

IHE Changing the Way Healthcare Connects in COMMUNITIES

HIMSS Interoperability Showcase April 2009

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### IHE - Connecting standards to care

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

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### Categories of Healthcare Communication Services

HIEs and RHIOs		Hospitals	
e.g. access to last 6 months historical labs and encounter summaries		e.g. get a current list of allergies or med list from a source	
e.g. order a lab test, track status and receive results			
Source persisted and attested health records	Specific info snapshot provided on demand	2 or more entities synchronize a task	
<b>Document Sharing</b>	<b>Dynamic Information Access</b>	<b>Workflow Management</b>	
<b>Patient and Provider ID Mgt</b>			
<b>Security</b>			

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## Requirements for an open RHIO/HIE(1)

- **Bring trust and ease of use for healthcare professionals:**
  - **Care delivery organizations choose information to share:**
    - Based on patient situation
    - When they see fit (discharge, end of encounter, etc.)
    - What information to share (pick relevant types of documents, and content elements).
  - **Care delivery organizations access patient information through:**
    - Their own EMR (if they have one), or
    - Through a shared portal otherwise.
  - **When accessing patient info:**
    - Find quickly if relevant information is available or not (single query).
    - Document content expected to be woven into the local patient chart. May select among relevant documents, which ones to see.
    - Among those of interest, chose to import in whole or part in its own EMR Chart (responsibility).


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## Requirements for an open RHIO/HIE(2)

- **Bring trust and privacy to patients:**
  - **Only authorized organizations and authenticated healthcare providers may transact in the HIE:**
    - Each node or IT system interfaced is strongly authenticated
    - Each user shall be authenticated on the edge system (where context known)
    - All traffic through the infrastructure is encrypted
  - **Patient consent needs multiple choices or levels**
    - Unless opt-in, no data about a specific patient may be shared
    - Several data sharing policies offered to the patient consent
    - Each shared document is assigned to specific policies (or not shared) at encounter time.
    - Healthcare providers may only access documents compatible with their role.
  - **Shared Document Registry does not contain patient clinical data only generic information (minimum metadata + repository reference)**


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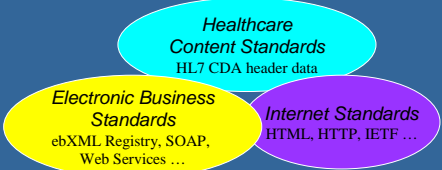
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## Cross-Enterprise Document Sharing (XDS)

*Standards Used*

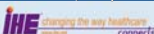


**Healthcare Content Standards**  
HL7 CDA header data

**Electronic Business Standards**  
ebXML Registry, SOAP, Web Services ...

**Internet Standards**  
HTML, HTTP, IETF ...

- **Implemented world-wide by over 100 vendors/5 open sources.**
- **Adopted in several national & regional projects:**  
Italy, Austria, Canada, USA, Japan, South Africa, France, Spain, Ireland, etc.)


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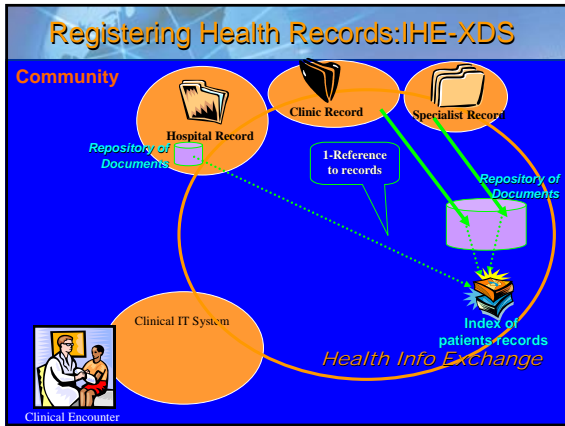
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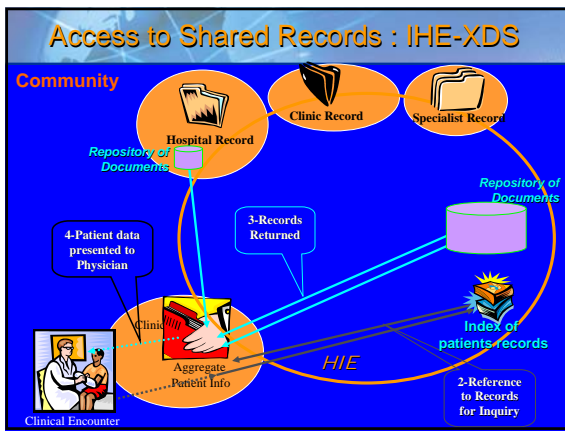
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### Health Information Exchanges Interoperability: Cross-enterprise Document Sharing

- Cross-Enterprise Document Sharing simplifies clinical data management by defining interoperable infrastructure. **Transparency = Ease of Evolution**
- Patients have guaranteed portability and providers may share information without concerns of aggregation errors. **Digital Documents = Patients and providers empowerment**
- Supports both centralized and decentralized repository architectures. Ease of **federation** nationally. **Flexible privacy, Flexibility of configurations**
- Addresses the need for a longitudinal healthcare data (health records). Complements to interactive workflow or dynamic access to data.

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## Why is IHE-XDS a breakthrough ?

- It based on an International Standards; ebXML registry: OASIS and ISO standard, Web Service/Soap/XML.
- Sharing of digital documents as “attested by the source”, meets the most urgent needs. A proven healthcare community data-sharing paradigm (Message feeding a central web server hinders use of EHRs).
- Efficient to support all types of Health IT Systems (IDNs, Hospitals, Ambulatory, Pharmacy, Diagnostics Centers, etc.) and all types of information (summaries, meds, images, lab reports, ECGs, etc.), structured and unstructured.
- Meets both the needs of push communication by info sources and on-demand pull in a variety of centralized or distributed architectures.

**Offer a consistent, standards-based and functional record sharing for EHRs, PHRs & other IT Systems**



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## IHE-XDS is part of a family of profiles

- Regional, national, local or disease centric networks need a consistent set of detailed specifications to enable interoperability
- IHE Integration and Content Profiles = Standards-based interoperability building blocks for
  - Rich Document Content for end-to-end application interoperability.
  - Patient identification management
  - Security and privacy
  - Notification and data capture

**IHE-XDS + related IHE profiles provide a complete interoperability solution**



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## IHE Integration Profiles for Health Info Nets

*What is available and in trial implementation*

Clinical and PHR Content	Security & Privacy	Patient ID Mgmt
<ul style="list-style-type: none"> <li>Emergency Referrals</li> <li>PHR Extracts/Updates</li> <li>ECG Report Document</li> <li>Lab Results Document</li> <li>Scanned Documents</li> <li>Imaging Information</li> <li>Medical Summary (Meds, Allergies, Pbs) <small>Format of the Document Content and associated coded vocabulary</small></li> </ul>	<ul style="list-style-type: none"> <li><b>Basic Patients Privacy</b> Consents <small>Establish Consents &amp; Enable Access Control</small></li> <li><b>Cross-Enterprise User Assertion</b> <small>Provides Trusted Identity</small></li> <li><b>Document Digital Signature</b> <small>Attesting "true-copy and origin"</small></li> </ul>	<ul style="list-style-type: none"> <li><b>Patient Demographics Query</b></li> <li><b>Patient Identifier Cross-referencing</b> <small>Map patient identifiers across independent identification domains</small></li> </ul>
<ul style="list-style-type: none"> <li><b>Health Data Exchange</b></li> <li><b>Cross-Enterprise Document Sharing</b> <small>Registration, distribution and access across health enterprises of clinical documents forming a longitudinal record</small></li> <li><b>Cross-Enterprise Document Pt-Pt Reliable Interchange</b></li> <li><b>Cross-Enterprise Document Media Interchange</b></li> <li><b>Cross-Community Access</b></li> </ul>	<ul style="list-style-type: none"> <li><b>Audit Trail &amp; Node Authentication</b> <small>Centralized privacy audit trail and node to node authentication to create a secured domain.</small></li> <li><b>Consistent Time</b> <small>Coordinate time across networked systems</small></li> </ul>	<ul style="list-style-type: none"> <li><b>Other</b></li> <li><b>Request Form for Data Capture</b> <small>External forms with custom import/export scripting</small></li> <li><b>Notification of Document Availability</b> <small>Notification of a remote provider health enterprise</small></li> </ul>



Final Text Approved
Trial Implementation-2008 – Final Txt 2009

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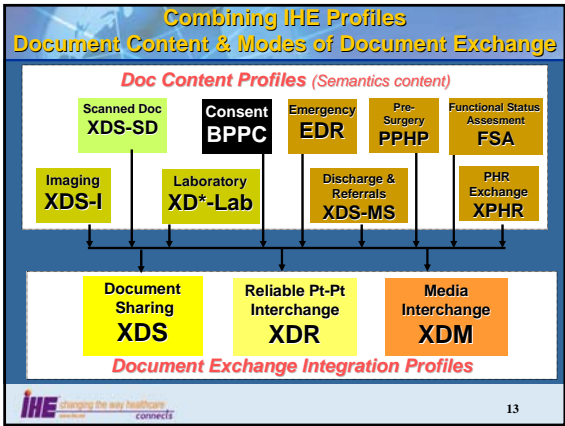
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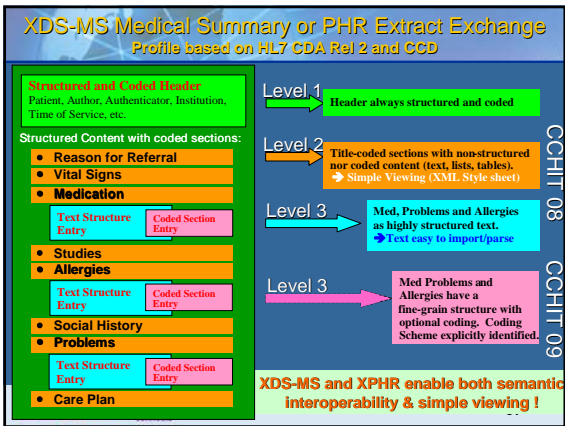
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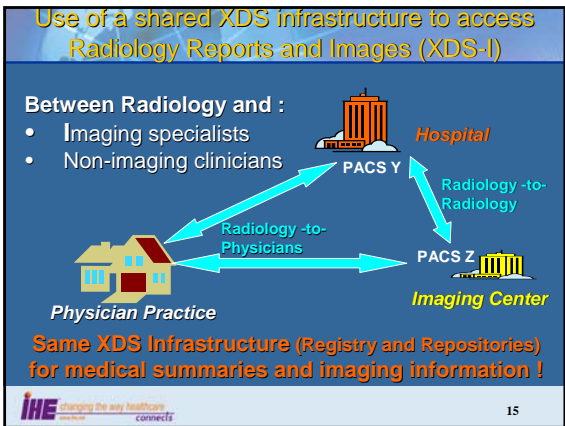
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## Leverage IHE for your RHIO/HIE/IDN !

- Leverage investments and experience world-wide
  - Choose either (or mix) a federated or a centralized HIE
  - Get both an HIE with portal data access (for entities without HIT Systems) and two way data exchange between EHRs, PHRs and other HIT systems.
  - Public domain architecture and specifications, simplify RFP process and implementation for both vendors and HIE.
  - Wide range of open source IHE test tools (MESA, Gazelle)

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## IHE-Based – Health Info Exchange

- IHE supports these requirements:
  - To meet the needs of the various stakeholders
  - With a wide array of standards to reduce cost and accelerate deployment of HIEs
  - With flexibility to accommodate a wide range of architectures and business models across the world
  - No rip and replace of edge systems, different levels of interoperability
  - Ensure reuse of implementations, sharing of experience
  - Forward looking way to enable interconnection of HIEs into a National Health Information Network
  - Allowing increasingly sophisticated security and privacy protections

Several HIEs successfully built in 2008 in the USA  
 ➔ Attend the Case Study Sessions in these theaters

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**IHE Profiles are consistent with HHS Recognized Standards (HITSP Interoperability Specifications)**

**HITSP Interoperability Specifications and supporting IHE Profiles**

<b>Electronic Health Record Laboratory Test Results IS-01</b> <small>NAV - PDQ - PIX - XCA - XD*Lab - XDS</small>	<b>Emergency Responder IS-04</b> <small>ATNA - CT - EDES - PDQ - PIX - XCA - XDS - XDS-MS - XUA</small>
<b>Biosurveillance IS-02</b> <small>NAV - PIX - PIX - RFD - XD*Lab</small>	<b>Consumer Empowerment and Access to Information via Media IS-05</b> <small>ATNA - CT - PDQ - PIX - XD*Lab - XDM - XUA</small>
<b>Consumer Empowerment Registration and Medication History IS-03 v2.1</b> <small>XCA - XDS - XDS-I - XDS-MS - XCA - XDS - PIX - PDQ</small>	<b>Quality IS-06</b> <small>ATNA - CT - DSS - QED - XDS-MS - XUA</small>
<b>Consumer Empowerment Access to Clinical Information IS-03 v3</b> <small>ATNA - BPPC - CT - DSS - PDQ - PIX - XCA - XD*Lab - XDS - XUA</small>	<b>Medication Management IS-07</b> <small>*still in development</small> <small>ATNA - BPPC - CT - PDQ - PIX - XCA - XDS - XUA</small>

**Upcoming Use Cases Later in 2008-2009**

Patient Provider Secure Messaging	Immunization and Response Management
Personalized Healthcare	Remote Monitoring
Public Health Case Reporting	Consultations and Hand-Offs of Care

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## How can I participate?

**As a Provider or Vendor Contributor**

- Offer Clinical Use Case Input to Drive IHE Profile Development
- Become a member of relevant domain's Planning or Technical Committees
- Become a member of relevant Regional/National Committees
- Help to shape IHE's future direction

**As a Vendor Participant**

- Respond to Public Comments of Domain Supplements
- Attend the June Educational Workshop
- Participate in Connect-a-thons and Demonstrations

**As a Provider/Consultant Participant**

- Respond to Public Comments of Domain Supplements
- Attend the June Educational Workshop
- Attend Demonstrations and include IHE Integration Profiles in your RFPs and Integration Projects.

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## What can you do?

- Attend the IHE Domain specific sessions in these Theaters during HIMSS 2007 (Orange sessions)
- Learn from the successful HIEs (VITL, CareSpark, KeyHIE, NCHICA, BMC, Providence, PhiladelphiaHIE, etc.)
- Learn about IHE, [www.ihe.net](http://www.ihe.net)
- **Insist on relevant IHE profiles compliance in your RFPs and contract documents:**
  - > Select Integration Profiles, and Appropriate Actor(s)
  - > Ask vendors for their products "IHE Integration Statements".

**Need more interoperability ? Contribute to IHE Committees**

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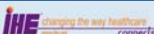
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## IHE Web site: [www.IHE.net](http://www.IHE.net)

- **Frequently Asked Questions**
- **Integration Profiles in Technical Frameworks:**  
*See Volume 1 of each TF for Use cases*
  - > Cardiology
  - > Eye Care
  - > IT Infrastructure
  - > Laboratory
  - > Patient Care Coordination
  - > Patient Care Devices
  - > Pathology
  - > Pharmacy
  - > Quality
  - > Radiation Oncology
  - > Radiology
- **Connectathon Result and Vendor Products Integration Statements: [www.ihe.net/Connectathon](http://www.ihe.net/Connectathon)**

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