

IHE Radiology: 2009 Update

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IHE

Connectathon **HIMSS 09**

IHE Radiology

- Scope:
 - Radiology including Nuclear Medicine, Mammography
- Vendors
 - Acquisition Modalities, RIS, PACS, Workstations, Displays, Printers
- Established 1998 (first IHE domain)
- Sponsor: RSNA
- Supporters: COCIR, DRG, EAR, ECR, EuroPACS, GMSIH, JIRA, JAHIS, JRS, JSRT, METI, MEDIS-DC, SFR, SIRM

Connectathon **HIMSS 09**

IHE Radiology - Achievements

- Entering 11th year
 - Robust Vendor Participation at Connectathons
 - 200+ IHE Integration Statements published
 - IHE Profiles appearing in User purchasing processes
- Have addressed basic Radiology workflows
 - Acquisition, Post-Processing, Reporting, Import Reconciliation, Teaching Files/Clinical Trials
- Have addressed imaging content handling
 - Measurements, CAD Results, NM Images, Mammo Images, Image Fusion, Presentation States, Reports, Key Image Notes
- Have addressed distribution of imaging information
 - to enterprise, to EHRs, on CD, keeping Audit Trails

Connectathon **HIMSS 09**

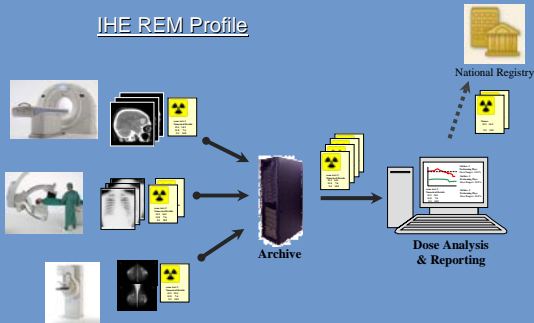
IHE Radiology – Recent Activities

- Address Concerns about Dose
 - Radiation Exposure Monitoring
- Complete Mammography/CAD work
 - Mammography Acquisition Workflow
- Improve Distribution / Access to Imaging
 - XDS-I.b
 - Portable Data for Imaging Extensions
 - Basic Image Review
- Encourage use of Enhanced DICOM
 - CT/MR Perfusion
 - MR Diffusion



Radiation Exposure Monitoring

IHE REM Profile



5

Using SR Dose Reports

Possible applications:


- Radiation QA
 - Periodically Query / Retrieve Reports from Archive
 - Set policies/standards and flag deviations
 - Set goals for improvement and track;
 - Implement protocol changes and compare difference in dose
- Patient Impact Evaluation
 - e.g. if Patient identified as pregnant post-facto
- Dose Mapping
 - Store data in realtime from Modality to Mapping Workstation



6

Using SR Dose Reports

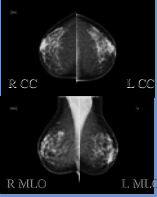
- National Registries
 - Anonymize and submit Dose Reports to Register
 - Compile Population Risk Estimations
 - Derive Dose Reference Levels
 - Provide Site-Site Comparisons
- Individual Dose Record
 - Collect Dose Reports over time
- Clinical Trials
 - Collect Dose together with Images
 - Demonstrate both improved detection & reduced dose



7

Mammography Acquisition Workflow

Full Field Digital Mammography (FFDM)
not just another modality:


- High patient throughput (e.g. 300 patients/day)
- Common use of CAD (Computer Aided Detection)
- “On-line” work-up, screening/diagnostic
- Importance of prior study comparisons
- Image size, orientation, layout
- Double reading

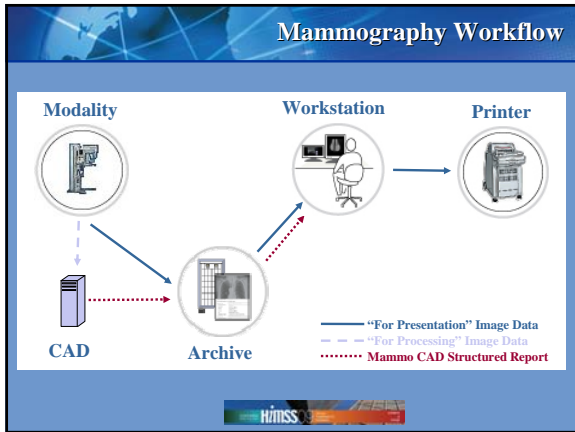


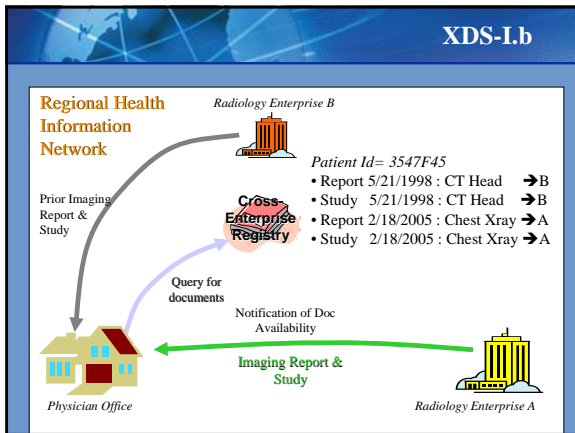


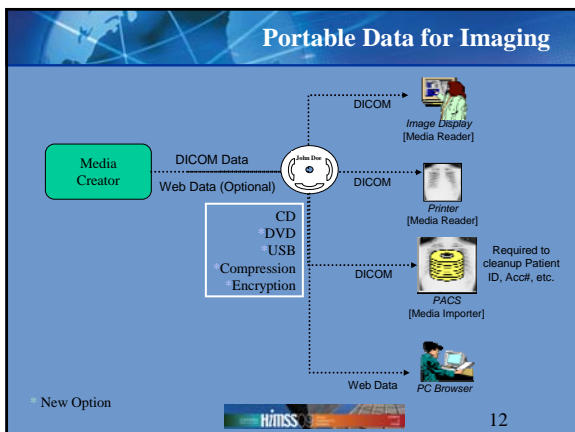
Mammo Integration Issues

- Variance among vendors' image data
- Variance in Hanging protocols/appearance
- Variance in CAD markers
- Two types of image data (for processing, display)
- Adding supplemental images
- Changing procedure information at Modality
- Hiding low-quality or incorrectly labeled images from further use










Basic Image Review

Motivation: Frustration with Image Viewers on CDs

Issues Addressed:


- viewer does not successfully run
- viewer does not successfully load the images
- viewer loads too slowly
- viewer claims to be "not of diagnostic quality"
- functions critical to review are missing
- Yet Another GUI in which the operation of basic functions is non-obvious



Enhanced DICOM


Standardizing use of Enhanced DICOM for:

- CT/MR Contrast Perfusion
 - Intra-venous contrast enhanced images containing standard attributes for timing and phase.
- MR Diffusion
 - MR diffusion images containing standard attributes for diffusion B values, direction & diffusion image type.




IHE Radiology: 2009 Development Schedule

Timeframe	Activity	Scheduled	Location
2008			
Aug.	Submit <u>Brief Profile Proposals</u> to Planning Committee (PC)	by Sept. 15	Wiki
Sept.	PC Selects "Short List" of Proposals	Sept. 17	T-Con
Sept.	PC Drafts Detailed Profile Proposals for "Short Listed" Proposals	by Sept. 30	Wiki
Oct.	TC Completes technical review of Detailed Proposals		T-Con
Oct.	PC makes Final Selection of Proposals for this year	Oct. 22	T-Con
Nov.	TC Profile development kickoff meeting	Nov. 10-13	Chicago
2009			
Jan.	TC Finalizes profile supplements for public comment	Jan. 27-30	Chicago
Feb.	Publication of <u>Public Comment</u> Supplements	Mar. 22	www.ihe.net
Mar.	Deadline for submission of public comments on profile supplements	May 1	www.ihe.net
Mar./Apr.	TC reconciles public comments	May 11-14	Chicago
May	Publication of Trial Implementation Supplements		www.ihe.net
Jun.	Publication of Final Text Technical Framework (if appropriate)		www.ihe.net
2010			
Jan.	First Test implementations at Connecticut		Chicago



Participate in IHE

- Users
 - Learn about the IHE Profiles
 - Include specific IHE Profiles in your RFPs
- Vendors
 - Implement IHE Profiles in your products
 - Test your products at the IHE Connectathon
 - Publish IHE Integration Statements
- IHE Process
 - Review Draft Profiles during Public Comment phase
 - Participate on Committees
 - Radiology Planning Committee:
 - Kevin O'Donnell (Toshiba) & Chris Lindop (GE Healthcare)
 - Radiology Technical Committee:
 - David Clunie (Radpharm) & Chris Lindop (GE Healthcare)
 - Chris Carr (RSNA) – ihe@rsna.org


16




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IHE in One Slide

- IHE helps vendors implement & test functions that span multiple systems 
- Profiles are implementation guides
 - how to use existing standards
 - to address a specific problem scenario
- Connectathons are test events
 - managed testing of Profile implementations
- IHE helps users purchase & integrate multi-system solutions


18

