

## JOB DESCRIPTION

JOB DETAILS	
Job Title	Lead Physicist for MRI
Reports to	Head of Clinical and Radiation Physics
Band	Band 8b
Department/Directorate	Medical Physics Department / Specialist Services Division

### JOB PURPOSE

The post-holder will work at a senior level with responsibility for the leadership and management of the highly specialised area of Magnetic Resonance Imaging Physics.

The post-holder will provide expert scientific support and safety advice to clinical MRI services as part of the Clinical & Radiation Physics team across the SEND Medical Physics network (South, East, and North Devon) and will lead and develop the MRI Physics service. This includes the development of advanced equipment QA programmes, MR safety framework support, scanner optimisation and leading on research and development activities. The post-holder will act as the MR Safety Expert (MRSE) for the trust and any external customers.

They will also take responsibility for managing and coordinating MRI Physics services across Devon and the region working in collaboration with other trusts. They will participate in the training of future Clinical Scientists and Clinical Technologists in MRI, providing bespoke training for radiographers and radiologists, and lecture on internal and external courses where appropriate.

The post requires a highly specialist knowledge of the scientific, technical, and safety aspects of MRI.

### KEY RESULT AREAS/PRINCIPAL DUTIES AND RESPONSIBILITIES

- Lead on and provide highly complex MR safety advice, acting as the MRSE
- Plan, develop and perform appropriate safety surveys of MRI facilities and provide advice according to the requirements of relevant legislation, guidance and best practice.
- Review and provide advice for improvement of MRI department safety documentation frameworks for compliance with all relevant legislation and guidance.
- Provide advice on the planning and design of new MRI facilities including specification of safety requirements and liaising with contractors and Estates departments.
- Provide specific MR safety advice relating to staff and patients concerning the MR safety status of equipment, implants and devices.
- Lead investigations of MR safety related incidents, discussing and communicating sensitive and highly complex information in a confidential manner and make appropriate recommendations for safety improvements.
- Lead on the development and implementation of Acceptance Testing (AT) and routine Quality Assurance (QA) Testing Programmes. Perform complex and sensitive measurements of scanner performance using appropriate test objects and lead on the auditing of QA programmes.
- Analyse and evaluate highly complex data from QA measurements and provide reports of scanner performance with appropriate recommendations for further action.
- Lead on the development of improved AT and routine QA methods and programmes tailored for increased relevance to specialist clinical services, advanced applications and research.
- Act as primary line manager for any non-ionising clinical scientist or clinical technologists.
- Maintain an awareness of current developments in the fields of Magnetic Resonance, its biomedical applications, and associated guidelines, regulations and standards

- Undertake continuing professional development, keeping abreast of the latest technical and scientific developments and their applications in magnetic resonance imaging and ultrasound and associated fields.

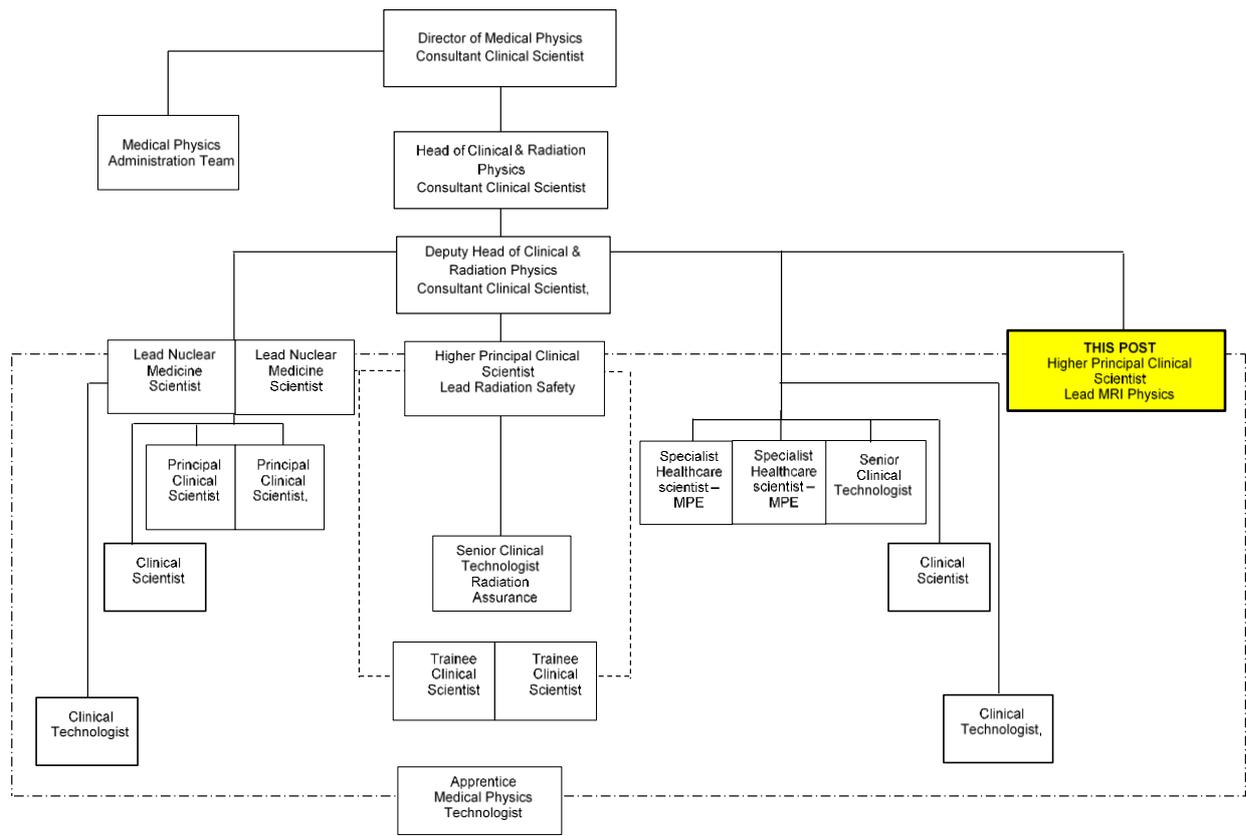
### KEY WORKING RELATIONSHIPS

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 external engineers, 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
<ul style="list-style-type: none"> <li>• Clinical Scientists</li> <li>• Radiographers</li> <li>• Service lead in Radiology, Radiologists, Radiographers and X-ray engineers</li> <li>• Clinicians</li> <li>• Specialist, technical and technical support staff, incl. infection control, recruitment, finance, estates, IM&amp;T and procurement</li> <li>• Clinical Technologists</li> <li>• Administrators</li> <li>• Estates and IT</li> <li>• STP Students</li> <li>• Education Leads</li> <li>• Other trainees and students</li> </ul>	<ul style="list-style-type: none"> <li>• Engineers</li> <li>• Equipment Manufacturers</li> <li>• University training coordinators</li> <li>• Clinical Scientists &amp; Technologists from other trusts</li> <li>• Patients</li> <li>• Peer group and the wider scientific community</li> </ul>

## ORGANISATIONAL CHART



## FREEDOM TO ACT

- The post holder is the lead physicist for their speciality and therefore works with a high degree of autonomy.
- The post holder has freedom to work within a set of parameters to ensure patient, staff and public safety and will manage and develop work practices for their area.
- Undertake quality control measurements on MRI equipment as required.
- Act at the MR Safety Expert (MRSE)
- Write procedures, work instructions and instructions for physics and other staff engaged in the provision of services. Ensure processes are documented in accordance with the local quality system, undertaking audits both as auditor and auditee, and initiating quality improvements.
- Coordinate programme of surveillance of MRI equipment. Advise as appropriate on clinical use of equipment.
- Serve as lead point of contact for external customer and coordinate service delivery for MRI quality assurance and provision of MR safety advice (e.g. University of Exeter and other NHS Trusts).

## COMMUNICATION/RELATIONSHIP SKILLS

- Communicate highly complex scientific information relating to own specialty, within the department and with any/all other staff groups, patients and carers as required.
- Communicate highly complex MR 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.
- Lead on effective collaborative working between MRI Physics and other teams in Medical Physics, Radiology and academic colleagues
- Liaise with universities, department leads, and the regional training network to ensure quality of training.
- Actively engage with the professional MRI physics community regionally and nationally and participate in special interest groups and activities as agreed with the Head of Department

#### **ANALYTICAL/JUDGEMENTAL SKILLS**

- Make judgements in highly complex situations involving the analysis and interpretation of highly complex clinical and scientific data.
- Analyse, communicate and manage the performance of own area. Optimisation of MRI clinical scans in collaboration with clinical staff.
- Provide advice on procuring, commissioning, accepting and routine quality assurance of highly complex clinical equipment including the assessment, interpretation and communication highly complex information.

#### **PLANNING/ORGANISATIONAL SKILLS**

- Plan and organise the work of own specialist team including workload and the allocation of work.
- Responsible for prioritisation of own work and that of others.
- Leads plans and strategies in response to changing circumstances and organisational priorities.
- Support the commissioning of highly complex clinical equipment which may involve leading on projects.
- Manage and participate in project work, including audit, research and QI.
- Participate in annual service and business planning processes, e.g., service and workforce plans and equipment procurement and replacement plans.
- Plan, organise and run meetings.

#### **PATIENT/CLIENT CARE**

- Provide highly specialist healthcare science services for own area.
- Act as an MRSE for own area.
- Act as an MRSE to support other areas as part of a networked system.
- This involves advising medical staff or other healthcare professionals on highly specialised clinical technologies and their application.
- Participate in writing, developing, reviewing, authorising, and implementing policies, work instructions and other documentation within the Trust Quality System.
- Carry out highly specialist optimisation for clinical MRI scans and issue appropriate advice for complex situations involving compatibility of patient implants.
- Use and develop the quality management system (QMS), or equivalent governance controls (reference ISO9000 and BS70000), to ensure that services are provided to the appropriate standards and are subject to external scrutiny. Contribute to the development of QMS documentation.

#### **POLICY/SERVICE DEVELOPMENT**

- Take a lead role in providing expert scientific support for service developments in one or more MRI specialisms (e.g. Neuro, Cardiac, MSK, Paediatric) or advanced techniques (e.g. MR spectroscopy, fMRI, tractography, perfusion)
- Work with clinical MRI staff and clinicians to harmonise and improve existing MRI protocols and implement advanced MRI techniques to meet clinical needs.
- Provide expert scientific advice for the procurement of highly complex MRI equipment, including hardware and software, based on clinical needs and priorities.

- Contribute to the development of tools for the analysis and interpretation of MRI data in compliance with departmental, Trust-wide and national regulations, guidelines and codes of practice for computer software and hardware systems used in the clinical environment.
- Evaluate complex artefacts in clinical patient data. Analyse and identify possible causes and provide advice on their reduction or elimination.
- Actively participate in research activities and liaise with clinicians to identify areas where innovation and research could improve services for patients in accordance with Trust policies and requirements of internal and externally funded projects.
- Assist in the preparation of grant applications and Ethics Committee applications relating to proposed research projects as agreed with the Head of Section.
- Prepare and submit manuscripts based on novel research results for publication in peer-reviewed scientific and clinical journals.
- Present talks on research findings at national and international clinical and scientific conferences and local meetings.
- Contributes to policy and strategy development and implementation for their specialism, contributing to an overall plan for the wider department and how this impacts service users.
- Applies the interpretation of national and international guidance and implement protocols to keep services in line with recommended practice. In conjunction with the line manager proposes and develops changes to practice for service users and supporting implementation outside own area.
- Lead on QI and service development for own area, contributing to an overall plan for the department.
- Use benchmarking and QI techniques to seek out and implement best practice.
- Embrace 'continuous improvement' as described by QMS standards such as ISO9000 and BS70000.
- Be aware of relevant legal and statutory issues, international standards, and guidelines for best practice.
- Monitor performance and develop strategies to improve satisfaction and efficiency of service to external customers.

#### **FINANCIAL/PHYSICAL RESOURCES**

- Responsible for the safe use of highly complex clinical and test and measurement equipment when assigned to the team.
- Specify, commission, test and verify highly complex clinical and test and measurement equipment
- Selection and requisition of specialist equipment and materials.
- Manage physical assets in own area.
- Manage a delegated budget for the specialty.

#### **HUMAN RESOURCES**

- Work autonomously; planning, prioritising and managing own work.
- Line management of staff within own specialty, including recruitment, managing attendance and performance and supporting personal professional development.
- Supervise staff (including clinical) 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.

#### **INFORMATION RESOURCES**

- Regularly use, test and manage computer systems and software including systems which are used to record and process data relating to own specialty.
- Specify, procure, commission specialist software on occasion. Or provide advice to other teams to do so.

- Update software to process, analyse and report highly complex datasets.
- Effectively manage data availability, integrity and confidentiality.
- Use and develop the QMS, or equivalent governance controls, to effectively manage document control.

### **RESEARCH AND DEVELOPMENT**

- Lead on QI and service development for own specialty including initiating, undertaking and supervising research projects.
- Initiate and participate in clinical and service audit.
- Participate in, support and supervise clinical trials as required.
- Introduce and commission new processes, procedures, protocols and techniques.
- Specify, commission, test and verify highly complex clinical and test and measurement equipment.
- 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.
- Lead on the programme of research, development and innovation in MRI Physics
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### **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**

- Manipulate (push) heavy pieces of equipment (assisted by trollies and tables on wheels)
- Lift heavy (>10kg) test equipment (in accordance with relevant manual handling protocols)
- Ability to sit for long (hours) period of time in front of computer monitors
- The post holder is required to travel between all Trust sites and to sites where external contracts are held

### **MENTAL EFFORT**

- Provide clinical advice under time pressure directly affecting medical imaging of patients.
- Deliver scientific advice on medical exposures making judgements under time pressure.
- Able to concentrate frequently when subject to unpredictable working patterns and interruptions.
- Able to concentrate for prolonged periods (hours)
- Able to extract relevant clinical information from complex datasets.

### **EMOTIONAL EFFORT**

- The post holder must be able to deal with rare but unexpected situations involving emotional distress.

### **WORKING CONDITIONS**

- Ensure that all practices comply relevant legislation, national standards and other guidelines for MRI, including MHRA, IEC, CEMFAW, Caldicott, GDPR, COSHH and Health & Safety at Work Act
- Ensure all activities are carried out within a quality framework and conform to the Statutory Regulations, approved Codes of Practice and Local Safety Rules.
- Ensure safe working within an MR Environment
- Regular VDU user.

### **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
- The post holder is expected to comply with Trust Infection Control Policies and conduct themselves at all times in such a manner as to minimise the risk of healthcare associated infection

#### **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

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Requirements	Essential	Desirable
<b>QUALIFICATION/ SPECIAL TRAINING</b>		
BSc good honours degree in Healthcare Science (Medical Physics Technology)/physics/engineering or equivalent knowledge and experience	E	
Masters Degree or equivalent experience	E	
State Registration as a Clinical Scientist with the HCPC	E	
Further specialist training allied to Medical Physics at postgraduate level	E	
PhD degree or equivalent research experience		D
Management training or equivalent experience		D
Additional specialist certification: MR Safety Expert		D
Further professional membership (MIPEM etc.)	E	
<b>KNOWLEDGE/SKILLS</b>		
Highly advanced theoretical and technical knowledge in MRI	E	
Specialist theoretical and practical knowledge quality assurance in MRI	E	
Advance theoretical knowledge and experience of relevant legislation, national standards and other guidelines for MRI, including MHRA, IEC, CEMFAW, Caldicott, GDPR, COSHH and Health & Safety at Work Act	E	
Advance theoretical knowledge and experience of clinical MRI	E	
Ability to use word processing, spreadsheet and database software and relevant software tools for analysis and development..	E	
Able to lift and transport testing equipment cases up to 15 kg sometimes via stairs.	E	
Knowledge of relevant anatomy, physiology and pathology		D
Good understanding of the hazards and risks of MRI in the clinical environment	E	
Able to concentrate when subject to frequent unpredictable working patterns	E	
Able to communicate scientific and technical information, providing explanation and guidance to non-technical staff	E	
Knowledge of appropriate standard and systems of financial accountability in a public sector organisation		D
Knowledge of how to offer effective supervision to junior staff		D

<b>EXPERIENCE</b>		
Experience of image acquisition with a clinical MRI scanner and MRI pulse sequence programming	E	
Experience of a scientific healthcare environment	E	
Able to solve highly complex problems using analytical skills and clinical judgement.	E	
Experience in using software to analyse data and extract information.	E	
Experience of working within a Quality Management System	E	
Extensive experience dealing with governance and regulatory compliance matters.	E	
Extensive experience using highly complex clinical equipment and systems and specialist test and measurement equipment	E	
Extensive post registration experience and able to act as a MRSE and to fulfil any additional specialist roles.	E	
Experience in service improvement / research and development. Experience of clinical trials.	E	
Experience in introducing/commissioning new equipment and techniques.	E	
Experience in delivering specialist teaching and training including professional presentations.	E	
Experience of managing resources within a project		D
Experience of supervision and management of scientists / trainees		D
Experience of presenting work at scientific meetings		D
<b>PERSONAL ATTRIBUTES</b>		
Highly motivated with positive attitude to change.	E	
Able to work under stressful-time sensitive conditions.	E	
Able to work as part of a team.	E	
Able to inspire confidence in clinical, scientific and managerial colleagues.	E	
Able to communicate complex information to many different groups of staff at a range of levels and across professional boundaries.	E	
Able to deal with distressing circumstances.	E	
Ability to provide advice on the use of clinical MRI equipment for patient diagnosis, management and treatment for routine care and when planning and implementing a research programme	E	

Able to operate a range of clinical MRI systems	E	
<p><b>OTHER REQUIREMENTS</b></p> <p>The post holder must demonstrate a positive commitment to uphold diversity and equality policies approved by the Trust.</p> <p>Full driving licence / able to travel to different working locations with equipment.</p> <p>Occasional requirement to work extended hours</p>	<p>E</p> <p>E</p> <p>E</p>	

WORKING CONDITIONS/HAZARDS		FREQUENCY (Rare/ Occasional/ Moderate/ Frequent)			
		R	O	M	F
<b>Hazards/ Risks requiring Immunisation Screening</b>					
Laboratory specimens	N				
Contact with patients	N				
Exposure Prone Procedures	N				
Blood/body fluids	Y	R			
Laboratory specimens	N				
<b>Hazard/Risks requiring Respiratory Health Surveillance</b>					
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				
<b>Risks requiring Other Health Surveillance</b>					
Radiation (>6mSv)	N				
Laser (Class 3R, 3B, 4)	Y	R			
Dusty environment (>4mg/m3)	N				
Noise (over 80dBA)	N				
Hand held vibration tools (=>2.5 m/s2)	N				
<b>Other General Hazards/ Risks</b>					
VDU use (> 1 hour daily)	Y				F
Heavy manual handling (>10kg)	Y		O		
Driving	Y		O		
Food handling	N				
Night working	N				
Electrical work	N				
Physical Effort	Y		O		
Mental Effort	Y			M	
Emotional Effort	N				
Working in isolation	N				
Challenging behaviour	N				