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EXTENDING SCOPE OF PRACTICE FOR ASSISTANT PRACTITIONERS UNDERTAKING FLUOROSCOPIC SCREENING IN THEATRE

A Comerford, S Mathieson & C O'Neill (Radiology NHS Tayside)
with support from NHS Education for Scotland and Scottish Clinical Imaging Network (SCIN)

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NOTE

This guideline is not intended to be construed or to serve as a standard of care. Standards of care are determined based on all clinical data available for an individual case and are subject to change as scientific knowledge and technology advance and patterns of care evolve. Adherence to guideline recommendations will not ensure a successful outcome in every case, nor should they be construed as including all proper methods of care or excluding other acceptable methods of care aimed at the same results. The ultimate judgement must be made by the appropriate healthcare professional(s) responsible for clinical decisions regarding a particular clinical procedure or treatment plan. This judgement should only be arrived at following discussion of the options with the patient, covering the diagnostic and treatment choices available. It is advised, however, that significant departures from the national guideline or any local guidelines derived from it should be fully documented in the patient's case notes at the time the relevant decision is taken.

Contents

Background

Experienced Assistant Practitioners (AP's) can contribute to service improvements and performance by increasing their autonomy supporting the delivery of a resilient radiographic workforce that maintains service performance. Suitable experience of both the AP and the supervising Radiographer and wider theatre team will be integral to the success of this project. Increasing the autonomy and voice of AP's may have a positive effect on the resilience of the service as a whole and the Radiographic workforce. It also can provide a mechanism for raising their profile with a possible raise in job satisfaction, staff engagement and retention.
Whilst developing the skills of senior APs, Radiographers can then extend their scope of practice into more advanced and consultant practices, helping to utilise both skills sets and hopefully improve retention within the workforce.

What is a National Treatment Centre?

In order to address the backlog from Covid-19 related treatment delays and meet ongoing healthcare needs for people across Scotland, the creation of National Treatment Centres (NTCs) is planned across Scotland (Gov.Scot, 2023).
NTCs will provide extra capacity for:

- inpatient care
- day case treatment
- diagnostic services

Aims of NTCs

NTCs will be a national resource which should:

- increase the ability of patients to access treatment
- increase flexibility for patients accessing treatment
- support regional working across territorial NHS health boards

Treatments available at NTCs

- Endoscopy
- General Surgery
- Ophthalmology
- Orthopaedics

Staffing of NTCs

The Scottish Government are committed to recruiting 1500 additional staff to work across NTCs (Yousaf, 2022) to provide:

- Additional funding
- Recruitment support
- Training and development opportunities
- The right mix of new and experienced staff
- New pathways into NHS Scotland careers

Fluoroscopic Imaging

Currently undertaken by Diagnostic Radiographers (RCR, 2020). However, persistent radiographer shortages and high vacancy rates present an urgent workforce issue (Nightingale et al, 2022)
At present Assistant Practitioners (APs) are not trained or entitled to carry out fluoroscopic imaging in theatres (SOR, 2023).

Incentive for APs to develop their role to help fill this gap

- Role development for existing APs
- Scope for Band 3 Imaging Department Assistants (IDAs) to Band 4 AP
- Pay increase for existing APs (AfC review recommended)

Module Descriptor

Module Title: Extending the scope of practice for Assistant Practitioners undertaking fluoroscopic screening in theatre

Aim: The aim of the module is to enable Assistant Practitioners (APs) working within a diagnostic service to develop the knowledge, understanding and practical skills required to undertake fluoroscopic screening in operating theatres.

Recommended prior knowledge and experience: Assistant practitioners wishing to undertake this module should hold:

- Certificate of Higher Education (CertHE)
- Diploma of Higher Education (DipHE) in Radiographic Studies.

The College of Radiographers (CoR) Education and Career Framework (4th Ed, 2022) and the NHS AHP Career Framework in England state that newly trained AP's should now hold a DipHE as minimum. They should be able to demonstrate a minimum of one year relevant post qualification in employment as an AP within a diagnostic radiology service. APs should be aware of the requirements of this module including the need to gather evidence, critically analyse and evaluate and report on their experiences. Those Assistant Practitioners holding a CertHE may require more supervision and oversight compared to those with a DipHE and it is the employer's responsibility to ensure that their staff are competent in their roles.

Clinical Time: The AP must be allocated a defined time to gain experience in undertaking fluoroscopic screening in operating theatres working under the direct supervision of an appropriately qualified HCPC registered radiographer who is a band 6 or above. A record of this to be kept in the Reflection Log (*Appendix 1*).

Clinical Supervision, Accountability and Delegation: Assistant Practitioners (APs), who are not registered practitioners with HCPC, are required to be supervised by and work alongside an HCPC registered radiographer. Those AP's who have received sufficient fluoroscopy training via a recognised and approved training route, are enabled to acquire diagnostic fluoroscopy images, within a defined scope of practice and under supervision.
Interpretation of supervision and delegation in practice has been variable. However, the 2023 SoR document Guidance to support delegation and supervision of the radiography support workforce has provided clarity for each area. The designated registered practitioner who supervises or delegates a task remains responsible for the overall episode of care. Practice or clinical supervision aims to support learning and develop competency related to a specific clinical task and is provided by an identified trainer/expert from the skill area. Supervision is required during training and support for new equipment or techniques, to develop the scope of practice for a new skill or radiographic technique. When the risks of the work or the inexperience of the person being trained are considered too great, it will be required that the work is directly supervised by a competent person.
Direct supervision requires the supervising practitioner to be physically present and observe completion of the task by the AP, commonly performed in the early days of training. Whereas once competence, has been achieved, the supervision model can change to the Radiographer being available for support and guidance as needed, whilst being in the same facility. Whilst telephone support alone is not advocated, with the availability of broadband and remote accessibility, support via video call and the ability to review images via the 'Picture Archiving and Communication System' (PACS) presents the opportunity to provide more effective distant supervision.

Following the completion of this module, APs working in theatres should report to a qualified HCPC registered radiographer who is accountable for theatre fluoroscopy. The radiographer is responsible for AP local sign off, training and education. Guidelines should be set regarding what

fluoroscopy activities are appropriate. The AP is accountable for correctly accepting this activity and for the performance of that activity. Written Procedures should be in place so that the AP is not required to make a clinical judgement that they are not competent or authorised to make. Equally the AP must refuse to accept a delegated activity or seek supervisory support if they feel it is inappropriate or not within their skill set. The AP should be assigned a clinical mentor to support the practical elements of their training. The clinical mentor will provide teaching, feedback, undertake clinical assessment and support the APs completion of the module. Guidance for the clinical mentor is included within this module (*Appendix 2*).

During the training period, the AP should be directly supervised at all times until the AP achieves competency and has passed the assessments (recorded in the Continuous Clinical Assessment – *Appendix 3*). Responsibility for the supervision of the AP rests at all times with the nominated supervising mentor. The supervising mentor must have full knowledge of the examinations being undertaken and be immediately available to provide support.
Upon successful completion of the module the AP may be authorised and entitled by their employer to deliver the defined imaging service via indirect supervision of the HCPC registered radiographer.

Radiation Safety: Under IR(ME)R (2017) (*Appendix 4*), the Employer has a responsibility to ensure that all entitled Operators are adequately trained to perform the tasks within their defined scope of practice.
IR(ME)R 2017 refers to a practitioner as an HCPC registered healthcare professional. Therefore, as APs are non-registered members of the team, they are only allowed to operate within a defined scope of practice when they:
• Have completed adequate training
• been deemed competent
• been entitled as an 'IR(ME)R' operator, meaning they are legally and professionally responsible for their actions
Operators should not carry out a medical exposure without receiving adequate training. The Employer must specify the scope of practice and the tasks for which an individual can act as an operator and be able to demonstrate that they are adequately trained and engage in Continued Professional Development (CPD) and education after qualification (Reg 6 IR(ME)R17)

Recording change to scope of practice: As part of the entitlement process, the necessary information surrounding the individual's scope of practice, the theoretical and practical training given as well as an assessment of competence must be clearly documented in the individuals training record in line with the IR(ME)R Employers Procedures. Copies should be kept by the Assistant Practitioner, and one within their personal work file as evidence for clinical governance. As Healthcare practitioners, AP's are required to evidence their skills and competence. It is also important that the AP qualifications, knowledge, experience and practical skills are recognised by colleagues and service users. Accreditation by the College of Radiographers can provide this assurance. Once CoR accreditation is awarded, re-accreditation every two years provides the AP with evidence that the knowledge and skills relevant to their scope of practice have been maintained. Successful applicants will also be eligible for cover of their accredited scope of practice under the SoR Professional Indemnity Insurance Scheme. The SoR and CoR must be informed of any changes to an AP's scope of practice at the time of change or the PII cover may

be affected. This may require application for re-accreditation of the new scope of practice. NHS bodies are vicariously liable for the negligent acts and omissions of their employees and are

responsible for ensuring that the appropriate governance processes are in place to support the AP scope of practice (SoR 2023 Supervision and Delegation guidance).

Audit: It is expected that different departments will have different clinical needs, and the AP Scope of Practice can vary to reflect this. It is also anticipated that the examinations performed at a local site may change over time to accommodate new diagnostic techniques. Audit of examinations undertaken should be completed annually to evidence competency has been maintained and form part of the annual appraisal discussion.

Learning Outcomes On completion of the theoretical and practical aspects of the module the AP will be expected to be able to:

1. Describe anatomy and clinical criteria relevant to theatre fluoroscopy being undertaken.
2. Demonstrate the theoretical knowledge required to operate equipment safely.
3. Explain theatre practice in regards to working in a sterile environment and appropriate infection control.
4. Preparation required prior to undergoing procedure.
5. Explain the theory of contrast media for imaging purposes and the imaging parameters required for optimisation.
6. Explain and demonstrate the ability to perform fluoroscopic screening.
7. Perform post examination procedure.
8. Demonstrate a training record evidencing competency.

Teaching Methods: The module is predominantly work based and encompasses a variety of teaching and learning methods undertaken in the clinical setting. This will incorporate a blended learning approach comprising of in-house training, support from an allocated mentor, clinical practice activities, reflective and independent learning.
An appropriately qualified practice-based mentor must be identified and who, along with the Assistant Practitioner and line manager will sign a Learning Contract (*Appendix5*) to identify the commitment that all parties will make to the process.

Course Assessment

Certificate of Higher Education (Dip HE) Fluoroscopy Module*

***To be confirmed. Module still to be designed and validated with education providers.**
Ideally, the theoretical aspects should be linked to an accredited education programme at SCQF8. It would be appropriate to approach Medical Physics to contribute to the theoretical training within the inhouse teaching package. A Theatre “Pause and Check” (*Appendix 6*) will support the AP to manage the controlled area; however, during the training period, it is advised that the AP make sure that the examination has been justified/authorised by the radiographer and that previous relevant imaging has been checked. On completion of training and entitled as an Operator, the AP can use the Theatre “Pause and Check” as is written. The radiographer will always be responsible for managing the theatre workload and work flow.

Practiced Based Activities

A practical assessment of clinical practice is required through a competence achievement. Assessment will be undertaken by the clinical mentor who should be a HCPC registered radiographer at Band 6 level or above. Assessment is carried out via clinical practice with

appropriate questions by the clinical mentor. Assistant Practitioners should work their way through practice activities outlined in the clinical workbook.

Continuous Clinical Assessment

A Continuous Clinical Assessment (CCA) located within the clinical workbook will be carried out by the clinical mentor throughout the progression of the module (*Appendix 3*). Assistant Practitioners will be expected to gain competencies undertaking fluoroscopic screening on a range of procedures.

The number of clinical exams completed is not critical but the Assistant Practitioner must demonstrate that they can work unassisted through a range of examinations. Completing the CCA will demonstrate that all evidence requirements have been met for each learning outcome.
The Continuous Clinical Assessment process will incorporate Clinical supervision sessions to record both the progression of the AP, and also to provide ongoing support for the AP to mitigate against risks concerning the potentially highly stressful theatre environment.

Quality Assurance of the assessment process will be maintained by audit. As the AP scope of practice will vary dependent on department and clinical needs, audits will be tailored to reflect the assessment profile. To support continued learning and the audit cycle, audits of examinations undertaken will be completed annually to evidence competency has been maintained and form part of the annual appraisal discussion.

Reflective Practice

Learning and self-assessment can be enhanced by reflective practice which is facilitated through review forms included in the Assessment section of the module.

Flowchart: Method of extending scope of practice for Assistant Practitioners undertaking fluoroscopic screening in theatre

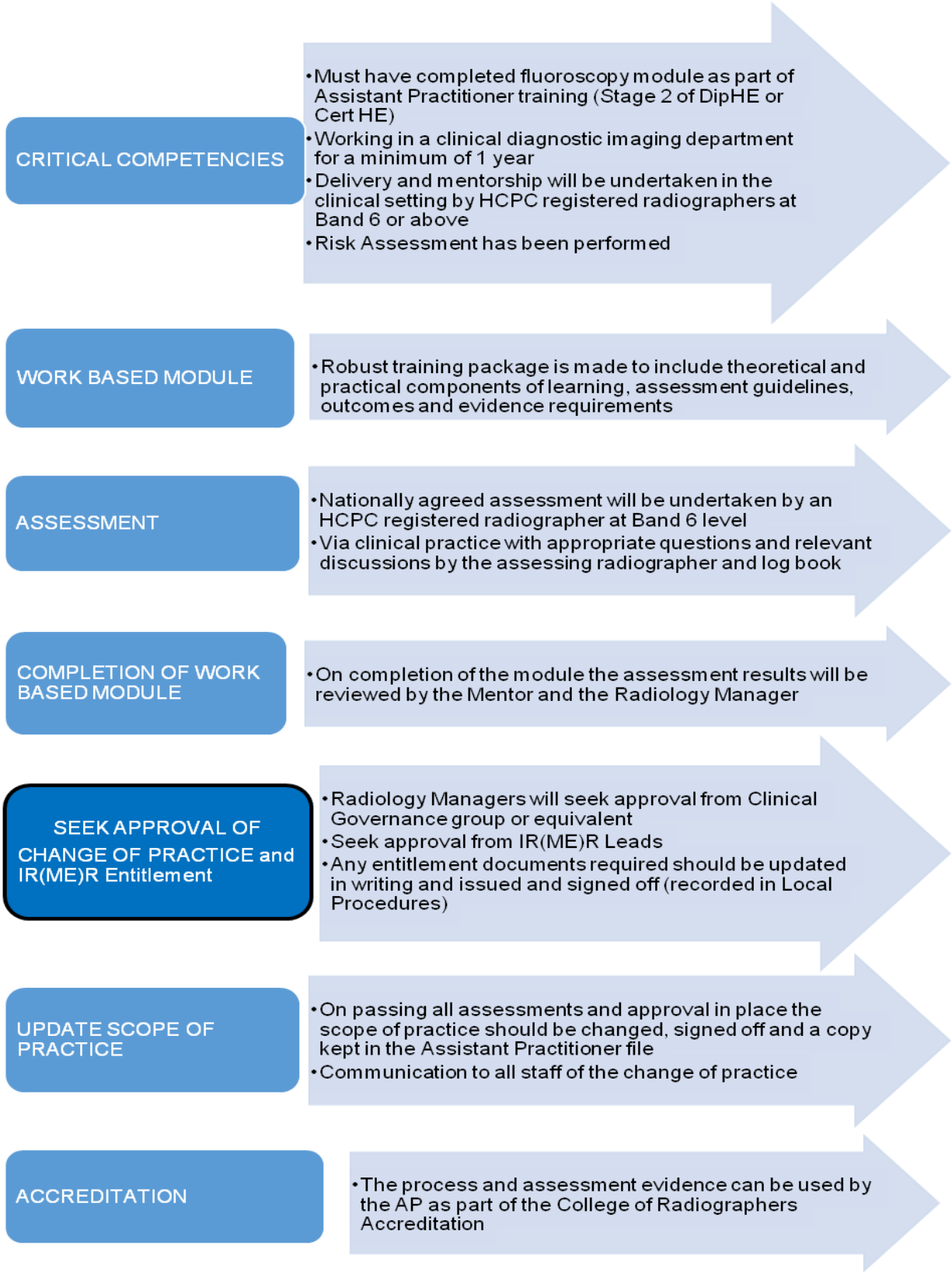


Figure 1 Flowchart of a method of extending scope of practice for Assistant Practitioners undertaking fluoroscopic screening in theatre

Supporting Document: Scope of Practice – Assistant Practitioners Radiology

An Assistant Practitioner performs protocol-limited clinical tasks under the direct supervision of a registered practitioner. Assistant Practitioners differ from general support workers in that they have completed a Certificate of Higher Education or Diploma of Higher Education in Radiographic Studies. They will, after a practical training module, be able to perform defined limited fluoroscopy screening in theatre under indirect supervision of a registered practitioner.

Examinations within the scope of the Assistant Practitioner. To maintain competence, these will be examinations which are frequently occurring and high volume, non-complex procedures within a theatre environment to include:

- General Surgery
- Urological Surgery
- Orthopaedic Surgery (excluding complex cases)
- Steroid Injections

Roles and Responsibilities:

- All request forms must be justified by a registered practitioner prior to the examination commencing.
- Assistant Practitioners will work under the clinical supervision of a qualified radiographer
- Supervising radiographers will be responsible for authorisation of the request form for the defined imaging to be undertaken.
- Assistant Practitioners are responsible for the tasks they undertake and should alert the supervising radiographer if a situation arises that they are unfamiliar with or which they consider is outside of their competency to practice.
- Assistant Practitioners must ensure the Radiological Pause Sheet is completed before the commencement of each operation (*Appendix 6)*.
- Assistant Practitioners will not supervise students.
- Assistant Practitioners will undertake CPD activities and keep accurate records, this will be assessed at employee appraisal meetings.
- Assistant Practitioners will participate and assist in departmental audits as required.
- Employer will support assistant practitioners in undertaking CPD.
- Employers will ensure that there is suitable access to a registered radiographer.
- Employers will support the training and development of Apps.

Record Keeping:

The Assistant Practitioner will enter details on generic CRIS or RIS systems in the following order:

- Authorised by - This is the HCPC registered radiographer who has authorised the examination or has justified the request.
- Operator 1 – This is the name of the Assistant Practitioner who carried out the practical aspects of the examination.
- Operator 2 – this is the HCPC registered radiographer who checked the images produced.

Risk Assessment

Extending Scope of Practice for Assistant Practitioners Undertaking Fluoroscopic Screening in Theatre

Concern/Risk	Who could be Affected	Risk Controls in Place	Risk Assessed as	Further Actions to Control Risk
Assistant Practitioner is not registered with HCPC	Staff and Patients	Theory based learning and practical training Scope of Practice Competency signed off	Low	College of Radiographers accreditation Extended Scope of Practice updated and approved
Radiation risk from excessive screening	Patients and staff	Theory based learning and practical training More than one year's work experience as AP Indirect supervision by a senior radiographer Completion of competency assessment	Low	College of Radiographers accreditation Extended Scope of Practice updated and approved Regular audit
Failure to designate and maintain controlled area in theatre	Staff	Theory based learning and practical training More than one year's work experience as AP Indirect supervision by a senior radiographer Completion of competency assessment	Low	College of Radiographers accreditation Extended Scope of Practice updated and approved Additional training including Local Rules – IRR17, warning signs, staff use of PPE Regular audit

Staff member enters theatre-controlled area not wearing PPE whilst screening is ongoing	Staff	Theory based learning and practical training More than one year's work experience as AP Indirect supervision by a senior radiographer Completion of competency assessment	Low	College of Radiographers accreditation Extended Scope of Practice updated and approved Additional training including Local Rules – IRR17, warning signs, staff use of PPE Regular audit Entry discouraged by use of area warning signs outside theatre Terminate exposure outlined in contingency plans
Unit fails to terminate exposure on release of fluoroscopy control	Staff and Patient	Theory based learning and practical training More than one year's work experience as AP Indirect supervision by a senior radiographer Completion of competency assessment	Low	College of Radiographers accreditation Extended Scope of Practice updated and approved Regular audit Terminate exposure outlined in contingency plans
Uncertainty around supplementary screening required as examination evolves	Staff and Patient	Theory based learning and practical training More than one year's work experience as AP Indirect supervision by a senior radiographer	Low	College of Radiographers accreditation Extended Scope of Practice updated and approved Suspend screening and seek immediate advice from supervising radiographer Regular audit

		Completion of competency assessment Radiographer to manage AP case load and workflow		
Assistant Practitioner working in a high pressure environment	Staff and Patient	Practical training within the clinical setting in theatre procedures and maintenance of sterile area. Training and development of increased communication skills required for the high pressure theatre environment	Medium	College of Radiographers accreditation Adherence to the SoR codes of conduct and ethics Additional support and CPD time for communication skills

Appendix 1: Reflective Log

Weekly reflection may include.

Outcome 1 – Technical evaluation. Assistant Practitioner will be asked to review and evaluate their screening performance. They will identify any areas for further improvement and reflectively analyse their images.

Outcome 2 – Assistant Practitioner should keep a reflective account of their practice.

Screening Procedure:
What went well during this examination?
What did not go well during this procedure?
How I can improve upon my performance next time
Input from Supervising Radiographer
Assistant Practitioner Date
Supervising Radiographer Date

Appendix 2: Guidance for the Clinical Mentor, Line Manager and Assistant Practitioner

Guidance for the Clinical Mentor, Line Manager and Assistant Practitioner

In the context of the integration of health and social care services in Scotland and wider public sector reform, AHP staff are being asked to work in new roles and deliver new models of service. This requires robust clinical and professional governance arrangements to be in place to support staff. Clinical supervision ensures staff practice safely and effectively while maintaining high professional standards of professional conduct. The purpose of this document is to provide guidance for the clinical mentor supporting the Assistant Practitioner training in fluoroscopy. The document focuses on the purpose of supervision within the healthcare environment underpinned by an evidenced based framework, the expectations of both the assistant practitioner and clinical mentor and the responsibilities included within the clinical mentor role.
The identified clinical mentor, assistant practitioner and line manager will sign a learning contract that identifies the commitment that all parties will make to the process. The expectations of the above parties are outlined in this document.

Purpose of Supervision

Professional supervision is a process of professional learning and development that enables individuals to reflect on and develop their knowledge, skills, and competence, through agreed and regular support with another professional (HCPC, 2023).
Clinical supervision sessions will be part of the continuous clinical assessment process, recording the progression of the AP, and also providing ongoing support to mitigate against risks concerning the potentially highly stressful theatre environment.
Clinical supervision is a formal/informal arrangement that enables a practitioner to discuss his or her own work performance in a safe environment with someone who is more experienced. The overall intention of supervision is to improve professional self through lifelong learning, improve professional practice and to feel, and be supported as a member of staff.

Supervision Training

NHS Education for Scotland (NES) Clinical Supervision is an online training resource available at TURAS and Units 1-4 are designed for Supervisors. The resource is designed to support practitioners to develop relevant knowledge and skills for participating in clinical supervision (Turas, 2023).
Turas Module https://learn.nes.nhs.scot/3580/clinical-supervision

Responsibilities of the Clinical Mentor

1. The Clinical mentor should be an experienced radiographer who is based within the Assistant Practitioner's own clinical service. The mentor should provide adequate supervision to support the development of knowledge, skills, values and best practice. They should provide a supportive environment for professional development and growth, facilitating questioning and structured reflection.
2. Support the Assistant Practitioner in reflecting on the effectiveness of their clinical time. The clinical mentor and trainee should meet on a regular basis to discuss training progress and review Reflective Log Forms. These forms are designed to facilitate the Assistant Practitioner to reflect on their training progress, identify areas of improvement and learning needs. These should also be used to facilitate a discussion between the assistant practitioner and mentor and provide an opportunity for constructive clinical supervision session.
3. Assess the Assistant Practitioner's ability to undertake clinical work in fluoroscopic imaging to a satisfactory standard. The mentor will undertake the Assistant Practitioner's Continuous Clinical Assessment located within the module. The mentor should review the required competencies required of the Assistant Practitioner and may use this as a guide to structure the training period. Competencies are designed to ensure that the Assistant Practitioner has met all the module's Learning Outcomes.

Expectations of the Line Manager

1. Identify a local clinical mentor who will provide guidance and supervision throughout the practical training. The Employees line manager should ensure that the Assistant Practitioner is appropriately clinically supervised throughout their training. This may involve one to one supervision with the identified clinical mentor or ensuring that a team of suitably qualified and experienced radiographers are available to provide supervision if the clinical mentor is not present.
2. Agree and regularly review with the Assistant Practitioner an allowance of clinical time and independent study time. The Assistant Practitioner must be allocated to a Fluoroscopy site and given time to gain experience undertaking fluoroscopic examinations.
3. To allow for provision of supervision, managers/leads will commit to offering protected time so that staff can plan for and engage meaningfully in their supervision sessions.

Expectations of the Assistant Practitioner

1. Commit the necessary effort and time to undertake the course activities. The Assistant Practitioner should take responsibility for making effective use of time, and for the outcomes and actions taken as result of the supervision
2. Complete the required competencies They should take an active role in their own personal and professional development in order to meet the learning outcomes of the module and meet competency attainments.
3. Undertake the clinical practice requirements of the module. Practice based activities are linked to each learning outcome and are designed to build knowledge and experience in the necessary competency area.
4. Plan and undertake appropriate action to meet personal learning needs required to develop knowledge and skills in fluoroscopic imaging. This includes preparing for supervision sessions and identifying issues from their practice for discussion with the clinical mentor.

Appendix 3: Continuous Clinical Assessment

Learning Outcome 1 **Pre-theatre Practicalities**	Signature of Assistant Practitioner and date	Signature of Supervising Radiographer and date
Demonstrate ability to liaise with supervising radiographer		
Demonstrate ability to work as part of the multi-disciplinary team, maintain open communication with surgeon		
Knowledge of theatre protocols and policies, Radiological theatre policies, Pregnancy Status checks, Local Rules		
Ensure with supervising radiographer that request has been submitted and justified, review any previous imaging		
Wear of appropriate theatre attire: theatre scrubs, anti-static shoes, disposable hat, mask		
Check equipment is clean and ready for use		
Identify Controlled Area and place Controlled Area warning signs on all entrances of designated theatre		
Use of personal PPE – lead apron, dose monitor under lead apron, thyroid collar		

Learning Outcome 2 **In-theatre Practicalities**	Signature of Assistant Practitioner and date	Signature of Supervising Radiographer and date
Demonstrate the ability to operate safely during the theatre procedure • Ensure doors to corridors and adjacent rooms are closed at all times and what to do if closure is challenged. • Notify all theatre staff prior to an exposure. • Ensure, where possible, all other theatre staff avoid unnecessary dose by standing more than two metres from the beam and what to do during such an occurrence. • Demonstrate awareness of staff entering theatre who may not be wearing lead protection and what to do during such an occurrence. • Demonstrate awareness of sterile areas and how to avoid contamination – be aware when moving II in towards sterile area of handle of operating lights and sterile drapes over		

patient and what to do during such an occurrence. • Ensure, where possible, surgeon and scrub nurse do not have hands in way of radiation beam when screening and what to do during such an occurrence. • Ensure patient radiation dose is as low as reasonably achievable using correct exposure factors, smallest field size, pulsed fluoroscopy and position of patient is as far from the x-ray tube as possible and what to do during such an occurrence.		
Setting up of monitor and c-arm in optimal position for particular examination.		
Take part in Theatre and Radiological Pause		
If not present at time of Theatre Pause • Confirm Patient ID • Confirm pregnancy status of patient, if appropriate • Ensure all staff wearing appropriate lead protection and in correct manner. • Ensure all staff wearing individual film badges or film badges for the task and under lead apron		

Learning Outcome 3 **Fluoroscopy**	Signature of Assistant Practitioner and date	Signature of Supervising Radiographer and date
System Overview		
Connect components and start up the system		
Shutdown the system and safely disconnect the components		
Log into the software		
Describe emergency stops		
Describe Pre/Post operative cleaning methods		
Safely move the system, c-arm, and monitors		
Study/Worklist Page		
Identify Icons		
Open RIS worklist and download a patient		
Manually enter a patient		
Select a patient to start an exam		
Control Panel		
Identify the icons		
Select between automatic and manual exposure		
Understand the status bar, clear fluoroscopy timer alarms		
Select an exam		

Select different dose levels – which button to press on the hand switch/foot pedal		
Adjust frame rate and exposure factors		
'pin' images to send to PACS		
Turn laser lights on and off		
Change the magnification/zoom level		
Adjust the collimation		
Orient the current frame		
Adjust image processing (if necessary)		
Access the memory monitor		
Enable and disable x-ray emission		
Memory Monitor		
Understand how images are stored		
Select different runs and images		
Play, pause and move frame by frame through runs		
Adjust image processing settings		
Orient the selected frame		
Apply shuttering to a single frame		
Text annotation		
Take measurements		
Send images to PACS when in a patient study		
Send an image of the dose report to PACS		
How to check if an image transfer has failed		
Select all patients and retry to send an image to PACS		
Close a patient study		
Delete patient studies and understand the auto-delete function		
Post Processing		
Record Screening Time, Radiation Dose, Contrast Medium used, Number of images sent to PACS		
Check images are sent to PACS		

Final Assessment	Date completed	Signature of Clinical Mentor
All competency assessments included within the work-based module have been met		

Appendix 4: Adequate Training relating to IR(ME)R 2017

Excerpt from The Ionising Radiation (Medical Exposure) Regulations, 2017, no. 1322, pp. 16-17. Schedule 3, Regulation 17

1. Practitioners and operators must have successfully completed training, including theoretical knowledge and practical experience, in (a) such of the subjects detailed in Table 1 as are relevant to their functions as practitioner or operator; and (b) such of the subjects detailed in Table 2 as are relevant to their specific area of practice.
Table 1 Radiation production, radiation protection and statutory obligations relating to ionising radiations.

Fundamental Physics of Radiation	
Properties of Radiation	Excitation and ionisation Attenuation of ionising radiation Scattering and absorption
Radiation Hazards and Dosimetry	Biological effects of radiation – stochastic and deterministic Risks and benefits of radiation Absorbed dose, equivalent dose, effective dose, other dose indicators and their units
Management and Radiation Protection of the individual being exposed	
Special Attention Areas	Pregnancy and potential pregnancy Asymptomatic individuals Breastfeeding Infants and children Medical and biomedical research Health screening Non-medical imaging Carers and comforters High dose techniques
Justification	Justification of the individual exposure Use of existing appropriate radiological information Alternative techniques
Radiation Protection	Diagnostic reference levels Dose Constraints Dose Optimisation Dose reduction devices and techniques Dose recording and dose audit General radiation protection Quality Assurance and Quality Control including routine inspection and testing of equipment Risk communication Use of radiation protection devices
Statutory Requirements and Non-Statutory Regulations	Regulations Non-statutory guidance Local procedures and protocols Individual responsibilities relating to exposures Responsibility for radiation safety Clinical audit

Table 2 Diagnostic radiology, radiotherapy and nuclear medicine

All Modalities	
General	Fundamentals of radiological anatomy
Factors affecting radiation dose	Dosimetry Fundamentals of clinical evaluation Identification of the individual being exposed
Diagnostic radiology	
General	Principles of radiological techniques Production of X-rays Equipment selection and use
Specialised Techniques	Computed Tomography: advanced applications Interventional procedures Cone Beam Computed Tomography Hybrid imaging
Fundamentals of Image Acquisition etc.	Optimisation of image quality and radiation dose Image formats, acquisition, processing, display, and storage
Contrast Media	Use and preparation Contraindications Use of contrast injection systems

Appendix 5: Learning Contract

This Learning Contract defines the agreement between the selected Assistant Practitioner, the Clinical Mentor and Line Manager in relation to the Assistant Practitioner's completion of Fluoroscopy in Operating Theatres work-based module.
The Line Manager will:

1. Identify a local Clinical Mentor who will provide guidance and supervision throughout the practical training.
2. Allocate the Assistant Practitioner an adequate allowance of clinical time and independent study time.

The Clinical Mentor will:

1. Be an experienced HCPC radiographer who is based in the Assistant Practitioners own clinical service.
2. Support the Assistant Practitioner in reflecting on the effectiveness of his/her clinical time.
3. Assess the Assistant Practitioners ability to undertake clinical work in Fluoroscopy to a satisfactory standard.

The Assistant Practitioner will:

1. Commit the necessary effort and time to undertake the course activities.
2. Complete the required competencies.
3. Undertake the clinical practice requirements of this module.
4. Plan and undertake appropriate action to meet personal learning needs required to develop knowledge and skills in Fluoroscopy in Operating Theatres.

Line Manager

Name	Date
Sign	

Clinical Mentor

Name	Date
Sign	

Assistant Practitioner

Name	Date
Sign	

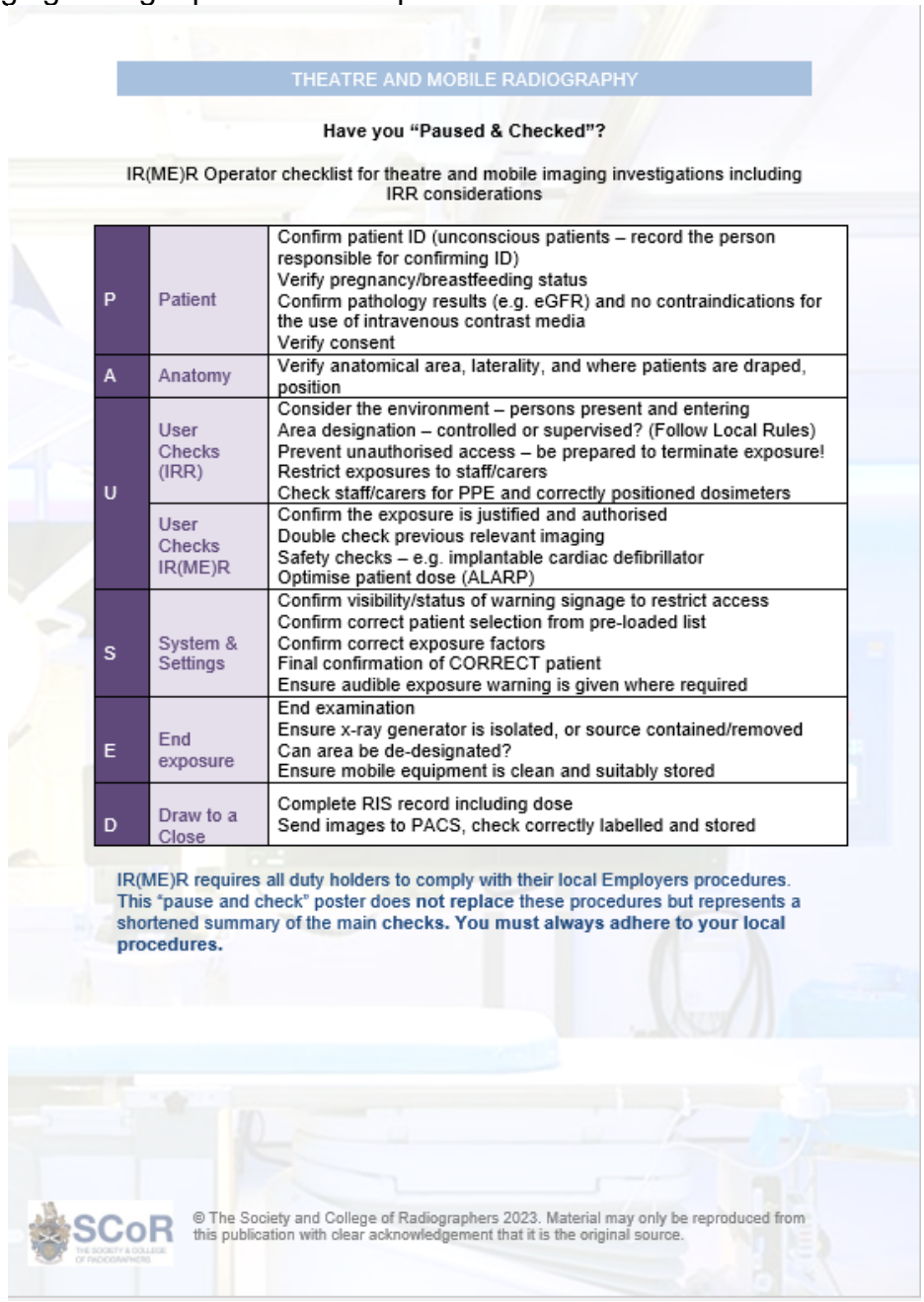
Appendix 6: Radiological Pause Sheet

Purpose

When in theatre the Assistant Practitioner is in charge of the radiation Controlled Area to ensure that the radiation safety of the patient and staff is maintained at all times. Prior to the procedure, appropriate checks must be carried out before commencing. At any point during the procedure the Assistant Practitioner may need to re-check any of these.

Procedure

The Assistant Practitioner will be allowed to carry out a radiological pause prior to commencing the use of x-ray imaging during a procedure or operation.



THEATRE AND MOBILE RADIOGRAPHY

Have you "Paused & Checked"?

IR(ME)R Operator checklist for theatre and mobile imaging investigations including IRR considerations

P	Patient	Confirm patient ID (unconscious patients – record the person responsible for confirming ID) Verify pregnancy/breastfeeding status Confirm pathology results (e.g. eGFR) and no contraindications for the use of intravenous contrast media Verify consent
A	Anatomy	Verify anatomical area, laterality, and where patients are draped, position
U	User Checks (IRR)	Consider the environment – persons present and entering Area designation – controlled or supervised? (Follow Local Rules) Prevent unauthorised access – be prepared to terminate exposure! Restrict exposures to staff/carers Check staff/carers for PPE and correctly positioned dosimeters
	User Checks IR(ME)R	Confirm the exposure is justified and authorised Double check previous relevant imaging Safety checks – e.g. implantable cardiac defibrillator Optimise patient dose (ALARP)
S	System & Settings	Confirm visibility/status of warning signage to restrict access Confirm correct patient selection from pre-loaded list Confirm correct exposure factors Final confirmation of CORRECT patient Ensure audible exposure warning is given where required
E	End exposure	End examination Ensure x-ray generator is isolated, or source contained/removed Can area be de-designated? Ensure mobile equipment is clean and suitably stored
D	Draw to a Close	Complete RIS record including dose Send images to PACS, check correctly labelled and stored

IR(ME)R requires all duty holders to comply with their local Employers procedures. This "pause and check" poster does not replace these procedures but represents a shortened summary of the main checks. You must always adhere to your local procedures.

SCoR

Figure 2 IR(ME)R operator checklist for theatre and mobile imaging investigations including IRR considerations

The Assistant Practitioner should record the information using the radiological pause label sheet to anonymously record the details of each case. These records will be retained within the radiological pause folder which will be kept in a designated area within the operating theatres.

Date	
CRIS Number	
Procedure	
Supervising Radiographer	
Assistant Practitioner	
Surgeon	
Anaesthetist	
Scrub Nurse	
Theatre Orderly	
Other	
Other	
Patient ID check	
Patient pregnancy check	
PPE check	

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Next Steps

- **A pilot of the theatre training package should be performed to assess the robustness of the content and identify areas for improvement. Once completed, audit of technical and clinical performance of AP's entitled as operators should be undertaken to ensure quality assurance. Feedback from APs and other multi-disciplinary team members should be collected and analysed to further improve training and services.**