Interoperability for Sharing Medical Summaries

Patient Care Coordination, April 21\textsuperscript{th}-22\textsuperscript{nd} 2005

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IHE IT Infrastructure Technical Committee Co-chair
Providers and Vendors
Working Together to Deliver
Interoperable Health Information Systems
in the Enterprise
and Across Care Settings

W W W . I H E . N E T
Standards Are Critical but Alone Are Not Enough

- Managing the domain boundaries with mapping of information flow across boundaries
- Standards offer generality, ambiguity and alternatives
- Standards Implementation Guides are focused on a single standard
- Vendor proprietary interests
- Complexity!!

We need a standard process for how to implement multiple standards!
Connecting Standards to Care

- Care providers must work with vendors to coordinate the implementation of standards to meet their needs
  - Care providers need to identify the key interoperability problems they face
  - Drive industry to develop and make available standards-based solutions
  - Implementers need to follow common guidelines in purchasing and integrating systems that deliver these solutions

What is the effective way to establish those “standards” for how to implement standards?
Driving healthcare standards-based integration

Prof. Societies Sponsorship
Healthcare Providers & Vendors

Healthcare IT Standards
HL7, DICOM, etc.

General IT Standards
Internet, ISO, etc.

IHE Process

Interoperable Healthcare IT Solutions
IHE Integration Profile

IHE Integration Profile: A well-defined and tested solution to a specific information exchange problem
What is Integrating the Healthcare Enterprise?

- IHE provides a common framework for passing health information seamlessly:
  - within the healthcare enterprise
  - across multiple healthcare enterprises
  - for local, regional & national health information networks.
- IHE is sponsored by healthcare professional associations.
- IHE drives standards adoption to address specific clinical needs.
Achievements and expanding scope

15 Active national chapters on 4 continents, 4 Technical Frameworks
27 Integration Profiles, Testing at yearly Connectathons,
Demonstrations at major exhibitions world-wide

- IHE EHR- Longitudinal Record
- IHE IT Infrastructure
- IHE Radiology: 14 Integration Profiles
- IHE Laboratory: 9 Integration Profiles
- IHE Oncology: 1 Integration Profile
- IHE Cardiology: 3 Integration Profiles
- New IHE Domains
  - Patient care coordination,
  - Ophthalmology, Surgery,
  - Pharmacy, Quality in 2005

April 21, 2005
Achievements and expanding scope

15 Active national chapters on 4 continents, 4 Technical Frameworks
27 Integration Profiles, Testing at yearly Connectathons,
Demonstrations at major exhibitions world-wide

Vendors claim compliance to *IHE Integration Profiles* by publishing an
*IHE Integration Statement* for each product.

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A Proven Standards Adoption Process

IHE Integration Profiles at the heart of IHE:
- Detailed selection of standards and options each solving a specific integration problem
- A growing set of effective provider/vendor agreed solutions
- Vendors can implement with ROI
- Providers can deploy with stability
- Process started in 1998 with continuous improvements

Requirements

Standards (e.g. ASTM-CCCR, HL7 CDA)

IHE Integration Profile A

IHE Connect-a-thon Results

Product IHE Integration Statement

Product With IHE

IHE Connect-a-thon

IHE Demonstration

Easy to Integrate Products

User Site

RFP

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IHE Patient Care Coordination
The IHE Process for products in 2006

- **April 21, 2005**
  - IHE Patient Care Coordination

- **Standards** (e.g. ASTM-CCR, HL7 CDA)
  - **IHE Integration Profile A**
  - **IHE Connect-a-thon**
  - **IHE Results**

- **Product IHE Integration Statement**
  - **Product With IHE**
  - **Easy to Integrate Products**

- **User Site**

- **Requirements**

- **April-May 2005**
  - **IHE Connect-a-thon**
  - **IHE Demonstration**

- **May-August 2005**

- **January 2006**

- **February 2006**

**Products 2006**
IHE Connectathons

Massive yearly events:
60-70 vendors

Vendors do not pass...
until an IHE Project Manager attest it!
### Participating and Contributing Vendors (America)

- **Agfa HealthCare**
- Algotec Systems, Ltd.
- Berdy
- Camtronics
- Canon Medical Systems
- Carefx
- Cedara Software Corporation
- **Cerner Corporation**
- CSIST
- Dictaphone
- DR Systems
- Dynamic Imaging
- **Eastern Informatics**
- Eastman Kodak Company
- Emageon
- **Eclipsys**
- Fujifilm Medical Systems
- **GE Healthcare**
- Heartlab
- Hitachi Medical Corporation
- Hologic, Inc
- IDX Systems Corporation
- IMCO Technologies
- InSiteOne
- INFINITT
- Konica Minolta
- Marotech, Inc.
- McKesson Information Solutions
- Medcon
- Medical Manager Health Systems
- Mediface Co., Ltd.
- Merge eFilm
- Mortara
- **Procom**
- **Philips Medical Systems**
- RASNA Imaging Systems
- Sectra
- Sentillion
- **Siemens Medical Solutions**
- Softmedical
- Stentor, Inc
- StorCOMM, Inc
- Swissray International, Inc
- Tiani Medgraph AG
- **Toshiba America Medical Systems**
- UltraVisual Medical Systems
- Vital Images, Inc.
- Voxar Limited
- WebMD
- XIMIS

*In yellow, companies with IHE Committees Chairs (Summer 2004)*
# HIMSS 2005 Interoperability Show Case Vendors

## Leadership Level
- CapMed/SanDisk
- Eclipsys
- GE Healthcare
- IDX
- InterSystems
- Kryptiq
- Quovadex/CareScience
- Siemens
- WebMD

## Participant Level
- Allscripts
- Cedara
- Cerner
- Dictaphone
- Eastman Kodak
- Eclipsys
- Emageon
- Epic
- ETIAM
- INFINITT Tech.
- MedcomSoft
- MediNotes
- MedCommons
- MidMark
- Mortara Instrument, Inc
- National Institute of Standards and Technology
- NextGen
- Novell
- Open Text
- Sentillion

## Supporter Level
- AccessPt
- AGFA
- dbMotion
- Dinmar – Oacis
- EMC
- Healthvision
- Healthramp
- McKesson
- Valco Data Systems

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At HIMSS in 2005: IHE-XDS

Community

Clinical Encounter

Hospital Record

Clinic Record

Specialist Record

Temporary Aggregate

Patient History

Clinic

4-Patient data presented to Physician

3-Records Returned

Reference to records

Index of patients records (Document-level)

Sharing System

2-Reference to Records for Inquiry
At HIMSS in 2005: IHE-XDS

**Shared prototype content:**
- Medical Summaries (Pre-CCR)
- Discharge Summaries (CDA-R1)
- Lab Results (HL7)
- Other (PDF)

Index of patients records (Document-level)

Reference to records

2-Reference to Records for Inquiry

3-Records Returned

Sharing System

Clinical Encounter

Temporary Aggregate Patient History

Community

Hospital Record

Laboratory Results

Specialist Record
**Secured Sharing of:**

- **Medical Summaries**
- Lab Results
- Images & reports
- ECG Reports
- Other PDFs
  + Notif of Doc Avail.

**Sharing System**

1. **Patient Authorized Inquiry**
2. **Reference to Records for Inquiry**
3. **Records Returned**

**Index of patients records**
(Document-level)

- Hospital Record
- Laboratory Results
- Specialist Record

**Community**

**Clinical Encounter**

Secured Sharing of: **Medical Summaries**, Lab Results, Images & reports, ECG Reports, Other PDFs, and Notification of Document Availability.

**Demo a RHIO with IHE at HIMSS 2006?**

**Clinical IT System**

Index of patients records (Document-level)

**1-Patient Authorized Inquiry**

**3-Records Returned**

**2-Reference to Records for Inquiry**

**Hospital Record**

**Laboratory Results**

**Specialist Record**

**Reference to records**

**Temporary Aggregate Patient History**

**Clinical Encounter**
IHE Profiles for RHIOs

What is available and what needs to be added in 2005

- **Cross-enterprise User Identity and Accountability**
  - Authentication & Auditing: Basis for Access Control

- **Notification of Document Availability**
  - Notification of a remote provider/health enterprise

- **Consistent Time**
  - Coordinate time across networked systems

- **Audit Trail & Node Authentication**
  - Centralized privacy audit trail and node to node authentication to create a secured domain.

- **Document Digital Signature**
  - Attesting "true-copy and origin"

- **Patient Identifier Cross-referencing**
  - Map patient identifiers across independent identification domains

- **Patient Demographics Query**

- **Imaging Information**
  - Content

- **For Display Document Content**
  - Query

- **Lab Results Document Content**
  - Format of the Document Content and associated coded vocabulary

- **Cross-enterprise Document Sharing**
  - Registration, distribution and access across health enterprises of clinical documents forming a patient electronic health record

- **Document Digital Signature**
  - Attesting "true-copy and origin"
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- Cross-Enterprise Document Sharing
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- Notification of Document Availability
  Notification of a remote provider/health enterprise

- Image Information Content
  Format of the Document Content
  Lab Results Document Content

- Cross-Enterprise User Identity and Accountability
  Authentication & Auditing: Basis for Access Control

- Personnel White Page
  Access to workforce contact information

- Medical Summary Document Content
  Information Structure and Format of the Document Content and Associated Coded Vocabulary
Patient Care Coordination

Broad industry consensus that medical summaries are the most critical clinical content building block:

- Promoted by physician associations
- Supported by Standards development: CCR, CDA
- Confirmed by HIMSS IHE Interoperability Showcase
- Support of EHR Vendors Association and CCHIT

The issue is no longer if, or when (ASAP) but what is the first step to deliver for clinical use in 2006?

Need to define an interoperable content scope for “a medical summary document” that delivers:

- A significant quality and efficiency step for practitioners
- A reasonable scope for vendors with existing EHR products
- A practical deployment, use and maintenance. Affordable!
- The capability for further richness and computer processing to be added in subsequent incremental steps
Launching Patient Care Coordination

Success Factors:

- Clear physicians and nurses leadership and sponsorship
- Availability of standards and support of developers
- Willingness of EHR Vendors to implement resulting integration profile
- Interest of Certification Commission to leverage resulting integration profile

Is Schedule too aggressive?

- IHE has 7 years of experience and success in such efforts with a proven process spanning from integration profile to implemented products
- Several years of Standards investments in ASTM and HL7 with rapidly maturing standards, near-ready to be used.
- We have the car, we need a determined team of care providers to lead the process.
Success depends on Collaboration

- Providers need confidence that EHR will support medical summaries consistently.
- Patients need confidence that most current information is available and reusable.
- Vendors need confidence that providers will be satisfied.
- Healthcare policy and financers need confidence that quality and efficiency will improve.

1 + 1 + 1 + 1 + 1 = 10
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