

Delivering the Paperless and Filmless NHS

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Overview

- Why paperless? Why filmless?
- Overview of PACS RIS and VNA
- Integration with EPR and other diagnostic/support services
- Supporting 7 day health services
- A sustainable future for diagnostic radiology
- What the future holds

Why paperless

- NHS 5 year Forward View

Fully interoperable electronic health records so that patients' records are largely paperless. Patients will have full access to these records, and be able to write into them. They will retain the right to opt out of their record being shared electronically. The NHS number, for safety and efficiency reasons, will be used in all settings, including social care.

National Information Board

- Personalised Health and Care 2020;
- **Using Data and Technology to Transform Outcomes for Patients and Citizens. A Framework for Action**

‘give care professionals and carers access to all the data, information and knowledge they need’ – real-time digital information on a person’s health and care by 2020 for all NHS-funded services, and comprehensive data on the outcomes and value of services to support improvement and sustainability;

Standards

- All patient and care records will be digital, real-time and interoperable by 2020.
- By 2018 clinicians in primary, urgent and emergency care and other key transitions of care contexts will be operating without needing to use paper records.
- This will be achieved by alignment of national technical and professional data standards with regulatory and commissioning requirements.
- Guidance to commissioners and providers published June 2015.
- Commissioners to develop roadmaps for the introduction of interoperable digital records and services by April 2016.

Why filmless?

Data

- Recording/Acquisition; Volumes

Information

- Context; Change; Knowledge

Intelligence

- Sharing; Audit; Research; HIE

Personalised

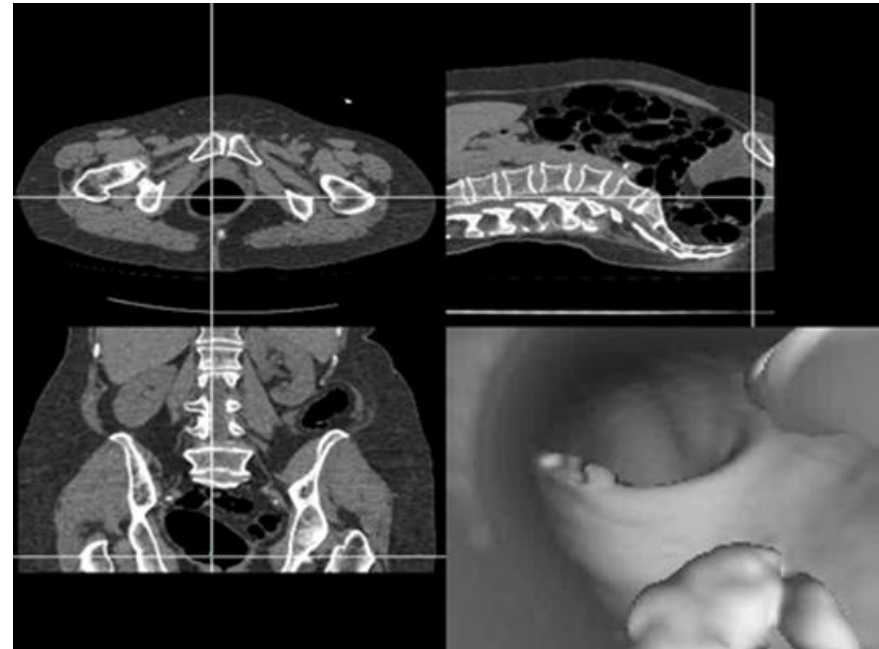
- Links with Phenomics, Pathology, Genomics

Overview of PACS

- Why PACS
 - Replaces hardcopy;
 - Storage costs
 - Reporting large data sets
 - Allows remote access and wide area sharing
 - Democratisation of knowledge generated by imaging data
 - Manages Imaging Department workflow
 - Gateway to imaging data life-cycle management
 - Facilitates integration with the wider electronic record

Components of PACS

- DICOM standard.
- Modalities
 - Generating exponential increase in data
 - Advanced image manipulation and modality workstations
- Transmission network
 - Secure trust networks; VPN; N3
 - The Internet and The Cloud
- Viewing platform
 - Expensive workstations
 - Web enabled, thin client
 - Portable devices
- Archive
 - Reducing cost
 - Disaster Recovery
 - 'Vendor Neutral Archive'



Radiology Information Systems (RIS)

Radiology Department workflow management

- Patient Tracking
- Interactive Documents
- Modality and Material management.
- Patient Registration and scheduling
- Patient List Management

Diagnostic and Reporting Workflow

- Request and document scanning
- Interface with Ordercomms/erefer
- Interface with modality via Worklist.
- Reporting; VR or DD
- Result(s) Delivery including printing faxing and e-mailing of clinical reports

Maximising benefits of integration

- Patient pathways
 - Smart decision support for Ordercomms
 - MDT management
 - Prioritising IP requests
 - Realtime bedstate
- Viewing
 - Better enterprise viewing capability.
 - Remote/mobile working
- Reporting workflow
 - Integrated into PACS
 - 24/7 capability
- Archiving
 - Data lifecycle management
 - Wider use of VNA;

Diagnostic Services and EPR

- RIS system functionality not reproduced in other diagnostic /support domains; significant blocker to a paperless environment
 - Endoscopy
 - Cardiology diagnostics
 - Physiological measurement
- Enterprise reporting Workflow
- Referrals
 - Therapies
 - Other specialists
- Accessible to Primary Care
 - GP ordering systems
 - E referral (Choose and Book Mark 2)

7 day services



Drivers for change (and engagement)

- **Quality and Safety**
 - Supporting Acute Medical and Surgical Services
- **Productivity**
 - Equipment
 - Staff
- **Patient Experience**

**Now explicit in a series of Standards reflected in
Commissioning intentions**

Quality and Safety

- NHS England. June 2013. 'Everyone Counts. Planning for Patients' 2013-14. First of five 'offers' – 7day working.
 - Access to radiography, CT, US, MRI, Endoscopy
 - Critical – imaging and reporting within 1 hour
 - Urgent – Imaging and reporting within 12 hours
 - All non-urgent – Within 24 hours
 - Access to Interventional Radiology;
 - Critical within 1 hour.
 - Non-critical within 12 hours
 - Access to comprehensive 24 hour endoscopy services that has a formal consultant rota 24 hours a day, 7 days a week.

In-Patients and Ambulatory Care

- Improved Safety
- Earlier diagnosis-enhanced Clinical Effectiveness
- Reduced Length of Stay
 - Direct GP access
 - Supporting Ambulatory Care
- Improved patient experience

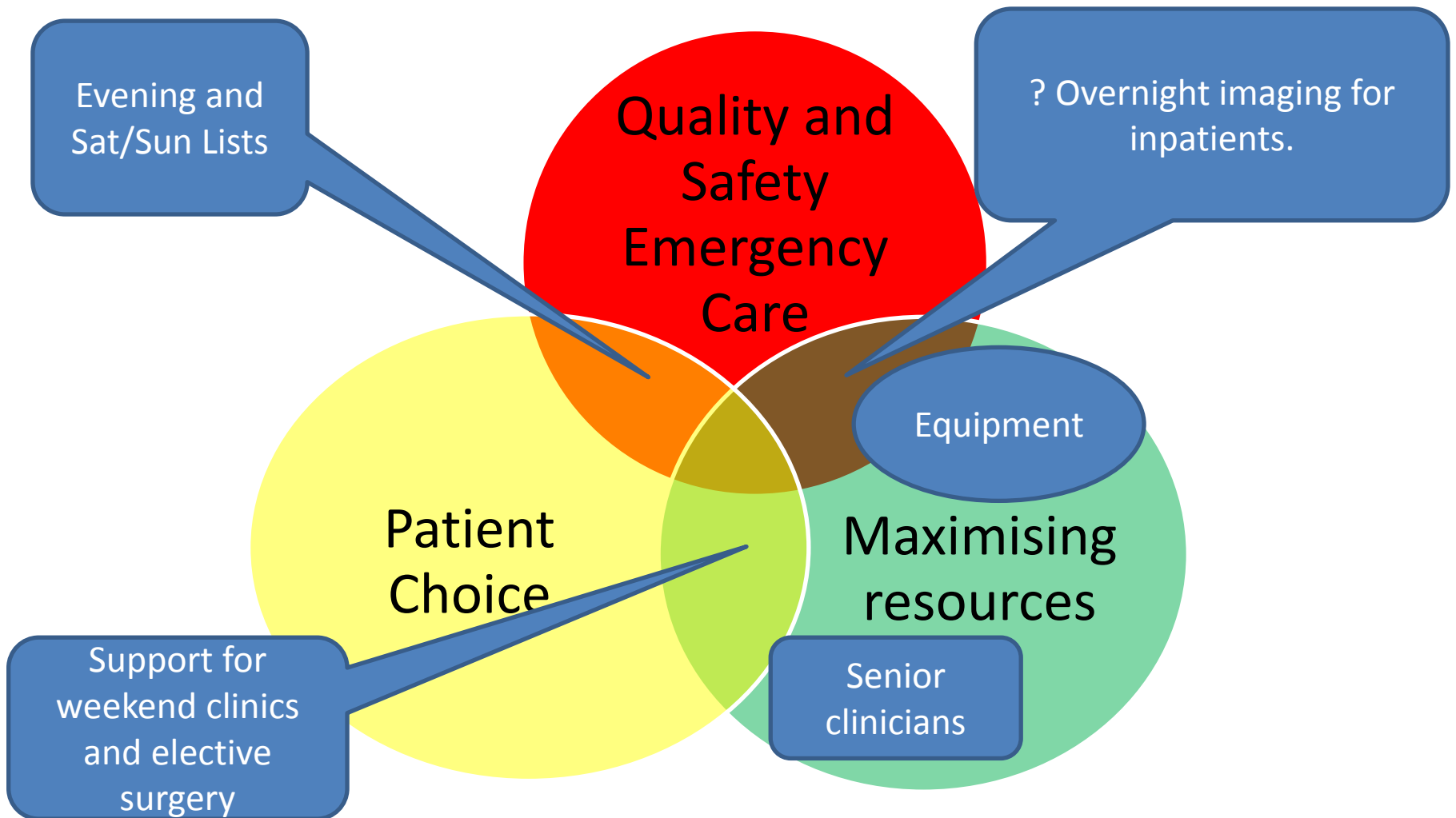


Productivity

- Maximising use of high value equipment; NAO report (2011)
- Increasing late evening and weekend working.
- Radiographer
- Administrative and Clerical
- Consultant
 - Consultant contract 2003; 2016? Removal of weekend premium and 'opt out'

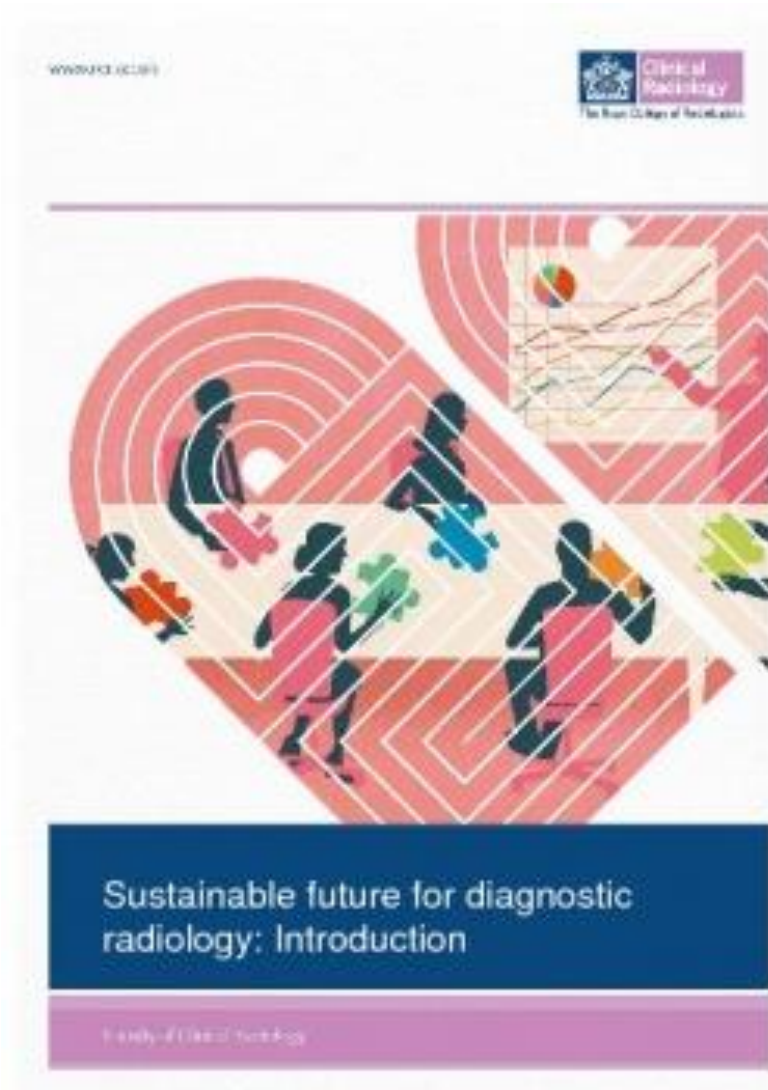


How the drivers interact



PACS and a sustainable future

- Network solutions
- The older radiologist
- Less than full-time working
- Flexible working and working from home



Network solutions and Enterprise diagnostic Imaging

- Across organisation
 - Democratisation of primary reporting
 - Implications for training
 - Impact on Radiology?
- Between organisations
 - 24/7 and specialty rotas
 - NHS 'in sourcing'
 - Collaborative PACS/RIS procurements eg Manchester, Hampshire
 - Image Exchange Portal
- And beyond
 - XDS standard
 - Affinity domains; MPI, Taxonomy
 - XCA

What holds the future?

- PACS, viewers, tools plug ins
- Increased drivers for acute primary reporting by frontline clinicians
- RIS merges with broader EPR scheduling functions
- Open source
- Integration with pathology/genomics
- Secure cloud for imaging big data. (lessons from NPfIT)
 - Consent
 - Research
 - Machine learning



Questions?