2.16.840.1.113883.5.1" codeSystemName="HL7 -
6946 Administrative Gender" displayName="Female"/>
6947 <birthTime value="19650516"/>
6948 </patientPatient>
6949 </patient>
6950 </recordTarget>
6951 <!--
6952 *****
6953 e-MS CDA Structured Body
6954 *****
6955 -->
6956 <component>
6957 <structuredBody>
6958 <!--
6959 *****
6960 Purpose
6961 *****
6962 -->
6963 <component>
6964 <section>
6965 <code code="001" codeSystem="7BA9BFFD-D25F-44e8-A7B0-0DF214D6845B"
6966 codeSystemName="e-MS Document Section Codes" displayName="Purpose"/>
6967 <title>Purpose Section</title>
6968 <text>
6969 <paragraph>
6970 Occasional occurrences of arrhythmia at rest accompanied with mild shortness of
6971 breath. Mild exercise leads to faintness and mild chest pain.
6972 </paragraph>
6973 <paragraph>
6974 Urgency: <content styleCode="bold">expedite</content>
6975 </paragraph>
6976 <table border="1">
6977 <tbody>
6978 <tr>
6979 <th>Other Provider</th>
6980 <th>Reason</th>
6981 </tr>
6982 <tr>
6983 <td>Dr. Vera V. Valve at Level 7 Healthcare, Inc </td>
6984 <td>High blood pressure in the past</td>
6985 </tr>
6986 <tr>
6987 <td>Dr. Sara S. Specialize at Good Health Hospital</td>
6988 <td>24 Hour ECG recording</td>
6989 </tr>
6990 </tbody>
6991 </table>
6992 <paragraph>
6993 The patient expressed that this problem has gradually been getting worse over the
6994 course of the past year and a half.
6995 </paragraph>
6996 </text>
6997 </section>
```

```
6998         </component>
6999     </structuredBody>
7000 </component>
7001 </ClinicalDocument>
7002
7003
7004
```

## Appendix F – Core Data Set

### Clinical Document

Schema Data Element	Attributes	e-MS Equivalent	Description	Data type	Vocabulary	R/M/O: Cardinality	Comments
4.1.2.1 ClinicalDocument.id	extension root	Document_ID	Unique ID of the document.	EMS.II .RootE xtension		M: 1..1	The ID is unique and generated by the sending application and can be used to match related clinical documents. In the case of multiple related documents and users merging these within the EMR system, it is the responsibility of the sending and receiving systems to handle the correlations. GUIDs must be used.
4.1.2.2 ClinicalDocument.code	code codeSystem codeSystemName displayName	Document_Type	The type of e-MS documents (e.g. referral, consult, medical summary).	EMS. CE.Ful l	<a href="#">LOINC: Document Type</a>	M: 1..1	
4.1.2.3 ClinicalDocument.title		Document_Title	Title of the document	ST		M: 1..1	
4.1.2.4 ClinicalDocument.effectiveTime	value	Send_Date	Date and time that the e-MS document was sent.	EMS.T S		M: 1..1	The send date and time should be the same as the date in the message transport.
4.1.2.5 ClinicalDocument.confidentialityCode	code codeSystem	Document_Confidentiality	Level of confidentiality of the document	CE	<a href="#">HL7: ConfidentialityCode</a>	M: 1..1	

### Information Recipient

Schema Data Element	Attributes	e-MS Equivalent	Description	Data type	Vocabulary	R/M/O: Cardinality	Comments
4.2.2.1 informationRecipient.intendedRecipient.id	extension root	Recipient_ID	User ID of individual that is clinically responsible for the e-MS.	EMS.II .RootE xtension		M: 1..1	An e-MS ID will be created for Phase 2. In the future it is expected that the PRS ID will be used.
4.2.2.2. Recipient Address							
4.2.2.2.a informationRecipient		Recipient_Address	An address is where	AD		O: 0..1	assignedEntity.add

	Schema Data Element	Attributes	e-MS Equivalent	Description	Data type	Vocabulary	R/M/O: Cardinality	Comments
	nt.intendedRecipient.streetAddressLine			documents are coming from. This information will be available in the provider lookup.				r is a mixed content element so if the individual components of an address are not available then the entire address could be put in this element.
4.2.2.2.b	informationRecipient.intendedRecipient.city		Recipient_City	The city where the care provider is located	AD		O: 0..1	
4.2.2.2.c	informationRecipient.intendedRecipient.state		Recipient_Province_State	The province where the care provider is located	AD	Canada Post: Province Codes/State Codes	O: 0..1	
4.2.2.2.d	informationRecipient.intendedRecipient.postalCode		Recipient_Postal_Zip	Location identifier used by Canada Post	AD		O: 0..1	
4.2.2.2.e	informationRecipient.intendedRecipient.country		Recipient_Country	Nation or state within which the care provider is found.	AD	ISO: Country	O: 0..1	
4.2.2.3	informationRecipient.intendedRecipient.telecom	value use	Recipient_Telecom_Us Recipient_Telecom_Value	A classification of the telecommunication type, e.g. Business phone, business fax, home phone, home fax, cell, e-mail together with the phone number or e-mail address of the care provider	EMS.TEL	HL7: TelecommunicationAddressUse HL7: URLScheme	O: 0..*	
4.2.2.4. Recipient Name								
4.2.2.4.a	informationRecipient.intendedRecipient.name.prefix		Recipient_Prefix	Title used by the person (i.e. Mr., Mrs., Ms., Dr.).	PN		O: 0..1	assigneePerson.name is a mixed content element so if the individual components of a person's name are not available then the entire name could be put in this element.
4.2.2.4.b	informationRecipient.intendedRecipient		Recipient_Given_Name	First name, second name, middle name of person.	PN		M: 1..*	

	Schema Data Element	Attributes	e-MS Equivalent	Description	Data type	Vocabulary	R/M/O: Cardinality	Comments
	nt.informationRecipient.name.given							
4.2.2.4.c	nt.informationRecipient.name.family		Recipient_Family_Name	Last name or family name of person.	PN		M: 1..1	
4.2.2.4.d	nt.informationRecipient.name.suffix		Recipient_Suffix	An addition to a surname to distinguish a person (i.e. III, Sr., Jr.).	PN		O: 0..1	
4.2.2.5	nt.informationRecipient.receivedOrganization.name		Recipient_Organization	The organization where the receiving care provider is currently working when sending the e-MS.	ON		O: 0..1	
4.2.2.6	nt.informationRecipient.typeCode			A code specifying the kind of Participation or involvement the Entity playing the Role associated with the Participation has with regard to the associated Act.		<a href="#">voc.xsd: x_informationRecipient</a>		
4.2.2.7	nt.informationRecipient.classCode			A code specifying the major type of Act that this Act-instance represents.		<a href="#">voc.xsd: x_informationRecipient Role</a>		

## Author

Schema Data Element	Attributes	e-MS Equivalent	Description	Date type	Vocabulary	R/M/O: Cardinality	Comments
4.3.2.1 author.time	value	Create_Date	Date and time stamp when e-MS was created.	EMS.TS		M: 1..1	This may not be a partial date.
4.3.2.2 author.assigned Author.id	extension root	AuthorID	User ID of individual that is clinically responsible for the e-MS.	EMS.II .RootExtension		M: 1..1	An own internal ID will be created at this point with the possibility to use the PRS in the future.
4.3.2.3. Provider Address							
4.3.2.3.a author.assigned Author.addr.streetAddressLine		Provider_Address	An address is where documents are coming from. This information will be available in the provider lookup.	AD		O: 0..1	assignedEntity.addr is a mixed content element so if the individual components of an address are not available then the entire address could be put in this element.
4.3.2.3.b author.assigned Author.addr.city		Provider_City	The city where the care provider is located	AD		O: 0..1	
4.3.2.3.c author.assigned Author.addr.state		Provider_Province_State	The province where the care provider is located	AD	Canada Post: Province Codes/State Codes	O: 0..1	
4.3.2.3.d author.assigned Author.addr.postalCode		Provider_Postal_Zip	Location identifier used by Canada Post	AD		O: 0..1	
4.3.2.3.e author.assigned Author.addr.country		Provider_Country	Nation or state within which the care provider is found.	AD	ISO: Country	O: 0..1	
4.3.2.4 author.assigned Author.telecom	value use	Provider_Telecom_Use Provider_Telecom_Value	A classification of the telecommunication type, e.g. Business phone, business fax, home phone, home fax, cell, e-mail together with the phone number or e-mail address of the care provider	EMS.TEL	HL7: TelecommunicationAddress Use HL7: URIScheme	O: 0..*	
4.3.2.5. Provider Name							
4.3.2.5.a author.assigned Author.assigned Person.name.prefix		Provider_Prefix	Title used by the person (i.e. Mr., Mrs., Ms., Dr.).	PN		O: 0..1	assignedPerson.name is a mixed content element so if the individual components of a person's name are not available then the entire name could be put in this element.

Schema Data Element	Attributes	e-MS Equivalent	Description	Date type	Vocabulary	R/M/O: Cardinality	Comments
4.3.2.5.b author.assigned Author.assigned Person.name.given		Provider_Given_Name	First name, second name, middle name of person.	PN		M: 1..*	
4.3.2.5.c author.assigned Author.assigned Person.name.family		Provider_Family_Name	Last name or family name of person.	PN		M: 1..1	
4.3.2.5.d author.assigned Author.assigned Person.name.suffix		Provider_Suffix	An addition to a surname to distinguish a person (i.e. III, Sr., Jr.).	PN		O: 0..1	
4.3.2.6 author.assigned Author.assigned AuthoringDevice. softwareName		Source_System_Name	Identifies the originating system that generated the e-MS.	SC		M: 1..1	

## Custodian

Schema Data Element	Attributes	e-MS Equivalent	Description	Data type	Vocabulary	R/M/O: Cardinality	Comments
4.4.2.1 custodian.assignedCustodianOrganization.id	extension root	Custodian_ID	ID of the custodian of the document. The custodian represents the organization from which the document originates and that is in charge of maintaining the document. The custodian is the steward that is entrusted with the care of the document.	EMS.II .RootExtension		M: 1..1	The e-MS system will provide this identifier when the organization is first created.
4.4.2.2 custodian.assignedCustodianOrganization.name		Custodian_Name	Name of the custodian of the document. The custodian represents the organization from which the document originates and that is in charge of maintaining the document. The custodian is the steward that is entrusted with the care of the document.	ON		O: 0..1	
4.4.2.3 custodian	typeCode		A code specifying the kind of Participation or involvement the Entity playing the Role associated with the Participation has with regard to the associated Act.		voc.xsd: ParticipationType		

## Record Target

	Schema Data Element	Attributes	e-MS Equivalent	Description	Data type	Vocabulary	R/M/O: Cardinality	Comments
4.5.2.1	recordTarget.patient.id	extension root assigningAuthorityName	Patient_PHN PHN_Province	Personal Health Number with corresponding province. Numerical lifetime identifier used in the specific identification of an individual client or patient who has any interaction with the (BC) health system.	EMS.II .RootE xtensi onAut hority	Canada Post: Province Codes/State Codes NullFlavor option for extension: UNK- Unknown	R: 0..1	Use the AssigningAuthorityName attribute for the Province. Only use the codes for the Canadian Provinces/Territories.
4.5.2.2	recordTarget.patient.id	extension root assigningAuthorityName	Patient_OtherID_Type Patient_OtherID	Type of secondary identification. Could be Workers Compensation Board Number, Interim Federal Health Number, Veteran Affairs' Benefits Number, MRN (unique to each HA or facility) and/or Band Number.	EMS.II .RootE xtensi onAut hority		O: 0..*	Use the AssigningAuthorityName attribute for the type of ID. There must be at least one ID for a patient.
<b>4.5.2.3. Patient Address</b>								
4.5.2.3.a	recordTarget.patient.address.streetAddressLine		Patient_Address	An address is where the patient resides.	AD		O: 0..1	
4.5.2.3.b	recordTarget.patient.address.city		Patient_Address_City	City where the patient resides.	AD		O: 0..1	
4.5.2.3.c	recordTarget.patient.address.state		Patient_Address_Province_State	Province or state where the patient resides.	AD	Canada Post: Province Codes/State Codes	O: 0..1	
4.5.2.3.d	recordTarget.patient.address.postalCode		Patient_Address_Postal_Zip	Postal or zip code of where the patient resides.	AD		O: 0..1	
4.5.2.3.e	recordTarget.patient.address.country		Patient_Country	Country where the patient resides.	AD	ISO: Country	O: 0..1	
4.5.2.4	recordTarget.patient.telecom	value use	Patient_Telecom_Use Patient_Telecom_Value	A classification of the telecommunication type and value associated with it.	EMS.T EL	HL7: Telecommu nicationAddr essUse HL7: URLScheme	O: 0..*	



	Schema Data Element	Attributes	e-MS Equivalent	Description	Data type	Vocabulary	R/M/O: Cardinality	Comments
4.5.2.5. Patient Name								
4.5.2.5.a	recordTarget.patient.name.prefix		Patient_Prefix	The title used by the patient (i.e. Mr. Miss. Ms. Mrs.).	PN		O: 0..1	
4.5.2.5.b	recordTarget.patient.name.given		Patient_Given_Name	First name, second name, middle name of person.	PN		M: 1..*	
4.5.2.5.c	recordTarget.patient.name.family		Patient_Family_Name	Last name or family name of the patient.	PN		M: 1..1	
4.5.2.5.d	recordTarget.patient.name.suffix		Patient_Suffix	An addition to a surname to distinguish a person (e.g. III, Sr., Jr.).	PN		O: 0..1	
4.5.2.6	recordTarget.patient.administrativeGenderCode	code codeSystem codeSystemName displayName	Patient_Gender	Patient gender.	CE	HL7: AdministrativeGender NullFlavor Option: UNK - Unknown	R: 1..1	
4.5.2.7	recordTarget.patient.birthTime	value	Patient_DOB	Patient date of birth.	TS	NullFlavor Option: UNK - Unknown	R: 1..1	The patient DOB may not be a partial date.
4.5.2.8	recordTarget.patient.languageCommunicationLanguageCode	code	Patient_Preferred_Language	Primary language used for patient communication.	CS	ISO: Language	O: 0..1	
4.5.2.9	recordTarget.contextControlCode	typeCode contextControlCode		A code specifying the kind of Participation or involvement the Entity playing the Role associated with the Participation has with regard to the associated Act.  A code that specifies how this Participation contributes to the context of the current Act, and whether it may be propagated to descendant Acts whose association allows such propagation.		Voc.xsd: ParticipationType Voc.xsd: ContextControl		
4.5.2.10	recordTarget.patientRole	ClassCode		A code specifying the major category of a Role as defined by HL7 vocabulary.		voc.xsd: RoleClass		

## Participant

Schema Data Element	Attributes	e-MS Equivalent	Description	Data type	Vocabulary	R/M/O: Cardinality	Comments
4.6.2.1 participant.participatingEntity.code	code codeSystem codeSystemName displayName	Contact_Relationship_Type	The relationship of the contact to the patient.	EMS, CE, Full	HL7: Personal Relationship Role Type	R: 0..1	
<b>4.6.2.2. Contact Address</b>							
4.6.2.2.a participant.participatingEntity.addr.streetAddressLine		Contact_Address	An address where the contact person resides.	AD		O: 0..1	
4.6.2.2.b participant.participatingEntity.addr.city		Contact_Address_City	The city where the contact person resides.	AD		O: 0..1	
4.6.2.2.c participant.participatingEntity.addr.state		Contact_Address_Province_State	The province or state where the contact person resides.	AD	Canada Post: Province Codes/State Codes	O: 0..1	
4.6.2.2.d participant.participatingEntity.addr.postalCode		Contact_Address_Postal_Zip	The postal or zip code where the contact person resides.	AD		O: 0..1	
4.6.2.2.e participant.participatingEntity.addr.country		Contact_Country	The country where the contact person resides.	AD	ISO: Country	O: 0..1	
4.6.2.3 participant.participatingEntity.telecom	value use	Contact_Telecom_Use Contact_Telecom_Value	A classification of the telecommunication type and value associated with it.	EMS, TEL	HL7: Telecommunication Address Use HL7: URL Scheme	O: 0..*	
<b>4.6.2.4. Contact Name</b>							
4.6.2.4.a participant.participatingEntity.associatedPerson.name.prefix		Contact_Prefix	The title used by the contact (e.g. Mr., Mrs., Miss., Ms.).	PN		O: 0..1	
4.6.2.4.a participant.participatingEntity.associatedPerson.name.given		Contact_Given_Name	First name, second name, middle name of the contact.	PN		R: 0..1	
4.6.2.4.b participant.participatingEntity.associatedPerson.name.family		Contact_Family_Name	Last name or family name of the contact.	PN		R: 0..1	
4.6.2.4.c participant.participatingEntity.associatedPerson.name		Contact_Suffix	An addition to a surname to distinguish a contact person	PN		O: 0..1	

	Schema Data Element	Attributes	e-MS Equivalent	Description	Data type	Vocabulary	R/M/O: Cardinality	Comments
4.6.2.5	e.suffix participant	typeCode		(i.e. III, Sr., Jr.). A code specifying the kind of Participation or involvement the Entity playing the Role associated with the Participation has with regard to the associated Act.		Voc.xsd: ParticipationType		
4.6.2.6	participant.participatingEntity	classCode		A code specifying the major category of a Role as defined by HL7 vocabulary.		Voc.xsd: RoleClassAssociative		

### Related Document

	Schema Data Element	Attributes	e-MS Equivalent	Description	Data type	Vocabulary	R/M/O: Cardinality	Comments
4.7.2.1	relatedDocument.parentDocument.id	extension root	Related_Document_ID	The ID of another e-MS document that this document is related to.	EMS.II.RootExtension		M: 1..1	Must be a GUID
4.7.2.2	relatedDocument.parentDocument.code	code codeSystem codeSystemName displayName	Related_Document_Type	The type of another e-MS document that this document is related to.	EMS.CE.Full	LOINC: DocumentType	M: 1..1	
4.7.2.3	relatedDocument.parentDocument.text		Related_Document_Text	The description of the document that is related	ED		M: 1..1	
4.7.2.4	relatedDocument	typeCode		A code specifying the meaning and purpose of every ActRelationship instance. Each of its values implies specific constraints to what kinds of Act objects can be related and in which way.		Voc.xsd: ActRelationshipDocument		APND is used when the document is a response to a previous document and RPLC is used when the document is replacing another document.

## Purpose

Schema Data Element		Attributes	e-MS Equivalent	Description	Data type	Vocabulary	R/M/O: Cardinality	Comments
<b>Level 2 Data Elements</b>								
5.1.2.1	component.section.code	code codeSystem codeSystemName displayName	Document_Purpose_Section_Code	Code identifying the Purpose section. The value in this field should always be the LOINC code given.	EMS_CEI	e-MS Document Section Code: 001	M: 1..1	
5.1.2.2	component.section.title		Document_Purpose_Section_Title	Human readable title of the section	ST		M: 1..1	
5.1.2.3	component.section.text		Document_Purpose_Section_Text	This field will be used to enter all of the data for this section.	TEXT		M: 1..1	
<b>Level 3 Data Elements</b>								
5.1.2.4	component.section.entry.observation.text		eMS_Purpose_Reason	Reason for the referral request.	ED		O: 0..1	
5.1.2.5	component.section.entry.observation.priorityCode	code codeSystem codeSystemName displayName	eMS_Purpose_Urgency	Urgency for appointment booking and/or referral request.	CE	e-MS: Urgency	O: 0..1	
5.1.2.6	component.section.entry.observation.value	xs:type					O: 0..1	
5.1.2.7	component.section.entry.observation.value.originalText/reference	value	eMS_Purpose_Comments	Additional comments about the referral request.	ANY		O: 0..1	
5.1.2.8	component.section.entry.observation.participantRole.playingEntity.name		eMS_Purpose_Other_Provider	List of other providers currently involved in the care of the patient.	EN		O: 0..*	
5.1.2.9	component.section.entry.observation.participantRole.playingEntity.desc		eMS_Purpose_Other_Provider_Reason	Reason for which each additional provider is involved in the care of the patient.	ED		O: 0..*	
5.1.2.10	component.section.entry	typeCode		A code specifying the meaning and purpose of every ActRelationship instance. Each of its values implies specific constraints to what kinds of Act objects can be related and in which way.		Voc.xsd: ParticipationInformationGenerator_X		
5.1.2.11	component.section.entry.observation	classCode moodCode		A code distinguishing whether an Act is conceived of as a factual statement or in some other manner as a command, possibility, goal, etc.		Voc.xsd: x_ActMoodDocumentObservation_X	classCode is mandatory	
5.1.2.11	component.section.entry.o	typeCode		A code specifying the kind of		Voc.xsd:		

Schema Data Element	Attributes	e-MS Equivalent	Description	Data type	Vocabulary	R/M/O: Cardinality	Comments
observation.participant			Participation or involvement the Entity playing the Role associated with the Participation has with regard to the associated Act.		ParticipationType		

## Alerts

Schema Data Element		Attributes	e-MS Equivalent	Description	Data type	Vocabulary	R/M/O: Cardinality	Comments
<b>Level 2 Data Elements</b>								
5.2.2.1	component.section.code	code codeSystemName displayName	Alert_Section_Code	Code identifying the Alerts section. The value in this field should always be the LOINC code given.	EMS.CE: Full	e-MS Document Section Code: 002	M: 1..1	
5.2.2.2	component.section.title		Alert_Section_Title	Human readable title of the section	ST		M: 1..1	
5.2.2.3	component.section.text		Alert_Section_Text	This field will be used to enter all of the data for this section.	TEXT		M: 1..1	
<b>Level 3 Data Elements</b>								
5.2.2.4	component.section.entry.observation.text		Alert_Type	Type of warning (i.e. history of violence, mental health, etc)	ED		O: 0..1	
5.2.2.5	component.section.entry.observation.effectiveTime	value	Alert_Date	Date when the alert was first recorded on the patient chart.	IVL_TS		O: 0..1	This may be a partial date
5.2.2.6	component.section.entry.observation.value	xsi:type					O: 0..1	
5.2.2.7	component.section.entry.observation.value.originalText/reference	Reference has attribute of value	Alert_Comments	Additional comments regarding the alert.	ANY		O: 0..1	
5.2.2.8	component.section.entry	typeCode		A code specifying the meaning and purpose of every ActRelationship instance. Each of its values implies specific constraints to what kinds of Act objects can be related and in which way.		Voc.xsd:ParticipationInformationGenerator_X		
5.2.2.9	component.section.entry.observation	classCode moodCode		Mood code indicates whether an Act has happened (an event), or is a request for something to happen, or a goal or even a criterion.		Voc.xsd:ActMoodDocumentObservation_	classCode is mandatory	

Schema Data Element	Attributes	e-MS Equivalent	Description	Data type	Vocabulary	R/M/O: Cardinality	Comments
					X		

## Social History / Risks

Schema Data Element	Attributes	e-MS Equivalent	Description	Data type	Vocabulary	R/M/O: Cardinality	Comments
<b>Level 2 Data Elements</b>							
4.3.2.1 Component.Section .Title		Risk_Section_Title	Human readable title of the section.	ST		M: 1..1	
4.3.2.2 Component.Section .Text		Risk_Section_Text	This field will be used for data to be entered if it is only sent or received at level 2.	ED		M: 1..1	
4.3.2.3 Component.Section .Code	code codeSystem codeSystemName displayName	Risk_Section_Code	Code identifying the Social History/Risks section.	CE	LOINC: 29762-2	M: 1..1	
<b>Level 3 Data Elements</b>							
4.3.2.4 Component.Section .Entry.Choice. Observation.Text		Risk_Type	Type of risk factor (usually has a medical impact). Examples may include alcohol use or smoking.	ED		O: 0..1	
4.3.2.5 Component.Section .Entry.Choice. Observation.EffectiveTime	value	Risk_Date Risk_End_Date	Date when the risk was first recorded on the patient chart and date when the risk ended.	IVL		O: 0..1	This may be a partial date
4.3.2.6 Component.Section .Entry.Choice. Observation.Value		Risk_Comments	Additional comments regarding the risk factor.	ANY		O: 0..1	
4.3.2.7 Component. Section.entry	typeCode				Voc.xsd:ParticipationInformationGenerator_X		
4.3.2.8 Component. Section.entry.entry Choice.observation	moodCode		Mood code indicates whether an Act has happened (an event), or is a request for something to happen, or a goal or even a criterion.		Voc.xsd:ActMoodObservation_X		

## Examination Measurements

Schema Data Element		Attributes	e-MS Equivalent	Description	Data type	Vocabulary	R/M/O: Cardinality	Comments
<b>Level 2 Data Elements</b>								
5.4.2.1	component.section.code	code codeSystem codeSystemName displayName	Obs_Section_Code	Code identifying the Examination Measurements section. The value in this field should always be the LOINC code given.	EMS. CE.Ful I	e-MS Document Section Code: 003	M: 1..1	
5.4.2.2	component.section.title		Obs_Section_Title	Human readable title of the section	ST		M: 1..1	
5.4.2.3	component.section.text		Obs_Section_Text	This field will be used to enter all of the data for this section.	TEXT		M: 1..1	
<b>Level 3 Data Elements</b>								
5.4.2.4	component.section.entry.observation.code	code codeSystem codeSystemName displayName value	Obs_Height_Code	Code identifying height	CD	LOINC: 8302-2	O: 0..1	
5.4.2.5	component.section.entry.observation.effectiveTime		Obs_Height_Eff_Date	Effective date of the height observation.	IVL_T S		O: 0..1	
5.4.2.6	Component.Section.Entry.observation.value	xsi:type value unit	Obs_Height	Patient height consisting of numeric height values and unit of measurement.	PQ	e-MS Height	O: 0..1	Enter height in inches or centimeters but not both.
5.4.2.7	component.section.entry.observation.code	code codeSystem codeSystemName displayName value	Obs_Weight_Code	Code identifying weight	CD	LOINC: 3141-9	O: 0..1	
5.4.2.8	component.section.entry.observation.effectiveTime		Obs_Weight_Eff_Date	Effective date of the weight observation.	IVL_T S		O: 0..1	
5.4.2.9	component.section.entry.observation.value	xsi:type value unit	Obs_Weight	Patient weight consisting of numeric weight value and unit of measurement.	PQ	e-MS Weight	O: 0..1	Enter weight in pounds or kilograms but not both.
5.4.2.10	component.section.entry.observation.code	code codeSystem codeSystemName displayName value	Obs_Pulse_Code	Code identifying pulse	CD	LOINC:11328-2	O: 0..1	
5.4.2.11	component.section.entry.observation		Obs_Pulse_Eff_Date	Effective date of the pulse observation.	IVL_T S		O: 0..1	

	Schema Data Element	Attributes	e-MS Equivalent	Description	Data type	Vocabulary	R/M/O: Cardinality	Comments
5.4.2.12	n.effectiveTime component.section n.entry.observation n.value	xsi:type value unit	Obs_Pulse	Patient pulse.	PQ		O: 0..1	
5.4.2.13	component.section n.entry.observation n.code	code codeSystem codeSystemName displayName value	Obs_BP_Code	Code identifying blood pressure	CD	e-MS data element code: 004	O: 0..1	
5.4.2.14	component.section n.entry.observation n.effectiveTime		Obs_BP_Eff_Date	Effective date of the blood pressure observation.	IVL_TS		O: 0..1	
5.4.2.15	component.section n.entry.observation n.entryRelationship p.observation.code	code codeSystem codeSystemName displayName	Obs_Diastolic or Systolic	Code identifying if it's referring to the diastolic or systolic blood pressure.	CD	e-MS data element code: 005 or 006	O: 0..1	
5.4.2.16	component.section n.entry.observation n.entryRelationship p.observation.value	xsi:type value unit	Obs_BP_Value (Diastolic or systolic)	Patient diastolic or systolic blood pressure	PQ		O: 0..1	
5.4.2.17	component. section.entry	typeCode		A code specifying the meaning and purpose of every ActRelationship instance. Each of its values implies specific constraints to what kinds of Act objects can be related and in which way.		Voc.xsd:ParticipationInformationGenerator_X		
5.4.2.18	component. section.entry.observation	classCode moodCode		Mood code indicates whether an Act has happened (an event), or is a request for something to happen, or a goal or even a criterion.		Voc.xsd: x_ActMoodDocumentObservation_X	classCode is mandatory	
5.4.2.19	component.section n.entry.observation n.entryRelationship p	typeCode		A code specifying the meaning and purpose of every ActRelationship instance. Each of its values implies specific constraints to what kinds of Act objects can be related and in which		Voc.xsd:ParticipationInformationGenerator_X		



Schema Data Element	Attributes	e-MS Equivalent	Description	Data type	Vocabulary	R/M/O: Cardinality	Comments
5.4.2.20 component.section.entry.observationRelationship.observation	classCode moodCode		way. Mood code indicates whether an Act has happened (an event), or is a request for something to happen, or a goal or even a criterion.		Voc.xsd:ActMoodDocumentObservation_X	ClassCode is mandatory	

### Active Problem List

Schema Data Element	Attributes	e-MS Equivalent	Description	Data type	Vocabulary	R/M/O: Cardinality	Comments
<b>Level 2 Data Elements</b>							
4.5.2.1 Component.Section.Title		Active_Condition_Section_Title	Human readable title of the section.	ST		M: 1..1	
4.5.2.2 Component.Section.Text		Active_Condition_Section_Text	This field will be used for data to be entered if it is only sent or received at level 2.	ED		M: 1..1	
4.5.2.3 Component.Section.Code	code codeSystem codeSystemName displayName	Active_Condition_Section_Code	Code identifying the Active Problem List section.	CE	LOINC: 11450-4	M: 1..1	
<b>Level 3 Data Elements</b>							
4.5.2.4 Component.Section.Entry.Choice.Observation.Code	code codeSystem codeSystemName displayName value	Active_Condition_Diagnosis	Diagnosis of a current problem.	CE	ICD-9 diagnostic codes	O: 0..1	
4.5.2.5 Component.Section.Entry.Choice.Observation.EffectiveTime		Active_Condition_Onset_Date	Date of the onset of the problem.	TS		O: 0..1	This may be a partial date.
4.5.2.6 Component.Section.Entry.Choice.Observation.Value		Active_Condition_Comments	Additional comments regarding the current problem.	ANY		O: 0..1	
4.5.2.7 Component.Section.entry	typeCode				Voc.xsd:ParticipationInformationGenerator_X		
4.5.2.8 Component.Section.entry.Choice.observation	moodCode		Mood code indicates whether an Act has happened (an event), or is a request for something to happen, or a		Voc.xsd:ActMoodDocumentObservation_X		

Schema Data Element	Attributes	e-MS Equivalent	Description	Data type	Vocabulary	R/M/O: Cardinality	Comments
			goal or even a criterion.		X		

## Current Medications

Schema Data Element							
Level 2 Data Elements							
5.6.2.1	component.section.code	code codeSystem codeSystemName displayName	Med_Section_Code	Code identifying the Current Medications section. The value in this field should always be the LOINC code given.	EMS. CE.Ful I	LOINC: 19013-2	M: 1..1
5.6.2.2	component.section.title		Med_Section_Title	Human readable title of the section.	ST		M: 1..1
5.6.2.3	component.section.text		Med_Section_Text	This field will be used to enter all of the data for this section.at level 2.	TEXT		M: 1..1
Level 3 Data Elements							
5.6.2.4	component.section.entry. substanceAdministration.te xt		Med_Quantity_Ordere d	The total amount of medications ordered by the physician	TEXT		O:0..1
5.6.2.5	component.section.entry. substanceAdministration.ef fectiveTime	value	Med_Effective_Date Med_Stop_Date	The date that the medication was ordered and the date when the patient ended taking the medication.	IVL_T S		O: 0..1
5.6.2.6	component.section.entry. substanceAdministration.re peatNumber	value	Med_Repeats	Number of repeats for the prescribed medication.	IVL_IN T		O: 0..1
5.6.2.7	component.section.entry. substanceAdministration.re peatNumber.low	value inclusive		Minimum value of medication repeats	INT		O: 0..1
5.6.2.8	component.section.entry. substanceAdministration.re peatNumber.high	value inclusive		Maximum value of medication repeats	INT		O: 0..1
5.6.2.9	component.section.entry. substanceAdministration.ro uteCode	code codeSystem codeSystemName displayName	Med_Administration_ Route	The route the prescribe medication is to be administered (e.g. oral, nasal, needle, etc.).	CE	HL7: MedAdmini strationRout e	O: 0..1
5.6.2.10	component.section.entry. substanceAdministration.d oseQuantity.center	value unit	Med_Dose	The dosage of the prescribed medication (e.g. 250 mg)	PQ	PIN: Medication Dose Unit	O: 0..1
5.6.2.11	component.section.entry. substanceAdministration.d oseQuantity.width	unit	Med_Frequency	The frequency of the prescription (e.g. BID, Q2H, etc)	PQ	PIN: Medication Frequency	O: 0..1
5.6.2.12	component.section.entry.	code	Med_DIN_ID	The Drug Identification Number for	CE	Drug	O: 0..1

Schema Data Element	Attributes	e-MS Equivalent	Description	Data type	Vocabulary	R/M/O: Cardinality	Comments
substanceAdministration.c onsumable.manufacturedP roduct.manufacturedLabel edDrug.code	codeSystem codeSystemName displayName	Med_DIN_Name	the prescribed medication.		Identification Number (DIN)		
5.6.2.13 component.section.entry. substanceAdministration.c onsumable.manufacturedP roduct.manufacturedLabel edDrug.name		Med_Name	The other name (brand or generic) of the prescribed medication.	EN		O: 0..1	
5.6.2.14 component.section.entry	typeCode		A code specifying the meaning and purpose of every ActRelationship instance. Each of its values implies specific constraints to what kinds of Act objects can be related and in which way.		Voc.xsd:ParticipationInformationGenerator_X		
5.6.2.15 component.section.entry. substanceAdministration	classCode moodCode		Mood code indicates whether an Act has happened (an event), or is a request for something to happen, or a goal or even a criterion.		Voc.xsd:DocumentObservation_X	classCode is mandatory	

## Medical History

Schema Data Element	Attributes	e-MS Equivalent	Description	Data type	Vocabulary	R/M/O: Cardinality	Comments
<b>Level 2 Data Elements</b>							
5.7.2.1 component.section.code	code codeSystem codeSystemName displayName	Past_Condition_Section_Code	Code identifying the Medical History section. The value in this field should always be the LOINC code given.	EMS. CE.Fully	LOINC: 11348-0	M: 1..1	
5.7.2.2 component.section.title		Past_Condition_Section_Title	Human readable title of the section.	ST		M: 1..1	
5.7.2.3 component.section.text		Past_Condition_Section_Text	This field will be used to enter all of the data for this section.	TEXT		M: 1..1	
<b>Level 3 Data Elements</b>							
5.7.2.4 component.section.entry. observation.code	code codeSystem codeSystemName displayName	Past_Condition_Diagnosis	The diagnosis of a past condition.	CE	ICD-9 diagnostic codes	O: 0..1	This code element may be used more loosely – for example, the element

Schema Data Element	Attributes	e-MS Equivalent	Description	Data type	Vocabulary	R/M/O: Cardinality	Comments
							could contain only 'displayName', and it doesn't necessarily have to be an ICD9 description. However, if ICD9 is used, the code set should be adhered to.
5.7.2.5	component.section.entry. observation.effectiveTime	Past_Onset_Date Past_Date_Resolved	The date of the past condition onset / occurrence / incident and the date the condition was resolved.	IVL_TS		O: 0..1	This may be a partial date.
5.7.2.6	component.section.entry. observation.value					O: 0..1	
5.7.2.7	component.section.entry. Text.reference/originalText	Past_Condition_Comments	Additional comments regarding the past condition.	ANY		O: 0..1	
5.7.2.8	component.section.entry		A code specifying the meaning and purpose of every ActRelationship instance. Each of its values implies specific constraints to what kinds of Act objects can be related and in which way.		Voc.xsd:ParticipationInformationGenerator_X		
5.7.2.9	component.section.entry. observation		Mood code indicates whether an Act has happened (an event), or is a request for something to happen, or a goal or even a criterion.		Voc.xsd:ActMoodDocumentObservation_X	classCode is mandatory	

## Surgical History

Schema Data Element	Attributes	e-MS Equivalent	Description	Data type	Vocabulary	R/M/O: Cardinality	Comments
<b>Level 2 Data Elements</b>							
5.8.2.1	component.section. code	Surgical_Section_Code	Code identifying the	EMS.	LOINC:	M: 1..1	

Schema Data Element	Attributes	e-MS Equivalent	Description	Data type	Vocabulary	R/M/O: Cardinality	Comments
code	codeSystem codeSystemName displayName		Surgical History section. The value in this field should always be the LOINC code given.	CE:Full	10167-5		
5.8.2.2 component.section.title		Surgical_Section_Title	Human readable title of the section.	ST		M: 1..1	
5.8.2.3 component.section.text		Surgical_Section_Text	This field will be used to enter all of the data for this section.	TEXT		M: 1..1	
<b>Level 3 Data Elements</b>							
5.8.2.4 Component.section.entry.procedure.text		Surgical_Procedure_Description	A description of the surgical procedure.	ED		O: 0..1	
5.8.2.5 component.section.entry.procedure.effectiveTime	value	Surgical_Procedure_Date	The date of the completed surgical procedure.	IVL_TS		O: 0..1	This may be a partial date.
5.8.2.6 component.section.entry	typeCode		A code specifying the meaning and purpose of every ActRelationship instance. Each of its values implies specific constraints to what kinds of Act objects can be related and in which way.		Voc.xsd:ParticipationInformationGenerator_X		
5.8.2.7 component.section.entry.procedure	classCode moodCode		Mood code indicates whether an Act has happened (an event), or is a request for something to happen, or a goal or even a criterion.		Voc.xsd:ActMoodDocumentObservation_X	classCode is mandatory	

## Medical Imaging History

Schema Data Element	Attributes	e-MS Equivalent	Description	Data type	Vocabulary	R/M/O: Cardinality	Comments
<b>Level 2 Data Elements</b>							
5.9.2.1 component.section.code	code codeSystem codeSystemName displayName	ML_Procedure_Section_Code	Code identifying the Medical Imaging History section. The value in this field should always be the LOINC code given.	EMS. CE:Full	LOINC: 35090-0	M: 1..1	
5.9.2.2 component.section.title		ML_Procedure_Section_Title	Human readable title of the section.	ST		M: 1..1	
5.9.2.3 component.section.text		ML_Procedure_Section_Text	This field will be used to enter all of	TEXT		M: 1..1	

Schema Data Element	Attributes	e-MS Equivalent	Description	Data type	Vocabulary	R/M/O: Cardinality	Comments
<b>Level 3 Data Elements</b>							
5.9.2.4 component.section.entry.observation.text		MI_Procedure_Description	A description of the medical imaging procedure that was performed.	ED		O: 0..1	
5.9.2.5 component.section.entry.observation.effectiveTime	value	MI_Procedure_Date	The date that the medical imaging procedure was performed.	IVL_TS		O: 0..1	This may be a partial date.
5.9.2.6 component.section.entry.observation.value	xs:type					O: 0..1	
5.9.2.7 component.section.entry.observation.value.reference/originalText	Reference has attribute of value	MI_Procedure_Results	Additional comments regarding the radiology procedure and/or findings.	ANY		O: 0..1	
5.9.2.8 component.section.entry	typeCode		A code specifying the meaning and purpose of every ActRelationship instance. Each of its values implies specific constraints to what kinds of Act objects can be related and in which way.	CS	Voc.xsd: ParticipatoryInformationGenerator_X		
5.9.2.9 component.section.entry.observation	classCode moodCode		Mood code indicates whether an Act has happened (an event), or is a request for something to happen, or a goal or even a criterion.		Voc.xsd: ActMoodDocumentObservation_X	classCode is mandatory	

## Other Treatments

Schema Data Element	Attributes	e-MS Equivalent	Description	Data type	Vocabulary	R/M/O: Cardinality	Comments
<b>Level 2 Data Elements</b>							
5.10.2.1 component.section.code	code codeSystem codeSystemName displayName	Other_Treatment_Section_Code	Code identifying the Other Treatments section. The value in this field should always be the LOINC code given.	EMS_CE_Full	e-MS Document Section Code: 007	M: 1..1	
5.10.2.2 component.section.title		Other_Treatment_Section_Title	Human readable title of the section.	ST		M: 1..1	
5.10.2.3 component.section.text		Other_Treatment_Section_Text	This field will be used to enter all of the data for this section.	TEXT		M: 1..1	
<b>Level 3 Data Elements</b>							
5.10.2.4 component.section.entry.observation.text		Other_Treatment_Type	Other treatment options that the patient has tried (other than medication and procedures).	ED		O: 0..1	

Schema Data Element	Attributes	e-MS Equivalent	Description	Data type	Vocabulary	R/M/O: Cardinality	Comments
5.10.2.5 component.section.entry. observation.effectiveTime	value	Other_Treatment_Date	The date when the other treatment was ordered or when the provider was notified by the patient of the alternative therapy decision.	IVL_TS		O: 0..1	This may be a partial date.
5.10.2.6 component.section.entry. observation.value	xsi:type					O: 0..1	
5.10.2.7 component.section.entry. observation.value.reference /originalText	Reference has attribute of value	Other_Treatment_Outcome	The outcome of the other treatment.	ANY		O: 0..1	
5.10.2.8 component.section.entry	typeCode		A code specifying the meaning and purpose of every ActRelationship instance. Each of its values implies specific constraints to what kinds of Act objects can be related and in which way.		Voc.xsd: Participatio nInformatio nGenerator_X		
5.10.2.9 component.section.entry. observation	classCode moodCode		Mood code indicates whether an Act has happened (an event), or is a request for something to happen, or a goal or even a criterion.		Voc.xsd: x_ActMood DocumentOb servation_X		

## Allergies

Schema Data Element	Attributes	e-MS Equivalent	Description	Data type	Vocabulary	R/M/O: Cardinality	Comments
<b>Level 2 Data Elements</b>							
5.11.2.1 component.section n.code	code codeSystem codeSystemName displayName	Allergy_Section_Code	Code identifying the Allergies section. The value in this field should always be the LOINC code given.	EMS. CE.F ull	e-MS Document Section Code: 008	M: 1..1	
5.11.2.2 component.section n.title		Allergy_Section_Title	Human readable title of the section.	ST		M: 1..1	
5.11.2.3 component.section n.text		Allergy_Section_Text	This field will be used to enter all of the data for this section.	TEXT		M: 1..1	
<b>Level 3 Data Elements</b>							
5.11.2.4 component.section n.entry.observatio n.code	code codeSystem codeSystemName displayName	Allergy_Type	A description of the allergy or adverse reaction.	CE	HL7: Allergy Type	O: 0..1	
5.11.2.5 component.section n.entry.observatio n.effectiveTime	value	Allergy_Date Allergy_End_Date	The date when the allergy or adverse reaction was recorded on the patient chart	IVL_TS		O: 0..1	This may be a partial date.

Schema Data Element	Attributes	e-MS Equivalent	Description	Data type	Vocabulary	R/M/O: Cardinality	Comments
			and the date that the allergy problem or adverse reaction was resolved.				
5.11.2.6	xsi:type					O: 0..1	
5.11.2.7	Reference has attribute of value	Allergy_Comments	Any additional comments regarding the allergy or adverse reaction including the allergen.	ANY		O: 0..1	
5.11.2.8	code codeSystem codeSystemName displayName	Allergy_Severity	The severity of the allergy or adverse reaction.	CE	HL7: Allergy Severity	O: 0..1	
5.11.2.9	typeCode		A code specifying the meaning and purpose of every ActRelationship instance. Each of its values implies specific constraints to what kinds of Act objects can be related and in which way.		Voc.xsd: ParticipationInformationGenerator_X		
5.11.2.10	classCode moodCode		Mood code indicates whether an Act has happened (an event), or is a request for something to happen, or a goal or even a criterion.		Voc.xsd: x_ActMoodDocumentObservation_X		

## Immunization

Schema Data Element	Attributes	e-MS Equivalent	Description	Data type	Vocabulary	R/M/O: Cardinality	Comments
<b>Level 2 Data Elements</b>							
5.12.2.1	code codeSystem codeSystemName displayName	Immunization_Section_Code	Code identifying the Immunization section. The value in this field should always be the LOINC code given.	EMS. CE.Fu II	LOINC: 11369-6	M: 1..1	
5.12.2.2	n.title	Immunization_Section_Title	Human readable title of the section.	ST		M: 1..1	
5.12.2.3	n.text	Immunization_Section_Text	This field will be used to enter all of the data for this section.	TEXT		M: 1..1	
<b>Level 3 Data Elements</b>							



	Schema Data Element	Attributes	e-MS Equivalent	Description	Data type	Vocabulary	R/M/O: Cardinality	Comments
5.12.2.4	component.section.entry.observation.code	code codeSystem codeSystemName displayName	Immunization_Code	The code of the immunization that was administered.	CE	BCCDC: BC Vaccination Codes	O: 0..1	
5.12.2.5	component.section.entry.observation.effectiveTime		Immunization_Date	The date that the immunization was administered.	IVL_TS		O: 0..1	This may be a partial date.
5.12.2.6	component.section.entry	typeCode		A code specifying the meaning and purpose of every ActRelationship instance. Each of its values implies specific constraints to what kinds of Act objects can be related and in which way.		Voc.xsd: ParticipationInformationGenerator_X		
5.12.2.7	component.section.entry.observation	classCode moodCode		Mood code indicates whether an Act has happened (an event), or is a request for something to happen, or a goal or even a criterion.		Voc.xsd: ActMoodDocumentObservation_X	classCode is mandatory	

## Labs

	Schema Data Element	Attributes	e-MS Equivalent	Description	Data type	Vocabulary	R/M/O: Cardinality	Comments
<b>Level 2 Data Elements</b>								
5.13.2.1	component.section.code	code codeSystem codeSystemName displayName	Labs_Section_Code	Code identifying the Labs section. The value in this field should always be the LOINC code given.	EMS_CE_Full	LOINC: 11502-2	M	
5.13.2.2	component.section.title		Labs_Section_Title	Human readable title of the section.	ST		M	
5.13.2.3	component.section.text		Labs_Section_Text	This field will be used to enter all of the data for this section.	TEXT		M	
<b>Level 3 Data Elements</b>								
5.13.2.4	component.section.entry.observation.code	code codeSystem codeSystemName displayName	Labs_Test_Type	The type of test that was ordered.	CE		R: 0..1	The lab test type originally sent by the lab should be used. Not all attributes need to be

Schema Data Element	Attributes	e-MS Equivalent	Description	Data type	Vocabulary	R/M/O: Cardinality	Comments
5.13.2.5	component.section. entry.observation.effectiveTime	Labs_Test_Specimen_Collected_Date/ Time	The date and time that the specimen was collected for the test.	IVL_TS		O: 0..1	used, however if the code system that the lab is using is know it would be beneficial to enter this information.
5.13.2.6	component.section. entry.observation.value	Labs_Test_Result	The result of the test.	ANY		O: 0..1	
5.13.2.7	component.section. entry.observation.in terpretationCode	Labs_Abnormal_Result_Flag	Identifies if the lab result is abnormal / normal	ED		O: 0..1	The abnormal flag originally sent by the lab should be used. Not all attributes need to be used, however if the code system that the lab is using is know it would be beneficial to enter this information.
5.13.2.8	component.section. entry.observation.referenceRange. referenceObservationRange.value	Labs_Normal_Result_Range	The value range, which is considered normal for the specific laboratory test. If a string is entered this element should be used. If the discrete elements are sent/received, the 'high' and 'low' elements (following 2 elements) should	IVL_PQ		O: 0..1	The normal results range originally sent by the lab should

Schema Data Element	Attributes	e-MS Equivalent	Description	Data type	Vocabulary	R/M/O: Cardinality	Comments
			be used.				be used. This element should be used if the range comes in the form of a string.
5.13.2.9 component.section. entry.observation.r eferenceRange. referenceObservati onRange.value.hig h	value unit inclusive	Labs_Normal_Result_R ange	The value range, which is considered normal for the specific laboratory test. This element should be used (in combination with low) if the range is sent/received as discrete elements.				The normal results range originally sent by the lab should be used. This element should be used (in combination with 'low') if the range comes in the form of discrete elements.
5.13.2.10 component.section. entry.observation.r eferenceRange. referenceObservati onRange.value.low	value unit inclusive	Labs_Normal_Result_R ange	The value range, which is considered normal for the specific laboratory test. This element should be used (in combination with high) if the range is sent/received as discrete elements.				The normal results range originally sent by the lab should be used. This element should be used (in combination with 'high') if the range comes in the form of discrete

	Schema Data Element	Attributes	e-MS Equivalent	Description	Data type	Vocabulary	R/M/O: Cardinality	Comments
5.13.2.11	component.section.entry.assignedPerformer.entity.id	displayable root assigningAuthorityName extension typeCode	Labs_Source	The laboratory where the result originated / test was performed.	II	BC Lab Standard: Diagnostic Facilities Listing	O: 1..1	elements.
5.13.2.12	component.section.entry	typeCode		A code specifying the meaning and purpose of every ActRelationship instance. Each of its values implies specific constraints to what kinds of Act objects can be related and in which way.		Voc.xsd: Participatory InformationGenerator X		
5.13.2.13	component.section.entry.observation	classCode moodCode		Mood code indicates whether an Act has happened (an event), or is a request for something to happen, or a goal or even a criterion.		Voc.xsd: x_ActMood DocumentObservation_ X	classCode is mandatory	

## Past Referrals and Hospitalizations

	Schema Data Element	Attributes	e-MS Equivalent	Description	Data type	Vocabulary	R/M/O: Cardinality	Comments
<b>Level 2 Data Elements</b>								
5.14.2.1	component.section.code	code codeSystemName displayName	Referral_Section_Code	Code identifying the Past Referrals and/or Hospitalizations section. The value in this field should always be the LOINC code given.	EMS, CE, Full	LOINC: 11336-5	M: 1..1	
5.14.2.2	component.section.title		Referral_Section_Title	Human readable title of the section.	ST		M: 1..1	
5.14.2.3	component.section.text		Referral_Section_Text	This field will be used to enter all of the data for this section.	TEXT		M: 1..1	
<b>Level 3 Data Elements</b>								
5.14.2.4	component.section.entry.under.id	extension	Referral_Location	Location where the referral took place (e.g. name of a hospital).	II		O: 0..1	
5.14.2.5	component.section.entry.under.code	code codeSystemName displayName	Referral_Type	The type of referral that was made	CE	HL7: ActEncounterCode	O: 0..1	
5.14.2.6	component.section.entry.under.text		Referral_Reason	The reason for the past referral or hospitalization.	ED		O: 0..1	
5.14.2.7	component.section.entry.under.effectiveTime	value	Referral_Date	The date of the past referral or hospitalization.	IVL_TS		O: 0..1	This may be a partial

Schema Data Element	Attributes	e-MS Equivalent	Description	Data type	Vocabulary	R/M/O: Cardinality	Comments
5.14.2.8	component.section.entry				Voc.xsd: ParticipationInformationGenerator_X		date.
5.14.2.9	component.section.entry.encoder	moodCode	A code specifying the meaning and purpose of every ActRelationship instance. Each of its values implies specific constraints to what kinds of Act objects can be related and in which way. Mood code indicates whether an Act has happened (an event), or is a request for something to happen, or a goal or even a criterion.		Voc.xsd: x_ActMoodObservation_X		

## Family History

Schema Data Element	Attributes	e-MS Equivalent	Description	Data type	Vocabulary	R/M/O: Cardinality	Comments
5.15.2.1	section.code	Fam_Hist_Section_Code	Code identifying the Family History section. The value in this field should always be the LOINC code given.	EMS: CE.Fully	LOINC: 10157-6	M: 1..1	
5.15.2.2	section.title	Fam_Hist_Section_Title	Human readable title of the section.	ST		M: 1..1	
5.15.2.3	section.text	Fam_Hist_Section_Text	This field will be used to enter all of the data for this section.	TEXT		M: 1..1	

## Observation Media

Schema Data Element	Attributes	e-MS Equivalent	Description	Data type	Vocabulary	R/M/O: Cardinality	Comments
5.16.2.1	entryRelationship		A code specifying the meaning and purpose of every ActRelationship instance. Each of its values implies specific constraints to what kinds of Act objects can be related and in which way				
5.16.2.2	entryRelationship.ObservationMedia	classCode moodCode				classCode is mandatory	

	Schema Data Element	Attributes	e-MS Equivalent	Description	Data type	Vocabulary	R/M/O: Cardinality	Comments
5.16.2.3	entryRelationship.ObservationMedia.value	mediaType		Type of attachment	ED			
5.16.2.4	entryRelationship.ObservationMedia.value.reference	value		Reference to the file attachment.	URL		R: 0..*	

## Appendix G – Vocabularies / Code Sets

*Note: XML is case-sensitive. Validation errors will occur if vocabularies are not entered exactly as they are below.*

*Note: due to current licensing issues in Canada, the SNOMED codeset cannot be used.*

### LOINC: Document Type

#### Code Set

34140-4	Referral
11488-4	Consultation
28616-1	Summary

#### Corresponding Data Elements

Document\_Type (4.1.2.2)

Related\_Document\_Type (4.7.2.2)

---

### Canada Post: Province Codes / State Codes

#### Code Set

AB	Alberta
BC	British Columbia
MB	Manitoba
NB	New Brunswick
NF	Newfoundland
NS	Nova Scotia
NT	Northwest Territories
ON	Ontario
PE	Prince Edward Island
QC	Quebec
SK	Saskatchewan
YT	Yukon
NU	Nunavut
AK	Alaska
AL	Alabama
AR	Arkansas
AS	American Samoa
AZ	Arizona
CA	California
CO	Colorado
CT	Connecticut
DC	District of Columbia

DE	Delaware
FL	Florida
FM	Federated States of Micronesia
GA	Georgia
GU	Guam
HI	Hawaii
IA	Iowa
ID	Idaho
IL	Illinois
IN	Indiana
KS	Kansas
KY	Kentucky
LA	Louisiana
MA	Massachusetts
MD	Maryland
ME	Maine
MH	Marshall Islands
MI	Michigan
MN	Minnesota
MO	Missouri
MP	Northern Mariana Islands
MS	Mississippi
MT	Montana
NC	North Carolina
ND	North Dakota
NE	Nebraska
NH	New Hampshire
NJ	New Jersey
NM	New Mexico
NV	Nevada
NY	New York
OH	Ohio
OK	Oklahoma
OR	Oregon
PA	Pennsylvania
PR	Puerto Rico
PW	Palau
RI	Rhode Island
SC	South Carolina
SD	South Dakota
TN	Tennessee



TX	Texas
UT	Utah
VA	Virginia
VI	Virgin Islands
VT	Vermont
WA	Washington
WI	Wisconsin
WV	West Virginia
WY	Wyoming

**Corresponding Data Elements**

Provider\_Province\_State (4.3.2.3.c)

Recipient\_Province\_State (4.2.2.2.c)

PHN\_Province (4.5.2.1)

Patient\_Address\_Province\_State (4.5.2.3.c)

Contact\_Address\_Province\_State (4.6.2.2.c)

**Comments**

Nunavut is currently not listed in the Canada Post Province Codes. NU is suggested to be used.

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**ISO: Country****Code Set**

Country names (official short names in English) in alphabetical order as given in ISO 3166-1 and the corresponding ISO 3166-1-alpha-2 code elements can be found at

<http://www.iso.org/iso/en/prods-services/iso3166ma/02iso-3166-code-lists/list-en1.html>

**Corresponding Data Elements**

Provider\_Country (4.3.2.3.e)

Recipient\_Country (4.2.2.2.e)

Patient\_Country (4.5.2.3.e)

Contact\_Country (4.6.2.2.e)

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**HL7: TelecommunicationAddressUse****Code Set**

H	Home
HP	Primary Home
HV	Vacation Home
WP	Workplace
AS	Answering Service
EC	Emergency Contact
MC	Mobile Contact
PG	Pager

**Corresponding Data Elements**

Provider\_Telecom\_Use (4.3.2.4)

Recipient\_Telecom\_Use (4.2.2.3)  
Patient\_Telecom\_Use (4.5.2.4)  
Contact\_Telecom\_Use (4.6.2.3)

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### **HL7: URLScheme**

#### **Code Set**

fax	Fax
file	File
ftp	FTP
http	HTTP
mailto	Mailto
modem	Modem
nfs	NFS
tel	Telephone
telnet	Telnet
cell	Cellular Phone

#### **Corresponding Data Elements**

Provider\_Telecom\_Value (4.3.2.4)  
Recipient\_Telecom\_Value (4.2.2.3)  
Patient\_Telecom\_Value (4.5.2.4)  
Contact\_Telecom\_Value (4.6.2.3)

#### **Comments**

Cell was added as an extension to the HL7 vocabulary.

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### **e-MS: Urgency**

#### **Code Set**

U	Urgent (call)
E	Expedite (call)
R	Routine

#### **Corresponding Data Elements**

eMS\_Purpose\_Urgency (5.1.2.5)

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### **ISO: Language**

#### **Code Set**

The ISO 639 2 letter language code set can be found at <http://www.w3.org/WAI/ER/IG/ert/iso639.htm>

#### **Corresponding Data Element**

e-MSIG

Patient\_Preferred\_Language (4.5.2.8)

**HL7: AdministrativeGender**

**Code Set**

M	Male
F	Female
U	Undifferentiated

**Corresponding Data Elements**

Patient\_Gender (4.5.2.6)

**HL7: PersonalRelationshipRoleType**

**Code Set**

AUNT	Aunt
CHLDADOPT	Adopted Child
CHLDFOST	Foster Child
CHLDINLAW	Child in law
NCHLD	Natural Child
STPCHLD	Step Child
COUSIN	Cousin
DOMPART	Domestic Partner
GGRFTH	Great Grandfather
GGRMTH	Great Grandmother
GRNDDAU	Granddaughter
GRNDSON	Grandson
GRFTH	Grandfather
GRMTH	Grandmother
NEPHEW	Nephew
NIECE	Niece
FTH	Father
MTH	Mother
NFTH	Natural Father
NMTH	Natural Mother
FTHINLAW	Father-in-law
MTHINLAW	Mother-in-law
STPFTH	Stepfather
STPMTH	Stepmother
ROOM	Roommate
BRO	Brother
HBRO	Half brother
HSISG	Half sister
NBRO	Natural Brother

NBRO	Natural Brother
NSIS	Natural Sister
BROINLAW	Brother-in-law
SISINLAW	Sister-in-law
SIS	Sister
STPBRO	Step brother
STPSIS	Step sister
SIGOTHR	Significant other
HUSB	Husband
WIFE	Wife
UNCLE	Uncle
FRND	Unrelated friend
NBOR	Neighbor

#### Corresponding Data Elements

Contact\_Relationship\_Type (4.6.2.1)

#### Drug Identification Number (DIN)

##### Code Set

The DIN code set can be downloaded at [http://www.hc-sc.gc.ca/hpfb-dgpsa/tpd-dpt/index\\_drugs\\_dpd\\_e.html](http://www.hc-sc.gc.ca/hpfb-dgpsa/tpd-dpt/index_drugs_dpd_e.html) (File name: drug.txt)

##### Corresponding Data Element

Med\_DIN\_ID (5.6.2.12)

Med\_DIN\_Name (5.6.2.12)

#### ICD-9 diagnostic codes

##### Code Set

ICD9 code set – available from MSP or e-MS Project Team

##### Corresponding Data Elements

Active\_Condition\_Section\_Code (5.5.2.4)

Past\_Condition\_Section\_Code (5.7.2.4)

#### HL7: Allergy Type

##### Code Set

DA	Drug Allergy
FA	Food Allergy
MA	Miscellaneous Allergy
MC	Miscellaneous Contraindication

##### Corresponding Data Elements

Allergy\_Type (5.11.2.4)

### HL7: Allergy Severity

### Code Set

MI	Mild
MO	Moderate
SV	Severe

## Corresponding Data Elements

Allergy\_Severity (5.11.2.8)

## BCCDC: BC Vaccination Codes

Please note that the CDA doesn't allow for spaces in 'code' attributes. Below all spaces in the agent codes have been replaced by a '-'.  
 1. [CDA](#)

### Code Set

ID	Agent Code	Agent Code Description
61	aP	Acellular Pertussis
187	RHOGAM	Anti-Rho (D) Immune Globulin
15	BAtox	Botulism Antitoxin
19	CHOL	Cholera
194	CHOL+ETEC	Cholera and Enterotoxigenic E.Coli
24	D	Diphtheria
21	DAtox	Diphtheria Antitoxin
27	DT	Diphtheria Tetanus - Paediatric
13	DTP	Diphtheria Tetanus Polio - Paed
26	DTwP-P	Diphtheria Tetanus wPertussis, iPolio
53	SCHK	Diphtheria Toxin for Schick Test
25	DTwP	Diphtheria, Tetanus wPertussis - Paed
193	DTaP	Diphtheria, Tetanus, acellular Pertussis
59	DTaP-P	Diphtheria, Tetanus, aPertussis, iPolio
58	DTaP-P-Hib	Diphtheria, Tetanus, aPertussis, iPolio, Hib
7	DTwP-P-s	Diphtheria, Tetanus, Pertussis, iPolio (study)
191	DTwP-P-H-s	Diphtheria, Tetanus, wPertussis, iPolio, Hib (study)
44	DTwP-P-Hib	Diphtheria, Tetanus, wPertussis, iPolio, Hib
33	Hib	Haemophilus influenzae type b
31	HA	Hepatitis A
63	HAHB	Hepatitis A and B
32	HB	Hepatitis B
52	HB-study	Hepatitis B (study)
30	HBIG	Hepatitis B Immune Globulin
35	Hib-study	Hib study
37	Ig	Immune Globulin
5-MS	IPV-study	Inactivated Polio Vaccine (study)
28	FLII	Influenza

28	FLU	Influenza
36	IPV	Injectable Polio Vaccine
10	E	Japanese Encephalitis
38	M	Measles
40	MMR	Measles Mumps Rubella
8	MR	Measles Rubella
184	MEN-C-C	Meningococcal-Conjugate-C
183	MEN-P-AC	Meningococcal-Polysaccharide-AC
39	MEN-P-ACWY	Meningococcal-Polysaccharide-ACWY
41	Mu	Mumps
46	PLAG	Plague
186	PNEU-C-7	Pneumococcal Conjugate C-7
62	PNEU-P-23	Pneumococcal-Polysaccharide-23
42	OPV	Polio
197	MEN-ACWY-s	Quadravalent Meningococcal (study)
47	RAB	Rabies
49	RIG	Rabies Immune Globulin
65	RSVlg	Respiratory Syncytial Virus Immune Globulin
50	R	Rubella
48	SnakAven	Snake Antivenom
17	spidAven	Spider Antivenom
14	T	Tetanus
192	TdaP	Tetanus Diphtheria aPertussis - adults
1	TIG	Tetanus Immune Globulin
55	Td	Tetanus, Diphtheria - adult
196	TdcP-s	Tetanus, Diphtheria, control Pertussis (study)
56	TdP	Tetanus, Diphtheria, Polio - adults
51	TdwP-s	Tetanus, Diphtheria, wPertussis - (study)
54	TBN	Tuberculin Purified Protein Derivative
16	BCG	Tuberculosis Vaccine (Bacille Calmette-Guerin)
11	TYPH-IM	Typhoid Intramuscular
12	TYPH-O	Typhoid Oral
2	TYPH	Typhoid Vaccine (discontinued)
64	VZ	Varicella Zoster
3	VZIG	Varicella Zoster Immune Globulin
45	wP	wPertussis
4	YF	Yellow Fever

**Corresponding Data Elements**

Immunization\_Code (5.12.2.4)

**PIN: Medication Frequency****Code Set**

Note: The option must exist to enter a value that is not in this list.

1/5day	Once every 5 days
1/6day	Once every 6 days
1/month	Once a month
1/week	Once a week
2/week	Twice a week
21/28D	21 out of 28 days
BID	Two times daily
ONCE	One time only
OTH	Other
Q1-2H	Every 1 to 2 hours
Q12H	Every 12 hours
Q1H	Every Hour
Q2-3H	Every 2 to 3 hours
Q2D	Every other day
Q2H	Every 2 hours
Q3-4H	Every 3-4 hours
Q3H	Every 3 hours
Q4-6H	Every 4-6 hours
Q4H	Every 4 hours
Q6-8H	Every 6-8 hours
Q6H	Every 6 hours
Q8-12H	Every 8-12 hours
Q8H	Every 8 hours
QAM	Every morning
QD	Once daily
QHS	Every day at bedtime
QID	4 times daily
QNOON	Every day at noon
QPM	Every evening
STAT	Now
TID	3 times daily

### Corresponding Data Element

Med\_Frequency (5.6.2.11)

### PIN: Medication Dose Unit

#### Code Set

Note: The option must exist to enter a value that is not in this list.

APPLR	Applicator
APPLN	Application(s)
BUC	Buccal Tablet
CAP	Capsule(s)
CREAM	Cream
CHRG	Cartridge(s)

CRTG	Cartridge(s)
CUP	Cup(s)
DISK	Disks
EA	Each
IMP	Implant(s)
INS	Inserts(s)
IU	International Units
LOZ	Lozenge(s)
MU	Milliunit
NEB	Nebule(s)
PAD	Pad(s)
PATCH	Patch(es)
PELL	Pellet(s)
PKT	Packet(s)
PNU	Protein Unit
PINT	Pint
PUFF	Puffs
SNIFF	Sniff(s)
SPRAY	Spray(s)
STICK	Stick(s)
STRIP	Strip(s)
SUP	Suppositories
TAB	Tablet(s)
TAMP	Tampon(s)
TUB	Tube
UNIT	Unit
WAF	Wafer(s)
cc	Cubic centimeter
fl oz	Fluid ounce
g	grams
Kg	Kilograms
mEq	MEq
mL	Millileters
mcg	Mcg
mcmol	Micromol
mg	Mg
mmol	Millimole
mol	Mole
oz	Ounce
TBSP	Tablespoon(s)
Tsp	Teaspoon(s)
L	Litre(s)

**Corresponding Data Element**  
Med\_Dose (5.6.2.10)



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**HL7: MedAdministrationRoute****Code Set**

PO	per os
SL	sublingual
PR	rectal
IH	per inhalation
OP	ophtalmic
NS	nasal
OT	otic
VG	vaginal
ID	intra-dermal
SC	subcutaneous
IV	intra-venous
IC	intra-cardial

**Corresponding Data Elements**

Med\_Administration\_Route (5.6.2.9)

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**e-MS Weight****Code Set**

lb	Pounds
kg	Kilograms

**Corresponding Data Element**

Obs\_Weight (5.4.2.9)

---

**e-MS Height****Code Set**

cm	Centimeters
in	Inches

**Corresponding Data Element**

Obs\_Height (5.4.2.6)

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**HL7: ActEncounterCode****Code Set**

AMB	Ambulatory
EMER	Emergency
FLD	Field
HH	Home Health
ACUTE	Inpatient Acute

e-MSIG

ACUTE	Inpatient Acute
NONAC	Inpatient non-acute
VR	Virtual
SP	Specialist

**Corresponding Data Elements**

Referral\_Type (5.14.2.5)

**Comments**

"Specialist" was not part of the HL7 vocabulary and was added to this list.

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**BC Lab Standard: Diagnostic Facilities Listing****Code Set**

BC Diagnostic Facilities Listing

**Corresponding Data Elements**

Labs\_Source (5.13.2.9)

**Comments**

A listing of facilities can be obtained from the e-MS project team.

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**HL7: ConfidentialityCode****Code Set**

N	Normal
R	Restricted
V	Very Restricted

**Corresponding Data Elements**

Document\_Confidentiality (4.1.2.5)

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**e-MS Document Section Code / e-MS Data Element Code****Code Set**

001	Purpose
002	Alerts
003	Examination Measurements
004	Blood Pressure
005	Systolic Blood Pressure
006	Diastolic Blood Pressure
007	Other Treatments
008	Allergies

**Comments**

These are codes created by the e-MS team to identify document sections and data elements that do not have a LOINC codes associated with them.

**Document Section LOINC Codes****Code Set**

29762-2	Social History/Risks
8302-2	Height
3141-9	Weight
11328-2	Pulse
11450-4	Active Problem List
19013-2	Current Medications
11348-0	Medical History
10167-5	Surgical History
35090-0	Medical Imaging History
11369-6	Immunizations
11502-2	Labs
11336-5	Past Referrals and/or Hospitalizations
16157-6	Family History

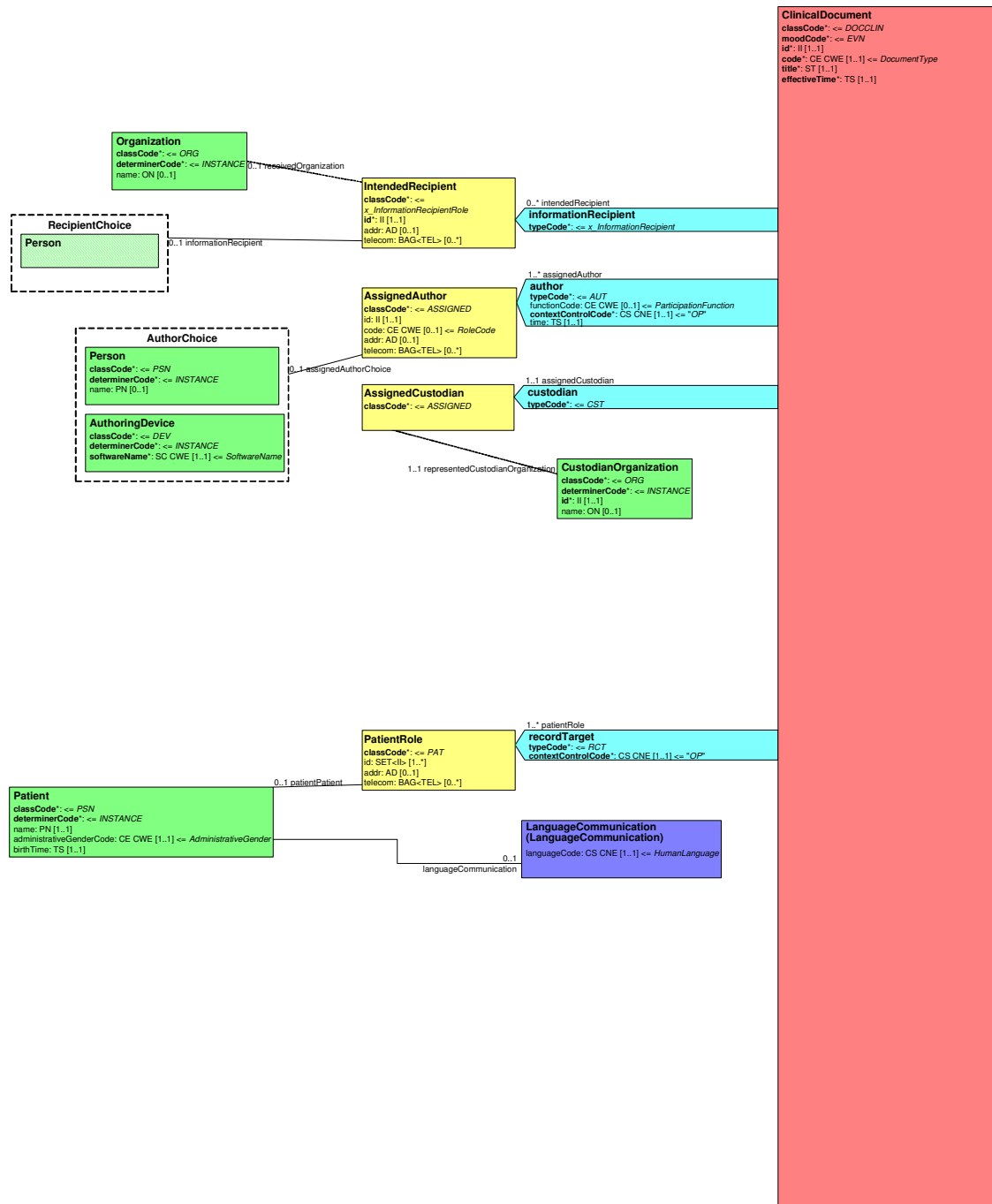
**GUIDs and Registered OIDs****Code Set**

2.16.840.1.113883.6.1	LOINC
2.16.840.1.113883.5.1	HL7 – Administrative Gender
2.16.840.1.113883.5.112	HL7 – Administration Route
2.16.840.1.113883.12.128	HL7 – Allergy Severity
2.16.840.1.113883.6.2	ICD9
2.16.840.1.113883.5.25	HL7 – Confidentiality Code
2.16.840.1.113883.3.933	HL7 – Clinical Document/Related Document ID
7EEF0BCC-F03E-4742-A736-8BAC57180C5F	Represented Custodian Organization
DCCD2C68-389B-44c4-AD99-B8FB2DAD1493	e-MS User
2BFBA1E9-79C2-4bbb-B589-41B949BD6A3B	BC-PHN
F05716F7-BA77-4641-A8D8-6E3948CCD321	HL7 – Personal Relationship Role Type
2A9DDF65-2465-4cf7-903C-832A33B22F5D	HL7 – Allergy Type
4FE1CC50-FBDC-44a6-A005-A49E9F7A6DA9	HL7 – Act Encounter Code
7BA9BFFD-D25F-44e8-A7B0-0DF214D6845B	e-MS Document Section Codes
B39DD860-FE4E-4025-820B-83BAEBD08EA2	e-MS Data Element Codes
36F030E1-180A-4c53-AEF6-7EEA32B531B3	DIN
FC1AFD51-7DC6-404c-9B06-C3234B850B65	BCCDC Immunization Codes
476CAE01-D4E8-4894-A007-EF55064175D0	MSP Lab Source Systems

## Appendix H – e-MS CDA Model

This model reflects the e-MS CDA prior to the finalization of CDA Ballot 3.

### Header



## Body

