IONISING RADIATION POLICY
(for the Safe Use of)

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<th>Document Author</th>
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<tr>
<td><strong>Written By:</strong> Radiation Medical Expert</td>
<td><strong>Authorised By:</strong> Chief Executive</td>
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<tr>
<td>Date: 1 April 2015</td>
<td>Date: 5 October 2015</td>
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<td><strong>Lead Director:</strong> Consultant Radiologist</td>
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<tr>
<td><strong>Effective Date:</strong> 5 October 2015</td>
<td><strong>Review Date:</strong> 4 October 2018</td>
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<td><strong>Approval at:</strong> Trust Executive Committee</td>
<td><strong>Date Approved:</strong> 5 October 2015</td>
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*Document will need to be reviewed immediately post organisational change to ensure descriptive titles and responsibilities described within are in line with the new structure.*
### DOCUMENT HISTORY

(Procedural document version numbering convention will follow the following format. Whole numbers for approved versions, e.g. 1.0, 2.0, 3.0 etc. With decimals being used to represent the current working draft version, e.g. 1.1, 1.2, 1.3, 1.4 etc. For example, when writing a procedural document for the first time – the initial draft will be version 0.1)

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<th>Date of Issue</th>
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<th>Director Responsible for Change</th>
<th>Nature of Change</th>
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NB: This policy relates to the Isle of Wight NHS Trust hereafter referred to as the Trust.
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1. EXECUTIVE SUMMARY

The following document is designed to ensure compliance with 'The Ionising Radiations Regulations (1999)' and 'The Ionising Radiation (Medical Exposure) Regulations 2000' (IRMER). The requirements of the legislation must be addressed and adopted by organisations responsible for facilities that provide radiological investigations. There is a proactive inspection by the Health & Safety Executive.

The IRMER regulations have a significant implication for clinical working practices. The regulations define four duty holders: 'Employer', 'Referrer', 'Practitioner' and 'Operator'. The responsibilities of these duty holders are clearly set out in the regulations.

This policy is a merger of two documents listed below to provide one central document to review and update as required

a) IW NHS Trust Policy for the Safe Use of Ionising Radiations

- Describes how ionising radiation is to be used safely throughout the Trust and by other organisations using Trust property.

- A common policy has been sought for organisations, which the Radiation Protection Adviser is responsible to ensure consistency of medical exposures to which patients are being subjected.

- Members of the Radiation Protection Committee, Operational Board and Trust Board have approved this policy in 2001.

b) Employer's Procedures for Medical Exposures

- The Ionising Radiation (Medical Exposure) Regulations 2000, Regulation 4(1) require that every employer who “carries out, or engages others to carry out, medical exposures or practical aspects”, establishes written procedures for medical exposures.

- Schedule 1 of the regulations lists the procedures that are specifically required by the legislation but the accompanying guidance states that these are the minimum requirement.

- The IR(ME)R 2000 regulations place a duty on the employer to ensure compliance with these procedures.

- Although the responsibilities of the employer can not be delegated, within the Trust, the duties of the employer are delegated to the Lead Clinician in Diagnostic Imaging, Diagnostic Imaging Services Manager and the Radiation Protection Committee.

- There is a requirement that compliance with the procedures is audited and that the procedures are reviewed to identify any necessary amendments.

- Each procedure will have a footer that includes the issue date.

- The Diagnostic Imaging Services Manager will issue updated versions of individual procedures to the Clinical Standards Group (CSG) and Medical Director as and when the procedures are reviewed and amended.

- There are three addenda to this document:
  - list of Referrers
  - list of Practitioners
  - list of Operators
2. INTRODUCTION

2.1 This policy concerns the safe use of ionising radiations at premises owned or managed by the Trust.

2.2 It states policy, arrangements and responsibilities for the Trust and for other organisations approved by the Trust to use ionising radiations on its premises or within the geographical boundaries of the Trust (the "Approved Organisations").

2.3 Approved Organisations are:

Emergency Dental Service EDS and other bodies which may be approved from time to time by the Chairman of the Radiation Protection Committee.

3. SCOPE

3.1 The policy applies to all registered Medical Practitioners, Dental Practitioners or other Health Professionals that are entitled in accordance with the Trust’s Expanded Professional Practice Development Package Version 2 to refer individuals for medical exposure.

4. PURPOSE

4.1 To ensure compliance with Background IR(ME)R Regulations 2000 and IRR 99 Regulations.

5. DEFINITIONS

5.1 Employer: In the context of the Ionising Radiation (Medical Exposure) Regulations 2000, the Employer is considered to be Isle of Wight NHS Trust. If the Trust contracts a third party to provide services then the Trust will be the Employer as regards the Operators for the purpose of the Regulations, but the third party is the Employer of the Operators for employment law purposes.

Equipment ownership has no impact on the Employer responsibilities under these Regulations.

5.2 Operator: The Operator is any person who is entitled, in accordance with the Trust’s written procedures, to undertake the practical aspects of a medical exposure and is adequately trained. Operators may include Radiographers, Doctors, Dentists, Medical Physicists, Medical Physics Technicians and Assistant Practitioners.

5.3 Practitioner: The Practitioner is a registered Medical Practitioner, Dental Practitioner or Radiographic Practitioner. Other health professional who may be entitled in accordance with the Trust’s written procedures to take responsibility for an individual medical exposure. The primary responsibility of the Practitioner is to justify medical exposures.

The Practitioner may also undertake practical aspects of an exposure and so becomes an Operator with regard to these specific functions.

5.4 Referrer: The Referrer is a registered Medical Practitioner, Dental Practitioner or other health professional who is entitled in accordance with the Employer’s procedures to refer individuals for medical exposure to a Practitioner.
6. **ROLES AND RESPONSIBILITIES**

6.1 The Chief Executive is ultimately responsible for ensuring implementation and compliance of this policy.

6.2 The Workforce Director is responsible for ensuring that training records for those employees authorised to act as ‘Operators’ or ‘Practitioners’ are maintained. (The Lead Clinician of Diagnostic Imaging and Diagnostic Imaging Services Manager will authorise roles).

6.3 The Clinical Director will authorise those non-medical staff able to refer patients, or other persons, for exposure to ionising radiations.

6.4 The Director of Medical Physics & Bioengineering (University Hospital Southampton) will ensure the appointment of ‘Medical Physics Experts’ as required by legislation in the areas where ionising radiations are used for diagnostic and therapeutic purposes.

6.5 Medical Workforce / Lead Clinicians and Care Centre Managers / Diagnostic Imaging will maintain an up-to-date record of those medical staff authorised to refer patients for exposure to ionising radiations and ensure an updated copy is sent to Diagnostic Imaging.

6.6 The Lead Clinicians / Directorate Managers / Personal Dental Service Manager / Heads of Approved Organisations are responsible for implementing this policy. The Lead Clinician in Diagnostic Imaging should be consulted for advice when changes are made that might affect the safe use of ionising radiations.

6.7 The Chief Executive Officer (CEO) is responsible for ensuring compliance of the written procedures set out in Appendix C. Failure to comply with any of these procedures may be considered a disciplinary matter. However, an employee may justify deviating from a procedure if it is in the best interests of a patient or on grounds of health and safety.

6.8 The Diagnostic Imaging Services Manager will be responsible for distributing up-to-date copies of relevant procedures to Lead Clinicians and General Managers.

6.9 Lead Clinicians and Directorate Managers are responsible for ensuring all members of staff within the Directorates are aware of the procedures to be followed.

6.10 The Lead Clinician of Diagnostic Imaging responsible for the provision of techniques using ionising radiations must ensure that these are undertaken in accordance with written protocols and subject to a programme of quality assurance.

6.11 All medical staff may refer patients for investigation and/or treatment provided sufficient clinical data is given.

6.12 Other non-medical healthcare professionals may be authorised to refer patients for investigation when signed off to do so by Clinical Standards Group / New Procedures Group (refer to Advanced Practice policy).

6.13 The Lead Clinician in Diagnostic Imaging and others within the department will satisfy themselves of the arrangements that individual non-medical healthcare professionals can provide adequate clinical data and be able to act upon the information or report issued.

6.14 The Lead Clinician in Diagnostic Imaging and Manager of Personal Dental Services will maintain an up-to-date list of those groups of medical staff and named non-medical healthcare professionals, both within and outside of the Trust who are able to refer patients to their Department for investigation.
6.15 The Lead Clinician in Diagnostic Imaging and Diagnostic Imaging Services Manager, Manager of Personal Dental Service and Head of Approved Organisations responsible for the provision of techniques using ionising radiations will authorise and maintain a record of those able to act as "Practitioners" and "Operators" and ensure they have received or are appropriately trained. A clinical Radiologist / Radiographer Practitioner is a "Practitioner" by virtue of professional training and will justify exposures of radiation within scope of competence. Other healthcare professionals (medical and non-medical) may act as "practitioners" provided suitable training has been provided.

6.16 A clinical Radiologist / Radiographer Practitioner are able to act as "Operators". Exceptionally other medical and non-medical healthcare professionals may act as "Operators" given relevant training.

6.17 Lead Clinician in Diagnostic Imaging responsible for the provision of techniques using ionising radiations where a patient receives a medical exposure, will ensure that arrangements are in place for the evaluation of each exposure used for diagnostic purposes and a record made of that evaluation.

6.18 Where an exposure of radiation is used as an aid to a clinical or surgical procedure, no formal evaluation is required. However, a note shall be made that the person received an exposure of radiation.

6.19 The Radiation Protection Adviser(s) shall be available to all employees of the Trust and Approved Organisations and provide appropriate advice and have the responsibility of maintaining awareness of current and likely future matters concerning the safe use of ionising radiations. The Radiation Protection Adviser(s) will provide information on the maintenance of records to fulfil statutory obligations.

6.20 The Chairman of the Radiation Protection Committee has the responsibility for calling regular meetings of the Committee. Matters of concern relating to ionising radiations should be reported to the Quality, Risk and Patient Safety Committee and / or to the Chief Executive. Any member of this committee may raise concerns about any aspect of Radiation Protection.

6.21 Radiation Protection Supervisors have the responsibility for monitoring all aspects of radiation safety within their jurisdiction and shall attend meetings or training courses as appropriate. Radiation Protection Supervisors will initiate the development of "local rules" and "systems of work" within their area of responsibility.

6.22 Lead Clinician in Diagnostic Imaging and Manager of Personal Dental Service and Heads of Approved Organisations will be responsible for supplying information and maintaining records in order for the Trust to comply with statutory regulations.

6.23 The "Operator" is responsible for each and every practical aspect of their duty.

6.24 The "Operator" is responsible for ensuring the typical Diagnostic Reference Level (DRL) is not exceeded for each medical exposure and that radiation dose to the patient for each investigation is recorded.

6.25 No employee shall refer a patient or other person for an exposure of ionising radiation unless they have been authorised to undertake such duties by prior arrangement and agreement.

6.26 No employee shall operate or make practicable arrangements in order to affect the exposure of a patient or other persons to ionising radiations unless they have prior authorisation and have received appropriate training.
6.27 All employees have the responsibility of complying with statutory obligations, this policy, "local rules" and "systems of work" which have been drawn up in accordance with risk assessments.

6.28 Employees involved in procedures using ionising radiations must inform Occupational Health in writing when a pregnancy is confirmed, or where breast feeding is being undertaken and their work involves using radioactive materials so that appropriate monitoring and, if necessary, change of duty can be considered. The Manager of Occupational Health will liaise with the relevant Superintendent Radiographer in consultation with the relevant Radiation Protection Adviser to consider revised possible changes in duties or other monitoring arrangements.

6.29 All employees must report adverse incidents to their line manager and, if appropriate, inform the Radiation Protection Adviser(s) direct, in addition to completing a Radiation Incident Form and a Trust Incident Form.

6.30 All employees who are designated "Classified" under the Ionising Radiations Regulations (2000) will be required to present themselves to an Appointed Doctor for assessment of fitness before starting employment and at specified intervals thereafter. No Classified Worker will be permitted to work in a Controlled Area unless their health record has currently been endorsed fit by the Appointed Doctor. (Presently not applicable - no Classified workers)

7. POLICY DETAIL/COURSE OF ACTION

7.1 It is the policy of the Trust to ensure arrangements are effected which provide for the safety of patients, staff, the general public and the environment whilst using ionising radiations for the purposes of diagnosis and research.

7.2 The Trust shall comply with all statutory obligations relating to the use of ionising radiations (see Appendix A for current list).

7.3 The Trust will minimise the use of ionising radiations and will use alternative techniques wherever reasonably practicable.

7.4 The Trust will seek prior authorisation and/or notification with regulatory bodies for the introduction or change of use of ionising radiations as required by legislation.

7.5 The Trust will make proper provision and maintenance of equipment associated with the measurement, use and production of ionising radiations.

7.6 The Trust will develop a process for establishing diagnostic reference dose levels for each procedure using ionising radiations on patients or volunteers and make provision for the measurement of the radiation dose for relevant investigations.

7.7 Employees of the Trust and other Approved Organisations will be required to adhere to the arrangements made under this policy and to ensure that operational aspects minimise the hazards and risks associated with the use of ionising radiations both to themselves, patients and the general public.

7.8 Employees of the Trust and other Approved Organisations shall receive training to enable them to perform their duties and associated responsibilities in a safe manner.

7.9 Employees of the Trust and other Approved Organisations are required to cooperate and thereby minimise the possibilities of untoward incidents and inappropriate, inefficient or ineffective use of ionising radiations.
7.10 Implementation of this policy will be made by each Directorate / Personal Dental Service or Approved Organisation and the associated costs met by these bodies.

7.11 The Trust will ensure that all employees concerned with the application or use of ionising radiations shall be appropriately qualified or have received relevant training. This training will be documented in Personnel records and collated centrally.

7.12 The Trust will ensure that patients or other persons exposed to ionising radiations receive appropriate information.

7.13 The Trust shall appoint accredited Radiation Protection Adviser(s) and provide facilities and managerial arrangements to enable their duties to be performed. The Trust shall receive and consider advice on the safe use of ionising radiations in accordance with statutory obligations.

7.14 The Radiation Protection Adviser(s) shall be available to all employees, Lead Clinicians / Directorate Managers / Personal Dental Service Manager and Approved Organisations for the purposes of giving advice, and shall inform the Trust on the status of radiation safety within the Trust.

7.15 The Radiation Protection Adviser(s) must be consulted in advance on matters concerning plans for use or change of use of ionising radiations, maintenance of related facilities and equipment, and protection arrangements relating to all persons.

7.16 The Trust shall constitute appropriate meetings for the discussion of radiation safety matters. A Radiation Protection committee shall meet at least once per annum. The Radiation Protection Committee shall consist of an appointed Chairman (the Lead Clinician representing Diagnostic Imaging), Radiation Protection Adviser(s), Diagnostic Imaging Services Manager, Radiation Protection Supervisors, Medical Director, Head of Clinical Governance, Health & Safety Manager and others concerned with the safe use of ionising radiations (see section 5.20).

7.17 A representative from each Approved Organisation may be invited to attend (see Appendix B).

7.18 The Diagnostic Imaging Services Manager, Personal Dental Service Manager and Heads of Approved Organisations will appoint in writing Radiation Protection Supervisors taking into account advice of the Radiation Protection Adviser.

7.19 The Radiation Protection Adviser(s) and Diagnostic Imaging Services Manager shall convene meetings of the Radiation Protection Supervisors to discuss matters of radiation safety.

7.20 In order to effect safe working practices "risk assessments", "local rules" and "systems of work" will be written in accordance with statutory obligations and prior to the use or change in work activity using ionising radiations.

7.21 Risk assessments will be used providing the information for the setting of dose constraints for employees and also for members of the general public who may be acting as comforters and carers.

7.22 The Trust will set radiation dose constraints for research using ionising radiations where an individual will receive no direct benefit.
8. TRAINING

8.1 The Trust will ensure that all employees concerned with the application or use of ionising radiations shall be appropriately qualified or have received relevant training. UK and European trained clinicians should have IRMER training as part of their medical course. Overseas will need to demonstrate an awareness of UK legislation or undertake local training once appointed. This training will be documented in Personnel records and collated centrally.

9. MONITORING COMPLIANCE AND EFFECTIVENESS

9.1 The Radiation Protection Adviser(s) will assist the Trust to monitor compliance with statutory regulations in respect of the management and practical arrangements for radiation safety; radiation safety checks of equipment; radiological assessment of new techniques or installations; exposure of staff, general public and patients to ionising radiation; radiation incidents. The Radiation Protection Adviser(s) will report to the Radiation Protection Committee and other relevant committees on matters concerning radiation safety.

9.2 The Workforce Director of the Trust and equivalent within the Approved Organisations will make arrangements to ensure that all employees, upon taking up their appointment or additional duties and acting as a "Practitioner" or "Operator", can provide documented evidence of the training received and qualifications gained relevant to the use of ionising radiations within the requirements of the post. Those employees administering radiopharmaceuticals to humans will be required to hold the relevant licence(s) issued by the Department of Health (Administration of Radioactive Substances Advisory Committee).

9.3 The RPA and/or Diagnostic Imaging Services Manager will make arrangements for the annual audit of relevant records maintained within Departments and report to Quality Risk and Patient Safety committee on compliance.

10. LINKS TO OTHER ORGANISATION POLICIES / DOCUMENTS

- New Clinical Procedure, Intervention or Technique or an Expanded Practice Policy

11. REFERENCES

- The Medicines Act 1968
- The Medicines (Administration of Radioactive Substances) Regulations 1978
- Ionising Radiations Regulations 1999 (IRR 1999)
- Ionising Radiation (Medical Exposures) Regulations 2000 (IRMER 2000)
- Ionising Radiation (Medical Exposures) Regulations Amendment 2006 (IRMER(A) 2006)
- Ionising Radiation (Medical Exposures) Regulations Amendment 2011 (IRMER(A) 2011)
- Radioactive Substances Act 1993 (RSA 1993)
- Environmental Permitting Regulations 2010 (EPR10)
APPENDIX A

LEGISLATION APPLYING TO SAFE USE OF IONISING RADIATIONS FOR MEDICAL USE

- The Medicines Act 1968
- The Medicines (Administration of Radioactive Substances) Regulations 1978
- Ionising Radiations Regulations 1999 (IRR 1999)
- The Units of Measurement Regulations 1986 (SI 1986 No. 1082)
- Ionising Radiation (Medical Exposures) Regulations 2000 (IR(ME)R 2000)
- Radioactive Material (Road Transport) Act 1991
- Radioactive Substances Act 1993 (RSA 1993)
## RADIATION PROTECTION COMMITTEE MEMBERSHIP 2015

| Joint Chair | 
|---|---|
| **Diagnostic Imaging and Service Manager** | **Consultant Radiologist** |
| Diane Adams | Dr Will King |
| **Radiation Protection Adviser (RPA)** | **Laser Protection Adviser (LPA)** |
| Ben Johnson, University Hospital Southampton | Clare Joy, University Hospital Southampton |

### Assistant Director Health & Safety and Security

Connie Wendes

### Clinical Lead Superintendents

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<td>Radiology</td>
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<th><strong>Representation for Lasers</strong></th>
<th><strong>Representation for Personal Dental Services</strong></th>
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Minutes of the Meeting are sent to Directorate Board and Quality Risk and Patient Safety Committee
APPENDIX C

PROCEDURES TO BE OBSERVED FOR MEDICAL EXPOSURES

A to identify correctly the individuals to be exposed to ionising radiation
B to identify individuals entitled to act as Referrer or Practitioner or Operator
C to be observed in the case of medico-legal exposures
D for making enquiries of females of childbearing age to establish whether the individual may be pregnant or breastfeeding
E to be followed in the event of pregnancy status being positive or unknown
F to ensure that quality assurance programmes are followed
G for the assessment of patient dose and administered activity
H for the use of diagnostic reference levels established by the employer for radio diagnostic examinations falling within regulations 3(a), (b), (c) and (e), specifying that these are expected not to be exceeded for standard procedures when good and normal practice regarding diagnostic and technical performance is applied.
I for determining whether the Practitioner or Operator is required to effect one or more of the matters set out in regulation 7(4) including criteria on how to effect those matters and in particular procedures for the use of dose constraints established by the employer for biomedical and medical research programmes falling within 3(d) where no direct medical benefit for the individual is expected from the exposure.
J for the giving of information and written instructions as referred to in regulation 7(5).
K for carrying out and recording of an evaluation for each medical exposure including, where appropriate, factors relevant to patient dose
L to ensure that the probability and magnitude of accidental or unintended doses to patients from radiological practices are reduced so far as reasonably practicable
M for justification and authorisation of medical exposures
### DEPARTMENT OF DIAGNOSTIC IMAGING
Ionising Radiation (Medical Exposure) Regulations

### PROCEDURES

**PROCEDURE A**

<table>
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<td><strong>Reference Documents:</strong> Ionising Radiation (Medical Exposure) Regulations 2000</td>
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<tr>
<td><strong>Responsible persons:</strong> Operators - Radiologists, Radiographers, Assistant Practitioners and Dental Practitioners as defined in the IR(ME)R 2000 and according to Employer’s Procedures.</td>
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<td><strong>AIM:</strong> To correctly identify the individual patient for whom the medical exposure has been justified</td>
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**PROCEDURE:**

Prior to the procedure/examination, the Radiologist/Radiographer (in the role of Operator) must ask patients to state their full name, date of birth and address.

**Incapable Patient:** If the patient is incapable of confirming their own identity, identification must be confirmed by both wristband and accompanying personnel (see Standard Operating Procedure)

**Foreign Patients:** In the absence of an accompanying person, use crib cards or local interpreter if possible or contact Switchboard for an interpreter service.

**Unknown Identity:** If the identity of the patient is unknown in the cases of trauma, the unique identification number on the wristband/case card provided by the Emergency Department must be used until the real patient details can be obtained. This will either be an IW number or a unique U number.

**Theatre Patients:** If the patient is sedated or anaesthetised, check the wristband or ask the surgeon/nurse in charge to confirm the patient was correctly identified following operating theatre procedures prior to being sedated or anaesthetised.

**Records:** The method used for identifying the patient must be recorded in the Radiology Information System (RIS).

Produced by: Diagnostic Imaging  
Revised: May 2015  
Reviewed: May 2017
### PROCEDURE B

To identify individuals entitled to act as Referrer/Practitioner/Operator

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<th>Reference Documents: Ionising Radiation (Medical Exposure) Regulations 2000</th>
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**AIM:** This procedure is intended to ensure that Referrers, Practitioners and Operators are identified and that referrals are not accepted from any other personnel.

### INTRODUCTION:

**REGULATION 11 or IR(ME)R 2000: ENTITLEMENT TO ACT**

Decisions on who is to entitle to act as a Referrer, Practitioner or Operator are taken at local level by agreement between the Employer and Healthcare Professionals involved in delivering medical exposures.

### PROCEDURE B: Definitions of Duty Holders:

**REFERRERS:** Entitled to refer individuals for a medical exposure to a Practitioner

**Primary Duty Holders:** Medical staff (Doctors, General Practitioners (GP) and General Dental Practitioners (GDP))

*Must be able to provide sufficient, accurate clinical information to enable the Practitioner to justify the examination. Referrers should discuss requests not covered by the normal referral criteria with a Practitioner.*

Also: Health Professionals authorised by the Trust (see Appendix F for staff groups and constraints)

**PRACTITIONERS:** Entitled to take responsibility for an individual exposure

**Primary Duty Holders:** Radiologists/Radiographer Practitioners employed by the Trust

*Reg 6 – JUSTIFICATION:* Every medical exposure to radiation must be justified by a Practitioner showing net benefit, giving appropriate weight to the benefits against the risks the exposure may cause and use of alternative techniques involving no or less exposure. The Practitioner will produce guidelines to enable operators to authorise exposures.

**OPERATORS:** A person entitled to carry out practical aspects of a medical exposure and who is able to authorise an exposure against Practitioners’ guidelines.

**Primary Duty Holders:**

- **CATEGORY A:** Radiologists, Radiographers and Assistant Practitioners employed by the Trust  
  *Those who set exposure parameters and/or activate the exposure switch for medical exposures*

- **CATEGORY B:** Medical Physics Scientific & Technical staff, University Hospital Southampton  
  *Those who test, calibrate and/or maintain medical exposure equipment*
PROCEDURE B CONTINUED:

Reg 2(1): Prohibits any Practitioners or Operator from carrying out medical exposures or any practical aspect without having been adequately trained (see Schedule 2, IR(ME)R 2000). An exception is made for trainees where they participate in practical aspects under the supervision of someone who is adequately trained.

Reg 6/5: Operators shall be responsible for each and every practical aspect that they carry out as well as authorisation of an exposure made under Practitioners’ guidelines. (Referral criteria – if authorisation is not made in accordance with these guidelines the Operator will be in breach of that regulation).

Reg 7: Optimisation in relation to medical exposures, the Practitioner and Operator shall ensure doses arising from the medical exposures are kept as low as reasonably practicable (ALARP) consistent with the intended purpose. The Operator shall select equipment and methods to ensure the dose is kept as low as reasonably practicable, with adherence to diagnostic reference levels (DRL).

ADMINISTRATION:

Primary verification/authorisation: See Appendix D

Persons who are not identified as primary duty holders according to the definitions and all persons undertaking the responsibilities of Practitioner and Operator must complete Form A ‘Authorisation of Roles’ to enable responsibilities as Referrer, Practitioner and Operator to be authorised and/or recorded by Diagnostic Imaging before taking up those responsibilities.

RECORDS: REG 11 (4):

Up-to-date records of entitlement to act as Practitioner or Operator will be held and available for inspection (see Appendix D). The Department of Diagnostic Imaging will hold the following:-

A record of Practitioners and Operators and non-medical referrers. The Department of Diagnostic Imaging must be satisfied that Healthcare Professionals acting as Referrers can fulfil the requirements of that role – the Medical Director will ensure a copy of the named persons will be sent to Diagnostic Imaging who will hold a list for reference.

Produced by: Diagnostic Imaging and Medical Physics  Revised: May 2015
Reviewed: May 2017
PROCEDURE C

To be observed in the case of medico-legal exposures

Reference Documents: Ionising Radiation (Medical Exposure) Regulations 2000

AIM: This procedure is intended to ensure that Referrers, Practitioners and Operators are identified and that referrals are not accepted from any other personnel.

INTRODUCTION:

Medico-legal means a procedure performed for insurance, medical report or legal purposes without a medical indication with no direct health benefit to the individual exposed, but possibly carrying some other benefit to the individual or society.

- The patient must be made aware that they will receive a small radiation dose that is not for their medical benefit.
- The circumstances for justification may be on an individual patient basis or for a specific cohort in respect of one Referrer (agreed by Radiologists) – to be reviewed annually**
- The only medico-legal exposures which may be considered appropriate for children are those which may contribute to the prevention of further harm to a child or further children, i.e. physical abuse (see Forensic Protocol).

Example: EMIGRATION CHESTS
These are not done for the direct medical benefit, but can be justified as a ‘benefit to society’ (Regulation 6(2)b). They are an entry requirement for various countries for TB screening etc.

- Must be referred by a Medical Practitioner
- The Radiographer must ensure that all the necessary paperwork and identification procedure (e.g. Radiographer signing photograph) is correct before the examination so that it is not invalidated for administrative reasons.

PRE-EMPLOYMENT CHESTS** MEDICAL REPORTS

PROCEDURE:

- Only standard radiographic procedures to be undertaken – not CT, Fluoroscopy and Mammography.
- The examination must be carried out according to protocol.
- If the examination has been pre-justified (individually or generically) the request form must specify the examination is in the category of medico-legal.
- In examining a patient for medico-legal reasons, every effort must be made to limit the dose.
- Every individual medical exposure undertaken for medico-legal reasons must be reported in full.
- Referrals for pregnant females and children must be brought to the attention of a Radiologist.

EXCLUSIONS: e.g.

- ? INGESTED/INSERTED DRUG PACKAGES ETC. for prosecution DO NOT X-RAY - other techniques must be used. If the request is for the direct medical benefit of the patient it is not medico-legal.
- PATIENTS SECTIONED UNDER THE MENTAL HEALTH ACT – no examination can be undertaken without consent unless a court order has been received.
PROCEDURE D

For making enquiries of females of childbearing age to establish whether the individual is or may be pregnant (or breastfeeding**)
(If the patient is or may be pregnant or is to undergo a high dose examination refer to Procedure E) (**services requiring this check are not provided on Isle of Wight NHS premises)

RESPONSIBLE PERSONS: Referrers, Practitioners and Operators

Reference Documents: Ionising Radiation (Medical Exposure) Regulations 2000

INTRODUCTION:

It is the responsibility of the Referrer to provide details of the patient’s menstrual history and factors, which may affect the possibility of pregnancy.

It is the ultimate responsibility of Practitioners and Operators to inquire whether females of childbearing age could possibly be pregnant, before exposing them to ionising radiation.

CONDITIONS WHERE THIS APPLIES:

- All females of child-bearing age (it is reasonable to assume that females between the ages of 12 and 55 could be pregnant)
- Examinations where the foetus will be in the primary beam or close to it e.g.
  - X-ray
  - Screening (interventional, contrast, etc.)
  - Breast Screening
  - CT
    Abdomen, pelvis, hips, lumbar/sacral spine
    All examinations
    All examinations
    Abdomen, pelvis, hips, thorax

Examinations of other areas should not lead to radiation exposures of the foetus providing dose limitation techniques and the ‘ALARA’ (dose as low as reasonably practicable) principles are applied.
PROCEDURE:

- **Enquiry of Pregnancy Status**
  The Operator / Practitioner must as far as practical ensure the individual understands the implications of a radiation dose to a foetus. Individuals will require varying levels of questioning / or enquiry. It is important to use appropriate questioning to ascertain whether there is a possibility of pregnancy.
- **Female patients under 16 years of age**
  ‘Gillick Competence’ a person under the age of 16 may be questioned (without a parent present or even without their knowledge) if, in the opinion of a health professional, the person understands what is being asked or explained, and demonstrates competence to make her own decisions. **Asking in the presence of a parent may not obtain an honest answer.**
- **Unconscious / anaesthetised patients**
  Unconscious patients, assume possible pregnancy
  Anaesthetised patients – check the consent form for pregnancy status
  Document the reasons for proceeding on the Radiology Information System(RIS)
- **Non English speaking patients / Incoherent**
  An accompanying capable person may interpret, or answer on their behalf.
  Document the reasons for proceeding on the Radiology Information System(RIS)

Special justification will be required to proceed with an exposure to Ionising Radiation if the patient is or may be pregnant.
*If the patient requires a High Dose Examination – refer to Procedure E*

<table>
<thead>
<tr>
<th>Produced by:</th>
<th>Revised:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diagnostic Imaging and Medical Physics</td>
<td>May 2015</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Reviewed:</th>
</tr>
</thead>
<tbody>
<tr>
<td>May 2017</td>
</tr>
</tbody>
</table>

Uncontrolled When Printed
PROCEDURE E

To be followed in the event of pregnancy status being positive or Unknown and for High Dose examinations.

RESPONSIBLE PERSONS: Practitioners and Operators e.g. Radiographers, Radiologists, Dental Practitioners

INTRODUCTION:

In line with the guidance from NRBP this protocol is to be followed when Procedure D (enquiry of pregnancy) has been followed and the pregnancy is confirmed or cannot be excluded. The NRBP guidance describes action to be taken depending on whether the medical exposure is classed as a low or high dose procedure. The NRBP definition of high dose procedures is “examinations resulting in foetal doses of some tens of milligray” and examples of low and high dose examinations taken from the NRBP guidance are given in Appendix E of this procedure.

PREGNANCY CONFIRMED OR PROBABLE:

The justification for the proposed examination or treatment should be reviewed and the option of deferring the examination or treatment until after delivery considered. However, a procedure of clinical benefit to the mother may also be of indirect benefit to the unborn child. If the procedure is undertaken, the foetal dose should be kept to the minimum consistent with the diagnostic purpose.

PROCEDURE:

Low dose procedure and pregnancy cannot be excluded – apply 28 day rule:

The examination may proceed provided that the period is not overdue. If the period is overdue, the instructions in paragraph E.2.1. should be followed.

High dose diagnostic procedure – Apply 10 day Rule:

- Book in the first 10 days of the menstrual cycle, when conception is unlikely to have occurred – the ‘10 day rule’.
- If patient is found to be in the second half of their cycle and pregnancy cannot be excluded the procedure should be rebooked. (checking with Medical Physics)
- Should the patient prove to be pregnant re-book after delivery unless clinically indicated

Produced by: Diagnostic Imaging and Medical Physics
Revised: May 2015
Reviewed: May 2017
PROCEDURE F

To ensure that quality assurance programmes are followed

Reference Document: Ionising Radiation (Medical Exposures) Regulations 2000

AIM: This procedure describes the audit of compliance with the standard operating procedures. The procedure is based on audits of the records that are described in each procedure and on the incident reporting system.

INTRODUCTION:

Regulation 4(3)(b) of IR(ME)R 2000 requires the employer to establish "quality assurance programmes for standard operating procedures" and guidance issued by the Department of Health on 22 May 2000 emphasises that this not the same as the quality assurance programme for equipment as required by the Ionising Radiations Regulations 1999.

PROCEDURE:

AUDIT:

- Each procedure is subject to audit at least once a year
- A report of each audit is to be produced which describes deficiencies in compliance, or in the procedure. The audit may suggest corrective action.
- Copies of the report are sent to the Responsible Persons and to the Radiation Protection Adviser.
- Deficiencies highlighted by the audit are investigated by Diagnostic Imaging Services Manager and Radiation Protection Adviser is informed of the corrective action that is taken.
- A summary of all audits is presented to the IOW Radiation Protection Team

INCIDENT REPORTING:

Failure to comply with a procedure is reported using the incident reporting system which ensures that the Radiation Protection Adviser is informed of such failure. The Radiation Protection Adviser considers the implications of the non-compliance and advises the Diagnostic Imaging Services Manager or Senior Trust Officer on the appropriate action to be taken. This may entail reporting the incident to the Department of Health.

Produced by: Diagnostic Imaging and Medical Physics
Revised: May 2015
Reviewed: May 2017
PROCEDURE G

For the assessment of patient dose and administered activity

Reference Document: Ionising Radiation (Medical Exposures) Regulations 2000

AIM: This procedure is intended to ensure that sufficient information regarding medical exposures is recorded to enable a retrospective estimation of the radiation dose to the patient.

RESPONSIBLE PERSONS: Operators – Radiologists and Radiographers, Dental Practitioners

PROCEDURE:

PATIENT DOSE (RADIOLOGY / RADIOGRAPHY):

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plain Film Radiography</td>
<td>The dose-area product (DAP) if available, otherwise the cumulative post exposure mAs value and the highest kV must be recorded on the Radiology Information System (RIS).</td>
</tr>
<tr>
<td>Mobile X-ray Equipment</td>
<td>The Focus Film Distance (FFD) is to be recorded on the film. For departmental films, the FFD is taken to be the standard distance according to the relevant protocol.</td>
</tr>
<tr>
<td>Fluoroscopy</td>
<td>The dose-area product (DAP) and / or screening time to be recorded on the RIS.</td>
</tr>
<tr>
<td>CT procedures</td>
<td>Where standard protocols have been followed, ‘protocol scan’ and number of slices is to be recorded on the RIS.</td>
</tr>
</tbody>
</table>

Produced by: Diagnostic Imaging and Medical Physics
Revised: May 2015
Reviewed: May 2017
PROCEDURE H

For the use of diagnostic reference levels (DRLs)

RESPONSIBLE PERSONS: Operators – Radiologists and Radiographers, Dental Practitioners

INTRODUCTION:

This procedure is for the use of Diagnostic Reference Levels (DRLs) established by the employer for radio diagnostic examinations falling within IR(ME)R regulations 3(a), (b), (c) and (e), specifying that these are expected not to be exceeded for standard procedures when good and normal practice regarding diagnostic and technical performance is applied.

DRLs are intended to be used as one of the tools to ensure that the radiation dose to patients is optimised. The units of the DRL may be any of the following:

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Unit</th>
<th>Measurement Device</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entrance surface dose</td>
<td>cGy</td>
<td>TLD, ionisation chamber</td>
</tr>
<tr>
<td>Dose area product</td>
<td>cGy.cm²</td>
<td>Dose area product meter</td>
</tr>
<tr>
<td>Screening time</td>
<td>Second</td>
<td>Timer on screening unit</td>
</tr>
</tbody>
</table>

The National Radiological Board (NRPB) has published reference doses for a selection of radiographic techniques and the local DRLs should not exceed those reference doses. It is understood that the radiation dose to the patient varies with patient size and the complexity of the individual procedure and so the DRL for x-ray investigations applies to an average size patient and straightforward procedure. For patients outside the normal distribution for which the DRL applies, the DRL may be exceeded in particular this may apply to screening during surgical procedures.

PROCEDURE:

Procurement of Equipment:
Where appropriate, a DAP meter is to be included in the specification of all new radiographic equipment. In other installations a device that indicates the tube current – exposure time product is specified.

Setting DRLs:
The Department of Diagnostic Imaging is to supply setting of a local DRL requires the supply of relevant information to the Department of Medical Physics and Bioengineering. This may be in the form of exposure factors, DAP readings or screening times.

The records required by the ‘procedure for the assessment of patient dose and administered activity’ and the ‘procedure for carrying out and recording of an evaluation for each medical exposure including, where appropriate, factors relevant to patient dose’ are to be supplied to the Department of Medical Physics and Bioengineering on a monthly basis.

Monitoring of patient dose against DRL

The data will be collected over a calendar year and used to set against the local DRL for the following year. This mean dose data is compared with the DRL on a quarterly (or monthly) basis. An investigation will be made by the Department of Diagnostic Imaging if the mean dose exceeds the DRL.

Produced by: Diagnostic Imaging and Medical Physics
Revised: May 2015
Reviewed: May 2017
PROCEDURE I

To be followed for biomedical and medical research programmes

Reference Documents: Ionising Radiation (Medical Exposure) Regulations 2000

INTRODUCTION:

Schedule 1, Regulation 4.1:

This procedure is intended to determine whether the Practitioner or Operator is required to effect one or more of the matters set out in IR(ME)R regulation 7(4) including criteria on how to effect those matters and in particular procedures for the use of dose constraints established by the employer for biomedical and medical research programmes falling within regulation 3(d) where no direct medical benefit for the individual is expected from the exposure'. (See also Procedure H)

Dose constraints will be set for the following:

a) Volunteers or patients for whom the exposure to ionising radiation has no net benefit
b) Patients for whom the exposure to ionising radiation might reasonably yield improved clinical management and therefore derive some benefit
c) Patients for whom the exposure to ionising radiation might reasonably derive a net therapeutic benefit

PROCEDURE:

• A Research Programme must be submitted to the Local Research Ethics Committee (LREC) together with dose constraints agreed with a Radiation Practitioner and Radiation Physics before starting.
• The dose constraints must be monitored on a project by project basis by a Radiation Practitioner in Diagnostic Imaging and must not be exceeded.
• Individuals concerned must:
  – Participate voluntarily in the research programme
  – Be informed in advance about the risks of the exposure and consent in writing.

The Radiation Practitioner is responsible for informing Operators of the dose constraints applicable to the research, for ensuring the recording and monitoring of the dose received by each volunteer/patient against the dose constraint and reporting any adverse variation to the R&D Department and the RPA.

Produced by: Diagnostic Imaging and Medical Physics
Revised: May 2015
Reviewed: May 2017
Procedure J

For the giving of information and written instructions to Nuclear Medicine patients and carers.

Reference Documents: Ionising Radiation (Medical Exposure) Regulations 2000

Introduction:
This procedure is for the giving of information and written instructions as referred to in IR(ME)R Regulation 7(5) for patients undergoing treatment or diagnosis with radioactive medicinal products.

Patients who undergo treatment or diagnosis with radioactive medicinal products may present a hazard to persons who come into contact with them following the treatment or diagnosis. The required radiation protection precautions vary considerably and in some considerations include isolation in a therapy room or avoidance of conception for some months.

Procedure (Nuclear Medicine):

Written information sheets specific to each procedure shall accompany all appointment letters.

Every practical effort should be made to ensure that this information is received in advance of the appointment to allow the patient to respond with questions or concerns. Telephone bookings should be made with reference to the information sheets specific to the procedure.

Information sheets shall be available in the department of Nuclear Medicine for those patients who do not have written information and then go on to request it, or where the Operator or Practitioner considers it appropriate to back up the oral advice already given.

Content shall be in a concise, but patient orientated style and include the following procedure details:

1. Name of procedure e.g. cardiac stress Myoview
2. Radionuclide to be administered and by what route
3. Likely radiation protection precautions (dose may be decided on the day depending on type of appointment e.g. thyroid therapy dose varies).

Advice about restricted contact with pregnant women and children shall be included and be specific to administered dose where appropriate. Breastfeeding guidelines supplement standard literature.

Verbal instructions (Operator/Practitioner) will be given out along with this information where appropriate, depending on patient’s cognitive, confidence and anxiety levels.

Procedure (Radiotherapy Centre):

All radiotherapy patients, in view of the nature of their disease, are counselled regarding radiotherapy treatments with radionuclides. At this point in time, leaflets regarding their treatment and issues relating to radiation protection are given to them according to the local procedure.

Produced by:
Medical Physics Department
Nuclear Medicine Department
University Hospital Southampton

This procedure is included for completion. The Isle of Wight NHS Trust does not provide a Nuclear Medicine service.
PROCEDURE K

For carrying out and recording of an evaluation for each medical exposure

Reference Documents: Ionising Radiation (Medical Exposure) Regulations 2000

AIM: This procedure is for carrying out and recording of an evaluation for each medical exposure, including, where appropriate, factors relevant to patient dose.

Ideally all radiographs and radiographic procedures should be formally reported on, in a timely fashion by Radiologists. However a large number of medical exposure episodes are reviewed in clinics by clinicians and then returned to file without being formally reported on. In order to comply with the regulations, there must be a record of every clinical evaluation of a medical exposure and of the factors relevant to patient dose.

PROCEDURE (diagnostic exposures) – see Standard Operating Procedure

In the case of episodes that will not be reported by a Radiologist, it is the responsibility of the referring clinician to ensure that the evaluation of the episode is recorded in the patient’s notes. A record of the dose-area product (DAP) reading or exposure factors (cumulative mAs and highest kVp) must be recorded on the Radiology Information System by the Radiographer.

RECORDS (DIAGNOSTIC EXPOSURES)

Evaluation by Diagnostic Imaging staff: Radiologists and Radiographers

The evaluation is recorded onto the Radiology Information System (RIS) and a copy returned to the Referrer

Evaluation by Referrer – Medical / Dental Practitioners

- ‘Evaluation by Referrer’ will be entered onto the RIS and stamped on the X-ray wallet against the episode by Diagnostic Imaging staff according to the Standard Operating Procedure.
- A timely evaluation is to be made and recorded in the patient’s notes by the Referring Clinician.
- The recording of the factors relevant to patient dose are described in Procedure G.

Produced by: Diagnostic Imaging Revised: May 2015
Reviewed: May 2017
**PROCEDURE L**

To ensure that the probability and magnitude of accidental or unintended doses to patients from radiological practices are reduced so far as reasonably practicable.

**AIM:** This procedure is intended to minimise the risk of accidental or unintended doses to patients so far as reasonably practicable. This process starts with the selection and installation of the equipment and continues through to the actual exposure of the patient.

**PROCEDURE:**

All practical aspects of medical exposures are conducted with due regard to minimising unintended doses to patients.

**PROCUREMENT OF EQUIPMENT:**

- The specification of diagnostic equipment to be purchased includes appropriate safety devices and dose-reduction features, commensurate with current best practice.
- Radiotherapy and diagnostic radiology equipment is installed in suitably protected rooms.
- Installations are subjected to a prior risk assessment as required by the Ionising Radiations Regulations 1999.
- Installations are subjected to a critical examination and acceptance testing as required by the Ionising Radiations Regulations.

**EXPOSURE TECHNIQUE:**

Consideration is given to the use of imaging techniques that employ non-ionising radiation in preference to those that use ionising radiation.

**EQUIPMENT:**

- Equipment is maintained according to manufacturers’ instructions.
- Equipment is subject to a documented QA programme.
- Diagnostic equipment that shows signs of a fault are withdrawn from service until it has been examined and passed as fit for purpose by a qualified engineer or by the Department of Medical Physics and Bioengineering.

**EXPOSURE:**

- The patient is positioned by an appropriately trained operator.
- Diagnostic exposure factors are chosen by an appropriately trained operator.

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Produced by: Diagnostic Imaging and Medical Physics  
Revised: May 2015  
Reviewed: May 2017
PROCEDURE M

For justification and authorisation of medical exposures

RESPONSIBLE PERSONS: Practitioners and Operators – Radiologists, Radiographers, Dental Practitioners

Reference Documents: Ionising Radiation Regulations (Medical Exposure) Regulations 2000

INTRODUCTION:

No medical exposure is permitted unless it has been justified as showing a sufficient net benefit. A Practitioner must ensure the justification for the exposure as requested by the referrer in line with IRMER. An Operator may authorise an individual exposure following written departmental protocols.

PROCEDURE:

Justification by Practitioner (Radiographer, Radiologist)

Practitioners identified in the IW list of Practitioners justifying exposures must sign the request forms or write in the patient’s notes.

The name of the Practitioner should also be recorded on the Radiology Information System (RIS).

If the Practitioner is unable to justify an exposure the Practitioner should contact the Referrer for more information or return the request form or referral letter with ‘non justified request form’ or letter stating why the exposure cannot be justified or write in patient’s notes.

AUTHORISATION BY OPERATOR:

- There must be department protocols to enable Operators to authorise an individual medical exposure as justified, these guidelines may include examples of when an exposure is NOT justified.
- An Operator who authorises an exposure, which does not accord with the guidelines, is acting unlawfully; the Operator's action does not change the status of the Operator to that of Practitioner.
- An Operator/Practitioner must sign the request form or patient’s notes to indicate justification of a medical exposure.
- If the Operator is unable to authorise an exposure because it does not comply with the guidelines, the Operator should take one of the following courses of action:
  a) Refer to a Practitioner
  b) Contact the Referrer for more information
  c) Return the request (or referral letter) with a ‘non-justified request’ stating the reason for return

Produced by: Diagnostic Imaging and Medical Physics
Revised: May 2015
Reviewed: May 2017
APPENDIX D

PRIMARY VERIFICATION/AUTHORISATION

B.6 Primary Verification:

- All new employees excluding Medical and Dental Practitioners (acting as Referrers) involved with the use of ionising radiation must complete Form A and send it to the Lead Clinician in Diagnostic Imaging.

- Any new employee including Medical and Dental Practitioners who may be required to act as Practitioners or Operators involving the use of ionising radiation must also complete Form A. The recruitment of these persons will involve personnel from Diagnostic Imaging.

- The designated persons in Diagnostic Imaging acting on behalf on the employer will complete section 2 on Form A assigning Referrer, and/or Practitioner and/or Operator status to the employee. A copy of this form will be retained in the central Register or Duty Holder’s to identify Practitioners, Operators and non-Medical or Dental Practitioner referrers.

- The certificate/proof of training/registration must be checked on recruitment. Professional state registration must be checked annually by the respective managing body.

- When a new Referrer for medical imaging is added to the list of Referrers, their attention must be drawn to the Referral Criteria for procedures involving medical exposure to ionising radiations.

- The referral criteria is based on the booklet “Making the Best Use of a Department of Clinical Radiology – Guidelines for Doctors”, published by the Royal College of Radiologists and local discussion.

- The referral criteria and guidelines are available on the hospital Intranet.

B.7 Verification of Competency in the Use of Ionising Radiation

- An Operator must undertake a recorded departmental induction. If problems are identified, these must be addressed by the line managers.

- Evaluation of Practitioners/Operator roles (according to Trust Policy) must be undertaken to ensure practical competency on qualification/recruitment/installation of new equipment/introduction of new practice and if identified at appraisal.

B.8 Continuing Professional Development

- The employer must check for proof of Continued Professional Development.

B.9 Locum / Agency / Sub-Contractors

- Where these staff are engaged, the employer must be satisfied that Regulation 7 – Optimisation – will be complied with. This can be achieved including a clause in the contract stipulating that the Practitioner or Operator to be engaged by him must have been adequately trained and undertake CPD and training.
## LOW AND HIGH DOSE EXAMINATIONS

### LOW DOSE EXAMINATIONS - APPLY 28 DAY RULE

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Foetal dose (mGy)*</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>Maximum</td>
<td></td>
</tr>
<tr>
<td><strong>Conventional Radiography</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Abdomen</td>
<td>1.4</td>
<td>4.2</td>
<td></td>
</tr>
<tr>
<td>Barium meal or swallow **</td>
<td>1.1</td>
<td>5.8</td>
<td></td>
</tr>
<tr>
<td>Chest</td>
<td>&lt; 0.01</td>
<td>&lt; 0.01</td>
<td></td>
</tr>
<tr>
<td>Pelvis</td>
<td>1.1</td>
<td>4.0</td>
<td></td>
</tr>
<tr>
<td>Skull</td>
<td>&lt; 0.01</td>
<td>&lt; 0.01</td>
<td></td>
</tr>
<tr>
<td>Thoracic spine</td>
<td>&lt; 0.01</td>
<td>&lt; 0.01</td>
<td></td>
</tr>
<tr>
<td><strong>Computed Tomography</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CT chest</td>
<td>0.06</td>
<td>0.96</td>
<td></td>
</tr>
<tr>
<td>CT head</td>
<td>&lt; 0.005</td>
<td>&lt; 0.005</td>
<td></td>
</tr>
<tr>
<td>CT lumbar spine **</td>
<td>2.4</td>
<td>8.6</td>
<td></td>
</tr>
<tr>
<td>CT pelvimetry **</td>
<td>0.2</td>
<td>0.4</td>
<td></td>
</tr>
<tr>
<td><strong>Nuclear Medicine</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$^{99m}$Tc bone scan (phosphate)</td>
<td>3.3</td>
<td>4.6</td>
<td></td>
</tr>
<tr>
<td>$^{99m}$Tc lung perfusion (MAA)</td>
<td>0.2</td>
<td>0.4</td>
<td></td>
</tr>
<tr>
<td>$^{99m}$Tc lung ventilation (aerosol)</td>
<td>0.3</td>
<td>1.2</td>
<td></td>
</tr>
<tr>
<td>$^{99m}$Tc kidney scan (DTPA)</td>
<td>1.5</td>
<td>4.0</td>
<td></td>
</tr>
<tr>
<td>$^{99m}$Tc thyroid scan (pertechnetate)</td>
<td>0.7</td>
<td>1.6</td>
<td></td>
</tr>
<tr>
<td>$^{99m}$Tc dynamic cardiac scan (RBC)</td>
<td>3.4</td>
<td>3.7</td>
<td></td>
</tr>
<tr>
<td>$^{99m}$Tc brain scan (pertechnetate)</td>
<td>4.3</td>
<td>6.5</td>
<td></td>
</tr>
<tr>
<td>$^{51}$Cr glomerular filtration (EDTA)</td>
<td>&lt; 0.01</td>
<td>0.01</td>
<td></td>
</tr>
<tr>
<td>$^{201}$Tl myocardial perfusion (thallium)</td>
<td>3.7</td>
<td>4.0</td>
<td></td>
</tr>
</tbody>
</table>

### HIGH DOSE EXAMINATIONS – APPLY TEN DAY RULE

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Fetal dose (mGy)*</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>Maximum</td>
<td></td>
</tr>
<tr>
<td><strong>Conventional Radiography</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Barium enema</td>
<td>6.8</td>
<td>24</td>
<td></td>
</tr>
<tr>
<td>Intravenous urography</td>
<td>1.7</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Lumbar spine</td>
<td>1.7</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td><strong>Computed Tomography</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CT abdomen</td>
<td>8.0</td>
<td>49</td>
<td></td>
</tr>
<tr>
<td>CT pelvis</td>
<td>25</td>
<td>79</td>
<td></td>
</tr>
<tr>
<td><strong>Nuclear Medicine</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$^{75}$Seleno-cholesterol</td>
<td>-</td>
<td>14.0</td>
<td></td>
</tr>
<tr>
<td>$^{67}$Ga tumours and abscesses</td>
<td>-</td>
<td>12.0</td>
<td></td>
</tr>
<tr>
<td>$^{131}$I thyroid metastases</td>
<td>-</td>
<td>22.0</td>
<td></td>
</tr>
</tbody>
</table>

*Foetal doses cited are those assumed from estimates of uterine dose.
** To be included with High dose procedures for administration purposes.
**APPENDIX F**

**REFERRERS**

**Registered Medical or Dental Practitioner from the following organisations may refer for radiological investigations:**

<table>
<thead>
<tr>
<th>Organisation</th>
</tr>
</thead>
<tbody>
<tr>
<td>IOW NHS Trust</td>
</tr>
<tr>
<td>University Hospital Southampton</td>
</tr>
<tr>
<td>Royal National Hospital for Rheumatic Diseases</td>
</tr>
<tr>
<td>Portsmouth Hospitals</td>
</tr>
<tr>
<td>Odstock Hospital</td>
</tr>
</tbody>
</table>

**The following medically qualified personnel may refer for radiotherapy to mainland centres:**

<table>
<thead>
<tr>
<th>Personnel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oncologists</td>
</tr>
</tbody>
</table>

**Other Staff Groups**

<table>
<thead>
<tr>
<th>Role</th>
<th>Type(s) of Medical Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mammographer - with COR Mammographic Certificate of Competence</td>
<td>Breast Screening</td>
</tr>
<tr>
<td>House officers under the auspices of their Consultant</td>
<td>All Examinations excluding CT</td>
</tr>
<tr>
<td>Coroner / Police / Social services / Solicitors</td>
<td>Medico-legal</td>
</tr>
</tbody>
</table>

**Other Personnel**

<table>
<thead>
<tr>
<th>Name</th>
<th>Position / Organisation</th>
<th>Type(s) of Medical Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>As listed in referrer file and Clinical Governance</td>
<td>IW NHS Trust Advanced Nurse Practitioners</td>
<td>Limited low dose examinations as per protocol</td>
</tr>
</tbody>
</table>
## PRACTITIONERS

<table>
<thead>
<tr>
<th>Registered Medical and Dental Practitioners</th>
<th>Type(s) of Medical Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consultant Radiologists</td>
<td>Diagnostic and Interventional x-ray procedures</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Other Staff Groups</th>
<th>Type(s) of Medical Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radiographers</td>
<td>Diagnostic and Interventional procedures</td>
</tr>
<tr>
<td>Mammography Radiographer - COR Certificate of competence</td>
<td>Breast screening and assessment</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Organisation</th>
<th>Type(s) of Medical Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Registered Dental Practitioners</td>
<td>Dental examinations</td>
</tr>
</tbody>
</table>
OPERATORS

Those who set exposure parameters and/or activate the exposure switch for medical exposures or who administer radioactive material or may affect the dose administered

<table>
<thead>
<tr>
<th>Staff Group</th>
<th>Type(s) of Medical Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consultant Radiologist</td>
<td>Diagnostic and Interventional fluoroscopy</td>
</tr>
<tr>
<td>Radiographers</td>
<td>Diagnostic radiography, Interventional fluoroscopy and CT (limit to scope of record of competence)</td>
</tr>
<tr>
<td>Assistant Practitioner</td>
<td>Limited Diagnostic radiography and fluoroscopy within set protocols</td>
</tr>
<tr>
<td>Dental officer / Dental Practitioner</td>
<td>Dental Radiography within recorded scope of competence</td>
</tr>
</tbody>
</table>

Those who test, calibrate and/or maintain medical exposure equipment or may otherwise influence the patient dose

| Medical Physics Scientific and Technical Staff |
1. To be completed and attached to all procedural/policy documents created within individual services.

2. Does the document have, or have the potential to deliver differential outcomes or affect in an adverse way any of the groups listed below?

If no confirm underneath in relevant section the data and/or research which provides evidence e.g. JSNA, Workforce Profile, Quality Improvement Framework, Commissioning Intentions, etc.

If yes please detail underneath in relevant section and provide priority rating and determine if full EIA is required:

<table>
<thead>
<tr>
<th>Gender</th>
<th>Positive Impact</th>
<th>Negative Impact</th>
<th>Reasons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Men</td>
<td>N/A</td>
<td>N/A</td>
<td>Same impact for all without any discrimination</td>
</tr>
<tr>
<td>Women</td>
<td>N/A</td>
<td>N/A</td>
<td>Same impact for all without any discrimination</td>
</tr>
<tr>
<td>Asian or Asian British People</td>
<td>N/A</td>
<td>N/A</td>
<td>Same impact for all without any discrimination</td>
</tr>
<tr>
<td>Black or Black British People</td>
<td>N/A</td>
<td>N/A</td>
<td>Same impact for all without any discrimination</td>
</tr>
<tr>
<td>Chinese people</td>
<td>N/A</td>
<td>N/A</td>
<td>Same impact for all without any discrimination</td>
</tr>
<tr>
<td>People of Mixed Race</td>
<td>N/A</td>
<td>N/A</td>
<td>Same impact for all without any discrimination</td>
</tr>
<tr>
<td>White people (including Irish people)</td>
<td>N/A</td>
<td>N/A</td>
<td>Same impact for all without any discrimination</td>
</tr>
<tr>
<td>People with Physical Disabilities, Learning Disabilities or Mental Health Issues</td>
<td>N/A</td>
<td>N/A</td>
<td>Same impact for all without any discrimination</td>
</tr>
</tbody>
</table>
### Sexual Orientation
<table>
<thead>
<tr>
<th>Gender</th>
<th>Impact on Same Impact for All Without Any Discrimination</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transgender</td>
<td>N/A</td>
</tr>
<tr>
<td>Lesbian, Gay men and bisexual</td>
<td>N/A</td>
</tr>
</tbody>
</table>

### Age
<table>
<thead>
<tr>
<th>Age Group</th>
<th>Impact on Same Impact for All Without Any Discrimination</th>
</tr>
</thead>
<tbody>
<tr>
<td>Children</td>
<td>N/A</td>
</tr>
<tr>
<td>Older People (60+)</td>
<td>N/A</td>
</tr>
<tr>
<td>Younger People (17 to 25 yrs)</td>
<td>N/A</td>
</tr>
</tbody>
</table>

### Faith Group
<table>
<thead>
<tr>
<th>Faith Group</th>
<th>Impact on Same Impact for All Without Any Discrimination</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N/A</td>
</tr>
</tbody>
</table>

### Pregnancy & Maternity
<table>
<thead>
<tr>
<th>Impact on Same Impact for All Without Any Discrimination</th>
</tr>
</thead>
<tbody>
<tr>
<td>N/A</td>
</tr>
</tbody>
</table>

### Equal Opportunities and/or improved relations
<table>
<thead>
<tr>
<th>Impact on Same Impact for All Without Any Discrimination</th>
</tr>
</thead>
<tbody>
<tr>
<td>N/A</td>
</tr>
</tbody>
</table>

**Notes:**

Faith groups cover a wide range of groupings, the most common of which are Buddhist, Christian, Hindus, Jews, Muslims and Sikhs. Consider faith categories individually and collectively when considering positive and negative impacts.

The categories used in the race section refer to those used in the 2001 Census. Consideration should be given to the specific communities within the broad categories such as Bangladeshi people and the needs of other communities that do not appear as separate categories in the Census, for example, Polish.

### 3. Level of Impact

If you have indicated that there is a negative impact, is that impact:

<table>
<thead>
<tr>
<th>Legal (it is not discriminatory under anti-discriminatory law)</th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intended</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

If the negative impact is possibly discriminatory and not intended and/or of high impact then please complete a thorough assessment after completing the rest of this form.

**3.1 Could you minimise or remove any negative impact that is of low significance?** Explain how below:

**3.2 Could you improve the strategy, function or policy positive impact?** Explain how below:

**3.3 If there is no evidence that this strategy, function or policy promotes equality of opportunity or improves relations – could it be adapted so it does?** How? If not why not?

**Scheduled for Full Impact Assessment**

<table>
<thead>
<tr>
<th>Date:</th>
</tr>
</thead>
</table>

**Name of persons/group completing the full assessment.**

<table>
<thead>
<tr>
<th>Date Initial Screening completed</th>
</tr>
</thead>
</table>