Introducción al CDA
Clinical Document Architecture

Josep Vilalta Marzo
www.vico.org
Universitat Internacional de Catalunya
CDA
Clinical Document Architecture

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Seminario Técnico HL7 – Claves de la interoperabilidad de un Sistema Sanitario
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ANNOUNCEMENT

ANSI/HL7 CDA R1.0-2000

Ann Arbor, Mich.—October 4, 2000—Health Level Seven, Inc. (HL7) successfully balloted what it believes to be the first XML-based standard for healthcare—the Clinical Document Architecture (CDA). The CDA, which was until recently known as the Patient Record Architecture (PRA), provides an exchange model for clinical documents (such as discharge summaries and progress notes)—and brings the healthcare industry closer to the realization of an electronic medical record. The CDA Standard is expected to be published as an ANSI approved standard by the end of the year.
Qué es CDA

- Clinical Document Architecture
  - Primera versión KONA group en 1997
  - Conocido previamente como: Patient Record Architecture (PRA)

- CDA es
  - Un estándar de marcaje para definir la estructura y la semántica de un documento clínico que se requiere intercambiar entre distintos sistemas.
Ejemplo

- `<clinical_document_header>

  <id EX="a123" RT="2.16.840.1.113883.3.933" />
  <document_type_cd V="11488-4" S="2.16.840.1.113883.6.1" DN="Consultation note" />
  <origination_dttm V="2000-04-07" />
  <document_relationship type_cd V="RPLC" />
  <related_document id EX="a234" RT="2.16.840.1.113883.3.933" />
</related_document>
</document_relationship>

  <patient_encounter id EX="KPENC1332" R T="2.16.840.1.113883.3.933" />
  <encounter_tmr V="2000-04-07" />
</patient_encounter>

  <local_header ignore="all" descriptor="MyLocalTag">
    ... extra stuff that is only used locally ...
  </local_header>
</clinical_document_header>
Qué es CDA

– Es un **objeto de información**
  • Que puede existir fuera de un mensaje
  • Puede contener textos, imágenes y contenido multimedia
  • Puede ser leído e interpretado por personas y sistemas
Qué es CDA

• XML and documents
  – Semantic markup
  • Two extremes in nowadays data processing
    – „Narrative text“ vs. „Fields in a database“
  • „enrich“ text with markups – for various purposes
CDA "Levels" - Quantum sets of specializations, to which further constraints can be applied.
Arquitectura

- **Level One**
  - RIM-derived **document header**
  - **body** is largely structural, although codes can be inserted

- **Level Two**
  - HL7 Templates can constrain the general Level One DTD, resulting in Level Two DTD

- **Level Three**
  - Clinical content can be marked up to the extent that it is modeled in the RIM
Claves del CDA

- CDA documents are encoded in eXtensible Markup Language (XML).

- CDA documents derive their meaning from the HL7 Reference Information Model (RIM) and use HL7 V3 data types.

- The complete CDA will include a hierarchical set of document specifications. This hierarchy is referred to as an architecture.

- CDA documents are no messages but can be the payload of an v2 or v3 message.
CDA y mensajes HL7

- Relationship of CDA to HL7 Messaging Standards
  - CDA documents are encapsulated as MIME packages within HL7 messages

```
HL7 V2.x
MSH|...
EVN|...
PID|...
PV1|...
TXA|...
OBX|1|ED|...
```

```
HL7 V3
<service_cd>
<service_txt T="ED">

CDA

CDA

</service_txt>
</service_cd>
```
Estructura CDA

- **CDA Header**
  - Specified in the CDA Header DTD
  - derived using the V3 Message Development process

- **CDA Level One Body**
  - Specified in the CDA Level One DTD
  - derived from document analysis, building on the modeling employed by document markup standards.

- **HL7 V3 Data Types**
  - An XML implementation of the abstract data type specification used by both the CDA and the HL7 Version 3 message specifications.
Elementos de la cabecera

- **Specified by the CDA Header DTD**
  - derived from a Hierarchical Description (HD)
  - method closely parallels the V3 Message Development Framework

- **Four logical components of the CDA Header**
  - 1. Document information
  - 2. Encounter data
  - 3. Service actors (such as providers)
  - 4. Service targets (such as patients)
Documento CDA

Header
- Document Information
- Encounter
- Service Actors
- Service Targets

Body
- Structured (Narrative)
- Text, Coded Entries
Documento CDA

document information

encounter data

service actors

service targets
CDA XML
Ejemplo

- `<clinical_document_header>`

  ```xml
  <clinical_document_header>
    <id EX="a123" RT="2.16.840.1.113883.3.933" />
    <document_type_cd V="11488-4" S="2.16.840.1.113883.6.1" DN="Consultation note" />
    <origination_dttm V="2000-04-07" />
    <document_relationship>
      <document_relationship.type_cd V="RPLC" />
      <related_document>
        <id EX="a234" RT="2.16.840.1.113883.3.933" />
      </related_document>
    </document_relationship>
    <patient_encounter>
      <id EX="KPENC1332" RT="2.16.840.1.113883.3.933" />
      <encounter_tmr V="2000-04-07" />
    </patient_encounter>
    <local_header ignore="all" descriptor="MyLocalTag">
      ... extra stuff that
    </local_header>
  </clinical_document_header>
  ```

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**Good Health Clinic Consultation note**

**Consultant:** Robert Delin, MD  
**Date:** April 7, 2000  
**Patient:** Henry Levin, the 97th  
**MRN:** 12345  
**Sex:** M

**History of Present Illness**

Henry Levin, the 97th is a 67 year old male referred for further asthma management. Onset of asthma symptoms in late teens. He was hospitalized twice last year, and already twice this year. He has not been able to discontinue off steroids for the past several months.

**Past Medical History**

- Asthma
- Hypertension
- Osteoarthritis, right knee

**Medications**

- Theodur 200mg BID
- Proventil inhaled 2puffs QID PRN
- Prednisone 20mg qd
- HCTZ 25mg qd

**Allergies**

- Penicillin - Hives
- Aspirin - Wheezing

**Social History**

- Smoking: 1 PPD between the ages of 20 and 55, and then he quit.
- Alcohol: none

**Physical Examination**

- **Vital Signs:** BP 118/78, Resp 16 and unlabored; T 98.6F, HR 86 and regular
CDA XML

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Con la colaboración de:

Oracle

IBM

HP

jvilalta@vico.org