A Practical Guide to Getting the most out of Radiology Information Systems and PACS Delivering the Paperless and Filmless Hospital

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The role of RIS and PACS in delivering the goal of a filmless and paperless NHS

Redesigning radiology services: including extended/7-day working, out of hours cover, home reporting and outsourcing
The Filmless Hospital

- A success!
- National contract circa 2006
- Local replacements from 2013
PACS: Beyond the national contract

• 30 June 2013 (Wave 1)
  • 84 NHS trusts exit from their national contracts
• 30 June 2014
  • East of England, East Midlands, Yorkshire and the Humber and the North East
  • Option to extend for a further 24 months
• 31 July 2015
  • London
Wave 1 - lessons learned

- Form a consortium, but be aware of the financial overheads
- Establish clear Terms of Reference for the consortium
- Ensure the meetings are attended by the right people (i.e. those who are able to make decisions such as IT directors and clinical directors)
- Think about exit when creating contracts in the first instance
- Be mindful of possible delays and additional costs when asking LSPs to carry out additional work that is not contractually bound
- Consider dual running of RIS and PACS to avoid ‘big bang’ scenarios
New world map
As the end of the LSP contracts approach trusts are signing contracts with their new PACS and RIS suppliers and beginning the process of moving all of their data over.

Check out our map below to see who trusts are choosing as their new suppliers.
Truly Filmless?

- Image export
  - Patient
  - Private practice
  - Legal cases
  - Research studies
Optical Media

- More complex to print than film
- Harder to scale up for large exams
- Security implications
- Software compatibility issues
- Staff resources/skill for PACS export/import
- What about reports, requests?
Future Challenges

- Digital transfer
  - bbRad, exoPACS, IEP
- What about reports?
- 2-way communication?
  - Amendments
  - 2nd opinions
  - post-processing/annotations
- Patient access?
  - Interpretation of findings…
Tb of data, all ring fenced...

- Separate silos of imaging within Trust
  - Radiology
  - Bone densitometry
  - Obstetrics (& gynae)
  - Cardiology
  - Endoscopy (GI, Urology, Lung, ENT)
  - Ophthalmology
  - Pathology
  - Medical photography
  - Pseudo-imaging - Lung function tests, ECGs, EEGs, exercise testing
The solution(s)

- VNA
- Clinical Portal
Data access route

- VNA benefits leveraged via Universal Viewer
  - PACS viewer
  - EPR
  - Custom VNA front end

- or via a Clinical Portal, Dashboard, EPR?
  - 1 central route (access point) to all data
  - Data specific viewers
    - Use custom tools for data presentation/analysis
What is a Clinical Portal?

Clinical Portal
A single interface that allows for personalized interaction with healthcare applications, content, processes and people.
Patient Context Integration?

- Depends upon the workflow start point...
  - RIS
  - PACS
  - OrderComms
  - EPR
  - Community (GP) records software
Imaging Context Integration

- RIS
- PACS
- CT software
- MRI software
- Advanced package
Context Integration – RIS Based

- Obstetrics
- Pharmacy
- Endoscopy
- EPR
- OrderComms
- MDT System
- Theatre Bookings
- Pathology Results
Context Integration – PACS

- Obstetrics
- Pharmacy
- Endoscopy
- EPR
- MDT System
- OrderComms
- Pathology Results
- Theatre Bookings
Context Integration – Portal

- Obstetrics
- Pharmacy
- Endoscopy
- PACS
- Portal
- MDT System
- Theatre Bookings
- OrderComms & Results
- EPR
Challenges

- Patient context
  - NHS number
  - MRN
  - Name, DoB, Address
- User ID
- Access controls
- Cross border IG issues
- Costs
- Supplier resources, interest
The Paperless Hospital
“From notepad to iPad: technology and the NHS”

Jeremy Hunt
Secretary of State for Health
16 January 2013
By March 2015, everyone would have **online access** to their own health records.

A ‘paperless NHS’ by 2018, allowing NHS staff to quickly and **securely** access and share digital patient records.

Patients should have **compatible** digital records [which] with a **patient’s consent** can follow them around the health and social care system.
We need protocols so that people can be comfortable that their data is only being accessed when necessary and with their permission.

We need to learn those lessons - and in particular avoid the pitfalls of a hugely complex, centrally specified approach.
Immediate impact...

- the NHS Commissioning Board have agreed that hospitals should be able to share digital data from April 2014
- ...and to adopt paperless referrals from April 2015
- a report by PwC suggests a potential £4.4bn could be put back into the NHS by using better use of information and technology
Success

- no longer adding radiology paperwork to patient records

Apart from

- Sec printing reports for clinic to speed things up
- External imaging reports not on local RIS/PACS
- Reports printed as physical reminder for MDT, etc
- MDT prep/running
Why does it matter - cost

- Media
  - Paper
  - Printer – Ink, Maintenance, Purchase, Power
  - Envelope
  - Postage
  - Exam info leaflets

- Staff
  - Moving requests round dept
  - Filing/retrieving requests
  - Sending out appt letters
  - Manual vetting
  - Checking blood tests
Printing Costs

- Request pathway – OP exams
  - Paper (2500 sheets): £10
  - Ink/toner: £25
  - Printer/support: £10
  - Prep leaflet: £250
  - Envelope: £40
  - Postage: £875
  - Staff costs: £500
  - Total: £1710
Within Radiology - Workflow

- Receive request
- Vetting
- Partial booking
- Appointing
- Prepping
- List prep/admin
- Pt check in
- Safety q’s
- Procedure prep
- Waiting in dept
- Consenting

- Day case admission/obs
- Dose recording
- Initial findings/prelim report
- Reporting worklist
- Report typing
- Verification
- Distribution
- Significant Findings
- Day case recharging
Solutions

- e-Vetting (inc preparation)
- e-Diary
- Self check-in
- Online safety questionnaire (stored in RIS?)
- Tablets for mobile list management, pt flow
- Digital reporting (VR, digital dictation) via RIS
- Electronic report distribution
- Business intelligence from digital RIS reports
Redesigning radiology services

- Degree of staff shortages nationwide
  - Per capita radiologist numbers
- Extended day working
- 7-day working
- Safe out of hours (on-call) service
- Outsourcing
Staff shortages

- Improve productivity using technology
- Reduce ‘wasted’ hours on-call
  - Asleep
  - Time between referral and scan
- Encourage flexible working
  - Home reporting
Home reporting challenges

- Kit – hardware and software
- Broadband
  - who pays for it?
  - Business grade SLAs
- Support
- Quality assurance
- Loss of on-site staff cover
- Loss of easy to access to expertise for 2nd opinions
- Ad-hoc or timetabled sessions?
Extended/7-Day Working

- Well documented that pt care suffers outside ‘normal’ working hours
- Is radiology a major factor?
- Some evidence that improved access to imaging can reduce length of stay
  - Requires supportive framework
- However, sick patients already get emergency imaging (“if it will change immediate management”)
Outsourcing

- **Type of work**
  - Day time
  - Out-of-hours

- **Destination**
  - Internal
  - Local co-operative
  - UK staffed reporting service
  - Opposite pole service
  - Generic worldwide service
Benefits

- Report turnaround times
- Specialist primary reporting
- Access to specialist second opinion
- Free up staff for daytime work
- Better support for leave/sickness cover
Challenges

- IG agreements, secure access
- Staff scheduling
- Access to ‘external’ radiology history, Path results, EPR
- Significant Findings
- Training in new systems, sequences
- Interoperability – HL7 messaging
- IT support
- Quality assurance of hardware/software
- Devalues personal relationship with clinicians
Conclusions

- Paper’s days are numbered
- RIS/PACS rep procurements provide a great opportunity/foundation for creating an integrated digital healthcare system
- Radiology service provision must change to meet multiple challenges
- IT remains the bedrock of any successful radiology department