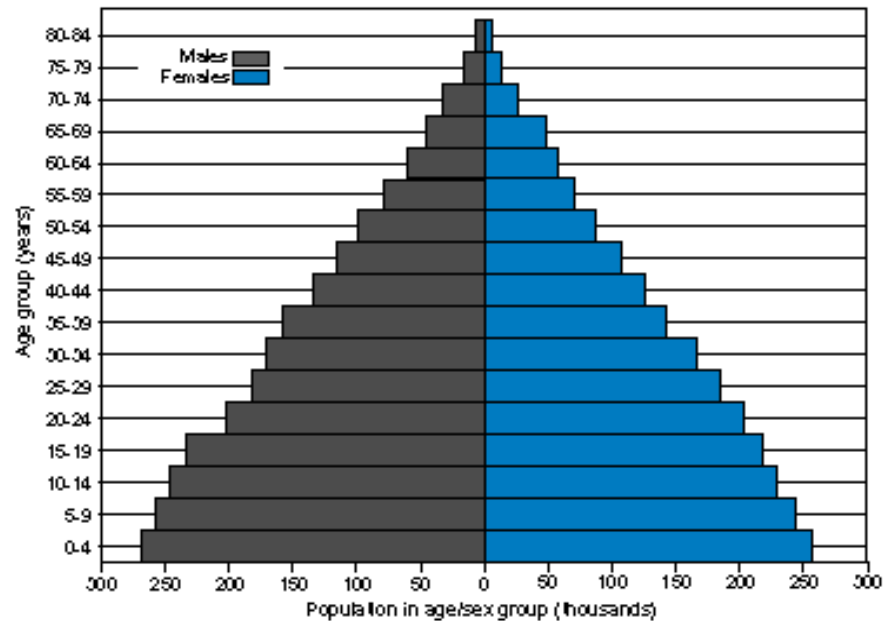


# Reporting Radiographers from a Service Perspective

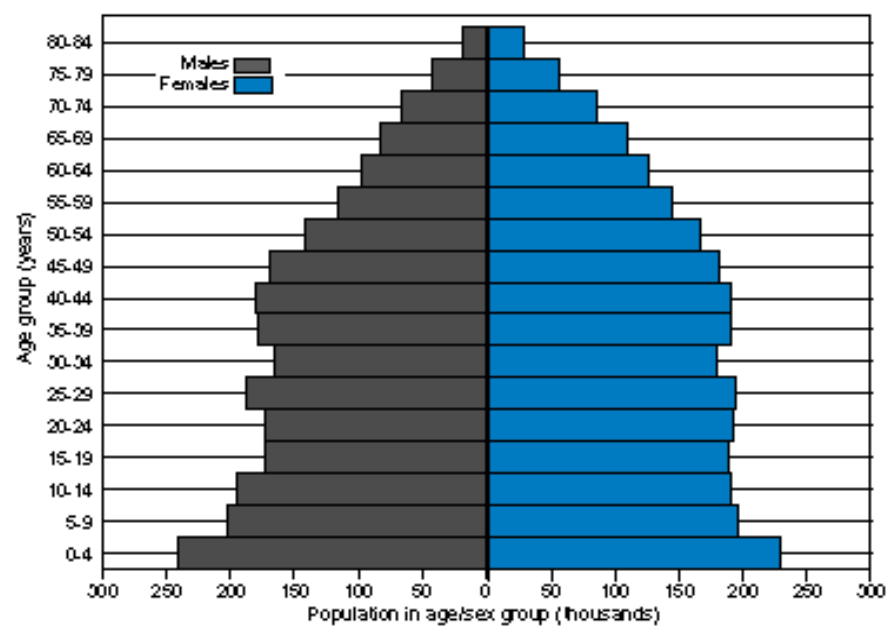
Martin Hurst  
Principle Radiographer  
Edinburgh Royal Infirmary

# Content

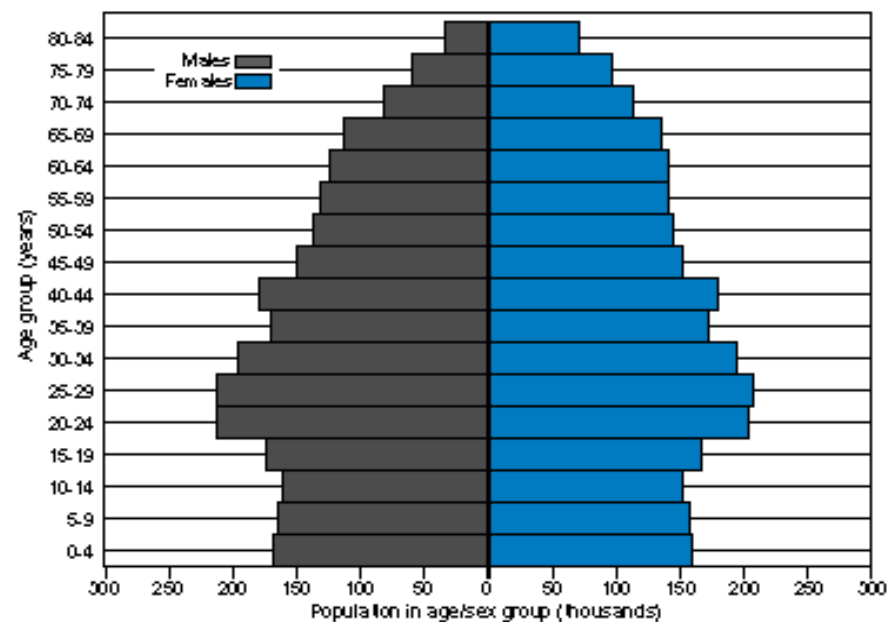
- Demographics
- NHS Lothian Perspective
- Drivers for Change
- National Perspective
- More NHS Lothian Perspective
- Management Lessons
- The Future
- Consultant Radiographers and advanced practice
- Radiographer Led Discharge
- Integrated Quiz



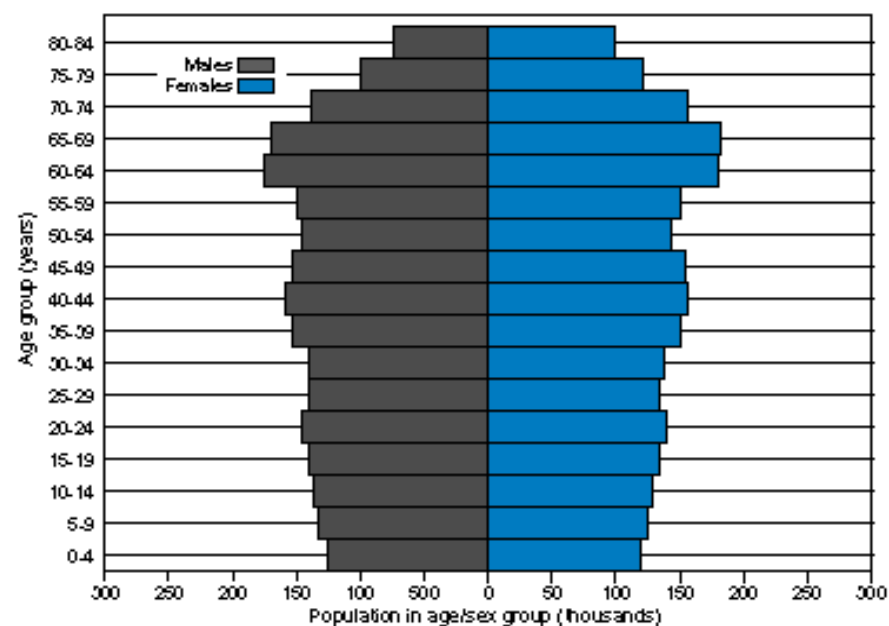
1911



1951



1991



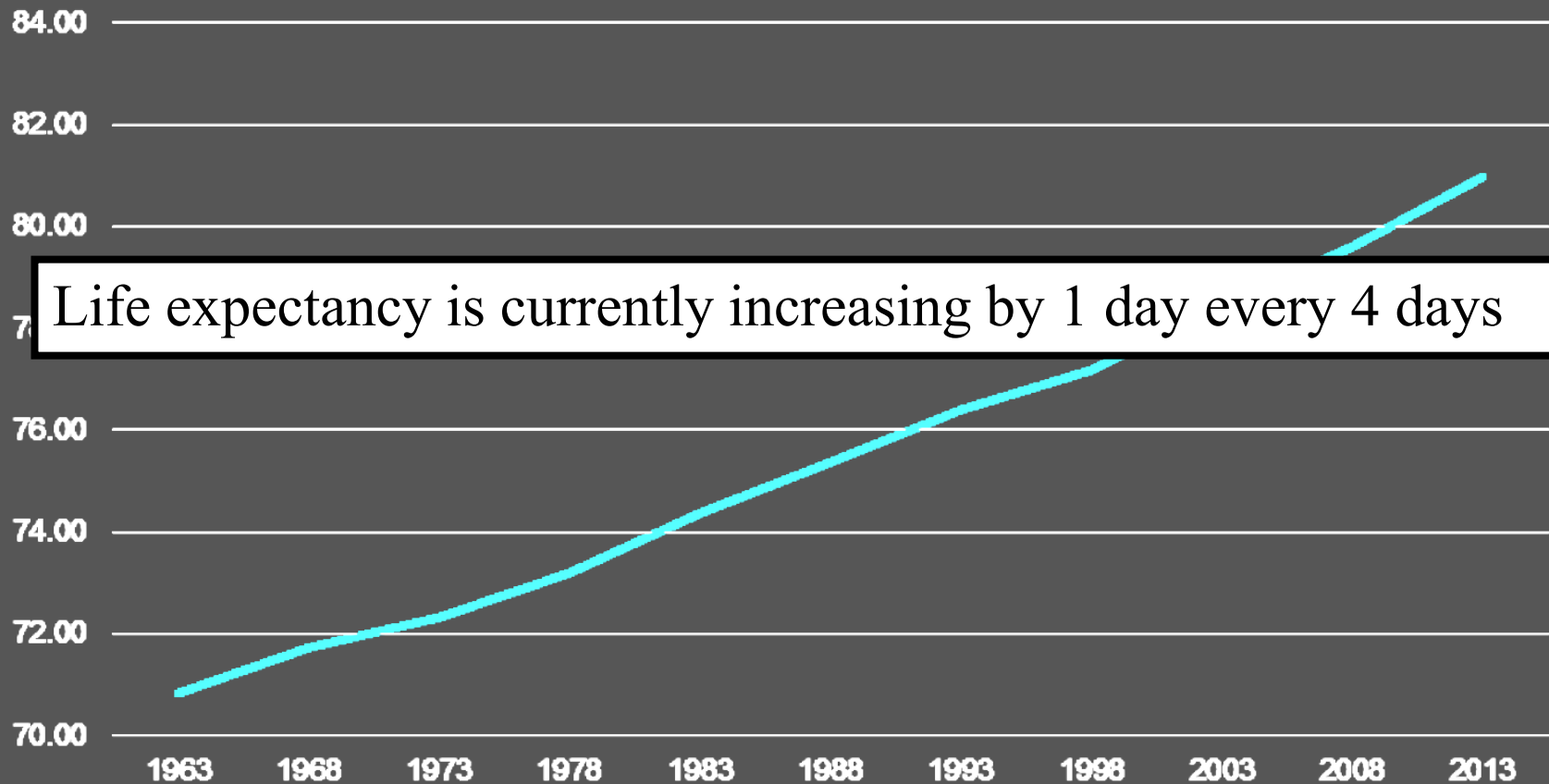
Projection to 2031

# Aging Population

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

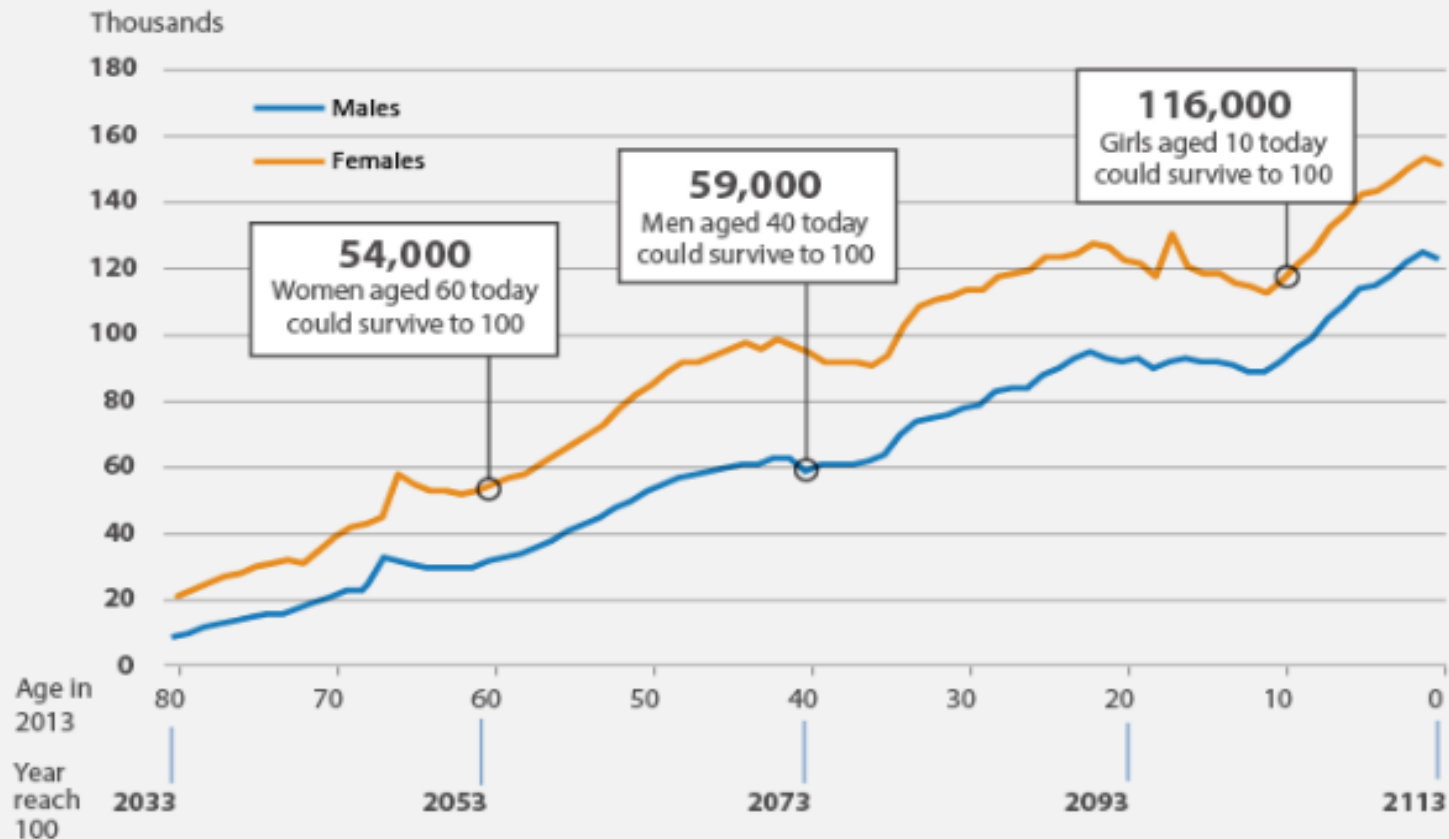


## UK Life expectancy



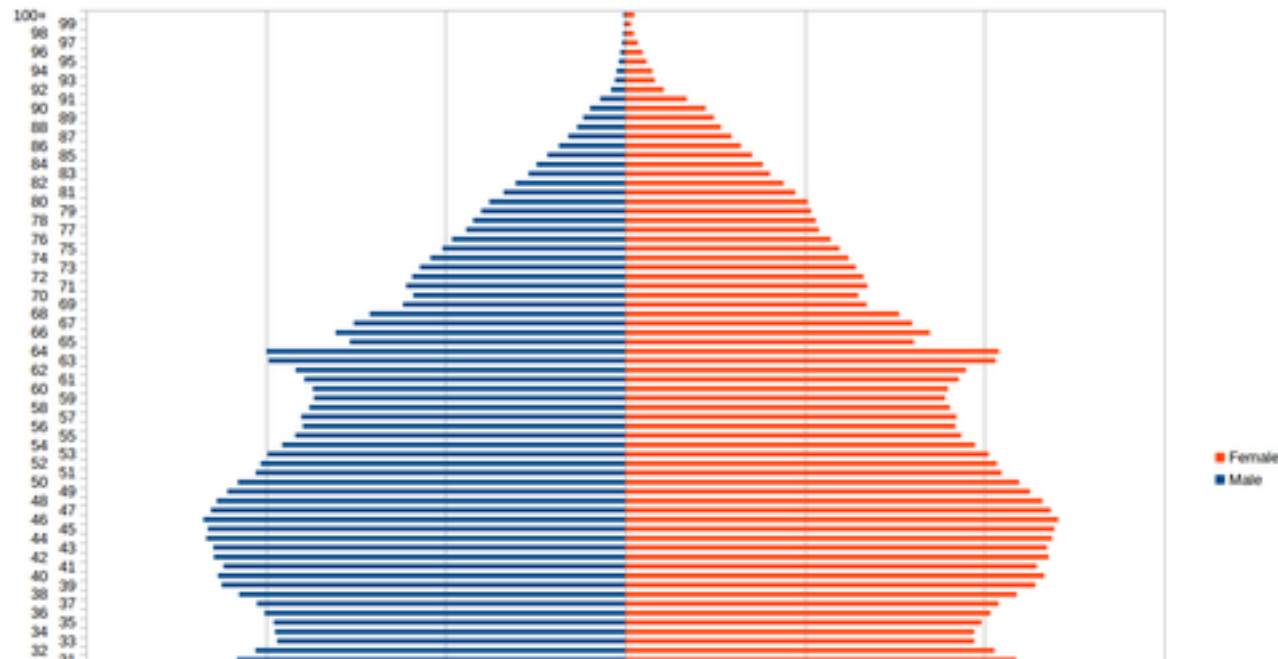
# Aging Population

## NUMBER OF PEOPLE REACHING THEIR 100<sup>TH</sup> BIRTHDAY (PRINCIPAL PROJECTION)



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

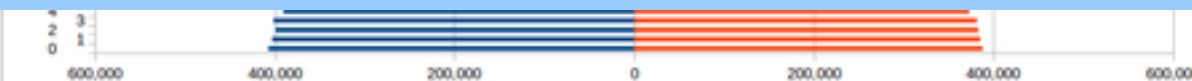
# Aging Population



**% of those aged 51 in 2013 likely to reach 100 years**

Males:  $50,000 / 450,000 = 11\%$

Females:  $80,000 / 450,000 = 18\%$



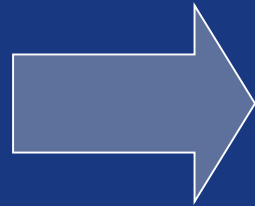
Population pyramid for the United Kingdom as at the 2011 census.



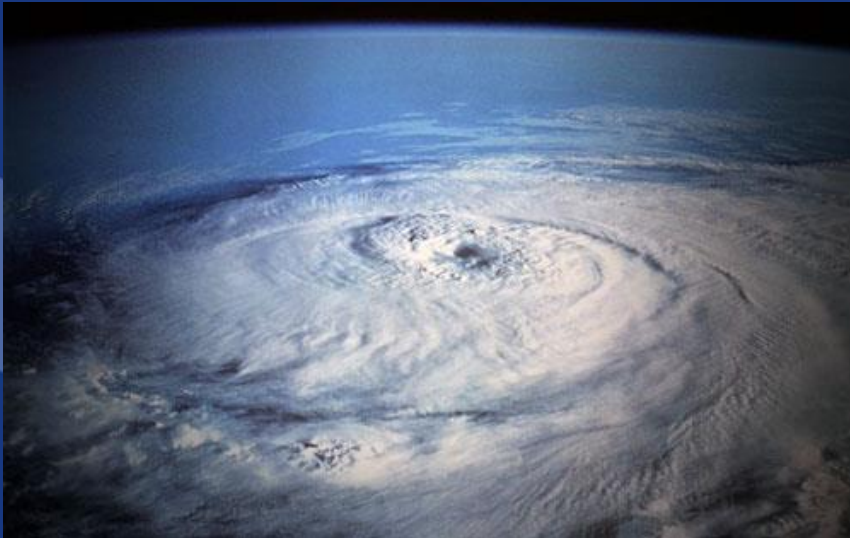
# Aging Population

Lifestyles less healthy:

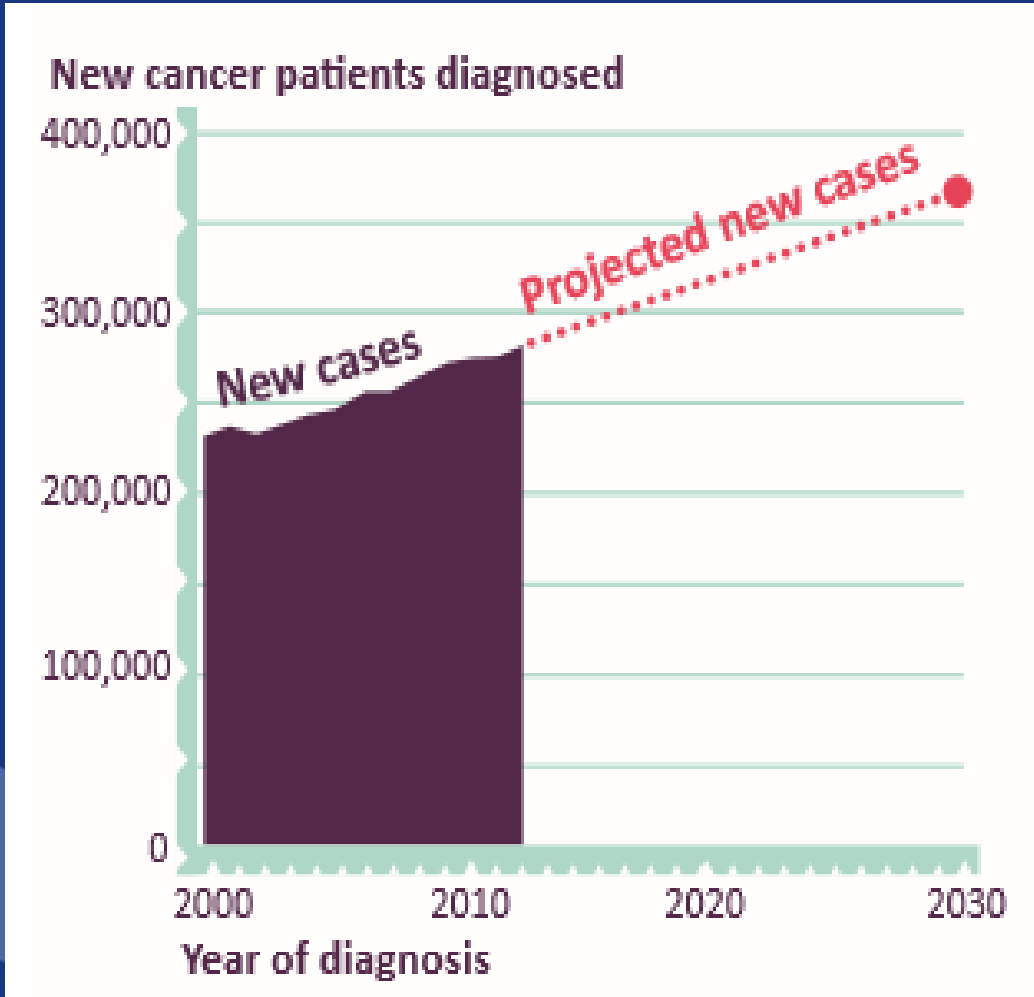
- Smoking
- Diet
- Alcohol
- Exercise
- Sun exposure



- 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



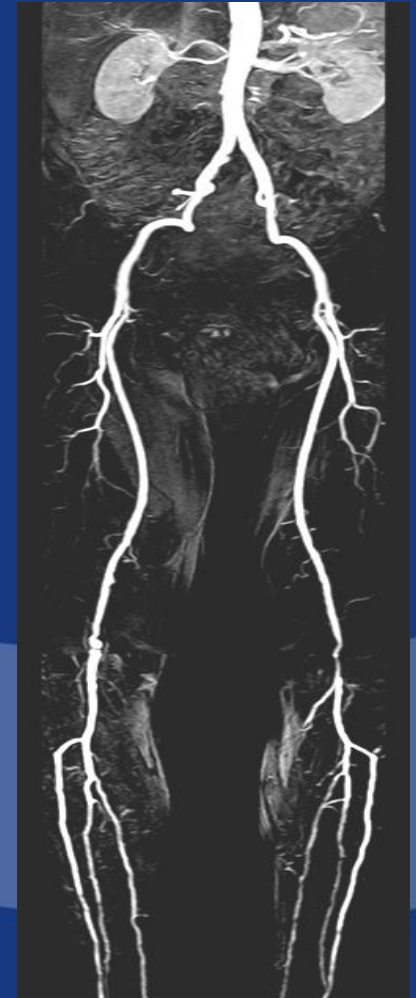


# NHS Lothian Perspective



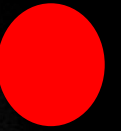
# RIE Site Staff Head Count

- 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



AP

# 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 10years.



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

# Activity (National evidence)

- Increase of 1.5% year on year P film <sup>(1)</sup>
- MRI and CT 12% and 10.3% respectively <sup>(1)</sup>
- Radiologist report 50% of their time
  - Report as little as 45 patients films <sup>(2)</sup>
- Some HB considering outsourcing <sup>RCR 2014</sup>
  - 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

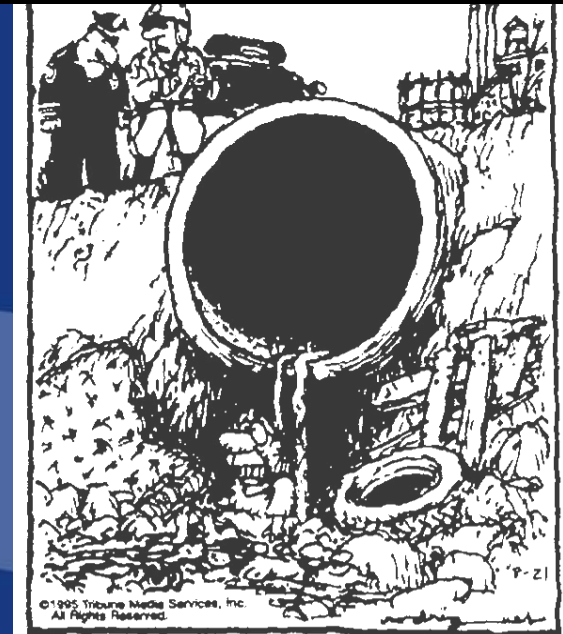




# Key Drivers

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

- oncologists
- Expansion of cancer services
- Public expectations.
  - Patient centred
  - Quality
    - Waiting time
    - Accuracy



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"All he knows, Sarge, is, five minutes ago he was placed in an MRI machine up on center street..."

# Key drivers Cont

- Political (HEAT)
  - Radiological Response times
    - Failing to formulate reports
  - Other targets(4 hour wait)
  - National Framework for Service Change (Kerr Report 2005)
- 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)

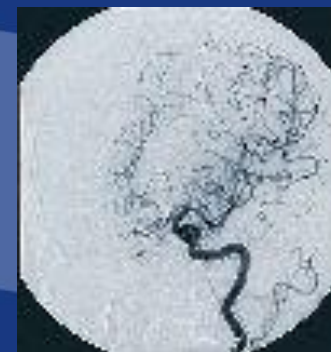
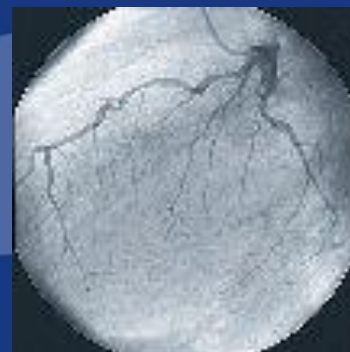
- Viewing facilities
- Background noise
- Rest periods required / Shorter sessions
- Comfort

1 Radiographic interpretation of appendicular skeleton: a comparison between casualty officers, nurses and radiographers Radiography 2009

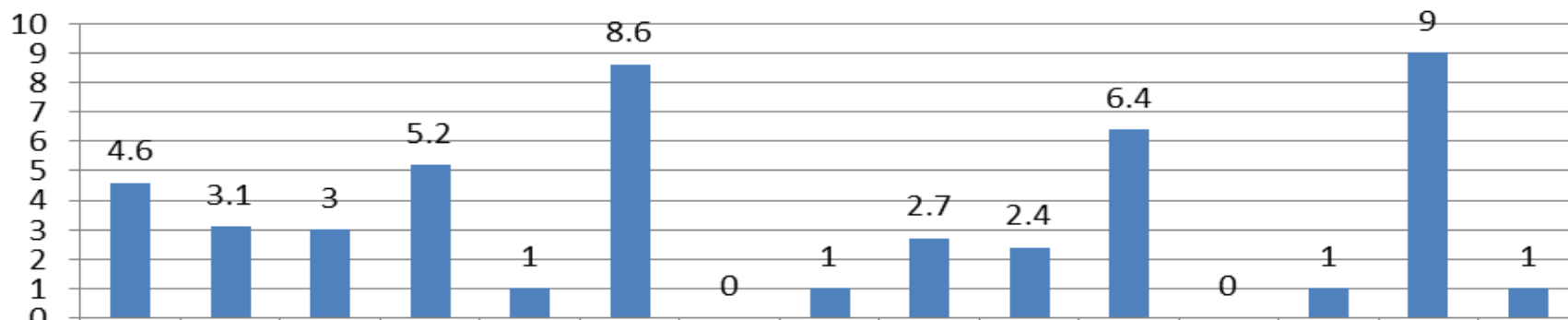
2 difficulties in the interpretation of chest radiography. Comparative interpretation of CT and standard radiography of the chest Springer 2011



# National Scope in support of NDP 5.4 Autumn 2013



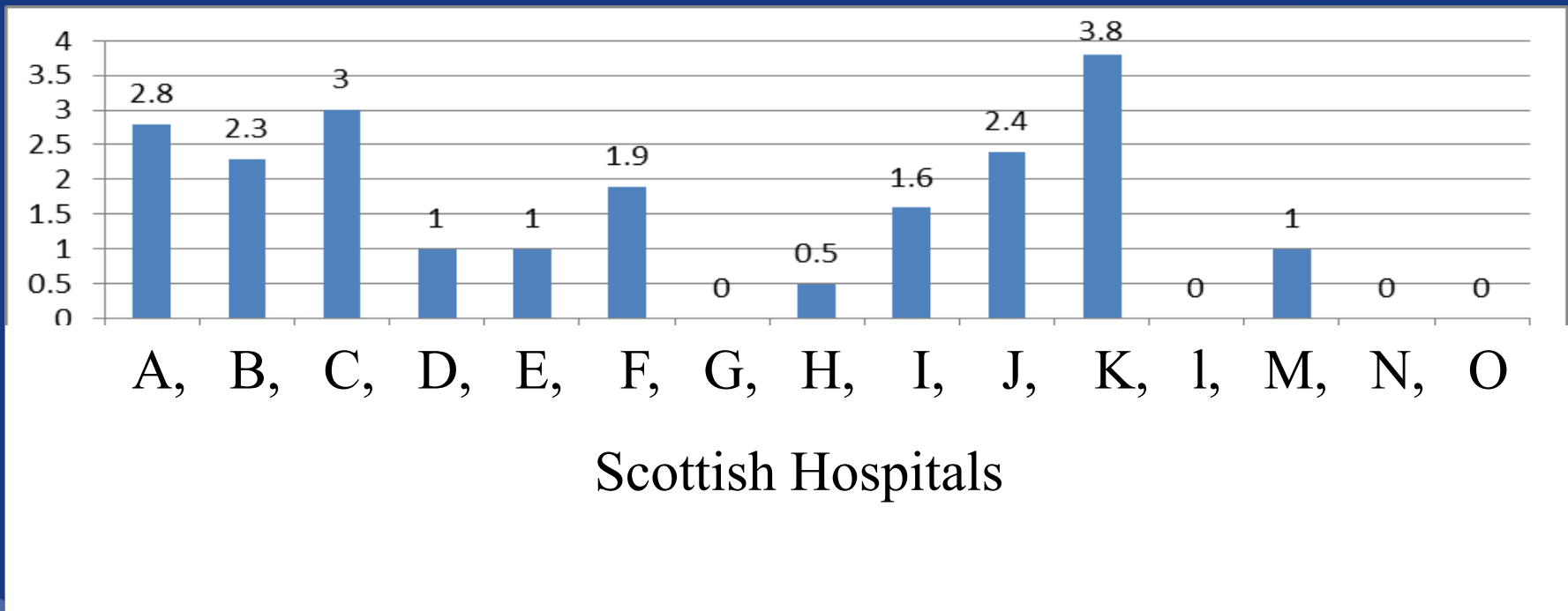
Q1b: Number of WTE Radiographers qualified within your board to undertake plain film reporting:



Scottish Hospitals

National Total: 49

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

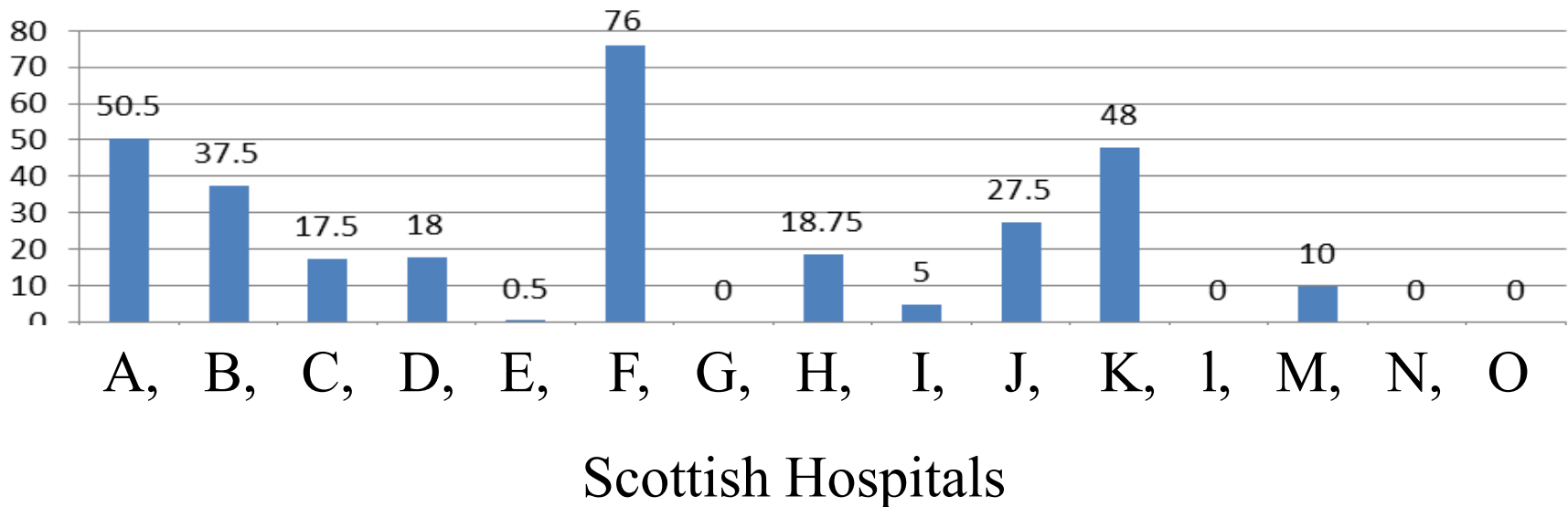


National Total: 21.3

National Total: 49 WTE Qualified



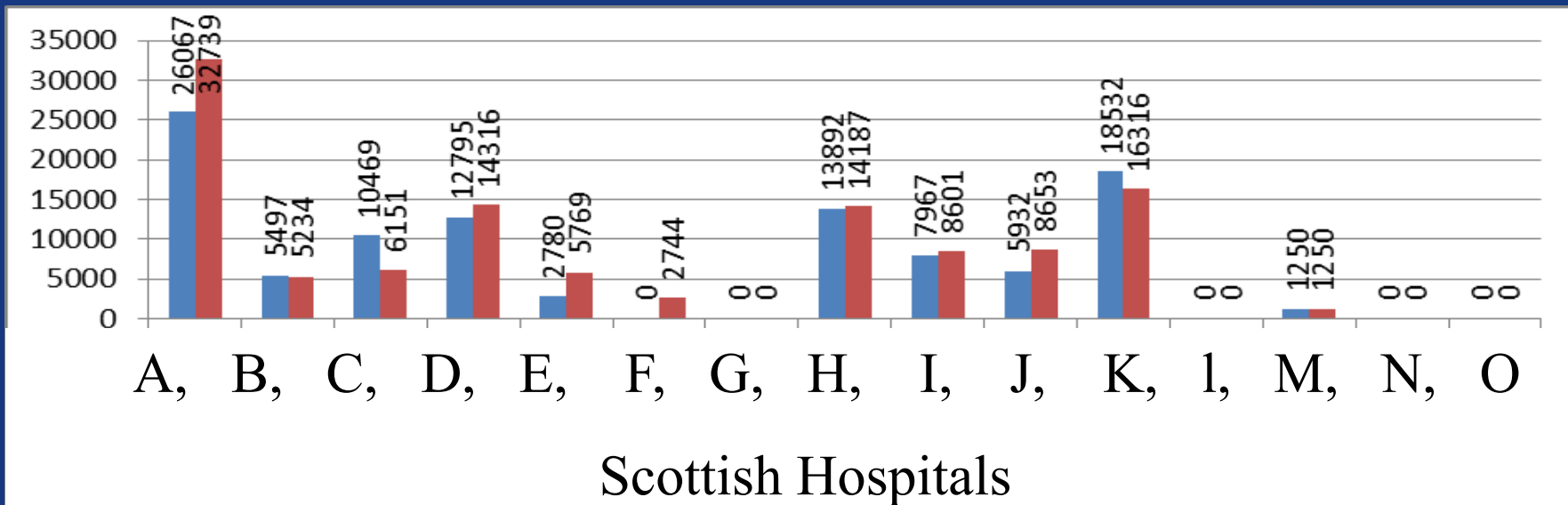
Q1d: Total Radiographer time dedicated per week within your board to undertake plain film reporting (hours:mins):



National Total: 309 hours 15 minutes

# Q1e: Number of plain film examinations reported by Radiography staff annually:

(Note each year is measured from 1<sup>st</sup> April – 31<sup>st</sup> March)

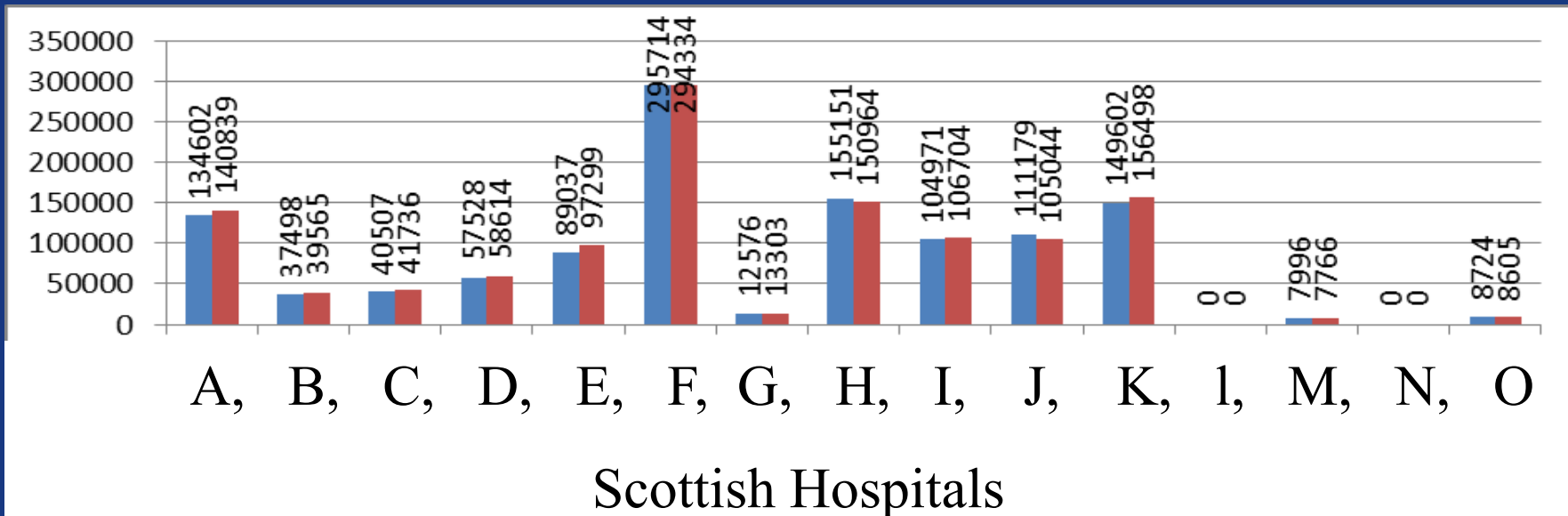


■ National Total 2011/2012: 105181  
■ National Total 2012/2013: 115960

# Q1f: Total number of plain film examinations reported by a Radiologist or a Radiographer within your Health Board:



(Note each year is measured from 1<sup>st</sup> April – 31<sup>st</sup> March)



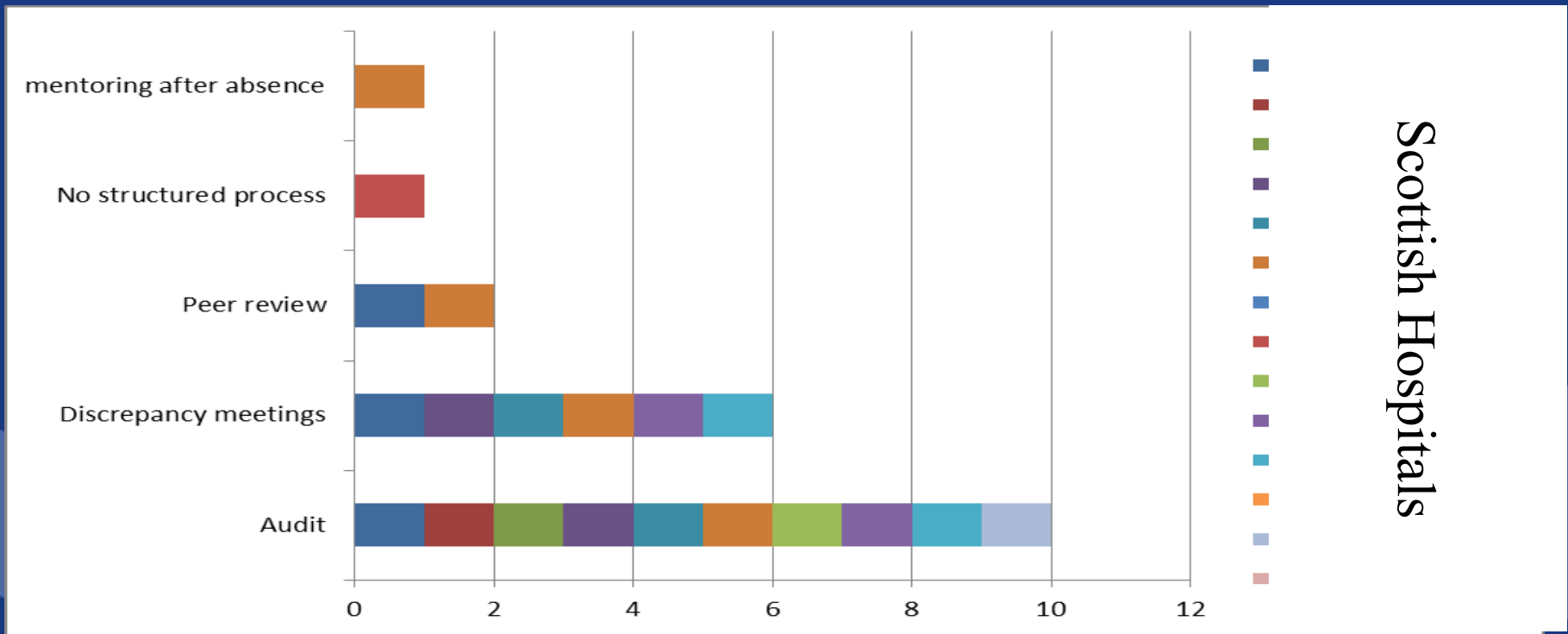
■ National Total 2011/2012: 1205085  
■ National Total 2012/2013: 1221271

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

**8.7%**

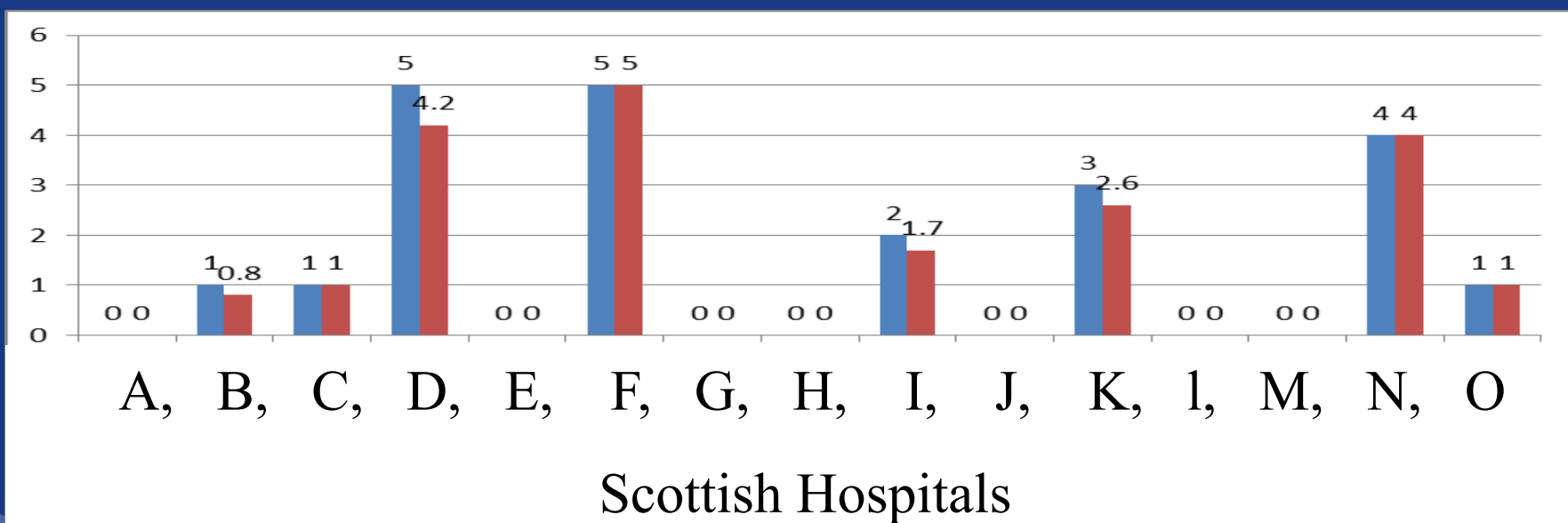


Q5. What quality assurance/audit mechanisms are in place locally within your board for plain film reporting undertaken by radiographers:



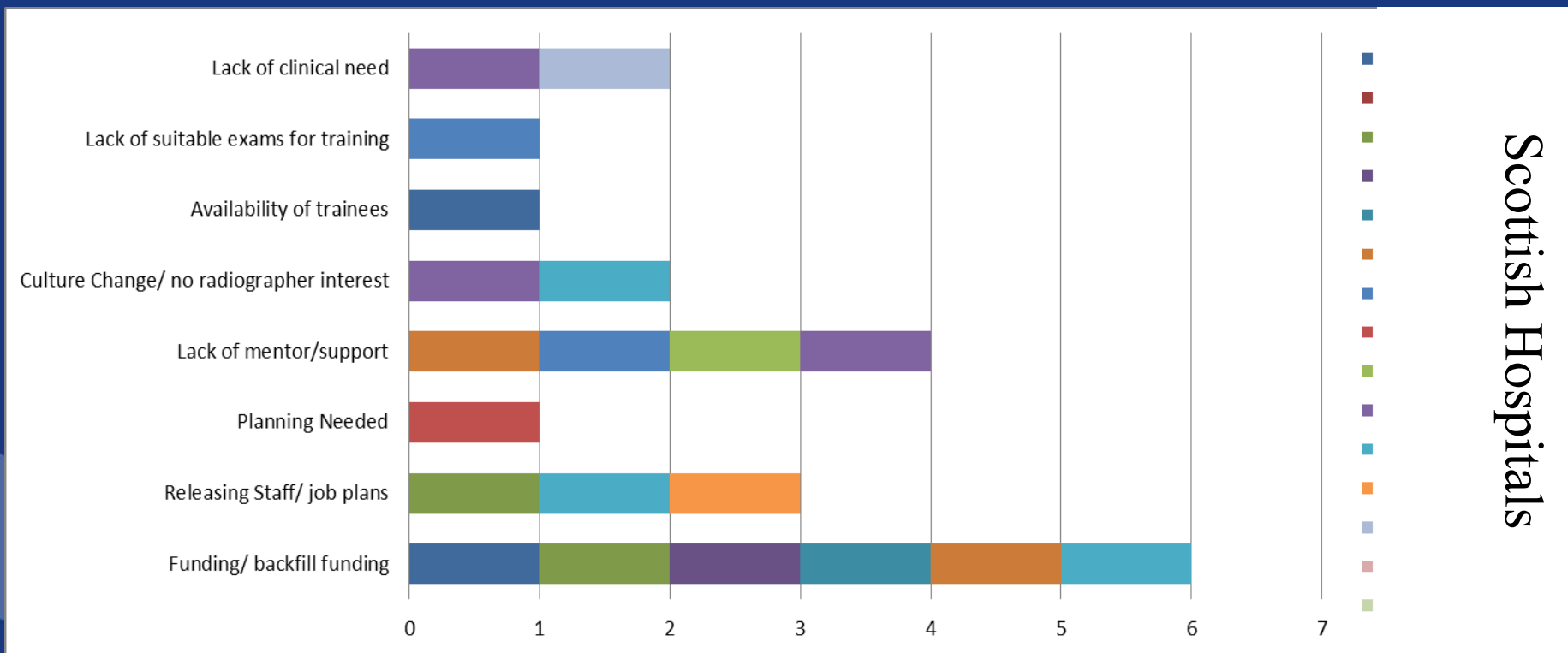
Scottish Hospitals

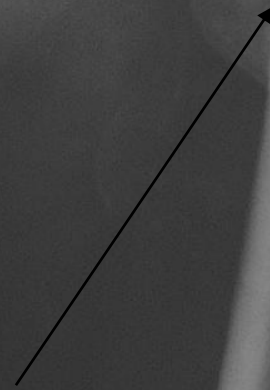
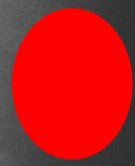
Q7: How many radiographers within your board are qualified to undertake plain film reporting but are not currently practicing and how many WTE radiographers does this equate to:



■ National Total # qualified not practising: 22  
■ National Total WTE qualified not practising: 20.3

# 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 <sup>(1)</sup>
- Radiographers attend discrepancy meetings
- Radiologists are not measured
  - Participate in discrepancy meetings

# 125 reporting staff



Count of Order Item	Month/ 2015						Grand Total
	Mar	Apr	May	Jun	Jul	Aug	
Reported By							
Rad 1	537	1250	1201	1154	1317	1758	7217
Rad 2	248	355	457	339	87		1486
Rad 3	316	129	83	51	140	322	1041
Radiol 1	2208	1129	1631	1311	1072	1379	8730
Radiol 2	819	1351	1097	1046	634	2122	7069
<b>Grand Total</b>	<b>26804</b>	<b>26292</b>	<b>26223</b>	<b>27001</b>	<b>24715</b>	<b>24518</b>	<b>155553</b>

2

1

3

# 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



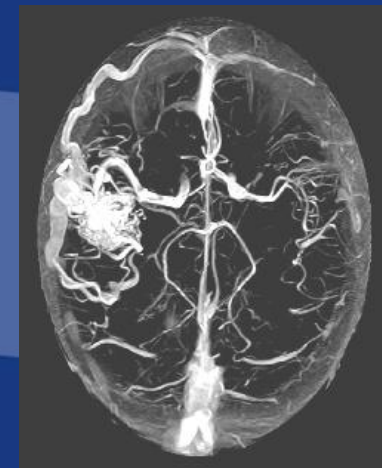
# Service Advantages

- 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 <sup>(1)</sup>
- 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



# 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

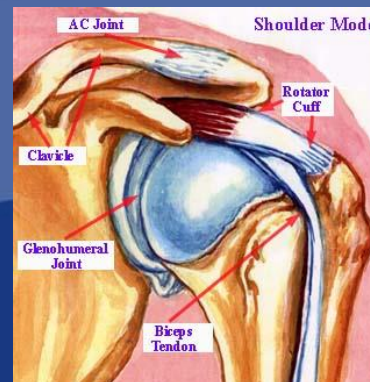
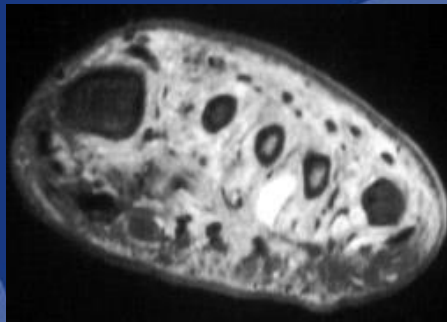
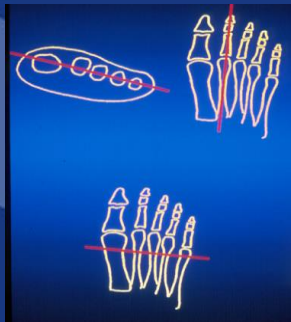


# The Future

- 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 (? reduce 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???

21



# Blue Sky Thinking

What else?????

Core biopsy in mammography

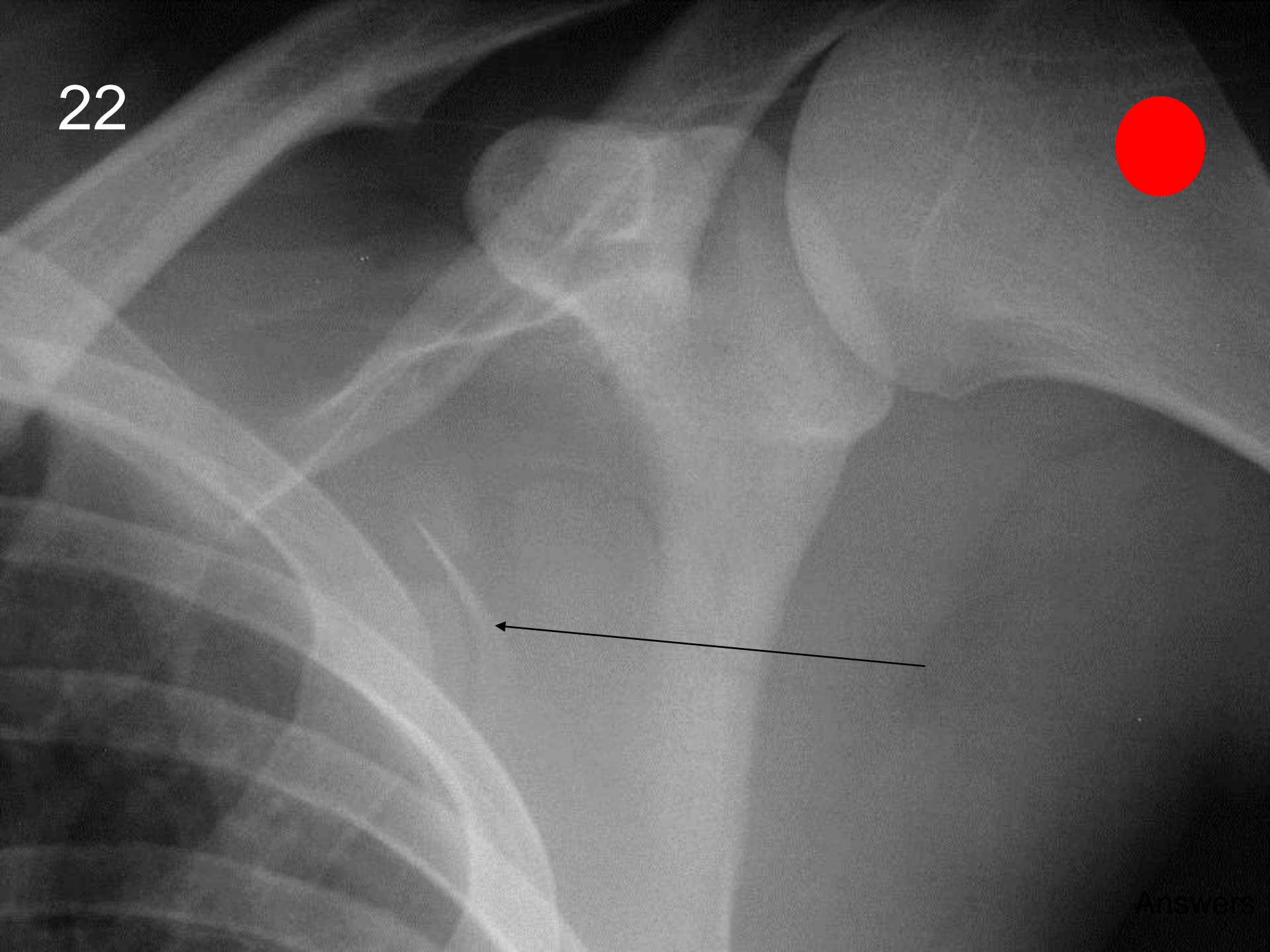
# Barriers and Concerns

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





22



# 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.)

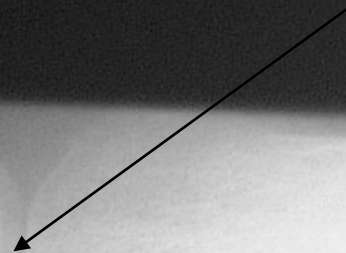
# Consultants

- 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



25

CRICHTON, BOBIE  
324138  
05/11/01  
DOB: 29/04/1995  
RHSC EDINBURGH  
P - A  
11 00  
101150



800

Answers

# Consultant Radiographers



## Clear Role

Quality

Education

R&D

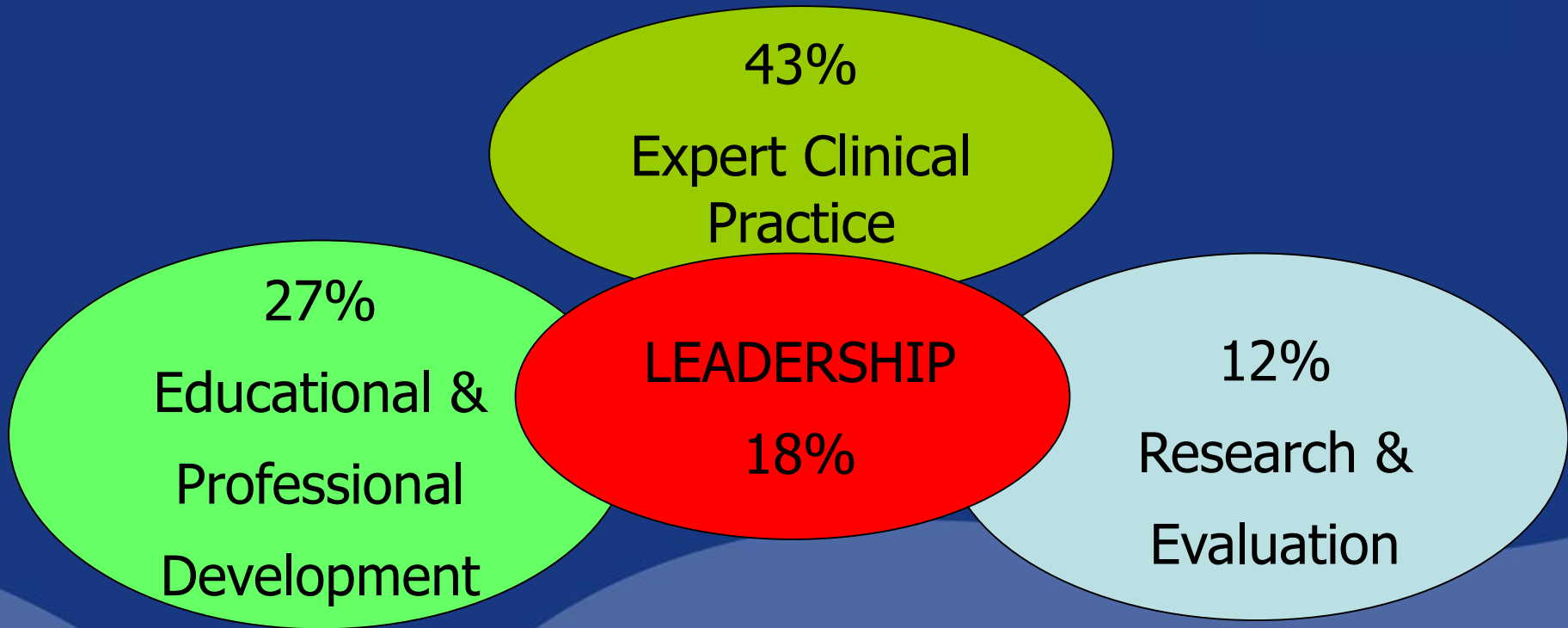
## Extended scope

Clinical e.g. Breast imaging

Link with University



# Consultant AHPs



28





# RADIOGRAPHER LED DISCHARGE

Margaret Diamond MBE  
Consultant Radiographer NHS Fife.



# Patient Journey

## Now



## Radiographer Led Discharge



# 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 radio0logy 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...

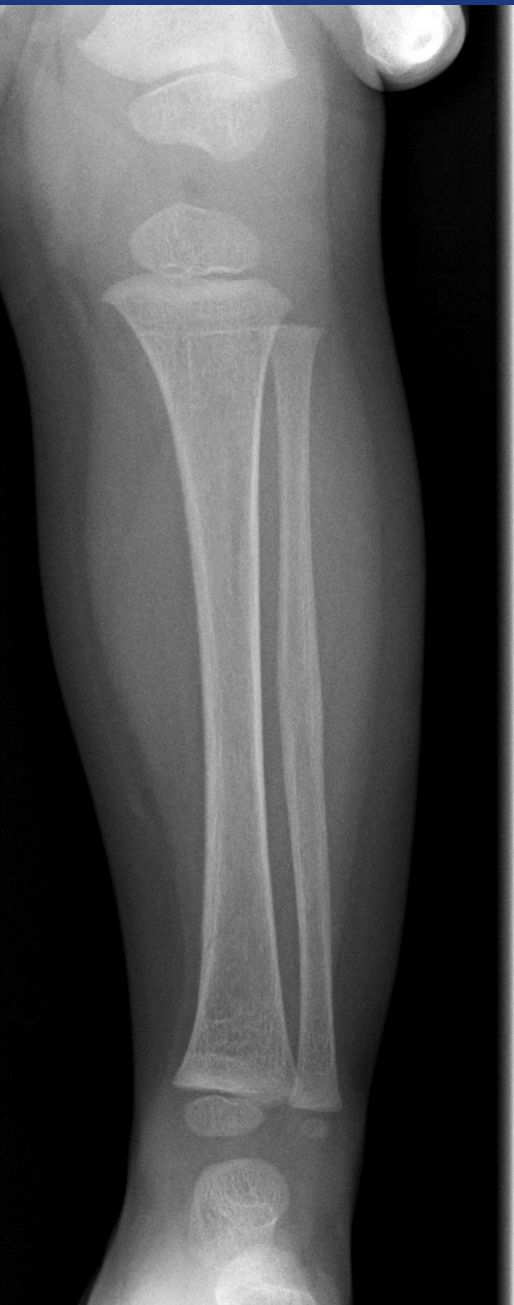
01.05am (45 mins later)

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)

Missed toddlers fracture.  
Recalled for treatment.

If not reported by radiographer  
correct diagnosis made no recall



# Benefits



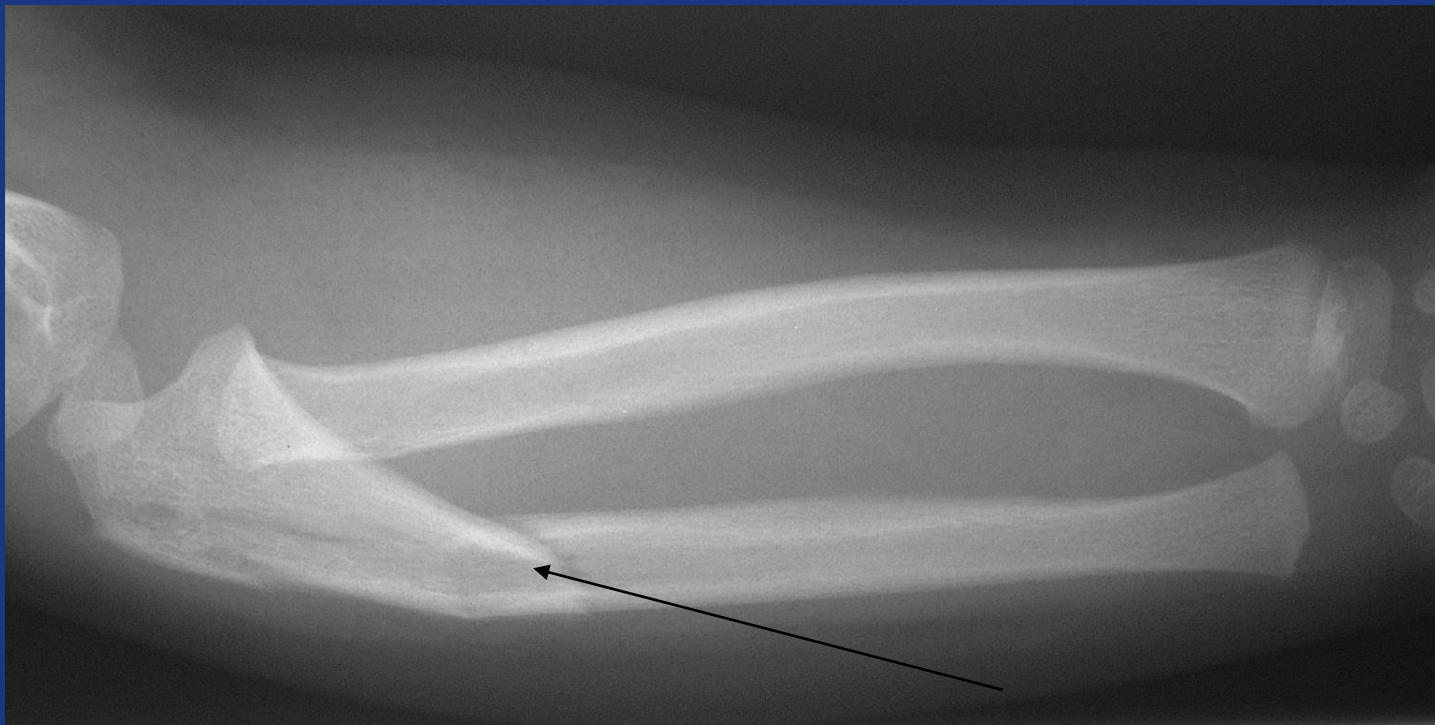
- Patients with NAD shorter waiting times,
- Accurate diagnosis therefore fewer recalls (reduced number of complaints)
- A/E clinical teams focus on patients with confirmed diagnosis
- less patients leaving before being treated

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 <sup>(1)</sup>
- 52% reduction in patient recall <sup>(1)</sup>

29



16  
ian

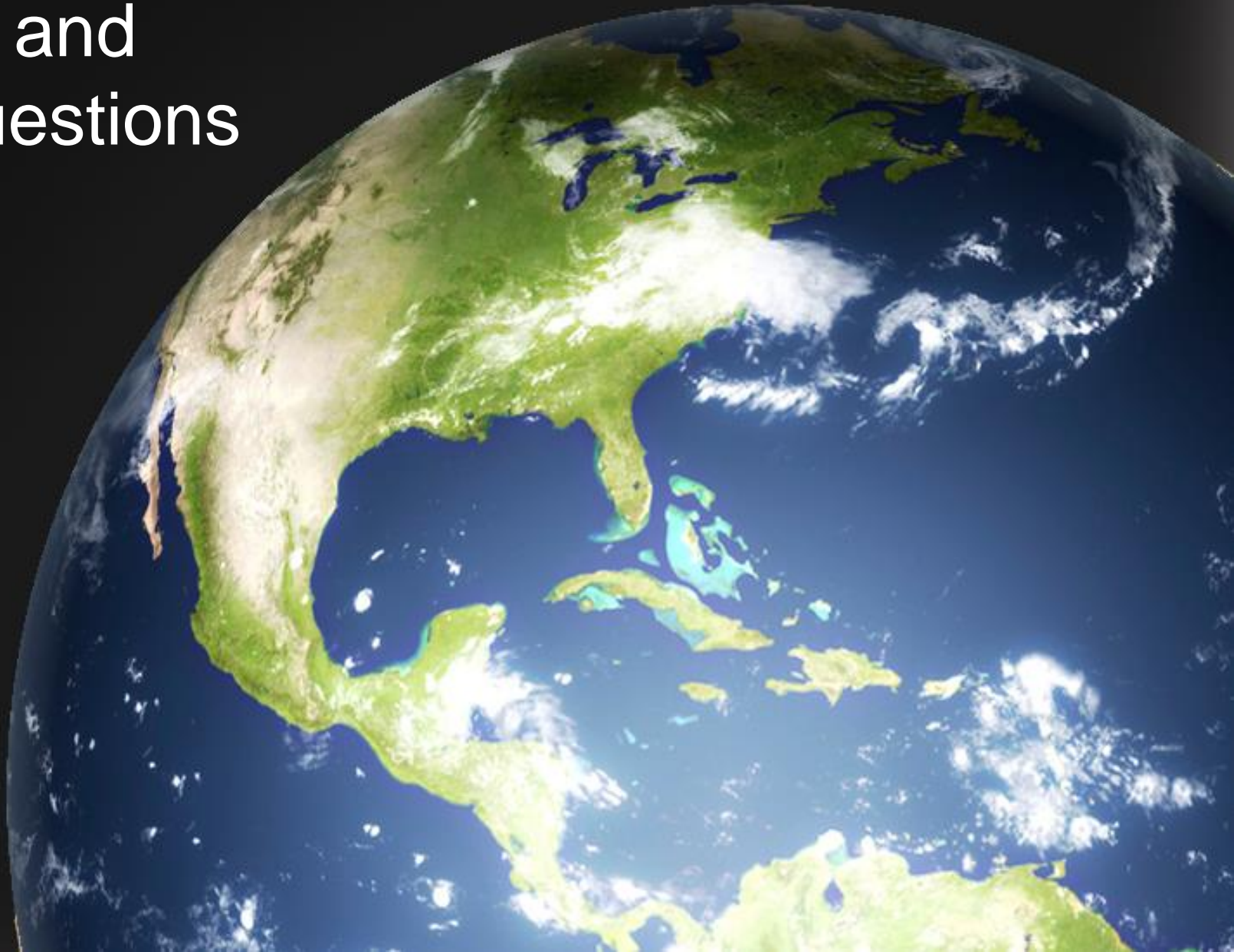
Answers

# 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 monteggia fracture