

Agenda for Change	Version 10
Author: Claire Ackerman	Date: May 2018



## Job Description

<b>Job Group (Delete as applicable):</b>	Healthcare Scientists
<b>Job Title:</b>	<b>Clinical Scientist in Imaging &amp; Radiation Protection Diagnostic Radiology / Deputy Head of Clinical &amp; Radiation Physics</b>
<b>Existing Grade:</b>	8C
<b>Care Group:</b>	Clinical Support Services
<b>Service Line:</b>	Healthcare Science & Technology Summary
<b>Department:</b>	<b>Clinical &amp; Radiation Physics</b>
<b>Location:</b>	<b>Derriford Hospital</b>
<b>Appraiser:</b>	<b>Head of Clinical &amp; Radiation Physics</b>
<b>Accountable to:</b>	<b>Head of Clinical &amp; Radiation Physics</b>
<b>Position Number:</b>	4039702
<b>Date:</b>	July 2023

Agenda for Change	Version 10
Author: Claire Ackerman	Date: May 2018

#### **Job Purpose:**

The post holder will work at a senior level of professional expertise to assist in the implementation and audit of legislation, codes of practice and other relevant guidance in radiation safety.

The post holder will act as a Radiation Protection Adviser and Medical Physics Expert for the Trust as defined in the relevant legislation. This requires liaison with senior management, statutory regulatory bodies, the heads of Imaging, Nuclear Medicine, Radiotherapy, Oncology and other service lines, consultant medical staff and all staff using radiation. Similar roles will apply to work carried out for external customers.

The post holder will provide specialist training in support of our customers and development of the team.

The post holder will operate with a high degree of autonomy to provide services to a range of service lines and departments within the Trust and other organisations with which the department has contractual agreements. The postholder will attend senior management meetings and provide representation and advice to both the Trust and external customers as directed by the head of Clinical & Radiation Physics.

The post holder will operate at a level of expertise where they are expected to provide advice on the interpretation and application of legislation and standards to relevant professional and national (government) bodies.

The post holder will have input to the future strategy of the Clinical & Radiation Physics Service and provide formal managerial support to the department and deputise for the Head of Clinical & Radiation Physics as necessary. The post holder will contribute to all areas of management including HR, training, and clinical governance. The postholder will undertake appraisals and 1:1s within the team.

#### **Key Dimensions:**

The Directorate of Healthcare Science and Technology provides specialist technical and scientific expertise in connection with the use, management and development of healthcare technologies and associated clinical services.

The Directorate employs a workforce of technologists, technicians, scientists and administrative staff and provides specialist healthcare science and technology services covering the following areas:

- Clinical and Radiation Physics
- Clinical Technologies
- Clinical Measurement and Innovation
- Radiotherapy Physics
- SDU

The use and support of healthcare technology is central to the safe, effective, efficient, timely and convenient delivery of patient-centred services, and this Directorate provides a range of specialised clinical support services which are essential for the Trust to realise its strategic aims.

Alongside a good range of guidance, there are statutory obligations with respect to the provision of scientific and clinical support services. In particular these are defined by the Care Quality Commission "Essential

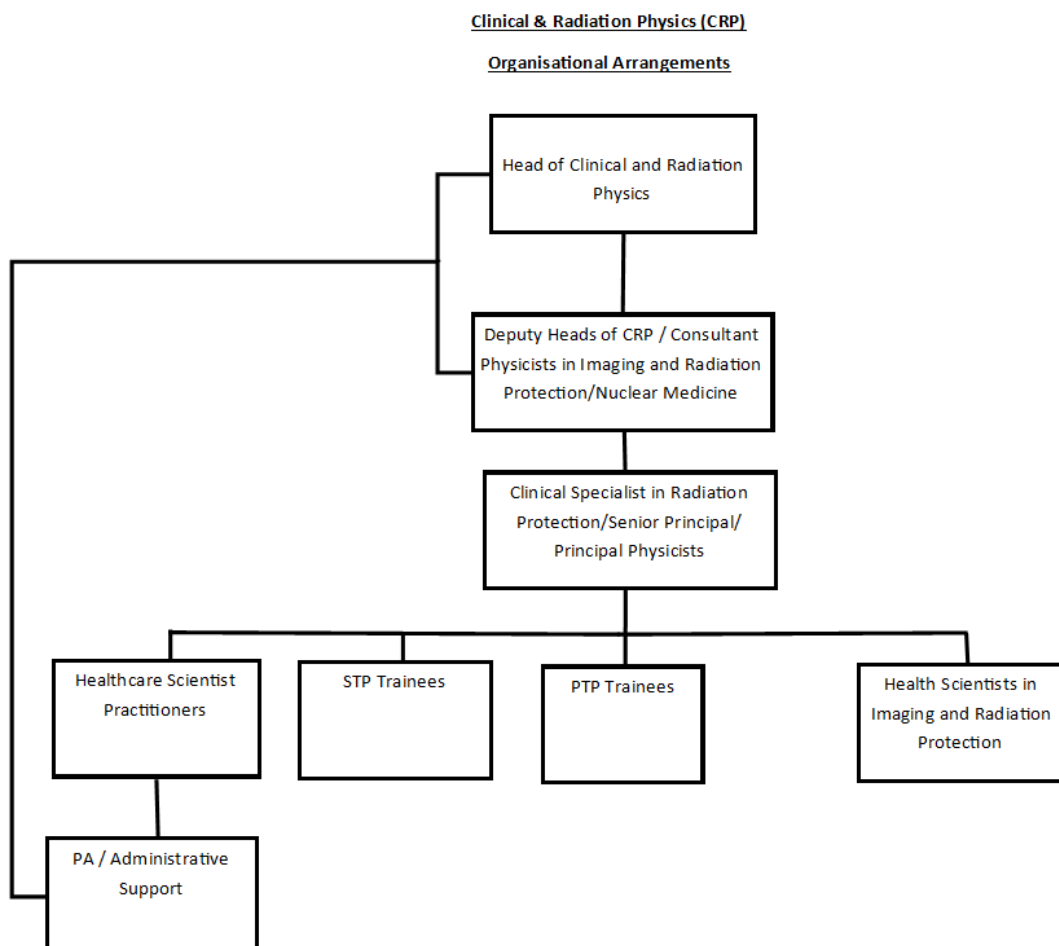
Agenda for Change	Version 10
Author: Claire Ackerman	Date: May 2018

Standards" within regulations concerning the safe use of ionising radiations and the development of medical devices.

The Clinical & Radiation Physics department provides scientific and technical support services for radiation protection, diagnostic radiology and nuclear medicine to a wide range of customers within the NHS, private and academic sectors.

Medical Imaging within UHP provides over 360,000 examinations / year: There is growing complexity of services in support of the MTC and other specialist services such as neuro radiology, vascular surgery and cardiology

## Organisation Chart



Agenda for Change	Version 10
Author: Claire Ackerman	Date: May 2018

## **PRIMARY DUTIES & AREAS OF RESPONSIBILITY**

- Appointed as Medical Physics Expert under IRMER 17 for Diagnostic & Interventional Radiology
- Appointed as Radiation Protection Adviser under the Ionising Radiations Regulations
- Appointed as Radioactive Waste Adviser under the Environmental Permitting Regulations (desirable)
- Deputise to the Head of Clinical & Radiation Physics

### **1. CLINICAL SCIENTIFIC**

1.1 To act as an appointed Radiation Protection Adviser (RPA) for the Trust and its customers. In providing RPA services, to discuss, analyse and advise independently and without supervision, and to receive, analyse and present highly complex information, to the Trust at all levels up to, and including, the Chief Executive. RPA duties include:

- 1.1.1 to provide expert advice to the Chief Executive, senior management and staff at all levels on all aspects of radiation safety in the use of radiation generators and radionuclides.
- 1.1.2 to provide expert advice on compliance with all relevant radiation safety legislation.
- 1.1.3 to provide expert advice on the design of new facilities and techniques where ionising radiations are used.
- 1.1.4 to provide advice on protection of staff and the public from radiation hazards, and on actions to be taken in the event of a radiation incident;
- 1.1.6 to conduct audits of compliance with radiation safety legislation and Trust policies on a regular basis, to report the results of audits in writing, and to make recommendations for actions and improvements to the Trust at a senior level.
- 1.1.7 to formulate, develop and maintain the radiation safety policies and strategies of the Trust to meet standards required by radiation safety legislation, and to advise heads of departments on the implementation of these policies and strategies through local procedures and codes of practice.
- 1.1.8 to provide dose assessments or estimates for staff, and the public as required and to report findings and make recommendations to heads of service.
- 1.1.9 to conduct surveys of radiation areas in order to assess and monitor levels of radiation exposure to staff, patients and visitors, to report findings in writing and to formulate measures for dose reduction and optimisation.
- 1.1.10 for the Trust, to ensure, prior to purchase, that radiation equipment purchased is necessary and can be operated in a safe manner by qualified staff.
- 1.1.11 to advise on the specification, commissioning, acceptance and quality assurance of all equipment generating radiation, monitoring radiation or restricting radiation exposure in relation to the safety of staff and public.
- 1.1.13 to be responsible for, and to provide instruction and training in radiation protection.

Agenda for Change	Version 10
Author: Claire Ackerman	Date: May 2018

1.2 To act as a Medical Physics Expert (MPE) to the Trust and its customers for Diagnostic and Interventional Radiology. In doing so, to understand the clinical aspects of medical exposures and to present highly complex information to clinicians and other staff involved in medical exposures, and, where relevant, to patients and others undergoing a medical exposure. The MPE role is carried out independently and without supervision. MPE duties include:

- 1.2.1 to provide expert advice on the optimisation of diagnostic medical exposures and on patient dosimetry and quality assurance.
- 1.2.2 to provide dosimetry data for standard operating protocols at the request of the relevant department manager.
- 1.2.3 to provide radiation dose data to clinicians for individual medical exposures, including research exposures, to enable the clinical justification of an exposure to occur.
- 1.2.4 to give expert advice to clinicians on the appropriate information to be given to patients and research volunteers regarding their medical exposure and how they might minimise the radiation dose to themselves and others.
- 1.2.5 to give expert advice on the establishment of diagnostic reference levels for medical exposures and on their use in auditing current clinical practice regarding medical exposures.
- 1.1.5 to provide expert advice on dose minimisation to comforters and carers who may be exposed to radiation in their care of an exposed individual.
- 1.2.6 to give expert advice to the Trust on the implementation of legislation relating to medical exposures and in general on the radiation protection of the patient.
- 1.2.7 to advise on the specification, commissioning, acceptance, and quality assurance of all equipment generating radiation, monitoring radiation or restricting radiation exposure in relation to the safety of staff and public.
- 1.2.8 to advise on the investigation and analysis of incidents involving suspected accidental or unintended exposure to patients.

1.3 To act as a Medical Physics Expert in the Physics of Diagnostic Radiology under the Ionising Radiation (Medical Exposure) Regulations i.e. to act as a lead source of knowledge and expertise in this field.

1.4 Responsible for the planning and delivery of the programme of radiation safety and equipment and performance testing of highly complex, patient critical, x-ray equipment, to ensure statutory compliance, and adherence to professional standards.

1.5 Test highly complex, patient-critical x-ray equipment requiring high precision measurements. Analyse results and provide reports and advice on findings to the Trust and users on the safety and efficacy of the use of the equipment.

1.6 Advise on and assist with safe methods for storage and disposal of solid and liquid waste including maintenance of disposal records, liaison with the Environment Agency, licence applications and associated assessment of the local environmental impact of disposals.

## **2. MANAGERIAL**

2.1 To deputise for the Head of Clinical & Radiation Physics on all matters as required.

2.2 To assist in the planning of the service including business, financial and workforce planning.

2.3 To assist in HR processes for staff, including interviews, appraisals and sickness absence reviews.

Agenda for Change	Version 10
Author: Claire Ackerman	Date: May 2018

- 2.4 To manage the work of the group in the provision of a programme of quality assurance for x-ray equipment, including allocation of staffing resource.
- 2.5 Responsible for the evaluation and selection of equipment used for performance assessment of diagnostic and interventional x-ray systems.
- 2.6 To minimise financial costs by safe and effective use of high capital value equipment (in excess of £1M).  
Take action to secure best value for the Trust in performance issues with suppliers in respect of this equipment.
- 2.7 To monitor and provide management information on the delivery of services to provide measures against key performance indicators
- 2.8 To plan and implement physics training for radiologists undergoing FRCR and Radiographers in collaboration with the University of Plymouth.
- 2.9 To act as training lead for Clinical Scientists on placement within the service.
- 2.10 To act as the Clinical Governance Lead for Clinical & Radiation Physics, reporting to the Head of Clinical & Radiation Physics.
- 2.11. Maintain appropriate and accurate records of the procedures performed. These may be required for inspection by the appropriate statutory authorities.
- 2.12. Responds in a timely manner to requests for advice and assistance by “customers”, using own judgment to prioritise the request against existing workload. Prioritise and manage own work, and that of others.
- 2.13 With the Head of Department, review and promote improvement to the quality and efficiency of service as necessary using appropriately selected quality improvement tools. To Communicate the progress and outcome of improvement projects to the Care Group and more widely as directed by the Head of Department.

### **3. TEACHING, TRAINING, RESEARCH and DEVELOPMENT**

- 3.1 Participate in formal teaching programmes and courses (include preparation and presentation of lectures) for staff on areas of Radiation Protection and Imaging Physics e.g.:
  - (i) Fellowship of the Royal College of Radiologists training for Radiologists
  - (ii) Statutory staff training under IRR17 and IR(ME)R 2017
  - (ii) Peninsula Dental School, University of Plymouth
  - (iii) Other staff training
- 3.2 Participate in the training of Clinical Scientists and Clinical Technologists, including supervision of trainees. Act as MSc Supervisor where required.
- 3.3 Initiate, supervise and carry out research and development in the Physics of Diagnostic Radiology, following a programme agreed with the Head of Clinical & Radiation Physics.
- 3.4 Liaise with clinicians, and other clinical staff to provide expert scientific advice and support for clinical research programmes involving novel uses of diagnostic x-rays.
- 3.5 Act as Health Research Authority (HRA) Medical Physics Expert Assessor.
- 3.6 Present original scientific work at national conferences, and through publication in scientific and medical journals.

Agenda for Change	Version 10
Author: Claire Ackerman	Date: May 2018

#### **4. PROFESSIONAL**

- 4.1 Maintain HCPC registration and participate in professional CPD programmes.
- 4.2 Maintain certificate of competence to act as RPA as stipulated by HSE.
- 4.3 Maintain recognition as Medical Physics Expert as stipulated by DH.
- 4.4 To attain and maintain high professional standards at all times in their execution of the duties of the post, actively working to ensure compliance with relevant Regulations and Policies and the relevant local, national and international scientific and professional standards and legislative requirements.
- 4.5 To work effectively and collaboratively within a multi-disciplinary team, with a demonstrable commitment to participating fully in the delivery of a professional, high-quality clinical service.
- 4.6 To negotiate persuasively potentially sensitive or contentious issues with other staff groups and with patients, remaining calm and objective under stressful conditions.
- 4.7 Keep abreast of the latest scientific and technical developments and their applications in medical and associated fields and attend suitable seminars and courses as part of training and personal development and to further the work of the department.
- 4.8 Engage professionally at a national level. Participate in professional committee, working parties as agreed with the Head of Clinical & Radiation Physics

#### **5. Communications and Working Relationships**

To communicate and liaise effectively with Service Line and other hospital staff at all levels, including;

- Senior Managers, Trust Board Members
- Manager at all levels in the organisation
- Consultant and Medical Staff at all levels
- Clinical Staff at all levels
- Support Staff at all levels
- External Customers, all organisational levels
- External Suppliers, all organisation levels
- Regulators and staff of enforcement authorities

#### **6. Other**

- 6.1 Work hours necessary for the proper and efficient performance of the work. In practice, the appointee will occasionally be required to perform duties outside the normal working hours of the Department. Duties include travel to other departments and work on premises of other NHS and non-NHS premises.
- 6.2 When working in other departments, the appointee will liaise with local heads of department, medical consultants, superintendents, nursing sisters etc. and representatives of outside agencies. The post holder will behave courteously and professionally at all times and seek to ensure that the highest level of service is provided by the service.
- 6.3 Perform other appropriate duties which may be required from time to time by the Head of Clinical & Radiation Physics.
- 6.4 Take all precautions when dealing with ionising radiation hazards, and any biological hazards encountered (particularly with equipment used for interventional procedures).
- 6.5 The post holder may be called upon at any time (during and outside normal working hours) for assistance (with others) in emergencies involving radiation and radioactive materials:
  - Provide cover, where available, for an emergency service to act in case of such accidents within the Trust, including the Trust Major Incident Plan for CBRN incidents involving radiation and radioactivity.

Agenda for Change	Version 10
Author: Claire Ackerman	Date: May 2018

- Participate, where required, as a Stage 1 Respondent in the National Arrangements for Incidents involving Radioactivity (NAIR) emergency response scheme. This scheme is co-ordinated by the Police.

**All Job Holders are required to...**

- Work to the Trust values - Put patients first, Take ownership, Respect others, Be positive, Listen, learn and improve.
- Adhere to Trust policies and procedures, e.g. Health and Safety at Work, Equal Opportunities etc.
- Maintain personal and professional development to meet the changing demands of the job, participate in appropriate training activities and encourage and support staff development and training.
- Attend statutory, essential and mandatory training.
- Respect the confidentiality of all matters relating to their employment and other members of staff. All members of staff are required to comply with the requirements of the UK Data Protection Act 2018/UK General Data Protection Regulation (UK GDPR) or Data Protection legislation.
- Comply with the Corporate Governance structure in keeping with the principles and standards set out by the Trust.
- Comply with the codes of professional conduct set out by the professional body of which registration is required for the post.
- Ensure they are familiar with the Risk Management Framework, follow policies, procedures and safe systems of work, make known any hazards or risks that they identify and take all necessary actions to reduce risk.
- Ensure the welfare and safety of children within their care. This includes staff who come into contact with children and families in the course of their work as well as those staff who have a specific role with children and families.
- Ensure they attend Child Protection training at the appropriate level within the specified time frame.
- Staff must comply with Safeguarding Policies and Procedures in order to promote safeguarding and prevent abuse to vulnerable people using Trust services.
- Maintain the prevention and control of infection and fully comply with all current Trust Infection Control policies and procedures.
- Take responsibility for any records that they create or use in the course of their duties, in line with the Public Records Act and be aware that any records created by an employee of the NHS are public records and may be subject to both legal and professional obligations.

**All Managers are responsible for...**

- Assessing risks and implementing the necessary actions to minimise these risks within their sphere of responsibility. They must also enable staff to attend the relevant statutory and essential training.
- Managing attendance in accordance with the Trusts Attendance Management Policy.

**All Heads of Departments are responsible for...**



Agenda for Change	Version 10
Author: Claire Ackerman	Date: May 2018

- Ensuring all necessary risk assessments are carried out within their division, Service Line or department in liaison with relevant sources of specialist support and expertise within the Trust. They must also ensure that the risk management process is completed appropriately.

**Note**

This job description is neither definitive nor exhaustive and is not intended to be totally comprehensive. It may be reviewed in the light of changing circumstances following consultation with the post holder. This job description is to be read in conjunction with all current University Hospitals Plymouth policies, procedures & guidelines.

Agenda for Change	Version 10
Author: Claire Ackerman	Date: May 2018

Agenda for Change	Version 10
Author: Claire Ackerman	Date: May 2018

## PERSON SPECIFICATION TEMPLATE

ATTRIBUTES	ESSENTIAL	DESIRABLE
<b>KNOWLEDGE &amp; EXPERIENCE</b>	<p><u>Scientific and Technical:</u></p> <ul style="list-style-type: none"> <li>• Advanced level of proven knowledge across the full range of working procedures and practices in Radiation Physics</li> <li>• Highly advanced theoretical and practical expert proven knowledge of the field of Radiation Safety, including the knowledge required to act as a Radiation Protection Adviser for a large teaching hospital and other academic and commercial organisations.</li> <li>• Highly advanced specialist proven knowledge of the Ionising Radiations Regulations 2017 and their application to a medical and biomedical research environment.</li> <li>• Advanced specialist proven knowledge of radiation issues in Radiology sufficient to act as a Medical Physics Expert under the Ionising Radiation (Medical Exposure) Regulations 2017.</li> <li>• Advanced specialist theoretical proven knowledge and demonstrable practical experience of the design of facilities and structures with respect to radiation protection and detailed proven knowledge of construction techniques and materials.</li> <li>• Ability to apply proven knowledge and demonstrable experience in making judgements regarding the safe and optimal use of radiation by themselves and others, involving objective assessment of benefits and detriments associated with various options available.</li> <li>• Ability to perform options appraisal in highly complex situations based on highly complex information and calculations</li> </ul> <p><u>Clinical:</u></p>	<ul style="list-style-type: none"> <li>• Specialist proven knowledge in other legislative areas such as Road Transport of Radioactive Materials, Trans-frontier Shipment of Radioactive Materials Radiation Emergency Preparedness etc.</li> <li>• Demonstrable experience managing a scientific service or specialist service</li> <li>• Proven knowledge required to act as Radioactive Waste Adviser for a large teaching hospital and other academic and commercial organisations.</li> <li>• Specialist proven knowledge of the Environmental Permitting Regulations.</li> </ul>

Agenda for Change	Version 10
Author: Claire Ackerman	Date: May 2018

	<ul style="list-style-type: none"> <li>• Highly specialised proven knowledge of clinical issues and their implications for radiation dosimetry purposes</li> <li>• Ability to provide highly specialised advice on the use of radiation for patient diagnosis and treatment, for routine care and when planning and implementing a research programme</li> <li>• Basic proven knowledge of relevant anatomy, physiology, and pathology</li> <li>• High level of understanding of patient and staff risks arising from equipment failure and staff error</li> <li>• High Level of understanding of risk management processes</li> </ul> <p><u>Managerial</u></p> <ul style="list-style-type: none"> <li>• Demonstrable experience of HR processes</li> <li>• Able to prioritise and manage own work</li> <li>• Able to implement policies and procedures in own work and to advise on policy and procedure review, development and implementation in services provided by others.</li> <li>• Well-developed planning and organisational skills</li> <li>• Excellent time management skills</li> <li>• Training and demonstrable experience in quality improvement methods.</li> <li>• Able to assess impact of policy/procedure changes on safety and service provision.</li> <li>• Able to plan and organise a broad range of complex procedures/activities and to monitor ongoing progress.</li> <li>• Able to motivate staff and inspire confidence</li> <li>• Able to exercise own initiative when dealing with issues within own specialist area of competence</li> <li>• Demonstrable experience of management of resources</li> <li>• Able to work in a team</li> <li>• Advanced proven knowledge of the framework of risk and incident management in healthcare.</li> <li>• Demonstrable experience in risk and incident management, communication and mitigation.</li> </ul>	
--	--	--

Agenda for Change	Version 10
Author: Claire Ackerman	Date: May 2018

<b>QUALIFICATIONS</b>	<ul style="list-style-type: none"> <li>• Good (1st or 2nd class) Honours degree in a relevant subject [e.g. Physics]</li> <li>• MSc in a relevant subject [e.g. Radiation Physics]</li> <li>• HCPC registration as a Clinical Scientist</li> <li>• Certificate of competence to act in the following certificated roles: <ul style="list-style-type: none"> <li>◦ Radiation Protection Adviser (RPA)</li> <li>◦ Medical Physics Expert (MPE)</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Certificate of Competence in RWA</li> <li>• Laser Protection Adviser certificate</li> <li>• Management Qualification</li> <li>• Membership of IPEM (MIPEM/FIPEM)</li> <li>• Membership of SRP</li> <li>• Membership of BIR</li> </ul>
<b>APTITUDE &amp; ABILITIES</b>	<ul style="list-style-type: none"> <li>• Proven evidence of sufficient training to act as a Medical Physics Expert in Diagnostic Radiology.</li> <li>• Advanced proven knowledge of radiation protection legislation in healthcare and biomedical research.</li> <li>• Expert proven knowledge of the techniques employed to measure the performance and radiological safety of state of the art X-ray imaging equipment.</li> <li>• Demonstrable ability in interpreting different situations and judging measures required to ensure compliance in areas that relate to the legislation listed above.</li> <li>• Advanced proven knowledge of the use of specialist testing equipment employed to measure the safety and performance of radiological equipment.</li> <li>• Able to use PC operating systems</li> <li>• Able to use PC based word processors, spreadsheets and databases to set up documents, spreadsheets etc and extract information</li> <li>• Able to use other specialised software relating to radiation safety information and radiation dose/exposure calculations</li> </ul>	
<b>DISPOSITION / ATTITUDE / MOTIVATION</b>	<p><u>Communication</u></p> <ul style="list-style-type: none"> <li>• Able to receive and assimilate highly complex technical and scientific information relating to ionising radiation.</li> <li>• Able to communicate highly complex technical and scientific information to a wide range of staff and the public with differing levels of knowledge and understanding. To communicate rationally in order to overcome recipients</li> </ul>	<ul style="list-style-type: none"> <li>• Proven evidence of previous significant contribution to the research base/field in peer review journal articles.</li> <li>• Track record of verbal and poster presentations at national/international scientific meetings.</li> </ul>

Agenda for Change	Version 10
Author: Claire Ackerman	Date: May 2018

	<p>fears or resistance relating to use of radiation and radiation exposure.</p> <ul style="list-style-type: none"> <li>• Able to produce clear and unambiguous written reports, guidance, policies and procedures which can be understood by staff at all levels within the organisation.</li> <li>• Able to communicate risk associated with radiation exposure in a clear manner to persons with no specialist knowledge, including nurses and members of the public.</li> <li>• Able to understand the concerns which individuals may have regarding the risks associated with radiation exposure and deal with highly emotive reactions relating to radiation use.</li> <li>• Able to communicate highly complex information at postgraduate level to other professional groups.</li> <li>• Able to present scientific papers at national and international conferences</li> <li>• Able to train groups of other professional staff</li> <li>• Able to deliver teaching and training on complex subjects</li> <li>• Good negotiation skills</li> <li>• Able to deal with complex and unpredictable situations</li> </ul>	
<b>OTHER FACTORS</b>	<ul style="list-style-type: none"> <li>• Manual dexterity; well-developed physical accuracy and dexterity for the ability to make accurate measurements using sophisticated testing equipment.</li> <li>• Frequent requirement to lift light to medium weight test cases, and occasional requirement to lift heavy test equipment.</li> <li>• Ability to travel in between hospital sites, as and when required of the role</li> <li>• Able to deal with occasional distressing circumstances</li> </ul>	