The NIMIS solution

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NIMIS

- Replacement of Analogue study viewing and storage with digital
- Connecting patient image data across the HSE
- Improving Safety and Efficiency
Historical Perspective: Irish Radiology

- First X-ray: 1895
- X-Ray in Ireland: 1896
- CT scanner: 1978
- MRI scanner: 1986
- PET scanner: 2002
- NIMIS: 2010
Where we are now

Adelaide and Meath hospital 1998
First digital imaging system
Where we are now

- 16 Hospitals have PACS
- 3.5 million examinations per year
  - 5% compound growth
  - 1.4 million in hospitals with digital imaging
  - 1.9 million not digitally archived
- No national network
Diagnostic Imaging

- Oncology, radiology, cardiology, vascular surgery…
- Pathology ECGs, EEGs etc.
National Structure

- Central Data Repository
  - Dublin
- Facility

- National data and workflow sharing
- Subject to appropriate security and access permissions
Changes for the radiology department: National RIS

- Horizon Radiology Manager
  - National RIS
  - Scheduling across regions
  - Filtered by location
  - Order and report across region/nation
Changes for the radiologist
Changes for the radiologist: Voice Recognition

- Nuance RadWhere
- Available at all workstations and in all locations
- Very flexible templating system
- Instant generation of reports
  - Turnaround of reports goes from days to minutes
Changes for the radiologist: Advanced visualization

- Segami Oasis nuclear imaging workstation
- Permits analysis of nuclear medicine and PET/CT data from all workstations
Changes for the radiologist: Mammography

- Magview-reporting system
- Terarecon-Tools for breast MRI
Changes for all clinicians: Advanced visualization

- Terarecon thin client workstation
  - Available on all PCs to all clinicians
- Radiology
- Vascular Surgery
- Cardiology
Changes for all clinicians: Distributed images

- Distributed PACS viewer
  - Same features as radiology workstation
  - Available on any pc within the hospital
  - Available at home
    - Subject to security
- Access all images from anywhere
Changes for all clinicians: Electronic Ordering

- Within the hospital all orders will be electronic
  - Existing EPR
  - iSoft-iCM
  - McKesson RIS
- External written orders from GPs can be scanned
Changes for cardiology: ECG management

- The system will accept and share ECGs
- Cardiology can utilize the radiology RIS and workstation including advanced image reconstructions
Changes for all clinicians: Data Mining

- RADCube – Intelligent and innovative data-mining from radiology reports
Changes for orthopedics: Advanced templating software

- TraumaCAD
- Advanced orthopedic templating software
- Will be available on all PACS PCs
  - Operating Theatre
  - Ward
  - Home
Changes for Emergency Medicine: Discrepancy reporting

- ER Discrepancy tool
- Allows Emergency medicine NCHDS to record their preliminary opinion
- Reporting radiologist can then agree or not
- Closed loop safety system
Changes for Community Health Teams: eJacket and integration with healthlink

- NIMIS will be integrated with the GP healthlink messaging system
  - Phase 1-Results
  - Phase 2-Ordering
- eJacket- weblink sent with each report will launch image viewer compatible with all GP systems
Sharing work across Ireland

- National data and workflow sharing
- Subject to appropriate security and access permissions
Patient safety

“On-line all the time”
Patient safety

- Our Lady’s Hospital Crumlin
  - Investigation into the removal of the wrong kidney from patient XY Our Lady’s Children’s Hospital, Crumlin.
  - 4/10 contributory factors relate to difficulties reviewing images
  - Recommendation 1: Introduce PACS
Patient safety: Multidisciplinary meetings

- Horizon Study Share
  - Conferences
  - Teaching
Patient safety: Audit and dose

- Multiple features for searching RIS will facilitate multiple types of audit
- Reduction in repeat imaging
- National radiation dose record
Multiple features for searching RIS will facilitate multiple types of audit.

- Reduction in repeat imaging
- National radiation dose record

- National data and workflow sharing
- Subject to appropriate security and access permissions
NIMIS Security

- Compliant with and facilitates current procedures
- Role based access
- Full audit trail
- Compliant with data protection act
- Designed with input from data protection commissioner