C-CDA Implementation-A-Thon

July 28, 2021

Virtual Zoom Meeting
Facilitators:
Jean Duteau
Joginder Madra
Lisa Nelson

Sponsored by
The Office of the National Coordinator for Health Information Technology
Facilitators

Jean Duteau
Duteau Design

Joginder Madra
Madra Consulting

Lisa Nelson
MaxMD

Dave Hamill
HL7
Welcome to Camp HL7 CDA®
C-CDA Communities

HL7
IHE
International Patient Summary
Gravity Community
DirectTrust
Sequoia
Commonwell/Carequality
SHIEC
VA/DOD
SSA
NCQA
Payer Community (PIE)
Patient Community (PE,PCC)

HL7 Communities Spiral

Implementer - Site
Existing Communities
New Communities

Level of Involvement
1-5: Implementation
6-7: Community Outreach

Core Standard Developers
Realm Specific Core IG Developers
Accelerators
Implementer - Developer

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# Welcome

## Newcomers
- Natalee Agassi
- Christopher Cera
- Ankit Dahal
- Edward Gillespie
- Robert Hausam
- Nithin Joseph
- Shabir Mamodraza
- Anoop Mohamed
- Michael Nusbaum
- Paulo Pinho
- Jay Rajendran
- Jenny Reay
- Christopher Dickerson
- Ryan Zoellner
- Beth Ellinport
- Emily Zhou
- Amit Trivedi

## Returning Campers
- Dennis Ball
- Anmer Ayala
- Albert Taylor
- Didi Davis
- Kenneth Lord
- Wanda Govan-Jenkins
- Matthew Davis
- Robert McClure
- Russell Ott
- Dale Owens
- Sumanth Bandaru
- Matt Szczepankiewicz
- David Carlson
- Jessica Ordoyne
- Gene Beyer
- Matthew Dugal
- Gay Dolin
- Ed Donaldson
- John DAmore
- Emma Jones
- Ozlem Kurt
- Joseph Lamy
- Matt Rahn
- Raychelle Fernandez
- Madhav Darji
- Brett Marquard
- Linda Michaelsen
<table>
<thead>
<tr>
<th>Time (ET)</th>
<th>Topic</th>
<th>Goal</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:00am – 10:10am</td>
<td>Opening</td>
<td>Jean Duteau</td>
</tr>
<tr>
<td>10:10am – 10:40am</td>
<td>Topic 1: CommonWell/Carequality Guidance Update;</td>
<td>Joe Lamy, Dennis Ball; Matt Szczepankiewicz</td>
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<tr>
<td>10:40am – 11:20am</td>
<td>New synthetic data resource from Project CLARE;</td>
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<td>Break (10 mins)</td>
<td>Break</td>
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<tr>
<td>11:30am – 12:30pm</td>
<td>Topic 2: Update on IPS; Collaborative Template Review Wrap-up;</td>
<td>Panel: Rob Hausam, Lisa Nelson, Michael Nusbaum; Amit Trivedi</td>
</tr>
<tr>
<td>Break (1 hour)</td>
<td>Lunch Break</td>
<td>1:00 – 1:30 C-CDA Errata Release planning</td>
</tr>
<tr>
<td>1:30pm – 2:30pm</td>
<td>Topic 3: Addressing Implementer Needs: Guidance on representing a</td>
<td>David Carlson</td>
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<tr>
<td></td>
<td>concept that requires multiple post-coordinated codes and translations</td>
<td></td>
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<td></td>
<td>to represent</td>
<td></td>
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<tr>
<td>2:30pm – 3:30pm</td>
<td>Topic 4: C-CDA to and from FHIR: Call for participation and demo</td>
<td>Natalee Agassi, Ken Lord</td>
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<tr>
<td>Break (30 mins)</td>
<td>Break</td>
<td></td>
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<tr>
<td>4:00pm – 5:30pm</td>
<td>Topic 5: Ask the ONC, USCDI V2 and more</td>
<td>Matt Rahn</td>
</tr>
<tr>
<td>5:30pm – 6:00pm</td>
<td>Closing Discussion and Parking Lot and IAT Open Issue Review</td>
<td>Jean Duteau, Joginder Madra</td>
</tr>
</tbody>
</table>
Working together to figure things out
Implementer Guidance:

Expanding the possibilities and evolving the guidance.

Joe Lamy, Dennis Ball; Matt Szczepankiewicz
COMMONWELL/CAREQUALITY GUIDANCE UPDATE

Joe Lamy
Specification Expert
AEGIS.net, Inc.
joe.lamy@aegis.net
Agenda

- CommonWell-Carequality Joint Document Content Work Group
- What is Project CLARE?
- Guidance examples covered in Project CLARE
- ONC Scorecard Improvements
What is the Joint Document Content Work Group?

- Carequality and CommonWell launched in 2018
- Participation from clinicians, vendors, standards SMEs
- Solve common problems with content
  - Too large C-CDA documents
  - Absence of clinical notes
  - Need for encounter summaries
  - Need for version management
- Output is best practices guide
  - Each exchange incorporates into its governance process to adopt or not
What is the group’s “lane”?

How is this group different from SDWG, IHE, etc.?

- Top level operational spec for exchanges; **can be more prescriptive**
- **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

Aug 2021: Concise Consolidated CDA: Deploying Encounter Summary and Patient Summary CDA Documents

- 2.0 rev (and rename) of previous guide; work done in 2020, currently being finalized
- Guidance for dynamically generating documents, aka “on-demand”
- Guidance for generating Encounter Summaries through the lifecycle of an encounter
- Guidance for “Patient Summaries”: generation with and without date ranges
- Guidance for interoperable lab results

Feb 2019: Concise Consolidated CDA: Deploying Encounter Summary CDA Documents with Clinical Notes

- Guidance for “Encounter Summaries”: 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
Guidance is better with examples! Project CLARE will show:

- Proper Text Linking (JDCWG section 2.2.1)
- ID Preservation Across Documents (JDCWG section 2.2.2)
- Clinical Note Templates (JDCWG section 3.4)
- Section Time Range (JDCWG section 3.1.1)

What would you like to see next?

- Encounter summary snapshots through the lifecycle of the encounter?
- Tracing labs from orders through pending and actual results?
- An entire workflow of IHE query for metadata, IHE retrieve for document, and the document itself?
- Any requests?
SYNTHETIC DATA RESOURCES FROM PROJECT CLARE

Dennis Ball
dennis.ball@ocuco.com
What is Project CLARE?

CLARE is a cross-community collaborative project focused on clarifying the vision for improved care coordination and creating a learning health system. CLARE is developing detailed examples that demonstrate how implementers can use standards-based communications to enable more efficient and effective information exchange for all care team members while empowering patients to actively participate in their care.

Project CLARE provides high-quality, synthetic patient data in the context of a specific healthcare use case depicting a valuable new information exchange capability positioned to improve health outcomes while lowering the cost of care, reducing physician burden, and improving patients' experience of care. Project CLARE information and resources can be found by clicking here.
Guidance examples covered in Project CLARE

Some of the guidance examples that are covered in Project CLARE
1. Proper Text Linking (Commonwell Carequality IG and Companion Guide)
2. ID Preservation (Commonwell Carequality IG)
3. Clinical Note Templates (Companion Guide)
4. Section Time Range (Companion Guide)
5. Author Provenance (Companion Guide)
6. Care Team (Companion Guide)
Guidance examples: Proper Text Linking

Objective: Maintain proper references between coded values and narrative
Importance: Processing and validating C-CDA documents with structured entries
Guidance examples: ID Preservation

Objective: Maintain act/observation IDs across documents
Importance: Enables receivers to accurately identify data that has been previously reported
Guidance examples: Clinical Note Templates

Objective: Use of new Notes Section and Notes Activity for common clinical note types
Importance: Clinical notes are a critical part of the patient record and USCDI v1

Common Clinical Note Types
- Consultation note (11488-4)
- Referral note (57133-1)
- Progress note (11506-3)
- Procedures note (28570-0)
- Discharge summary (11842-5)
- History & Physical (34117-2)
- Imaging narrative (18726-0)
- Lab/path narrative

```xml
<templateId root="2.16.840.1.113883.10.20.22.2.65" extension="2016-11-01"/>
<code code="11488-4" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC"
  displayName="Consultation note"/>
<title>CONSULTATION NOTES</title>

<templateId root="2.16.840.1.113883.10.20.22.4.202" extension="2016-11-01"/>
<code code="34117-2" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC"
  displayName="Note"/>
<title>Code must match or be equivalent to section code -->
<translation code="11488-4" codeSystem="2.16.840.1.113883.6.1"
  codeSystemName="LOINC" displayValue="Consultation note"/>
</code>
```
Guidance examples: Section Time Range

Objective: Use of Section Time Range to represent date and time range of data
Importance: Provides a mechanism to communicate what data is included in a section
Guidance examples: Provenance – Author Participation

Objective: Record Provenance in an Author Participation

Importance: Critical for maintaining Data Provenance

The author of a goal

The author of the clinical document
Guidance examples: Care Team

Objective: Use of new Care Team Organizer

Importance: Defines the care team name, participants and lead

Demonstrates Care Team:
- Organizer
- Team Name
- Team Status
- Team Lead
Guidance examples: Care Team (cont’d)

Care team members are components of a care team (within the CareTeam organizer)

Demonstrates Care Team Members:
- Member Status
- Member effectiveTime
- Member Attributes (Name)
- Member Role (function on the team)
Improvements needed in the ONC Scorecard:

1. The validator needs to validate templates in a more modular way. Most templates are open templates and can be used anywhere. The validator should trigger off an asserted template, using the templateId in the assertion to apply the implied conformance constraint checking.

2. C-CDA Document Types. The validator skips many common sections when it does not see a specific document type.

3. Option for One-click Scorecard to provide the full report – same as the regular ONC Scorecard.
NEW CDA STYLESHEET FOR RENDERING DATA PROVENANCE

Matt Szczepankiewicz
Epic | Software Developer | Care Everywhere
mszczepa@epic.com
Provenance is a required data element in USCDI v1; all USCDI data elements must also be visible to users.

The ONC offered the following guidance around the display of provenance info:

*Provenance Author Participation template in the C-CDA Companion Guide has to be used to record Provenance data for all USCDI data classes and elements. When desired by a Provider or a Patient, vendors should be able to display the Provenance data. In summary for VDT, the Health IT system should be able to demonstrate the capability to display Provenance data.*
Challenges

- Vendors could parse all provenance data in all USCDI elements and integrate it into downstream workflows, but this is hard.
- Any solution needs to handle all discrete Provenance Author Participation templates from other sources— that is, just adding provenance to your own document narratives wouldn’t be enough.
Solution

- Created new USCDI feature branch of CDA stylesheet.
- Currently in alpha, looking for implementer feedback.
- Enables provenance display out of the box by parsing provenance author entries linked to narrative elements and converting them to tooltips.
Follow-Ups & Conclusion

- How useful is this to implementers? What other solutions, if any, exist for provenance display?
- Stylesheet available for download on GitHub; leave feedback there too!
- Is there value in this maturing beyond alpha and being maintained?

For further information:
- Joe Lamy
  joe.lamy@aegis.net
- Dennis Ball
  dennis.ball@ocuco.com
- Matt Szczepankiewicz
  mszczepa@epic.com
### What’s your favorite camping location?

<table>
<thead>
<tr>
<th>Location 1</th>
<th>Location 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glacier National Park. Montana</td>
<td>Africa</td>
</tr>
<tr>
<td>Finger Lakes, upstate NY</td>
<td>My house</td>
</tr>
<tr>
<td>North rim of Grand Canyon in the cabins</td>
<td>By a mountain lake</td>
</tr>
<tr>
<td>Horse camping almost anywhere - still looking</td>
<td>I don't have one. Never been!</td>
</tr>
<tr>
<td>for favorite. But Ormand Ranch in Crescent</td>
<td></td>
</tr>
<tr>
<td>City CA is leading so far.</td>
<td>Any national park</td>
</tr>
<tr>
<td>Yosemite</td>
<td>A&amp;F Challenge</td>
</tr>
<tr>
<td>Canadian Rockies</td>
<td>Wherever my friends are camping (usually</td>
</tr>
<tr>
<td>anywhere close to horses</td>
<td>in the Smokies)</td>
</tr>
<tr>
<td>Glacier National Park</td>
<td>Entire state of Alaska for me. Having never</td>
</tr>
<tr>
<td>New Zealand</td>
<td>explored the state, I look forward to a time</td>
</tr>
<tr>
<td>Miyajima, Japan</td>
<td>where I can spend a few months exploring</td>
</tr>
<tr>
<td>the plains of africa</td>
<td>mother nature at her best.</td>
</tr>
<tr>
<td>Moab, Utah</td>
<td></td>
</tr>
<tr>
<td></td>
<td>By the shore of Lake Michigan near Traverse</td>
</tr>
<tr>
<td></td>
<td>City.</td>
</tr>
</tbody>
</table>
Balancing many priorities
Global Perspectives: Update on IPS

Collaborative Template Review Wrap-up; Relevant Global Use Case: Exchange of immunization information

Rob Hausam
Lisa Nelson
Mike Nusbaum
Amit Trivedi
INTERNATIONAL PATIENT SUMMARY
IPS CONCEPTS AND OVERVIEW

Rob Hausam
Hausam Consulting LLC
+1 (801) 949-1556
rob@hausamconsulting.com
The Beginning of IPS  
HL7 Int. CEN/TC 251 agreement (April 2017)

Vision

- “In order to further the care for citizens across the globe, we agree to **collaborate on a single, common International Patient Summary (IPS)** specification that is readily usable by all clinicians for the **(cross-border) unscheduled care of a patient.**”

Scope

- “The IPS specification shall focus on a **minimal** and **non-exhaustive** Patient Summary, which is **specialty-agnostic** and **condition-independent**, but **still clinically relevant.**”
**International Patient Summary**

**Health record extract**
- Snapshot in time of a subject of care’s health information and healthcare

**International**
- Generic solutions for global application beyond a particular region or country.

**Scoped**
- Designed for Unscheduled (cross-border) care
- …but it provides a base-line usable also within other scheduled or planned care cases.
The IPS: a focused Patient Summary

- Provide a **healthcare summary** for a citizen at the point of care
- It is **minimal** and **non-exhaustive**
- It is **specialty-agnostic** and **condition-independent**...but still **clinically relevant**
The IPS: a focused Patient Summary

- Designed to be **simple** and **implementable**
- Usable **any time**, in **any place**; by **any one**
- **Multi-beneficiaries**: Individuals, Healthcare Providers, Society
The International Patient Summary

A document composed by reusable profiles

The IPS “library” of profiles

Allergies
Problems
Medications
Vaccinations
Results
Procedures

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The IPS “library”
IPS Sections

- Subject
- Author
- Attester
- Custodian
- Medication Summary
- Allergies and Intolerances
- Problem List
- Immunizations
- History of Procedures
- Medical Devices
- Vital Signs
- Past History of Illness
- Diagnostic Results
- Pregnancy status + history summary
- Social History
- Functional Status: Autonomy/Invalidity
- Plan of Care
- Advance Directives

Metadata (i.e. CDA “Header”) Required Recommended Optional
The IPS landscape

- EN 17269: implementation independent content of the IPS
- TS 17288: guidelines for establishing a EU IPS service
- IPS FHIR IG: how to implement the IPS using HL7 FHIR
- IPS CDA IG: how to implement the IPS using HL7 CDA

EN 17269: implementation independent content of the IPS
TS 17288: guidelines for establishing a EU IPS service
IPS Use Cases

- Cross-border IPS document exchange of clinical data
  - Developed initially for unplanned care – but may also be planned
  - Patient mediated data transfer (e.g., mobile device)
    - But may use exchange infrastructure (e.g., national gateways)
  - May be regional or institutional boundaries (not only national)

- Specialized use of individual profile “building blocks”
  - Vaccination and test result data exchange (e.g., COVID-19)
    - May have use for digital vaccination certificate/”passport”
  - Supporting care for rare diseases, chronic conditions – or pandemics!
  - Potentially many others
COLLABORATIVE TEMPLATE REVIEW PROJECT

Lisa Nelson
MaxMD
INelson@max.md
This pilot project will explore using a collaborative review process, performed by resources from across a small set of domain workgroups, to facilitate collaboration CDA template assessment.

The objective is to understand what is involved in working across workgroups to facilitate collaboration on CDA template assessment.

The project is investigative, in that it intends to investigate and document the identified changes needed to align and harmonize the templates, but it does not include doing the work to address the changes. Once the agreed upon list of changes has been identified, a separate project or projects will be initiated to address making the needed changes.

Scope:
- PC WG – Problems Section (Problem Concern) and Allergies and Intolerances Section (Allergy And Intolerance Concern)
- FM WG – Payer Section
- Pharmacy WG – Medications Section

EffectiveTime 20181212 - 20210728
Summary of produced artifacts and findings

Complete Project Documentation is on Confluence within the CMG Space

- Project Documentation: https://confluence.hl7.org/display/CDA/Collaborative+Template+Review+Project+Pilot

PC WG

- Substantial input was documented over an 18-month period.
- Collaborative Review documented changes PC felt would be beneficial for the purpose statements and constraints expressed within the templates
- Comparison with IPS templates produced findings that could be considered in future design changes

FM WG

- Collaborative Review notes documented recommended aligning the C-CDA Coverage Activity template with the FHIR Coverage Resource which would involve removing the guarantor performer and aligning the value sets used to represent this information; additional work would be needed to review the Planned Coverage template (not in scope for this pilot).

Pharmacy WG

- Initial scope of review document was developed but no collaborative review was performed.
Conclusions/Outcomes

- Cross-work group collaboration can produce meaningful insight about beneficial changes for C-CDA templates that could be considered in new template designs or new versions for existing templates.
- Success depends on the level of interest in CDA implementation guides and the availability of resources to support creating a team of analysis participants with the needed knowledge to support the review.
- Follow-up for designing and balloting new templates would additionally require participation of resources skilled with template tooling, IG publishing tools, and HL7 ballot processes.
- A useful analysis method was developed through the use of Art Décor to produce new templates that merges constraints of multiple templates.

Expanded use of the Merged Template Design analysis will be demonstrated on Immunizations templates at the July 2021 C-CDA IAT.
If both and 1 symbol, conformance is the same; if both and 2 symbols, IPS conformance is on the left.
If both and 1 symbol, conformance is the same; if both and 2 symbols, IPS conformance is on the left.
Opportunity/Recommendations

- Next C-CDA Update-being planned for January 2022 ballot
- PC WG (collaboration team) should consider submitting JIRA tickets to transform collaborative analysis into a set of specific requests for template redesign requirements
- FM WG (collaboration team) should consider submitting JIRA tickets to transform collaborative analysis into a set of specific request for template redesign requirements
IPS «UNION» C-CDA
NEW MERGED TEMPLATE DESIGNS FOR IMMUNIZATIONS
Immunization Harmonized Template

Tooling Advances:
Art Décor makes it easy to “Merge” template designs.

https://art-decor.org/art-decor/decor-templates--shl7it-?section=templates&id=2.16.840.1.113883.3.1937.99.61.30.10.60
Immunizations Section

Section

@nullFlavor

id

Title

code (11369-6)

Text

Translation sub-section

author

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entry

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IPS Compared to C-CDA

- SHALL
- SHOULD
- MAY
- SHALL IF
- SHOULD NOT

Used for Given / Not Given

TBD: use the statusCode

any status

Fixed “completed” ➔ any status

Fixed “IMMUNIZ”

@negationInd

@moodCode

id

effectiveTime

statusCode

templateId

Code

IPS

SBADM

both

@negationInd ➔ C-CDA

@moodCode ➔ both

id ➔ both

effectiveTime ➔ both

statusCode ➔ both

templateId ➔ both

Code ➔ IPS

...
IPS Compared to C-CDA

C-CDA Immunization Medication Information (V2)

IPS Immunization Medication Information

- consumable: both
- author: both
- performer: C-CDA
- participant: C-CDA
- Several elements: C-CDA
- SBADM: both
- Drug Vehicle
- precondition: C-CDA
- Several entryRelationship: C-CDA

SHALL
SHOULD
MAY
SHALL IF
SHOULD NOT
IPS Compared to C-CDA

- SBADM
  - repeatNumber
  - routeCode
  - approachSiteCode
  - doseQuantity
  - administrationUnitCode

- Several elements
  - C-CDA

- Several entryRelationship
  - C-CDA

SHALL

SHOULD

MAY

SHALL IF

SHOULD NOT
IPS Compared to C-CDA

**SBADM**

- Several elements
- Several entry relationship

**C-CDA**

- Substance Administered Act
- Medication Supply Order (V2)
- Medication Dispense (V2)
- Instruction (V2)
- Indication (V2)
- Immunization Refusal Reason
- Reaction Observation (V2)
INTERNATIONAL PATIENT SUMMARY
A HIGH-IMPACT COLLABORATION

Michael Nusbaum,
BASc, MHSA, FHIMSS
M.H. Nusbaum & Associates Ltd.
michael@mhnusbaum.com
The Patient Summary journey…

European initiatives

IPS 2017-2021
IPS: Now a Cross-SDO Initiative
IPS Standards Artefacts

- ISO/DIS 27269 awaiting approval
- CEN/EN 17269 and CEN/TS 17288 published
- HL7 FHIR and CDA Implementation Guides (IG) published as “Standard for Trial Use”
- IHE IPS Profile for both CDA and FHIR published for “Trial Implementation”
- SNOMED CT has published the free for use “Global Patient Set” including the IPS free set
There is only one IPS!
The CDA Imperative

- FHIR is emerging, but implementation is still a journey
- IPS is international, and CDA implementations are very pervasive worldwide
- There may be a 10+ year window where CDA is dominant
- CDA recognized by CEN, HL7 and IHE as an important IPS implementation consideration
- IHE Connectathon testing attracted vendors testing with CDA
Learnings from the IPS experience

- xSDO collaborations work very well when there is a focused need
- Each SDO brings their unique expertise, tooling and processes
- A suite of artefacts that work together ultimately helps the end user
- Growth and maintenance are key steps that can’t be forgotten
- Adoption and implementation can be improved by leveraging existing international collaborations:
  - Joint Initiative Council
  - Global Consortium for eHealth Interoperability
  - Global Digital Health Partnership
IPS References

- The EN/ISO standards, which describe the notion of an IPS as a document and standardise the data elements that are essential, required, recommended, and optional in the IPS
- The HL7 IPS Implementation Guides, which specify what an IPS looks like in HL7 CDA and HL7 FHIR
- The IHE IPS Profile, which provides a few scenarios and bindings with the transport technology
- An IPS Overview and video
- Joint Initiative Council’s Patient Summary Standards Set
INTERNATIONAL PATIENT
SUMMARY
GLOBAL IMPACT

Amit Trivedi, MS
@a3vedi
IHEUSA.org
Globalhealthinterop.org
HealthIT.gov:
Global Pandemics Drive Global Action

- Urgent clinical need for an up-to-date clinical summary available at the point of care anywhere in the world
- Equitable in usage to ensure effectiveness across regions and resource levels
- Universality of use requires broad collaboration
Global Digital Health Partnership

Interoperability Work Stream

International Patient Summary Work Group

- Government-to-government knowledge exchange
- Addressing interoperability challenges through standards and technology
- Focus on pilot implementations of IPS by member countries
HHS designated ONC to serve as the lead US representative to the GDHP along with the HHS Office of the CTO.

- ONC facilitates key discussions and projects to advance interoperability across the GDHP countries and territories and chairs the GDHP Interoperability Work Stream:
  - Overcome patient data sharing challenges between health care providers, health organizations, caregivers, and patients.
  - Determine the path forward for addressing interoperability challenges through standards and technology.

- **IPS**: Importance of being able to have a patients’ data follow them wherever they go so that they can retrieve the data when and where it matters most. The value sets are based on global vocabularies that are usable and understandable in any country. This means that key pieces of patients’ health data can be transferred between countries so emergency care providers can use this data to provide patients with personalized care.
Encourages international collaboration in standards development, testing, and implementation efforts by highlighting key interoperability and standards global goods:

- **Content:** Highlighting existing, relevant standards, profiles, implementation guides and best practices to promote standards adoption and success
- **Software:** Supporting the accessibility and availability of robust open-source tools, validators, reference implementations, and developer sandboxes
- **Services:** Panel discussions, demonstrations, education events, and workshops – content curated by HIMSS, HL7, IHE and other health IT interoperability subject matter experts to support standards adoption
Development Activities
Global Health Standards Adoption Project

- **March 2021:** Launched developers’ sandbox leveraging OpenHIE/HAPI FHIR/OpenMRS architecture at IHE North American Connectathon
- **May 2021:** Demonstrated use of developers’ sandbox to test IHE International Patient Summary Profile at HL7 FHIR Connectathon
- **June 2021:** Proof of concept completed to test interoperability of International Patient Summary profile in commercial software at IHE European Connectathon

Professional Development
On Demand Education

- **July-September 2020:** HIMSS20 Digital Series
  - International Patient Summary: Cross-Border Interoperability at a Global Scale
    - Don Rucker, MD, Former National Coordinator for Health IT, United States
    - Dr. Petra Wilson, European Program Director, Personal Connected Health Alliance
    - Derek Ritz, IHE Canada Liaison
    - Walter Ricciardi, President, Italian National Institute of Health
    - Rob Hausam, MD, Co-Chair, HL7 Vocabulary and Orders and Observations (OO) Work Groups
    - Giorgio Cangioli, Chair, HL7 Italia

- **March 2021:** IHE North American Connectathon Conference
  - IHE Deep Dive-How the International Patient Summary Works
    - Michael Nusbaum, President, MH Nusbaum & Associates
    - Rob Hausam, MD, Co-Chair, HL7 Vocabulary and Orders and Observations (OO) Work Groups
  - Global Health Standards Adoption Project Lab
    - Derek Ritz, IHE Canada Liaison
    - Jan Flowers, Director of Global Health Informatics, Clinical Informatics Research Group, University of Washington
International Patient Summary: Implementers

- Global Health Standards Adoption Project Events
- OpenHIE/HAPI FHIR/OpenMRS Developers’ Sandbox
- LMIC Stakeholder Outreach & Participation
  - Haiti
  - Kenya
  - Nairobi
  - Tanzania
International Patient Summary: Next Steps

- August 10, 2021, Las Vegas
  - HIMSS Global Conference Interoperability Showcase Theatre – SDO Collaboration Panel Session @2:30pm PT
- September 2021, Virtual
  - HL7 FHIR Connectathon: IPS Track, IHE Testing Track
- January 14-18, 2022, Henderson, NV
  - HL7 FHIR Connectathon
- January 24-28, 2022, Chicago
  - IHE North American Connectathon: Global Health Standards Acceleration Program
Accelerate progress by coordinating resources and better aligning development and testing events

Improve global stakeholder equity by addressing education and awareness gaps

Abstracting information for other purposes of use beyond unexpected cross-border care
For further information:

Rob Hausam  
rob@hausamconsulting.com

Lisa Nelson  
Inelson@max.md

Michael Nusbaum  
michael@mhnusbaum.com

Amit Trivedi  
Amit.Trivedi@himss.org
Lunch break until 1:30

What’s your favorite way to camp?
- Glamping = 6
- Cabin = 1
- Hotel = 7
- Tent = 8
- Truck camper with horse trailer = 1
- Cowboy camping (on ground) = 1
- RV = 4
- On my couch = 1
Errata meeting

Today from 1-1:30pm ET

https://us02web.zoom.us/j/465862913?pwd=cUlIR1BndVpYNYpR3dzc3VlUERTZz09

Meeting ID: 465 862 913

Passcode: 310940

Phone number: +1 929-436-2866
What do you do when things are not on target?
Implementer Leadership:
Implementer challenges and how to overcome them.
Using Multiple Codes from one Code System to represent a single complex code in another Code System

David Carlson
Director of Standards and Interoperability
dcarlson@mieweb.com

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Overview

- **The Issue**
  - Specific third parties and others were trying to use existing structures within C-CDA modeling to post-coordinate terms in a way that did not communicate that correctly.

- **The Request Steps**
  - Introducing the issue on the HL7 Zulip Channel
  - Discussion in Structured Documents
  - Solution proposed by the community
  - Voted to accept the proposed solution

- **The Example**
  - Created the new example usage
  - Brought to Examples Task Force for review and vote
  - Accepted as a listed example

- **Going Forward**
  - Communicating this back to the 3rd party
  - Working with ONC to get this new usage into validation schemas
The Initial Issue

In my case, I noted that IMO (Intelligent Medical Objects) provides a service where they have their own database of very precise condition descriptions for physician Problem Lists.

In their examples for how to communicate it within C-CDA, they appeared to have incorrect usage of coding values, especially surrounding the grouping of ICD-10 codes.
<?xml version="1.0" encoding="utf-16"?>
<CODE orgid="e17142266bb3f386" userid="" patient_age="66" patient_gender="M">
  <fromCODE_statusCode="1" statusText="CHANGE">
  </fromCODE_statusCode>
  <fromCODE_items>
  </fromCODE_items>
</CODE>

<fromCODE_item statusIndicator="migrated"
inCodeSystem="3PC" inCode="65167828" display_title="Chronic pain of both knees">
  <CODEPayload code="65167828" title="Chronic pain of both knees"
dg_code="719.46" dg title="Pain in joint, lower leg" ICD10CM_CODE="M25.561" ICD10CM_TITLE="Pain in right knee" SCT_CONCEPT_ID="1003722009" SNOMED_DESCRIPTION="Pain of knee region" GENDER_FLAG="" AGE_FLAG="" NON_SPECIFIC_CODE="0" HCC_MODEL_CAT="" HCC_COMMUNITY_FACTORS=""
  </fromCODE_item>
  <fromCODE_items>
  </fromCODE_items>
</CODE>

<fromCODE_item statusIndicator="migrated"
inCodeSystem="3PC" inCode="65167828" display_title="Chronic pain of both knees">
  <CODEPayload code="65167828" title="Chronic pain of both knees"
dg_code="719.46" dg title="Pain in joint, lower leg" ICD10CM_CODE="M25.561" ICD10CM_TITLE="Pain in right knee" SCT_CONCEPT_ID="1003722009" SNOMED_DESCRIPTION="Pain of knee region" GENDER_FLAG="" AGE_FLAG="" NON_SPECIFIC_CODE="0" HCC_MODEL_CAT="" HCC_COMMUNITY_FACTORS=""
  </fromCODE_item>
  <fromCODE_items>
  </fromCODE_items>
</CODE>

SECONDARY_ICD9_CODE1="338.29" SECONDARY_ICD9_TEXT1="Other chronic pain"
SECONDARY_ICD10_CODE1="M25.562"
SECONDARY_ICD10_TEXT1="Pain in left knee"
SECONDARY_ICD9_CODE2="" SECONDARY_ICD9_TEXT2=""
SECONDARY_ICD10_CODE2="G89.29"
SECONDARY_ICD10_TEXT2="Other chronic pain"
SECONDARY_ICD9_CODE3="" SECONDARY_ICD9_TEXT3=""
SECONDARY_ICD10_CODE3="" SECONDARY_ICD10_TEXT3=""
SECONDARY_ICD9_CODE4="" SECONDARY_ICD9_TEXT4=""
SECONDARY_ICD10_CODE4="" SECONDARY_ICD10_TEXT4="" />

</fromCODE>
Example Suggested C-CDA (Incorrect)

```
<value xsi:type="CD" code="30989003" codeSystem="2.16.840.1.113883.6.96" codeSystemName="SNOMED CT"
displayName="Knee pain"> <originalText>Chronic pain of both knees</originalText>
<translation code="65167828" displayName="Chronic pain of both knees"
codeSystem="2.16.840.1.113883.3.247.1.1" codeSystemName="3rdPartyID"/>
<translation code="82423001" codeSystem="2.16.840.1.113883.6.96" codeSystemName="SNOMED CT"
displayName="Chronic pain"/>
<!-- All Code Mappings of each ICD Code System in the order in which we maps them -->
<translation code="M25.561" codeSystem="2.16.840.1.113883.6.90" codeSystemName="ICD-10-CM"
displayName="Pain in right knee"/>
<translation code="M25.562" codeSystem="2.16.840.1.113883.6.90" codeSystemName="ICD-10-CM"
displayName="Pain in left knee"/>
<translation code="G89.29" codeSystem="2.16.840.1.113883.6.90" codeSystemName="ICD-10-CM"
displayName="Other chronic pain"/>
</value>

● This notation would signify that each of their translation ICD-10 codes are each individually equivalent to
  the value code concept, which is incorrect in this case. The ICD-10 codes listed are really components that
  make up the concept designated by the 3rdPartyID code (65167828).
```
Reach out to the HL7 C-CDA Community

- Discussed with the 3rd party and determined that their documentation was from an old employee who has left and that they don’t have anyone on staff who is a point person familiar with HL7/C-CDA to discuss their documentation.

- Asked the question about the example from the 3rd party to the HL7 Zulip Community.
The topic got presented at C-CDA Examples Workgroup meetings in early April 2021 by

Presented at a Structured Documents Workgroup meeting on April 22.

After some conversation we arrived at a proposed solution that got approved in Jira ticket.
I took the example and discussion points and worked on some sample sections to bring to the C-CDA examples WG.

After discussion and edits to the example during the meeting, the example was approved on June 10.

On June 22, the example was added into the publicly accessible C-CDA examples.
Follow Up Steps

- Contacting the vendor with the updated C-CDA content so they could update their documentation.
  - Still awaiting feedback
- Further discussion happening on the solution.
  - Back and forth on the email list in the past week from Matt S. and Robert McClure on proper way to codify the
Follow Up Steps

- Possible follow up to get any changes necessary into C-CDA validator
  - Should it test for multiple codes in the same codeset at the same level of translation nodes? (maybe not an “error”, but a “warning”?)
  - Should we test for proper usage if it does see qualifier nodes under a translation code? What is considered “proper usage” other than being correct syntax (which I’d think would already be being checked since these aren’t new node types?).

- Discussion on venues such as this meeting to “get the word out”.

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Conclusion

- There are a number of steps to go through within the HL7 C-CDA community to get a problem solved and a solution in place.
- Don’t be daunted… it will take time, but as you can see, solutions can be worked out and followed through on.
- Lots of people willing to help you along the way.
Team CDA vs Team FHIR
Get in the mud together
Aligning with FHIR:

Mapping C-CDA to and from US Core.

Natalee Agassi; Ken Lord
PROJECT OVERVIEW AND DEMONSTRATION

Natalee Agassi, MD
PharmD Enterprise Architecture
Cerner Corporation
Natalee.Agassi@Cerner.com

Ken Lord
klord@mdixinc.com
Problem:
- How to transform structured data in one form into actionable content in a different structured form?
- How to provide guidance for accurate transformations?

Abundance of data from different sources
Redundant data with Difference in the Interpretation
Fragmented data being populated in Different formats
Mismatch in vocabulary and structure
Many different siloed efforts could be complicating the problem
Project: PSS-1811

This project will establish definitive HL7 mapping guidance for C-CDA to FHIR and FHIR to C-CDA using the document types in C-CDA R2.1 plus C-CDA Companion Guide R2 referenced/implied in the 2015 Certification Edition Cures Update and USCDI v1 Clinical Notes data class: CCD, Discharge Summary, Referral Note, Consultation Note, Procedure Note, History and Physical, and Progress Note document types.

Reference Link:
https://confluence.hl7.org/display/CGP/Mapping+C-CDA+to+and+from+FHIR
PSS-1811 Scope

- Produce mappings for C-CDA section templates and C-CDA entry templates to and from FHIR resource/US Core profiles.

- Propose additional FHIR attributes, extensions and/or FHIR Core additions through the respective FHIR resource stewards as identified and appropriate.

- Propose additional CDA extensions through SDWG as appropriate

- Collaborate with the then current annual value set harmonization process (currently PSS 1696) when alignment of code system/value sets are identified.

- Establish a publication format, informed by the v2-to-FHIR and other mapping efforts, to ballot and publish the proposed definitive mappings, that also enables FHIR standard/IGs and C-CDA IG to reference applicable mappings in context.

Reference Link: https://jira.hl7.org/browse/PSS-1811
Project Process and Use Cases

• Project Process
  • Roadmap
  • Subject Matter Expert Review
  • Acceptance (SME Sign-off and Test Messages)

• Use Cases
  • CDAonFHIR (Composition, USCore)
  • CDA-IPS-FHIR (IPS Composition, USCore)
  • FHIRtoCCDA (eCR)
### RoadMap - https://confluence.hl7.org/display/CGP/Project+Progress+Dashboard

**Scope / Priority**

<table>
<thead>
<tr>
<th>Priority</th>
<th>Map Name</th>
<th>Produce mapping for review</th>
<th>Review and document issues</th>
<th>Resolve issues</th>
<th>Create sample file(s) and gold standard transform</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>C2F (Template Name)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High</td>
<td>C2F US Realm Header (V3)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High</td>
<td>C2F Consultation Note (V3)</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>High</td>
<td>C2F Document (CCD) (V3)</td>
<td>MDIX</td>
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<tr>
<td>High</td>
<td>C2F Allergies and Intolerances Section (V3)</td>
<td>MDIX</td>
<td>7/14/2021</td>
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<tr>
<td>High</td>
<td>C2F Encounters Section (V3)</td>
<td>MDIX</td>
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<tr>
<td>High</td>
<td>C2F Immunizations Section (V3)</td>
<td>MDIX</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Reports for Ballot**

- "Gold Standard" for implementers
Review - Subject Matter Experts and Developers
https://confluence.hl7.org/display/CGP/Mapping+CDA+to+and+from+FHIR
Use Cases - MDIX

Demonstration:
- Runtime Use Cases
- SME Use Case

MDMI Map:
- Captures knowledge in a computable way for any exchange format on how to produce or consume a document, file, or message.
- Any MDMI Map works with any other MDMI Map.

MDMI Runtime:
- Takes MDMI Maps and executes transformations to produce consumable file.
MDIX
• For more information about MDMI, go to www.mdixinc.com

Open Standard for Interoperability: MDMI
• For information on the MDMI Standard, go to www.omg.org/mdmi

MDMI Open-Source Software and Content
• For information on Open Source, go to www.github.com/mdmi
Demonstration
Reporting Use-Case: FHIR to CCDA (eCR)

- E-Case Reporting
- Immunizations
- Syndromic Surveillance
- Reportable Labs
Electronic Case Reporting (eCR) Value

The automated generation and transmission of case reports from electronic health records (EHRs) to public health agencies for review and action.

Reporting diseases and conditions of interest to public health by healthcare providers is required by law in all US states and territories.

Requirements of this reporting vary by disease/condition (100+ reportable conditions) and public health jurisdiction.

Historically, healthcare providers must identify that their patient has a disease/condition of interest to public health, create a reportable condition case report using time-intensive manual processes (e.g., written reports, fax, or mail), and submit the report to the appropriate PHA.

Manual reporting has led to significant underreporting and, therefore, delayed identification of events, such as dangerous disease outbreaks, that require public health intervention.
Reporting Use-Case: FHIR to CCDA (eCR)

Any Healthcare Delivery System

- Deterministic Mappings and E-Case Reporting

APP supports

- COVID and the rest of the Reportable conditions

Nationwide eCR Trust Framework

Provisioning, Routing, DSS, Infrastructure

Project: PSS-1811
Join Our Team

Your LABEL could be HERE
Questions?

For further information

Natalee Agassi Natalee.Agassi@Cerner.com
Ken Lord ken.lord@bookzurman.com

Go to https://github.com/MDMI/MDMI-Transformation-Engine

- Scroll down to Swagger API section
- Under the Connectathon banner, click to get access to swagger application and test messages.
Break until 4:00 pm

How do you roast your marshmallows?

- Roast to golden perfection! = 23
- Burnt is best = 2
- Why roast at all? Eat them raw! = 2
- Somewhere between roasted and burnt, just not fully blackened and charred all over = 1
- Vegetarians don’t eat marshmallow! = 1
Leaping ahead
Ask the ONC:

Hear updates and get answers to your questions regarding regulations, certifications, USCDI, ONC Scorecard, and more.

Matt Rahn; Al Taylor
Ask ONC? and USCDI Version 2

Al Taylor and Matthew Rahn, ONC
July 28, 2021
Follow up from Previous IATs

- Why did ONC remove (e)(2) Clinical Summary?
  - CMS has identified this criterion as supporting the coordination of care through patient engagement objective and measure, which is expected to remain operational for Medicaid until January 1, 2022; after 2021 there will be no further incentives under the Medicaid Promoting Interoperability Program.
  - Removing this criterion will encourage market to innovate on patient engagement and interaction functionalities that providers and patients request
  - Reduce burden and costs without negative impact on future innovations in patient engagement and secure information exchange

- Clarify support regarding the use of unstructured information (e.g. pdf) as a clinical note?
  - ONC is exploring how we would test whether the note is good or not. Do IAT participants have any ideas of how to assess an unstructured note?

- Can all questions submitted through the feedback tool and answers to those questions should be publicly viewable?
  - You can submit all your comments on GoogleGroups so everyone will be able to see it. Propose that HL7 continue to push the specific rubric JIRA page. Inquiries or questions, email edge-test-tool@googlegroups.com
Follow up (continued)

• Is it possible to architect the scorecard so that it validates all the information that is provided regardless of whether it is required - i.e. provide validation for these "bonus sections" but do not have it count against the score?
  • This is another instance where we can define further rubrics. We can clarify which rubrics we can do an evaluation, but don’t lower the score

• Can the Scorecard score other document types besides CCD?
  • Yes, It should score any document type with a valid id, but only to a certain point. We would need to create more rubrics on a specific document template (e.g. care plan doesn’t have most of the sections we are scoring)

• Follow up with NLM with respect to a tool to show differences between one value set release to another.
What is the U.S. Core Data for Interoperability (USCDI)?

- ONC-defined set of health data that must be expressed in Certified Health IT modules and made available for exchange using certain exchange standards, such as FHIR or C-CDA.

- USCDI focuses on **core** data requirements for patient data access and patient care related exchanges.

- USCDI data elements represent individual concepts: medication, allergy, procedure, or health concern.

- Some USCDI data elements must be expressed using specific health IT vocabulary standards, such as SNOMED CT or RxNorm.

- USCDI is "content exchange standard agnostic" USCDI doesn't specify how and to what extent its elements are included in FHIR or C-CDA.
USCDI Core Principles

• Comprises a core set of structured and unstructured data needed to support patient care and facilitate patient access using health IT

• Establishes a consistent baseline of harmonized data elements that can be broadly reused across use cases, including those outside of patient care and patient access

• Expands over time via predictable, transparent, and collaborative process, weighing both anticipated benefits and industry-wide impacts
USCDI Version 2
USCDI v2 Highlighted Changes

USCDI v2 Supports Health Equity

• Sexual Orientation and Gender Identity (SOGI)
  • New Patient Demographics Data Elements using existing vocabulary standards

• Social Determinants of Health (SDOH)
  • SDOH Assessment
  • SDOH Goals
  • SDOH Problems/Health Concerns
  • SDOH Interventions
USCDI v2 Highlighted Changes

USCDI v2 Supports Broader Health Data Interoperability

- 3 new data classes
- 22 new data elements
- 4 data elements removed
### New Data Elements – Patient Demographics – SOGI

<table>
<thead>
<tr>
<th>DATA ELEMENT</th>
<th>APPLICABLE VOCABULARY STANDARD(S)</th>
</tr>
</thead>
</table>
| **Sexual Orientation** | - Sexual orientation must be coded in accordance with SNOMED CT® and HL7 Version 3 Standard, Value Sets for AdministrativeGender and NullFlavor, attributed as follows:  
  - Lesbian, gay or homosexual. 38628009  
  - Straight or heterosexual. 20430005  
  - Bisexual. 42035005  
  - Something else, please describe. nullFlavor OTH  
  - Don’t know. nullFlavor UNK  
  - Choose not to disclose. nullFlavor ASKU  

Adopted at 45 CFR 170.207(o)(1)                                                                                                                                                                                                 |
| **Gender Identity** | - Gender Identify must be coded in accordance with SNOMED CT® and HL7 Version 3 Standard, Value Sets for AdministrativeGender and NullFlavor, attributed as follows:  
  - Male. 446151000124109  
  - Female. 446141000124107  
  - Female-to-Male (FTM)/Transgender Male/Trans Man. 407377005  
  - Male-to-Female (MTF)/Transgender Female/Trans Woman. 407376001  
  - Genderqueer, neither exclusively male nor female. 446131000124102  
  - Additional gender category or other, please specify. nullFlavor OTH  
  - Choose not to disclose. nullFlavor ASKU  

Adopted at 45 CFR 170.207(o)(2)                                                                                                                                                                                                 |
## New Data Elements – Social Determinants of Health (SDOH)

Data related to conditions in which people live, learn, work, and play and their effects on health risks and outcomes.

<table>
<thead>
<tr>
<th>DATA CLASS</th>
<th>DATA ELEMENT</th>
<th>APPLICABLE VOCABULARY STANDARD(S)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessment and Plan of Treatment</td>
<td>SDOH Assessment</td>
<td>LOINC 2.70 SNOMED CT March 2021</td>
</tr>
<tr>
<td></td>
<td>Structured evaluation of risk (e.g., PRAPARE, Hunger Vital Sign, AHC-HRSN screening tool) for any Social Determinants of Health domain such as food, housing, or transportation security. SDOH data relate to conditions in which people live, learn, work, and play and their effects on health risks and outcomes.</td>
<td></td>
</tr>
<tr>
<td>Goals</td>
<td>SDOH Goals</td>
<td>SNOMED CT March 2021 LOINC 2.70</td>
</tr>
<tr>
<td></td>
<td>Identifies a future desired condition or change in condition related to an SDOH risk in any domain and is established by the patient or provider. (e.g., Has adequate quality meals and snacks, Transportation security-able to access health and social needs). SDOH data relate to conditions in which people live, learn, work, and play and their effects on health risks and outcomes.</td>
<td></td>
</tr>
<tr>
<td>Procedures</td>
<td>SDOH Interventions</td>
<td>SNOMED-CT March 2021 CPT 2021 HCPCS</td>
</tr>
<tr>
<td></td>
<td>A service offered to a patient to address identified Social Determinants of Health concerns, problems, or diagnoses (e.g., Education about Meals on Wheels Program, Referral to transportation support programs). SDOH data relate to conditions in which people live, learn, work, and play and their effects on health risks and outcomes.</td>
<td></td>
</tr>
<tr>
<td>Problems</td>
<td>SDOH Problems/Health Concerns</td>
<td>SNOMED-CT March 2021 ICD-10-CM 2021</td>
</tr>
<tr>
<td></td>
<td>An identified Social Determinants of Health-related condition (e.g., Homelessness (finding), Lack of adequate food Z59.41, Transport too expensive (finding)). SDOH data relate to conditions in which people live, learn, work, and play and their effects on health risks and outcomes.</td>
<td></td>
</tr>
</tbody>
</table>
New Data Elements – Care Team Member(s)

Represents information on a person who participates or is expected to participate in the care of a patient.

<table>
<thead>
<tr>
<th>DATA ELEMENT</th>
<th>APPLICABLE VOCABULARY STANDARD(S)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Care Team Member(s)</td>
<td>Removed Data Element, replaced by following 5 data elements</td>
</tr>
<tr>
<td>Care Team Member Name</td>
<td></td>
</tr>
<tr>
<td>Care Team Member Identifier</td>
<td></td>
</tr>
<tr>
<td>Care Team Member Role</td>
<td>Function or functions that a person may perform while participating in the care for a patient</td>
</tr>
<tr>
<td>Care Team Member Location</td>
<td>Physical location of provider or other care team member</td>
</tr>
<tr>
<td>Care Team Member Telecom</td>
<td></td>
</tr>
</tbody>
</table>

- **Care Team Member Name**
- **Care Team Member Identifier**
- **Care Team Member Role**
- **Care Team Member Location**
- **Care Team Member Telecom**

**Care Team Member Telecom**

- ITU-T E.123, Series E: Overall Network Operation, Telephone Service, Service Operation and Human Factors, International operation - General provisions concerning users: Notation for national and international telephone numbers, email addresses and web addresses (incorporated by reference in § 170.299), **and**
- ITU-T E.164, Series E: Overall Network Operation, Telephone Service, Service Operation and Human Factors, International operation - Numbering plan of the international telephone service: The international public telecommunication numbering plan
New Data Class - Clinical Tests

Includes non-imaging and non-laboratory tests performed on a patient that results in structured or unstructured (narrative) findings specific to the patient, such as electrocardiogram (ECG), visual acuity exam, macular exam, or graded exercise testing (GXT), to facilitate the diagnosis and management of conditions.

<table>
<thead>
<tr>
<th>DATA ELEMENT</th>
<th>APPLICABLE VOCABULARY STANDARD(S)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinical Test</td>
<td>LOINC 2.70</td>
</tr>
<tr>
<td>The name of the non-imaging or non-laboratory test performed on a patient.</td>
<td></td>
</tr>
<tr>
<td>Clinical Test Result/Report</td>
<td></td>
</tr>
<tr>
<td>Interpreted results of clinical tests that may include study performed, reason performed, findings, and impressions. Includes both structured and unstructured (narrative) components.</td>
<td></td>
</tr>
</tbody>
</table>
New Data Class – Diagnostic Imaging

Tests that result in visual images requiring interpretation by a credentialed professional.

<table>
<thead>
<tr>
<th>DATA ELEMENT</th>
<th>APPLICABLE VOCABULARY STANDARD(S)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diagnostic Imaging Test</td>
<td>LOINC 2.70</td>
</tr>
<tr>
<td>The name of the test performed which generates visual images (radiographic, photographic, video, etc.) of anatomic structures, and requires interpretation by qualified professionals.</td>
<td></td>
</tr>
<tr>
<td>Diagnostic Imaging Report</td>
<td></td>
</tr>
<tr>
<td>Interpreted results of imaging test that includes the study performed, reason, findings, and impressions. Includes both structured and unstructured (narrative) components.</td>
<td></td>
</tr>
<tr>
<td>Imaging Narrative</td>
<td></td>
</tr>
<tr>
<td>Interpreted results of imaging test that includes the study performed, reason, findings, and impressions. Includes both structured and unstructured (narrative) components.</td>
<td></td>
</tr>
<tr>
<td>Part of Clinical Notes Data Class in USCDI v1</td>
<td></td>
</tr>
<tr>
<td>Removed data element and incorporated narrative into definition of Diagnostic Imaging Report</td>
<td></td>
</tr>
</tbody>
</table>
New Data Class – Encounter Information

An episode defined by an interaction between a healthcare provider and the subject of care in which healthcare-related activities take place.

<table>
<thead>
<tr>
<th>DATA ELEMENT</th>
<th>APPLICABLE VOCABULARY STANDARD(S)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Encounter Type</td>
<td></td>
</tr>
<tr>
<td>Encounter Diagnosis</td>
<td>SNOMED CT March 2021</td>
</tr>
<tr>
<td></td>
<td>ICD-10 2021</td>
</tr>
<tr>
<td>Encounter Time</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Represents a date/time related to an</td>
</tr>
<tr>
<td></td>
<td>encounter (e.g., scheduled appointment time,</td>
</tr>
<tr>
<td></td>
<td>check in time, start and stop times)</td>
</tr>
<tr>
<td>Encounter Location</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Physical location of facility which</td>
</tr>
<tr>
<td></td>
<td>delivered a person’s health care or related</td>
</tr>
<tr>
<td></td>
<td>services</td>
</tr>
<tr>
<td>Encounter Disposition</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Identifies the location or type of facility</td>
</tr>
<tr>
<td></td>
<td>to where the patient left the hospital or</td>
</tr>
<tr>
<td></td>
<td>encounter episode.</td>
</tr>
</tbody>
</table>
# Changes to Data Elements - Laboratory

<table>
<thead>
<tr>
<th>DATA ELEMENT</th>
<th>APPLICABLE VOCABULARY STANDARD(S)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Test</strong></td>
<td>The name of the analysis of specimens derived from humans which provide information for the diagnosis, prevention, treatment of disease, or assessment of health.</td>
</tr>
<tr>
<td><strong>Values/Results</strong></td>
<td>Documented findings of the analysis of a tested specimen. Includes both structured and unstructured (narrative) components.</td>
</tr>
<tr>
<td><strong>Laboratory Report Narrative</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Pathology Report Narrative</strong></td>
<td></td>
</tr>
</tbody>
</table>
Changes to Data Elements - Problems

Data related to the episode of health care or related services that were performed for or delivered to a person

<table>
<thead>
<tr>
<th>DATA ELEMENT</th>
<th>APPLICABLE VOCABULARY STANDARD(S)</th>
</tr>
</thead>
</table>
                            • International Classification of Diseases ICD-10-CM 2021                                        |
                              • International Classification of Diseases ICD-10-CM 2021                                             |
| Date of Diagnosis         | Date of first determination by a qualified professional of the presence of a problem or condition affecting a patient. |
| Date of Resolution        |                                                                                                   |
USCDI v2
Updated Applicable Standards Versions

• USCDI v1
  • RxNorm - January 6, 2020
  • SNOMED CT - September 2019
  • LOINC 2.67
  • ICD-10-CM 2020
  • CVX - January 31, 2020
  • Vaccine NDC Linker - January 31, 2020
  • CPT 2020

• USCDI v2
  • RxNorm - June 7, 2021
  • SNOMED CT - March 2021
  • LOINC 2.70
  • ICD-10-CM 2021
  • CVX – April 6, 2021
  • Vaccine NDC Linker - May 18, 2021
  • CPT 2021
Standards Version Advancement Process (SVAP)
Standards Version Advancement Process (SVAP)

• **ONC to consider USCDI v2 and other standards**
  • Allows developers to voluntarily update health IT modules to newer standards
  • ONC wants your feedback on standards that should be included.
  • Comment period open until September 30th, 2021
• [www.healthit.gov/svap](http://www.healthit.gov/svap)
USCDI Version 3 Process
USCDI Version Update Process

- **2020**
  - Submission & Review Period - v2
  - USCDI v1 Final

- **2021**
  - Submission & Review Period - v3
  - USCDI v2 Draft
  - USCDI v2 Final
  - Considered for 2021 SVAP

- **2022**
  - Submission & Review Period - v4
  - USCDI v3 Draft
  - USCDI v3 Final
  - Considered for 2022 SVAP
USCDI v3 Prioritization Criteria

• **USCDI v2 Prioritization Criteria to continue for v3**
  • Represent important data needs not included in USCDI v2
  • Require only modest standards or implementation guide developmental burden
  • Require only modest developmental burden on health IT modules
  • Create only modest implementation burden on providers and health systems
  • Result in only modest aggregate lift for all new data elements combined

• **New USCDI v3 Prioritization Criteria**
  • Further mitigate health and healthcare inequities and disparities
  • Address the needs of underserved stakeholders
  • Address public health reporting, investigation, and emergency response
USCDI version 3 Update Process

Next Steps

• ONDEC v3 submission process open through September 30, 2021
• Stakeholders encouraged to
  • Review ONC prioritization criteria
  • Review existing data elements that didn’t make USCDI v2
  • Consider collaborating with other submitters to strengthen or combine submissions
  • Engage with ONC to find ways to improve submissions
Key Links

• USCDI: www.healthit.gov/uscdi
• SVAP: www.healthit.gov/svap
• ISA: www.healthit.gov/isa
  • Comments due by September 30th, 2021
• Standards Bulletins: https://www.healthit.gov/topic/standards-technology/onc-standards-bulletin
• 2015 Edition Cures Act Final Rule
  • https://www.healthit.gov/curesrule/
• 2015 Edition Cures Update Test Method
• C-CDA Validators
  • https://site.healthit.gov/home
• C-CDA Scorecard
  • https://ccda.healthit.gov/scorecard/
  • One-Click Scorecard: https://oncprojecttracking.healthit.gov/wiki/display/TechLabTU/ONC+One+Click+Scorecard
ASK ONC?
Gain some perspective

- The progress we’ve made and the path ahead
Wrap up:

Review the C-CDA IAT Dashboard and Roadmap, cover the parking lot items, and reflect on the event.

Jean Duteau; Joginder Madra
C-CDA IAT Dashboard

C-CDA IAT 12 (and before)
July 2020 and prior C-CDA IAT

- Complete: 1
- In Process: 10

C-CDA IAT 13
October 2020 C-CDA IAT

- Complete: 5
- In Process: 3

C-CDA IAT 14
March 2021 C-CDA IAT

- Complete: 7
- In Process: 0

https://confluence.hl7.org/display/CDA/CDA+R2+C-CDA+2.1+Implementation-A-Thon+Action+Items
Key accomplishments

Completed

- New alternateIdentifier extension
  - https://confluence.hl7.org/display/SD/CDA+Extensions
  - https://hl7-c-cda-examples.herokuapp.com/examples/view/Header/Direct%20Address

- Cleared up confusion about laboratory, pathology and diagnostic imaging reports in the Clinical Notes Data Class in US CDI

- Crisp definitions for CDA participants in different entry types
  - http://cdasearch.hl7.org/examples/view/General/Authors%20Performers%20Informants%20Participants%20in%20CDA%20Documents

In-Progress

- More Guidance on when to generate Encounter Summary documents (Data Usability WG)
- How to reference id’s over time (Data Usability WG)
- Template resign options for Problem Concern and Allergy Concern entries
- Lots of questions for the ONC to answer
- More guidance on the use of Section Time Range
- Tool for showing differences between two value sets
- Use of Referral Notes and Consultation Notes, and Progress Notes to support closed-loop-referrals

https://confluence.hl7.org/display/CDA/CDA+R2+C-CDA+2.1+Implementation-A-Thon+Action+Items
CDA Roadmap

- New IG Quality Criteria
- New JIRA process for issue reporting and tracking
- New GitHub Repo strategy for managing resources associated with an IG
- Pilot to experiment with using FHIR’s IG Publisher Tooling to create CDA IGs

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C-CDA Roadmap Update

C-CDA Roadmap (Pathway to 2022)

1. **2021 September/October:** Errata Package! Publish a clean version of C-CDA 2.1 including errata (All potential errata due (tracker created and emailed to co-chairs) By 7/29/2021!)
   a. **ADDITION:** Errata package for C-CDA companion guide

2. **2022 January C-CDA Ballot**
   a. **Roll current templates out of the Companion Guide (USCDI v1) into C-CDA**
      b. **Incorporate any design changes for existing templates in C-CDA 2.1 that couldn’t be ‘errata’**
      c. **This project will develop heuristics for accepting design changes.**
      d. **Consider Supplemental Templates that are new versions of existing C-CDA templates**
      e. **Consider ballot a path to normative that does not carry forward:**
         i. **Diagnostic Imaging Report (V3)**
      f. **Finalize ballot vs STU update after errata triage (September)**

3. **2022 January Companion Guide Ballot:** USCDI v2 design is done in separate Companion guide ballot
Sliding into success!

And the award(s) go to.....
Event feedback

- [https://www.surveymonkey.com/r/202107CCDAIAT](https://www.surveymonkey.com/r/202107CCDAIAT)
Save the Date!
C-CDA IAT is scheduled for October 27, 2021
Thank you

Thanks to the ONC for their support to fund the C-CDA Implementation-a-thon!

The Office of the National Coordinator for Health Information Technology
Jean Duteau to Everyone (10:06 AM)
http://pollev.com/ccdaiat752
Audience texts CCDAIAT752 to 22333 to join the session, then they text a response.
http://pollev.com/ccdaiat752
Jean Duteau to Everyone (10:12 AM)
https://forms.gle/j9DkcpGdgcAXL5fR7
Chris Dickerson to Everyone (10:25 AM)
https://carequality.org/joint-document-content-work-group-