Healthcare Improvement Scotland | Inspections and reviews
To drive improvement

Announced Inspection Report – Ionising Radiation (Medical Exposure) Regulations 2017

Queen Elizabeth University Hospital, Glasgow

NHS Greater Glasgow and Clyde

25-26 October 2022

NHS SCOTLAND

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First published January 2023

www.healthcareimprovementscotland.org

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Our approach

Healthcare Improvement Scotland has a statutory responsibility to provide public assurance about the quality and safety of healthcare through its inspection activity.

The quality of care approach and the quality framework together allows us to provide external assurance of the quality of healthcare provided in Scotland.

- **The quality of care approach** brings a consistency to our quality assurance activity by basing all of our inspections and reviews on a set of fundamental principles and a common quality framework.
- **Our quality framework** has been aligned to the Scottish Government's *Health and Social Care Standards: My support, my life* (June 2017). These standards apply to the NHS, as well as independent services registered with Healthcare Improvement. They set out what anyone should expect when using health, social care or social work services.

We have aligned the Ionising Radiation (Medical Exposure) Regulations (IR(ME)R) 2017 to the quality framework.

How we inspect services that use ionising radiation for medical exposure

The focus of our inspections is to ensure each service is implementing IR(ME)R 2017. Therefore, we only evaluate the service against quality indicators that align to the regulations.

What we look at

We want to find out:

- how the service complies with its legal obligations under IR(ME)R 2017 and addresses the radiation protection of persons undergoing medical exposures, and
- how well services are led, managed and delivered.

After our inspections, we publish a report on how well a service is complying with IR(ME)R and its performance against the Healthcare Improvement Scotland quality framework.

More information about the quality framework and quality of care approach can be found on our website:
www.healthcareimprovementscotland.org/our_work/governance_and_assurance/quality_of_care_approach.aspx

Summary of inspection

About our inspection

We carried out an announced inspection to the Queen Elizabeth University Hospital, NHS Greater Glasgow and Clyde, on Tuesday 25 and Wednesday 26 October 2022. We spoke with a number of staff including the diagnostic director, IR(ME)R lead, radiologists and radiographers. The inspection team was made up of one inspector.

Queen Elizabeth University Hospital offers a variety of equipment that used ionising radiation including plain film, computerised tomography (CT), interventional, mammography, fluoroscopy, dental and nuclear medicine. The focus of this inspection is the imaging department.

What we found

What the service did well

- Clear governance structures are in place for the implementation and management of the IR(ME)R.
- A strong optimisation culture is in place. Staff we spoke with demonstrated changes to practice as a result of image optimisation.
- All radiographers are trained to carry out quality assurance of equipment.

What the service needs to improve

- The role of the clinician should be included in determining if an event is clinically significant accidental or unintended exposure.
- Ensure completion and return of all clinical audit forms to demonstrate its compliance with IR(ME)R.

Detailed findings from our inspection can be found on page 8.

What action we expect NHS Greater Glasgow and Clyde to take after our inspection

This inspection resulted in no requirements and seven recommendations. See Appendix 1 for a full list of the recommendations.

An improvement action plan has been developed by the NHS board and is available on the Healthcare Improvement Scotland website.

https://www.healthcareimprovementscotland.org/our_work/inspecting_and_regulating_care/ionising_radiation_regulation.aspx

We would like to thank all staff at the radiology department, Queen Elizabeth University Hospital, for their assistance during the inspection.

What we found during our inspection

Outcomes and impact

This section is where we report on what key outcomes the service has achieved and how well the service meets people's needs.

Domain 1 – Key organisational outcomes

High performing healthcare organisations identify and monitor key measures that help determine the quality of service delivery and the impact on those who use the service or work with the service.

IR(ME)R requires that those who refer for a patient to be exposed to medical radiation, those who operate equipment and those healthcare professionals (medical and non-medical) who justify that the procedure is necessary, must be adequately trained and entitled to do so. Entitlement is given to each person involved in the process by the employer.

What we found - fulfilment of statutory duties and adherence to national guidelines

Entitlement

The process of entitlement sets out the scope of practice an individual can carry out, such as the types of referrals, operate equipment and carry out clinical evaluations. Their scope of practice depends on the individual's qualifications, role, training and experience. It can also change over time following additional training or moving to a new role. The individual is required to work within this scope of practice.

Radiologists who are Fellows of the Royal College of Radiologists are entitled to carry out justifications and clinical evaluations. A radiologist is a doctor who is specially trained to interpret diagnostic images, such as x-rays and CT scans. A trainee specialist radiologist's scope of practice changes as they progress through their 5 year training to become a consultant radiologist.

Radiographers are entitled, depending on their training, to act as operators and practitioners. They can also be entitled to carry out justifications of plain film x-rays, operate equipment (mobile x-ray units) and carry out clinical evaluation to different degrees, depending on their area of work and training.

Another group of staff who are entitled to make referrals are non-medical referrers, healthcare professionals who are not doctors or dentists. Such as, advanced nurse practitioners, physiotherapists and speech and language specialists. EP-Guidance-001 (Guidance notes IR(ME)R approval requirements) sets out the entitlement process for these non-medical referrers. Applications must detail why a particular member of staff requires to make referrals and confirmation that the member of staff is appropriately trained to do so. The application is reviewed by the diagnostic imaging IR(ME)R approval panel. If successful, a letter of entitlement for the non-medical referrer detailing their scope of practice will be issued. Locum and bank staff must also go through the same entitlement process as all NHS Greater Glasgow and Clyde staff.

Employer's procedure EP1 (Entitlement of duty holders for medical exposures) sets out the process of entitlement. EP2 (Procedure to identify individuals entitled to act as referrers, practitioners, operators, and medical physics experts and a description of their duties) defines the duties and training of staff who are entitled to act as a referrer, practitioner or operator.

The IR(ME)R lead is responsible for entitling medical and dental staff. General managers and local service leads are responsible for approving the entitlement of non-medical staff and the scientific director is responsible for the entitlement of medical physics experts. A letter of entitlement detailing whether a staff member is a referrer, operator and or a practitioner is issued. Their scope of practice is detailed further in departmental documents and training records.

All medical staff have group entitlement, which defines the scope of referrals for imaging.

Referral

Referrals are received by the radiology department from a variety of sources from within the Queen Elizabeth University Hospital, from other hospitals and from the community, such as GPs. Referrals must include details about why the exposure is required.

Most referrals are made using an electronic referral systems. The system is linked to the radiology information system, which is used by the radiology department to record the patient imaging information (all relevant information about the patient and reason for the exposure and staff involved). The system is also used to record the different parts of the imaging pathway.

Paper referrals are still received from some GP practices. The information is transposed to the radiology information system and the form is scanned onto the radiology information system.

A referral can only be made by a person who is entitled to do so. The role of the referrer is clearly recorded on the referral and can be checked against their entitlement. When a referral is received by non-medical referrer, radiographers will check the referrer's scope of practice against the list of non-medical referrers. Radiographers told us this process works well and the list is easy to access. We were told that if a referral has been received, which is not within an individual's scope of practice, it is rejected.

Justification

Radiologists and radiographers, as part of their role, justify exposures within their scope of practice. As part of this process they ensure sufficient clinical information is available for the referral to be justified. Within the NHS board, radiographers are entitled to justify plain film images. Consultant radiologists can justify all types of imaging.

Before a radiographer is deemed qualified to carry out justifications, they must review at least 50 referrals as part of their training, alongside a qualified practitioner. They will then be assessed on 20 referrals they have reviewed independently to become qualified to justify plain film imaging. Radiographers can also authorise under protocol for referrals that meet specific guidelines (called clinical indicators) such as a head trauma. The responsibility for the justification remains with the practitioner when authorising under protocol (the clinical director who is a consultant radiologist in the Queen Elizabeth University Hospital). Staff are trained to authorise under protocol.

All staff we spoke with told us a patient's clinical information is reviewed in line with EP4 (Referral procedure and referral criteria). Checks are also carried out for any previous exposures or duplicate referrals. They told us they would review the patient's clinical history to check it matched the clinical information received. They would check the site, laterality (part and side of the body to be exposed) and reason for exposure matched the referral and ensure this matched the patients understanding.

If any discrepancies are identified during these checks, staff told us they would pause and seek further information from the referrer. If further information can be provided to support the justification, staff told us they would ask for a new referral to be submitted immediately to allow the referral to be justified and the exposure to proceed. Should a new referral not be possible at the time the patient is in the department, the referral will be rejected. If insufficient information is provided to justify the referral, the referral is returned and the exposure will not be carried out.

For patients who require an appointment, referrals are justified at the time the appointment is issued. The information is reviewed on the day of the appointment to ensure it is still correct.

All referrals are checked at the time of exposure to ensure the clinical information is correct. Such as, if a patient is reported to have a nasogastric tube in place (a thin, soft tube that goes in through the nose, down the throat, and into the stomach), checks are carried out to ensure it remain in place at as highlighted in EP5 (Justification and authorisation of medical exposure).

All justifications are recorded on the radiology information system and the practitioner who made the decision is clearly identified. We are assured staff would choose the correct protocol for the medical exposure and processes are in place to demonstrate staff are entitled to justify and they are adequately trained to do so.

Records

Employer's procedure DR-GGC-PROC-005 (Recording of patient dose and relevant examination information on the radiology information system) provides clear guidance on the checks to be carried before any exposure and where this information should be recorded. This includes the need to check the referral details, examination codes, checks for duplication, laterality (part and side of the body to be exposed) and pregnancy checks. It also provides details of what should be recorded in the radiology information system. We looked at the information recorded on the radiology information system and noted that staff had documented:

- clinical information
- correct patient information and identification checks
- pregnancy status checks
- justification
- details of the referrer and operator, and whether a student is present
- number of images and recorded dose
- the equipment used, and
- clinical evaluation.

Radiography staff could describe the checks they carry out recording this information and where they would get the dose information.

Radiologists or reporting radiographers will review the image and report their findings (clinical evaluation). All staff we spoke with could describe the process

and where this information is recorded. The operator who carried out the clinical evaluation is identified on the report.

What needs to improve

While we were told radiologists do identify any issues that do not meet the guidelines for authorisation under protocol when they carry out their clinical evaluation, it was acknowledged that there is a gap when assessing training for radiographers who authorise under protocol (see recommendation a).

- No requirements.

Recommendation a

- NHS Greater Glasgow and Clyde should develop a system to assess radiographers who are trained to authorise under protocol.

Service delivery

This section is where we report on how well the service is delivered and managed.

Domain 5 – Safe, effective and person-centred care delivery

High performing healthcare organisations are focused on safety and learning to take forward improvements, and put in place appropriate controls to manage risks. They provide care that is respectful and responsive to people's individual needs, preferences and values delivered through appropriate clinical and operational planning, processes and procedures.

What we found - safe delivery of care

Safety culture

We were told about a positive safety culture within the NHS board. Staff felt confident to report mistakes and near misses and were clear about the procedures for reporting and investigating incidents. Staff were also clear that learning from incidents should be shared to reduce the chance of a similar incident happening again.

We saw PAUSE posters prominently displayed in each clinical room in the radiology department to remind staff to take the time when carrying out appropriate checks before any patient exposures. Staff also told us they did not feel pressured to rush an exposure.

Radiologists attend radiology events and learning meetings (REALM) in each of the three sectors in the NHS board area (north, south and west Glasgow), each sector has a REALM lead. Any radiological discrepancies are reviewed at these meetings, while ensuring patients' anonymity. Radiologists told us about the positive, open culture at these meetings. Learning can be shared between the three sectors at the clinical governance meeting, which is attended by the all three REALM leads.

Employer's procedures

NHS Greater Glasgow and Clyde has a duty under IR(ME)R to develop written procedures commonly referred to as employer's procedures. These are intended to provide a framework under which professionals can practice. We saw a clear structure for the development and update of these employer's procedures. The NHS board has three levels of employer's procedures:

- level 1 applies to the whole NHS board, including all modalities

- level 2 applied to service level across various sites, and
- level 3 are local rules for a specific site and service.

The approval of employer's procedure is split between different committees and staff groups. Level 1 employer's procedures are approved by the NHS board's IR(ME)R working party. Level 2 employer's procedures are approved by the general manager. Level 3 employer's procedures are approved by sector superintendents. The development and review involves a variety of staff, including sector superintendents, medical physic experts, radiographers and radiologists, as required. Procedures are review every 3 years by the author.

NHS Greater Glasgow and Clyde has moved away from using level 3 procedures to support a greater degree of consistency across the NHS board. Services outwith radiology that require to develop employer's procedures use a standard template to support consistency.

Employer's procedures we reviewed were all clear, up to date and appropriately cross-referenced. All staff we spoke with were familiar with the employer's procedures and could easily locate them on the staff intranet and the document management system. Staff are updated on any changes through a variety of communication routes, such as regular team meetings and weekly email updates.

Level 1 employer's procedures are also available on the NHS board's public website for referrers outwith the NHS board. Contact details are also available on the website for GPs who need to cancel requests for imaging.

Patient identification

Employer's procedure EP7 (Patient identification) provides guidance on the three points identification checks to be carried out for all patients before an exposure. These checks are essential to ensure the correct person is being exposed. EP7 also includes guidance on the application of the procedure during a major incident and clinical emergencies.

All staff we spoke with could clearly describe the required checks for patient identification. An escort or relative can identify an outpatient on their behalf. A patient's hospital name band can be used as a secondary check. If an inpatient is unable to identify themselves verbally (a patient who is cognitively impaired) a member of staff from the ward who can identify the patient must accompany them. For anesthetised or unconscious patients without a hospital name band it is the responsibility of the referrer to identify the patient.

Once patient identification checks are complete, they are recorded the radiology information system.

Risk benefit conversations

Employer's procedure EP6 (Information and instruction to patients) provides guidance on the communication of risks and benefits associated with the radiation dose from medical exposure. We saw information posters in the radiology department and in changing rooms to inform patients of the low risk of an exposure. Copies of the risk benefit information poster are available on the NHS board's public website.

EP6 also states the operator who identifies the patient should offer to read the relevant information before an exposure, where practical. Radiographers described this in practice and they share this information in a way that is easy to understand. EP-Guidance-004 (Guidance on incident reporting) includes information on approximate effective dose as an equivalent background radiation in days. This information is also be shared as part of the risk benefit conversations.

Making enquiries of individuals who could be pregnant

EP8 (Exposure of individuals of child-bearing potential) provides guidance for carrying out pregnancy status checks before an exposure. All radiographers we spoke with were familiar with the employer's procedure. They told us everyone aged between 12 and 55, for exposures where the primary beam was between the lower diaphragm and upper thigh, were asked the pregnancy status questions.

We saw information posters displayed in the diagnostic department that highlight the need to inform a member of staff of any possibility that a patient may be pregnant.

EP8 also sets out how to proceed in different scenarios, including the need for local protocols to be in place for pregnancy status checks before elective surgery. If a patient is known to be pregnant at the time of referral, this information must be included in the referral. The decision to proceed may be taken after discussion with the referrer, however the responsibility remains with the practitioner who justifies the exposure. In these circumstances, the practitioner must consider how to minimise exposure to the fetus.

The practitioner for plain film would normally be the radiographer and radiologist in higher dose examinations. While it is rare that an abdominal plain film exposure is carried out when an individual is known to be pregnant, radiographers told us they would seek the advice of a radiologist before

continuing. If the radiologist agreed the expose is required, this would be documented on the radiology information system.

Carers and comforters procedures

Employer's procedure EP21 (Carers and comforters) provides clear guidance on the authorisation of an exposure to a carer or comforter, such as the mother of a child. All staff we spoke with could describe the measures they would take to reduce their exposure, or ask them to leave the room if possible. Dose constraints for carers and comforters are in place and they are provided with written information about the dose they will be exposed to.

General duties in relation to equipment

Employer's procedure EP20 (Equipment inventory) and DR-GGC-PROC-006 (Equipment inventory) provide details of how the NHS board will develop and maintain the equipment inventory. A radiological equipment inventory for each site includes each piece of equipment and is given a unique identification code. This information is collected centrally.

The medical physics experts set up a quality assurance schedule, which includes the parameters and tolerances for each piece of equipment. The frequency of quality assurance checks are in line with national guidance from the Institute of Physics and Engineering in Medicine. This involves a combination of weekly and monthly checks depending on the equipment. The schedules also incorporate planned preventative maintenance carried out by visiting engineers.

All radiographers are trained to carry out quality assurance on equipment they use. When quality assurance checks are carried out, results are added to a spreadsheet that highlights when the results are out with relevant tolerance levels. In the event that results are outwith the required limits, we were told staff would repeat the test. If it failed again, the equipment is put out of use and their line manager notified. The engineer or a medical physics expert would then be informed as appropriate to investigate the fault. When a fault is corrected by an engineer, staff would then carry out another quality assurance check before the equipment is put back into use.

When equipment needs to be replaced, it will be added to the risk register that informs future procurement plans for replacing equipment.

Optimisation

Dose optimisation is the balance between the lowest dose and the image quality that is clinically suitable. We were told about imaging optimisation teams for plain film and CT imaging. The aim of these groups are to reduce imaging doses as far as is reasonably practical and improve image quality. Dose

audit data and feedback from radiologists and radiographers is used to identify areas of improvement. Such as, the lead radiologist led a review on the quality of CT head imaging following feedback from radiologists. This resulted in the development of best practice for head positioning during imaging, which has improved image quality.

Medical physics experts carry out dose audits. This information is used to inform local dose reference levels. Local dose reference levels are agreed by local image optimisation teams and ratified at the radiation safety committees. Where local dose reference levels are not available, national dose reference levels are used. We were told all dose reference levels in the NHS board either meet, or are below, the national dose reference levels.

We saw national and local dose reference levels displayed near equipment in the radiology department. Should the recorded value of an exposure be outside agreed limits, an investigation will be carried out. The investigation will consider the patient details, the quality of the image taken, the protocol used and scan range. Information on image quality has also been used to identify the optimal equipment for imaging patients with metal artefacts, such as a hip replacement. This provides the best image quality for the radiologist to review.

When an exposure is required on infants and children in Queen Elizabeth University Hospital, staff from the Royal Hospital for Children will attend to ensure the positioning of the child is optimal for imaging. CT scanners across the NHS board are loaded with paediatric imaging protocols from the Royal Hospital for Children to ensure these images are optimised. NHS Greater Glasgow and Clyde have also identified the most suitable equipment to use on children and young adults where practicable, choosing equipment that delivers the lowest possible dose.

All operators we spoke with could describe how they would select the correct protocol for the intended purpose. Radiologists we spoke with described how they calculate image quality with as low as dose as was reasonably practical when justifying an exposure. They also told us they would always consider an alternative to ionising radiation.

Accidental or unintended exposure

Employer's procedure EP-Guidance-004 (Guidance on incident reporting) details the procedure to follow when an error has taken place. The process of reporting and investigating incidents was well understood by all staff we spoke with. We were told about the positive culture that supports the reporting of incidents and sharing lessons learned. Learning is shared through emails, staff huddles and learning sessions. EP15 (Reporting of radiation incidents) references the involvement of medical staff in determining if an incident affects the patient's

quality of life sufficiently to categorise it as a clinically significant accidental or unintended exposure.

What needs to improve

When the decision has been made to carry out an exposure on an individual that is known to be pregnant, it is the responsibility of the referrer to have the risk benefit conversation with the patient at the time of referral. The radiologist will support this conversation, if necessary. The referrer does not currently always advise whether this conversation has taken place in the referral. They rely on the patient to confirm whether this conversation has taken place (see recommendation b).

- No requirements.

Recommendation b

- NHS Greater Glasgow and Clyde should ensure referrers include confirmation that risk benefit conversations are complete as part of the referral for individuals who are pregnant.

Domain 6 – Policies, planning and governance

High performing healthcare organisations translate strategy into operational delivery through development and reliable implementation of plans and policies, and have effective accountability, governance and performance management systems in place.

What we found - policies and procedures

Each organisation must appoint an IR(ME)R lead who is responsible for the implementation of systems and processes to ensure statutory requirements are being met. NHS Greater Glasgow and Clyde's IR(ME)R lead is the chief of medicine and diagnostic directorate. They are supported by the clinical director, scientific director, general manager, quality manager and sector superintendents. The IR(ME)R lead told us about the positive links to the governance framework and the mechanisms to escalate any issues to the executive team.

The role of the IR(ME)R lead is set out in the NHS boards' employer's procedures, which also provides clear structure about how IR(ME)R is implemented, including the roles and responsibilities from the different staff groups.

What we found - risk management, audit and governance

NHS Greater Glasgow and Clyde has a clear governance structure in place with committees that support safety and the implementation of IR(ME)R. It also provides a mechanism for escalation. These groups include:

- imaging clinical governance subgroup
- IR(ME)R working party
- diagnostics clinical governance and safety committee
- Board radiation safety committee, and
- acute clinical governance committee.

The IR(ME)R lead chairs the diagnostics clinical governance and safety committee and the Board radiation safety committee .

Contracted services

NHS Greater Glasgow and Clyde use external contracted services to provide clinical evaluations. The clinical director vets all staff provided by the contracted services. This includes a check that radiologists are registered with the General Medical Council on the specialist register. The clinical director has access to their training records on request.

The quality of the clinical evaluations provided by the contracted services is monitored through a system of peer review carried out by the contracted services. Clinical evaluations may also be reviewed as part of the NHS board's REALM meetings and any discrepancies would be communicated back to the contracted service.

Clinical audit

The IR(ME)R lead requires every service across NHS Greater Glasgow and Clyde to provide an annual return, as detailed in EP18 (Clinical audit) and EP-Guidance-006 (Clinical audit form). The annual return forms part of the annual clinical audit reported to the acute clinical governance committee to demonstrate how well the NHS board implements IR(ME)R.

The clinical audit form set out in EP-Guidance-006 covers a variety of topics and includes the following areas:

- entitlement, including that of non-medical referrers
- clinical evaluations
- incidents and near misses
- dose reference levels, and

- equipment inventory

Peer review audits are carried out on 5% of radiographers' clinical evaluations, in line with The Royal College of Radiologist publication Quality assurance in radiology reporting.

What needs to improve

We were told not all services return the clinical audit forms as described in EP18 and EP-Guidance-006 (see recommendation c).

The NHS board does not currently have capacity to carry out a dedicated peer review programme as the priority is to deliver the outstanding clinical evaluations. However, peer review is being carried out at multidisciplinary team meetings and at one-off reviews at the request of clinicians, which could be documented to demonstrate a degree of peer review (see recommendation d).

While a variety of clinical audit activity takes place in the diagnostic department, some of which is being captured, others such as trainee specialist radiologist audits are not being recorded. We were told radiologists are currently looking at ways of better of collating audits such as the west of Scotland dedicated audit webpage for trainee specialist radiologists (see recommendation e).

- No requirements.

Recommendation c

- NHS Greater Glasgow and Clyde should ensure the completion and return of all clinical audit forms as described in EP18 (Clinical audit) and EP-Guidance-006 (Clinical audit form) to demonstrate its compliance with IR(ME)R.

Recommendation d

- NHS Greater Glasgow and Clyde should review options for capturing peer reviews currently being carried out.

Recommendation e

- NHS Greater Glasgow and Clyde should ensure it collates the full scope of clinical audits carried out to monitor compliance with IR(ME)R.

Domain 7 – Workforce management and support

High performing healthcare organisations have a proactive approach to workforce planning and management, and value their people supporting them to deliver safe and high quality care.

What we found - staff recruitment, training and development

Expert advice

A team of medical physics experts provide support to NHS Greater Glasgow and Clyde and other NHS boards in the west of Scotland. They are appointed by letter from the scientific director and provide expert advice in relation to compliance with IR(ME)R. They are involved in a variety of areas such as:

- commissioning of new equipment
- acceptance testing of new equipment
- local dose reference levels
- dose monitoring, and
- analysis of incidents.

Staff told us the medical physics experts often visit and they are easily contactable and available for support. They also provide staff with advice on whether an incident requires to be reported to Healthcare Improvement Scotland.

Training

We found training policies in place for staff who are entitled to act as operators and practitioners. EP-Guidance-002 (Guidance on records of training an education) details the mechanisms for assessing competency and the expected level of training and professional registration required to fulfil their intended scopes of entitlement, depending on the different staff groups.

When a radiographer joins the NHS board, they are trained to fulfil their specific scope of practice. A standardised form (DR-FORM-006 Competency assessment form for radiographers and assistant practitioners) details the competencies required for each aspect of their role.

Operators must be trained on each specific piece of equipment. All the radiographers we spoke with said they had received appropriate training. We saw clear training records in place for operators of equipment in the department, including CT and plain film equipment.

It is the responsibility of the radiographer to maintain their own continual professional development as part of their professional registration.

Student radiographers can only work under the supervision of a qualified radiographer. All radiographers we spoke with told us a student would never be left without direct supervision. Students and trainee assistant practitioners are given more autonomy as they progress through their training. However, radiographers are always there to observe and support while students carry out their duties. Radiographers were clear they are ultimately responsible for the patient.

Clinical leads in each sector have oversight for the training of radiologists. DR-GGC-FORM-007 (Competency assessment form for radiologists) details competencies required for trainee radiologist specialists. Similar to the student radiographers, as trainee radiologist progresses through their training, they will be given more autonomy.

A radiologists training and continual professional development is managed through their annual appraisals and medical revalidation process, which is reviewed every 5 years.

An online training module is available for staff who make referrals. All non-medical referrers must complete this module as part of their application to become a non-medical referrer.

Radiographers told us they must provide ongoing training relevant to the implementation of IR(ME)R duties. They also attend sessions delivered by the medical physics experts and radiologists. Continued professional developments sessions take place every week, which are recorded and accessible to all staff.

What needs to improve

The NHS board has completed a calculation of the medical physics expertise resource required using an internationally recognised tool. It has identified the need for a further seven full time equivalent staff in the diagnostic imaging department and additional staff in nuclear medicine. While we are aware the NHS board has sought support from NHS Education for Scotland to establish a system to recruit and train new medical physics experts, this has not yet been successful. The NHS board continues to explore options to seek further resource. The shortfall is currently having to be resourced within the current medical physics expert provision (see recommendation f).

We were told that when medical staff join the NHS board, they must attend a variety of induction sessions. This does not consistently include sessions with

radiologists on IR(ME)R related procedures, such as how to make and cancel referrals (see recommendation g).

- No requirements.

Recommendation f

- NHS Greater Glasgow and Clyde should ensure its workforce plans outline the medical physics expert resource required to meet the predicted service need. It should include how the NHS board intends to address the shortfall in staff in the short and long term.

Recommendation g

- NHS Greater Glasgow and Clyde should ensure induction of new medical staff includes information on IR(ME)R related procedures, such as how to make and cancel referrals.

Appendix 1 – Requirements and recommendations

The actions that Healthcare Improvement Scotland expects the independent healthcare service to take are called requirements and recommendations.

- **Requirement:** A requirement is a statement which sets out what is required of a service to comply with the Regulations. Requirements are enforceable at the discretion of Healthcare Improvement Scotland.
- **Recommendation:** A recommendation is a statement that sets out actions the service should take to improve or develop the quality of the service but where failure to do so will not directly result in enforcement.

Domain 1 – Key organisational outcomes	
Requirements	
None.	
Recommendation	
a	NHS Greater Glasgow and Clyde should develop a system to assess radiographers who are trained to authorise under protocol (see page 12).

Domain 5 – Safe, effective and person-centred care delivery	
Requirements	
None.	
Recommendation	
b	NHS Greater Glasgow and Clyde should ensure referrers include confirmation that risk benefit conversations are complete as part of the referral for individuals who are pregnant (see page 18).

Domain 6 – Policies, planning and governance
Requirements
None.

Domain 6 – Policies, planning and governance	
Recommendations	
c	NHS Greater Glasgow and Clyde should ensure the completion and return of all clinical audit forms as described in EP18 (Clinical audit) and EP-Guidance-006 (Clinical audit form) to demonstrate its compliance with IR(ME)R (see page 20).
d	NHS Greater Glasgow and Clyde should review options for capturing peer reviews currently being carried out (see page 20).
e	NHS Greater Glasgow and Clyde should ensure it collates the full scope of clinical audits carried out to monitor compliance with IR(ME)R (see page 20).

Domain 7 – Workforce management and support	
Requirements	
	None.
Recommendations	
f	NHS Greater Glasgow and Clyde should ensure its workforce plans outline the medical physics expert resource required to meet the predicted service need. It should include how the NHS board intends to address the shortfall in staff in the short and long term (see page 23).
g	NHS Greater Glasgow and Clyde should ensure induction of new medical staff includes information on IR(ME)R related procedures, such as how to make and cancel referrals (see page 23).

Complaints/Concerns

If you would like to raise a concern or complaint regarding any aspect of the inspection then please discuss this with the lead inspector in the first instance.

If there is a concern or complaint about the conduct of an inspector please contact Kevin Freeman-Ferguson, Head of Service Review, kevin.freeman-ferguson@nhs.scot in the first instance to discuss your concerns in more detail.

Alternatively, Healthcare Improvement Scotland has a complaint and feedback service that can be contacted directly. Details can be found on our webpage.

http://www.healthcareimprovementscotland.org/about_us/contact_healthcare_improvement/complaints.aspx

Our contact details are:

Healthcare Improvement Scotland
Gyle Square
1 South Gyle Crescent
Edinburgh
EH12 9EB

Telephone: 0131 623 4300

Email: his.comments@nhs.scot

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or email contactpublicinvolvement.his@nhs.net

Healthcare Improvement Scotland

Edinburgh Office
Gyle Square
1 South Gyle Crescent
Edinburgh
EH12 9EB

0131 623 4300

Glasgow Office
Delta House
50 West Nile Street
Glasgow
G1 2NP

0141 225 6999

www.healthcareimprovementscotland.org