Reporting Radiographers from a Service Perspective

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Edinburgh Royal Infirmary
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• Integrated Quiz
Aging Population

http://data.worldbank.org/country/united-kingdom?display=default

Life expectancy is currently increasing by 1 day every 4 days

UK Life expectancy

84.00
82.00
80.00
76.00
74.00
72.00
70.00

Aging Population

NUMBER OF PEOPLE REACHING THEIR 100TH BIRTHDAY (PRINCIPAL PROJECTION)

- **54,000** Women aged 60 today could survive to 100
- **59,000** Men aged 40 today could survive to 100
- **116,000** Girls aged 10 today could survive to 100

At every age, females have more chance of reaching their 100th birthdays than men.
Aging Population

% of those aged 51 in 2013 likely to reach 100 years
Males: 50,000/450,000 = 11%
Females: 80,000/450,000 = 18%
Aging Population

Lifestyles less healthy:
- Smoking
- Diet
- Alcohol
- Exercise
- Sun exposure

- Hypertension
- Heart disease
- Stroke
- Diabetes
- Dementia
- Mental Health Problems
- Cancer…
New cancer cases will increase…

By the end of 2016, there will be a further 1,000 people in the UK diagnosed with cancer every day.

NHS Lothian Perspective
RIE Site Staff Head Count

• 234 total staff
• 18 Consultants
• 15+ Sprs
• 124 Radiographers
  • 5 Reporting Radiographers
  • 10 Sonographers
  • 1 in training
  • 2 undertake and report HSG
• 19 Support staff
• 10 Nurses inc CN
• 34 A & C
Radiography Structure

• Large rotating staff group
  ● senior & staff grade radiographers, AP & support staff

• Small core staff in specialised areas
  ● Superintendent management structure

• Independent Radiologist workforce

• Work in close relationship with other staff groups

• Equipment fit for purpose
  ● A/E
Activity

• 2013/14 plain film exams 173,449
• 2014/15 plain film exams 174,993
• 2015/16 plain film exams 171,213

• 2005/6 plain film exams 154,474
>10% increase in 10 years.
<table>
<thead>
<tr>
<th>Service</th>
<th>2005/06</th>
<th>2009/10</th>
<th>2014/15</th>
</tr>
</thead>
<tbody>
<tr>
<td>Angiography</td>
<td>2,475</td>
<td>1,460</td>
<td>2,174</td>
</tr>
<tr>
<td>Cardiac Radiology</td>
<td>6,148</td>
<td>10,242</td>
<td>11,133</td>
</tr>
<tr>
<td>Computerised Tomography</td>
<td><strong>13,080</strong></td>
<td><strong>18,126</strong></td>
<td><strong>26,807</strong></td>
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<tr>
<td>Fluoroscopy</td>
<td>3,609</td>
<td>3,757</td>
<td>3,692</td>
</tr>
<tr>
<td>General Radiography</td>
<td>154,474</td>
<td>168,083</td>
<td>174,993</td>
</tr>
<tr>
<td>General Ultrasound</td>
<td>13,115</td>
<td>17,426</td>
<td>22,618</td>
</tr>
<tr>
<td>Magnetic Resonance Imaging</td>
<td><strong>5,805</strong></td>
<td><strong>11,779</strong></td>
<td><strong>13,243</strong></td>
</tr>
<tr>
<td>Obs/Gynae Ultrasound</td>
<td>26,266</td>
<td>32,751</td>
<td>36,267</td>
</tr>
<tr>
<td>Paediatric Radiology (NNU)</td>
<td>0</td>
<td>262</td>
<td>652</td>
</tr>
<tr>
<td>Radiology Theatres</td>
<td>2,417</td>
<td>4,230</td>
<td>4,042</td>
</tr>
<tr>
<td>Radionuclide Imaging</td>
<td>1,247</td>
<td>1,434</td>
<td>1,235</td>
</tr>
<tr>
<td>PET CT</td>
<td></td>
<td></td>
<td><strong>1,683</strong></td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td><strong>228,636</strong></td>
<td><strong>269,550</strong></td>
<td><strong>298,539</strong></td>
</tr>
</tbody>
</table>
Activity (National evidence)

- Increase of 1.5% year on year P film (1)
- MRI and CT 12% and 10.3% respectively (1)
- Radiologist report 50% of their time
  - Report as little as 45 patients films (2)
- Some HB considering outsourcing RCR 2014
  - Jenny Reeves
  - In-Health
  - Expert Eye

1 RCR clin rad UK workforce census report 2014
2 RCR clin rad workload guidance on radiologist reporting figures 2012
Key Drivers

50 radiologist expected to retire with 25 unfilled posts in Scotland !!!!

- oncologists

• Expansion of cancer services

• Public expectations.
  - Patient centred
  - Quality
    • Waiting time
    • Accuracy
Key drivers Cont

• Political (HEAT)
  – Radiological Response times
    • Failing to formulate reports
  – Other targets (4 hour wait)

• Limited effective clinical pathways
Radiographer Ability to Report

• Coleman and Piper (1)
  - Radiographers better able to detect abnormality than ANP or A/E officers
  - Significantly higher detection rate on image interpretation test
  - No difference between Radiologist and Radiographer in accuracy

• Delrue et al (2)
  - Viewing facilities
  - Background noise
  - Rest periods required / Shorter sessions
  - Comfort

1 Radiographic interpretation of appendicular skeleton: a comparison between casualty officers, nurses and radiographers Radiotherapy 2009
2 Difficulties in the interpretation of chest radiography. Comparative interpretation of CT and standard radiography of the chest Springer 2011
Answers
National Scope in support of NDP
5.4 Autumn 2013
Q1b: Number of WTE Radiographers qualified within your board to undertake plain film reporting:

Scottish Hospitals

National Total: 49
Q1c: Number of WTE Radiographers currently dedicated within your board to undertake plain film reporting per week:

Scottish Hospitals

National Total: 21.3

National Total: 49 WTE Qualified
Q1d: Total Radiographer time dedicated per week within your board to undertake plain film reporting (hours:mins):

Scottish Hospitals

National Total: 309 hours 15 minutes
Q1e: Number of plain film examinations reported by Radiography staff annually:

(Note each year is measured from 1st April – 31st March)

National Total 2011/2012: 105181
National Total 2012/2013: 115960
Q1f: Total number of plain film examinations reported by a Radiologist or a Radiographer within your Health Board:

(Note each year is measured from 1st April – 31st March)

National Total 2011/2012: 1205085
National Total 2012/2013: 1221271

Scottish Hospitals

National Total 2011/2012: 105181
National Total 2012/2013: 115960

8.7%
Q2. Scope of Clinical application for Radiographer plain film reporting ie. A/E, GP, IP etc.
Q5. What quality assurance/audit mechanisms are in place locally within your board for plain film reporting undertaken by radiographers:
Q7: How many radiographers within your board are qualified to undertake plain film reporting but are not currently practicing and how many WTE radiographers does this equate to:

Scottish Hospitals

<table>
<thead>
<tr>
<th>Hospital</th>
<th>National Total # qualified not practising</th>
<th>WTE qualified not practising</th>
</tr>
</thead>
</table>

NHS Lothian
Q8. Do you currently have any obstacles/barriers within your board limiting your progress with developing plain film reporting by radiographers?
Clinical Activity & Accuracy

• Radiologists report 30-60 images per hr
  – RIE mean 40 images per hour depend on experience
• Radiographer mean varies
• Accuracy >97%
• 95% for specificity and sensitivity (1)
• Radiographers attend discrepancy meetings
• Radiologists are not measured
  – Participate in discrepancy meetings

Paterson et al Reporting by radiographer: a policy and practice guide. Radiography 2004
## Count of Order Item

<table>
<thead>
<tr>
<th>Reported By</th>
<th>Month/ 2015</th>
<th>Grand Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rad 1</td>
<td>Mar  537, Apr 1250, May 1201, Jun 1154, Jul 1317, Aug 1758</td>
<td>7217</td>
</tr>
<tr>
<td>Rad 2</td>
<td>Mar  248, Apr 355, May 457, Jun 339, Jul 87, Aug 1486</td>
<td>1486</td>
</tr>
<tr>
<td>Rad 3</td>
<td>Mar  316, Apr 129, May 83, Jun 51, Jul 140, Aug 1041</td>
<td>1041</td>
</tr>
<tr>
<td>Radiol 1</td>
<td>Mar  2208, Apr 1129, May 1631, Jun 1311, Jul 1072, Aug 1379</td>
<td>8730</td>
</tr>
<tr>
<td>Radiol 2</td>
<td>Mar  819, Apr 1351, May 1097, Jun 1046, Jul 634, Aug 2122</td>
<td>7069</td>
</tr>
<tr>
<td>Grand Total</td>
<td>Mar 26804, Apr 26292, May 26223, Jun 27001, Jul 24715, Aug 24518</td>
<td>155553</td>
</tr>
</tbody>
</table>
Lothian RIE Radiographer Reporting

- Fluctuating sessions of plain film reporting
- Reporting 8% of total NHSL plain film workload.
- 5 trained Reporting Radiographers.
  - 2 in post
  - 2 on mat leave,
  - 1 not in post due to limited funding
  - 1 training
Management Lessons
Service Advantages

• Improved morale of staff
  • Alternative career progression
  • Fits with P/T staff

• Cost efficient
  • Immediate reports by radiographer equate to £23.40 saving per patient (1)

• Improved Quality
  • Staff review own work different
  • More audit
  • Staff looking at change

1. Hardy et al is radiographer led immediate reporting service for emergency department referrals a cost effective initiative Radiography 2013
Service Advantages Cont

• Improved services for patient and referring clinicians
  • Cohesive relationships with other services
• Reduction in unreported images
• Reduction in turnaround time
• Drive protocol change
What makes a success

• Planning (a joined up workforce plan)
• Central support SG, and SOR
  – NDP 5.4
• Management support
• Dedicated reporting sessions
  – Woznitza et al 2014
  • This is achieved by 4 tier structure
  • Close working relationships with other reporters
• Job satisfaction autonomy/responsibility for other work.
• Audit, quality, education

Woznitza et al Optimising patient care in radiology through team working Radiography 2014
Disadvantages & Concerns

• Staff expectations
• Barriers to support from radiologists
  – Our trainers and mentors
• Loss of training material for SpR
  – Radiographers now train SpR
• Radiographers have a gap in knowledge
  – Donnavan and Manning. need a scope of practice and work with radiologists to offer advice

Donnavan and Manning successful reporting by non-medical practitioners such as radiographers will always be task specific and limited Radiography 2006
The Future

- Staff work at the top of their licence
- Protectionism is lost as a barrier to change and development
- A centralised push
  - More cross border cooperation
  - Regionalisation (reduced to 3 HB)
  - More strategic thinking (NDP)
    - Major trauma centres
Future Cont.

• Protocol driven direct referral
  • +ve # NOF send direct to ward from radiology
  • Other AHP eg patients with Charcot foot
• Radiographer-led focused abdominal sonography in trauma (FAST)
The Future for NHSL

• With funding potentially all of the total RIE A/E workload between 8am – 8pm, 7 days per week can be reported by Radiographers

• Initial commenting (extension of red dot)

• Arthrograms / MRI Arthrograms???
Blue Sky Thinking

What else?????

Core biopsy in mammography
Barriers and Concerns

- Silos (organisation, dept. professional)
- Spr training
- Medical staff concerns
- Funding
- When to stop
Consultant Practitioner

Definition

State registered

“A consultant practitioner provides clinical leadership within a specialism, bringing strategic direction, innovation and influence through practice, research and education.”

(adapted from Radiography Skills Mix: A report on the four tier service delivery model; Department of Health, June 2003.)
Consultants

• Funding is the biggest barrier to implementing consultant roles
• Shortage of suitable applicants
  • Train our own
• Roles must recognise that radiographers are not medically qualified
• There is no clear E & T path for Consultants
Consultant Radiographers

Clear Role
  Quality
  Education
  R&D

Extended scope
  Clinical e.g. Breast imaging
  Link with University

"I don’t want another X-ray. The last one didn’t help one bit."
Consultant AHPs

- Expert Clinical Practice: 43%
- Educational & Professional Development: 27%
- Leadership: 18%
- Research & Evaluation: 12%
RADIOGRAPHER LED DISCHARGE

Margaret Diamond MBE
Consultant Radiographer NHS Fife.
Patient Journey

**Now**

Triage wait → ENP wait → X-ray wait → ENP

or

Referral

**Radiographer Led Discharge**

Triage wait → ENP wait → X-ray

Discharge or Referral
Criteria

• Patients from 5-65 years who have
  • injuries to the appendicular skeleton - shoulder - fingers
  • below knee - toes.

• Patients with lower limb injuries must be weight-bearing and able to take four steps in keeping with the ‘Ottawa Rules’.

Excluded

• Patients over 65
  • often require further referral to other health care professionals
• open wounds, tissue damage or burns
Hot Reporting Service

Hot Reporting –

- images reported when the patient is in the department, therefore influencing patient management.

Cold Reporting -

- images reported within 24-48 hours after the patient has left the department.
Fall onto outstretched hand. Tender over distal radius ? #.

X-ray at.. 8.25pm (NAD)
Discharge from A/E. 9.15pm (50 mins later)

NBI could have been discharged from radiology at 8.25pm
Slipped sustaining an inversion injury to left ankle, ? #

X-ray at... 10.06am (NAD)
Discharge from A/E.. 11.27am (1 hour 21 mins later)

NBI could have been discharged from Radiology @10.06am.
Ongoing pain in elbow following trauma, exclude fracture.

X-ray at.... 1.15pm (NAD)
Discharge from A/E.... 2.11pm (56 mins later)

NBI could have been discharged from Radiology @ 1.15pm
Fall onto Right knee, now unable to weight bear, exclude #.

X-ray at.... 00.20am
Discharge from A/E... 01.05am (45 mins later)
Missed fracture of tibial plateau, therefore needed recalled for treatment.

If not reported by radiographer correct diagnosis made no recall
Fall onto left leg, tender over tibia. Exclude #.

X-rayed at 8.08pm
Discharge at 8.59pm (51 minutes later)


If not reported by radiographer correct diagnosis made no recall.
Benefits

• Patients with NAD shorter waiting times,
• Accurate diagnosis therefore fewer recalls (reduced number of complaints)
• A/E clinical teams focus on patients with confirmed diagnosis
• less patients leaving before being treated

Hot Reporting/ Radiographer Led Discharge would ensure patients receive an all-round improved experience.
Attitudes of radiographer to radiographer led discharge

- Remove job demarcation and protectionist behaviours for benefit of patients
- ENP reduce W/T, improve service Q, and increase staff morale
- 82% Radiol support change with concerns about dilution of own skill (1)
- 52% reduction in patient recall (1)

1 Snaith Radiographer-led discharge in accident and emergency the results of a pilot study Radiography 2007
Conclusion

- Staff
- Service
- Economy
- Safe
- Meet future need?
Thank You and Questions
Answers

- 3 normal
- 7 right slipped upper femoral epiphysis
- 8 talar osteochondral defect
- 9 Fracture distal fibular
- 16 fractured left femur
- 19 normal
- 6 normal
- 21 normal
- 22 fractured scapular
- 25 kohler’s navicular
- 28 enchondroma second prox. phalanx
- 29 monteggio fracture