

## JOB DESCRIPTION

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| <b>JOB TITLE:</b>   | <b>Principal Physicist, Radiological Physics and Radiation Safety</b> |  |
| <b>DIVISION:</b>  | <b>Imaging, Group Clinical Services</b>                               |  |
| <b>SALARY BAND:</b>   | <b>8b</b>   |  |
| <b>RESPONSIBLE TO:</b>  | <b>Head of Radiological Physics and Radiation Safety</b>              |  |
| <b>ACCOUNTABLE TO:</b>  | <b>Head of Radiological Physics and Radiation Safety</b>              |  |
| <b>HOURS PER WEEK:</b>  | <b>37.5</b>   |  |
| <b>MANAGES:</b>   | <b>Directly:</b>  |  |
|   | <b>Indirectly:</b>  |  |
| <b>JOB SUMMARY:</b>   |   |  |
| <p>The Radiological Physics and Radiation Safety group (RPRSG) provides support for the trust and a number of external healthcare organisations in ensuring the safe and optimal use of ionising radiation in all diagnostic and interventional radiology procedures. The post holder will play a lead role in delivering the group's services and work at a senior level of professional expertise. They will make a major contribution to the work of the group which includes performance testing of X-ray equipment; patient dosimetry; optimisation; provision of services to the NHS Breast Screening Programme; investigating faults and liaising with Radiology staff and service engineers; and radiation safety auditing. The post holder will also contribute to the design of new X-ray facilities, specification and procurement of new X-ray equipment, and risk assessment.</p> <p>The post holder will act as a Medical Physics Expert (MPE) for diagnostic radiology under the IR(ME)R legislation, and must hold and maintain certification for this role. They will also act as a Lead Mammography Physicist as required by the NHS Breast Screening Programme.</p> <p>Due to the varied remit of the group, work patterns can be unpredictable. This post therefore calls for initiative and flexibility in tackling actual and perceived problems as they arise; and an ability to prioritise work and multi-task, sometimes under considerable pressure. The post holder will be required to work single-handedly both on and off site.</p> |   |  |

**Reviewed Apr 2024**

## MAIN DUTIES AND RESPONSIBILITIES

### Royal Free World Class Values

The post holder will offer World Class Care to service users, staff, colleagues, clients and patients alike so that everyone at the Royal Free can feel:

- **welcome** all of the time
- confident because we are clearly **communicating**
- **respected** and cared for
- **reassured** that they are always in safe hands

### 1 CLINICAL RESPONSIBILITIES

- 1.1 Develop and deliver radiological physics and radiation safety services for the group.
- 1.2 Act as a certified and appointed Medical Physics Expert (MPE) for diagnostic and interventional radiological procedures as required by the Ionising Radiation (Medical Exposure) Regulations 2017 (IR(ME)R17) for the trust and for other healthcare organisations with whom the group holds contracts. This includes being involved in optimisation of radiological practices, being available for consultation regarding these practices, and giving advice on and contributing to those matters listed in Regulation 14 of IR(ME)R17. From time to time this will involve personally giving advice to patients (or their carers) about radiation risks. This may take place under difficult and taxing circumstances for the patients or their carers.
- 1.3 As an MPE, maintain a very high level of up-to-date knowledge of radiation protection legislation and related international directives and recommendations. Prepare reports for the trust and other healthcare organisations on the implications of legislative or guideline changes.
- 1.4 Perform acceptance and commissioning testing and routine periodic performance testing of highly complex, patient critical X-ray equipment at the trust and at other healthcare organisations with whom the group holds contracts. This includes making high precision measurements, preparing reports on site visits in a well presented, timely manner, and making recommendations in order to ensure compliance with relevant legislation, national and local standards, and agreed good practice. The work requires the use of complex X-ray testing equipment, recording and analysis of results using complex computer spreadsheets, and interpretation of results. It involves liaison with equipment suppliers, service engineers, applications specialists and clinical staff. The post holder will be expected to work single-handedly, both on and off site, testing the full range of X-ray imaging equipment including general radiography, fluoroscopy, interventional, mammography and computed tomography systems. The post holder will also be required to supervise more junior staff carrying out quality control tests on X-ray equipment.
- 1.5 Develop and deliver medical physics services to the NHS Breast Screening Programme (NHSBSP). Act as a Lead Mammography Physicist as required by the NHSBSP. Contribute to regional and national audits and data collection programmes, and provide advice on equipment selection and procedure optimisation.

- 1.6 Measure and calculate radiation doses received by patients from radiological procedures. This requires insight into clinical and technical aspects of the procedures themselves, and familiarity with radiation measurement equipment and complex computer software.
- 1.7 Optimise and audit patient radiological procedures. This requires a detailed knowledge of the functionality of complex X-ray equipment and detailed understanding of the factors affecting patient dose. It includes precise measurement of factors relating to patient dose, direct measurement of patient dose, and assessment of clinical image quality using suitable test tools and image analysis software. The work will be carried out in close collaboration with clinical staff in other departments such as Radiology, Cardiology and Vascular Surgery.
- 1.8 Provide radiation dose calculations, risk estimates and radiation protection advice for clinical trials involving radiological uses of ionising radiation. This includes acting as a registered MPE with the Health Research Authority, as well as acting as Lead MPE where the trust is the main site.
- 1.9 Contribute to the design and layout of new X-ray facilities. This work includes carrying out measurements using radiation monitoring equipment and performing highly complex shielding calculations. It involves liaison with Projects and Estates, PFIs, building contractors and equipment suppliers.
- 1.10 Contribute to the procurement of radiological equipment. Produce technical specifications for new highly complex, patient critical X-ray equipment. Attend site visits, make technical evaluations of the tender responses and advise the trust on equipment selection. This work requires analysis and interpretation of complex technical data; and liaison with medical consultants, radiographic, scientific and technical staff.
- 1.11 Provide radiological physics advice and assurance as required. Possession of a current RPA2000 certificate of competence to act as a Radiation Protection Adviser is desirable but not essential.
- 1.12 Analyse events involving or potentially involving accidental or unintended exposures.
- 1.13 Carry out radiation risk assessments for work involving diagnostic X-rays.
- 1.14 Assess the adequacy and integrity of radiation protection shielding in X-ray facilities. This work will involve the use of radiation monitoring equipment and making complex calculations.
- 1.15 Carry out audits of X-ray facilities and radiation working arrangements in order to ensure compliance with relevant legislation. Advise managers and clinicians accordingly.
- 1.16 Investigate equipment faults and provide recommendations and expert advice to radiology staff and service engineers to ensure that faults are corrected.

## **2 RESPONSIBILITY FOR POLICY AND SERVICE DEVELOPMENT**

- 2.1 Support, implement and contribute to any initiatives within own work area aimed at reviewing and developing policies and services.
- 2.2 Support, implement and contribute to enhancing existing procedures and protocols, and developing new procedures and protocols for the testing of highly complex, patient critical X-ray equipment.
- 2.3 Support, implement and contribute to procedures, protocols, Local Rules and risk assessments pertaining to diagnostic radiology physics support work. Contribute to regular reviews of all documentation in use and prepare related reports and presentations.
- 2.4 Work towards the group's compliance with an accredited Quality System in areas of work for which the post holder carries responsibility.

## **3 RESPONSIBILITY FOR LEADING AND MANAGING**

- 3.1 Supervise the work of clinical scientists, physicists and technologists when they are performing work under the post holder's direction.
- 3.2 Prioritise own work in accordance with departmental and trust priorities and external demands. Meet expected results by using own initiative and following general principles and applicable regulations, standards and guidelines. Areas of work can be diverse and unpredictable and good organisational skills are essential.
- 3.3 Attend regular meetings with Superintendent Radiographers and Radiation Protection Supervisors in Radiology. These meetings provide a forum for discussing radiation safety issues, devising improvement strategies and maintaining good communications with Radiology.
- 3.4 Contribute actively to the Radiation Protection Committee for the Trust and for other organisations with whom radiological physics contracts are held.
- 3.5 Play an active role in promoting the group within the Trust and to other service providers.
- 3.6 As an MPE, liaise with the Care Quality Commission on behalf of the trust and other organisations with whom the group holds contracts regarding compliance with radiation safety legislation.

## **4 RESPONSIBILITY FOR INFORMATION RESOURCES**

- 4.1 Ensure the effective maintenance and security of all necessary records relating to areas under the post holder's control.
- 4.2 Use computer facilities for a variety of applications, including spreadsheets, word processing, Powerpoint, databases, dose calculation software and image analysis software.

4.3 Keep careful records of all work carried out and maintain high standards of care and accuracy in the operation of spreadsheet and database records.

## **5 RESPONSIBILITY FOR TEACHING, RESEARCH AND DEVELOPMENT**

- 5.1 Contribute to the group's training programmes and study days. Identify training needs; ensure that appropriate training programmes are in place; and play a direct role in the delivery of training. The group provides training to medical physics trainees; Practitioners, Operators and non-medical Referrers as required by IR(ME)R17; and radiation workers and Radiation Protection Supervisors as required by IRR17.
- 5.2 Contribute to local and regional training initiatives. Identify training needs; ensure that appropriate training programmes are in place; maintain contact with external training providers; and play a direct role in the delivery of training.
- 5.3 Contribute to the training and supervision of STP trainees and physicists following Route 2 to registration. This includes demonstrating routine work to the trainee, discussing the underlying scientific principles and supporting and advising on project work.
- 5.4 Teach and train staff, students and others as required on all aspects of complex equipment use and radiation safety.
- 5.5 Initiate and lead research and development projects relevant to the needs of the group, the trust and other healthcare organisations, and supervise staff working on such projects. Evaluate and introduce new techniques and emerging technologies. This will require the ability to undertake critical analysis of published scientific work and of proposals for future work.
- 5.6 Undertake own research and development, promoting original work through scientific publication in peer-reviewed journals and presentation at national and international conferences. Summarise and present complex scientific ideas to patients and to a range of other staff.
- 5.7 Maintain evidence of Continuing Professional Development in order to maintain HCPC registration as a Clinical Scientist and certification as an MPE.
- 5.8 Attend suitable seminars and courses as part of personal development and to further the work of the group.
- 5.9 Keep abreast of relevant developments and new techniques, maintaining a detailed awareness of current topics important to both diagnostic radiology and radiation protection.
- 5.10 Participate in national working parties to develop NHS-wide guidance documents as appropriate.

## **GENERAL RESPONSIBILITIES**

### **Infection Control**

Infection control is everyone's responsibility. All staff, both clinical and non clinical, are required to adhere to the Trust's Infection Prevention and Control policies and

procedures and the Health Act (2006) Code of Practice for the prevention and control healthcare associated infections and make every effort to maintain high standards of infection control at all times thereby reducing the risk of Healthcare Associated infections.

It is the duty of every member of staff to take personal responsibility for the prevention and control of infection, as laid down in the Trust's policies and procedures which reflect the statutory requirements of the Hygiene Code.

- To work in close collaboration with the Infection Control Team.
- To ensure that monitoring of clinical practice is undertaken at the agreed frequency.
- To ensure that the ward environments are cleaned and maintained to the highest standards; ensuring that shortfalls are rectified, or escalate as necessary.
- To ensure that all relevant monitoring data and issues are provided to the Directorate's Governance structures.
- To ensure that all staff are released to attend infection control-related educational sessions and staff with specialist roles, e.g. link practitioners, are released to undertake their duties.

### **Health and Safety at Work**

The post holder is required to:

- Take reasonable care for the health and safety of himself/herself and other persons who may be affected by their actions or omissions at work.
- Co-operate with the employer in ensuring that all statutory and other requirements are complied with.

### **Confidentiality & Data Protection**

The post holder has a responsibility to comply with the Data Protection Act and General Data Protection Regulation 2018 and maintain confidentiality of staff, patients and Trust business.

If you are required to process information, you should do so in a fair and lawful way, ensuring accuracy is maintained. You should hold information only for the specific registered purpose and not use or disclose it in any way incompatible with such a purpose.

You should disclose information only to authorised persons or organisations as instructed. Breaches of confidentiality in relation to information will result in disciplinary action, which may include dismissal. Employees are expected to comply with all Trust policies and procedures and to work in accordance of the Data Protection Act and General Data Protection Regulation 2018. For those posts where there is management or supervision of other staff it is the responsibility of that employee to ensure that their staff receive appropriate training (e.g. HISS induction, organising refresher sessions for staff when necessary.)

### **Conflict of Interest**

The Trust is responsible for ensuring that the services for patients in its care meet the highest standards. Equally, it is responsible for ensuring that staff do not abuse their official position, to gain or benefit themselves, their family or friends.

### **Equality and Diversity**

The Trust values equality and diversity in employment and in the services we provide. It is committed to promoting equality and diversity in employment and will keep under review our policies and procedures to ensure that the job related needs of all staff

working in the Trust are recognised. The Trust aims to ensure that all job applicants, employees or clients are treated fairly and valued equally regardless of sex, marital status, domestic circumstances, age, race, colour, disablement, ethnic or national origin, social background or employment status, sexual orientation, religion, beliefs, HIV status, gender reassignment, political affiliation or trade union membership. Selection for training and development and promotion will be on the basis of the individual's ability to meet the requirements for the job.

You are responsible for ensuring that the Trust's policies, procedures and obligation in respect of promoting equality and diversity are adhered to in relation to both staff and services.

### **Vulnerable Groups**

To carry out responsibilities in such a way as to minimise risk of harm to children, young people and vulnerable adults and to promote their welfare in accordance with the Children Act 2004, Working Together to Safeguard Children (2018) and the Care Act 2014

### **Smoke Free**

The Trust implements a Smoke Free policy that applies to all staff. Staff are not allowed to smoke while wearing a recognisable Trust uniform or visible trust identification badge, and not allowed to smoke anywhere on hospital grounds. Staff are not allowed to take additional breaks in order to smoke. They may smoke during designated breaks but only out of uniform and off site. Staff contravening this policy may be subject to disciplinary procedures.

### **Standards of dress**

All staff are expected to abide by the Trust's guidance on standards of dress.

This job description outlines the current main responsibilities of the post. However the duties of the post may change and develop over time and may therefore be amended in consultation with the post holder.

### **Sustainability**

The Trust places great importance on sustainable development, reducing their carbon footprint and maximising the positive social, economic, and environmental outcomes of Trust actions and activities. As an employee it will be your responsibility to minimise your environmental impact, use resources efficiently, saving energy by switching off unnecessary equipment, reducing waste generation, using recycling/redistribution facilities, minimising travel, and saving water when possible. If your role involves purchasing/ordering supplies, you must consider the environmental impacts and purchase optimal sustainable products and services.

Sustainability is integral to the Trust achieving the NHS Net Zero target. All staff are therefore expected to be aware of the Greener RFL & NHS agenda (via induction/ESR/other training) and actively encouraged/supported to implement new ways of working within their field of expertise that reduce harmful emissions and waste.