RADIATION SAFETY POLICY

POLICY

Reference	CPG-TW-IRSP		
Approving Body	Radiation Safety Committee		
Date Approved	September 2021		
For publication to external SFH website	**Positive confirmation received from the approving body that the content does not risk the safety of patients or the public:**		
	YES	**NO**	**N/A**
	X		
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Summary of Changes from Previous Version	• Scheduled review/ update – general updates made to names of trust committees/ groups. • Various appendices removed as now maintained locally within the Radiology Department as 'associated documents' (see associated documents listed further below). Remaining appendices re-numbered.		
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Sponsor (Position)	Divisional General Manager, D&O		
Author (Position & Name)	Sarah Sentence, Radiography Services Manager Gillian Asher, Deputy Radiography Services Manager		
Lead Division/ Directorate	Diagnostics and Outpatients		
Lead Specialty/ Service/ Department	Radiology		
Position of Person able to provide Further Guidance/Information	Radiography Services Manager		

Associated Documents/ Information	**Date Associated Documents/ Information was reviewed**
The following associated documents can be obtained from and are maintained locally within the Radiology Department: 1. Radiation Safety Committee – Terms of Reference 2. Medical Exposures Committee-Terms of reference 3. Procedure for Personal and Environmental Dose Monitoring 4. Procedure for the Protection of Pregnant and Breastfeeding Staff	1. Yearly 2. Yearly 3. April 2020 4. March 2020

5. Best Available Techniques for the Management and Discharge of Radioactive 6. Procedure for the Receipt, Accumulation and Disposal of Unsealed Radioactive Materials 7. Training Requirements for Radiation Users 8. Management Procedure for X-Ray Equipment	5. April 2020 6. April 2020 7. September 2021 8. September 2021
Template control	June 2020

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1.0 INTRODUCTION

The Trust uses ionising radiation from X-ray equipment, and radioactive substances in order to benefit patients; directly through diagnostic X-ray tests, interventional radiology and Nuclear Medicine procedures, as well as indirectly in the maintenance and calibration of associated equipment.

The general principles by which the Trust manages risk are set out in the Trust's Risk Management Policy. The "Ionising Radiations Safety Policy" (IRSP) supports supplements and clarifies those principles in relation to the use of ionising radiations.

It is supported by a number of documents that give detailed instruction on the means whereby ionising radiation risks are managed.

2.0 POLICY STATEMENT

This policy applies to any use of ionising radiation across the Trust. It does not apply to non-ionising radiations, such as lasers, ultraviolet, visible and infra-red light, ultrasound, microwaves, or electromagnetic fields. Alternative arrangements for the safety of non-ionising radiation sources are managed by the Medical Equipment Management Department. Due to the specialist nature of the policy the consultation has predominantly been drafted by the Radiation Safety Committee, RPS's and the Trust's advisers.

The Trust Board of Directors is committed to minimising risks to patients, staff, visitors, members of the public and contractors from any of the Trust's uses of ionising radiations, adopting the principle of ensuring radiation doses are as low as reasonably practical.

To this end the Board of directors will ensure that adequately resourced structures and systems and processes are in place, and regularly reviewed, in order that:

a. The Trust complies with current legislation and best practice;
b. Only justified practices involving ionising radiations are undertaken (i.e. the benefits to the patient or society outweigh the associated risk);
c. Medical and non-medical exposures are individually justified and optimised (i.e. a medical exposure will be of net benefit to the individual or society, as appropriate, and the dose will be the minimum required to achieve the intended outcome), IR(ME)R must be enforced for all medical exposures;
d. All radiation sources are used appropriately and safely;
e. Radiation doses to staff, contractors and members of the public arising out of work activities are restricted to as low as is reasonably practicable, and within dose limits.
f. There is an appropriate exchange of information with other radiation employers.

The Trust operates x-ray equipment with permission from the HSE who receive notification and registration consent applications.

The Trust stores and uses radioactive material, and accumulates and disposes of radioactive waste under environmental permits from the Environment Agency and with permission from the HSE following applications as above. In undertaking these activities the Trust will use best available techniques to minimise the activity, volume and radiological effects on the environment and members of the public, of any disposal.

3.0 DEFINITIONS/ ABBREVIATIONS

Definitions used in this policy:

The Trust	Means the Sherwood Forest Hospitals NHS Foundation Trust.
Staff	Means all employees of the Trust including those managed by a third party organisation on behalf of the Trust. Staff who work in the Trust as part of a SLA and agency staff.
Ionising radiations	Means X-rays generated by electrical means i.e. diagnostic or therapeutic X-ray equipment, or the radiations from radioactive substances.
Radiation	Means all ionising radiations as far as this policy is concerned
RPA	Radiation Protection Advisor
RPS	Radiation Protection Supervisor

This policy does not apply to non-ionising radiations, which include; lasers, ultraviolet, visible and infra-red light, ultrasound, microwaves and electromagnetic fields including the fields associated with magnetic resonance imaging (MRI) scanners.

4.0 ROLES AND RESPONSIBILITIES

Chief Executive

Although the Chief Executive retains overall responsibility for ensuring that systems are in place to manage risks arising out of the use of radiations, this responsibility is discharged through designated individuals.

Within this framework the Medical Director is responsible for this policy, delegating responsibility for the preparation and implementation of the Ionising Radiations Safety Policy and the associated procedures, structures and processes as follows.

The Responsible Manager

The Responsible Manager is the General Manager, Diagnostic & Outpatients Division and will appoint: Medical Physics Experts, Radiation Protection Advisers (RPA's) and Radioactive Waste Advisors, who advise on all aspects of radiation safety. The suitability of appointments will be ensured by seeking the advice of the Trust's External Medical Physics Expert

The Responsible Manager will arrange for services in support of radiation safety to be available through the appointed experts and their colleagues.

The Responsible Manager will ensure that Heads of Service in departments where there is a radiation facility have been authorised to sign off employer procedures under this policy.

Additionally, the Responsible Manager delegates responsibility for the formulation of an ionising radiation equipment replacement programme to the Head of Clinical Engineering, (MEMD) and the Service Leads for the Department where such equipment is located.

The Responsible Manager is advised of the health of workers exposed to radiation by the Occupational Health Medical Adviser.

Service Leads / Heads of Service

Control of radiation facilities and departments using ionizing radiation: Service Directors in Divisions where there is a radiation facility or radiation practices are undertaken are responsible, where relevant for ensuring that safety the required safety and protection measures are carried out.

Their responsibilities include ensuring that:

i. Explicit provision for the risk management of radiation and/or radioactive materials is made within their areas governance arrangements.

ii. Risk assessment is carried out before the introduction of any new practice involving ionising radiation or before the modification of an existing one. Risk assessments are reviewed regularly in line with the Trusts Risk Management Policy

iii. Systems for radiation safety, including up-to-date local rules and procedures, and appropriate equipment and security measures, are in place. The advice of the RPA must be sought when updating any radiation systems, procedures or local rules and during planning new or modified facilities.

iv. Any department where exposures are made or services utilise ionizing radiation must have a clear documented IR(ME)R framework. Procedures for the exposure of research study participants are followed, and comply with Trust requirements, ensuring that patient doses are recorded.

v. Systems are in place to ensure the safety of carers, visitors and the control of contractors.

vi. There is appropriate cooperation between employers in circumstances where Trust employees may undertake radiation work at other establishments or there are external radiation workers visiting the Trust working inside a Trust-designated radiation area.

vii. A suitably trained and experienced person(s) is appointed as Radiation Protection Supervisor (RPS), with the advice of the RPA for all areas using ionizing radiation. A copy of the appointment letter must be sent to the RPA. The RPS must also receive periodic update training, at a frequency identified by the Radiation Safety Committee. RPS's will ensure staff comply with protection measures as required by dose and environmental monitoring policies.

viii. An inventory of radiation equipment is maintained by the Radiography Services Manager. New, replacement, or re-sited radiation equipment must undergo a critical examination and commissioning tests prior to first use.

ix. Areas in which radioactive substances are used meet the requirements of the Trust procedures for the control of radioactive substances as part of the Trust's implementation of "Best Available Techniques" for the minimisation of radioactive waste disposal. The Trust will maintain a document identifying these techniques.

x. Where radioactive products are administered to patients that a site ARSAC (Administration of Radioactive Substances Advisory Committee) certificate is in place to cover the work.

xi. An ARSAC certificate holder acts as the responsible person under IR(ME)R for every administration of a radioactive substance to a patient for medical or research purposes.

xii. Staff who take responsibility for, or undertake medical exposures, or supervise the use of radioactive substances are identified, authorised, adequately trained and periodically updated and at a frequency agreed by the Committee. An up-to-date list of their names, training scope and their scope of practice is maintained.

xiii. A programme of clinical and compliance audit is carried out, covering management arrangements and all aspects of ionising radiation legislation.

xiv. Staff are adequately trained to fulfill their radiation-related duties and training records are maintained. Those Directors who have significant responsibility for radiation facilities, medical exposures or the use of radioactive substances:

- Must appoint one or more individuals to take an operational lead with respect to radiation issues if it is inappropriate for the Service Director to do so personally because of the commitment required;
- Notify the names of lead individuals to the Radiation Safety Committee, who will inform the RPAs. These individuals will act as points of contact for management issues within relevant areas.

All Staff

Staff are required to co-operate with the Trust in implementing this policy. All staff must carry out only activities involving radiation and radioactivity for which they have had appropriate training and only undertake the responsibilities for radiation work outlined in their job descriptions.

Radiation Safety Committee

As part of its Risk Management Policy and to implement its Health and Safety Policy the Trust has convened a group of relevant specialist advisers and representatives of ionising radiation users as a sub-committee of the Patient Safety Committee (PSC), which in turn reports to the Quality Committee, and thereby to the Trust Board.

The Radiation Safety Committee has the remit of:

- Developing and maintaining a list of roles within the Trust and their range of responsibilities associated with ionising radiations, for the PSC to approve
- Drafting, reviewing and improving Trust documentation relating to ionising radiation compliance and practice,
- advising the Quality Committee generally on issues relating to ionising radiation,
- monitoring compliance with Trust policies and procedures in relation to ionising radiations.

Detailed Terms of Reference of the Radiation Safety Committee are maintained by/ can be obtained from the Radiology Department. They are reviewed and updated on an annual basis as part of the work plan for the committee.

Medical Exposures Committee

The Medical Exposures Committee is established as a sub-committee of the Radiology Governance Meeting.

Its purpose is to address matters relating to the use of ionising radiation in the Radiology Department that affects patients. This committee provides a verbal highlight report to the RSC quarterly.

Detailed Terms of Reference of the Medical Exposures Committee are maintained by/ can be obtained from the Radiology Department. They are reviewed and updated on an annual basis as part of the work plan for the committee.

5.0 APPROVAL

This policy (v4.0) has been approved by the Radiation Safety Committee.

6.0 DOCUMENT REQUIREMENTS (POLICY NARRATIVE)

Documentation and supporting procedures

All written procedures relating to radiation work must be controlled documentation within an appropriate quality system, with a version, issue date and authorising signature on them. All written procedures relating to radiation work must be audited at least once every 3 years, and the results of the audit recorded and reviewed.

Implementation of the Radiation Safety Policy is supported by detailed Trust wide procedures. Appropriate procedures will be developed under the direction of the Radiation Safety Committee and will be ratified by the PSC.

Incident Reporting

Incidents must be reported according to the Trust Incident Reporting Policy and reported on the Trust incident reporting system: Datix. Incidents that are initially deemed to carry a moderate harm or above rating must be scoped using the 72 Hours scoping report and be presented at the weekly scoping meeting. Any incidents which are deemed serious will require further investigation as per the Incident Reporting Policy. Any IR(ME)R Reportable incidents must be investigated by the Division where the incident originated and reported to the Trust Sign Off Meeting as per the process flowchart at Appendix A.

Radiation incidents must also be reported to the RPA as soon as possible, who will advise the Trust on the need for external reporting.

The loss or uncontrolled release of radioactive substances may require prompt reporting to the Police and the Environment Agency. Users of radioactive substances must ensure that they are aware of and follow supplementary procedures in their local rules for these circumstances.

A 6-monthly summary of incidents related to the use of ionising radiation is provided to PSC. A table of the process required for reporting radiation safety incidents can be found at Appendix A.

External Audit and Inspection

External audits and inspections by the Care Quality Commission, the Health & Safety Executive (HSE) and the Environment Agency may take place from time to time. The outcomes of these audits and inspections will be discussed at the Radiation Safety Committee and reported to the PSC

Audit

Radiology are responsible for ensuring that clinical audit is undertaken to confirm that good standards practice are demonstrated and to improve the quality and outcome of patient care. Other areas with the responsibility for radiation equipment will ensure they have a robust audit programme in place to monitor and improve practice.

There will be an annual RPA audit of radiation departments that will include the RPS and management representatives and the outcomes from audits will be reported to the Trust Radiation Safety Committee. In addition to the annual RPA audits the department has a yearly audit programme combined with both radiation and clinical audits.

Research Exposures

Exposures carried out for the purposes of research studies require the authorisation of a Medical Physics Expert, prior to the study starting. It is the responsibility of the Chief or Principal Investigator to obtain such authorisation.

Procedures for the governance of radiation within research are held by the R&D Department. Chief and Principal Investigators are responsible for ensuring that these procedures are followed.

The Policy will be published on the Trust Intranet site. Additionally, areas designated as operating a radiation facility will ensure that all relevant staff are made aware of the policy, with local managers ensuring that distribution and awareness is commensurate with the level of knowledge required regarding specific policy areas.

7.0 MONITORING COMPLIANCE AND EFFECTIVENESS

Compliance will be monitored by the Trust's Radiation Safety Committee who will commission internal audits to give the Patient Safety & Quality Group assurance that the policy is being complied with. An annual report will be produced by the Radiation Safety Committee to demonstrate compliance and identify risk issues

Minimum Requirement to be Monitored **(WHAT – element of compliance or effectiveness within the document will be monitored)**	**Responsible Individual** **(WHO – is going to monitor this element)**	**Process for Monitoring e.g. Audit** **(HOW – will this element be monitored (method used))**	**Frequency of Monitoring** **(WHEN – will this element be monitored (frequency/ how often))**	**Responsible Individual or Committee/ Group for Review of Results** **(WHERE – Which individual/ committee or group will this be reported to, in what format (eg verbal, formal report etc) and by who)**
Staff dose	Radiation Protection Supervisor	Audit	Annual	Risk Committee
Management Review	Radiation Protection Advisor	Audit	Three yearly	Patient Safety Committee

8.0 TRAINING AND IMPLEMENTATION

The policy and changes to it will be communicated to all staff via the weekly Staff bulletin and Team briefing mechanisms.

All new members of staff within Radiology, Endoscopy, Theatres, Pathology and Surgery must receive appropriate instruction on radiation protection and safety procedures as part of their induction training. This training will be refreshed at intervals decided by the RSC.

Staff working in designated radiation areas are required to sign a statement that they have read and understood the local rules and other associated relevant procedures.

All staff using radiation or with responsibility for radiation protection shall receive appropriate training prior to undertaking such work, and shall receive regular update training. It is the responsibility of relevant Heads of Service to ensure staff receive such training and that records of such training are kept. Practitioner and operators as defined by IR(ME)R must have training to demonstrate their competence to act in these roles.

The Radiation Safety Committee will ensure that a training strategy for this policy is developed, identifying who should be trained and to what level.

9.0 IMPACT ASSESSMENTS

- This document has been subject to an Equality Impact Assessment, see completed form at Appendix B
- This document is not subject to an Environmental Impact Assessment

10.0 EVIDENCE BASE (Relevant Legislation/ National Guidance) AND RELATED SFHFT DOCUMENTS

Evidence Base:

This policy is written to ensure compliance with statutory legislation and best practice and taking into account evidence of audits and professional body recommendations.

- The Environmental Permitting (England and Wales) Regulations 2016
- The Carriage of Dangerous Goods by Road Regulations 2009 and Amendment 2019
- The Ionising Radiations Regulations 2017
- The Ionising Radiation(Medical Exposure) Regulations 2017 IR(ME)R

Related SFHFT Documents:

- Risk Management Policy
- Incident Reporting Policy and Procedures

11.0 KEYWORDS

- radiology xray x-ray ionising

12.0 APPENDICES

- Appendix A – SFH Radiation Incident Reporting Process
- Appendix B – Equality Impact Assessment

Appendix A

SFHT Radiation Incident Reporting Process

Sherwood Forest Hospitals
NHS Foundation Trust

Examples of these are:

Patient related

- wrong site or wrong patient x-rayed/scanned-CT only
- duplicate ICE request (resulting in patients x-rayed again)
- selecting wrong patient on ICE (referrer)
- patient receives exposure much greater than intended (e.g. very over exposed image), wrong protocol settings on CT scanner.

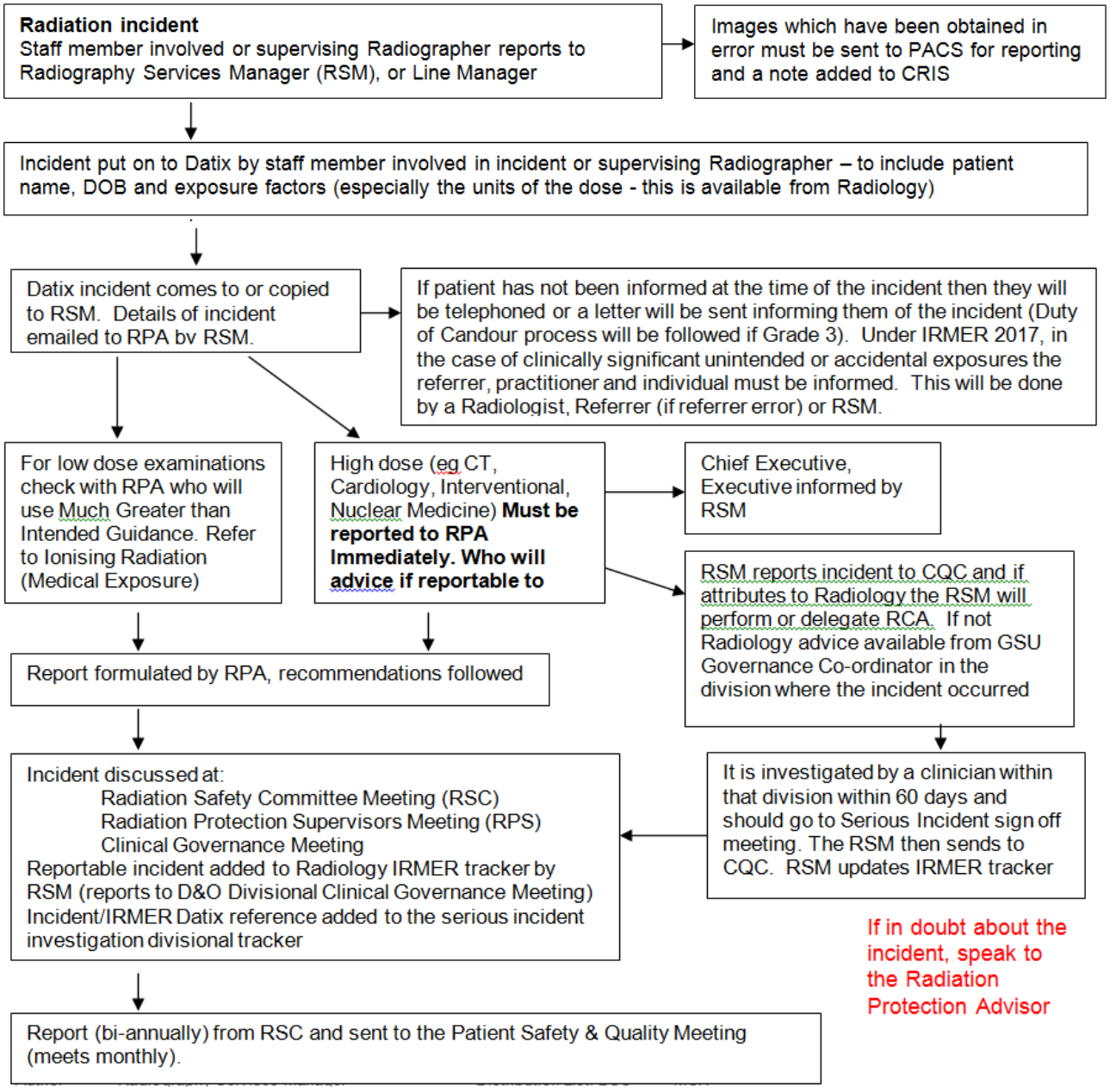
Staff or equipment related

Exposure fails to terminate (e.g. AEC failure or exposure switch failure)

Unintended exposure

- someone exposes unintentionally e.g. steps on a pedal or unauthorised person makes an exposure
- person walks into controlled area during exposure / not complying with local rules.

This list is only a brief guide – if in doubt check with Radiation Protection Advisor (RPA)-0115 8754500



APPENDIX B – EQUALITY IMPACT ASSESSMENT FORM (EQIA)

Name of service/policy/procedure being reviewed: Radiation Safety Policy			
New or existing service/policy/procedure: Existing			
Date of Assessment: September 2021			
For the service/policy/procedure and its implementation answer the questions a – c below against each characteristic (if relevant consider breaking the policy or implementation down into areas)			
Protected Characteristic	**a) Using data and supporting information, what issues, needs or barriers could the protected characteristic groups' experience? For example, are there any known health inequality or access issues to consider?**	**b) What is already in place in the policy or its implementation to address any inequalities or barriers to access including under representation at clinics, screening?**	**c) Please state any barriers that still need to be addressed and any proposed actions to eliminate inequality**
The area of policy or its implementation being assessed:			
Race and Ethnicity	none	none	none
Gender	None-see below	none	none
Age	none	none	none
Religion	none	none	none
Disability	none	none	none
Sexuality	none	none	none
Pregnancy and Maternity	It should be noted that there are certain requirements of the regulations, principally related to radiation dose limitation, which may require different treatment of men and women, due to potential for harm to those pregnant/breast-feeding	none	none

Gender Reassignment	none	none	none
Marriage and Civil Partnership	none	none	none
Socio-Economic Factors (i.e. living in a poorer neighbourhood / social deprivation)	none	none	none

What consultation with protected characteristic groups including patient groups have you carried out?

- **N/A**

What data or information did you use in support of this EqIA?

- **N/A**

As far as you are aware are there any Human Rights issues be taken into account such as arising from surveys, questionnaires, comments, concerns, complaints or compliments?

- **None**

Level of impact

From the information provided above and following EQIA guidance document Guidance on how to complete an EIA (click here), please indicate the perceived level of impact:

Low Level of Impact

For high or medium levels of impact, please forward a copy of this form to the HR Secretaries for inclusion at the next Diversity and Inclusivity meeting.

Name of Responsible Person undertaking this assessment: Gillian Asher

Signature:

Date: September 2021