



A "Few" Standards for Exchanging EHR Information

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Overview



- Two Minnesota-based HIE projects focused on exchanging EHR information
- A surfeit of relevant standards
- Harmonizing the standards
- Standards for clinical documents
- Conclusions

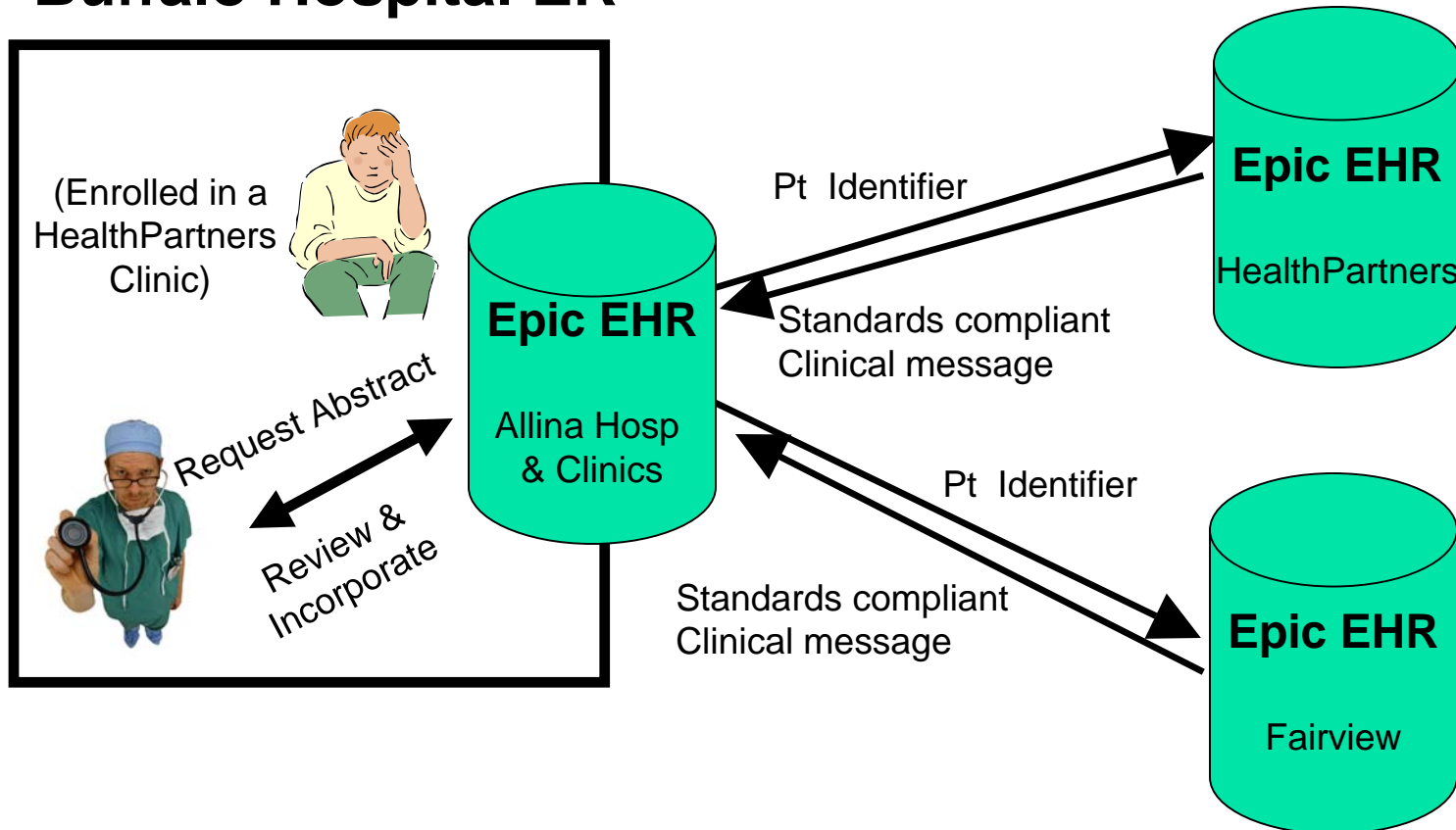


The “AHRQ Project” - A Shared Clinical Abstract to Improve Care

- Focus: fill information gaps that occur at care transitions
- Why: more informed clinical decisions should lead to improved quality, patient safety, and less redundancy
- Who: Allina, HealthPartners, Fairview (and beyond)
- How: deliver a community-shared clinical record abstract near the point of care
 - Some elements: problem lists, allergies & reactions, medications, procedures, immunizations, key lab values
 - Use a federated model of contributing clinical databases not a centralized one

Phase 2 – Direct Health Information Exchange

Buffalo Hospital ER

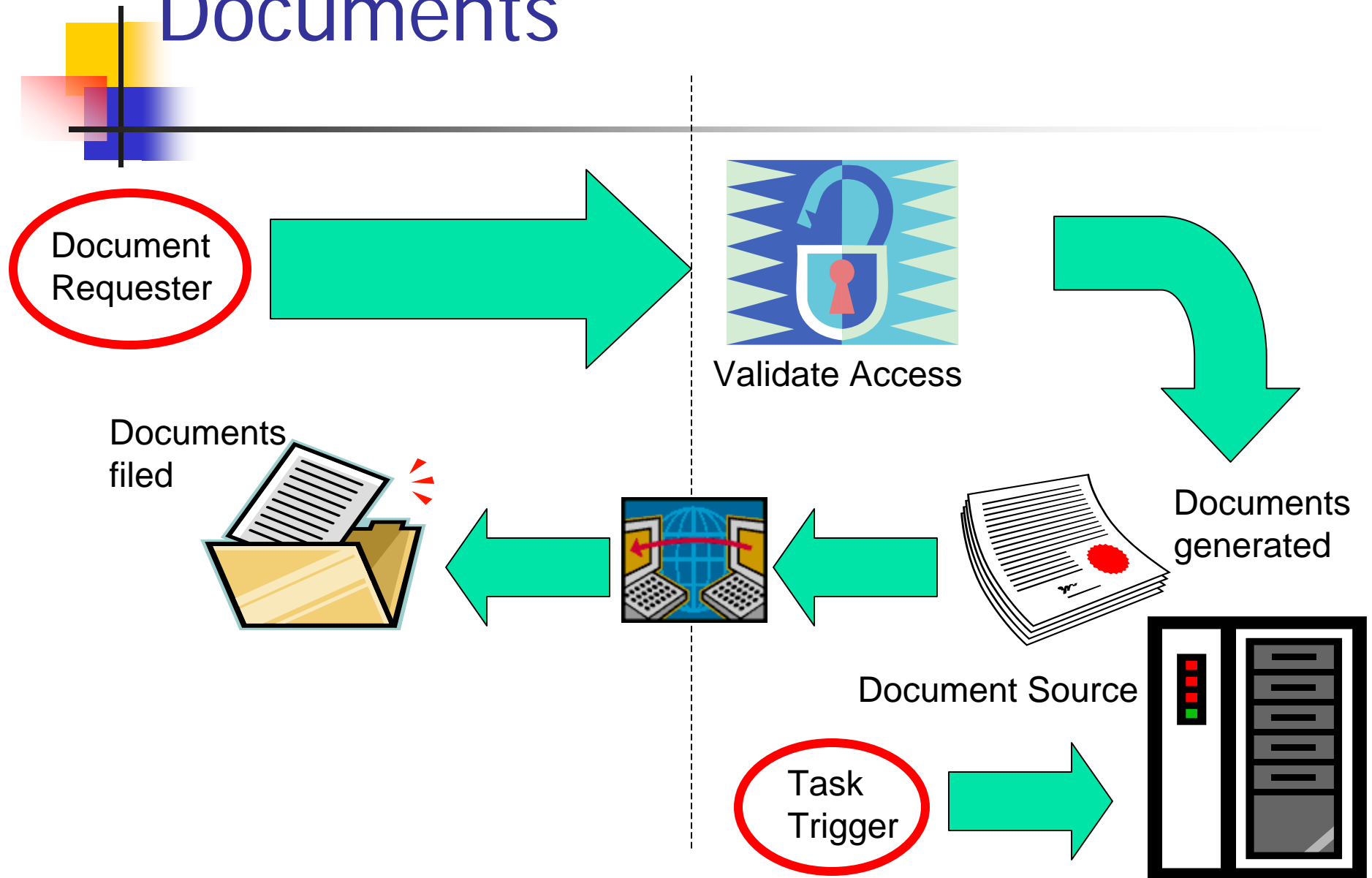


Mayo Health System

Mayo's Challenge
How to integrate regional health information to avoid needless tests and improve information sharing?



Generation and Receipt of Documents





The National Standards Scene

- ONC (Office of the National Coordinator for HIT)
- ONC's RFP for the Evaluation of Standards Harmonization Process for HIT (June, 2005)
- HITSP (HIT Standards Panel)
- AHIC (American Health Info. Community)
- HITSP Technical Committees



THE EHR Use Case

- Allow ordering clinicians to electronically access laboratory results, and allow non-ordering authorized clinicians to electronically access historical and other laboratory results for clinical care.

Standards Gap and Overlap Analysis - EHR Use Case, HITSP EHR Tech. Committee May 30, 2006

Standards for exchanging EHR info



Suitable for purpose



Standards Category	N
Context (information model)	33
Information exchange	34
Terminology	30
Security and Privacy	41
Identifier (individual and org.)	11
Process, workflow, regulatory	15

164 !

Selected Standards (Draft)



- Simplify – interoperable only
- Focus – breakthrough interchange
- Tier 2 Readiness Criteria

Standards Category	N
Context (information model)	16
Information exchange	16
Terminology	14
Security and Privacy	-
Identifier (individual and org.)	3
Process, workflow, regulatory	1
Non-classified	1

Pulling the standards together



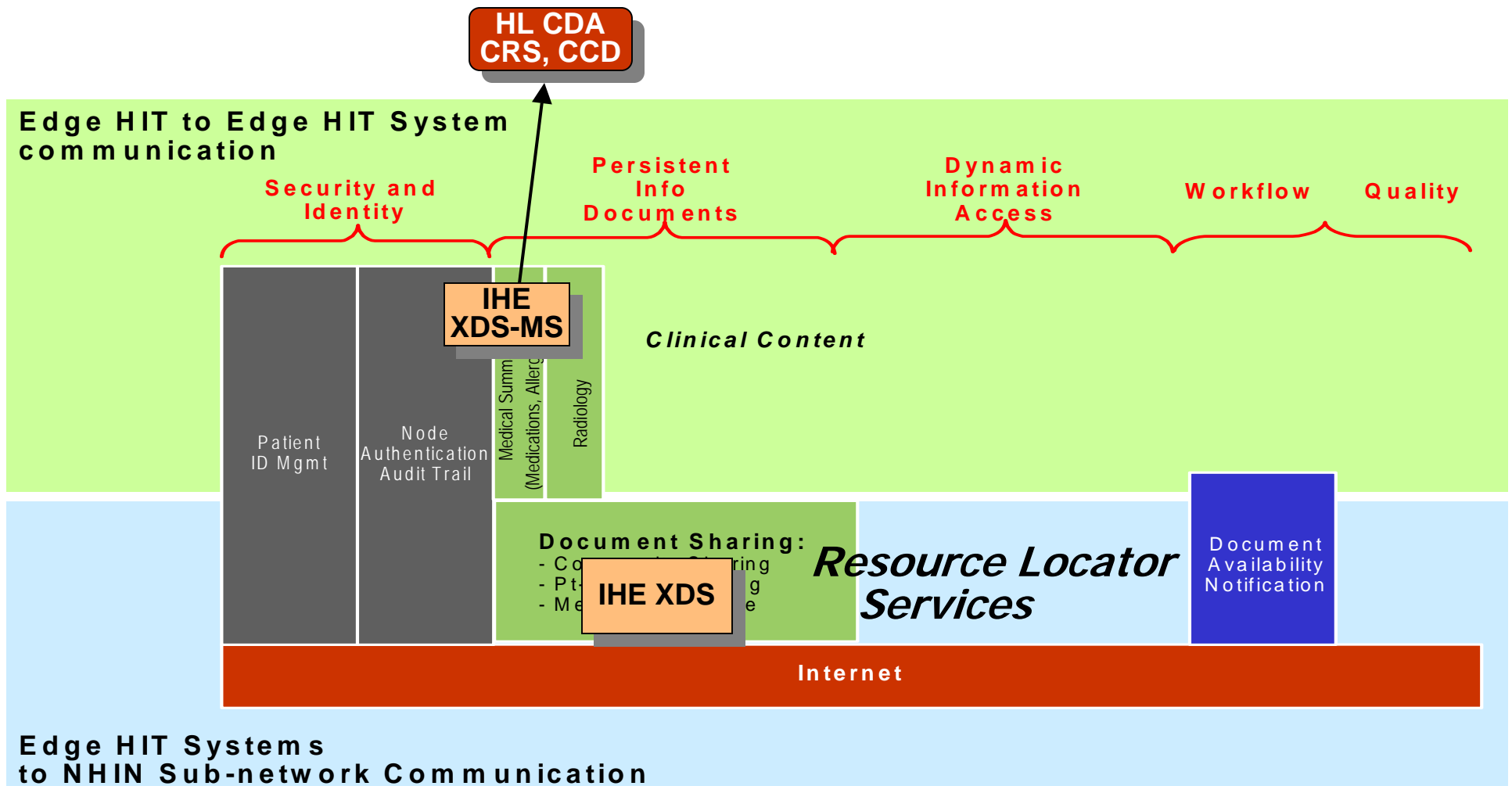
- HITSP Implementation Guides
- IHE Integration Profiles
- HIMSS Electronic Health Records Vendors Association (EHRVA) Roadmap

HIMSS EHRVA

HIMSS EHRVA is a trade association of Electronic Health Record (EHR) vendors that are addressing national efforts to create interoperable EHRs in hospital and ambulatory care settings.

2005-2006 Achievements

Realistic First Phase

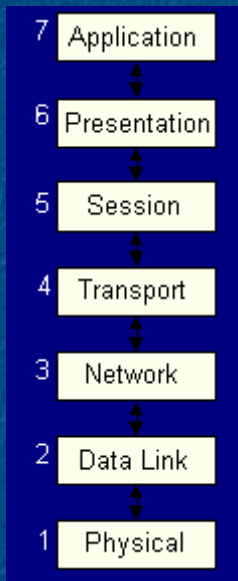


National Standards for Health Information Exchange

- Health Level Seven (HL7)
- HL7 & ASTM Exchange Standards
 - CDA, CRS, CCR, CCD
- Mayo's CDA implementations
- Business Case for CDA

What is Health Level 7 ?

- Health Level Seven or HL7 is one of several ANSI-accredited Standards Developing Organizations responsible for national standards used by the health care industry.



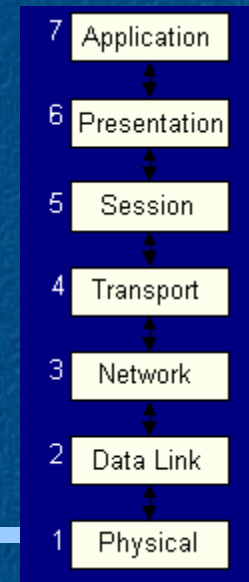
It's name
OSI model
layers of

HL7 has f
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application



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HL7 has gone International!

- Argentina
- Canada
- Czech Republic
- Germany
- Ireland
- Korea (Sth.)
- Mexico
- Poland
- Switzerland
- Netherlands
- USA
- Australia
- China
- Denmark
- Greece
- Italy
- Lithuania
- New Zealand
- Southern Africa
- Taiwan
- United Kingdom
- Brazil
- Croatia
- Finland
- India
- Japan
- France
- Uruguay
- Spain
- Turkey
- Sweden

HL7 Organizations in 29 Countries!

Messaging and more ...

- **HL7 Messaging Standards and ...**
- **Clinical Context Management (CCOW)**
- **Arden Syntax for Medical Logic Systems**
- **Reference Information Model (RIM)**
- **Clinical Document Architecture (CDA)**
- **Clinical Statement / Term Info Projects**
- **Electronic Healthcare Records(EHR)**

Structured Documents Technical Committee (SDTC)

- HL7 Messaging Standards and ...
- Clinical Context Management (CCOW)
- Arden Syntax for Medical Logic Systems
- Reference Information Model (RIM)
- **Clinical Document Architecture (CDA)**
- Clinical Statement / Term Info Projects
- Electronic Healthcare Records (EHR)

Clinical Document Architecture

An XML markup standard that specifies the structure and semantics of "clinical documents" for the purpose of exchange.

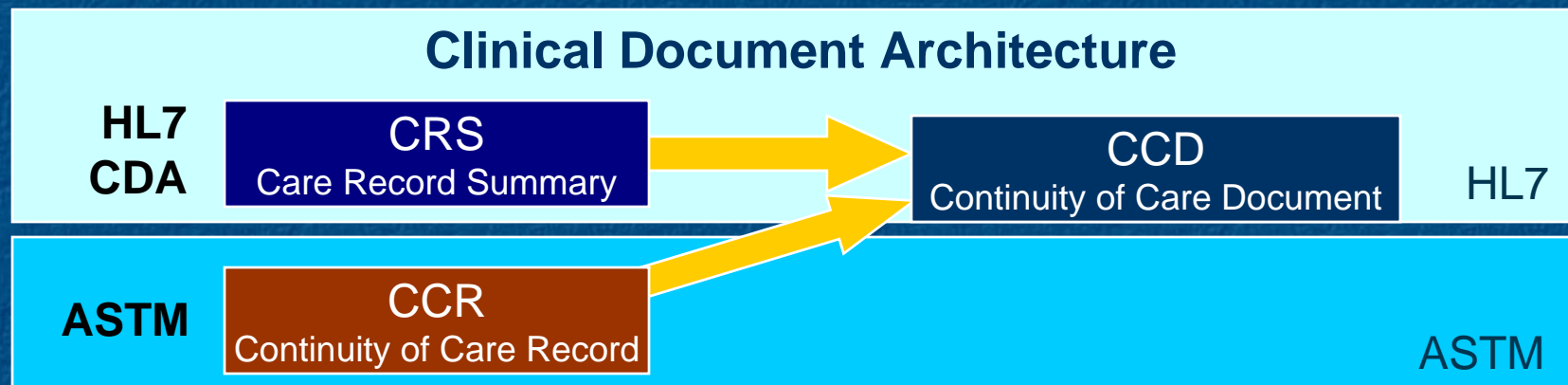
- Originally presented at the HL7 Plenary meeting in September of 1998.
- CDA Release 1.0 was approved as an ANSI standard on November of 2000.
- CDA Release 2.0 was approved as an ANSI standard on May of 2005.
- 1st US Realm CDA implementation guide, Care Record Summary January 2006.

Competing standards for clinical information exchange!



Healthcare Markup Standards

- Two competing standards are merging
 - CRS - Care Record Summary by HL7
 - CCR - Continuity of Care Record by ASTM
 - Becomes Continuity of Care Document or CCD



Structured Documents TC

- Created the CDA R1 & R2 standards
 - Supporting the Attachment SIG w/ billing attachment standards.
 - Balloted Implementation Guides
 - Care Record Summary (L1,L2)
 - **Continuity of Care Document (L3)**
under active development...

Continuity of Care Document

- Incorporates CCR content with CDA markup, and supersedes CRS at HL7.
- HL7 / CCD Conference calls
 - Every Thursday
 - 10:00 AM – 11:30 AM
 - Working on fall ballot.

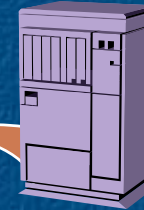
For more information: www.hl7.org
Structured Documents Committee page

Mayo's use of CDA

Mayo Notes



Regional Systems



CDA Documents

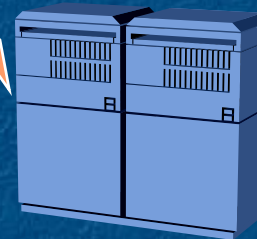
We are loading CDA documents into the Genomics Repository.

Interface engine converts XML to RTF



CDA

RFT

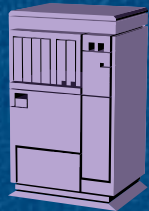


Genomics Repository

MICS System

Mayo's use of CDA

Surgical System

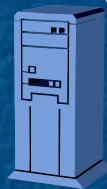


Surgical Reports

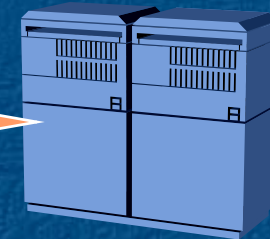
We generate CDA R2.0 attachments for surgical reports and send them to WPS for Medicare patients.

Evaluating CDA R2 for attachments.

We have seen a significant reduction in the time to process changes.



X12 Billing Messages
w/ embedded CDA Documents



WPS

CDA Benefits to Mayo

- **Readable**
 - CDA looks like our documents: narrative, multi-sectioned
 - Version 3 modeling approach provides machine processability
- **Durable**
 - Our documents needed to survive technology changes
 - Our paper based system lasted over a 100 years
- **Shareable**
 - Standards based document exchange - \$\$ savings
 - Developing needs for **Regional** partners and others
- **Flexible**
 - Multi-media & web technology support - day one
 - An open architecture to cover the Mayo documentation needs.

Conclusions

- *Health Information Exchange (HIE) is underway in Minnesota*
- *Amazingly, HIE standards harmonization at a national level is moving and moving amazingly fast*
- *Many HIT vendors have a handle on what needs to be done and seem to be committed to doing it*
- *HIE work can be done today and bring value*
- *HIT is on a trip and we've got a long way to go*





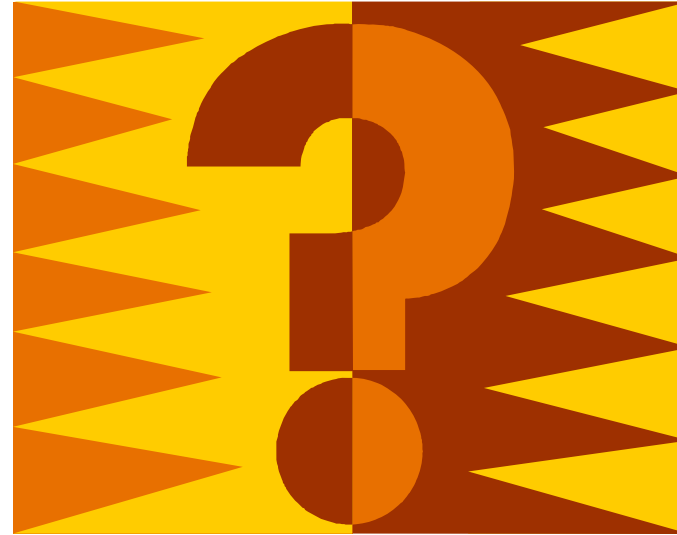
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Questions



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