Report for the Sustainability & Seven Day Services Taskforce

Seven Day Working in Imaging in Scotland
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Access to timely accurate imaging services is at the heart of modern healthcare delivery for both primary and secondary care. This aids clinicians to make the correct diagnosis and decide the appropriate treatment for patients.

Currently there is variability in access to emergency imaging across Scotland, both diagnostic and interventional, out with normal working hours.

There is increasing patient and clinician expectation that, not only emergency imaging, but a more extended imaging service should be available to them on a 7 day basis from both a safety and person focused point of view.

The Scottish Clinical Imaging Network (SCIN) is one of four Managed Diagnostic Clinical Networks in Scotland and is performance managed by National Services Division (NSD). It has a wide remit encompassing diagnostic imaging issues across Scotland in both primary and secondary care. One of the aims contained in its work plan for 2014-2015 was to look specifically at the issue of seven day working in Imaging in Scotland, in collaboration with the Scottish Government’s Sustainability & Seven Day Services Taskforce. A subgroup of SCIN was set up in 2014 to look at this issue with the remit to report back to the Task Force on their deliberations.

The group has made recommendations on two separate but linked issues with regard to out of hours imaging. The first is the standardisation of emergency imaging tests and procedures which should be accessible on an equitable basis across Scotland and the second is the implementation of 7 day working in Imaging.
Summary of SCIN Recommendations

**Imaging Services Recommendations**

1. All acute receiving hospitals should deliver a minimum standard list of imaging examinations for the emergency care of acutely ill patients. If these are not available on site then robust and timely transfer arrangements of images or patients should be put in place.

2. Extension of imaging services should be focused initially on improving emergency and inpatient care.

3. Development of extended imaging services should include a comprehensive assessment of the impact on Monday-Friday daytime working.

4. Early engagement of all staff groups and staff side representatives to draft the most suitable extended working arrangement.

5. Types of work to be undertaken should be clearly stated in any extended working agreement prior to commencement.

6. There should be a flexible approach to the remuneration arrangements for extended working. This could include time off in lieu/sessional allocation/payment model or any combination of the three for consultant radiologists. Any extended working for diagnostic radiographers, sonographers and support staff will need to comply with AfC (Agenda for Change) terms and conditions.

7. Workload for extended services should be monitored by local Imaging Services.

8. Adequate support staff require to be put in place prior to the institution of an extended imaging service.
National Workforce Recommendations

9. National workforce planning groups should take into account the current and projected expansion in demand for imaging services including weekend working, and, in collaboration with the training schemes, increase the Clinical Radiology National Training Numbers.

10. National workforce planning groups should scope the requirement for additional radiographers, advanced practitioner radiographers and sonographers to support an extended service.

National Infrastructure Recommendations

11. Development of the national IT Radiology system for Scotland, augmenting the existing national PACS system to enable viewing and reporting of images across Health Boards.

12. Development in national data collecting services for Imaging to enable robust real time data gathering of imaging and reporting activity.

13. Investment in software for rota and leave management (e rostering technology) for imaging departments in Scotland. This will free up clinical time currently consumed in this administrative task.

14. Further development of links with the Scottish Ambulance Service to facilitate rapid patient transfer for emergency radiology procedures and scans.
Background

Drivers for Change

The Scottish Government's 2020 Vision (1) is that by 2020 everyone is able to live longer healthier lives at home, or in a homely setting. It aspires to a healthcare system where we have integrated health and social care and where there is a focus on ensuring that people get back into their home or community environment from hospital as soon as appropriate, with minimal risk of re-admission.

Key to this is equitable access to a quality imaging service that serves primary and secondary care. This would enable an accurate faster diagnostic process leading to shorter hospital stay for patients across 7 days.

There is broad consensus that the delivery of appropriate 7 day services will improve patient care and clinical outcomes, in keeping with the 2020 vision, by responding to the needs of patients in a timely fashion and ensuring that the whole system works more cohesively and effectively across the entire week. It will also ensure that patients receive the same quality of care irrespective of the day of the week.

There are patient and public expectations that waiting in hospital for several days at the weekend for a non emergency test but one which could lead to earlier discharge is becoming less acceptable.

Reducing length of stay is an important point for economic and patient focused reasons as the health service in Scotland aims to spend the health budget as efficiently as possible whilst maintaining excellent clinical standards.

There is evidence that using imaging appropriately can reduce length of stay. In 2005 a study by Beinfeld and Gazelle (2) observed that hospital costs had stabilised, despite marked increases in imaging costs and postulated that this could be attributed to a decrease in other factors such as length of stay because of the increased use of modern imaging techniques.

Imaging equipment is expensive to procure and maintain and is currently not used to its full potential at weekends and out of normal 9am-5pm working hours. To realise the benefit of improved equipment utilisation there may need to be further investment in the imaging workforce. This investment in the workforce could also enable the realisation of savings associated with faster diagnosis, improvement in patient care and length of patient hospital stay without jeopardising the existing service.

Demands on Imaging

The central role of imaging in modern medicine has driven a demand for a greater volume and complexity of imaging studies. There has been a notable expansion in demand, both in and out of hours, for such services in recent years. In 2013/14 NHS Scotland performed over 200,000 MRI, 450,000 CT and 550,000 Ultrasound examinations; these numbers have increased by 30%, 25% and 20% respectively since 2010/11.(4,5)
This increase in demand has been dealt with in a variety of different ways including a small increase in the workforce, overtime payments to existing staff, skill mix development and outsourcing of some types of reporting.

There are national access targets for key patient groups which the imaging services in Scotland have on the whole delivered. There are however other patient groups which have to wait longer for reports.

**Current Out of Hours Imaging Service**

Out of hours imaging in the evenings and at weekends has traditionally been delivered on an on call model with the consultant/registrar at home called in when consultant radiologist opinion or intervention is required. The rising demand for specialised imaging out of hours, particularly CT, has led to issues with this model with consultants and trainees working more hours.

There are currently differences in access to imaging across Scotland out of hours. Within a traditional 5 day service/weekend on call model, Hospitals/Health Boards have a different range of diagnostic examinations and interventional procedures available to them depending on historical practice amongst radiologists in different areas.

The majority of imaging examinations are acquired by diagnostic radiographers who provide a 24hr/7day service for urgent and emergency referrals in most Hospitals throughout Scotland. The level of demand and scope of imaging referral varies from site to site and will dictate the requirement for radiographer on-call or on-site shifts patterns, compliant with AFC terms and conditions and the European Working Time Directive (EWTD).

**Recommendation 1**

**All acute receiving hospitals should deliver a minimum standard list of imaging examinations for the emergency care of acutely ill patients. If these are not available on site then robust and timely transfer arrangements of images or patients should be put in place.**

Some Health Boards have models whereby the on call radiologist performs some routine work for a set period of hours during the weekend, as well as delivering the emergency imaging service. This is usually done for some combination of time off in lieu/payment arrangement. This is more common in the smaller hospitals which have a smaller emergency workload and therefore have the capacity for the on call consultant to provide some elective work.

The larger centres in Scotland have developed successful 24hr on site registrar reporting (GG&C/Lothian) supported by consultants on call from home. This requires a certain number of participating trainees for it to be a viable option.

Several Scottish Health Boards have recently outsourced their on call imaging to private providers as they struggle with recruitment and retention of staff to maintain the weekday service.
As the consultant contract currently stands, services cannot compel consultants to work at the weekend past midday on Saturday unless for emergency activities. Routine imaging work, whether inpatient or outpatient, undertaken at the weekend, can only be achieved by a negotiated agreement. This situation has led historically to the development of different models of weekend service delivery across Scotland. Some of these models are more attractive than others and can incentivise recruitment to certain areas.

This report makes recommendations on providing equity of access with recommendations on standards of imaging for a quality out of hours’ service for adult diagnostic imaging, paediatric radiology and interventional radiology. (Tables 1, 2 and 3)

**Adult Diagnostic Radiology**

The essential skills of a diagnostic radiologist are in image interpretation leading them to form a written report to aid clinicians in their management of the patient. There is inequity in the range of imaging tests that are available to clinicians in Scotland in the emergency setting depending on time of day or night and hospital site.

Table 1 below outlines the SCIN recommendations for adult emergency imaging services in an attempt to standardise access for patients across the country and suggest a minimum service that should be in place for out of hours and weekends. It is accepted that urgent general x-ray procedures are available on direct referral at any time.

**Table 1**

<table>
<thead>
<tr>
<th>Recommendations for a Quality Emergency Radiology Service (Adult)</th>
</tr>
</thead>
<tbody>
<tr>
<td>The following studies should be available when they will materially alter patient management before the next normal working period.</td>
</tr>
<tr>
<td>All acute receiving hospitals should have agreed patient transfer arrangements in place to access these procedures if they are not available on site.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Adult Imaging services that should be available 24/7</th>
</tr>
</thead>
<tbody>
<tr>
<td>CT Head including CTA/CTV</td>
</tr>
<tr>
<td>CT Neck /cervical spine</td>
</tr>
<tr>
<td>CT Orbits/facial bones</td>
</tr>
</tbody>
</table>
CT Thorax/Abdomen/Pelvis
CT Pulmonary Angiogram
CT Angiogram for haemorrhage/ischaemia
Poly trauma CT
CT KUB
MRI for Spinal Cord Compression
Renal ultrasound for obstruction/sepsis

Adult Imaging services that should be available during day-time at weekends

All of the above
General abdominal/pelvic ultrasound
DVT US

Paediatric Radiology

Emergency Paediatric Radiology is delivered in some secondary hospitals but predominantly in tertiary centres in Scotland.
The recommendations in table 2 below pertain to diagnostic and interventional procedures for paediatric patients both for secondary centres and for tertiary centres which should be available out of hours and at weekends.

Table 2

Recommendations for A Quality Emergency Radiology Service (Paediatric)
The following studies should be available when they will materially alter patient management before the next normal working period.

All acute secondary receiving hospitals which receive paediatric patients should have imaging facilities to scan patients and agreed image and/or
patient transfer arrangements in place to access these procedures in a tertiary centre if they are not available on site.

Local scanning on the receiving site is recommended. If there is no local expertise to report the images, these images should be transferred to the agreed tertiary centre for reporting. Protocols should be put in place to enable the safe scanning of paediatric patients on the secondary site and the onward timely reporting of the images.

<table>
<thead>
<tr>
<th>Paediatric services that should be available 24/7 in a secondary centre</th>
</tr>
</thead>
<tbody>
<tr>
<td>CT head +/- contrast</td>
</tr>
<tr>
<td>Trauma CT +/- pumped contrast</td>
</tr>
<tr>
<td>Abdominal ultrasound</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Paediatric services that should be available 24/7 in a tertiary centre</th>
</tr>
</thead>
<tbody>
<tr>
<td>All of the above</td>
</tr>
<tr>
<td>Pneumatic reduction of intussusception</td>
</tr>
<tr>
<td>Upper GI contrast for malrotation</td>
</tr>
<tr>
<td>Remote viewing and reporting capacity of imaging from other centres</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Paediatric services that should be available weekend days in a tertiary centre</th>
</tr>
</thead>
<tbody>
<tr>
<td>All of the above</td>
</tr>
<tr>
<td>Chest and abdominal drainage</td>
</tr>
<tr>
<td>Nephrostomy</td>
</tr>
<tr>
<td>Upper and lower GI contrast studies</td>
</tr>
<tr>
<td>MRI brain and spine</td>
</tr>
<tr>
<td>Cranial ultrasound</td>
</tr>
</tbody>
</table>
**Interventional Radiology**

The essential skills of an interventional radiologist are in diagnostic image interpretation and the manipulation of needles and the use of fine catheter tubes and wires to navigate around the body under imaging control. Many of the interventional procedures can be done as outpatients and have replaced many surgical procedures. Interventional radiologists are doctors who are trained in radiology and interventional therapy. There is a requirement for a robust out of hours interventional service as a small volume of interventional emergency work is lifesaving for patients.

There is a UK shortage of trained interventional radiologists. This has led to a variable service across Scotland with only 4 Health Boards having a robustly staffed interventional on call rota for acute haemorrhage. This lack of a local 24/7 service leads to the need for timely transfer of acutely unwell patients. The shortage of interventional radiologists is currently delaying any development of 7 day working for this section of the imaging workforce. The RCR acknowledges the nationwide staffing situation and supports the expansion of the interventional radiological workforce. (3) Any expansion will require increasing numbers of trained specialist interventional radiographers and nursing staff.

SCIN supports the further development of collaborative working between interventional radiology units in Scotland to ensure the timely transfer of emergency patients across the entire week. This needs good cooperation between Health Boards and with the Scottish Ambulance Service to enable this to happen.

Table 3 below contains a list of interventional studies which should be available for all patients, being admitted as an emergency to an acute hospital in Scotland 24/7 and during weekend days, whether directly onsite or through a rapid agreed transfer mechanism to an adjacent hospital with the relevant facilities.

**Table 3**

<table>
<thead>
<tr>
<th>Recommendations for A Quality Emergency Radiology Service (Adult Interventional)</th>
</tr>
</thead>
<tbody>
<tr>
<td>The following studies should be available when they will materially alter patient management before the next normal working period.</td>
</tr>
<tr>
<td>All acute receiving hospitals should have agreed patient transfer arrangements in place to access these procedures if they are not available on site</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Adult Imaging services that should be available 24/7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Haemorrhage control</td>
</tr>
</tbody>
</table>
Nephrostomy for sepsis

**Adult Imaging services that should be available during day-time at weekends**

All of the above
Relief of untreatable bowel obstruction
Abscess drainage for sepsis

Table 4 below outlines what more could practically be delivered with an extended service with routine weekend working in interventional radiology, if adequate workforce was in place. Further expansion of this workforce would contribute to shorter hospital stay for patients who currently can wait for days as an inpatient for an interventional procedure.

**Table 4**

**Interventional Services that could be delivered at the Weekend/Public Holidays with a 7 day working model**

Angioplasty for leg ischaemia
Intravenous line placement/access
Dialysis fistula work
Upper gastrointestinal and colonic stenting
Percutaneous gastrostomy tube insertion
Non septic biliary obstruction
TIPPS procedure for haemorrhage
Nephrostomy for deteriorating renal function
Abscess drainage for non septic patients
There was a recent SCIN meeting with all the Interventional Radiologists from across Scotland on the 10th of September 2015 to discuss current challenges and look at new models of service delivery for Interventional Radiology across Scotland. A short life working group with representatives from across Scotland has been set up to consider new ways of working which will include consideration of an extended seven day service.

**Developing 7 Day Working In Imaging**

**Management of Change**

**Recommendation 2**

*Extension of imaging services should be focused initially on improving emergency and inpatient care.*

Maintaining the current service during the week whilst providing an extended out of hours service will be challenging in the current climate of increasing demand, workforce shortages and economic constraints.

SCIN supports the extension of services on a 7 day basis to include enhanced inpatient services in the first instance. This will improve turnaround times for patients within a hospital setting and facilitate earlier discharge. Once robust staffing levels are in place, outside traditional working hours, the possibility of extending the service to include elective work on an extended basis is a possibility.

**Recommendation 3**

*Development of extended imaging services should include a comprehensive assessment of the impact on Monday-Friday daytime working.*

The institution of weekend working without an increase in the current workforce is likely to have a destabilising effect on the weekday service. This may lead to increased stress on staff throughout the week as more flexibility is required to maintain key services. Before the institution of any extended imaging service, there should be a comprehensive assessment on what the likely effects on the weekday service will be. Steps should be taken to mitigate the impact by deploying staff in different ways and employing additional staff if necessary.

**Recommendation 4**

*Early engagement of all staff groups and staff side representatives to draft the most suitable extended working arrangement.*

Staff reluctance to engage in this issue requires strong leadership to convince them of the benefits to patient care within their service. The concept of weekends as protected time is deeply ingrained in our culture. This has changed, particularly in the retail sector, over the last 20 years but healthcare has not kept pace with this change. Moving to a 7 day model for all staff groups may raise issues of work/life
balance, including religious considerations and these issues need to be treated sensitively in order to maximise participation in weekend working.

Cultural change of such magnitude to deliver an extended 7 day service for an entire imaging service requires patient and resilient leadership and exemplary management skills. It requires leaders to be able to engage with staff of all levels from the outset to make the case for change then plan, pilot and audit the changes required.

**Recommendation 5**

**Types of work to be undertaken should be clearly stated in any extended working agreement prior to commencement.**

It is important that staff agree beforehand what type of work they are expected to undertake as part of an extended working agreement and how there may be a change to their weekday working conditions as a result of the change. This is important to the long term acceptability of a new way of working.

**Recommendation 6**

**There should be a flexible approach to the remuneration arrangements for consultant extended working. This could include time off in lieu/sessional allocation/payment model or any combination of the three.**

Greater Glasgow and Clyde Health Board are currently undertaking a 20 week pilot of weekend and evening working for consultant radiologists in the new Queen Elizabeth University Hospital (QEUH).

The model has three consultants on site, on a staggered rota, throughout the weekend and public holidays from 9am-8pm doing a mixture of emergency and elective work. The model also includes weekday evening consultant cover from 5pm-8pm. This has lead to the presence of senior decision makers in imaging being on site for longer, providing support to clinicians and to radiology trainees. The pilot has a choice of remuneration options for consultants to incentivise full participation which include /sessional allocation/time off in lieu/payment. This is a key feature which makes the option of working for extended periods out of hours, over and above what is required through the consultant contract, a more attractive one. By adopting this approach, all the consultants agreed to participate. So far, it has proved popular with referring clinicians and with participating radiologists.

Assessment of the pilot will include work done, impact on existing service and acceptability to imaging staff and referring clinicians.

The most important issues in negotiating with staff are early engagement of staff, facilitation of group ownership of the solution and offering a flexible approach to remuneration.
Recommendation 7

**Workload for extended services should be monitored by local Imaging Services.**

The workload in the new model should be monitored by service managers to ensure that there is no imbalance between workload and available staff and that staff are not being placed under undue pressure. It is also important to monitor the impact of any new model in terms of turnaround of imaging as part of this process in order to be able to demonstrate benefit and to feed this back to participating staff and to the organisation as a whole.

It is also important for the engagement of imaging staff with the 7 day working process that other clinical groups are working similarly across the weekend to respond timeously to diagnostic reports. This usually involves the institution of twice daily clinical ward rounds and access to senior decision makers at the weekend.

Recommendation 8

**Adequate support staff to be put in place prior to the institution of an extended imaging service**

For the optimum use of imaging staff, the necessary support services, which are currently in place during the normal Monday-Friday working week, need to be in place for an extended service to maintain a quality service for patients and to avoid placing radiologists and radiographers under undue pressure. This includes adequate:-

- Health care support workers
- Administrative staff
- Porters
- Facilities staff
- IT support staff

Facilitating changes for such a variety of professionals’ working conditions will be challenging to achieve but necessary, in order to put in place a safe and sustainable service.
Workforce Issues

Recommendation 9

National workforce planning groups should take into account the current and projected expansion in demand for imaging services including weekend working, and, in collaboration with the training schemes, increase the Clinical Radiology National Training Numbers.

There is a well documented UK wide shortage of radiologists leading to high vacancy rates and a subsequent reliance on locum and outsourcing companies across the country. There is an urgent need to train more radiologists in Scotland to address this shortage particularly in view of the desire to develop a 7 day service in face of a continuing rise in demand on imaging services. There is some capacity within existing training schemes to do so.

There are around half as many radiologists per head of population in the Scotland as the Western European average, with inadequate numbers in training posts and a resultant rising vacancy rate for consultant posts. This makes institution of seven day working particularly challenging.

The total number of vacancies in Clinical Radiology in Scotland (36.8) is greater than in any other individual specialty, including Emergency Medicine (23.8) and General Psychiatry (20.1).

Below are NHS Scotland workforce statistics from ISD. The current 10.5% (total) and 5.7% (6 months or more) vacancy rates for Clinical Radiology are 8.3% and 3.5% for an average of all specialties. (7)

<table>
<thead>
<tr>
<th>Date</th>
<th>Staff in Post (WTE)</th>
<th>Total Vacancies</th>
<th>Total Vacancies as % of Establishment</th>
<th>Vacancies of 6 months or more as % of Establishment</th>
</tr>
</thead>
<tbody>
<tr>
<td>31/12/2013</td>
<td>282.6</td>
<td>19.0</td>
<td>6.3</td>
<td>1.7</td>
</tr>
<tr>
<td>31/03/2014</td>
<td>288.2</td>
<td>32.0</td>
<td>10.0</td>
<td>3.1</td>
</tr>
<tr>
<td>30/06/2014</td>
<td>291.1</td>
<td>26.4</td>
<td>8.3</td>
<td>3.5</td>
</tr>
<tr>
<td>30/09/2014</td>
<td>304.7</td>
<td>33.0</td>
<td>9.8</td>
<td>4.8</td>
</tr>
<tr>
<td>31/12/2014</td>
<td>309.5</td>
<td>35.2</td>
<td>10.2</td>
<td>5.8</td>
</tr>
<tr>
<td>31/03/2015</td>
<td>303.5</td>
<td>40.0</td>
<td>11.6</td>
<td>4.7</td>
</tr>
<tr>
<td>30/06/2015</td>
<td>314.1</td>
<td>36.8</td>
<td>10.5</td>
<td>5.7</td>
</tr>
</tbody>
</table>

The most recent census of radiological staffing was undertaken across the UK by the Royal College of Radiologists (6) in 2014. Their comprehensive report outlines the issues facing imaging as it struggles to cope with the increasing demand on its services at the same time as a shortfall in trained radiologists to take up posts.

There are specific difficulties seen across the UK with recruitment and retention which are most acute for smaller general district general hospitals. These include issues with local geography and amenities and a lack of trainees leading to first on call for consultants and more frequent on call rotas. There can also be a relative lack
of subspecialisation opportunity and an over reliance on locum staff to fill gaps as a result of recruitment issues.

The RCR census outlines specific subspecialties within imaging where the demographics of imminent retirements are more extreme than others. These are in breast, musculoskeletal, interventional, radionuclide and paediatric radiology. The involvement of these subspecialist radiologists in additional weekend working will have an effect on the delivery of sustainable services during the week.

There is an increase in professionals working less than fulltime with an increase in LTFT working for consultant radiologists rising from 19% of the workforce in 2008, to 23% in 2014.

It is important that the expansion of 7 day working in imaging in Scotland is not just about spreading the existing resource a bit thinner. Meticulous planning is required ahead of any change to scope out the existing service and the effect that 7 day working will have upon it.

**Radiology Networks**

The Royal College of Radiologists (RCR) has recently responded to the issue of seven day working by putting forward a proposal for networking in Imaging across traditional hospital/health board boundaries. They are clear that is not a solution for the capacity issue, but could help with the access to subspecialist expertise on a 7 day basis.

SCIN is currently looking at the possibilities of a network approach for sharing workload across traditional health board boundaries in Scotland which could be used for weekday and weekend cross sectional imaging if a robust national PACS/Radiology Information Service (RIS) solution plus agreements for cross boundary reporting were in place.

**MDT Working**

As well as providing a reporting service for a large variety of imaging modalities, Consultant Radiologists also provide a range of other services to the clinical community during a normal working week. Institution of extended weekend working with resultant time off during the week will have an impact on these services. They include MDT working, teaching and audit.

The increased requirement for subspecialist radiologists to be present at relevant MDTs has led to pressure on available reporting capacity. MDT working takes up on average 10% of a radiologist’s working time and a greater percentage of their reporting time. These meetings require preparation time for the radiologist before the meeting, at the time of the meeting and often afterwards for administrative tasks arising from the MDT. These meetings occur during normal weekday working hours and require the attendance of the whole clinical team.

Most radiologists participate in undergraduate and postgraduate teaching including training the next generation of radiologists and undertake audit of their practise. These activities will be impacted upon by extending the normal working week to include more onerous weekend rotas.
Some areas, in particular remote and rural areas, have more difficulty than others in recruiting and retaining Imaging staff making the development of weekend working, whilst maintaining a core weekday service, in certain areas particularly challenging.

**Outsourcing**

The lack of trained consultant staff leads to an increasing reliance on outsourcing to external companies and to extra payments for overtime to existing staff who wish to do extra reporting. This has led to an increase in hospitals employing external companies from 33% in 2010 to 58% in 2014.

The RCR workforce census report shows projected figures for outsourcing spend in Scotland for 2013-2014 is £3,506,369. It also shows the correlations between outsourced spend and vacant consultant posts across the UK. (6)

Outsourcing companies are mainly used to report plain films but also some CT and MRI when required. They are increasingly being used to deliver out of hours imaging in order to free up consultants to report more scans during the day. The longer term consequences of removing consultants from on call commitment is likely to impact on the delivery of weekend working.

**Skill mix**

There has been much progress made over the last few years in the development of skill mix in radiology with radiographers and sonographers delivering some of the roles traditionally performed by radiologists. This includes the development of an extended role for radiographers in the reporting of some types of plain films, undertaking some hands on radiological tests such as barium studies and in the undertaking of certain administrative tasks such as justifying examination requests. Radiographers and sonographers are keen to extend their roles further in order to enhance the quality of patient care.

Health boards in Scotland continue to develop the role of the reporting radiographer to help with the current pressures on plain film imaging reporting and should be encouraged to explore all opportunities for skill mix amongst their radiographic and scientific staffing to free up consultant time.

**Recommendation 10**

National workforce planning groups should scope the requirement for additional radiographers, advanced practitioners and sonographers to support a weekend service.

There is a current national shortage of diagnostic radiographers and sonographers. The age demographic of diagnostic radiographers and sonographers employed by NHS Scotland is also a concern as it reflects an aging workforce.

Between 2010 & 2013 the total Whole Time Equivalent (WTE) of diagnostic radiographer staff in NHS Scotland increased only slightly by 1.5% despite the
overall increased demand for diagnostic imaging in particular CT, MRI and Ultrasound.

A 2014 UK-wide survey by the SCOR (Society and College of Radiographers) on sonographer staffing included two responses from Scotland and reported a high level of vacancies, difficulties in recruiting staff (61% of departments) and a high level of absence (54% of departments). Difficulties in recruitment were most frequently attributed to a lack of suitable applicants. A significant factor in relation to absences was a high and increasing incidence of work related musculoskeletal disorders.

The implementation of the increased retirement age, may lead to increasing staff safety issues as the ability to work extended hours becomes restricted. Musculoskeletal injuries are becoming more prevalent with the increased intensity of patient throughput, and longer hours required, particularly in CT, MRI and ultrasound.

Increased numbers of diagnostic radiographers and sonographers, essential for maintaining the current service delivery will be vital to any extension of radiological services. Scoping the workforce requirements for all staff groups involved in the imaging service will therefore be an important part of an extended 7 day service.

National Infrastructure Issues

Recommendation 11

Development of the national IT Radiology system for Scotland, augmenting the existing national PACS system to enable viewing and reporting of images across Health Boards.

Scotland is very fortunate to have a national picture archive and communication system (PACS). This is the digital platform where all radiology images are viewed by radiologists and stored nationally. PACS previously worked within health boards but transfer out with a local area was problematic. It has however recently been upgraded and now allows for timely transfer of radiology images across traditional health board boundaries. There is however, no uniform reporting platform for radiologists from one area to report studies from another. The lack of this functionality mitigates against models which could utilise capacity in one area to service demand in another. The technology for this exists and SCIN supports the investment in a common reporting solution to add to PACS. Such a development could potentially be used to deliver an extended 7 day service in more remote area if linked to larger centres.

Recommendation 12

Development in national data collecting services for Imaging to enable robust real time data gathering of imaging and reporting activity.

There is a lack of a comprehensive centralised data collection process for imaging in Scotland. Acquiring and presenting data on imaging parameters such as time to
book, scan and report studies is currently labour intensive for hard pressed administrative staff. There is currently no straightforward way to get statistics on imaging activity across the country. There is therefore a need for investment in an electronic dashboard solution for imaging departments across Scotland to facilitate real time analysis of this data, to motivate staff, and to support the change process to 7 day working across all Health Boards.

**Recommendation 13**

*Investment in software for rota and leave management (e rostering technology) for imaging departments in Scotland. This will free up clinical time currently consumed in this administrative task.*

Hard pressed clinical time in imaging is currently consumed across Scotland constructing weekly rotas and annual leave rotas. This is time which would be better spent on direct clinical care. There is a need for investment in a robust electronic rota making/leave planning software solution for staff as both of these issues becomes more onerous with a 7 day service. Radiologist/radiographer time should not be consumed on this administrative task.

**Recommendation 14**

*Further development of links with the Scottish Ambulance Service to facilitate rapid patient transfer for emergency radiology procedures and scans.*

When imaging services cannot be provided locally, the patient needs to be transferred to an agreed site to access the correct tests. Key to this is a rapid transfer, usually by ambulance. There should be links with SAS to enable this to occur reliably and in a timely manner.
References


3. NHS services, seven days a week: response from the Royal College of Radiologists Jan 2014


6. Implementing 7 Day working in Imaging Departments: Good Practice Guidance *A Report from the National Imaging Clinical Advisory Group 2012*

7. Clinical Radiology UK Workforce Census 2014 report RCR


## Managed Diagnostic Imaging Clinical Network - Seven Day Working Group

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