

## Job Description

**JOB TITLE:** Senior Radiotherapy Electronics Technologist (Linac Engineering)

**DIVISION:** Clinical Support

**GRADE:** Band 6

**REPORTS TO:** Head of Radiotherapy Engineering

**ACCOUNTABLE TO:** Head of Dosimetry and QA

### VALUES AND BEHAVIOURS



### ABOUT NUH

Every day, our teams at Nottingham University Hospitals NHS Trust (NUH) make a difference. We save lives, we improve lives and we usher in new life. We are proud to play a central role in supporting the health and wellbeing of people in Nottingham, Nottinghamshire and our surrounding communities.

With more than 18,000 colleagues, we are the largest employer in Nottinghamshire and one of the biggest and busiest NHS Trusts in the country, serving more than 2.5m residents of Nottingham and Nottinghamshire and a further four million people across the East Midlands and beyond.

We provide a range of national and internationally renowned specialist services and we are at the forefront of new surgical procedures and research programmes.

We are home to the East Midlands Major Trauma Centre, the Nottingham Children's Hospital and in partnership with the University of Nottingham we host a Biomedical Research Centre carrying out vital research into hearing, digestive diseases, respiratory, musculoskeletal disease, mental health and imaging.

As a teaching hospital, we are instrumental in the education and training of doctors, nurses and other healthcare professionals. We are proud of our strong relationships with universities across the East Midlands, including the University of Nottingham, Nottingham Trent University and Loughborough University.

The last year has been challenging for our teams. Alongside our continued recovery from Covid, our maternity services are subject to an independent review and we must do more to improve our culture. We are more focused than ever on making sustained improvements across our services.

As one of the NHS Trusts identified in the New Hospital Programme, a programme of investment in NHS hospitals, we have extensive plans to improve our hospitals and the services we deliver for patients. As well as the redevelopment of the Queen's Medical Centre and City Hospital, plans for a new 70 bed NHS rehabilitation facility set to be built on the Stanford Hall Rehabilitation Estate near Loughborough, are currently going through the approvals process.

We have recently become home to the latest series of Channel 4's award-winning series 24 Hours in A&E, which takes a look inside one of the country's busiest emergency department at QMC and showcases the dedication, passion and skill of our teams.

This is an exciting time to join NUH and help support our future ambitions.

## **JOB SUMMARY**

The post holder is a key member of the Radiotherapy Engineering team. The Radiotherapy Engineering Section provides linac engineering services on behalf of Radiotherapy Physics in the Medical Physics and Clinical engineering Department. The primary role of the team is to provide specialist, patient-focussed support and immediate response for the radiotherapy and radiotherapy physics services. This takes the form of pre-treatment maintenance, diagnostic testing and decisions about the clinical status of treatment machines on a daily basis. The team carries out preventative maintenance tasks, calibration of patient critical equipment parameters, safety testing, and prompt fault diagnosis and repair on a wide range of highly complex and patient critical therapeutic and associated ancillary equipment with the aim of maintaining patient treatment targets. The clinical equipment covered incorporates electrical, electronic, mechanical, computer hardware/software and networking, gas, high vacuum, laser, high voltage, water-cooling and safety systems.

The post holder is required to exercise a high level of flexibility, initiative, and tenacity. Working at all times to extremely high standards, maintaining safety and being accountable.

The post holder will need to communicate effectively with treatment radiographers, clinical scientist and medical staff to discuss concerns regarding machine behaviour, identify faults, repair equipment, liaise with and work alongside equipment manufacturers as deemed necessary or appropriate.

The post holder will be based at: City Hospital Campus.

## **KEY JOB RESPONSIBILITIES**

### **1. Clinical Technical**

- a. Provide specialised clinical technical services to the Oncology Department.
  - i. Start-up Linear Accelerators (advanced radiotherapy treatment machines) and perform daily pre-clinical maintenance to decide upon the clinical status. Ensuring that they operate safely and remain within recommended tolerances and clinically defined parameters.

- ii. Interpret treatment machine standby & running values, to identify possible deterioration of specific components, predict useful life remaining and be proactive in the acquisition of replacement items prior to machine failure.
  - iii. Communicate with treatment radiographers, clinical scientists and medical staff to gain a clear understanding of any problematic equipment symptoms. Use initiative and sound judgment to assess the seriousness and implications of any problems, and dictate the clinical status of the equipment accordingly.
  - iv. Perform immediate rectification tasks, where possible, to allow the continuation of interrupted patient treatment. Consult with treatment radiographers, where patient contact is imminent; in order to ensure the privacy and modesty of patients is protected.
  - v. Ability to work under pressure, undertake advanced faultfinding on complex electronic systems. Apply proven faultfinding techniques to diagnose problems promptly, including those beyond the scope of manufacturer-supplied information. Use all available resources to positively identify defective item, particularly high-cost, non-returnable goods and use judgment to approximate machine downtime.
  - vi. Perform scheduled Quality Assurance checks on treatment machines, to ensure the correct operation of primary and secondary electronic, mechanical and software driven safety devices, software limits and calibrated settings.
  - vii. Participate in a shift pattern, which provides pre-treatment maintenance on the weekends when patients are undergoing intensive radiotherapy treatment. Also on-call breakdown cover for evening and weekends, plus weekend on-call breakdown cover for all other emergency radiotherapy patients.
  - viii. Responsible for maintaining integrity of protection systems for radiation controlled areas.
  - ix. Responsible as an IR(ME)R 2000 operator.
  - x. Perform safety related checks and embody performance-enhancing modifications to treatment equipment, in accordance with manufacturers' directives and instructions.
  - xi. Provide support on the maintenance and repair of the complete range of radiotherapy and radiation dosimetry/monitoring equipment.
  - xii. Take responsibility for the clinical status of patient treatment machines, following maintenance, and the quality of workmanship carried out.
- b. In conjunction with Clinical Scientists (Radiotherapy Physicists) provide specialist knowledge and assistance in the adjustment of patient critical equipment, to optimise performance and obtain the required clinical parameters.
  - c. Participate in all general clinical engineering duties as required.
  - d. Liaise with clinical staff to organise planned and un-planned maintenance, and adjust schedules in response to short-term clinical needs.
  - e. Contact manufacturers to obtain information, provide feedback on equipment related issues and return of parts for assessment.
  - f. Monitor stocks of components, spares and materials held, re-ordering when necessary to maintain stock levels.
  - g. Keep relevant scientific, technical, and QA documentation for all tasks performed.
  - h. Take responsibility for all tools and equipment within the post holder's care. Ensure electronic workshop facility is kept clear and well ordered and that all equipment is maintained and safe to use. Ensure adequate safety devices and signs are in place prior to live working on lethal voltages.
  - i. Provide technical advice to clinical scientists, radiographers, other staff groups and departmental colleagues as appropriate.
  - j. Assist with evaluation, commissioning and safety testing of intricate and complex equipment.
  - k. Be proactive in locating replacement parts from the most competitive source, whilst maintaining the quality of all items used.
  - l. Introduce and improve engineering controlled documentation, used within the department, which must conform to current quality assurance standards.

## **2. Managerial**

- a. Participate in shift patterns and on-call rosters to ensure adequate cover for equipment preparation and breakdown.
- b. Prioritise and manage own work in accordance with section policies and competing service demands. Propose changes to own working practices and procedures.
- c. Participate in regular meetings with the Head of Radiotherapy Engineering, other technical staff in the Section, Clinical Scientist and Radiotherapy.
- d. Keep accurate records of all work performed and complete appropriate records.

## **3. Teaching, Training and Research**

- a. Regularly teach and train other staff (technicians, clinical scientists, radiographers) in the operation and care of Radiotherapy equipment.

- b. Train Staff in the full range of techniques and methods used in the Engineering Facility.
- c. Supervise Trainees on placement.
- d. Give presentations at seminars and training courses.
- e. Assist other groups within department in the development and construction of new and innovative devices to support clinical activity and research.
- f. Participate in the evaluation of medical equipment.

#### **4. Professional**

- a. Keep abreast of technical developments. Enrol in appropriate Continuing Professional development programmes. Attend suitable seminars and courses as part of personal development and to further the work of the Department.
- b. Ensure all activities are carried out within a quality framework and meet regulatory requirements, professional standards and acceptable guidelines.

#### **5. Miscellaneous**

- a. Other appropriate duties, as required, for which the post holder has adequate training.

### **GENERAL DUTIES**

In addition to the key job responsibilities detailed in this job description all employees at Nottingham University Hospitals NHS Trust are expected to comply with the general duties detailed below:

#### **Infection Control**

To maintain a clean, safe environment, ensuring adherence to the Trust's standards of cleanliness, hygiene and infection control.

#### ***For senior/clinical managers the following statement must also be included***

*The post holder is accountable for minimising the risks of infections and for the implementation of the Code of Practice for the Prevention and Control of Healthcare Associated Infections as outlined in the Health Act 2006. This includes receiving assurance of risk and embedding evidence based practice into daily routines of all staff.*

#### **Safeguarding children, young people and vulnerable adults**

Nottingham University Hospitals is committed to safeguarding and promoting the welfare of children, young people and vulnerable adults. All staff and volunteers are therefore expected to behave in such a way that supports this commitment.

#### **Information Governance**

All staff have an individual responsibility for creating accurate records of their work and for making entries into and managing all NHS records effectively in line with the Health Record Keeping Policy and other Health Records and Corporate Records Management policies and procedures in order to meet the Trust's legal, regulatory and accountability requirements.

### **Health and Safety**

To take reasonable care to prevent injury to themselves or others who may be affected by their acts or omissions.

To co-operate fully in discharging the Trust policies and procedures with regard to health and safety matters.

To immediately report to their manager any shortcomings in health and safety procedures and practice.

To report any accidents or dangerous incidents to their immediate manager and safety representative as early as possible and submit a completed accident/incident form.

To use protective clothing and equipment where provided.

Whilst the aim of the Trust is to promote a co-operative and constructive view of health and safety concerns in the organisation, all staff must be aware that a wilful or irresponsible disregard for safety matters may give rise to disciplinary proceedings.

### **Governance**

To actively participate in governance activities to ensure that the highest standards of care and business conduct are achieved.

### **Health and Wellbeing**

Employees are expected to take all reasonable steps to look after both their physical health and mental health. To support employees to achieve this NUH offers a wide range of health and wellbeing activities and interventions. The full programme can be viewed at on the staff intranet.

Line managers are expected to encourage and support staff to look after their health and wellbeing, including the release of staff to attend health and wellbeing activities and interventions.

### **General Policies Procedures and Practices**

To comply with all Trust policies, procedures and practices and to be responsible for keeping up to date with any changes to these.

### **WORKING CONDITIONS**

Describe the post holder's normal working conditions (*such as exposures to hazards, requirement for physical effort etc*).

### **JOB REVISION**

This job description should be regarded as a guide to the duties required and is not definitive or restrictive in any way. The duties of the post may be varied from time to time in response to changing circumstances. This job description does not form part of the contract of employment.

### **Service Review**

A strategic review of all Trust services is taking place, as a result of which some services, or parts of some services, may transfer from one campus to the other. This will be decided in accordance with the most appropriate way to provide the best healthcare for patients in the future and all staff will be fully consulted on about the impact of any such decisions.

**Job description reviewed by:**

**Date:**



