THE STATE HOSPITALS BOARD FOR SCOTLAND

RADIATION SAFETY POLICY

(To be read in conjunction with the Radiation Safety Procedure)

Policy Reference Number	OHS16
Issue Number	9.0
Lead Author	Security Operations Manager
Contributing Authors	Skye Centre Manager Skye Centre Senior Charge Nurse Health Centre Practice Nurse
Advisory Group	Health and Safety Committee
Approval Group	Policy Approval Group (PAG)
Implementation Date	24 January 2025
Next Review Date	24 January 2028
Accountable Executive Director	Director of Security, Estates and Resilience

The date for review detailed on the front of all State Hospital policies/ procedures/ guidance. The review date is advisory and the organisation reserves the right to review a policy/ procedure/ guidance at any time due to organisational/legal changes.

Staff are advised to always check that they are using the correct version of any policy, procedure or guidance rather than referring to locally held copies.

The most up to date version of all State Hospital policies, procedures and guidance can be found on the Hospital's Intranet policies page.

REVIEW SUMMARY SHEET

No changes required to policy (evidence base checked)	☒

Changes required to policy (evidence base checked)	☐
Summary of changes within policy:	

CONTENTS

1 RADIATION SAFETY POLICY

1) This policy sets out the framework to oversee health and safety relating to all uses of ionising radiation within The State Hospital (TSH) and should be read in conjunction with the Radiation Safety Procedure. Compliance with the policy is mandatory for all staff in all locations.

2) TSH will ensure, as far as reasonably practicable, the health and safety of its staff, students, patients, volunteers, visitors and contractors working on the premises and of members of the public who may be exposed to the hazards arising from the use of ionising radiation, lasers and other non-ionising radiations.

3) The Hospital will ensure that all dental radiological examinations are performed with the radiation dose to the patient being as low as reasonably practicable to achieve the required clinical purpose, consistent with the TSH procedures.

4) TSH is committed to a policy of restricting exposures to ionising radiation in accordance with the ALARP (as low as is reasonably practicable) principle and will effect this through the organisational arrangements and responsibilities described.

5) Overall responsibility for ensuring that a radiation safety programme is implemented and reviewed, which complies with current legislation and regulations, is the responsibility of the Chief Executive.

6) Responsibility for supervising the work with radiation and ensuring that it is done in accordance with “local rules” “see appendix 1 & appendix 2” is the responsibility of the Radiation Protection Supervisors (RPS) appointed in writing by the Human Resources Department of the Hospital. There should be at least two RPS’s based at the Hospital. One based in the Health Centre to cover the dental suite and one within Security to cover the x-ray baggage scanner. The duties of the RPS are identified & communicated see appendix 3. The RPS are responsible to the Director of Security, Estates and Resilience for carrying out these duties.

7) Responsibility for entitling staff in writing as referrers, practitioners and/or operators for dental radiographs under Ionising Radiation (Medical Exposure) Regulations 2017 (IRMER 17) can be done by the Dentists due to their General Dental Council (GDC) registration. Responsibility for maintaining a record of training for these IRMER duty-holders is the responsibility of the Health and Safety Lead.

8) Responsibility for maintaining an inventory of radiation equipment on behalf of the Hospital, and for ensuring that all such equipment both satisfies radiation safety requirements and is subject to an appropriate replacement programme, is the responsibility of the RPS for that area. Responsibility for ensuring that all radiation equipment is installed, critically examined and maintained to satisfy radiation safety requirements and included in the equipment replacement programme is the responsibility of the RPS.

9) Responsibility for the justification and optimisation of each dental exposure will lie with the individual duty-holder clearly identified in the Hospital’s IRMER procedures.

10) Dentists carrying out X-ray procedures within the Hospital will follow the IRMER procedures for dentists agreed by NHS Lanarkshire.

11) Responsibility for maintaining records for disposal of radioactive sources formerly held under the Radioactive Substances (Testing Instruments) Exemption Order 1985 (SI No. 1049), and any other radioactive material held or used on the premises is the responsibility of the Estates Manager.

12) TSH will appoint appropriately qualified members of Health Physics as its Radiation Protection Advisers (RPAs), and will appoint appropriately qualified members of Department of Clinical Physics and Bioengineering (DCPB) as its Medical Physics Experts (MPEs) in diagnostic radiology.

13) Should there be concerns about any aspect of Radiation Safety; the Hospital shall seek expert advice from one of the RPA's at Health Physics, Gartnavel Royal Hospital. See appendix 4

14) TSH will establish effective communication and co-operation between managers and the RPA and will give them the power to inspect and perform such tests as they think appropriate.

15) Individual workers are required to work with radiation in such a way that they:

a) Exercise reasonable care and follow any relevant policies and Local Rules.
b) Use, as instructed, any protective equipment and personal dosimeters provided by TSH.
c) Report to their line manager and RPS any defect in such equipment.
d) Undertake regular update training in IRR17 and IRMER17 and be able to evidence this.
e) Comply with the TSH procedures and protocols for medical exposures.
f) Report through the Datix system immediately and to their RPS if any incident occurs in which a patient may have received a radiation exposure greater than intended or any other incident in which a person is exposed to radiation.
g) Do not recklessly endanger the safety of others.

16) As an employer, the Board has a policy to help safeguard, as far as reasonably practicable, the health and safety of all persons who may be exposed to the hazards arising from the use of ionising radiation.

17) Everyone working with sources of ionising radiation has a duty in law to protect themselves and others from any hazard arising from their work. It is essential that each person complies with their responsibilities and the precautions required by the Ionising Radiations Regulations (2017). Additional information can be found in the Radiation Safety Documentation.

2 EQUALITY AND DIVERSITY

The State Hospitals Board (the Board) is committed to valuing and supporting equality and diversity, ensuring patients, carers, volunteers and staff are treated with dignity and respect. Policy development incorporates consideration of the needs of all Protected Characteristic groups in relation to inclusivity, accessibility, equity of impact and attention to practice which may unintentionally cause prejudice and / or discrimination.

The Board recognises the need to ensure all stakeholders are supported to understand information about how services are delivered. Based on what is proportionate and reasonable, we can provide information/documents in alternative formats and are happy to discuss individual needs in this respect. If information is required in an alternative format, please contact the Person-Centred Improvement Lead on 01555 842072.

Line Managers are responsible for ensuring that staff can undertake their role, adhering to policies and procedures. Specialist advice is available to managers to ensure that reasonable adjustments are in place to enable staff to understand and comply with policies and procedures. The EQIA considers the Protected Characteristic groups and highlights any potential inequalities in relation to the content of this policy.

Patient pre-admission assessment processes and ongoing review of individual care and treatment plans support a tailored approach to meeting the needs of patients who experience barriers to communication (e.g. Dementia, Autism, Intellectual Disability, sensory impairment). Rapid access to interpretation / translation services enables an inclusive approach to engage patients for whom English is not their first language. Admission processes include assessment of physical disability with access to local services to support implementation of reasonable adjustments.

Patients are encouraged to disclose their faith / religion / beliefs, highlighting any adapted practice required to support individual need in this respect. The EQIA considers the Protected Characteristic groups and highlights any potential inequalities in relation to the content of this policy.

Carers / Named Persons are encouraged to highlight any barriers to communication, physical disability or anything else which would prevent them from being meaningfully involved in the patient's care (where the patient has consented) and / or other aspects of the work of the Hospital relevant to their role. The EQIA considers the Protected Characteristic groups and highlights any potential inequalities in relation to the content of this policy".

The volunteer recruitment and induction process supports volunteers to highlight any barriers to communication, physical disability or anything else which would prevent them from contributing meaningfully to patient care and / or engage in other aspects of the work of the Hospital relevant to their role. The EQIA considers the Protected Characteristic groups and highlights any potential inequalities in relation to the content of this policy.

3 STAKEHOLDER ENGAGEMENT

This policy is governed by specialised national guidance. Therefore engagement with Key Stakeholders is not necessary.

Key Stakeholders	Consulted (Y/N)
Patients	N/A
Staff	N/A
Carers	N/A
Volunteers	N/A

4 COMMUNICATION, IMPLEMENTATION, MONITORING AND REVIEW OF POLICY

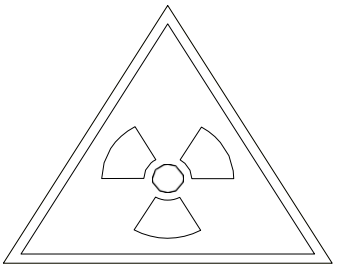
This policy will be communicated to all stakeholders within The State Hospital via the intranet and through the staff bulletin.

The Health and Safety Committee will be responsible for the implementation and monitoring of this policy.

Any deviation from policy should be notified directly to the policy Lead Author. The Lead Author will be responsible for notifying the Advisory Group of the occurrence.

This policy will be reviewed every three years or earlier if required.

APPENDIX 1: X-RAY BAGGAGE SCREENING SYSTEM - LOCAL RULES



X-RAY BAGGAGE SCREENING SYSTEM - LOCAL RULES

1. Ensure that radiation signs are located at entry into, and exit from, the baggage irradiation area.

2. The operating key should be removed from the unit whenever it is left unattended.

3. No person should place any part of their body within the irradiation area or interfere with the lead rubber protective sheets at the entry and exit points

4. Appropriate training in the operation of the x-ray equipment should be given to all staff new to the area before they take charge of it.

5. The lead rubber drapes at the entry and exit point to the unit should be checked for any damage daily and a record made of this check. Should any damage be observed, the manufacturer should be contacted to make the necessary repairs.

6. If X-ray emission fails to terminate on release of the exposure button, then the electrical supply to the unit should be switched off and the service engineer contacted to arrange for repair.

7. If any other malfunction of the equipment is suspected, then the service engineer should be contacted to arrange for repair.

8. Should any incident occur involving a suspected radiation exposure, the RPA should be contacted, the attached form should be completed by the RPS and an investigation of the circumstances carried out.

Signed…….. Date……...
Security Director

Review date: 23/03/2028

For further information contact:

Shellagh Miligan
Dept. of Clinical Physics and Bio-Engineering
Health Physics Service West House (Ground Floor)
Gartnavel Royal Hospital
1055 Great Western Road
Glasgow G12 OXH
Telephone: 0141 211 3387
E-mail : Shellagh.Miligan@nhs.scot

APPENDIX 2: LOCAL RULES FOR DENTAL SURGERY AT THE STATE HOSPITAL

LOCAL RULES FOR DENTAL SURGERY AT THE STATE HOSPITAL

Location:	The State Hospital Health Board, Rooms containing intra-oral X-ray units
Radiation Protection Supervisor:	Marcus Topping Ext 2149
RPA	Shellagh.Miligan@nhs.scot 0141 211 3387

1 RESPONSIBILITY FOR RADIATION PROTECTION

As an employer, the Board has a policy to help safeguard, as far as reasonably practicable, the health and safety of all persons who may be exposed to the hazards arising from the use of ionising radiation.

Everyone working with sources of ionising radiation has a duty in law to protect themselves and others from any hazard arising from their work. It is essential that each person complies with their responsibilities and the precautions required by the Ionising Radiations Regulations (2017) as contained in these Local Rules. Additional information can be found in the Radiation Safety Documentation.

2 DOSE INVESTIGATION LEVELS

Personal monitoring is not required unless a member of staff takes in excess of 100 intra oral or 50 OPT exposures per week or pro-rata combination of both. If staff are monitored, the dose investigation level is 0.3mSv in any single monitoring period or 3mSv/calendar year.

3 CONTROLLED AREAS

The controlled area around a dental intra-oral X-ray unit will extend in the direction of the primary beam until the beam is attenuated by the patient or a protective barrier and will extend 1.5m from the patient in other directions.

4 SYSTEMS OF WORK

4.1 General Work Instructions

a) X-ray equipment must only be operated by staff who have been trained in safe and correct operation. Records of all training should be maintained and available for inspection.
b) The equipment must be switched off at all times when not in use. Keys to equipment must be removed when the equipment is not in use and stored in a secure location accessible to entitled / designated staff only.
c) When taking an X-ray, the tube must always be pointed towards one of the side walls and NEVER towards any windows or doors.
d) The operator or patient must not hold the tube or image receptor by hand during an exposure.
e) Persons must not expose any part of themselves to the primary X-ray beam and must remain at the maximum distance from the patient compatible with the efficient discharge of their duties.
f) The operator must be able to hear the audible signal and see the radiation warning light when exposing. Functionality of warning lights should be checked prior to starting work or ASAP. If not operational they should be covered with an ‘out of order’ sign and a temporary Controlled Area sign attached to the entrance. Warning lights should be then made operational ASAP.

4.2 Arrangements for Access to Controlled Areas

Access to controlled areas is by the following arrangements:

4.2.1 All persons accessing a controlled area

a) No persons should enter the controlled area unless it is necessary e.g. to hold or support a patient.
b) Entitled operators who are pregnant can continue to take X-rays but must remain outside the IO controlled area and behind the protective screen for OPT. Pregnant staff should inform their line manager as soon as possible.
c) Trainees must only work in a controlled area under supervision until appropriately trained.

4.2.2 Outside workers

a) Outside workers must not enter the controlled area.
b) When service companies need to work on the equipment, the area must be handed over. Should local staff then be required to enter the Controlled Area they must comply with any arrangements put in place by the service company.

4.2.3 Other Persons (e.g. domestics, translators, observers, schoolchildren)

Other persons must not enter the controlled area while it is so designated.

4.3 Staff holding of Patients

a) No persons should carry out this task on a regular basis. Records must be kept of the names, status and date of holding, for the persons who hold or support a patient during X-ray.
b) Persons who hold or support a patient during X-ray must follow the instructions of the equipment operator.

5 CONTINGENCY PLANS

The following contingency plans have been prepared for foreseeable radiation incidents to ensure the safety of staff and visitors. The aim is to restrict any unplanned radiation exposure as far as reasonably practicable, and to obtain information on the exposure for subsequent assessment.

5.1 Contingency plan for reasonably foreseeable radiation accidents

The following scenarios have been identified as reasonably foreseeable radiation accidents and incidents that could occur

- Suspected high staff / patient exposure from an incident.
- Unauthorised person enters controlled area when X-rays on.
- Staff radiation exposure.
- Equipment fault resulting in X-ray exposure failing to terminate.

If any of these events occur then the following action must be taken:

a) If X-ray has not already terminated, release exposure control or press abort button or emergency power off to terminate exposure. If this fails follow Emergency off Procedure. Record any error codes.
b) Record all incident details as this information can be used for future investigation and to assess staff dose if necessary.

If it is suspected that the incident has arisen due to X-ray equipment fault (electrical or mechanical) then the following action should also be taken:

a) Clinical use of the equipment must be suspended and a sign should be put on to that effect.
b) The X-ray engineer should be asked to investigate and rectify the fault.
c) The unit should not be returned to clinical service until appropriate remedial action has been taken to rectify the fault.
d) Appropriate Quality control tests should be performed to confirm that the equipment is fit for clinical use.

5.2 Fire contingency plan

In the event of a fire the contingency plan would be that normal procedures should be followed as outlined in the Department Fire and Safety Notices. Equipment should normally be switched off, provided this action does not seriously endanger the staff involved.

5.3. Declaration

All staff should be asked to confirm they have read, understood and will abide by these Local Rules and records should be kept of such confirmation.

DECLARATION ON RADIATION PROTECTION

I confirm that I have read, understood and undertake to act in accordance with the Local Rules for the dental service at The State Hospital, dated March 2025.

Name (Block Capitals)	Designation	Signed	Date

Radiation Protection Supervisor: Date:

APPENDIX 3: FUNCTIONS OF THE RADIATION PROTECTION SUPERVISOR

All the following items listed are the employer's legal responsibility, but the employer (e.g. the Chief Executive or designated senior manager) may allocate the functions to a suitably trained RPS.

Responsibility	
✓	To oversee the work performed in the department for which the **RPS is appointed** so that it may be carried out in accordance with the local rules for that department.
	To supervise the issue and collection of personal monitoring dosemeters at the appropriate times.
	To investigate and report to the Head of Department and the employer (e.g. the Chief Executive or designated senior manager) (and RPA, as appropriate) any single dose reading exceeding 0.3 mSv, or the locally agreed investigation level.
	To investigate and report to the Head of Department and the employer (and RPA, as appropriate), without delay, incidents that may have exposed any person(s) to an unforeseen radiation exposure or any patient to an exposure significantly greater than that intended.
✓	To observe, from time to time, all procedures involving ionising radiations carried on within the areas for which the RPS is responsible, and issue any instructions necessary to maintain doses to persons as low as reasonably practicable.
	To ensure that local rules and amendments are read and understood by all relevant staff and that a record of such occasions is kept.
	To act as the first point of reference on questions of practical radiation safety.
✓	To assist in the derivation of local rules and systems of work to ensure that they are practicable and usable.
✓	To undertake an annual review of radiation safety and submit an annual report to the Radiation Safety Committee.
	To ensure that any contingency plans are reviewed on a regular basis.
✓	To assist in performing risk assessments including those for pregnant staff.

Site Name: _____ Area within site: _____

RPS Name: _____ RPS Signature: _____ Date: ____

Manager Name: _____ Manager Signature: _____ Date: ____

APPENDIX 4: RADIATION PROTECTION SUPERVISORS

(THE STATE HOSPITAL)

Equipment	Supervisor	Date Trained	Date Appointed
Rapiscan x-ray Baggage Screening System	Security Operations Manager	22/06/2021	
Dental Equipment	Marcus Topping	22/06/2021	

RADIATION PROTECTION ADVISERS
(HEALTH PHYSICS – GARTNAVEL ROYAL HOSPITAL)

Name	Contact Number
Mrs Julie Willis	0141 211 3460
Dr Christina Stewart	0141 211 3428
Mrs Shellagh Miligan	0141 211 3387
Mr Michael Watt	0141 211 3433
Duty Radiation Protection Advisor	0141 211 6760

Signed:

Chief Executive _____

Finance Director _____

Health and Safety Advisor _____