

Providing a Solid Foundation: NHIN Pilot Development and How the IHE Technical Framework Accelerates RHIOS

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IHE Strategic Development Committee co-chair
IHE Patient Care Device (PCD) Domain co-chair



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A simple Bio:

- **32+ years in IT and Clinical/Biomedical Engineering fields**
 - 25 of those years in the patient safety, life-support device, and medical informatics industries
- **Since 2000, Academic/research faculty at Villanova School of Business**
- **Since 2001, active HIMSS and IHE participant while President of the American College of Clinical Engineering**
- **Now co-chair of IHE's Strategic Development Committee and IHE's Patient Care Device Domain.**

Presentation Goals

- **What is IHE?**
- **What is the National Healthcare Information Network (NHIN)?**
- **How is IHE used to accomplish the NHIN goals?**

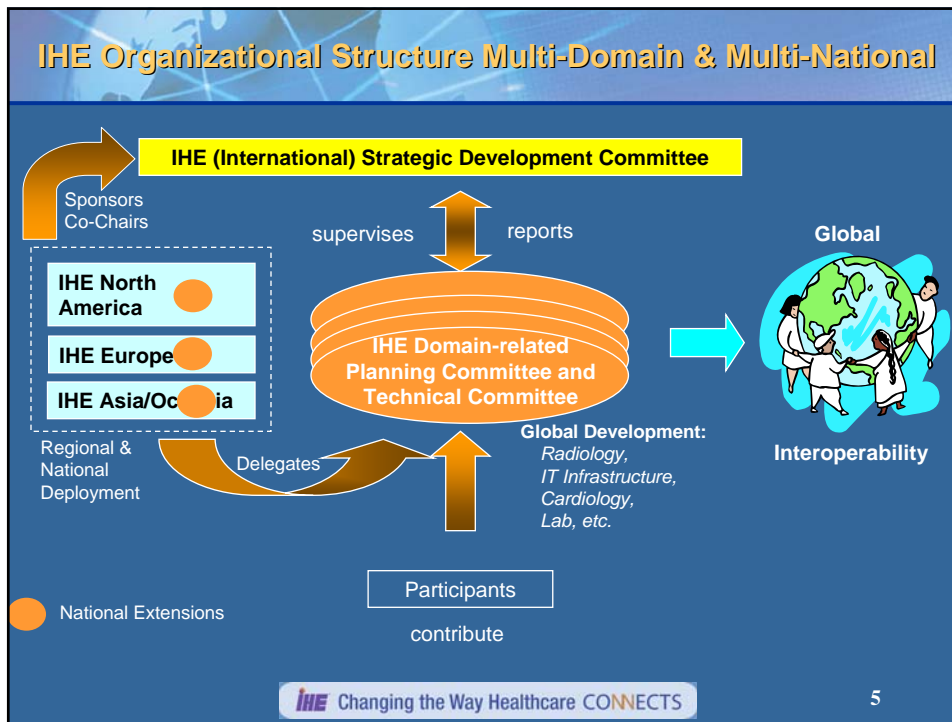
IHE Contributors & Participants

Sponsored by:

- **Professional Societies Representing Healthcare Segments**
 - RSNA, HIMSS, ACC, ACP, ACCE, AAO, others...

Participants are:

- **Users - Clinicians, Medical Staff, Administrators, CIOs**
- **Information Systems & Equipment (e.g. imaging) Vendors**
- **Consultants**
- **In addition, active liaison with Standards Development Organizations (SDOs)**
 - HL7, DICOM, NCCLS, ASTM, ISO, others



What is a standard?

- A definition or format that has been approved by a recognized standards organization or is accepted as a de facto standard by the industry. Standards exist for programming languages, operating systems, data formats, communications protocols, and electrical interfaces.

HIMSS HIT Dictionary 2006

IHE Changing the Way Healthcare **CONNECTS**

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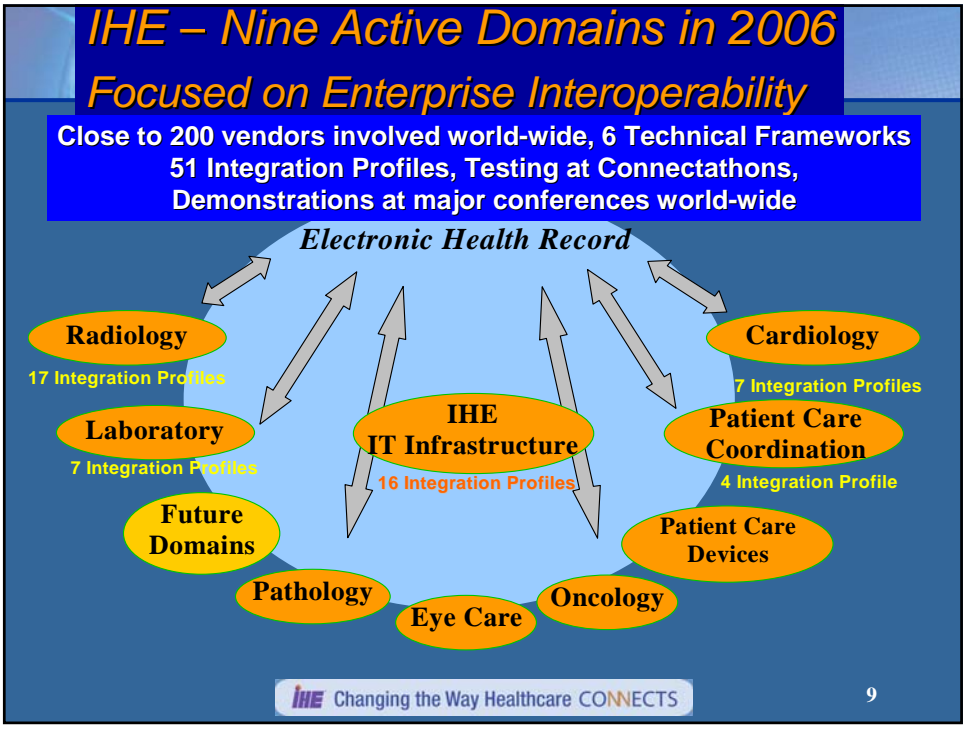
Standards are critical but alone are not enough

- Standards offer generality, ambiguity and alternatives
- Standard Implementation Guides are focused on a single standard
- Increasing complexity

IHE provides a uniform process for implementing multiple standards! IHE creates new "Composite Standards," which it publishes as "Frameworks."

Connecting standards to care

- Care providers 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



Interoperability Showcase 2007

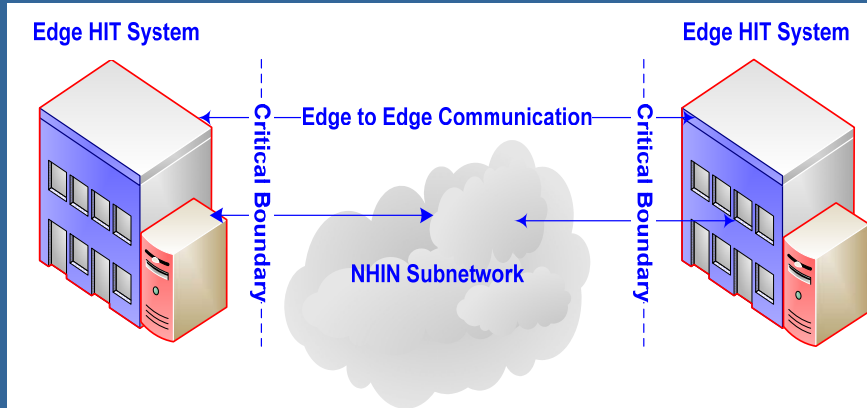
- **Expansion of the Showcase for 2007 is expected to include:**
 - Health information exchange with patient care devices
 - Personal health record solutions
 - Financial and administrative billing systems
 - Emergency referral systems
 - Expanded distributed demonstration in a RHIO format
 - Focused tours – international, VIP, media, CIOs, congressional members, NHIN, RHIO participants

Interoperability Showcase 2007

- **HIMSS RHIO - Technical demonstration**
 - Featuring the IHE framework enabling standards-based health information exchange within and across local, regional, and national networks
- **Clinical scenarios**
 - Focusing on clinician and patient access and information sharing across the continuum of care
 - New Directions Life Sciences, Financial and billing transactions
- **Connectivity with**
 - Participating vendors booths
 - Show-wide attendee access at 'Surf the Web' kiosks
- **Focused tours – International, VIP, Congressional**
- **Theater – Education sessions**
 - Ongoing educational sessions focused on IHE, RHIO's and IHE case studies/implementations

www.interoperabilityshowcase.org

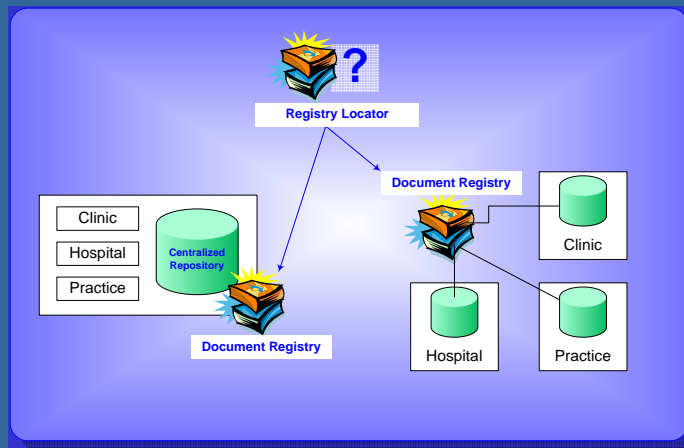
1 - Distinguish "edge" HIT systems from information exchange infrastructure



IHE support for RHIOs, and community Health Information Exchange

2 - Supports multiple architectures

Centralized, distributed, federated, etc.

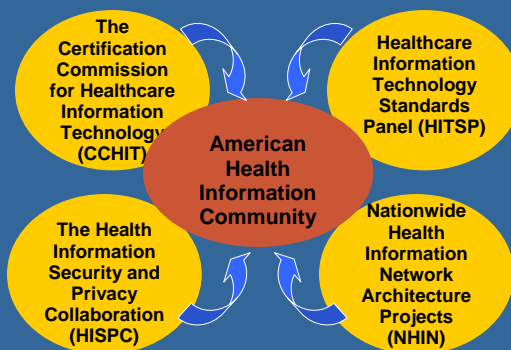


Different business models, cost, legacy systems, etc.

3 - Enrich Incrementally, no rip and replace

- Has been the hallmark of IHE for many years
- Think long-term, but specify & implement what is needed today
- Steal good ideas, learn from others' mistakes
- Listen and collaborate
- Reuse, repurpose, and enhance previous Integration Profiles
- If a clear use case cannot be specified in 6 months, and implemented for testing in the next 6 months, rethink.

HHS Health IT Strategy to create a National Healthcare Information Network (NHIN)



- The Community serves as the hub for identifying breakthrough opportunities
- CCHIT is developing a mechanism for certification of health care IT products
- HITSP brings together all relevant stakeholders to identify appropriate IT standards
- HISPC is addressing variations in business policy and state law that affect privacy and security
- NHIN is focusing on interoperability pilots starting in 2006

IHE is part of the US NHIN solution...

- In 2005, HHS contracted with ANSI to host the Healthcare Information Standards Panel (HITSP)
- After a full year of work by 220 independent organizations, in 2006, HITSP recommended using several IHE profiles for the first year designs
 - e.g., using the IHE Laboratory Technical Frameworks
- In 2007, the Secretary of Health accepted the HITSP recommendations as drafts, and HITSP is working on the second year's designs now.

Healthcare Information Technology Standards Panel - HITSP

- **The *Community* selects breakthrough areas to be worked across ONC contracts**
- **The HITSP then charters Technical Committees to address each break through**
 - Identify a pool of standards for a general breakthrough area
 - Identify gaps and overlaps for a specific context,
 - Make recommendations to the HITSP for resolution of gaps and overlaps
 - Develop instructions for using the selected standard for a specific context called interoperability specifications
 - Test the interoperability specifications for using the standard
- **A call for participation is announced to all HITSP members**

www.hitsp.org

HITSP Recommended Standards

● Biosurveillance

- ICD-9CM – International Classification of Diseases v. 9 Clinical Modifications
- ICD-10 CM – Diagnoses and Procedures
- IHE-XDS – Integrating the Healthcare Enterprise (IHE) Cross-Enterprise Document Sharing
- IHE-XDS Lab – IHE Laboratory Report Document Sharing
- IHE-RFD – IHE Retrieve Form for Data Capture
- IHE-PIX – IHE Patient Identification Cross-Referencing
- IHE-RAD – XDS-I – IHE Cross-Enterprise Sharing of Images
- IHE-NAV – IHE Notification of Document Availability
- IHE-XDS-MS – IHE Medical Summary Document Sharing
- ISO/TC215 -DTS 25237 - Health Informatics Pseudonymisation
- LOINC – Logical Observation Identifiers Names and Codes
- NCCLS – National Committee for Clinical Laboratory Standards
- RxNorm – National Library of Medicine RxNorm

HITSP Recommended Standards

● Consumer Empowerment

- IHE-XDS – Integrating the Healthcare Enterprise (IHE) Cross-Enterprise Document Sharing
- IHE-PIX – IHE Patient Identification Cross-Referencing
- IHE-PDQ – IHE Patient Demographics Query
- Health Level Seven (HL7) CDA R2 – HL7 Clinical Document Architecture Release 2
- HL7 CCD – HL7 Clinical Document Architecture Release 2 and ASTM E 2369-05 Standard Specification for Continuity of Care Record (CCR)
- HL7 v. 2.5
- HL7 EHR Systems Functional Model Draft Standard for Trial Use (DSTU)
- Logical Observation Identifiers Names and Codes (LOINC)

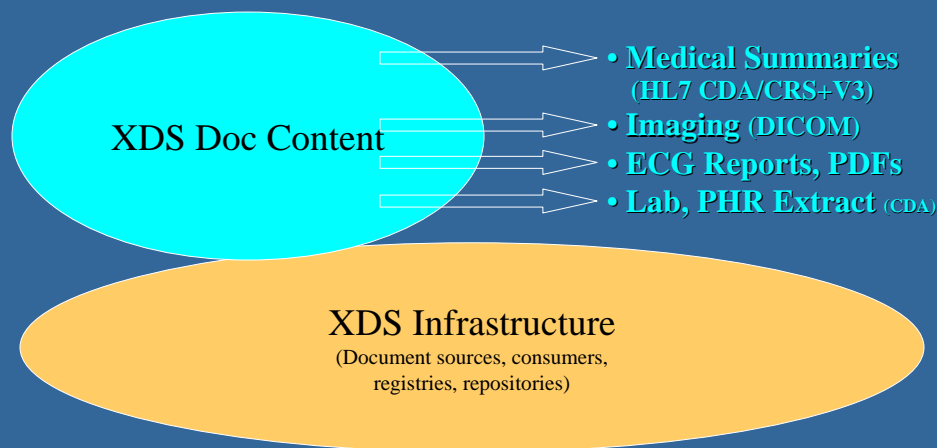
HITSP Recommended Standards

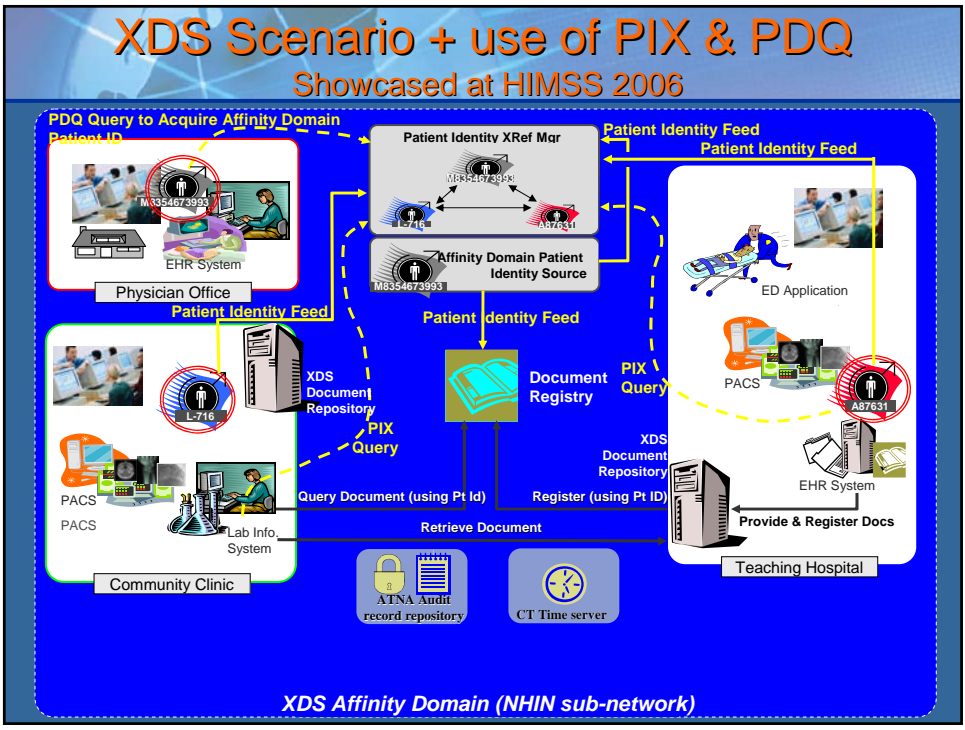
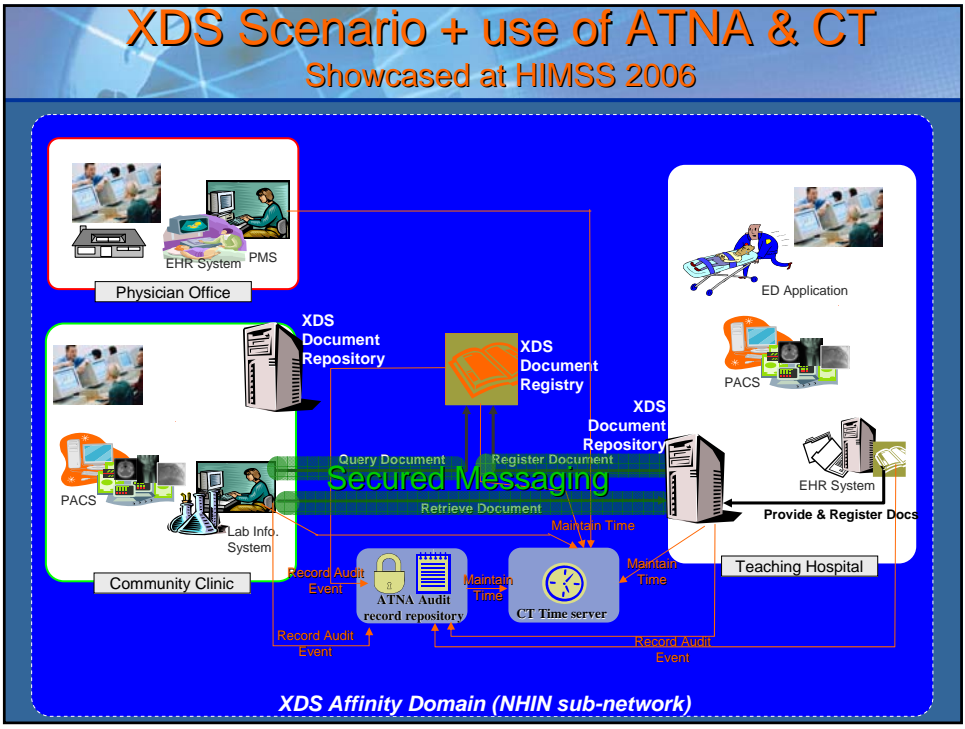
● Electronic Health Record Exchange

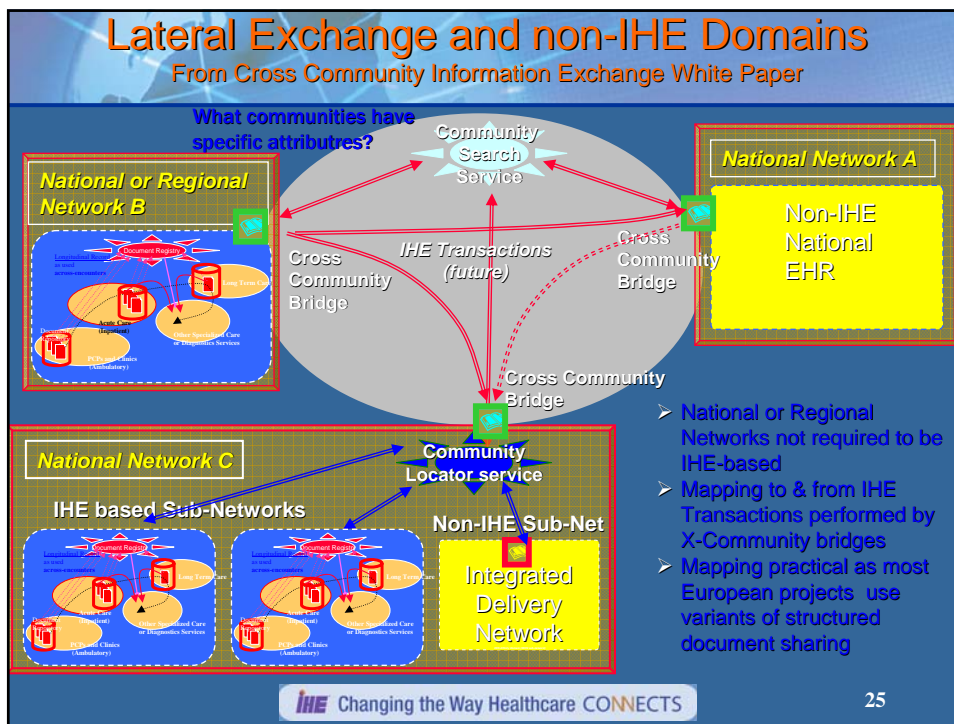
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- IHE-PIX – IHE Patient Identification Cross-Referencing
- IHE-PDQ – IHE Patient Demographics Query
- Health Level Seven (HL7) CDA R2 – HL7 Clinical Document Architecture Release 2
- HL7 v. 2.5
- Clinical Laboratory Improvement Amendments (CLIA)
- Logical Observation Identifiers Names and Codes (LOINC)
- Health Insurance Portability and Accountability Act (HIPAA)
- Systematized Nomenclature of Medicine – Clinical Terms (SNOMED – CT)
- Unified Code for Units of Measure (UCUM)

Cross-Enterprise Document Sharing (XDS) Standards Used at the Document Content Level

Ease of reuse of data (financial, clinical and consumer)









**Providers and Vendors
 Working Together to Deliver
 Interoperable Health Information Systems
 in the Enterprise
 and Across Care Settings**

<http://www.ihe.net>

IHE Changing the Way Healthcare CONNECTS 26

More Resources - www.ihe.net

- **Frequently Asked Questions**
- **Integration Profiles in Technical Frameworks:**
 - Examples:
 - > *Cardiology*
 - > *IT Infrastructure*
 - > *Laboratory*
 - > *Patient Care Coordination*
 - > *Patient Care Devices*
 - > *Radiology*
- **Connectathon Results**
- **Vendor Products Integration Statements**
- **Participation in Committees & Connectathons**

Thank you!
Questions?
Comments!





IHE *changing the way healthcare*
www.ihe.net *connects*

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