Diagnostic Radiology Referral

Have you “Paused & Checked”?

An IR(ME)R Referrers checklist for referring a patient for a diagnostic imaging examination

P	**Patient**	Ensure correct patient (3-point ID) Ensure it is physically possible for the patient to undergo the examination (e.g. any mobility issues) Ensure patient understands and agrees to examination
A	**Anatomy**	Ensure correct body part/laterality specified
U	**User Checks**	Confirm most appropriate investigation and consider non ionising radiation alternative (use of iRefer/local referral guidelines) Check previous investigations Confirm timing of examination (is date required clear?) Ensure pregnancy/breastfeeding status is verified Ensure any special needs/interpreter/disabilities/mobility documented (eg hoist required?) Ensure implantable cardiac defibrillator devices documented Ensure allergies documented and appropriate pathology results are available where requested
S	**System & Settings**	Confirm correct examination (code) requested Confirm correct imaging modality selection Confirm relevant clinical information is adequate to enable the Practitioner to justify the examination Confirm relevant clinical information will assist in the evaluation of the study
E	**End**	Confirm entitled Referrer against IR(ME)R procedures – eg unique identifier/correct user login Final check that this is the CORRECT patient Confirm the above and submit request
D	**Draw to a Close**	Ensure you have received an evaluation of the examination Ensure the results are discussed with the patient Confirm whether further investigation is required

SCoR
THE SOCIETY & COLLEGE OF RADIOGRAPHERS

IR(ME)R requires all duty holders to comply with their local employer’s procedures. This ‘pause and check’ poster does **not replace** these procedures but represents a shortened summary of the main **checks. You must adhere to your local procedures at all times.**

Ionising Radiation Regulations

Update – February 2016

This update provides a number of useful links to information sources relating to the Ionising Radiation Regulations. It will also focus on you as a Referrer of patients for diagnostic imaging (excluding CT scans).

At the end of this update you will find a self-declaration of completion. Please can you sign this, keep a copy for your records and send one to your MSM. Please review this **annually** as CPD for your Appraisal (3 Hours).

The regulations are intended to:

- protect patients from unintended, excessive or incorrect medical exposures
- ensure the benefits outweigh the risk in every case
- make certain patients receive no more than the required exposure for the desired benefit, within technological limits

The regulations also apply to exposure as part of established health screening programmes, medical or biomedical, diagnostic or therapeutic research and those undertaken for medico-legal purposes.

Schedule 1 Employers Procedures (from http://www.sor.org/learning/document-library/irmer-2000-and-irme-amendment-regulations-2006/1-irmer-employer-s-procedures-schedule-1)

Correct identification (ID) of the individual to be exposed to ionising radiation

It is the responsibility of the operator (individual undertaking the medical exposure) to correctly identify the individual undergoing the medical exposure. It is advised that this is done by asking the patient the following questions to which there should be an active response:

- What is your name?
- What is your date of birth?
- What is your address?

In the cases where the answers to these questions match those on the source document (ie request card or prescription sheet), there should be a procedure to identify which operator has undertaken the patient ID (ie operator signature) and if there is more than one operator involved in the patient exposure, requiring two signatures, the procedure should state clearly which operator is responsible for the patient ID (ie first signature). The use of patient ID bracelets has come into question as there may be a case of mistaken identity when the ID bracelet was first put on (local procedures should be determined to avoid this happening).

There may be exceptions where it may not be possible or be more difficult for the patient to be directly identified for example:

- Inpatients v outpatients

- Mute or non-English speaking
- Unconscious
- Children
- Those patients unable to identify themselves but have a carer with them

Procedures for correct ID should be in place to cover these patient examples. The use of a family member as an interpreter for non-English speaking patients is not advised. In these circumstances, formal interpreter services should be used.

Patient ID checks must be performed prior to each medical exposure or set of medical exposures.

Identify individuals "Entitled to act as referrer, or practitioner or operator"

A note about "Entitlement"

The IR(ME)R Employer has the legal responsibility for entitling individuals to act as one or more of the three duty holder roles of referrer, practitioner and operator. Being entitled by the Employer, means that permission has been given to act, in compliance with the Regulations, according to the specific responsibilities of a duty holder role. There must be a documented entitlement process within the Employer's procedures, that details the mechanism through which an individual becomes entitled. A specific process for checking that an individual is "adequately trained" is required before entitlement can be given to act as practitioner and / or operator. The scope of practice of an entitled individual should also be specified with procedure.

Referrers

The Referrer must be a registered healthcare professional (a person who is a member of a profession regulated by a body mentioned in section 25(3) of the National Health Service Reform and Health Care Professions Act 2002). Decisions on who is entitled to act as a referrer should be taken at local level by agreement between the Employer and the healthcare professionals involved in medical exposures. The Employer is required to make referral criteria available to all referrers.

A comprehensive named and entitled list of all non-medical referrers should be kept in all areas within the radiology department (and kept up-to date by a person designated by the Employer) – this enables the radiographer to check that they are authorised to request. The referrer is required to provide sufficient clinical information in order that the practitioner may make a decision about justifying the medical exposure.

In radiotherapy, the referral must include as a minimum details of the tumour diagnosis, histology, clinical findings and staging examinations. For referral to radiotherapy planning, the Employer should define appropriate referral criteria which would normally include histology reports and some diagnostic imaging. This might be different in the case of an emergency referral such as cord compression where histology might not be appropriate. A local procedure should make allowances for emergency patients or particular national guidelines. Referral criteria also need to be in place for verification images.

SCoR Guidance

Although it is not a legal requirement within the Regulations that medical / non-medical referrers are trained, it is normal practice that radiology departments require them to attend radiation protection / IR(ME)R awareness training prior to being entitled to act as referrer. Guidance has been written by SCoR and other professional bodies (RCN, 2008) to help those non-medical healthcare practitioners (including radiographers) registered with a healthcare regulatory body who wish to take on the role of IR(ME)R "Referrer" within a clinical imaging department.

SCoR Guidance - Electronic referrals

There may be some radiology management systems (RMS) / radiotherapy verification systems that allow electronic IR(ME)R referrals. The referrer's signature is normally their individual log on ID (name or code) and the sharing of usernames and passwords must be strictly prohibited.

The SCoR Information Management and Technology (IM&T) Group have provided the following advice by way of helping to ensure that the use of a Radiology Management System (RMS) / Radiotherapy Verification system (known as "system") can provide a safe and robust IT system to aid in electronic image requesting / radiotherapy referral:

- there must be a facility for recording the priority of the request
- the system must contain features, which provide the implementation and monitoring of compliance with the IR(ME)R. The system must capture all necessary data items necessary to comply with the Regulations
- the system must provide a field for authorisation of examination / treatment procedures by the IR(ME)R Practitioner/operator
- the system should be able to provide appropriate information regarding LMP dates / pregnancy status
- there must be a facility, supported by a drop down box (or comments box), which allows the user to indicate why a request / referral has not been justified / refused
- the system administrator must be able to define the appropriate IR(ME)R roles (referrer, practitioner and operator) for all users and all examination combinations to conform to local IRMER procedures
- the system needs to include an up-to-date register of referrers with their current Registration details
- the RMS must implement appropriate permissions at all stages of the requesting/appointing/imaging/reporting process (diagnostic only)
- the RMS must be able to produce IRMER audit reports to demonstrate compliance (diagnostic only
- the RMS must record the electronic 'sign off' of reports in order that an audit trail can be detailed which confirms that clinicians have received reports (diagnostic only).

Practitioners

The Practitioner must be a registered healthcare professional (ie a person who is a member of a profession regulated by a body mentioned in section 25(3) of the National Health Service Reform and Health Care Professions Act 2002). The practitioner must be entitled by the Employer and may be based on the type of medical exposure / radiotherapy treatment and on specific circumstances. It may be appropriate to agree that certain non-medical health professionals can act as a practitioner for diagnostic / radiotherapy procedures depending on the complexity of the examination/treatment.

In clinical imaging, practitioners are normally radiologists, specialist registrars, radiographers, ARSAC certificate holders (in nuclear medicine) and dental practitioners for intra-oral or panoramic dental radiology. In radiotherapy, practitioners are normally clinical oncologists and specialist registrars / radiographers for certain procedures. The practitioner must be "adequately trained", as detailed in Schedule 2 of the Regulations, to undertake the role. The primary responsibility of the practitioner is to justify medical exposures: to do this the request must be assessed using the clinical data supplied by the referrer.

Justification is the process of balancing the potential benefit of the exposure against the potential detriment from the exposure to that individual in making a decision in the best interests of the individual. This requires the practitioner to have a full knowledge of the potential benefit and detriment associated with the medical exposure under consideration.

SCoR Guidance

The requirements of Schedule 2 of IR(ME)R are largely addressed by specific professional qualifications and experience. The exception to this may be where individuals undertake functions associated with role development and extension, in which case the contents of Schedule 2 must be addressed and evidence of this should be available before entitlement is extended.

The Employer should specify the scope of practice for which an individual can act as practitioner. In the case of radiographers this may mean justification for all plain film and some CT procedures or for radiotherapy: planning/verification exposures. Training must be provided when equipment changes or when new techniques or protocols are introduced. All training records must be written and kept up to date.

Concomitant doses in radiotherapy

Concomitant exposures are defined as all exposures within a course of radiotherapy other than the treatment exposures. These will include simulation, check simulation, computed tomography (CT) localisation and portal localisation and verification images (when these are additional to the treatment exposure).

The IR(ME)R practitioner responsible for the treatment exposures can justify the concomitant exposures at the outset or during the radiotherapy course, but in doing so must be aware of the likely exposures and the resulting dose so that the benefit and detriment can be assessed. This can be achieved by including likely concomitant exposures within site specific protocols with a total effective dose agreed. The IR(ME)R practitioner for the treatment exposures need not be the same practitioner for the concomitant exposures.

The practitioner, therefore, should be aware of the concomitant doses received by the patient as part of a course of radiotherapy in order to make that judgement. This could be achieved through written site specific protocols that include doses for concomitant exposures and limits to those exposures. This will be department specific according to the localisation and imaging procedures.

Females of childbearing age - to establish whether the individual is or may be pregnant or breastfeeding

Clinical imaging and radiotherapy can cause damage to an unborn child (fetus), therefore it is essential that the pregnancy status is determined prior to any relevant medical exposure. Radiation risks are related to the stage of the pregnancy and the absorbed dose to the fetus.

Diagnostic Radiography

A jointly authored updated guidance booklet entitled “Protection of Pregnant Patients during Diagnostic Medical Exposures to Ionising Radiation” (2009) written by HPA, SCoR, and RCR about patients of childbearing age is essential reading for all diagnostic radiographers.

SCoR Guidance

The IR(ME)R procedure should be aimed at all females of childbearing age for X-ray examinations between the diaphragm and knees, for radionuclide imaging studies and radiotherapy treatment. The age guidance is normally set between 12 and 55 years (this is the standard usually employed although it is not legally enforceable) but a local procedure should be in place for dealing with the sensitive issue of potential pregnancy with younger female patients (ie from 9 years of age) and for

female patients who are unconscious. Flow chart examples for diagnostic radiography (conscious and unconscious patients) are detailed in the Appendix.

Firstly, it is the responsibility of the referrer to investigate the pregnancy status of females who are to be referred for medical exposure using ionising radiations. The "pregnancy status" must be written on the request card. It is the responsibility of the operator to again check the pregnancy status before the examination / treatment. If more than one member of staff is involved in the medical exposure, the operator who initiates the exposure must be certain that the procedure for the investigation of pregnancy status has been carried out. Notices should be displayed in the clinical imaging / radiotherapy department requesting patients that they inform staff if they are, or might be, pregnant.

Limitations of pregnancy testing

Due to the potential for a high rate of false negatives achieved during early pregnancy, the use of pregnancy testing with a subsequent negative result should not be considered as conclusive evidence that a patient is not pregnant.

SCoR Guidance

Therapeutic Radiography

See also guidance for diagnostic radiography. Often a pregnancy status check in radiotherapy aims to cover the entire radiotherapy process in order that the patient is not repeatedly asked about their pregnancy status. However, there must be some consideration given to the timing of the declaration as there may be a significant time period between declaration and localisation/treatment that the pregnancy status may have changed. Local policies must take into account any potential for change.

There must be documented evidence that a discussion has taken place regarding pregnancy which must be available for staff to check/refer to. It is advised that all women of child bearing age should sign a pregnancy status form to confirm that they are not pregnant, before their first exposure.

The majority of patients receiving external beam radiotherapy will require localisation therefore the "Pregnancy Flow Chart" for diagnostic procedures (Appendix) may be followed if it is necessary to re-check the pregnancy status of patients.

Prior to delivery of radiotherapy, staff must be confident that a patient is not pregnant and should not assume that if a patient was not pregnant at localisation, they will not be pregnant at treatment. A declaration either as part of the consent process or undertaken separately should be verified taking into account the date of consent/declaration. Local procedure should provide specific detail on the "pregnancy status checking" procedures. There should be a procedure if a patient informs an operator that she has become pregnant during treatment – in the first instance, no further treatment should be given until the clinical oncologist has been informed who will then decide with the patient, the efficacy of further radiotherapy (liaising with the Medical Physics Expert as necessary).

Delivering Radiotherapy to a Pregnant Patient – SCoR Guidance

A pregnant patient requiring external beam radiotherapy must be fully aware of the potential risks to the fetus and consent to treatment prior to any intervention being undertaken must be verified.

It is essential that a full risk assessment involving the clinician, therapeutic radiographers / dosimetrists and the medical physics expert is undertaken, the aim of which is to estimate the dose to the fetus and to determine whether the dose can be reduced through modifications to the treatment plan / shielding.

Prior to the pregnant patient starting treatment phantom measurements must be undertaken with and without shielding. The treatment plan should be reviewed to determine whether any modifications would reduce the dose to the fetus.

Shielding to the abdomen to minimise the dose further might be required, the design of which will be specific to the individual patient. It is essential that the shielding is safe and robust. During treatment, dosimetric measurements could be obtained to confirm the dose to the fetus (vaginal vault) and other areas as required. There must be a record of the shielding configuration and dosimetry results.

SCoR Guidance (not relating to IR(ME)R) - Fertility following examinations

Nuclear Medicine
Male patients should not father a child for up to 6 months after their radioiodine therapy date and this advice must be included in the radioiodine therapy information leaflet that is given to all patients.

Therapeutic Radiography
The issue of fertility should be discussed between the clinician and patient before radiotherapy procedures are begun; patients may, if there is a risk of infertility, wish to have eggs or sperm banked before commencing treatment.

Procedures to ensure that the probability and magnitude of accidental or unintended doses are reduced as far as possible

Regulation 4(5) requires the Employer to carry out investigations of incidents and appropriate reviews. All departments should have procedures in place to deal with this locally (eg independent dose checks, reporting or error procedures).

SCoR Guidance

Patients who undergo an examination/treatment that was not intended, due to mistaken identity or other procedural failure and were consequently exposed to radiation should be considered as having received an unintended dose of radiation, in which case an Incident/ Near Miss Report Form 1 should be completed.

Radiotherapy
Misidentification of a patient or dataset used for treatment delivery should be reported to the appropriate authority. The importance of reporting and learning from errors and near misses is discussed in the guidance document "Towards Safer Radiotherapy" written by SCoR, RCR, IPEM, BIR, HPA & NPSA (2008) The publication is available via: http://doc-lib.sor.org/listtitles?page=2

A must read document with your focus as the referrer

- Read the Implications of IRMER at https://www.rcr.ac.uk/sites/default/files/bfcr152_irmer.pdf

Further interesting reading:

The Ionising Radiation (Medical Exposure) Regulations (IRMER) were published in 2000 and a number of amendments were subsequently made in 2006 and 2011. These can be found at the Office for Public Sector Information's website.

- Read the 2000 IRMER regulations

- Read the 2006 IRMER amendment regulations
- Read the 2011 IRMER amendment regulations

You will only work as a referrer of diagnostic test (not including CT scans) and p21 of the above implications document makes it clear that there is no legal requirement for formal training. However, it will be good for record keeping adding the following self declaration to your CPD diary and Appraisal. This is evidence of how you annually keep your skills as Diagnostic Referrer up to date.

I Dr..... have read this IRMER update and the 'Implications of IRMER' document and have taken note of the Regulations and amendments.

I understand how to be a safe referrer and noted the information that I need to provide to ensure patient safety and correct referral.

Signature

Date

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