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Information Content Standards

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Content Standards

- Clinical documents
- Clinical statements
- Data types
Objectives

- By the end of this session, you should be able to:
  - Define key features of clinical documents
  - Describe key classes used in the HL7 CDA standard
  - Describe common data types and classes using in HL7 Version 3
  - Explain how to map an HL7 diagram to UML
Clinical Documents

- **Communicate** relevant clinical information between healthcare providers separated by distance or time

- Support **compliance** with local policy, regulation and law

- Provide **credible** documentation of healthcare

- Present a **complete** picture of care provided

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HL7 Clinical Document Architecture (CDA)

- CDA is an XML based standard format developed by HL7 International for exchange of dictated, transcribed, scanned or electronic reports between health care information systems
  - It has also been approved by ANSI and ISO

- Six key features of CDA are derived from Four Cs (previous slide):
  1. Human readability
  2. Wholeness
  3. Persistence
  4. Stewardship
  5. Context
  6. Potential for authentication

- Optional features support
  - Standardized XML for text; machine processable content
CDA supports multiple levels of human readability

Level 1 provides a Header storing context and human readable text in a variety of formats—proprietary or standards based

Level 2 adds a standard format for human readable text and coded sections

Level 3 adds a standard format for machine readable clinical statements

The various levels allow for an incremental approach to adoption and interoperability
Wholeness

- Health care is not just about a single problem, medication, or allergy: it is about the whole patient.

- Clinicians providing care must be aware of all patient issues affecting their health.

- Therefore, documentation must include all necessary information in context.
  - Wholeness enforces the idea that a single encounter requires complete documentation.

- Rule #1 from a health information management professional:
  - “If it isn’t documented, it didn’t happen.”
Persistence

- Documents must be stored for long periods of time from a policy, regulatory, or legal perspective
  - Patient life + seven years
  - 70 years
  - 10 years

- In order to provide appropriate care, patient history must be available
  - Surgical implant may reside in patient for decades
  - Prior history of patient exposures important (e.g., chicken pox)

- File formats need to be standardized and well specified to allow for technology changes over that time
  - Who here remembers WordStar—let alone would be able to access old records stored in that proprietary file format?
Stewardship

- Clinical documents must have a custodian who can make them accessible against future need

- Organizations producing clinical documentation must be able to reproduce the original content, often by law and regulation

- The steward must be identified in the clinical document so that access to the original and other clinical data can be gained should questions arise
The context of the document includes:
  - Who wrote it
  - What patient it is for
  - When and what encounter it was about
  - Who provided the information in it
  - Who it was meant for
  - What kind of service was provided

This context should be maintained inside the document.

In early days of transcription, documents and their metadata were often stored as separate files; maintaining the links between these two was a challenge.
  - When the links are lost, it requires a great deal of effort to recreate them.

Context enables the document to be searched for.
  - “If you cannot find it, it may as well not exist, in which case, see rule number 1.”
Potential for Authentication

- In order to be credible, responsibility for document content must be asserted.

- The role of legal authentication can be different from that of authorship:
  - A resident writes a progress note on the patient.
  - He or she is the author of the information but not legally responsible because he is under the supervision of the attending physician, who legally signs the document.

- Responsibility ultimately resides in one individual.
<?xml encoding='UTF-8' version='1.0'?>
<?xml version="1.0" encoding="UTF-8" ?>

<ClinicalDocument
 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
 xmlns="urn:hl7-org:v3">
<typeId extension="POCD_HD000040"
 root="2.16.840.1.113883.1.3" />
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 codeSystemName="LOINC" displayName="SUMMARIZATION OF EPISODE NOTE" />
<title>Continuity of Care Document</title>
<effectiveTime value="20070817194300-0500" />
<confidentialityCode code="N"
 codeSystem="2.16.840.1.113883.5.25"
 codeSystemName="Confidentiality" displayName="Normal" />
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  <patientRole>
    <id extension="12345" root="2.16.840.1.113883.3.933"/>
    <addr>
      <streetAddressLine>17 Daws Rd.</streetAddressLine>
      <city>Blue Bell</city>
      <state>MA</state>
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    <telecom value="tel:(781)555-1212" use="HP"/>
  </patientRole>
  <patient>
    <name>
      <prefix>Mrs.</prefix>
      <given>Ellen</given>
      <family>Ross</family>
    </name>
    <administrativeGenderCode code="F"
      codeSystem="2.16.840.1.113883.5.1"/>
    <birthTime value="19600127"/>
  </patient>
</recordTarget>
...<author>
  <time value="20050329224411+0500"/>
  <assignedAuthor>
    <id extension="1" root="1.3.6.1.4.1.2835.1"/>
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    <addr>
      <streetAddressLine>21 North Ave</streetAddressLine>
      <city>Burlington</city> <state>MA</state>
      <postalCode>01803</postalCode>
    </addr>
    <telecom value="tel:(999)555-1212" use="DIR"/>
    <assignedPerson>
      <name><prefix>Dr.</prefix><given>Bernard</given>
      <family>Wiseman</family> <suffix>Sr.</suffix>
    </name>
    </assignedPerson>
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      <name/>
    </assignedPerson>
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</legalAuthenticator>

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</informant>

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      codeSystemName="CPT-4" />
    <effectiveTime>
      <low value="20050329" />
      <high value="20050329" />
    </effectiveTime>
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      codeSystem="2.16.840.1.113883.6.21"
      displayName="Routine Discharge"
      codeSystemName="UB92" />
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</componentOf>
Service Information

<documentationOf>
  <serviceEvent classCode="PCPR">
    <code/>
    <effectiveTime>
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      <high value="20050329" />
    </effectiveTime>
    <performer typeCode="PRF">
      <functionCode code="PCP"
        codeSystem="2.16.840.1.113883.5.88" />
      <time>
        <low value="1998" />
        <high value="2005" />
      </time>
      <assignedEntity/>
    </performer>
  </serviceEvent>
</documentationOf>
<component>
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    <text>
      <reference value value="file.rtf" />
    </text>
  </nonXMLBody>
</component>
Patient slipped and fell on ice, twisting her ankle as she fell.