C-CDA Implementation-A-Thon

July 29 2020

Virtual Zoom Meeting
Facilitators:
Jean Duteau
Joginder Madra
Lisa Nelson
Thank you ONC!

- The C-CDA Implementation-A-Thon is sponsored by the Office of the National Coordinator for Health IT
Facilitators

Jean Duteau  
Duteau Designs

Joginder Madra  
Madra Consulting

Lisa Nelson  
MaxMd

Dave Hamill  
HL7
New Focus: Create Action resulting from IAT topics

- Agree to start doing something different now
- Propose a new Rubric Rule
- Propose a new C-CDA to FHIR mapping rule
- Sign-up to present a C-CDA Example/Proposal at the upcoming IAT
- Report an errata in a current specification
- Request a change to the current specification
- Report a certification problem
- Develop and propose a new template
- Initiate a discussion within HL7 WG, SDWG, or CMG
Topic Leaders

John D’Amore
Linda Michaelson
Jean Duteau
Joe Lamy

Emma Jones
David Riddle
<table>
<thead>
<tr>
<th>Time (ET)</th>
<th>Goal</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:00am – 10:15am</td>
<td>Opening</td>
</tr>
<tr>
<td>10:15am – 11:00am</td>
<td>Topic 1: John D’Amore – Life to Death in CDA</td>
</tr>
<tr>
<td>Break (15 mins)</td>
<td>Break</td>
</tr>
<tr>
<td>11:15am–12:00pm</td>
<td>Topic 2: Linda Michaelson – Payer Section</td>
</tr>
<tr>
<td>Break (45 mins)</td>
<td>Lunch Break:</td>
</tr>
<tr>
<td>12:45pm – 1:30pm</td>
<td>Topic 3: Jean Duteau – Identifiers</td>
</tr>
<tr>
<td>Break (15 mins)</td>
<td></td>
</tr>
<tr>
<td>1:45pm – 2:30pm</td>
<td>Topic 4: Joe Lamy – Encounter Document Creation</td>
</tr>
<tr>
<td>Break (15 mins)</td>
<td></td>
</tr>
<tr>
<td>2:45pm – 3:30pm</td>
<td>Topic 5: Emma Jones – Clinical Notes</td>
</tr>
<tr>
<td>Break (15 mins)</td>
<td></td>
</tr>
<tr>
<td>3:45pm – 4:30pm</td>
<td>Topic 6: David Riddle– C-CDA Participation</td>
</tr>
<tr>
<td>Break (15 mins)</td>
<td></td>
</tr>
<tr>
<td>4:45pm – 5:30pm</td>
<td>Open Discussion</td>
</tr>
<tr>
<td>5:30pm – 6:00pm</td>
<td>Closing</td>
</tr>
</tbody>
</table>
Diameter Health

John D’Amore

Life To Death in C-CDA
Agenda

▪ How death is managed today
▪ Death in C-CDA
  - Usage of deceasedInd
  - Usage of deceasedTime
  - How to transmit “cause of death” in C-CDA
▪ Life in C-CDA
  - Discuss use of pregnancy template
  - 2 Examples of pregnancy with 35 weeks gestation
You can render an XML locally but you generally need to adjust your browser settings.

Here’s how to do in Firefox

1. Open Firefox and enter “about:config” in URL
2. Search for “privacy.file_unique_origin” in settings and toggle to “false”
3. Save XML & stylesheet in same directory
4. Make sure you have reference in XML
   ```xml
   <?xml-stylesheet type='text/xsl' href='CDA.xsl'>
   ```
Approved Samples (2018)

- [https://github.com/HL7/C-CDA-Examples/tree/master/Header/Patient%20Deceased](https://github.com/HL7/C-CDA-Examples/tree/master/Header/Patient%20Deceased)
- Uses two sdtc extension to denote date:
  - `sdtc:deceasedInd (@value="true")`
  - `sdtc:deceasedTime (e.g. @value="20180315")`
- No changed proposed to that mechanism, but there may be opportunity for improvement…
**Stylesheet Rendering**

**HL7 Stylesheet**

*Patient Summary (May 9, 2017, 12:49:23AM -0500)*

**Patient**
- Legal: Adam DEADMAN

**Author**
- Patricia Patty PRIMARY M.D.

**Table of Contents**
- Allergies and Adverse Reactions

**Sample Vendor Stylesheets**

**DEADMAN, Adam**
- Male
- DOB: Oct 22, 1952
- Race: White
- Language: English

**Patient Demographics**
Opportunity to Improve

- How should vendors make sure to consistently render:
  1. All vendors update their stylesheets?
  2. Should “deceased” be displayed somewhere else?
     a) Potential to add to document title?
     b) Some vendors add to patient name (seems bad practice)
     c) Is adding a coded reason of death section appropriate?
     d) Anywhere else?
  3. No action needed
Including Cause of Death

2.2 Coded Cause of Death Section

Published as part of Vital Records Death Reporting V2

Table 22: Coded Cause of Death Section Contexts

<table>
<thead>
<tr>
<th>Contained By:</th>
<th>Contains:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coded Cause of Death Document (V2) (required)</td>
<td>Pregnancy Status (V2) (required)</td>
</tr>
<tr>
<td></td>
<td>Activity at Time of Death (required)</td>
</tr>
<tr>
<td></td>
<td>Tobacco Use Contributed to Death (V2) (required)</td>
</tr>
<tr>
<td></td>
<td>Coded Death Causal Information Organizer (required)</td>
</tr>
<tr>
<td></td>
<td>Injury Organizer (required)</td>
</tr>
</tbody>
</table>

Activity at Time of Death

While engaged in other specified activities

Injury Details

Injury Involved in Death

Yes

Injury Description

Car left road, hit tree and rolled over.

Injury Date

Nov 1, 2016

Place of Injury (address)

22 Any Street, Anyville, 12345, US

Place of Injury (coded)

Street/Highway

Injury Association with Transportation Event

Participant

Yes

Injury Association with Work

Yes

Pregnancy Status (V2)

Yes

Pregnancy Edit Flag

On (verified)

Tobacco Use Contributed to Death

No
Options to record cause of death

1. Use the Vital Records Death Reporting Section
   - Advantage: It’s a separate section
   - Disadvantage: It’s complex with many SHALL 1..1

2. Add entryRelationship with typeCode="CAUS"
   - Advantage: It’s similar to how family history reports
   - Disadvantage: Not a separate section, not formal template

3. Use the C-CDA Deceased Observation
   - Advantage: It’s a templated observation
   - Disadvantage: Unclear where it goes
Example of Pregnancy Status

**Section: Problem vs. Social History** (also noted in Health Concern)

- **Unknown if pregnant**

- **Not pregnant**
Pregnancy Acceptable Values

7. SHALL contain exactly one [1..1] value with @xsi:type="CD", where the code SHALL be selected from ValueSet Extended Pregnancy Status urn:oid:2.16.840.1.113762.1.4.1099.24 DYNAMIC (CONF:81-457).

8. MAY contain zero or one [0..1] entryRelationship (CONF:81-458) such that it
   a. SHALL contain exactly one [1..1] @typeCode="REFR" Refers to (CodeSystem: HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002 STATIC) (CONF:81-459).
   b. SHALL contain exactly one [1..1] Estimated Date of Delivery (identifier: urn:oid:2.16.840.1.113883.10.20.15.3.1) (CONF:81-15584).

Table 410: Extended Pregnancy Status

<table>
<thead>
<tr>
<th>Code</th>
<th>Code System</th>
<th>Code System OID</th>
<th>Print Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>102874004</td>
<td>SNOMED CT</td>
<td>urn:oid:2.16.840.1.113883.6.96</td>
<td>Possible pregnancy (finding)</td>
</tr>
<tr>
<td>60001007</td>
<td>SNOMED CT</td>
<td>urn:oid:2.16.840.1.113883.6.96</td>
<td>Not pregnant (finding)</td>
</tr>
<tr>
<td>77386006</td>
<td>SNOMED CT</td>
<td>urn:oid:2.16.840.1.113883.6.96</td>
<td>Pregnant (finding)</td>
</tr>
</tbody>
</table>

Value Set: Extended Pregnancy Status urn:oid:2.16.840.1.113762.1.4.1099.24
(Clinical Focus: Defines the status of pregnancy),(Data Element Scope: Pregnancy status at time of encounter),(Inclusion Criteria: SNOMED CT concepts intended to indicate whether a patient is pregnant, not pregnant or possibly pregnant.),(Exclusion Criteria: None)

This value set was imported on 6/24/2019 with a version of 20190319.
Value Set Source:
Example of Pregnancy

C-CDA Template (NOT Pregnancy IG*)

```xml
<observation classCode="OBST" moodCode="EVN"/>
<templateId root="2.16.840.1.113883.10.20.15.3.8"/>
<id extension="123456789" root="2.16.840.1.113883.19"/>
<code system="Assertion" codeSystem="2.16.840.1.113883.5.4"/>
<text>
  <reference value="#5Observation2"/>
</text>
<statusCode code="completed"/>
<effectiveTime><low value="20190901"/></effectiveTime>
<value xsi:type="CD" code="77386006" displayName="pregnant" codeSystem="2.16.840.1.113883.6.96"/>
<entryRelationship typeCode="REFR"/>
<templateId root="2.16.840.1.113883.10.20.15.3.1"/>
<observation classCode="OBST" moodCode="EVN"/>
<templateId root="2.16.840.1.113883.10.20.15.3.1"/>
<code system="11778-8" codeSystem="2.16.840.1.113883.6.1" displayName="Estimated date of delivery"/>
<statusCode code="completed"/>
<value xsi:type="TS" value="20190924"/>
<observation/>
<entryRelationship>
  <author/>
</entryRelationship>
<templateId root="2.16.840.1.113883.10.20.22.4.119"/>
<time value="201903101256-0500"/>
</observation>

Week gestation

Date of conception

Date of delivery

Date of last author update

Problem List C-CDA (Real-World Alignment)

```xml
<observation classCode="OBST" moodCode="EVN"/>
<templateId root="2.16.840.1.113883.10.20.22.4.4"/>
<templateId root="2.16.840.1.113883.10.20.22.4.4" extension="2015-08-01"/>
<id extension="123456789" root="2.16.840.1.113883.19"/>
<code system="55078006" display="Problem" codeSystem="2.16.840.1.113883.6.96" codeSystemName="SNOMED CT"/>
<translation code="751326-9" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC" display="Problem"/>
<code/>
<text>
  <reference value="#Problem1"/>
</text>
<statusCode code="completed"/>
<effectiveTime><low value="20190901"/></effectiveTime>
<value xsi:type="CD" code="77386006" displayName="pregnant" codeSystem="2.16.840.1.113883.6.96"/>
<entryRelationship typeCode="REFR"/>
<templateId root="2.16.840.1.113883.10.20.22.4.119"/>
<translation code="38939008" display="Gestation period, 10 weeks" codeSystem="2.16.840.1.113883.6.96"/>
<translation code="234.10" display="10 weeks gestation of pregnancy" codeSystem="2.16.840.1.113883.6.90"/>
<value/>
<author/>
<templateId root="2.16.840.1.113883.19.20.22.4.119"/>
<time value="201903101256-0500"/>
</observation>


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Optum

Linda Michaelsen

Payer Section

© Health Level Seven and HL7 are registered trademarks of Health Level Seven International, registered with the United States Patent and Trademark Office.
The Payers Section contains data on the patient’s payers, whether "third party" insurance, self-pay, other payer or guarantor, or some combination of payers, and is used to define which entity is the responsible fiduciary for the financial aspects of a patient’s care. Each unique instance of a payer and all the pertinent data needed to contact, bill to, and collect from that payer should be included. Authorization information that can be used to define pertinent referral, authorization tracking number, procedure, therapy, intervention, device, or similar authorizations for the patient or provider, or both should be included. At a minimum, the patient’s pertinent current payment sources should be listed. The sources of payment are represented as a Coverage Activity, which identifies all of the insurance policies or government or other programs that cover some or all of the patient’s healthcare expenses. The policies or programs are sequenced by preference. The Coverage Activity has a sequence number that represents the preference order. Each policy or program identifies the covered party with respect to the payer, so that the identifiers can be recorded.
### Payer Section (V3)

<table>
<thead>
<tr>
<th>0..* Coverage Activity(V3)</th>
<th>Believe this repeats per encounter but not defined</th>
</tr>
</thead>
<tbody>
<tr>
<td>1..* Entry Relationship</td>
<td>Repeats for insurance and/or responsible party</td>
</tr>
<tr>
<td></td>
<td>SequenceNumber: 1 for primary, 2 for secondary, etc</td>
</tr>
<tr>
<td></td>
<td>1..1 PolicyActivity(V3)</td>
</tr>
<tr>
<td>1..1 Performer</td>
<td>Responsible Party/Payer where payer name and id are located; or self pay</td>
</tr>
<tr>
<td>0..* Performer</td>
<td>Guarantor used to identify another person paying for care, example parent</td>
</tr>
<tr>
<td>1..1 Participant</td>
<td>Patient if Patient is subscriber all identifiers go here (id, group, rxbin, etc)</td>
</tr>
<tr>
<td></td>
<td>Subscriber only present if Patient is NOT the subscriber (has subscriber id, group, rxbin, etc)</td>
</tr>
<tr>
<td>1..1 Entry Relationship</td>
<td>Prior Authorization Should likely not always be required since each visit does NOT require a prior auth (STU Comment entered)</td>
</tr>
</tbody>
</table>
The Questions

- How do you clearly identify a payer?
- How do you distinguish between the different identifiers from the payer?
- What do you do when there is not a Prior Authorization for the visit?
- How do you link multiple occurrences of Coverage in a CCDA document to the correct encounter?
Can we use the Payer ID used in Claims?

- Currently an id with a root and extension
- How it is handled in claims

\[
\text{ISA*03* *00* *ZZ*1234567A *27*04112 *030101*1253**00501*100000002*1*T*:~}
\]

In the particular example – the payer requires 04112 in the ISA08 which is the Interchange Receiver ID.

\[
\text{NM1*PR*2*ABC INSURANCE CO*****PI*04112~}
\]

04112 was one of the payer ID’s that this particular payer uses

- While many are NAIC numbers, there is no one system for this id

_Potentially_

<assignedEntity>
<id root="2.16.840.1.113883.6.300" extension="04112"/>
Will the type extension on id help distinguish between identifiers?

- Proposal to add an extension to id to allow for identifying the “type” of id. This could be used to distinguish between identifiers that belong to same payer (root)
  - Subscriber id
  - Group id
  - RxBIN
  - RxPCN
  - RxGroup

```xml
<participantRole classCode="PAT">
  <!-- Health plan ID for patient. -->
  <id root="1.1.1.1.1.1.1.1.14" extension="113834885" />
  <id root="1.1.1.1.1.1.1.1.10" extension="49502" />
  <id root="1.1.1.1.1.1.1.1.31" extension="113834" />
  <id root="1.1.1.1.1.1.1.1.32" extension="9999" />
  <id root="1.1.1.1.1.1.1.1.14" extension="OGroup" />
```
Do you nullFlavor the Prior Authorization entryRelationship when there isn’t one?

- Since most visits do not require a prior authorization but entryRelationship is required how do you handle now?
- STU Comment filed to request change to optional.

http://www.hl7.org/dstucomments/showdetail_comment.cfm?commentId=2007
How do you indicate which encounter the coverage is for?

- effectiveDate in Coverage Activity?
- entryRelationship to Encounter?
ADDITIONAL RESOURCES
Payer Section (V3)

Coverage Activity(V3) root 2.16.840.1.113883.10.20.22.4.60 extension=2015-08-01
Code = 48768-6 Payment sources (LOINC)

Entry Relationship

SequenceNumber:: Sequence of coverage

1..* PolicyActivity(V3) root 2.16.840.1.113883.10.20.22.4.61 extension=2015-08-01
1..1 code from 2.16.840.1.113883.3.88.12.3221.5.2 (Health Insurance Type)
1..n translation from 2.16.840.1.114222.4.11.3591 (Payer)
1..1 Performer-Responsible Party/Payer
1..1 code from 2.16.840.1.113883.1.11.10416 (HL7FinanciallyResponsiblePartyType)
Address, telecom, Represented Organization
AssignedEntity – where payer id is located and HL7FinanciallyResponsiblePartyType

0..* Performer- Guarantor
0..1 code from 2.16.840.1.113883.5.110
Address, telecom
RepresentedOrganization

1..1 Participant - Member
1..1 typeCode urn:oid:2.16.840.1.113883.5.90 (HL7ParticipationType) = COV
effectiveTime – high low
1..1 ParticipantRole
Code from 2.16.840.1.113883.1.11.18877 (Coverage Role Type) , self, family, etc

0..1 Participant – Subscriber (not present if Member is subscriber)
1..1 typeCode 2.16.840.1.113883.5.90 (HL7ParticipationType) = HLD
1..1 ParticipantRole
2.16.840.1.113883.5.1002 HL7ActRelationshipType) = REFR
a. SHALL contain exactly one [1..1] @typeCode="REFR" Refers to (CodeSystem:
HL7ActRelationshipType urn:oid:2.16.840.1.113883.5.1002 STATIC) (CONF:1198-8940).

b. The target of a policy activity with act/entryRelationship/@typeCode="REFR" SHALL be an
authorization activity (templateId 2.16.840.1.113883.10.20.1.19) OR an act, with
act[@classCode="ACT"] and act[@moodCode="DEF"], representing a description of the coverage plan
(CONF:1198-8942).

c. A description of the coverage plan SHALL contain one or more act/id, to represent the plan identifier,
and an act/text with the name of the plan (CONF:1198-8943).
Example List

A - Member is Subscriber, single insurance – Slide 10
B - Member is not Subscriber, single insurance Slide 11
C - Member has two insurance, primary Subscriber and secondary dependent Slide 12/13
D - Member has insurance but service is not covered Slide 14
E - Self Pay – Slide 15
F - Guarantor Pay (Child as example) – Slide 16
A Payer Section (V3) – Single Insurance where Patient is subscriber

Coverage Activity(V3) root 2.16.840.1.113883.10.20.22.4.60 extension=2015-08-01
Code = 48768-6 Payment sources (LOINC)

1..* Entry Relationship
SequenceNumber: Sequence of coverage 1
1..1 PolicyActivity(V3) root 2.16.840.1.113883.10.20.22.4.61 extension=2015-08-01
  1..1 code from 2.16.840.1.113883.3.88.12.3221.5.2 (Health Insurance Type) - MB for Medicare Part B
  1..n translation from 2.16.840.1.114222.4.11.3591 (Payer) – 1 for Medicare

1..1 Performer- Responsible Party/PAYER
  @typeCode="PRF"
  1.1 AssignedEntity
  1..* id – would be identifier for the payer (NOT the Subscriber, Dependent, Member)
    0..1 code from 2.16.840.1.113883.1.11.10416 (HL7FinanciallyResponsiblePartyType) SUBSCR
    0..1 Address
    0..* telecom
    0..1 Represented Organization (Insurance Company name)
      0..1 Address, 0..1 Telecom

1..1 Participant PATIENT is the SUBSCRIBER
  1..1 typeCode um:oid:2.16.840.1.113883.5.90 (HL7ParticipationType) = COV
    Time – high low

1..1 ParticipantRole
  Id (Root for Payer and Extension is SubscriberId)
  Group
  RXBIN
  RXPCN
  RXGroup
  RXID
  Code from 2.16.840.1.113883.1.11.18877 (Coverage Role Type) set to self
### Coverage Activity (V3) root 2.16.840.1.113883.10.20.22.4.60 extension=2015-08-01

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Text</th>
</tr>
</thead>
<tbody>
<tr>
<td>0..*</td>
<td></td>
<td>Coverage Activity (V3) root 2.16.840.1.113883.10.20.22.4.60 extension=2015-08-01</td>
</tr>
</tbody>
</table>

- Code = 48768-6 Payment sources (LOINC)

### Entry Relationship

<table>
<thead>
<tr>
<th>SequenceNumber</th>
<th>Sequence of coverage (1)</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>1..1</th>
<th>PolicyActivity (V3) root 2.16.840.1.113883.10.20.22.4.61 extension=2015-08-01</th>
</tr>
</thead>
</table>

- 1..* id – 1..1 code from 2.16.840.1.113883.3.88.12.3221.5.2 (Health Insurance Type) **C1** (Commercial)
- 1..n translation from 2.16.840.1.114222.4.11.3591 (Payer) **6** (BC/BS)

### Performer-Responsible Party/Payer

- `@typeCode="PRF"
- 1..1 AssignedEntity
- 1..* id would be identifier for the payer (NOT the Subscriber, Dependent, Member)
- 0..1 code from 2.16.840.1.113883.11.10416 (HL7FinanciallyResponsiblePartyType) **DEPEN**
- 0..1 Address
- 0..* telecom
- 0..1 Represented Organization (Insurance Company name)
- 0..1 Address

### Participant - Patient

- 1..1 typeCode um:oid:2.16.840.1.113883.5.90 (HL7ParticipationType) = COV
- time – high low

### ParticipantRole

- Id (Root for Payer and Extension is DependentId) if exists
- Code from 2.16.840.1.113883.11.18877 (Coverage Role) Type – most common set to **FAMDEP**

### Participant – Subscriber (not present if Patient is subscriber)

- 0..1 typeCode 2.16.840.1.113883.5.90 (HL7ParticipationType) = HLD

### ParticipantRole

- Id (Root for Payer and Extension is SubscriberId)
- 2.16.840.1.113883.5.1002 HL7ActRelationshipType) = **REFR**
<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Text</th>
</tr>
</thead>
<tbody>
<tr>
<td>48768-6</td>
<td>Payment sources (LOINC)</td>
<td></td>
</tr>
<tr>
<td>1..1</td>
<td>PolicyActivity(V3) root 2.16.840.1.113883.10.20.22.4.61</td>
<td>extension=2015-08-01</td>
</tr>
<tr>
<td>1..1</td>
<td>Performer-Responsible Party/Payer</td>
<td></td>
</tr>
<tr>
<td></td>
<td>@typeCode=&quot;PRF&quot;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1.1 AssignedEntity</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1..* id – would be identifier for the payer (NOT the Member)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0..1 code from 2.16.840.1.113883.3.88.12.3221.5.2 (Health Insurance Type)</td>
<td>C1 Commercial</td>
</tr>
<tr>
<td></td>
<td>1..n translation from 2.16.840.1.114222.4.11.3591 (Payer)</td>
<td>6 BCBS</td>
</tr>
<tr>
<td>1..1</td>
<td>Participant - Patient</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1..1 typeCode urn:oid:2.16.840.1.113883.5.90 (HL7ParticipationType)</td>
<td>COV</td>
</tr>
<tr>
<td></td>
<td>Time – high low</td>
<td></td>
</tr>
<tr>
<td>1..1</td>
<td>ParticipantRole</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Id (Root for Payer and Extension is SubscriberId)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Code from 2.16.840.1.113883.1.11.18877 (Coverage Role Type)</td>
<td>SELF</td>
</tr>
</tbody>
</table>

Continued on next slide
Continued…
C Payer Section (V3) - Insurance where Patient has two Insurance, Primary Subscriber, Secondary Dependent (2)

SequenceNumber- Sequence of coverage (2)
1..1 PolicyActivity(V3) root 2.16.840.1.113883.10.20.22.4.61 extension=2015-08-01

1..1 code from 2.16.840.1.113883.3.88.12.3221.5.2 (Health Insurance Type) 311 Tricare
1..n translation from 2.16.840.1.114222.4.11.3591 (Payer) OT Other

1..1 Performer-Responsible Party/PAYER

1..1 code from 2.16.840.1.113883.1.11.10416 (HL7FinanciallyResponsiblePartyType) DEPEN
Address, telecom, Represented Organization
AssignedEntity – where payer id is located and HL7FinanciallyResponsiblePartyType
urn:oid:2.16.840.1.113883.1.11.10416 DYNAMIC
1..* Id – would be identifier for the payer (NOT the Subscriber, Dependent, Member)
(address, telecom, etc)

1..1 Participant - Patient

1..1 typeCode um:id:2.16.840.1.113883.5.90 (HL7ParticipationType) = COV
Time – high low

1..1 ParticipantRole

Id (Root for Payer and Extension is DependentId) if exists
Code from .16.840.1.113883.1.11.18877 (Coverage Role Type) FAMDEP

0..1 Participant – Subscriber (not present if Member is subscriber)

1..1 ParticipantRole

2.16.840.1.113883.5.1002 HL7ActRelationshipType) = REF
Id (Root for Payer and Extension is SubscriberId)
D Payer Section (V3) - Insurance where Patient is Subscriber but Service is Not Covered so Guarantor Required

Coverage Activity(V3) root 2.16.840.1.113883.10.20.22.4.60 extension=2015-08-01

Entry Relationship

PolicyActivity(V3) root 2.16.840.1.113883.10.20.22.4.61 extension=2015-08-01

Code = 48768-6 Payment sources (LOINC)

SequenceNumber

1..*

1..1 Performer - Payer

1..1 code from 2.16.840.1.113883.1.11.10416 (HL7FinanciallyResponsiblePartyType) SUBSCR

AssignedEntity - where payer id is located and HL7FinanciallyResponsiblePartyType

urn:oid:2.16.840.1.113883.1.11.10416 DYNAMIC

Participant - Member

1..1 typeCode urn:oid:2.16.840.1.113883.5.90 (HL7ParticipationType) = COV

Time – high low

ParticipantRole

Id (Root for Payer and Extension is SubscriberId)

Code from 2.16.840.1.113883.11.18877 (Coverage Role Type) , SELF
D Payer Section (V3) for Insurance where Patient is Subscriber but Service is Not Covered so Guarantor Required

Repeat of Policy Activity for Guarantor information

1..* Entry Relationship
   SequenceNumber - 2

1..1 PolicyActivity(V3) root 2.16.840.1.113883.10.20.22.4.61 extension=2015-08-01
   1..* id – would be identifier for the payer (NOT the Subscriber, Dependent, Member)
   1..1 code from 2.16.840.1.113883.3.88.12.3221.5.2 (Health Insurance Type) MB Medicare
   1..n translation from 2.16.840.1.114222.4.11.3591 (Payer) 1 Medicare Part B

1..1 Performer- Responsible Party
   1..1 code from 2.16.840.1.113883.1.11.10416 (HL7FinanciallyResponsiblePartyType) GUAR
   Address, telecom, Represented Organization
   AssignedEntity – where payer id is located and HL7FinanciallyResponsiblePartyType

0..* Performer- Guarantor (need guarantor to pay what is not covered)
   1..1 code from 2.16.840.1.113883.5.110
   Address, telecom
   RepresentedOrganization

1..1 Participant - Member
   1..1 typeCode urn:oid:2.16.840.1.113883.5.90 (HL7ParticipationType) = COV
   Time – high low

1..1 ParticipantRole
   Id
   Code from 2.16.840.1.113883.1.11.18877 (Coverage Role Type) , SELF
E Payer Section (V3) for No Insurance, Self Pay

Coverage Activity (V3) root 2.16.840.1.113883.10.20.22.4.60 extension=2015-08-01

Code = 48768-6 Payment sources (LOINC)

Entry Relationship

SequenceNumber: Sequence of coverage

1..* PolicyActivity (V3) root 2.16.840.1.113883.10.20.22.4.61 extension=2015-08-01

1..1 code from 2.16.840.1.113883.3.88.12.3221.5.2 (Health Insurance Type) PP Personal Payment (Cash-No Insurance)

1..1 translation from 2.16.840.1.114222.4.11.3591 (Payer) 81 Self Pay

1..1 code from 2.16.840.1.113883.1.11.10416 (HL7FinanciallyResponsiblePartyType) PAT or INDIV

1..1 AssignedEntity – where payer id is located and HL7FinanciallyResponsiblePartyType urn:oid:2.16.840.1.113883.1.11.10416 DYNAMIC

1..1 Participant - Member

1..1 typeCode urn:oid:2.16.840.1.113883.5.90 (HL7ParticipationType) = COV

Time – high low

1..1 ParticipantRole

Id (Root for Facility and Account Number?)

Code from 2.16.840.1.113883.1.11.18877 (Coverage Role Type) SELF
## F Payer Section (V3) for No Insurance, Guarantor Paying

### Coverage Activity(V3) root 2.16.840.1.113883.10.20.22.4.60 extension=2015-08-01

Code = 48768-6  Payment sources (LOINC)

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<th>text</th>
</tr>
</thead>
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<tr>
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<td><strong>Entry Relationship</strong></td>
<td></td>
</tr>
<tr>
<td>1..*</td>
<td>SequenceNumber</td>
<td>Sequence of coverage</td>
</tr>
<tr>
<td>1..1</td>
<td><strong>PolicyActivity(V3) root 2.16.840.1.113883.10.20.22.4.61 extension=2015-08-01</strong></td>
<td></td>
</tr>
<tr>
<td>1..1</td>
<td>code from 2.16.840.1.113883.3.88.12.3221.5.2 (Health Insurance Type)</td>
<td><strong>PP</strong> Personal Payment (Cash-No Insurance)</td>
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<tr>
<td>1..1</td>
<td>translation from 2.16.840.1.114222.4.11.3591 (Payer)</td>
<td><strong>81 Self Pay</strong></td>
</tr>
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<td>1..1</td>
<td><strong>Performer-Responsible Party/Payer</strong></td>
<td></td>
</tr>
<tr>
<td>1..1</td>
<td>code from 2.16.840.1.113883.1.11.10416 (HL7FinanciallyResponsiblePartyType)</td>
<td><strong>GUAR</strong> Address, telecom, Represented Organization AssignedEntity – where payer id is located and HL7FinanciallyResponsiblePartyType</td>
</tr>
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<td>0..*</td>
<td><strong>Performer- Guarantor</strong></td>
<td></td>
</tr>
<tr>
<td>1..1</td>
<td>code from 2.16.840.1.113883.5.110</td>
<td><strong>GUAR</strong> Address, telecom RepresentedOrganization</td>
</tr>
<tr>
<td>1..1</td>
<td><strong>Participant - Member</strong></td>
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</tr>
<tr>
<td>1..1</td>
<td>typeCode</td>
<td><strong>urn:oid:2.16.840.1.113883.5.90 (HL7ParticipationType) = COV</strong></td>
</tr>
<tr>
<td>1..1</td>
<td>ParticipantRole</td>
<td>Code 2.16.840.1.113883.5.111</td>
</tr>
<tr>
<td>1..1</td>
<td>Time – high low</td>
<td></td>
</tr>
<tr>
<td>1..1</td>
<td><strong>ParticipantRole</strong></td>
<td></td>
</tr>
<tr>
<td>1..1</td>
<td>Id (Root for Payer and Extension is SubscriberId)</td>
<td>Code from 2.16.840.1.113883.1.11.18877 (Coverage Role Type)</td>
</tr>
</tbody>
</table>
13.1 Resource Coverage - Content

Financial instrument which may be used to reimburse or pay for health care products and services. Includes both insurance and self-payment.

13.1.1 Scope and Usage

The Coverage resource is intended to provide the high-level identifiers and descriptors of an insurance plan, typically the information which would appear on an insurance card, which may be used to pay, in part or in whole, for the provision of health care products and services.

This resource may also be used to register ‘SelfPay’ where an individual or organization other than an insurer is taking responsibility for payment for a portion of the health care costs. Selfpay should not be confused with being a guarantor of the patient’s account.

The Coverage resource is a “event” resource from a FHIR workflow perspective - see Workflow Request.

13.1.2 Boundaries and Relationships

The eClaim domain includes a number of related insurance resources

| Coverage | The Coverage resource is intended to provide the high-level identifiers and descriptors of a specific insurance plan for a specific individual - essentially the insurance card information. This may alternately provide the individual or organization, selfpay, which will pay for products and services rendered. |
| Contract | A Contract resource holds the references to parties who have entered into an agreement of some type, the parties who may sign or witness such an agreement, descriptors of the type of agreement and even the actual text or executable copy of the agreement. The agreement may be of a variety of types including service contracts, insurance contracts, directives, etc. The contract may be either definitional or actual instances. |
| InsurancePlan | The InsurancePlan resource holds the definition of an insurance plan which an insurer may offer to potential clients through insurance brokers or an online insurance marketplace. This is only the plan definition and does not contain or reference a list of individuals who have purchased the plan. |

This resource is referenced by Account, Claim, ClaimResponse, CoverageEligibilityRequest, CoverageEligibilityResponse, DeviceRequest, EnrollmentRequest, ExplanationOfBenefit, MedicationRequest, ServiceRequest and Task

13.1.3 Resource Content

Structure UML XML JSON Turtle R3 Diff All
8.12 Resource Account - Content

| Patient Administration Work Group | Maturity Level: 2 | Trial Use | Security Category: Patient | Compartments: Device, Patient, Practitioner |

A financial tool for tracking value accrued for a particular purpose. In the healthcare field, used to track charges for a patient, cost centers, etc.

8.12.1 Scope and Usage

The Account resource acts as a central record against which charges, payments, and adjustments are applied. It contains information about which parties are responsible for payment of the account.

While the Account does conceptually have a balance, expressing that balance directly as a resource property is challenging due to the complexity of pricing contracts. An operation to retrieve the current balance of an account is in consideration as future work.

8.12.2 Boundaries and Relationships

The Account itself does not include information about the charges, payments or adjustments, but rather those resources, such as ChargeItem point to the account to which they apply. Payment and adjustment resources have not yet been developed.

8.12.3 Background and Context

The Account resource can be considered a "bucket" to which ChargeItem resources are linked. These charges are processed by a billing system, which determines the responsible parties for the balance of the account. The billing system then submits claims or sends statements to the appropriate parties. Once payment is received, an adjustment is applied to the Account. The internal calculation of balances and allocation of responsibility is expected to be internal to the billing systems. Only the inputs and outputs of the billing process is communicated in the relevant financial FHIR resources.

This resource is referenced by itself, ChargeItem, Encounter, EpisodeOfCare and Invoice
Duteau Design

Jean Duteau

Extending CDA To Add More Useful Identifiers
Extending CDA for more useful identifiers

- Problem - how do you determine the meaning of a given identifier in a CDA document?
- Example: recordTarget/patientRole/id is 1..*
  - How do you know what each identifier actually conveys?
  - II datatype has root – normally an OID
  - Also assigningAuthorityName – not normally provided and doesn’t necessarily give the meaning
How are applications distinguishing identifiers?

- If you aren’t taking the IL.root OID and doing an OID discovery process, what are you doing?
What FHIR does?

<table>
<thead>
<tr>
<th>Name</th>
<th>Flags</th>
<th>Card.</th>
<th>Type</th>
<th>Description &amp; Constraints</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identifier</td>
<td>Σ</td>
<td>N</td>
<td>Element</td>
<td>An identifier intended for computation</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Elements defined in Ancestors: id, extension</td>
</tr>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>usual</td>
</tr>
<tr>
<td>use</td>
<td>?! Σ</td>
<td>0..1</td>
<td>code</td>
<td>IdentifierUse (Required)</td>
</tr>
<tr>
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<td>Σ</td>
<td>0..1</td>
<td>CodeableConcept</td>
<td>Description of identifier</td>
</tr>
<tr>
<td>system</td>
<td>Σ</td>
<td>0..1</td>
<td>uri</td>
<td>IdentifierType (Extensible)</td>
</tr>
<tr>
<td>value</td>
<td>Σ</td>
<td>0..1</td>
<td>string</td>
<td>The namespace for the identifier value</td>
</tr>
<tr>
<td>period</td>
<td>Σ</td>
<td>0..1</td>
<td>Period</td>
<td>The value that is unique</td>
</tr>
<tr>
<td>assigner</td>
<td>Σ</td>
<td>0..1</td>
<td>Reference(Organization)</td>
<td>Time period when id is/was valid for use</td>
</tr>
</tbody>
</table>

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Proposed CDA Schema extension
Extension gives us a "typing" of the identifier

- AlternatetIdentifier.code gives us a means of indicating what type of identifier is being provided
What do I want from you?

- Update the Companion Guide to add guidance on using this new extension that SDWG is creating
  - Yes?  Yes?  No?

- What are some real-world examples/use cases that show the value of this?
CommonWell & Carequality

Joe Lamy

Clarifying document lifecycles for Encounter and Patient Summary Documents

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Agenda

- Joint Document Content Work Group
- Sharing Through the Encounter Lifecycle
- Next steps for SDWG
- Extra/Background Slides (If Needed)
  - Guidance for Dynamically Generated documents
  - Use Cases for Versioning Encounter Summaries
  - Guidance on using the IHE mechanisms
  - Prioritized list of labs
  - Other work items in backlog
JOINT DOCUMENT CONTENT WORK GROUP
What is the Joint Document Content Work Group?

- Carequality and CommonWell launched in 2018
- Solve common problems
  - Too large C-CDA documents
  - Absence of clinical notes
  - Need for encounter summaries
  - Need for version management
- Output is best practices document
  - Each exchange incorporates into its governance process
What is the group’s “lane”?

- Top level operational spec for exchanges
- Participation from clinicians, vendors, standards SMEs
- Can address problems crossing multiple standards lanes
  - Content: HL7 CDA, C-CDA documents
  - Query and retrieval: IHE Document Sharing
  - Relationships between EHR state, queries, and generated content
- Can feed back issues to standards bodies
  - E.g. consider for C-CDA Companion Guide
Work so far

- Feb 2019: Concise Consolidated CDA: Deploying Encounter Summary CDA Documents with Clinical Notes
  - Guidance for Progress Notes and Discharge Summaries
  - Guidance for Clinical note placement
  - How dates in queries relate to returned/generated documents
  - Guidance for Smart Senders and Resilient Receivers

SHARING THROUGH THE ENCOUNTER LIFECYCLE
Challenges with encounter summaries

- **For consumers**
  - Want to get the same document if nothing has changed
  - Want to know without retrieving if something has changed

- **For generators**
  - Want to know when in encounter lifecycle is appropriate to share a document
  - Want to proactively create and host documents (even paper documents that are scanned and hosted), or generate documents when requested
  - Want to never generate a document if never asked for
When to share an encounter as document?

- When and how to share the current state of an incomplete encounter as an encounter summary document?
  - Encounter with a start but not an end date
  - Encounter that has concluded, but which still has outstanding results that are expected to be included in an updated encounter summary
  - Encounter waiting to be “locked down” or “signed”

- Share based on data completeness or explicit action?
  - As soon as enough data to generate a conformant document?
  - Only after a specific trigger (e.g. signing)?
  - Allow sharing in special cases (very incomplete) only through action?
Challenges with legalAuthenticator

- Intent of legalAuthenticator seems to be the provider “signing off” or “completing” the document
  - Some systems don’t populate this by default unless configured
    ➢ Receiving systems would have to decide after a certain time that they have the final version.
  - Some systems use a single configured person (e.g. HIMSS manager), rather than the clinician who actually attests
  - This may be use case dependent (Attachments IG requires legalAuth between payers and providers)
Clinicnals decided:
- Must share after encounter is done
- Not ok with waiting until legally authenticated to share (because of issues on next slide)
- Might want to share in-progress in some cases
  - Note: Discharge Summary required to have discharge date – can use nullFlavor?
- Must share all updates

Considered each of these as potentially marking an encounter as “done”
- End time is available
- Authenticator is available (discuss: passive vs. active attestation)
- Legal Authenticator is available

See CDA Book: 2.2.3 Potential for Authentication
A Responder MAY share an encounter summary document for an encounter that is in process. A Responder SHALL share an encounter summary document if any of the following is true:

- The end time for the encompassing encounter is defined.
- The encounter has been authenticated.
- The encounter has been legally authenticated (i.e., completed or "signed off").

A Responder SHALL have the capability to share updates to encounter summaries. If no data contributing to an encounter has changed since the last shared encounter summary, a Responder SHALL return the same stable document entry in response to a query. If any data contributing to an encounter has changed since the last shared encounter summary, a Responder SHALL return a new stable document entry in response to a query.
NEXT STEPS FOR SDWG
Next steps for SDWG

Note: These are not all from the topics presented today

- Need Results section in C-CDA Discharge Summary
  - There is a Hospital Discharge Studies Summary Section, but it’s text
  - Need discrete result entries, so Results Section (entries required)

- How to connect results to original order?
  - CDA allows an entire document to be in fulfillment of an order (inFulfillmentOf)
  - But when results are just part of a larger document?
Next steps for SDWG

- If a lab is cancelled, how to report?
  - Lab result in Results with statusCode code="cancelled"?
  - Lab order in Plan of Treatment with statusCode code="cancelled"?

- How to correct a lab result in a subsequent CDA?
  - Create a new result somehow tying to the original result (same id?)
  - Nothing in Table 335: Result Status, but ActStatus has “nullified” (created in error) and “obsolete” (replaced)
Next steps for SDWG

- Consider guidance for C-CDA Companion Guide
  - Incomplete encounters
  - Versioning
- Add labs to C-CDA rubric?
EXTRA/BACKGROUND SLIDES (IF NEEDED)
GUIDANCE FOR DYNAMICALLY GENERATED DOCUMENTS
They say “On-demand”, but it’s bigger than that

- The original ask was for help with “on-demand”
  - Few actually use the IHE On-Demand mechanism (host the metadata for a potential document and generate at retrieve)
  - But many generate documents or metadata on request

- Topic now covers all issues related to dynamic generation
  - How many documents should be generated?
  - Wait until retrieve to generate CDA (via Delayed Doc Assembly)
  - Indicate new version before retrieve (fix chicken and egg problem)
  - Handle long-latency generation (via XCA Deferred)
  - Guidance on using the IHE mechanisms
How many documents should be generated?

- Some vendors are generating new documents every time someone asks
  - New document ID, new creation time – metadata immediately deprecated so others won’t see in queries
  - Difficult to detect duplicative data

- When does it make sense to share the same document instance?
  - Same encounter, nothing has changed = share same instance
  - Encounter goes through revisions = share same versions
  - Patient summary (CCD) newly generated = each request gets new
USE CASES FOR VERSIONING ENCOUNTER SUMMARIES
Sharing versions of encounter summary documents

- **Examples**
  - Unexpected corrections
  - Expected updates (e.g. labs come in after discharge)

- **Versioning scenario**
  - Monday, you get four documents for a patient: one patient summary (CCD) and three encounter summaries.
  - During the week, two encounters get updated in the EHR, some multiple times, and others have requested those versions, causing them to be saved and earlier versions to be deprecated.
Versioning scenario continued

Friday, you see the patient again. Assuming you want the latest info, how do you want to see it?

- Just want to get the latest (i.e. 10, 6, 3, 9)
- Want to know without reading the document which of the encounters each update is for (i.e. 6 is an update to 2).
- Want to see the entire chain of revisions before retrieving and decide if I want to retrieve any intermediate versions.
GUIDANCE ON USING THE IHE MECHANISMS
Mechanisms in the IHE specs

Query
Stable
- Document Entry – stable
  - creationTime
  - Size
  - Hash
  - serviceStartTime
  - serviceStopTime
  - Etc.

On-Demand
- Document Entry – on demand
  - serviceStartTime (opt)
  - serviceStopTime (opt)
  - Etc.

Delayed Doc Assembly
- Document Entry – stable
  - creationTime
  - Size = dummy
  - Hash = dummy
  - serviceStartTime
  - serviceStopTime
  - Etc.

Retrieve
CDA
- Return same

Retrieve
CDA
- Return same

Red = the CDA document
Blue = Document entry: metadata about the document
Receive document entries when you query, documents when you retrieve
Some general guidance on IHE mechanisms

- If the data for an encounter has changed since the last generated encounter summary, a query shall return a new stable approved document entry, and the earlier stable entry shall be deprecated.
  - IOW, don’t have to retrieve to find out something has changed
  - Makes choice of mechanism more invisible to requester

- For encounter summaries, pre-create or use Delayed Document Assembly

- For patient summaries, use IHE On-Demand
PRIORITIZED LIST OF LABS
The problem

- Want to develop a prioritized list of laboratory results to be shared, similar to “most common allergens” from Allergies and Intolerances

- Many examples of problems captured
  - Mismatched codes
  - One to many mappings
  - Excessive use of local codes coming from labs

- Considering limiting scope to COVID-19 to get something useful
Potential solutions

- Leverage work Epic and Sutter have already been doing
- Develop harmonized list
- Develop mappings to-from other value sets
- Choose deployment options and governance
  - Burden on the source to do mappings; harmonized values on the wire
  - Just publish mappings and leave to implementers

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Other work items in backlog

Additions/revisions to v1.1 guide
Best practices for rendering documents
Guidance for Data Provenance
Guidance for documents vs. clinical scenarios
Guidance for longitudinal view
Guidance for patient summaries

Guidance for populating meaningful narratives
Guidance for Referral Notes and Consultation Notes
Guidance for sharing entries within/across documents
Guidance for meaningful codes
Problems with name formats between XDS/CDA
Allscripts

Emma Jones
Cecilia Wong
Ken Burney

Implementing Clinical Notes
Clinical Notes Implementation

- **Workflows**
  - CCDA
    - Encounters
    - Procedures
    - Result Organizer
    - Result Observation
    - Reasons for Referrals
    - Hospital Course
    - Notes Section
  - Contrast FHIR expectations
    - DiagnosticReport
    - DocumentReference
Clinical Notes Implementation

- Unstructured Documents, Comments, Flags – how should differentiation occur?
- Association with other “concept” Domains (e.g. Vital Signs, …etc and use of LOINC codes)
- Continue to push Discrete data
  - Over prescription of clinical notes may inadvertently cause diminish use of discrete data
- Clinical Notes considerations specific to Care Settings
  - Inpatient – May have more discipline specific notes
  - Ambulatory Care - outpatient, home care, community care, etc. – may have discipline specific and concept specific
  - Long term care – May have more ‘free text’ notes than
- Notes Filtering/Searching
  - Are all “clinical notes” meant to be shared?
    - Clinical Decision making aspect
  - Will this increase data dumping and increase CDA document size?
  - Tagging concept for easier searching (e.g. Key words) – can this be supported in CDA docs.
Clinical Notes – Potential Action

- Update Companion Guide to include more concise guidance
- Feedback about use of “Clinical Notes” in CDA documents
  - Relationship to use of Discreet data
  - Relationship to CDA document size
- Alignment with FHIR
Cerner Corporation

David Riddle

Mapping USCDI PAMPI from C-CDA to FHIR US CORE and Provenance
GOAL

- Move toward establishing comprehensive and consistent direction on how to map C-CDA participations to US Core resources that provides the level of detail required to ensure consistent implementation.
- The mappings proposed in this presentation focus on mapping of C-CDA author, informant & performer participations for US Core Conditions and AllergyIntolerances, but should help illustrate the need for comprehensive and consistent direction on this topic for all PAMPI resources.
- What form should this direction take?
  - Documentation in a new Implementation or Companion Guide?
  - Rubric rules to raise expectation on use of the Provenance Author Participation template?
  - Examples that cover all of the PAMPI entries/resources?
MAPPING C-CDA PARTICIPATIONS TO FHIR US CORE, C-CDA ON FHIR AND PROVENANCE
Intuitive Mapping at the Header Level

- Mapping of **C-CDA Header** participations to the **CCDA-on-FHIR-US-Realm-Header Composition Profile**

- Note the parity between C-CDA element name and CCDA on FHIR-US-Realm-Header attributes

- Also note the parity in cardinality

<table>
<thead>
<tr>
<th>CDA Header Participations</th>
<th>CCDA on FHIR US Realm Header Attributes</th>
</tr>
</thead>
<tbody>
<tr>
<td>author 1..*</td>
<td>Composition.author 1..*</td>
</tr>
<tr>
<td>informant 0..* (Assigned Provider)</td>
<td>Composition.extension:informant_extension 0..*</td>
</tr>
<tr>
<td>informant 0..* (Non-Provider)</td>
<td></td>
</tr>
<tr>
<td>performer 0..*</td>
<td>Composition.extension:performer_extension 0..*</td>
</tr>
<tr>
<td>dataEnterer 0..1</td>
<td>Composition.extension:data_enterer_extension 0..1</td>
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</tbody>
</table>

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Proposal

- Map the C-CDA author to the FHIR Condition.recorder
- Map the C-CDA informant to the FHIR Condition.asserter
- What if a C-CDA Problem has a performer?

```
<table>
<thead>
<tr>
<th>CDA Problem Participations</th>
<th>US Core Condition Attributes</th>
</tr>
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<tbody>
<tr>
<td>author 0..*</td>
<td>Condition.recorder 0..1</td>
</tr>
<tr>
<td>author/time</td>
<td>Condition.recordedDate 0..1</td>
</tr>
<tr>
<td>informant 0..*</td>
<td>Condition.asserter 0..1</td>
</tr>
<tr>
<td>performer 0..*</td>
<td>Condition.extension:performer_extension</td>
</tr>
</tbody>
</table>
```

Potential Related Concerns

- SOA Project currently mapping the C-CDA author to the FHIR Condition.asserter attribute

```
<table>
<thead>
<tr>
<th>CDA Problem Participations</th>
<th>US Core Condition Attributes</th>
</tr>
</thead>
<tbody>
<tr>
<td>author 0..*</td>
<td>Condition.asserter 0..1</td>
</tr>
<tr>
<td>author/time</td>
<td>Condition.assertedDate?</td>
</tr>
<tr>
<td>recorder 0..1</td>
<td>Condition.recorder 0..1</td>
</tr>
<tr>
<td>recordedDate 0..1</td>
<td></td>
</tr>
</tbody>
</table>
```

- Cardinality differences between C-CDA author (1..*) and informant (0..*) vs. recorder (0..1) and asserter (0..1) attributes on US Core Profiles
- Rules for assigning type to recorder and asserter references
- No home for informant or recordedDate on MedicationRequest
  - Are recordedDate & asserter extensions needed on MedicationRequest?
  - MedicationRequest.authoredOn (when prescribed)
- No home for recordedDate on Procedure
- No home for author on Immunization

PAMPI = Problems (Conditions), Allergies, Medications, Procedures and Immunizations
**About CDA Participations & US Core Profile Agents**

<table>
<thead>
<tr>
<th>Element/Attribute</th>
<th>Definitions</th>
<th>Definition Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>CDA Problem Observation/author</td>
<td>A party that originates the Act and therefore has responsibility for the information given in the Act. The author element represents the creator of the clinical document. The author may be a device or a person.</td>
<td>CDA R2</td>
</tr>
<tr>
<td>CDA Problem Observation/informant</td>
<td>A source of reported information (e.g., a next of kin who answers questions about the patient's history). For history questions, unless otherwise stated, the patient is implicitly the informant. The informant element describes an information source for any content within the clinical document. This informant is constrained for use when the source of information is an assigned health care provider for the patient.</td>
<td>CDA R2</td>
</tr>
<tr>
<td>FHIR Condition.recorder</td>
<td>Who recorded the condition. Individual who recorded the record and takes responsibility for its content</td>
<td>US Core Condition Profile.recorder</td>
</tr>
<tr>
<td>FiveWs.author</td>
<td>Who authored the content of the resource.</td>
<td>FiveWs Condition Mapping</td>
</tr>
<tr>
<td>CDA Problem Observation/performer</td>
<td>A person who actually and principally carries out an action. The performer participant represents clinicians who actually and principally carry out the serviceEvent. In a transfer of care this represents the healthcare providers involved in the current or pertinent historical care of the patient. Preferably, the patient's key healthcare care team members would be listed, particularly their primary physician and any active consulting physicians, therapists, and counselors.</td>
<td>CDA R2</td>
</tr>
<tr>
<td>FHIR Condition.extension:performer_extension</td>
<td>Represents clinicians who actually and principally carry out the clinical services being documented. In a transfer of care this represents the healthcare providers involved in the current or pertinent historical care of the patient. Preferably, the patients key healthcare care team members would be listed, particularly their primary physician and any active consulting physicians, therapists, and counselors.</td>
<td>CCDA on FHIR Performer (extension)</td>
</tr>
<tr>
<td>FiveWs N/A</td>
<td>Performer is a proposed extension to the base FHIR Condition resource. No FiveWs mapping of performer.</td>
<td></td>
</tr>
</tbody>
</table>
Mapping C-CDA Problem Observation Author & Informant to US Core Condition

<observation classCode="OBS" moodCode="EVN">
  <templateId root="2.16.840.1.113883.10.20.22.4.4"/>
  <author>
    <templateId root="2.16.840.1.113883.10.20.22.4.119"/>
    <time value="20140407"/>
    <assignedAuthor>
      <id extension="66666" root="2.16.840.1.113883.4.6"/>
      <code code="207RC0000X" codeSystem="2.16.840.1.113883.6.101"/>
      <telecom value="tel:+1(301)666-6666" use="WP"/>
      <name>
        <given>Robert</given><family>Sixer</family><suffix>RN</suffix>
        <name>
          <given>Harold</given><family>Hippocrates</family><suffix>M.D.</suffix>
          <name>
            <representedOrganization><name>The DoctorsApart Physician Group</name>
            <representedOrganization>
          </representedOrganization>
        </name>
      </name>
    </assignedAuthor>
  </author>
  <informantлиз Assinged Health Care Provider informant -->
  <assignedEntity>
    <id extension="888888888" root="1.1.1.1.1.1.1.3"/>
    <assignedPerson>
      <name>
        <given>Robert</given><family>Sixer</family><suffix>RN</suffix>
        <name>
          <given>Harold</given><family>Hippocrates</family><suffix>M.D.</suffix>
          <name>
            <representedOrganization><name>The DoctorsApart Physician Group</name>
            <representedOrganization>
          </representedOrganization>
        </name>
      </name>
    </assignedPerson>
  </assignedEntity>
</observation>

\[\text{recordedDate}" (\text{when this particular Condition record was created in the system}) = '2014-04-07'\]
\[\text{recorder} (\text{who recorded the record and takes responsibility for its content})\]
  - .recorder[Practitioner].identifier.value = '666666'
  - .recorder[Practitioner].identifier.system = '2.16.840.1.113883.4.6'
  - .recorder[Practitioner].name.family = 'Sixer'
  - .recorder[Practitioner].name.given = 'Robert'
  - .recorder[Practitioner].name.suffix = 'RN'
  - .recorder[Practitioner].address = ...
  - .recorder[Practitioner].telecom.value = '+1(301)666-6666'
  - .recorder[Practitioner].telecom.use = 'work'
\[\text{asserter} (\text{who is making the condition statement})\]
  - .asserter[Practitioner].identifier.value = '888888888'
  - .asserter[Practitioner].identifier.system = '1.1.1.1.1.1.1.3'
  - .asserter[Practitioner].name.family = 'Hippocrates'
  - .asserter[Practitioner].name.given = 'Harold'
  - .asserter[Practitioner].name.suffix = 'M.D.'
Mapping C-CDA Allergy Observation Author to US Core Allergy - Intolerance

FHIR AllergyIntolerance

- `.recordedDate` ('when this particular AllergyIntolerance record was created in the system') = '2013-08-01'
- `.recorder` ('who recorded the record and takes responsibility for its content')
  - .recorder[PractitionerRole].practitioner.identifier.value = '1234567'
  - .recorder[PractitionerRole].practitioner.identifier.system = '2.16.840.1.113883.4.6'
  - .recorder[PractitionerRole].practitioner.name.family = 'Nightingale'
  - .recorder[PractitionerRole].practitioner.name.given = 'Nurse'
  - .recorder[PractitionerRole].organization.name = 'Good Health Hospital'
  - .recorder[PractitionerRole].organization.identifier.value = '1104145838'
  - .recorder[PractitionerRole].organization.identifier.system = '2.16.840.1.113883.4.6'
- .asserter = null
C-CDA Allergy Observation Provenance Author Participation to US Core Allergy - Intolerance

FHIR AllergyIntolerance

- .recordedDate ('when this particular AllergyIntolerance record was created in the system') = '2013-08-01'
- .recorder ('who recorded the record and takes responsibility for its content')
  - .recorder[PractitionerRole].practitioner.identifier.value = '1234567'
  - .recorder[PractitionerRole].practitioner.identifier.system = '2.16.840.1.113883.4.6'
  - .recorder[PractitionerRole].practitioner.name.family = 'Nightingale'
  - .recorder[PractitionerRole].practitioner.name.given = 'Nurse'
  - .recorder[PractitionerRole].organization.name = 'Good Health Hospital'
  - .recorder[PractitionerRole].organization.identifier.value = '1104145838'
  - .recorder[PractitionerRole].organization.identifier.system = '2.16.840.1.113883.4.6'
- .asserter = null
Mapping Multiple Authors
Problem Observation to FHIR Condition

### Derived FHIR Condition

```xml
<observation classCode="OBS" moodCode="EVN">
  <templateId root="2.16.840.1.113883.10.20.22.4.4"/>
  ...
  <author>
    <templateId root="2.16.840.1.113883.10.20.22.4.119"/>
    <time value="20140407"/>
    <assignedAuthor>
      <id extension="66666" root="2.16.840.1.113883.4.6"/>
      <code code="207RC0000X" codeSystem="2.16.840.1.113883.6.101"/>
      <telecom value="tel:+1(301)666-6666" use="WP"/>
      <assignedPerson>
        <name>
          <given>Heartly</given>
          <family>Sixer</family><suffix>MD</suffix>
        </name>
      </assignedPerson>
    </assignedAuthor>
  </author>
  ...
  <author>
    <templateId root="2.16.840.1.113883.10.20.22.4.119"/>
    <time value="20140407"/>
    <assignedAuthor>
      <id root="2.16.840.1.113883.4.3.12" extension="33487"/>
      <code code="FTH" codeSystem="2.16.840.1.113883.5.111" display="father"/>
      <telecom value="tel:+1(301)666-6666" use="MC"/>
      <assignedPerson>
        <name>
          <given>Roger</given>
          ...
        </name>
      </assignedPerson>
    </assignedAuthor>
  </author>
</observation>
```

- **.recordedDate** = ‘2014-04-07’
- **.recorder** 0..1
  - .recorder.Practitioner.identifier.value = ‘666666’
  - .recorder.Practitioner.identifier.system = ‘2.16.840.1.113883.4.6’
  - .recorder.Practitioner.name.family = ‘Sixer’
  - .recorder.Practitioner.name.given = ‘Heartly’
  - .recorder.Practitioner.name.suffix = ‘MD’
  - .recorder.Practitioner.telecom.value = ‘+1(301)666-6666’
  - .recorder.Practitioner.telecom.use = ‘work’
Mapping Multiple Informants
Problem Observation to FHIR Condition

<observation classCode="OBS" moodCode="EVN">
  <templateId root="2.16.840.1.113883.10.20.22.4.4"/>
  <author/>
  <author/>

  <informant> <!-- Assigned Health Care Provider informant #1 -->
    <assignedEntity>
      <id extension="888888888" root="1.1.1.1.1.1.1.3"/>
      <assignedPerson>
        <given>Harold</given><family>Hippocrates</family><suffix>M.D.</suffix></name>
      </assignedPerson>
      <representedOrganization><name>The DoctorsApart Physician Group</name></representedOrganization>
    </assignedEntity>
  </informant>

  <informant> <!-- Assigned Health Care Provider informant #2 -->
    <assignedEntity>
      <id extension="1234567890" root="1.1.1.1.1.1.1.3"/>
      <assignedPerson>
        <given>Tammy</given><family>White</family><suffix>M.D.</suffix></name>
      </assignedPerson>
      <representedOrganization><name>The DoctorsApart Physician Group</name></representedOrganization>
    </assignedEntity>
  </informant>
</observation>

Derived FHIR Condition

Condition

- **asserter 0..1** ('who is making the condition statement')
  - .asserter[Practitioner].identifier.value = '888888888'
  - .asserter[Practitioner].identifier.system = '1.1.1.1.1.1.1.3'
  - .asserter[Practitioner].name.family = 'Hippocrates'
  - .asserter[Practitioner].name.given = 'Harold'
  - .asserter[Practitioner].name.suffix = 'M.D.'
The following logic is proposed for determining what FHIR Resource a C-CDA author participant should be converted into. e.g., Should a C-CDA Problem Observation author be a Condition.recorder reference to a Patient, RelatedPerson, Practitioner or PractitionerRole?

IF author/assignedAuthor includes an assignedAuthoringDevice vs. an assignedPerson THEN
    FHIR Condition.recorder should be null if
ELSE IF author/assignedAuthor/code/@codeSystem="2.16.840.1.113883.5.111" and author/assignedAuthor/code/@code = “SELF” THEN
    assignedAuthor/assignedPerson should be a FHIR Condition.recorder Patient reference
ELSE IF author/assignedAuthor/code/@codeSystem="2.16.840.1.113883.5.111" and author/assignedAuthor/code/@code <> "SELF" THEN
    assignedAuthor/assignedPerson should be a FHIR Condition.recorder RelatedPerson reference
ELSE IF assignedAuthor does not include a representedOrganization THEN
    assignedAuthor/assignedPerson should be a FHIR Condition.recorder Practitioner reference
ELSE IF assignedAuthor does include a representedOrganization THEN
    assignedAuthor/assignedPerson should be a FHIR Condition.recorder PractitionerRole
END IF
DERIVING FHIR US CORE PROVENANCE RESOURCES FROM C-CDA
Deriving US Core Author Provenance from C-CDA Provenance

**FHIR Provenance**

- .target[AllergyIntolerance]
- .recorded = '2013-08-01T12:35-08:00'
- .agent(0)
  - .agent(0).type.coding.code = 'author'
  - .agent(0).who[PractitionerRole].practitioner.identifier.value = '1234567'
  - .agent(0).who[PractitionerRole].practitioner.identifier.system = '2.16.840.1.113883.4.6'
  - .agent(0).who[PractitionerRole].practitioner.name.family = 'Nightingale'
  - .agent(0).who[PractitionerRole].practitioner.name.given = 'Nurse'
  - .agent(0).who[PractitionerRole].organization.name = 'Good Health Hospital'
  - .agent(0).who[PractitionerRole].organization.identifier.value = '1104145838'
  - .agent(0).who[PractitionerRole].organization.identifier.system = '2.16.840.1.113883.4.6'
  - .agent(0).who[PractitionerRole].organization.telecom.value = '+1(555)867-5309'

*Organization conveyed via. PractitionerRole.organization vs. .agent(0).onBehalfOf?
If no explicit C-CDA Provenance Author Participation then no US Core Author Provenance

FHIR Provenance

No explicit Provenance Author Participation in this C-CDA Allergy - Intolerance Observation, so no 'Author agent' Provenance will be derived for the US Core AllergyIntolerance resource.
Deriving US Core Author Provenance from multiple C-CDA Provenance Author Participations

FHIR Provenance

Provenance instance 1
- .target[AllergyIntolerance]
- .recorded = '2013-08-01T12:35:08.00'
- .agent(0)
  - .agent(0).type.coding.code = 'author'
  - .agent(0).who[PractitionerRole].practitioner.identifier.value = '1234567'
  - .agent(0).who[PractitionerRole].practitioner.identifier.system = '2.16.840.1.113883.4.6'
  - .agent(0).who[PractitionerRole].practitioner.name.family = 'Nightingale'
  - .agent(0).who[PractitionerRole].practitioner.name.given = 'Nurse'
  - .agent(0).who[PractitionerRole].organization.name = 'Good Health Hospital'
  - .agent(0).who[PractitionerRole].organization.identifier.value = '1104145838'
  - .agent(0).who[PractitionerRole].organization.identifier.system = '2.16.840.1.113883.4.6'

Provenance instance 2
- .target[AllergyIntolerance]
- .recorded = '2013-08-15T10:45:08.00'
- .agent(0)
  - .agent(0).type.coding.code = 'author'
  - .agent(0).who[PractitionerRole].practitioner.identifier.value = '99999'
  - .agent(0).who[PractitionerRole].practitioner.identifier.system = '2.16.840.1.113883.4.6'
  - .agent(0).who[PractitionerRole].practitioner.name.family = 'Wilson'
  - .agent(0).who[PractitionerRole].practitioner.name.given = 'Robert'
  - .agent(0).who[PractitionerRole].organization.name = 'Good Health Hospital'
  - .agent(0).who[PractitionerRole].organization.identifier.value = '1104145838'...
Virtual C-CDA IAT

Jean Duteau

Recap, Next Steps, Closing Thoughts
Plans for next C-CDA IAT – October 2020
Save the Date for the next C-CDA IAT

- Proposed date for next C-CDA IAT
  - Wednesday, October 21\textsuperscript{st}, 2020
Continued Participation in the C-CDA Community

- Keep the discussion going on the Zulip C-CDA Stream
  - https://chat.fhir.org/

- Contribute to the work of the C-CDA Examples Task Force
  - Thursdays, noon – 1:00pm ET
  - Visit hl7.org Conference Call Center for meeting invite information