Radiation Safety Policy for the Medical Use of Ionising Radiation Policy

<table>
<thead>
<tr>
<th>Author:</th>
<th>Secretary, Area Radiation Safety Committee</th>
</tr>
</thead>
<tbody>
<tr>
<td>Responsible Lead Executive Director:</td>
<td>Chief Executive</td>
</tr>
<tr>
<td>Endorsing Body:</td>
<td>Area Radiation Safety Committee</td>
</tr>
<tr>
<td>Governance or Assurance Committee</td>
<td>Healthcare Quality Assurance Improvement Committee</td>
</tr>
<tr>
<td>Implementation Date:</td>
<td>September 2018</td>
</tr>
<tr>
<td>Version Number:</td>
<td>3.1</td>
</tr>
<tr>
<td>Review Date:</td>
<td>September 2020</td>
</tr>
<tr>
<td>Responsible Person</td>
<td>Chairman, Area Radiation Safety Committee</td>
</tr>
</tbody>
</table>
Radiation Safety Policy for the Medical Use of Ionising Radiation Policy

CONTENTS

i) Consultation and Distribution Record
ii) Change Record

1. INTRODUCTION

2. AIM, PURPOSE AND OUTCOMES

3. SCOPE

4. PRINCIPAL CONTENT

5. ROLES AND RESPONSIBILITIES

6. RESOURCE IMPLICATIONS

7. COMMUNICATION PLAN

8. QUALITY IMPROVEMENT – MONITORING AND REVIEW

9. EQUALITY AND DIVERSITY IMPACT ASSESSMENT

10. SUMMARY OF POLICY / FAQS

11. REFERENCES
Radiation Safety Policy for the Medical Use of Ionising Radiation Policy

CONSULTATION AND DISTRIBUTION RECORD

<table>
<thead>
<tr>
<th>Author</th>
</tr>
</thead>
<tbody>
<tr>
<td>Secretary, Area Radiation Safety Committee</td>
</tr>
</tbody>
</table>

Consultation Process / Stakeholders:

- Medical Director
- Radiation Protection Adviser
- Chairman, Area Radiation Safety Committee
- Clinical Director, Radiology
- Diagnostic Services Manager
- Lead Radiologist, University Hospital Monklands
- Lead Radiologist, University Hospital Wishaw
- Lead Radiologist, University Hospital Hairmyres

Distribution:

- NHSL Intranet: FirstPort
- NHSL Public website

CHANGE RECORD

<table>
<thead>
<tr>
<th>Date</th>
<th>Author</th>
<th>Change</th>
<th>Version No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>30/04/15</td>
<td>Secretary, Area Radiation Safety Committee</td>
<td>Updated Appendix 7 Reformat into NHS Lanarkshire Corporate Policy template</td>
<td>1.9</td>
</tr>
<tr>
<td>17/11/15</td>
<td>Secretary, Area Radiation Safety Committee</td>
<td>Updated to account for Beatson Satellite Radiotherapy Centre at Monklands Hospital</td>
<td>2.0</td>
</tr>
<tr>
<td>04/12/15</td>
<td>Secretary, Area Radiation Safety Committee / Medical Director</td>
<td>Updated to make terminology consistent</td>
<td>2.1</td>
</tr>
<tr>
<td>27/02/18</td>
<td>Secretary, Area Radiation Safety Committee</td>
<td>Updated to take account of new legislation</td>
<td>3.0</td>
</tr>
<tr>
<td>19/09/18</td>
<td>Secretary, Area Radiation Safety Committee</td>
<td>GDPR statement added into section 3; Policy reviewed for inclusion on NHSL public website</td>
<td>3.1</td>
</tr>
<tr>
<td>27/05/2020</td>
<td>K. Torrance</td>
<td>Extended until September 2021 (COVID-19)</td>
<td>3.1</td>
</tr>
</tbody>
</table>
1. INTRODUCTION

The medical use of ionising and non-ionising radiation is covered by a series of statutory instruments that implement the Basic Safety Standards Directive 2013/59/Euratom in Great Britain that address the control of associated risks to workers, members of the public, patients and the environment. While these statutory instruments are made under different primary legislation (for example under the Health and Safety at Work, etc Act 1974 the employer’s legal duties in all cases fall to the Chief Executive of NHS Lanarkshire Board (the ‘Board’)).

The employer’s legal responsibilities cannot be delegated. However, management responsibilities for implementing the employer’s duties can properly be delegated to designated staff, under provisions authorised by the legal employer. Accordingly, the Board’s ‘Health and Safety Policy’ document requires that the risk associated with the use of ionising radiation throughout the NHS Board shall be managed in accordance with the provisions of a Radiation Safety Policy authorised by the Chief Executive.

The Beatson Satellite Radiotherapy Centre at Monklands Hospital is managed by NHS Greater Glasgow and Clyde. The responsibility for ensuring that the operation of this facility is in accordance with the relevant legislation belongs to NHS Greater Glasgow and Clyde.

The Medical Director (see Appendix 2) is responsible to the Chief Executive for providing the Radiation Safety Policy document. The Chief Executive shall authorise the Radiation Safety Policy by signing it to indicate that this comprises their instructions regarding implementation of the employer’s responsibilities under the relevant regulations. The Medical Director shall also sign this document to indicate their responsibility for its content and for overseeing the implementation of its contents as regards the Ionising Radiations Regulations 2017, Ionising Radiation (Medical Exposure) Regulations 2017 and Environmental Authorisations (Scotland) Regulations 2018.

The Medical Director shall report to the NHS Lanarkshire Healthcare Quality Assurance Improvement Committee annually on the implementation of the provisions of this Radiation Safety Policy and shall notify the Chief Executive forthwith in the event of any significant breaches of its provisions.

The responsibilities and remit of the Radiation Safety Committee are described in Appendix 1. The Chairman of the Radiation Safety Committee (RSC) shall ensure that the Radiation Safety Policy is reviewed at intervals not exceeding two years, and shall include a description of the outcome of such reviews in reports made to the Medical Director.
Radiation Safety Policy for the Medical Use of Ionising Radiation Policy

2. **AIM**

The aim of this policy is to describe the radiation safety policy for the medical use of ionising radiation within NHS Lanarkshire.

3. **SCOPE**

This policy will benefit patients being treated by NHS Lanarkshire and will affect NHS Lanarkshire staff; members of the public and staff from other organisations working on NHS Lanarkshire premises.

NHS Lanarkshire takes care to ensure your personal information is only accessible to authorised people. Our staff have a legal and contractual duty to keep personal health information secure, and confidential. In order to find out more about current data protection legislation and how we process your information, please visit the Data Protection Notice on our website at [www.nhslanarkshire.scot.nhs.uk](http://www.nhslanarkshire.scot.nhs.uk) or ask a member of staff for a copy of our Data Protection Notice.

The stakeholders are the patients being treated by NHS Lanarkshire; employees of NHS Lanarkshire; members of Health Physics Greater Glasgow and Clyde Health Board; NHS Lanarkshire Radiation Safety Committee; NHS Lanarkshire Healthcare Quality Assurance Improvement Committee; NHS Lanarkshire Health Board through the Medical Director.

4. **PRINCIPAL CONTENT**

Policy authorised by Chief Executive, NHS Lanarkshire and Medical Director (IRMER Lead) NHS Lanarkshire.
Radiation Safety Policy for the Medical Use of Ionising Radiation Policy

1 General requirements for radiation safety and legal compliance.

In accordance with the provisions of the Health and Safety at Work, etc. Act 1974 and associated legislation, the use of ionising radiation in NHS Lanarkshire Board shall be managed in such a way as to ensure, as far as reasonably practicable, the health and safety of its employees, of contractors and staff of other organisations working on its premises and of members of the public who may be exposed to the associated hazards.

Provisions for the safety of patients undergoing all medical exposures shall be in accordance with the Ionising Radiation (Medical Exposure) Regulations 2017. In particular, radiation doses to patients shall be kept as low as reasonably practicable to achieve the required clinical outcome, and any doctor or dentist employed by or contracted to NHS Lanarkshire who wishes to administer radioactive medicinal products to humans must hold a relevant ARSAC certificate issued by Health Ministers.

All sealed and unsealed sources of ionising radiation employed by NHS Lanarkshire Board staff shall be held, moved, used and disposed of in accordance with the provisions of the Environmental Authorisations (Scotland) Regulations 2018 and other relevant legislation, and in consultation with the Regulator (the Scottish Environment Protection Agency).

2 Specific Provisions for Ionising Radiation Safety

2.1 Safety of employees, contractors working on Board premises, and members of the public – Compliance with the Ionising Radiations Regulations 2017.

The Medical Director shall be responsible to the Chief Executive for implementation of the duties of the ‘Radiation Employer’ as defined in the Ionising Radiations Regulations (IRR) 2017.

The Medical Director shall appoint, in writing, one or more suitably qualified and certificated Radiation Protection Advisers (RPAs), and shall notify such appointments to the Health and Safety Executive (HSE). The RPA’s responsibilities are described in Appendix 3 and this shall constitute the Radiation Employer’s written definition of the ‘scope of advice which the RPA is required to give’ (Regulation 14).

The Medical Director shall consult with the RPA, to ensure that the RPA is given adequate information and facilities to perform their functions (Regulation 14), and shall report any related concerns to the Chief Executive.
Radiation Safety Policy for the Medical Use of Ionising Radiation Policy

The Medical Director shall appoint, in writing, a sufficient number of Radiation Protection Supervisors (RPSs), taking advice from the RPA. The RPS’s responsibilities are described in Appendix 4.

The Chairman of the RSC, Heads of Clinical Service, Head of Nuclear Medicine Physics, and local managers shall consult the RPA on all matters identified in Schedule 4 of the IRR and in Appendix 3 of this Policy. This includes the use of x-rays; design of facilities; purchase, transport, use and disposal of radioactive materials, controls for pregnant staff members, and radiation dosimetry requirements for Board staff and contractors.

Where the RPA is requested by the Medical Director to produce documentation relevant to compliance with the duties of the Radiation Employer under the IRR, the Medical Director shall countersign such documents as an indication of authorization by the Radiation Employer. The Clinical Director/Head of Service shall countersign the Local Rules.

The Medical Director shall approve written provisions for investigation and notification of incidents in accordance with Regulation 26, and shall make any necessary reports to the HSE. These provisions shall be in keeping with related provisions for incident investigation and reporting under the IR(ME)R Regulation (see also paragraph 3.3.5).

Each Clinical Director / Head of Service shall ensure that an inventory is kept of each item of equipment that delivers ionising radiation and equipment that directly controls or influences the extent of the exposure and that an appropriate quality assurance programme is in place (see also Paragraph 3.3.7).

2.2 Keeping, use, moving and disposal of radioactive substances – Compliance with the Radioactive Substances Act (RSA) and the IRR 2017

For each location where radioactive materials are used (apart from the Beatson Satellite Radiotherapy Centre at Monklands Hospital), the Medical Director is responsible to the Chief Executive for ensuring that arrangements and supporting written documentation comply with the requirements of valid authorisations for the accumulation and disposal of radioactive material, and certificates of registration for the keeping and use of radioactive material issued by the Scottish Environment Protection Agency (SEPA). The Medical Director shall appoint in writing Qualified Experts, Radioactive Waste Advisers (RWA) with appropriate experience to advise on handling of radioactive materials and disposal of radioactive waste. The responsibilities of the RWA are described in Appendix 6.
2.2 Safety of Patients – Compliance with the Ionising Radiation (Medical Exposure) Regulations 2017.

2.3.1 Employer’s Duties

The Medical Director (the IRMER Lead) shall be responsible to the Chief Executive for implementation of the duties of the ‘Legal Employer’ under the Ionising Radiation (Medical Exposure) Regulations 2017. These duties are:

(i) Ensuring that appropriate written procedures, including those defined in Schedule 2 of the IR(ME)R 2017 are in place. Regulation 6(1)

(ii) Ensuring that any written procedures are complied with by the referrer, practitioner and operator. Regulation 6(2)

(iii) Ensuring that every practitioner or operator is appropriately trained and undergoes continuing education. Regulation 6(3)

(iv) Ensuring that written protocols are in place for every type of standard radiological practice including practices involving non-medical imaging. Regulation 6(4)

(v) Establishing recommendations concerning referral guidelines and ensuring that these are available to the referrer. Regulation 6(5)

(vi) Establishing a quality assurance programme for written protocols and written procedures. Regulation 6(5)

(vii) Regularly reviewing diagnostic reference levels. Regulation 6(5)

(viii) Establishing dose constraints for research programmes where no direct medical benefit for the individual is expected from the exposure. Regulation 6(5)

(ix) Establishing dose constraints with regard to the protection of carers and comforters. Regulation 6(5)

(x) Ensuring appropriate reviews are undertaken whenever diagnostic reference levels are consistently exceeded and ensuring that corrective action is taken where appropriate. Regulation 6(7)

(xi) Taking measures to raise awareness of the effects of ionising radiation amongst individuals capable of childbearing or breastfeeding. Regulation 6(8)

(xii) Ensuring that clinical audit is carried out as appropriate. Regulation 7

(xiii) Ensuring that the referrer, practitioner and the individual exposed are informed of the occurrence of a clinically significant unintended or accidental exposure and of the outcome of the analysis of this exposure. Regulation 8
Radiation Safety Policy for the Medical Use of Ionising Radiation Policy

(xiv) Establishing a system for recording analyses of events involving or potentially involving accidental or unintended exposures. Regulation 8

(xv) Investigating any over exposure and notifying the relevant enforcing authority within the appropriate time period of the outcome of the investigation and any corrective measures adopted. Regulation 8

(xvi) Putting in place mechanisms enabling the timely dissemination of information regarding lessons learned from significant events. Regulation 9

(xvii) Collecting dose estimates from medical exposures for radiodiagnostic and interventional procedures. Regulation 13

(xviii) Ensuring that a suitable medical physics expert is appointed and involved in relation to every type of exposure to which the Regulations apply. Regulation 14

(xix) Implementing and maintaining a quality assurance programme in respect of radiological equipment and drawing up an inventory of the equipment. Regulation 15

(xx) Keeping an up-to-date record of all relevant training undertaken by all practitioners and operators. Regulation 17

2.3.2 Employer's written procedures and protocols

Employer's written procedures for medical exposures in NHS Lanarkshire Board shall include a ‘Document Control’ procedure (Employer’s Procedure ‘EP19’) authorised by the Medical Director, that defines the structures for the production, authorization and quality control of all employer's written procedures and protocols. The structure shall be:

- There shall be ‘Level 1’ employer’s procedures, authorised by the Medical Director that shall apply for all medical exposures.
- There shall ‘Level 2’ employer’s procedures and protocols, authorised by the relevant Clinical Directors that shall apply for all medical exposures.
- There shall be ‘Level 3’ employer’s documents that shall include Protocols, Work Instructions, Training Documents and any other employer’s documents suitable for inclusion in this quality control structure. These may be authorised by any operator so entitled by the relevant Clinical Director / Head of Service (see below).

Information to be included in all Levels 1, 2 and 3 documents shall include the names of the document authorizer and of the author, and the period for review. Each document shall be uniquely numbered according to the convention defined in Employer’s Procedure ‘EP19’.

The document authorizer is responsible for ensuring that the document is reviewed within the required period and for recording completion of each review (irrespective of whether the document is amended). In this regard, the Medical Director shall
Radiation Safety Policy for the Medical Use of Ionising Radiation Policy

maintain a list of all Level 1 documents, including dates for review, author and authoriser. Lists of Level 2 and Level 3 documents will be maintained.

The document author is responsible for the accuracy and applicability of the content of the document.

2.3.3 Referral Criteria.

Recommendations concerning referral criteria shall be made available to entitled referrers via the NHS Lanarkshire Board Intranet. The Medical Director is responsible for ensuring that these recommendations are properly maintained. Each Clinical Director / Head of Service is responsible to the Medical Director for compiling and maintaining referral criteria for their own Service, if not covered by the Royal College of Radiologists “Making the best use of clinical radiology services” or the Faculty of Dental Practitioners “Selection criteria for dental radiography”, and for posting these on the Intranet site. Referral criteria shall be in keeping with extant RCR and FDP recommendations and with the provisions of employer’s Level 1 procedure ‘EP 4’.

2.3.4 Diagnostic Reference Levels.

The Medical Director is responsible for ensuring that "diagnostic reference levels" (DRLs) are in place. These DRLs shall be established, maintained and reviewed in accordance with employer’s Level 1 procedure ‘EP 11’. These DRLs shall take proper account of national and European reference levels, where available, and shall be established and used in accordance with extant Department of Health ‘Guidance on the establishment and use of diagnostic reference levels’. In accordance with employer’s Level 1 procedure ‘EP12’, the Clinical Directors / Heads of Service are responsible for establishing and maintaining a system for monitoring of exposure levels for comparison with the Board’s authorised DRLs. Where it appears that an applicable DRL has been consistently exceeded, the relevant Clinical Director shall undertake a review and shall ensure that corrective action, including retraining, is taken where appropriate.

2.3.5 Investigation and reporting of Incidents.

Incidents involving unintended exposure or overexposure of patients shall be investigated and reported in accordance with employer’s Level 1 procedure ‘EP 15’. Reports to the appropriate authority shall be made by the Medical Director.

2.3.6 Dose constraints for biomedical and medical research programmes

Dose constraints for biomedical and medical research programmes shall be established in accordance with employer’s Level 1 procedure ‘EP 16’.
2.3.7 Inventory of equipment

In accordance with employer’s Level 1 procedure ‘EP 20’, each Clinical Director / Head of Service is responsible to the Medical Director for maintaining an equipment inventory for their service. This inventory shall be regarded as a ‘Level 3’ employer’s procedure and structured and maintained accordingly.

2.3.8 Training and entitlement of duty holders

The IR(ME)R 2017 require that the processes of referral, justification, exposure, and clinical evaluation involved in medical exposures shall only be carried out by duty holders properly entitled by the employer. The duty holders are, ‘Referrers’, ‘Practitioners’ and ‘Operators’ (including Medical Physics Experts) and their respective duties are as described in employer’s Level 1 procedure ‘EP 2’.

Procedure ‘EP 2’ also identifies the training that is required by employees before they can be considered for entitlement as a duty holder by the employer. Clinical Directors / Heads of Service are responsible for ensuring that a system is in place for keeping training records for practitioners and operators. There is no requirement for the employer to keep training records for referrers, and these shall not be kept.

The Medical Director (IRMER Lead) is responsible to the Chief Executive for entitlement of Referrers. This shall include consideration of scope of entitlement, in that not all entitled referrers shall be entitled to refer for all types of medical exposure. Medical and Dental Referrers shall be entitled by generic group, rather than as individuals, and no lists of the names of referrers shall be kept. Entitlement of other registered healthcare professionals as referrers for medical exposures will be by identification of individuals. The Radiation Safety Committee will retain a record of these registered healthcare professionals. Entitlement shall be in accordance with employer’s Level 1 procedure ‘EP 1’.

The Medical Director is also responsible to the Chief Executive for ensuring that proper provisions are in place for entitlement of Practitioners and Operators, but has authorised each of the Clinical Directors / Heads of Service to entitle these duty holders for activities falling within their areas of responsibility. Each Clinical Director / Head of Service is authorized by the Medical Director to authorize, in turn, relevant managers within their Service to assess and record those competences for which each member of their staff is properly trained and qualified, and to request entitlement for a scope of entitlement that comprises the total of these competences. Detailed provisions for entitlement of Practitioners and Operators, including definition of scope of entitlement, are described in employer’s Level 1 procedure ‘EP 2’.

The provisions of employer’s procedure ‘EP 2’ allow for the identification of competences for which operators are in training. In accordance with Regulation 11(3) operators may participate in competences for which they are ‘in training’ provided that they do so under
Radiation Safety Policy for the Medical Use of Ionising Radiation Policy

the direct supervision of an operator who is entitled by the relevant Clinical Director / Head of Service as being ‘competent to supervise’ for that competence.

3 Accountability

In addition to the responsibilities outlined in previous sections, the following responsibilities also apply:

3.1 The Chief Executive shall take steps to ensure that the general provisions of the Radiation Safety Policy are being properly implemented. In making his annual report, the Chief Executive shall seek input from the Medical Director with the Director of Human Resources providing input in relation to the Occupational Health & Safety Performance Group, and this shall include specific evaluation of implementation of the Radiation Safety Policy.

3.2 The Medical Director and Chairman of the Radiation Safety Committee shall take steps to ensure that the responsibilities of the Clinical Directors and of the Radiation Protection Adviser(s) that arise from the Radiation Safety Policy are being properly implemented. Each of the Chairs of the Local Radiation Safety Committees, and the Radiation Protection Adviser(s), shall make a short annual report to the NHSL Radiation Safety Committee on implementation of their respective responsibilities. This shall include details of the extant status of (i) all necessary certification and authorizations regarding the keeping, use and disposal of radioactive materials, (ii) all necessary local rules, and employer’s written procedures and protocols, (iii) resource and staffing concerns relevant to compliance with the Radiation Safety Policy, and (iv) entitlement of duty holders and availability of supporting training records. These reports shall also include details of their audit of compliance with at least one of their Level 2 Employer’s Procedures per annum.

3.3 Clinical Directors/ Heads of Service shall ensure that each Duty Holder is entitled for a written Scope of Entitlement which is supported by appropriate training and training records; and shall oversee that training. This includes responsibility for advising the Medical Director through the Radiation Safety Committee on appropriate training requirements for Duty Holders and for reviewing such requirements regularly (with regard to review of employer’s procedure ‘EP 2’) to ensure that they are consistent with extant national guidance.

3.4 Any manager of a department considering any work with ionising radiation for the first time shall consult with the Radiation Protection Adviser.
3.5 All Members of Staff shall ensure that:

- They take reasonable care to protect themselves and others from any hazard arising from their work and thus to work safely.
- They have read and understood the Local Rules for Radiation Safety relevant to their work and to the area in which they work; and agree to act in accordance with them.
- They report any hazards or incidents to the Radiation Protection Supervisor.
- They follow extant employer’s written procedures and protocols.
- If they work with ionising radiation, they inform their local manager as soon as possible if they become pregnant, so that he/she can review doses, and carry out any necessary risk assessments.
- They correctly use the personal protective equipment provided for them; taking care of it and storing it correctly.
- They must tell their employer about any faults with the personal protective equipment and report any damage.
- They must cooperate with employers about dose measurements and assessments.
- They must report loss or damage of personal dosemeters to their employer immediately.
- They must tell their employer about actual or suspected incidents which the employer has a duty to investigate, such as apparent overexposures or loss of a source.
Appendix 1
Responsibilities and Remit of NHS Lanarkshire (NHSL) Area Radiation Safety Committee and its chairman

The Area Radiation Safety Committee will comprise:

- Clinical Director Radiology (Chairman)
- Radiography Manager
- Consultant Radiologist (MRI)
- Dental Practitioner
- SALUS Representative
- Consultant Dermatologist (Phototherapy)
- Representative of Laser Protection Supervisors
- Head of Nuclear Medicine
- Radiation Protection Adviser
- Medical Physics Experts
- Radioactive Waste Advisers
- Deputy Radiography Managers

The Chairman of the Area Radiation Safety Committee shall:

- Be responsible to the Medical Director for implementation of agreed provisions relevant to the employer’s legal duties under legislation relevant to the use of ionising and non-ionising radiation throughout NHS Lanarkshire Board as stated in this Policy.

- Provide a Radiation Safety Policy document to the Medical Director for their review and acceptance of responsibility for its content.

- Appoint the members of the Area Radiation Safety Committee and ensure that the Committee meets at least twice annually.

- Ensure that Local Radiation Protection Safety Committees meet at least annually.

- The Monklands Hospital Local Radiation Protection Safety Committee will ensure that an annual report is supplied by the Radiation Protection Supervisor of the Beatson Satellite Radiotherapy Centre at Monklands Hospital.

- Approve the minutes of each Area Radiation Safety Committee meeting ahead of presentation to the Medical Director.

- Arrange review of the NHS Lanarkshire Radiation Safety Policy once every two years, or earlier if required, and record completion of this review in writing.

- Report to the Board’s Medical Director on issues concerning the implementation of the
Radiation Safety Policy for the Medical Use of Ionising Radiation Policy

provisions of the Radiation Safety Policy, and directly to the Chief Executive when necessary.

• Advise the Medical Director on radiation safety training requirements for IRMER duty holders.

• Review any new Regulations, Approved Codes of Practice, Guidance etc. relevant to the use of ionising and non-ionising radiation, and recommend a structured process for implementation.

• Identify and monitor all current activities and co-ordinate all developments related to the use of ionising and non-ionising radiation and the storage and disposal of radioactive substances.

• Monitor radiation related activities for compliance with extant legislation, guidelines, Local Rules and national quality standards.

• Monitor that employer’s policies and procedures and any certificates held by the Board are reviewed in accordance with written procedures.

• Monitor incidents and contact the Medical Director as necessary.

• Receive reports from the Radiation Protection Adviser, Radiation Protection Supervisors, Medical Physics Experts and Laser Protection Advisers.

The Area Radiation Safety Committee may, from time to time, established Short Life Working Groups to review Appendices to this Radiation Safety Policy.
Appendix 2
Responsibilities of NHS Lanarkshire Medical Director

The Medical Director shall:

- Be responsible to the Chief Executive for implementation of agreed provisions relevant to the employer’s legal duties under legislation relevant to the use of ionising and non-ionising radiation throughout NHS Lanarkshire Board as stated in this Policy. Note that the Medical Director shall be responsible to the Chief Executive for implementation of the duties of the ‘Legal Employer’ under the Ionising Radiations Regulations 2017, Ionising Radiation (Medical Exposure) Regulations 2017, and Environmental Authorisations (Scotland) Regulations 2018.

- Provide a Radiation Safety Policy document to the Chief Executive for their authorisation and shall co-sign the document to indicate acceptance of responsibility for its content and for overseeing implementation of its provisions.

- Report to NHS Lanarkshire Healthcare Quality Assurance and Improvement Committee and the Occupational Health & Safety Performance Group annually on the implementation of the provisions of this Radiation Safety Policy.

- Approve written provisions for investigation and notification of radiation incidents in accordance IRR2017 or IRMER2017, and shall make any necessary reports to the appropriate authority.

- Be responsible to the Chief Executive for entitlement of Referrers.

- Authorise in writing Clinical Directors / Heads of Service to assess competence and entitle Practitioners and Operators within their clinical specialty.

- Appoint the Chairman of Area Radiation Safety Committee.

- Appoint in writing Radiation Protection Advisers for the purposes of the Ionising Radiations Regulations 2017.

- Appoint in writing Radiation Protection Supervisors for the purposes of the Ionising Radiations Regulations 2017.

- Appoint in writing Medical Physics Experts for purposes of Ionising Radiation (Medical Exposure) Regulations 2017.

- Appoint in writing Qualified Expert(s) and local supervisor for the purposes of the Environmental Authorisations (Scotland) Regulations 2018.
Radiation Safety Policy for the Medical Use of Ionising Radiation Policy

- Appoint in writing Laser Protection Adviser(s), Laser Protection Supervisors, Magnetic Resonance Imaging Supervisors and UV (Dermatology) Safety Supervisor.
- Monitor incidents and satisfy themselves that appropriate action is taken within the Board’s corporate framework.
Appendix 3

Responsibilities of the Radiation Protection Adviser

Radiation Protection Advisers (RPAs), appointed in writing by the Medical Director, shall advise the Medical Director, Chairman of the Area Radiation Safety Committee, Clinical Directors / Heads of Service, staff and appropriate outside agencies on compliance with extant radiation legislation and national quality standards. The Radiation Protection Adviser appointed must meet the criteria of competence specified by the HSE.

According to Schedule 4 of the Ionising Radiations Regulations 2017 (IRR2017) the advice provided by the Radiation Protection Adviser includes:

- The prior risk assessment and examination of plans for medical radiation installations and the acceptance into service of new or modified sources of ionising radiation in relation to any engineering controls, design features, safety features and warning devices provided to restrict exposure to ionising radiation.

- The implementation of requirements for controlled and supervised radiation areas.

- The periodic examination and testing of engineering controls, design features, safety features and warning devices and regular checking of systems of work, including any written arrangements provided to restrict exposure to ionising radiation.

- The regular calibration of equipment provided for monitoring ionising radiation and the regular checking that such equipment is serviceable and correctly used.

The Radiation Protection Adviser will provide advice to the Medical Director and the Area Radiation Safety Committee on the following:

- Risk assessments, contingency planning and training in emergencies.

- The production of Local Rules and Systems of Work for designated radiation areas.

- Critical examinations on new radiation equipment and, where appropriate, repaired equipment or re-located equipment.

- Personal radiation dose assessments including reports and radiation monitoring of areas.

- Provision of suitable personal protective equipment and its use.

- Provision of quality assurance programmes for medical radiation equipment.
Radiation Safety Policy for the Medical Use of Ionising Radiation Policy

- Staff training for relevant Board employees associated with radiation including Radiation Protection Supervisors, managers, users of radiation equipment and persons who enter controlled radiation areas.

- Design of areas where unsealed radioactive sources are to be used.

- Design of areas where radiation equipment is to be used.

- Production of information for pregnant and breastfeeding employees.
Appendix 4
Responsibilities of the Radiation Protection Supervisor

The following duties which the Radiation Protection Supervisor undertakes on behalf the NHS Lanarkshire Board (the 'Board') are carried out in collaboration with the Board’s Clinical Directors for Radiology; the Director of Public Dental Services; Radiation Protection Adviser(s); Medical Physics Expert(s) and appropriate members of the Board’s Radiation Safety Committee.

Under current radiation safety legislation, the Radiation Protection Supervisor has no legal responsibility for radiation safety. The Radiation Protection Supervisors may undertake some or all of the following:

- Report directly to the Board’s Radiation Protection Adviser, when necessary in the interest of radiation safety.

- Report immediately to the Head of Department and the Radiation Protection Adviser on unsatisfactory conditions of radiation safety; to propose measures to remedy them and to confirm that agreed remedies have been carried out.

- Provide immediate supervision for radiation protection and to ensure that protection measures are carried out in accordance with the extant Ionising Radiations Regulations, associated Approved Codes of Practice and Employer’s Standard Operating Procedures.

- Keep under review the Local Rules describing arrangements for meeting the requirements of the extant Radiation Regulations, Codes and Guidance Notes, applying to the medical uses of radiation.

- Ensure that all members of staff associated with the use of X-ray and nuclear medicine equipment are adequately instructed about radiation hazards and the precautions to be observed.

- Ensure visitors to radiation areas in the department are informed as necessary of the radiation safety precautions to be observed.

- Ensure that each member of staff carrying out, or assisting with, X-ray or nuclear medicine examinations, or required to enter Controlled Radiation Areas, has read the Local Rules and has signed a statement agreeing to act in accordance with them; and to retain an up-to-date record of these signed statements.

- Organise personnel radiation dose monitoring by a means approved by the Radiation Protection Adviser and to retain relevant records in the Department for two years.
Radiation Safety Policy for the Medical Use of Ionising Radiation Policy

- Keep under review, radiation doses received by persons required to hold patients during X-ray or nuclear medicine examinations, to ensure that no individual is receiving significant exposure from this cause.

- Ensure that radiation over-exposures of staff, patients or visitors are reported to the Radiation Protection Adviser immediately and to liaise with the Medical Physics Expert regarding radiation dose assessments required following any radiation incident.

- Inform the Radiation Protection Adviser when a member of staff reports that she is pregnant and to participate in review the duties of that member of staff to ensure that the developing foetus is adequately protected in terms of radiation safety.

- Ensure, in collaboration with the Clinical Directors / Heads of Service; Consultant Radiologist(s) and the Radiation Protection Adviser, that the radiation exposure of staff is as low as reasonably practicable. This will require that all working practices, the designation of Controlled Radiation Areas and the use of radiation warning signs are kept under regular review.

- Ensure, in collaboration with the Clinical Directors / Heads of Service, Consultant Radiologist(s) and the Radiation Protection Adviser, that working practices are such that radiation doses received by patients during X-ray or nuclear medicine examinations are not greater than necessary to meet the desired clinical objectives.

- Ensure strict adherence to the documented procedure(s) for X-ray or nuclear medicine examinations of females of childbearing age.

- Collaborate with the Radiation Protection Adviser in the preparation, review and recording of environmental monitoring.

- Ensure that the Radiation Protection Adviser is consulted when it is proposed to alter the operating conditions of any X-ray installation, whether by new or modified buildings or equipment or by changes of procedures or workload.

- Ensure that the Handover Procedure associated with X-ray equipment is followed satisfactorily.

- Ensure that a record book is kept for recording all modifications and maintenance carried out on X-ray or nuclear medicine equipment. Any work which might affect radiation quality, output or safety must be recorded.

- Ensure that personal protective equipment and clothing is examined, as specified in the Local Rules, and that a record is kept for each item.
Radiation Safety Policy for the Medical Use of Ionising Radiation Policy

- Ensure that appropriate procedures are applied to the operation of all X-ray or nuclear medicine equipment to avoid over-exposure of patients, members of staff and visitors.

- Ensure that all radiation monitors in the department are regularly checked, and are calibrated annually under the guidance of a Qualified Expert.

- Provide authorisation in approved circumstances for access to Controlled Radiation Areas.

Report to the NHSL Radiation Safety Committee when necessary and in particular after any radiation incident.
Appendix 5

Responsibilities of the Medical Physics Expert

Medical Physics Experts (MPEs), appointed in writing by the Medical Director shall advise the Medical Director; Chairman of the Area Radiation Safety Committee; Clinical Directors / Heads of Service; staff and appropriate outside agencies on medical exposure issues related to radiation safety, radiation dose assessment or optimisation. The MPE appointed must meet the criteria of competence specified in IR(ME)R 2017.

According to Regulation 14 of IR(ME)R 2017 the Medical Physics Expert shall be:

- closely involved in every radiotherapeutic practice other than standardised therapeutic nuclear medicine practices
- involved in standardised therapeutic nuclear medicine practices, diagnostic nuclear medicine practices and high dose interventional radiology and high dose computed tomography
- involved as appropriate for consultation on optimisation, including patient dosimetry and quality assurance

A medical physics expert must also contribute to the following matters:-

- optimisation of the radiation protection of patients and other individuals including the application and use of diagnostic reference levels
- definition and performance of quality assurance of the equipment
- acceptance testing of equipment
- preparation of technical specifications for equipment and installation design
- surveillance of the medical radiological installations
- analysis of events involving accidental or unintended exposures
- selection of equipment required to perform radiation protection measurements
- training of practitioners and other staff in relevant areas of radiation protection
- provision of advice relating to compliance with the Regulations.

Diagnostic radiology

The MPE in diagnostic radiology will either be actively involved in, or available for consultation on, all matters concerning diagnostic and interventional radiology exposures, including research applications. Involvement will be especially warranted where doses are known to be high, e.g. CT and interventional radiology, for optimisation of doses for high
Radiation Safety Policy for the Medical Use of Ionising Radiation Policy

risk groups such as infants, for dose constraints in health screening and for risk assessment in research proposals. These include:

- generic risk assessment for new equipment or techniques
- risk assessments and dose constraints for research proposals
- systems for dose calculation and quantification
- diagnostic reference levels and review
- patient dose monitoring and review
- quality assurance including advice on quality control
- specification and commissioning of new equipment
- audit of medical exposures
- incident investigation including patient dose assessment
- advice on development and implementation of employer’s procedures
- training

Nuclear Medicine

The MPE in nuclear medicine must be available to advise on the following activities :-

- involvement in all applications for ARSAC certification
- advice on protocols for therapeutic administrations
- advice regarding dosimetry for pregnant and breast-feeding patients
- dose constraints for research proposals
- validation of new procedures and protocols for diagnostic investigations
- patient dosimetry (diagnostic and therapy)
- establishment and review of diagnostic reference levels
- quality assurance including advice on quality control
- calibration of radionuclide dose calibrators
- specification and acceptance testing of new equipment
- advice on maintenance
- incident investigation
- advice on development and implementation of employer’s procedures
Appendix 6
Responsibilities of the Radioactive Waste Adviser (RWA)

• The role of the RWA is advisory; responsibility for compliance with radioactive waste legislation and permit conditions lies with the permit holder (employer).

• The role of the RWA is to provide advice to the employer on radioactive waste management and environmental radiation protection. The permit holder will specify the scope of advice that a RWA is expected to give. It is likely to include:
  o achieving and maintaining an optimal level of protection of the environment and the population;
  o checking the effectiveness of technical devices for protecting the environment and the population;
  o acceptance into service, from the point of view of surveillance of radiation protection, of equipment and procedures for measuring and assessing, as appropriate, exposure and radioactive contamination of the environment and the population; and
  o regular calibration of measuring instruments and regular checking that they are serviceable and correctly used.

• The RWA needs to understand the limitations of the advice that they are able to give and be able to recognise when further specialist advice is needed. The RWA should be able to clearly convey to the permit holder what additional specialist advice is needed and understand the resulting advice that is received.

• Where a RWA recommends that additional advice is sought from a number of specialists, it is likely to be the role of the RWA to consolidate this advice into recommendations for his employer.

• Where a RWA has been appointed on a continuing basis, they should usually be available to provide advice whenever required, although they do not need to be present on the permit holder’s premises at all times.
5. ROLES AND RESPONSIBILITIES

The contributing authors will be responsible for regular monitoring of this policy through the NHS Lanarkshire Radiation Safety Committee. The responsible Lead Executive Director is the Chief Executive.

6. RESOURCE IMPLICATIONS

Staff time in terms of training; education; audit; optimisation and reviewing the policy.

7. COMMUNICATION PLAN

The policy will be put on FirstPort and communicated to staff through the management structure of NHS Lanarkshire.

8. QUALITY IMPROVEMENT – Monitoring and Review

The policy will be subject to regular review by the contributing authors.

9. EQUALITY AND DIVERSITY IMPACT ASSESSMENT

This policy meets NHS Lanarkshire’s EDIA (tick box)

10. Summary

This document describes the Radiation Safety Policy for the Medical Use of Ionising Radiation within NHS Lanarkshire.
11. REFERENCES


2. The Ionising Radiation (Medical Exposures) Regulations 2017

3. Work with ionising radiation. The Ionising Radiations Regulations 2017: Approved Code of Practice and guidance L121(Draft)


5. The Ionising Radiations Regulations 2017

6. Environmental Authorisations (Scotland) Regulations 2018

7. The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009

8. The Medicines Act 1968


10. Equipment used in connection with Medical Exposure. Guidance Note PM 77 (2nd and 3rd ed.) HSE, 2006


12. The Control of Artificial Optical Radiation at Work Regulations 2010

13. Making the best use of clinical radiology services. Royal College of Radiologists

14. Selection criteria for dental radiography. Faculty of Dental Practitioners 2004


16. Data Protection Act 2018