Job Description

Job title:	Senior Specialist Radiographer in Radiotherapy Physics (Dosimetrist)
Division:	Cancer Services
Board/corporate function:	Surgery and Cancer
Salary band:	Band 8A
Responsible to:	Lead Radiotherapy Dosimetrist
Accountable to:	Head of Radiotherapy Physics
Hours per week:	37.5
Location:	Radiotherapy Physics, 1st floor East, 250 Euston Road

University College London Hospitals NHS Foundation Trust

University College London Hospitals NHS Foundation Trust (UCLH) is one of the most complex NHS trusts in the UK, serving a large and diverse population.

We provide academically-led acute and specialist services, to people from the local area, from throughout the United Kingdom and overseas.

Our vision is to deliver top-quality patient care, excellent education and world-class research. We provide first-class acute and specialist services across eight sites:

- University College Hospital (incorporating the Elizabeth Garrett Anderson Wing)
- National Hospital for Neurology and Neurosurgery
- Royal National ENT and Eastman Dental Hospitals
- Royal London Hospital for Integrated Medicine
- University College Hospital Macmillan Cancer Centre
- The Hospital for Tropical Diseases
- University College Hospitals at Westmoreland Street
- University College Hospital Grafton Way

We are dedicated to the diagnosis and treatment of many complex illnesses. UCLH specialises in women's health and the treatment of cancer, cardiac, infection, neurological, gastrointestinal and oral disease. It has world class support services including critical care, imaging, nuclear medicine and pathology.

Surgery and Cancer Board and Radiotherapy Physics

The Surgery and Cancer Board comprises of Surgery, Cancer services and Imaging, led by the Medical Director.

The Radiotherapy Physics Department consists of Physicists, Planning Radiographers Physics practitioners (clinical technologists) and Radiotherapy Engineers. At any given time, there may also be several additional staff undertaking training in the Department, including STP and PTP Physics

trainees, Radiographers rotating through Treatment Planning, Student Radiographers, and Oncology Registrars and Medical Physics MSc students.

The Department is part of a multi-disciplinary team in the Department of Clinical Oncology, which sees about 2000 new patients and administers over 3000 new courses of radiotherapy treatment per year. The Department of Clinical Oncology has a varied patient base suitable for the development of complex radiotherapy including total body irradiation, paediatric practice, head and neck, and sarcoma treatments. There are also close relationships with the academic department in nuclear medicine and the academic department of oncology, which has a major research interest in targeted radioisotope therapy.

The Radiotherapy Department is located on the UCH site and the estate includes six accelerator bunkers and ten protected ward rooms. The radiation equipment in the Department includes: four Varian TrueBEAM linear accelerators, one orthovoltage unit and an busy High Dose Rate Brachytherapy unit. The department also has access to PET/CT and PET/MR units for radiotherapy planning.

The Radiotherapy Physics Department provides all Dosimetry, Quality Assurance and Engineering services needed to maintain the above equipment in good and safe working order. It follows all national and international protocols and codes of practices and participates in regional, national and international audits to ensure its dosimetry is consistent with accepted standards. The Department is actively engaged in developing and implementing new technologies to enhance the safety, accuracy and efficacy of cancer treatment.

The Radiotherapy Physics Department supplies Treatment Planning services to Radiotherapy. Treatment planning is performed using Eclipse planning system for 3D conformal and IMRT/VMAT. The Department offers a variety of specialised treatment services and is continually developing advanced treatment techniques. Treatments offered include: Dynamic IMRT and VMAT, SABR, IGRT, CT-based TBI; Ultrasound–guided and CT-planned HDR brachytherapy and high precision conformal radiotherapy, utilising MR/PET/CT fusion. The Department has an integrated ARIA Radiotherapy Network to transfer treatment parameters and images between the various pieces of equipment, as well as to streamline the patient flow. This network enables easy and fast Recording and Verification of complex treatments. The Radiotherapy Department as a whole has a policy of Quality Assurance for Radiotherapy and is accredited to ISO 9000-2000.

The Radiotherapy Physics group has a close collaborative relationship with UCL Medical Physics and Bioengineering group with several PhD projects in related areas of proton radiotherapy, Image-guided Radiotherapy and Adaptive radiotherapy.

The Trust has been identified as one of the first two NHS centres to offer proton beam therapy (PBT) through an integrated service with the existing radiotherapy and radiotherapy physics departments. The Trust is currently working with the DH and our partner site, the Christie, to deliver service and is located in the Grafton Way building. The site has direct access to the Trust's existing radiotherapy department and close to the new University College Hospital Macmillan Cancer Centre. The UK proton service brings together some of the world's leading specialists in complex cancers. Together, the Christie and UCLH will see more children and teenagers with cancer than almost any other centre in the world, and more adults with brain cancers than any other centre in the UK.

The Proton service commenced clinical treatment in 2021. The provision of Physics services to the PBT facility, at UCLH, will be provided by the radiotherapy physics group. This post will form part of that group and will require a shift-working pattern.

The Proton service is equipped with four Varian ProBEAM gantries serviced by a single cyclotron source. Proton pencil-beam scanning is standard and a single networked ARIA and Eclipse system in use across PBT and radiotherapy. The ProBEAM gantries have full imaging capabilities including planar and cone-beam CT. Pre-treatment imaging includes a dedicated MR scanner and Dual-energy CT.

The department is expected to treat up to 1000 new highly complex cases per year across the four treatment gantries. Staffing for the proton department includes clinical scientists, dosimetrists and a team of technologists.

Job Purpose

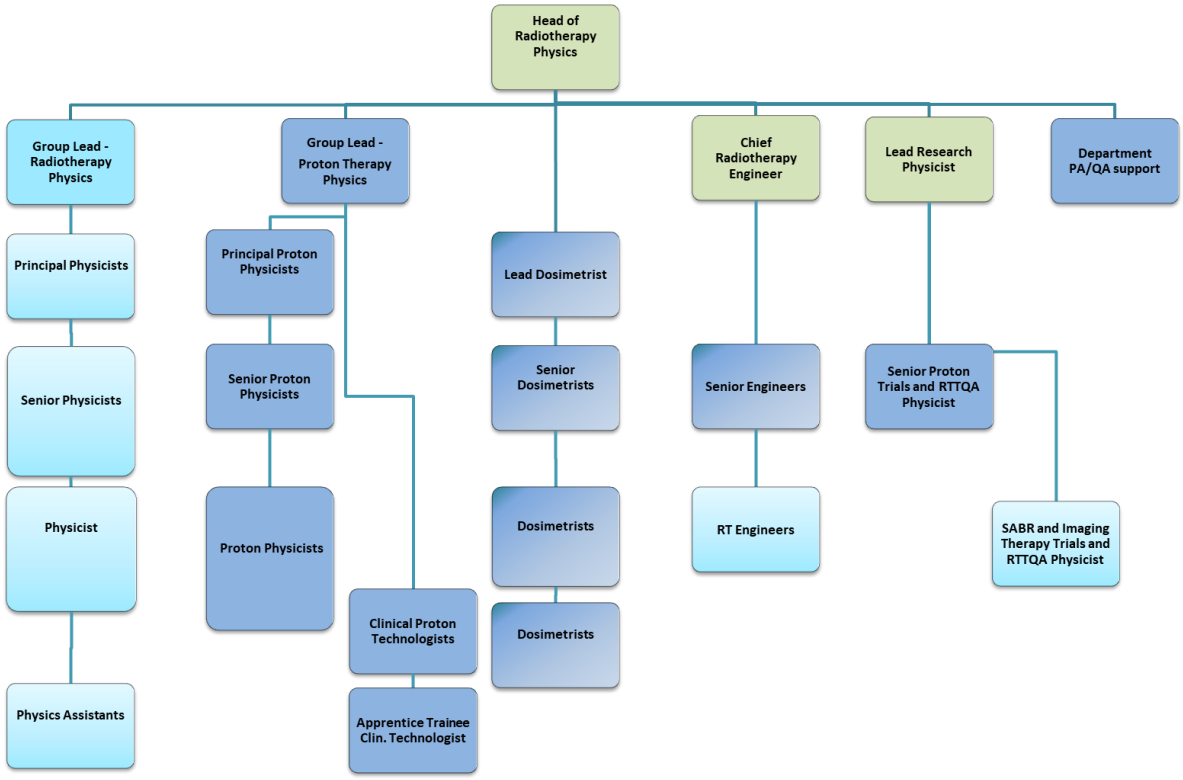
- The postholder carries out a highly specialised IR(ME)R operator role in Treatment Planning with the production of highly complex treatment plans.
- To participate fully in the provision of treatment planning service provided by the Radiotherapy Physics Group including proton therapy physics.
- To liaise closely with the current senior/ Lead Planning Dosimetrist and Principal Planning Physicists for radiotherapy and proton therapy in the provision of the service.
- To deputise for the Lead planning Dosimetrist in their absence.
- To participate in the development, implementation and audit of Quality Assurance programmes related to Treatment Planning.
- The postholder will be assist in the training and competency of all staff involved in treatment planning activities in Radiotherapy physics and work closely with the principal physicists responsible for treatment planning to ensure sufficient staff are trained.
- To participate in the Treatment Planning training of additional staff in the Department, including STP Physics trainees, rotating Radiographers, Student Radiographers, Oncology Registrars and Medical Physics MSc students.
- To provide highly specialised advice and guidance, where necessary, to the Radiotherapy Department in matters relating to treatment plans and techniques.
- To participate in research, development and implementation of new techniques across RT and PBT services.
- To work closely with the pre-treatment and treatment Superintendents to ensure that workload flows smoothly through the Department
- To participate in audit.

Key Working Relationships

The post holder will report to the Lead Dosimetrist and will come under the line management of the Head of Radiotherapy Physics.

The post holder will be expected to liaise closely with the Group Leads for both radiotherapy physics and PBT physics; the Principal Planning Leads for radiotherapy physics and PBT physics; members of the Radiotherapy and proton therapy department and clinical oncologists and specialist registrars. Close liaison with senior radiography staff in treatment planning and treatment floor is expected.

The postholder will also participate rotationally through the SABR MDT meeting with senior dosimetrists, representing Radiotherapy Physics Services



Key Results Areas

- The Treatment Planning services to Radiotherapy including PBT will be provided in a timely and efficient manner. These include the production and checking of both routine and highly complex radiotherapy treatment plans and entry of complex data onto departmental computer systems.
- Supervision of the other dosimetrists, rotating radiographers and clinicians within the group
- The work of the Treatment Planning section will be closely co-ordinated with the Pre-treatment and Treatment Superintendents to ensure that workload flows smoothly through the Department, thus delivering a prompt and high quality service to patients.
- The Capacity and Demand conflicts within the Treatment Planning Section will be balanced, in co-ordination with the Lead Dosimetrist, Planning Superintendents and the Group leads for RT and PBT Physics, to avoid unnecessary increases or decreases in workload.
- The training needs of all grades of staff starting or rotating through the Treatment Planning Section will be fulfilled to the satisfaction of the Head of Radiotherapy Physics.

- New treatment techniques will be implemented within a multi-disciplinary approach. Changes to treatment planning techniques will be implemented in conjunction with the Principal Physicists in charge of RT and PBT Treatment planning and the Group Lead for RT and PBT Physics

- All activities of the postholder will be compliant with relevant national Radiation Protection legislation.

Main Duties and Responsibilities

1. CLINICAL SCIENTIFIC

- Produce routine and highly complex radiotherapy treatment plans and carry out associated dosimetry calculations in accordance with clinical prescription and agreed procedures.

- Ensure that all the necessary patient data, including complex information, images and other investigations are available for the production of treatment plans.

- Using all relevant data, analyse requirements and make complex judgements regarding treatment parameters and patient / dose effects to produce the required dose distribution over the treatment volume using computerised planning systems and other devices as appropriate.

- Provide clinical staff with advice on treatment plan options and effect on dose distribution to create optimum treatment plan.

- Supervise, advice, check and approve highly complex treatment plans produced by other members of staff.

- Provide pre-treatment and treatment radiography staff with advice on planning aspects of treatment and attend patient set–up as required.

- Perform and advise on dosimetry measurements on patients. Provide complex advice to clinical staff.

- Advise and participate in developments in “in-vivo” dosimetry and megavoltage imaging

- Review all forms of offline verification imaging and advice clinical staff on the potential impact to dosimetry on patients that are changing during treatment.

- Advise and participate in developments in “in-vivo” dosimetry and imaging for verification

- Where the need arises, use expert judgement to make decision to halt treatment in order to carry out further planning procedures as a consequence of change in patient shape or status. Make arrangements for further procedures to take place and re – plan treatment as required.

- Report any radiotherapy pathway errors according to local policies.

- Understand the operation of the treatment machines and appreciate their potential and limitations with regard to treatment techniques. Use this knowledge in the production of treatment plans.

- Produce as required written protocols for all aspects of Treatment Planning as part of compliance with ISO9000 requirements.

- Lead and participate in multi-disciplinary working parties and development groups to negotiate, agree and implement changes in Radiotherapy practice.

- The post holder will be expected to communicate highly complex information to various other staff groups and participate in multi-disciplinary staff meetings.

- The post holder will be able to maintain appropriate radiographic skills by arranging time to be spent on treatment units.

- Act as an operator under the definitions of the IR(ME)R regulations in accordance with Trust Policies and Practices.

2. MANAGERIAL

- To deputise for the lead Dosimetrist in their absence.

- To assist in the supervision of the dosimetry staff, rotating radiographers and clinical staff within the Radiotherapy Physics group

- With guidance from the lead dosimetrist to provide appraisals and project allocation to junior members of the team.

- To assist with the management of the workflow within the Treatment Planning section and manage the Capacity and Demand conflicts arising, as required.

- To ensure that the Radiotherapy Information schedule system is completed to manage the number of plans required to be completed by Physics.

- To ensure that Planning management system is completed accurately to allow the group to know plan deadlines for completion.

- Prioritise and manage own caseload. Working to deadlines.

- Monitor tasks through worklists within the planning section to prioritise, allocate and manage other planners' and trainees' caseload.

- Assist in change management to achieve improvement in processes and patient outcomes

- Organise and manipulate daily case load to accommodate emergencies and patients requiring further unscheduled planning procedures.

- Investigate issues or errors highlighted through ARIA or Datix systems across planning services,

3. Teaching, Training and Research

- Provide a lead in theoretical and practical instruction in all treatment planning techniques, computerised planning and associated dosimetry to Radiotherapy rotational staff, undergraduate Radiotherapy students, post graduate Physics students and other trainees in Radiotherapy Physics

- Provide instruction in radiotherapy and proton therapy planning techniques to junior doctors as required.

- Participate in training of other staff groups as required.

- Lead and participate in clinical audit and trials.

- Conduct research into new techniques.

- Test and adapt techniques to meet specific medical requirements.

4. Professional

- Participate in Continuing Professional Development.

- To maintain State registration

- Attend and present at seminars, conferences and courses as part of CPD and as part of service development.

- Ensure all work complies with current UK legislation for work with ionising radiation (IRR99, IRMER 2000).

5. Miscellaneous

- Ensure compliance with accredited Quality Systems in the areas of work in which the postholder carries responsibility. Participate in, and actively contribute to the operation and development of Quality Systems.

- Carry out all duties in accordance with the requirements of the Health & Safety at Work Act, relevant Statutory Regulations, Approved Codes of Conduct and Local Rules.

- Take personal responsibility for promoting a safe environment and safe patient care by identifying areas of risk and following the Incident, Serious Incidents and Near Misses reporting policy and procedures.

- Work hours necessary for the proper and efficient performance of the work. In practice, the postholder will often be required to perform duties outside the normal working hours of the Department.

- Perform other appropriate duties which may be required from time to time by the Head of Radiotherapy Physics.

Other

The job description is not intended to be exhaustive and it is likely that duties may be altered from time to time in the light of changing circumstances and after consultation with the post holder.

You will be expected to actively participate in annual appraisals and set objectives in conjunction with your manager. Performance will be monitored against set objectives.

Our Vision and Values

The Trust is committed to delivering top quality patient care, excellent education and world-class research.

We deliver our vision through values to describe how we serve patients, their families and how we are with colleagues in the Trust and beyond.

We put your safety and wellbeing above everything

Deliver the best outcomes	Keep people safe	Reassuringly professional	Take personal responsibility

We offer you the kindness we would want for a loved one

Respect individuals	Friendly and courteous	Attentive and helpful	Protect your dignity

We achieve through teamwork

Listen and hear	Explain and involve	Work in partnership	Respect everyone's time

We strive to keep improving

Courage to give and receive feedback	Efficient and simplified	Develop through learning	Innovate and research

Person Specification

A= Application Form
I= Interview
R-References
T/P=Test/Presentation

Requirements	Essential	Desirable	Assessment Criteria			
			A	I	R	T/P
Knowledge and Qualifications	BSc Therapeutic Radiography or Diploma of the College of Radiographers D.C.R.T.		**A**			
	State registration or eligible		**A**			
		Evidence of further study/ ongoing education	**A**			
		MSc Level equivalent education	**A**			
Experience	Knowledge of varied radiotherapeutic techniques.		**A**	**I**		
	Experience with Microsoft applications such as Word and Excel		**A**	**I**		
	Treatment Planning experience		**A**	**I**		
	Experience of 3-D Treatment Planning systems.		**A**	**I**		
	Experience of IMRT/VMAT planning		**A**	**I**		
	Understanding of hazards posed by, and precautions needed with: Ionising radiation		**A**	**I**		
		Knowledge of Varian treatment equipment and techniques.	**A**	**I**		
		Experience with ARIA Radiation Oncology Management system				
Skills and Abilities	Ability to demonstrate an understanding of the day-to-day running and organisation of a Treatment Planning section.		**A**	**I**		
	Must demonstrate good patient care at all times			**I**		
	Able to concentrate frequently when subject to			**I**		

	unpredictable working patterns Able to concentrate for prolonged periods Experience with Microsoft applications such as Word and Excel Ability to demonstrate an understanding of Capacity and Demand conflicts and how to resolve them Participation in Quality Audits for service improvement	Flexibility and ability to use own initiative and be innovative Experience with ARIA Radiation Oncology Management system Understanding of Quality systems within Radiotherapy Ability to participate in introduction of new radiotherapy techniques and to implement change	**A** **A** **A**	**I** **I** **I** **I** **I** **I** **I**		
Communication	Excellent communication skills with an ability to relate confidently to all hospital staff Must be able to communicate in a sensitive manner when talking to patients. Must be able to communicate complex information in a manner suitable to the patient's understanding		**A** **A**	**I** **I** **I**		
Personal and People Development	Evidence of Continuing personal development (CPD) Willingness to attend courses and keep abreast of developments in the service	Experience of training junior Staff including doctors and radiographers	**A** **A** **A**			

Specific Requirements	Able to vary working hours to meet needs of the department		**A**	**I**		