CDA® and C-CDA® for Patient Summaries

HIMSS 2015

Calvin E. Beebe
A single XML schema for all Clinical Documents in Healthcare!

CDA Structured Documents

Coded Discrete Data Elements (CDA templates)

Transition of Care
Clinical Summary
VDT Summary
Quality Reporting
Documents for Payers

Leveraging templates to create Implementation Guides
How V3 Models are developed and maintained: with just enough HL7 Development Framework

Reference Information Model

RMIM

subset of RIM
tighten constraints

Hierarchical Description

linearization
additional constraints

algorithmic

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**Good Health Clinic Consultation Note**

**Patient:** Henry Levin, the 7th

**Birthdate:** September 24, 1932

**Consultant:** Robert Dolin, MD

**History of Present Illness**

Henry Levin, the 7th is a 67 year old man with a history of asthma in his teens. He has been able to be weaned off steroids.

**Past Medical History**

- Asthma
- Hypertension (see HTN.cda for details)
- Osteoarthritis, right knee

**Medications**

- Theodur 200mg BID
- Proventil inhaler 2puffs QID PRN
- Prednisone 20mg od

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```xml
+ <custodian>
  - <recordTarget>
    - <patient>
      <id extension="12345" root="2.16.840.1.113883.3.933" />
      - <patientPatient>
        - <name>
          <given>Henry</given>
          <family>Levin</family>
          <suffix>the 7th</suffix>
        </name>
        <administrativeGenderCode code="M" codeSystem="2.16.840.1.113883.5.1" />
        <birthTime value="19320924" />
      </patientPatient>
      + <providerTime value="19320924" />
      </recordTarget>
    + <relatedDocument typeCode="RPLC">
      + <componentOf>
        - <!--
          CDA Body
          -->
        - <component>
          - <structuredBody>
            - <!--
              History of Present Illness section
              -->
            - <section>
              - <code code="10164-2" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC"/>
              <title>History of Present Illness</title>
              <text>
                Henry Levin, the 7
              </text>
            </section>
            + <content styleCode="Bold">
              Henry Levin, the 7
            </content>
            + <content>
              (see HTN.cda for details)
            </content>
            + <content>
              Osteoarthritis, right knee
            </content>
          </structuredBody>
        </component>
      </relatedDocument>
    </patient>
  </recordTarget>
</custodian>
```
HL7’s CDA vs. C-CDA

C-CDA defines a set of CDA documents!

The HL7 Consolidated CDA is an implementation guide which specifies a library of templates and proscribes their use for a set of specific document types.

CDA the schema for those documents!

The HL7 Clinical Document Architecture (CDA) is a document markup standard that specifies the structure and semantics of "clinical documents" for the purpose of exchange.
Consolidated CDA 1.1

Continuity of Care Document  History and Physical
Discharge Summary
Consultation Notes
Diagnostic Imaging Rpt
Procedure Note
Operative Note
Progress Note
Unstructured Documents

ONC - CEHRT
HITSP - C32, C80, C83
IHE – PCC
HL7 – CCD
HL7 – CDA

C-CDA

HL7 Health Story Implementation Guides
C-CDA 1.1 → C-CDA 2.0

 Consolidated CDA
 IHE Health Story
 Consolidation, Release 1.1

 ✓ Care Plan
   • Consultation Notes
   • Continuity of Care Document*
   • Discharge Summary
   • History and Physical
   • Diagnostic Imaging Reports
   • Operative Note
 ✓ Patient Generated Document
   • Progress Note
   • Procedure Note
 ✓ Referral Note
 ✓ Transfer Note
 • Unstructured

 Consolidated CDA
 Templates for Clinical Notes, Release 2
HL7 Attachments WG – CDP1

Rational for CDP1 document types:

1) Current C-CDA documents require very few sections
2) EHR vendors frequently support only required sections
3) Certification requires support only for the CCD and some sections
4) Providers experience large variability in C-CDA optionality
5) Digital signatures fix content at time of signing

The Clinical Documents for Payers, reduces optionality, by requiring essentially all content to ensure that vendors support its generation.
QRDA – Quality Reporting

QRDA
Quality Reporting
Document Architecture

- eMeasure (HQMFM)
- Patient data
- Patient data
- Patient data
- Other systems
- Informs

- EHR
- Individual quality report(s)
- Calculation engine
- Aggregate quality report
- Informs

- data capture
  - Defined by QDM
- export
  - QRDA Category I Reports
- calculate
  - HQMF eMeasures
- report
  - QRDA Category III Reports
The mechanism most commonly used to constrain CDA is referred to as “templated CDA”. In this approach, a library is created containing modular CDA templates such that the templates can be reused across any number of CDA document types.
A system of templates...

- **Document-level templates**: These templates constrain fields in the CDA header, and define containment relationships to CDA sections.

- **Section-level templates**: These templates constrain fields in the CDA section, and define containment relationships to CDA entries.

- **Entry-level templates**: These templates constrain the CDA clinical statement model in accordance with real world observations and acts.

- **Reuse templates**: These templates group a common set of constraints for reuse in CDA documents. i.e. names, dates, …
What does this mean?

Certified EHR Systems*

PATIENTS

PAYERS

QUALITY

PRACTICE

future +700 +700 +700
Challenges (Opportunities)

Numerous CDA IGs have been developed:
- Certified EHRs are required to support a number of them
- All IGs are typically Draft Standards for Trial Use (DSTU)

What have we learned:
- Each implementation is slightly different,
  - *Inherent differences* – source systems, narrative
  - *Interpretation differences* – communications and content
  - *Best Practice differences* – SHALL, SHOULD and MAY
  - *Weakness in the Standards / Guidance / Samples*
  - *There is a need to adopt a set of best practices with CDA!"
The Opportunity...

**Solicit Feedback:**
- DSTU Comment page for feedback
- Additional venues (HIMSS 2014)

**More samples:**
- SDWG sample taskforce – 40 new templates approved
  - More in the pipeline, under development

**Best practices:**
- Read the standards and implementation guides
- Review the extensive set of samples developed
- Removing optionality will require wider industry participation of both vendors / practices.
How to participate…

Create an HL7 user account (free) or become a member:

- Access the CDA Standards from HL7
- Post or review the C-CDA DSTU comments
- Subscribe to Structured Document WG ListServ
- Call into the Thursday AM SDWG conference call