Royal Devon University Healthcare NHS Foundation Trust

JOB DESCRIPTION

JOB DETAILS	
Job Title	Specialist Clinical Scientist / Medical Physics Expert
Reports to	Head of Medical Physics/Operational Lead
Band	B8a
Department/Directorate	Medical Physics / Clinical Specialist Services

JOB PURPOSE

- Provide highly specialised clinical and technical advice to maintain and enhance radiotherapy services
- Contribute to external beam quality control, dosimetry, brachytherapy, treatment planning and duty physics tasks and other areas of radiotherapy physics
- Contribute to the implementation and commissioning of new radiotherapy techniques and equipment
- Supervise and/or train staff/students/trainees on the safe radiotherapy treatments
- The post holder will be a Medical Physics Expert (MPE) and be able to advise in off protocol situations.
- Responsible for line management and supervision of clinical, scientific and technical staff, and will liaise with other staff on managing risk, resources and performance across the department.
- Contribute to the development and implementation of relevant policies, protocols, processes and procedures, and for adopting and sharing best practice.
- Help Lead Physicists to ensure compliance with relevant protocols, legislation, guidance and best practice.
- Deputise for sub-specialty Lead Physicist, as required

The post holder will fulfil the following regulated and/or specialist roles as required:

Clinical Scientist (HCPC), Medical Physics Expert (MPE)

KEY RESULT AREAS/PRINCIPAL DUTIES AND RESPONSIBILITIES

Specific duties include but are not limited to:

- **Undertake all responsibilities and duties associated with a Radiotherapy Medical Physics Expert under IR(ME)R 2017**
- **The post holder is expected to act in the broader sense; as Specialist Clinical Scientist in ALL three specialisms of radiotherapy physics.**
- **The post holder may have higher expertise in one specialism which may bias their involvement in service development projects and clinical advice, but not to the detriment other specialities**
- **Deputise for Specialty Lead Physicist, as required**

In addition:

- Contribute to the routine radiotherapy service, including treatment planning, plan checking, QC, brachytherapy, imaging and dosimetry activities
- Contribute to routine treatment planning service, including advice, adaptive RT and maintenance of infrastructure
- Be responsible for the management and development of IMT and medical devices

- Participate in the Duty Physicists roster, including where sporadic weekend work is required, on-call duties and bank holiday cover
- Plan, propose and undertake CPD, as required by the HCPC so that professional competency is maintained and developed. Attend suitable seminars and courses as part of training and personal development to keep abreast of the latest scientific and technical developments and their application.
- The post holder is required to be up to date with current legal requirements and national guidance relating to ionising radiations
- Advising on off-protocol treatments or situations and adaptive radiotherapy
- Commissioning new equipment/techniques
- Participate and drive ongoing service development
- In conjunction with lead physicists help to ensure service compliance with relevant legislation

KEY WORKING RELATIONSHIPS

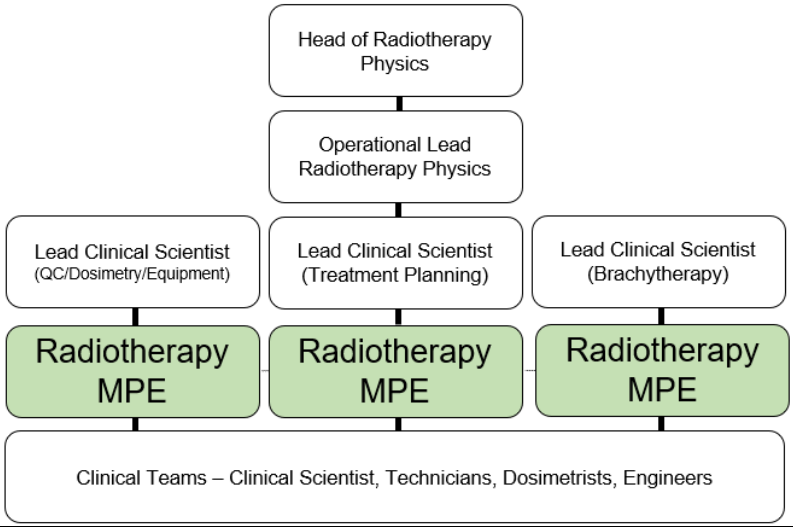
Areas of Responsibility: Radiotherapy Physics
No. of Staff reporting to this role: 4

The post holder is required to deal effectively with staff of all levels throughout the Trust as and when they encounter on a day-to-day basis. In addition, the post holder will deal with the wider healthcare community, external organisations and the public. This will include verbal, written and electronic media.

Of particular importance are working relationships with:

Internal to the Trust	External to the Trust
• Healthcare scientists and trainees • Clinical/Medical professions, incl. oncologists, nursing, pharmacy and allied health professionals • Specialist, technical and technical support staff, incl. infection control, recruitment, finance, estates, IM&T and procurement • Clinical and general managers • Patients	• External clients, partners and equipment suppliers • Peer group and the wider scientific community • Research and Trials Organisations • Neighbouring trusts and radiotherapy departments • Regulators and auditors

ORGANISATIONAL CHART



FREEDOM TO ACT

- Act as a Medical Physics Expert (MPE) in all aspects of radiotherapy and a highly experienced Clinical Scientist - therefore working with a high degree of autonomy.
- Responsibility to act within their scope of practice to ensure patient, staff and public safety and manage/develop work practices.

COMMUNICATION/RELATIONSHIP SKILLS

- Communicate highly complex scientific information, within the department and with any/all other staff groups, patients and carers as required.
- Communicate highly complex radiation safety and regulatory advice with medical and other staff, patients and carers as required.
- Communicate highly complex governance, performance and improvement information, including the results of audit, peer review, quality improvement (QI) and research.
- Present work at professional and scientific meetings and conferences and in peer-reviewed literature, collaborating with colleagues within and out with the Trust.
- When working in other departments and on other sites, the post holder will behave professionally and courteously at all times and will observe local policies, rules and working practices.

ANALYTICAL/JUDGEMENTAL SKILLS

- Analyse complex clinical requirements making judgements regarding treatment parameters, often under time pressure/with incomplete information, within clinical and resource limitations
- Design treatment protocols to meet highly complex clinical needs stipulated by medical staff, either standard treatment scenarios or unique designs for individual patients
- Perform external beam/brachytherapy planning, treatment calculations, checks and treatment authorisation for a range of sites and techniques
- Apply dose volume constraints to organs at risk, minimising such doses where practicable so that treatments can be delivered safely.
- Manipulate CT, MRI, planar X-ray and US using IT equipment and software for treatment volumes, organs at risk and radiation distributions within Treatment Planning Systems.
- Assist in the performance, analysis and review of QC checks and advise on out of tolerance results and QC required following machine breakdown or planned maintenance
- Assist in critical patient dosimetry measurements and calculations for external beam radiotherapy treatments. This includes adaptive advice, BED calculations.
- Check complex radiotherapy and brachytherapy plans to ensure accuracy and clinical appropriateness of the technique.
- Carry out and assess pre-treatment external beam plan verifications
- Assessment of in vivo dosimetry results
- Advise on choice of modality, energy, applicators for electron, superficial treatments

PLANNING/ORGANISATIONAL SKILLS

- Participate in the evaluation and procurement process for new equipment and participate in their installation, acceptance testing and commissioning so that the service is the best obtainable within resource constraints.
- Coordinate with the lead physicists to support the effective and safe delivery of Radiotherapy and HDR brachytherapy.
- Coordinate with the lead physicists to maintain and support the radiation dosimetry services ensuring that equipment is calibrated in accordance with national codes of practice
- Plan, organise and run meetings.
- Responsible for prioritisation of own work and that of others.
- Adjusts plans and strategies in response to changing circumstances and organisational priorities.
- Line management of staff, including routine workload and coaching/mentoring

PATIENT/CLIENT CARE

- Participate in the duty roster for radiotherapy physics, including on call and bank holidays
- Speak directly with patients, in conjunction with radiographer and clinician colleagues to answer technical questions relating to treatment or equipment
- Consult on patient treatment setups in a linac, pre-treatment or mould room context for all modalities
- Follow principles of data protection
- Post holder will be expected to act flexibly in approach and working hours to cover clinical requirements of the service
- Provide highly specialist healthcare science services for own area.
- Act as an MPE as part of a networked system.
- Advising medical staff or other healthcare professionals on highly specialised clinical technologies and their application.
- Act as an “Operator” as defined under IRMER 17 as required.
- Work with and assist trust appointed Radiation Protection Advisors in their duties.
- Use and develop the ISO9001 quality management system (QMS), or equivalent governance controls, to ensure that services are provided to the appropriate standards and are subject to external scrutiny.
- Work with ionising and non-ionising radiation and other hazardous resources, taking all precautions to minimise risk to oneself and others.

POLICY/SERVICE DEVELOPMENT

- Provide radiation protection advice for patients and hospital staff, within scope of practice
- Interpret national and international guidance and implement protocols to keep services in line with recommended practice.
- Contribute to clinical protocol development and associated workstreams
- Ensure that all radiotherapy practices comply with Statutory Regulations, Approved Codes of Practice and local Safety rules, particularly IRR and IR(ME)R and other relevant legislation.
- Uphold DICOM standard and TPS data integrity
- Participate in key MDT meetings including Governance and Errors groups, where appropriate.
- Use benchmarking and QI techniques to seek out and implement best practice.
  Embrace 'continuous improvement' as described by QMS standards such as ISO9001.

FINANCIAL/PHYSICAL RESOURCES

- Responsible for the safe use of highly complex clinical and test and measurement equipment when assigned to the team.
- Oversee the installation, validation and commissioning of new hardware and software, including introducing new software upgrades into clinical use.
- Assist in specifying and assessing new equipment including technical and financial

HUMAN RESOURCES

- Work autonomously; planning, prioritising and managing own work.
- Day to day and line management of staff within own specialty, including recruitment, managing attendance and performance and supporting personal professional development.
- Supervise staff under the post holder’s direction and sign off work and reports as required.
- Use coaching and mentoring techniques to support staff within and out with own specialty.
- Teach and train healthcare scientists, including, for example, apprenticeship programmes and programmes accredited through the National School for Healthcare Science (NSHCS).
- Organise and deliver specialist teaching and training for other staff groups and clients.
- May need to have difficult conversations with staff and deal with sensitive and challenging behaviours and situations.

- Ensure that practices comply with Health and Safety legislation and other relevant regulations, including IRR17 and IRMER 2017.

INFORMATION RESOURCES

- Maintain and enhance databases, software and networking for radiotherapy and brachytherapy assets.
- Be involved in the maintenance, upgrades of 3rd party radiotherapy systems, TPS, OMS and associated infrastructure and networks
- Specify, procure, commission, use, test and manage computer systems and software including systems which are used to record and process data.
- Configure and/or write software to process, analyse and report highly complex datasets.
- Effectively manage data availability, integrity and confidentiality.
- Use and develop the ISO9001 QMS, or equivalent governance controls, to effectively manage document control.

RESEARCH AND DEVELOPMENT

- Undertake and participate in clinical and professional audit, so that professional and safety standards may be maintained. Audits may be organised on a local, regional and national basis.
- Implement nationally and locally agreed policies
- Promote the implementation of novel radiotherapy/brachytherapy clinical protocols and trials
- Promote continuous innovations and developments within the radiotherapy and brachytherapy services, in line with changing clinical practice
- Assist in the planning of new or modified facilities for radiation equipment in relation to providing expert advice on equipment specification, radiation safety and radiation shielding requirements; and assess the adequacy of engineering controls and radiation safety arrangements prior to a facility's introduction into clinical service.
- Present work at professional and scientific meetings and conferences and in peer reviewed literature, collaborating with colleagues within and out with the Trust.
- Responsible for own continuous professional development (CPD) and for maintaining professional registration and certification.

PHYSICAL SKILLS

- Highly-developed physical skills are required, to carry out testing procedures and scientific measurements where a high degree of precision and accuracy is essential.
- Perform minute adjustments to medical equipment or instrumentation.
- Execute and coordinate equipment-based clinical measurements.
- Perform analysis of complex pieces of information and take prompt action as required to maintain safe and effective clinical operations.
- Advanced keyboard skills.

PHYSICAL EFFORT

Ability to handle and manoeuvre moderately heavy measurement equipment (10kg). High degree of dexterity required for some specialist QC activities.

MENTAL EFFORT

Frequently required to concentrate for long periods of time in complex situations (clinical and non-clinical), often with time pressure and with incomplete information.

EMOTIONAL EFFORT

Able to deal with emotionally distressing circumstances involving cancer patients.
Able to deal with work-based and pastoral issues of team members and direct reports covering a wide variety of circumstances.

WORKING CONDITIONS

Able to work safely under legislation and local protocols to ensure safe practice, working closely with radiation.
Able to work flexibly to accommodate the needs of the service, including occasional weekends and bank holidays.

OTHER RESPONSIBILITIES

Take part in regular performance appraisal.

Undertake any training required in order to maintain competency including mandatory training, e.g. Manual Handling

Contribute to and work within a safe working environment

You are expected to comply with Trust Infection Control Policies and conduct him/herself at all times in such a manner as to minimise the risk of healthcare associated infection

As an employee of the Trust, it is a contractual duty that you abide by any relevant code of professional conduct and/or practice applicable to you. A breach of this requirement may result in action being taken against you (in accordance with the Trust's disciplinary policy) up to and including dismissal.

You must also take responsibility for your workplace health and wellbeing:

- When required, gain support from Occupational Health, Human Resources or other sources.
- Familiarise yourself with the health and wellbeing support available from policies and/or Occupational Health.
- Follow the Trust's health and wellbeing vision of healthy body, healthy mind, healthy you.
- Undertake a Display Screen Equipment assessment (DSE) if appropriate to role.

APPLICABLE TO MANAGERS ONLY

Leading the team effectively and supporting their wellbeing by:

- Championing health and wellbeing.
- Encouraging and support staff engagement in delivery of the service.
- Encouraging staff to comment on development and delivery of the service.
- Ensuring during 1:1's / supervision with employees you always check how they are.

DISCLOSURE AND BARRING SERVICE CHECKS

This post has been identified as involving access to vulnerable adults and/or children and in line with Trust policy successful applicants will be required to undertake a Disclosure & Barring Service Disclosure Check.

GENERAL

This is a description of the job as it is now. We periodically examine employees' job descriptions and update them to ensure that they reflect the job as it is then being performed, or to incorporate any changes being proposed. This procedure is conducted by the manager in consultation with the jobholder. You will, therefore, be expected to participate fully in such discussions. We aim to reach agreement on reasonable changes, but if agreement is not possible, we reserve the right to insist on changes to your job description after consultation with you.

Everyone within the Trust has a responsibility for, and is committed to, safeguarding and promoting the welfare of vulnerable adults, children and young people and for ensuring that they are protected from harm, ensuring that the Trusts Child Protection and Safeguarding Adult policies and procedures are promoted and adhered to by all members of staff.

At the Royal Devon, we are committed to reducing our carbon emissions and minimising the impact of healthcare on the environment, as outlined in our Green Plan available on our website. We actively promote sustainable practices and encourage colleagues to explore and implement greener ways of working within their roles.

PERSON SPECIFICATION

Job Title	Medical Physics Expert/Principal Physicist

Requirements	Essential	Desirable
QUALIFICATION/ SPECIAL TRAINING		
Degree in Physics or a related subject	E	
MSc in Medical Physics or related subject	E	
State registered Clinical Scientist (HCPC)	E	
MPE Registration in Radiotherapy Physics (RPA200)	E	
Further specialist training allied to Medical Physics at PHD level		D
Corporate member of IPEM	E	
Significant post (HCPC) registration experience as a Clinical Scientist	E	
Radiation Protection Supervisor		D
KNOWLEDGE/SKILLS		
Advanced theoretical and practical knowledge in radiotherapy physics, sufficient for the role of Medical Physics Expert (MPE).	E	
In-depth understanding of relevant legislation, national standards, professional and other guidelines.	E	
Specialist theoretical and practical knowledge of highly complex clinical equipment and systems and specialist test and measurement equipment.	E	
Specialist theoretical and practical knowledge of relevant medical physics processes, procedures and techniques.	E	
Specialist theoretical and practical knowledge relating to the assessment of risk applied to medical physics.	E	
Ability to use word processing, spreadsheet and database software and relevant software tools for analysis and development.	E	
Knowledge of programming, and scientific computing		D
EXPERIENCE		
Significant post-registration experience as a clinical scientist such to act as an MPE and able to accept a high level of responsibility and autonomy.	E	
Experience using highly complex clinical equipment and systems and specialist tests and measurement equipment.	E	
Experience in introducing/commissioning new equipment and techniques.	E	
Experience in service improvement / research and development.	E	

Experience in the structured management of work activities, eg, ISO9000 quality management system.	E	
PERSONAL ATTRIBUTES Highly motivated with positive attitude to change. Able to work under stressful-time sensitive conditions. Able to work as part of a team. Able to inspire confidence in clinical, scientific and managerial colleagues. Able to work with people with illness without becoming unduly distressed. Able to self-reflect and act on constructive feedback Able to present scientific papers at local / national conferences. Good verbal and written communication skills.	E E E E E E E E	
OTHER REQUIREMENTS Full driving licence / able to travel to different working locations with equipment.	E	

Complete the table below as appropriate

WORKING CONDITIONS/HAZARDS		FREQUENCY (Rare/ Occasional/ Moderate/ Frequent) R	O	M	F
Hazards/ Risks requiring Immunisation Screening					
Laboratory specimens	N				
Contact with patients	Y				
Exposure Prone Procedures	N				
Blood/body fluids	Y		x		
Laboratory specimens	N				
Hazard/Risks requiring Respiratory Health Surveillance					
Solvents (e.g. toluene, xylene, white spirit, acetone, formaldehyde and ethyl acetate)	N				
Respiratory sensitisers (e.g isocyanates)	N				
Chlorine based cleaning solutions (e.g. Chlorclean, Actichlor, Tristel)	N				
Animals	N				
Cytotoxic drugs	N				
Risks requiring Other Health Surveillance					
Radiation (>6mSv)	N				
Laser (Class 3R, 3B, 4)	N				
Dusty environment (>4mg/m3)	N				
Noise (over 80dBA)	N				
Hand held vibration tools (=>2.5 m/s2)	N				
Other General Hazards/ Risks					
VDU use (> 1 hour daily)	Y				x
Heavy manual handling (>10kg)	Y		x		
Driving	Y		x		
Food handling	N				
Night working	N				
Electrical work	N				
Physical Effort	Y		x		
Mental Effort	Y				x
Emotional Effort	Y			x	
Working in isolation	Y		x		
Challenging behaviour	Y	x			