

PHR by CDA: Creating Personal Health Records with the Clinical Document Architecture

Liora Alschuler





CDA Basics

Where it is used today

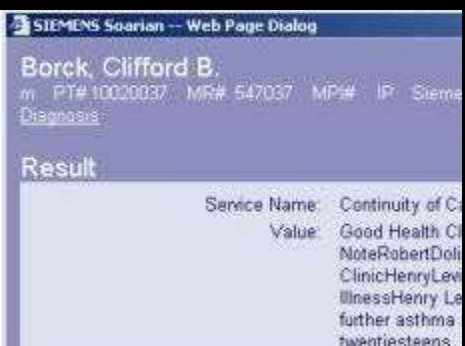
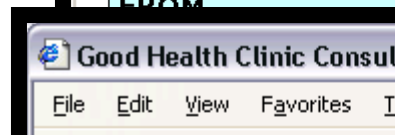
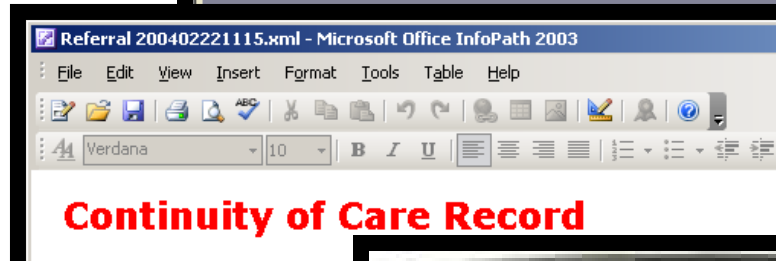
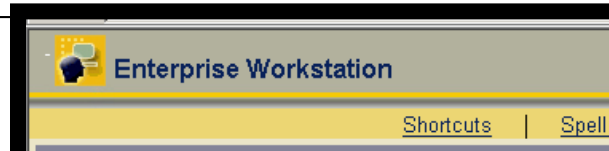
Demonstration

CDA

- Clinical Document Architecture
- ANSI/HL7 CDA R1.0-2000
- ANSI/HL7 CDA R2.0-2005
- A specification for document exchange using
 - XML,
 - the HL7 Reference Information Model (RIM)
 - Version 3 methodology
 - and vocabulary (SNOMED, ICD, local,...)

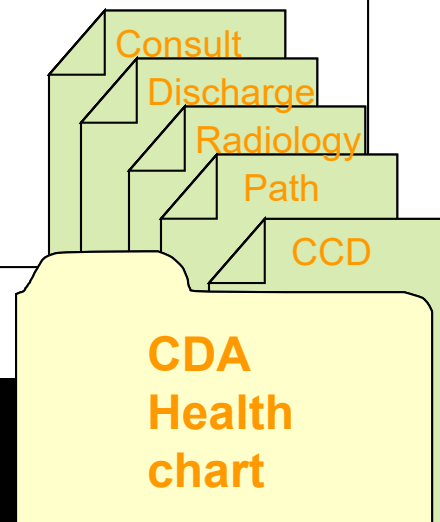
CDA: A Document Exchange Specification

- This is a CDA
- and this
- and this
- and this
- and this
- and this
- and this



CDA: electronic documents

- eDocuments for Interoperability
 - Many CDA documents comprise an individual electronic medical record
 - Key component for local, regional, national electronic health records
 - Gentle on-ramp to information exchange
 - Everyone uses documents
 - EMR compatible, no EMR required
 - All types of clinical documents



Sample CDA

```
C:\KEGVR2M1\CDA.ReleaseTwo.MembershipBallot01.Jan.2005\html\infrastructure\cda\SampleCDADocumen
File Edit View Favorites Tools Help
Back Forward Stop Refresh Home Search Favorites
+ <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>
+ <providerOrganization>
</patient>
</recordTarget>
+ <relatedDocument typeCode='
+ <componentOf>
- <!--

*****
CDA Body
*****

-->
- <component>
- <structuredBody>
- <!--

*****
History of Present Illness section
*****

-->
- <component>
- <section>
  <code code="10164-2" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC" />
  <title>History of Present Illness</title>
  - <text>
    - <content styleCode="Bold">
      Henry Levin, the 7
    - </content>
```

- Header
- Body
 - Readable: required
 - Computable: optional

Good Health Clinic Consultation Note

File Edit View Go Bookmarks Tools H

Subscribe with Blogli...

Good Health

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 male with a long history of asthma in his teens. He was hospitalized for asthma in 1980 and has been able to be weaned off steroid therapy since that time.

Past Medical History

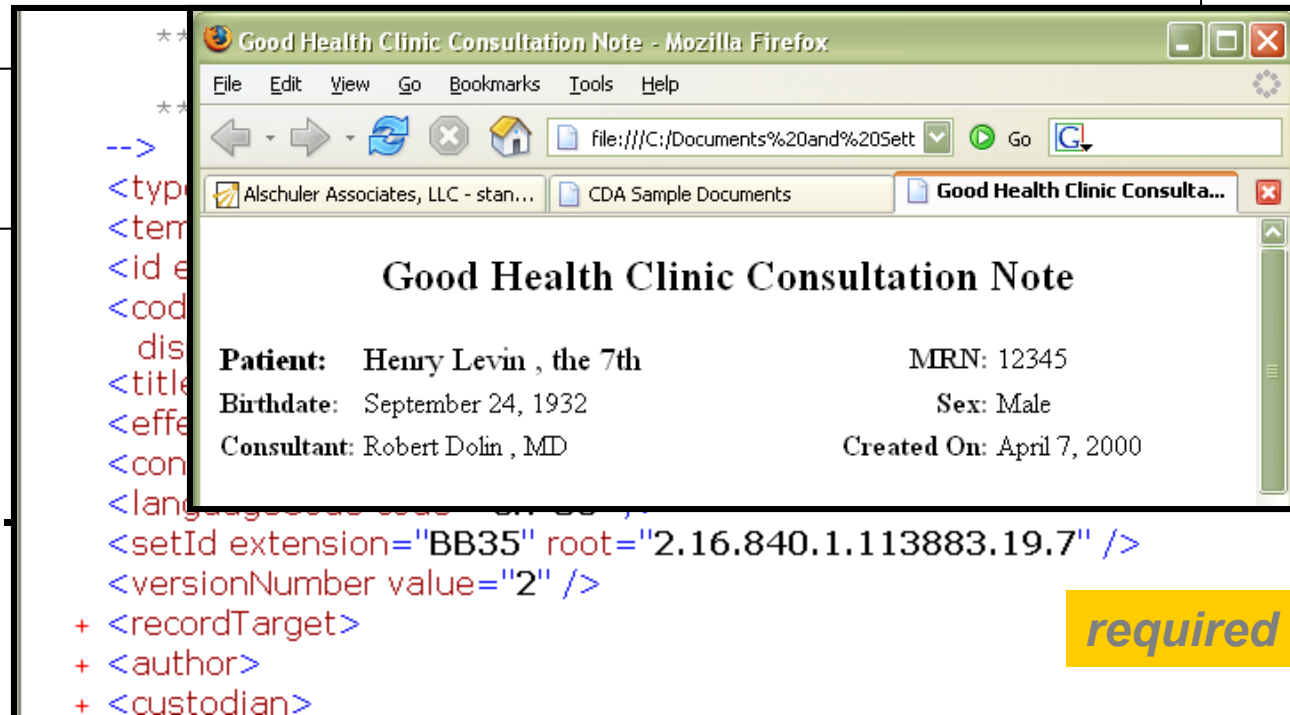
- Asthma
- Hypertension (see HTN.cda for details)
- Osteoarthritis, right knee

Medications

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

CDA Header: Metadata

- Identify
 - Patient
 - Provider
 - Document type
- Sufficient for
 - Medical records management
 - Document management
 - Registry/repository
 - Record locator service
 - Store, query, retrieve



Good Health Clinic Consultation Note - Mozilla Firefox

File Edit View Go Bookmarks Tools Help

file:///C:/Documents%20and%20Sett Go

Alschuler Associates, LLC - stan... CDA Sample Documents Good Health Clinic Consulta...

Good Health Clinic Consultation Note

Patient: Henry Levin , the 7th	MRN: 12345
Birthdate: September 24, 1932	Sex: Male
Consultant: Robert Dolin , MD	Created On: April 7, 2000

```
-->
<type
<tem
<id e
<cod
dis
<title
<effe
<con
<lang
<setId extension="BB35" root="2.16.840.1.113883.19.7" />
<versionNumber value="2" />
+ <recordTarget>
+ <author>
+ <custodian>
```

required

CDA Body: Human-readable report

- Any type of clinical document
 - H&P
 - Consult
 - Op note
 - Discharge Summary...
- Format: tif, PDF, HTML, XML:
 - Paragraph
 - List
 - Table
 - Caption
 - Link
 - Content
 - Presentation

Good Health Clinic Consultation Note - Mozilla Firefox

File Edit View Go Bookmarks Tools Help

file:///C:/Documents%20and%20Settings/...

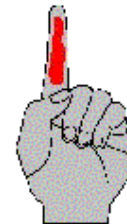
Alschuler Associates, LLC - stan... CDA Sample Documents

Vital Signs

Date / Time	April 7, 2000 14:30	April 7, 2000 15:30
Height	177 cm (69.7 in)	
Weight	194.0 lbs (88.0 kg)	
BMI	28.1 kg/m ²	
BSA	2.05 m ²	
Temperature	36.9 C (98.5 F)	36.9 C (98.5 F)
Pulse	86 / minute	84 / minute
Rhythm	Regular	Regular
Respirations	16 / minute, unlabored	14 / minute
Systolic	132 mmHg	135 mmHg
Diastolic	86 mmHg	88 mmHg
Position / Cuff	Left Arm	Left Arm

Skin Exam

Erythematous rash, palmar surface, left index finger.



required

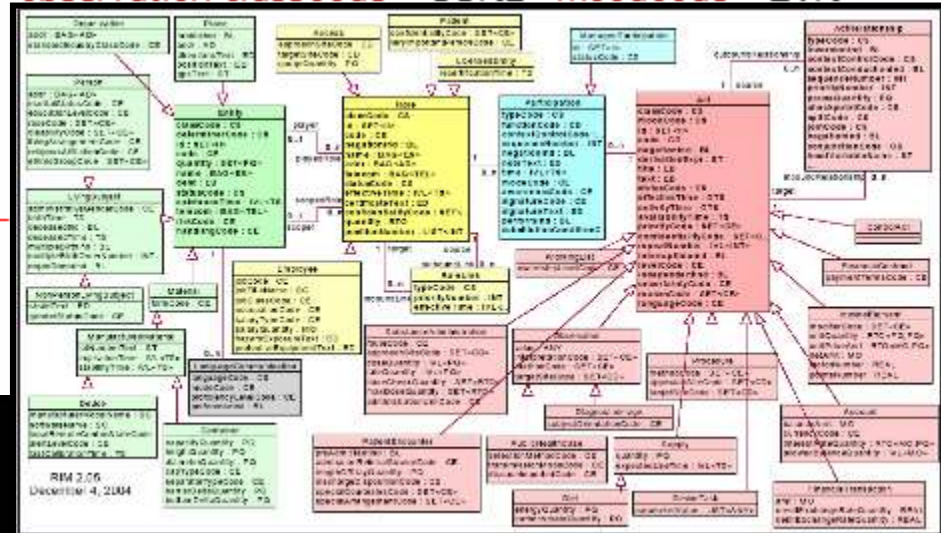
CDA Body: Machine Processible

– Model-based computable semantics:

- Observation
- Procedure
- Organizer
- Supply
- Encounter
- Substance Administration
- Observation Media
- Region Of Interest
- Act

```
<title>Past Medical History</title>
- <text>
- <list>
- <item>
  <content ID="a1">Asthma</content>
</item>
+ <item>
+ <item>
</list>
</text>
- <entry>
- <observation classCode="COND" moodCode="EVN">
```

Optional



why XML alone isn't enough

- With a few simple tags, and controlled vocabulary, XML can describe anything
- but...
- the tags need to be defined:
 - `<orderNum>` : **HL7** : order placed
 - `<orderNum>` : **CDISC** : visit sequence
- CDA tags are defined by the HL7 Reference Information Model (RIM) and use standard controlled vocabulary

CDA Body: Why isn't XML + SNOMED enough?

Good Health Clinic Consultation note

Consultant: Robert Dolin, MD
Date: April 7, 2000
Patient: Henry Levin, the 7th **MRN:** 12345 **Sex:** Male
Birthdate: September 24, 1932

History of Present Illness

Henry Levin, the 7th is a 67 year old male referred for further asthma management. Onset of asthma in his ~~twenties~~ teens. He was hospitalized twice last year, and already twice this year. He has not been able to be weaned off steroids for the past several months.


Past Medical History

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

Medications

- Theodur 200mg BID
- Albuterol inhaler 2puffs QID PRN
- Prednisone 20mg qd
- HCTZ 25mg qd

Allergies & Adverse Reactions

- Penicillin 
- Aspirin - Wheezing
- Codeine - Itching and nausea

Family History

- Father had fatal MI in his early 50's.



“hives”: SNOMED CT **247472004**

“Dr. Dolin asserts that Henry Levin manifests hives as a previously-diagnosed allergic reaction to penicillin”

First: human readable

Allergies & Adverse Reactions

- Penicillin - Hives
- Aspirin - Wheezing
- Codeine - Itching and nausea

```
<!--
```

```
*****  
Allergies & Adverse Reactions section  
*****
```

```
-->
```

```
<component>  
  <section>  
    <code code="10155-0" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC" />  
    <title>Allergies and Adverse Reactions</title>  
    <text>  
      <list>  
        <item>Penicillin - Hives</item>  
        <item>Aspirin - Wheezing</item>  
        <item>Codeine - Itching and nausea</item>  
      </list>  
    </text>
```

Observation: RIM-defined
History: SNOMED
Hives: SNOMED

Observation: RIM-defined
History : SNOMED
Allergy to penicillin: SNOMED

Relationship: RIM-defined
RIM-defined CDA structures + vocabulary =
Hives manifests an allergic reaction to penicillin

```
<entry>  
  <observation classCode="OBS" moodCode="EVN">  
    <code code="84100007" codeSystem="2.16.840.1.113883.6.96"  
      codeSystemName="SNOMED CT" displayName="history taking (procedure)" />  
    <value xsi:type="CD" code="247472004" codeSystem="2.16.840.1.113883.6.96"  
      codeSystemName="SNOMED CT" displayName="Hives" />  
    <entryRelationship typeCode="MFST">  
      <observation classCode="OBS" moodCode="EVN">  
        <code code="84100007" codeSystem="2.16.840.1.113883.6.96"  
          codeSystemName="SNOMED CT" displayName="history taking (procedure)" />  
        <value xsi:type="CD" code="91936005" codeSystem="2.16.840.1.113883.6.96"  
          codeSystemName="SNOMED CT" displayName="Allergy to penicillin" />  
      </observation>  
    </entryRelationship>  
  </observation>  
</entry>
```

Then: supply context

<!--

CDA Header

-->

<id extension="c266" root="2.16.840.1.113883.3.933" />

<code code="11488-4" codeSystem="2.16.840.1.113883.6.1" displayName="Consultation note" />

<title>Good Health Clinic Consultation Note</title>

<effectiveTime value="20000407" />

<confidentialityCode code="N" codeSystem="2.16.840.1.113883.5.25" />

<setId extension="BB35" root="2.16.840.1.113883.3.933" />

<versionNumber value="2" />

+<legalAuthenticator>

+<author>

+<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>

<providerOrganization>

<id extension="M345" root="2.16.840.1.113883.3.933" />

</providerOrganization>

</patient>

</recordTarget>

Who is the subject?

Target: RIM-defined

Id: local

CDA: Incremental Computability

- Standard HL7 metadata
- Simple XML for point of care human readability
- RIM semantics for reusable computability (“semantic interoperability”)

```
*****  
CDA Header  
*****
```

-->

```
<typeId root="2.16.840.1.113883.1.3" extension="POCD_HD"  
<templateId root="2.16.840.1.113883.3.27.1776" />  
id="1" root="2.16.840.1.113883.1.3" extension="POCD_HD"/>
```

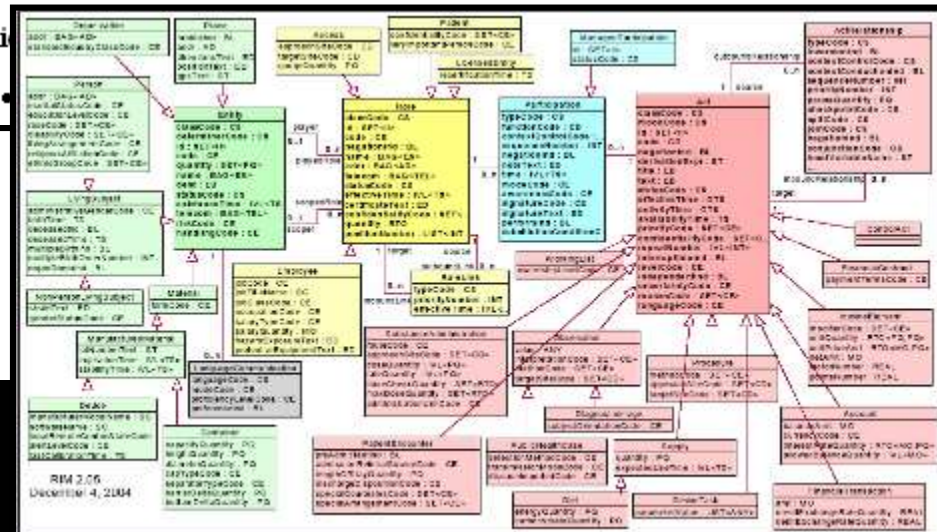
History of Present Illness

Henry Levin, the 7th is a 67 year old male referred for further asthma management. Onset of asthma in h was hospitalized twice last year, and already twice this year. He has not been able to be weaned off steroid several months.

Past Medical History

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

Medi



Incremental Semantic Interoperability

- Patients transfer between providers with vastly different IT capabilities
- Need to support information requirements at point of care
 - Full EMR adoption... not predictable based on past adoption curves
- Assume gradually rising, but still heterogeneous levels of sophistication
 - Data formats (imaging, text, XML)
 - Coded data (metadata, basic structure, simple results reporting, complex clinical statements)

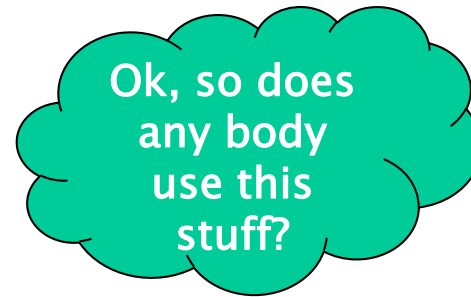
Investing in Information

- CDA can be simple
- CDA can be complex
- Simple encoding relatively inexpensive
- Complex encoding costs more
- You get what you pay for:
 - like charging a battery,
 - the more detailed the encoding
 - the greater the potential for reuse

CDA Basics



Where it is used today •

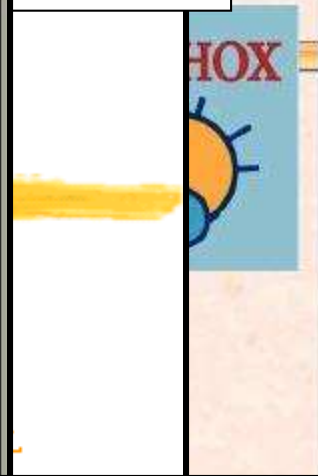
Demonstration



Ok, so does
any body
use this
stuff?


CDA: an international standard

 <p>Ministro per l'Innovazione e le Tecnologie Piano Nazionale di e-Government</p>	Nome progetto: TeleMed ESCAPE	Autore: Alessia Brigido, abrigido@ulss.tv.it Soluzioni Informatiche: www.solinfo.it		
	Titolo documento: Specifiche per lo schema standard di referto utilizzando lo standard CDA release 2	Documento Schema di referto CDA release 2	Pagina Pagina 1 di 62	
	Oggetto: Illustrazione della struttura e delle specifiche dello schema standard di referto	Status V.1.5	Data 07/04/05	




No	Element Name (Link to tabular view)	Card	Mand	Conf	of Message Element Type	CS
	PREF HMD					
1	ClinicalDocument	0..1			ClinicalDocument	
2	classCode					
3	moodCode					
4	id					
5	code					
6	title					
7	effectiveTime					
8	versionNumber					
9	author					
10	typeCode					
11	functionCode					
12	contextControlCode					
13	time					
14	assignedAuthor					
15	classCode					
16	id					
17	code					
18	addr					
19	telecom					
20	assignedAuthorChoice	0..1			AuthorChoice AuthorChoice_comp1_1 Person	
21	assignedAuthorChoice_AuthorChoice_comp1_1	1..1			AuthorChoice_comp1_1 Person	


診療情報ヘッダ



BRITISH COLUMBIA



e-MS ELECTRONIC MEDICAL SUMMARY



VANCOUVER ISLAND health authority

e-MS Clinical Document Architecture Implementation Guide

17 December 2004

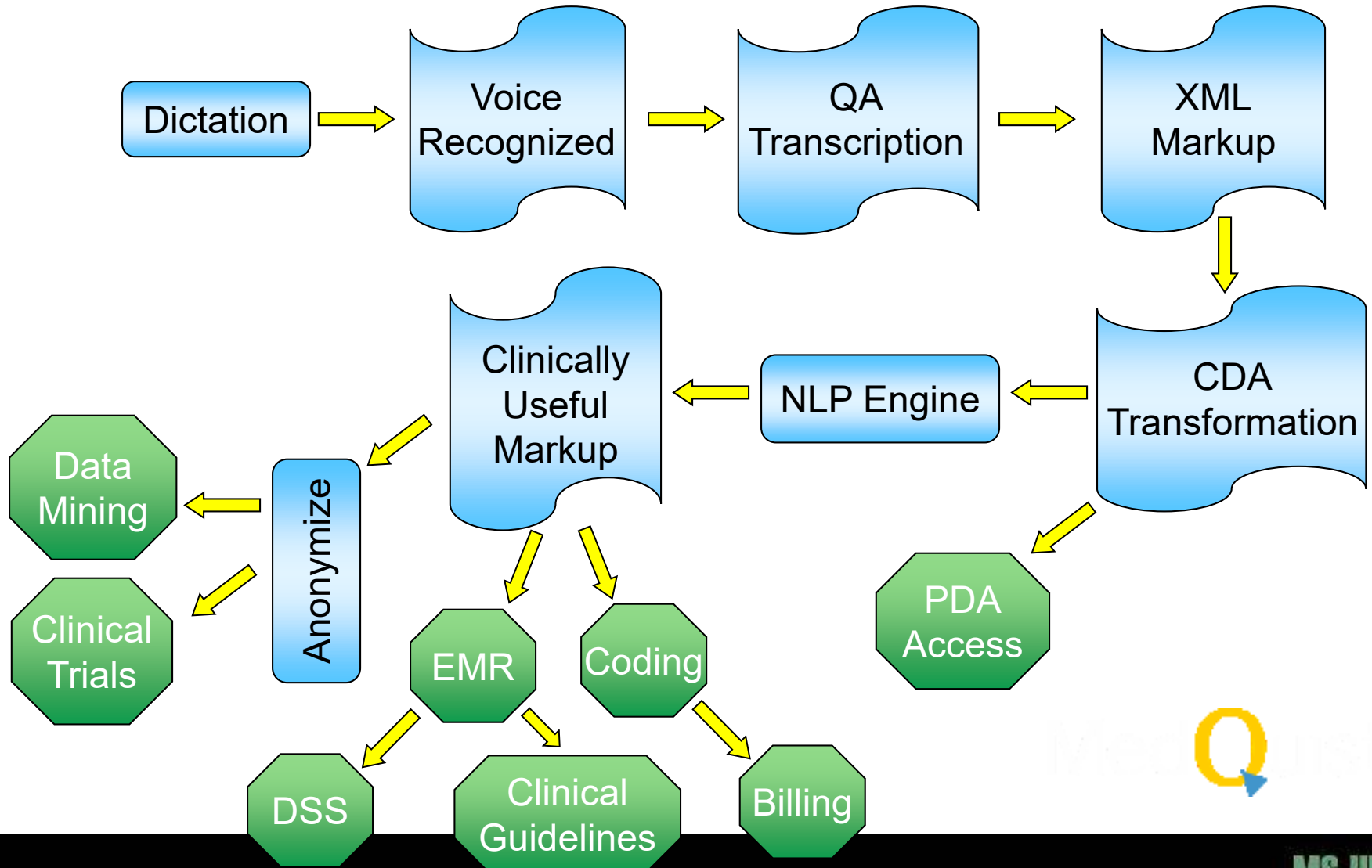
Major Implementations (outside US)

- PICNIC (European Union)
- SCIPHOX (Germany)
- HYGEIAnet/WebOnColl (Greece)
- Aluetietojärjestelmä (Finland)
- Health Information Summaries (New Zealand)
- Referrals (Australia)
- MERIT-9 (Japan)
- NHS (Wales)
- Buenos Aires HMO project (Argentina)
- Plus projects in France, Italy, Russia, Estonia, Taiwan, Korea...
- Now under development for patient summaries with the English National Health Service

CDA: Investing in Information

- CDA at the Mayo Clinic
 - Initiated in 1999
 - About 50,000 documents each week
 - Clinical documents: Most important capital asset
- CDA at New York Presbyterian (was Col-Pres)
 - “CDA Philosophy”
 - Clinical notes contain critical information in narrative
 - Best format for information mining and aggregation across applications
 - 1/3 of all discharges summaries

XML Value Chain



MS-HUG
Q

Allscripts

Touch

Patient: LAWR
Birthdate:
Consultant:

Enterprise Remote Access - Microsoft Internet Explorer
Address: http://localhost:1945/DesktopDefault.aspx?tabid=18&tabindex=7&tabid=123

Care Record Summary - Microsoft Internet Explorer
Creation Date: February 16, 2006

Reason

http://66.78.214.22:8080 - Siemens XDS Viewer : TouchWorks Care Record Summary - Microsoft Internet Explorer

Chief

MCKNIGHT, LAWRENCE
Male PT #145831 MR #145831

http://66.78.214.22:8080 - Siemens XDS Viewer : Discharge Summary 2/15/2006 1:33:42 PM - Microsoft Internet Explorer

MCKNIGHT, LAWRENCE
Male PT #145831 MR #145831

Viewing document: Discharge Summary 2/15/2006 1:33:42 PM

Patient: LAWRENCE MCKNIGHT
Birthdate: May 20, 1966
Consultant: Timothy Weaver

Siemens Soarian (PDF)

Reason

Reason for Visit

- visit for: follow-up exam

Chief Complaint

- back pain

Reason for Referral

Dr. Saibabu: This appears to be muscular strain.

History of Present Illness

- lower back pain radiating to the right toes

Patient Name: MCKNIGHT, LAWRENCE

Admit Date: 02/13/2006 14:20

MRN: 145831

Discharge Date:

Birthdate: 05/20/1966

Dictated By: R Remote

Gender: Male

Attending MD:

Final Diagnosis:

Atypical Chest Pain
CAD, s/p 3V CABG
Hypertension
Bipolar Disease
Hx Stroke
Hx Nephrolithiasis
Hx Appendectomy

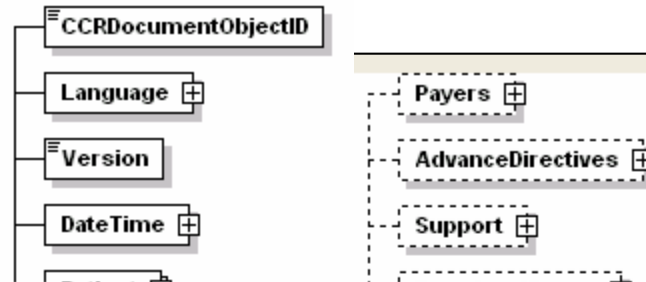
Allergies:

CDA for Information Exchange

- IHE 2006 choice for Medical Summaries

MediNotes	MediNotes e
NextGen Healthcare Information Systems	NextGen EMR
AllScripts	Touchworks EHR
GE Healthcare	Centricity® Enterprise Solution (formerly Carecast)
Philips Medical Systems	Xtenity
McKesson	Horizon Ambulatory Care
CapMed/IBM	Personal HealthKey
Eclipsys	Sunrise
Medical Informatics Engineering	Webchart
Dictaphone	Enterprise Workstation
Epic Systems	EpicCare
GE Healthcare	Centricity® Physician Office
Misys Healthcare Systems	Misys Connect
Siemens	Soarian

ASTM's CCR



Designation: E 2369 – 05

ContinuityOfCareRecord

Standard Specification for Continuity of Care Record (CCR)¹

This standard is issued under the fixed designation E 2369; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 The Continuity of Care Record (CCR) is a core data set of the most relevant administrative, demographic, and clinical information facts about a patient's healthcare, covering one or more healthcare encounters.² It provides a means for one healthcare practitioner, system, or setting to aggregate all of the pertinent data about a patient and forward it to another practitioner, system, or setting to support the continuity of care.

1.1.1 The CCR data set includes a summary of the patient's health status (for example, problems, medications, allergies) and basic information about insurance, advance directives, care documentation, and the patient's care plan. It also includes identifying information and the purpose of the CCR. (See 5.1 for a description of the CCR's components and sections, and Annex A1 for the detailed data fields of the CCR.)

of use cases and workflows. Any examples offered in this specification are not to be considered normative.⁴

1.3 To ensure interchangeability of electronic CCRs, this specification specifies XML coding that is required when the CCR is created in a structured electronic format.⁵ This specified XML coding provides flexibility that will allow users to prepare, transmit, and view the CCR in multiple ways, for example, in a browser, as an element in a Health Level 7 (HL7) message or CDA compliant document, in a secure email, as a PDF file, as an HTML file, or as a word processing document. It will further permit users to display the fields of the CCR in multiple formats.

1.3.1 The CCR XML schema or .xsd (see the Adjunct to this specification) is defined as a data object that represents a snapshot of a patient's relevant administrative, demographic,

ASTM CCR vs. HL7 CDA



- Conflicting?
- Overlapping?
- What if you could have both!#*?!
 - What if you could have your data elements
 - And send them in a common exchange framework?

Continuity of Care Document



- CCD maps the CCR elements into a CDA representation.

CCR data element	CDA R2 correspondence
Results	Section
Result	Observation
DateTime	Observation.effectiveTime
IDs	Observation.id
Type: Values include: Hematology, Chemistry, Serology, Virology, Toxicology, Microbiology, Imaging - X-ray, Ultrasound, CT, MRI, Angiography, Cardiac Echo, Nuclear Medicine, Pathology, Procedure	Draw values from observation.code (e.g. by looking at the LOINC class for a LOINC code).
Description	Observation.code
Status	Observation.statusCode
Procedure	Observation.methodCode; Procedure
Test	Observation



Continuity of Care Document



Project will develop basis for automated translation

```
<Results>
  <Result>
    <CCRDataObjectID>
      2.16.840.1.113883.19.1
    </CCRDataObjectID>
    <DateTime>
      <Type>
        <Text>Assessment Time</Text>
      </Type>
      <ExactDateTime>
        2000-04-07T14:30Z
      </ExactDateTime>
    </DateTime>
    <Type>
      <Text>Hematology</Text>
    </Type>
    <Description>
      <Text>CBC WO DIFFERENTIAL</Text>
      <Code>
        <Value>43789009</Value>
        <CodingSystem>
          SNOMED CT
        </CodingSystem>
      </Code>
    </Description>
    <Status>
      <Text>Final Results</Text>
```

```
<section>
  <code code="30954-2"
    codeSystem="2.16.840.1.113883.6.1"
    codeSystemName="LOINC"/>
  <title>RESULTS</title>
  <text>
    CBC (04/07/2000): HGB 13.2; WBC 6.7; PLT 123*
  </text>
  <entry typeCode="DRIV">
    <observation classCode="OBS" moodCode="EVN">
      <id root="2.16.840.1.113883.19"
        extension="1"/>
      <code code="43789009"
        codeSystem="2.16.840.1.113883.6.96"
        codeSystemName="SNOMED CT"
        displayName="CBC WO DIFFERENTIAL"/>
      <statusCode code="completed"/>
      <effectiveTime value="200004071430"/>
```

CCD Sample

Good Health Clinic Continuity of Care Document

Patient: Henry Levin , the 7th
Birthdate: September 24, 1932
Consultant:

Created

Advance Directives

Directive	Description	Verification	Supporting Document(s)
Resuscitation status	Do not resuscitate	Dr. Robert Dolin, Nov 07, 1999	A

Functional Status

Functional Condition	Effective Dates	Condition Status
Dependence on cane	1998	Active

Problems

Condition	Effective Dates	Condition Status
Asthma	1950	Active
Pneumonia	Jan 1997	Resolved
"	Mar 1999	Resolved
Myocardial Infarction	Jan 1997	Resolved

Family history

Member: Father; Status: deceased

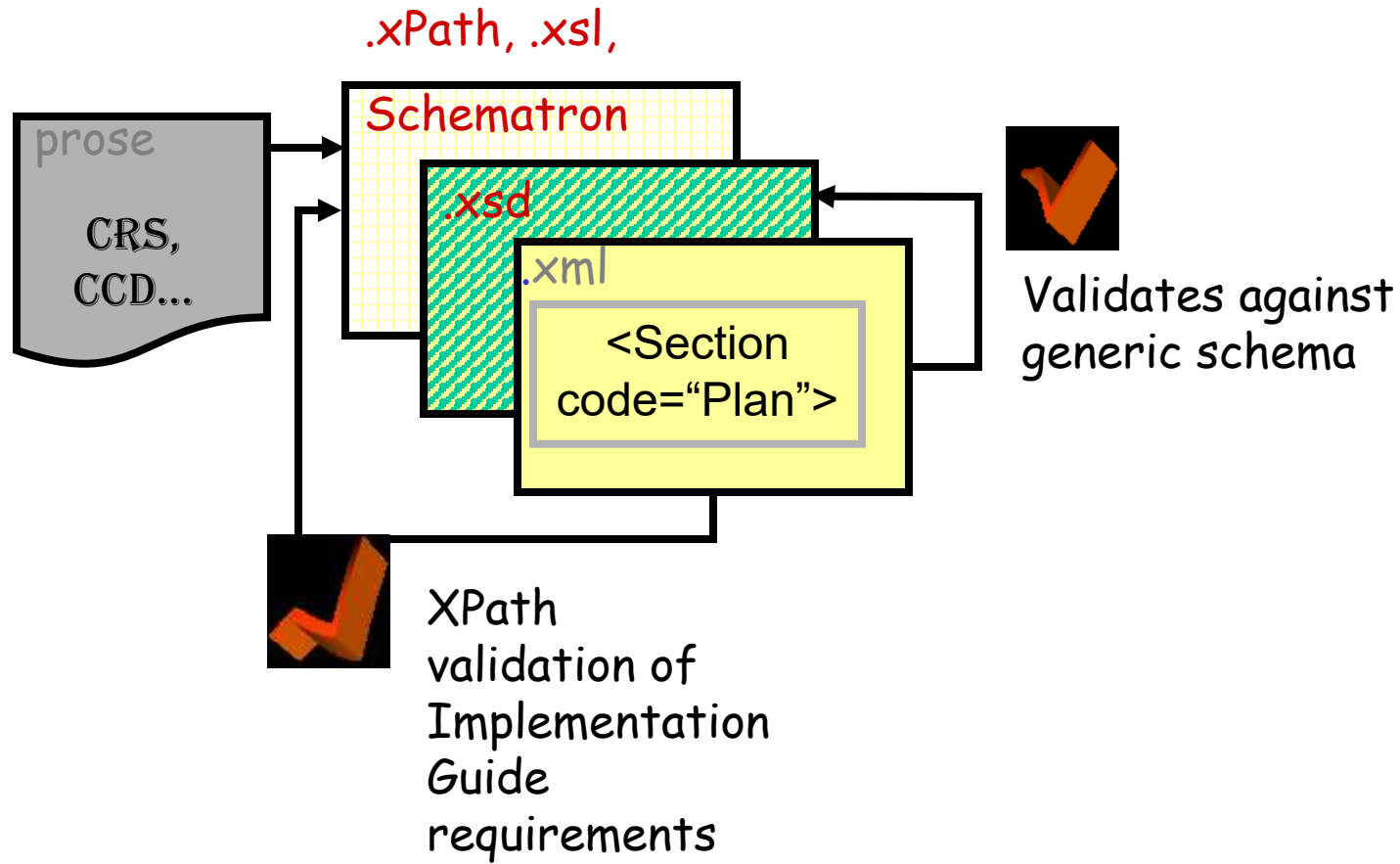
Diagnosis	Age At Onset
Myocardial Infarction	57
Hypertension	40

```
<templateId extension="IMPL_ASTM_CCR" root="2.16.840.1.113883.10" />
<id root="db734647-fc99-424c-a864-7e3cda82e703" />
<code code="34133-9" codeSystem="2.16.840.1.113883.6.1"
  codeSystemName="LOINC" displayName="SUMMARIZATION OF EPISODE
  NOTE" />
<title>Good Health Clinic Continuity of Care Document</title>
<effectiveTime value="20000407130000+0500" />
<confidentialityCode code="N" codeSystem="2.16.840.1.113883.5.25" />
<languageCode code="en-US" />
+ <recordTarget>
+ <author>
+ <custodian>
+ <legalAuthenticator>
+ <participant typeCode="IND">
+ <participant typeCode="IND">
+ <inFulfillmentOf>
+ <documentationOf>
+ <!-- -->
- <component>
  - <structuredBody>
    + <!-- -->
      <!-- Illustrating the use of Payers enumerated in the header. In this
      case there are no Insurance acts in the body that reference the Payer
    + <!-- -->
  - <component>
    - <section>
      <code code="42348-3" codeSystem="2.16.840.1.113883.6.1" />
      <title>Advance Directives</title>
    - <text>
      - <table>
        - <thead>
          - <tr>
            <th>Directive</th>
            <th>Description</th>
            <th>Verification</th>
            <th>Supporting Document(s)</th>
          - <tr>
```

What is a CDA Implementation Guide?

- Objective: define how to implement CDA for particular **clinical** and **user** domain
 - Example: transfer of care, US
 - Example: imaging reports, International
- Scope: **document type or types**
 - Example: CCD for transfer of care
 - Can be further refined for speciality: cardiology
 - Can be further refined for setting: long term care
- Contents: **define**
 - Example: Radiology reports, Lab...
 - Contents of clinical report
 - Coding (required, optional terminology) and identifiers
 - Rules for validating conformance: prose and XML syntax

Validating CDA document types



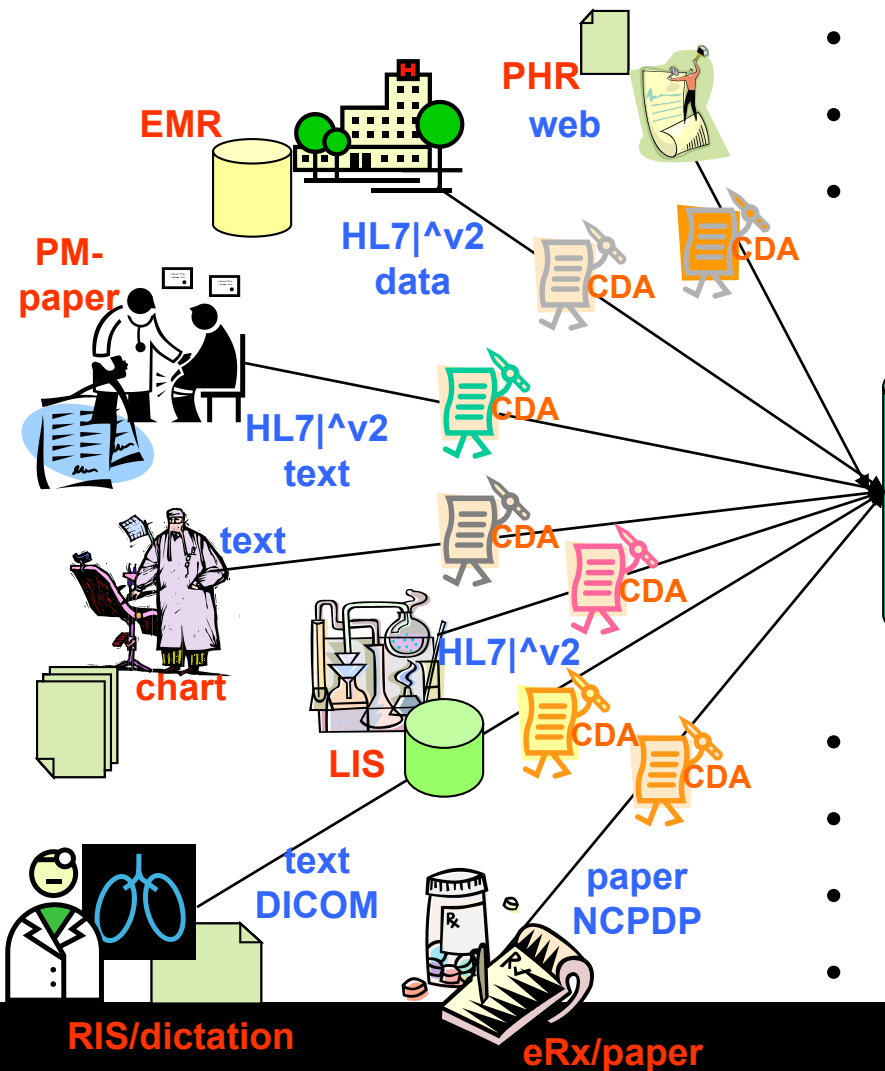
Requirements for a PHR: Summary

- Patient-centric, patient-directed
- Open interface/data specs
- Comprehensive record
- Supports re-use

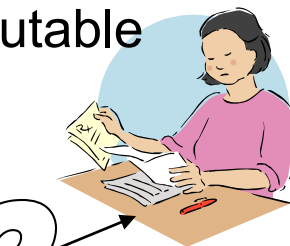
CDA for PHR: Summary

- Patient-centric, patient-directed
 - Supports eMPI, patient identification across providers
 - Confidentiality can be specified for the document as a whole or pieces of it
- Open interface/data specs
 - Designed for broad-based interoperability
 - Header: the metadata required for content management
- Comprehensive record
 - All records, not just a summary
 - Everybody plays: benefits increase with better coding
- Supports re-use
 - Both manual and automated

CDA document-based network

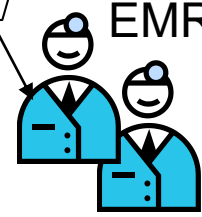


- All transform to CDA
- Complete view of record
- No loss in computable semantics



- What is available?
- How do I get it?
- Can I read it?
- Can I import it into my EMR/PHR/CDR...?

- EHR
- V-EHR
- PHR
- Patient Portal



Current Work

- HL7
 - Continuity of Care Document (with ASTM)
 - Medical Summary (with IHE, EHR Vendors Association)
 - Pathology reports (with CAP)
 - Imaging reports (with DICOM)
 - Claims attachments, migrate from R1 (with CMS)
 - Dental reports (with ADA)
 - Anesthesiology Reports (with Anes SIG)
 - Public health reports (with CDC)
 - ... *What are your priorities?*

CDA for Interoperability

- HL7/ANSI specification based on
 - Reference Information Model (RIM)
 - Extensible Markup Language (XML)
 - Standard Terminology
- The spec:
 - Header+Human-readable report+(optional) computable semantics
- Industry acceptance:
 - Internationally implemented for 6 years
 - US: FHA, CHI, CMS, VA, DoD
 - Under consideration for NHIN, HITSP, state RHIOs
 - Vendor support: strong & growing
- Interoperability
 - Full patient record, not just the data that can be coded today
 - Full patient record – summaries and more, implementation guides in the works from multiple professional societies and agencies

CDA Basics

Where it is used today

Demonstration .



So, let's
take a
look...

References & More Info

www.HL7.org Structured Documents Technical Committee web page

All meetings, listservs, open to all

JAMIA

Dolin RH, Alschuler L, Boyer S, Beebe C, Behlen FM, Biron PV, Shabo A.
HL7 Clinical Document Architecture, Release 2. J Am Med Inform Assoc.
2006;13:30–39.

<http://www.jamia.org/cgi/reprint/13/1/30>

Care Record Summary

<http://www.hl7.org/Library/Committees/structure/CareRecordSummary%5F12%5F2005SEP%2Ezip>

CDA Release 2.0 Normative Edition: see HL7.org

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Quick Start Guides

CDA/CRS Validator

CDA Gallery