

#### **JOB DESCRIPTION**

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| JOB IDENTIFICATION | |
| Job Title: Clinical Technologist Assistant (Clinical Engineering/Medical Equipment)  Responsible to Workshop Manager or Sector Manager, Medical Equipment Management (depending on location)  Department(s): Medical Physics  Directorate: Diagnostics, Anaesthetics, Theatres & Critical Care (DATCC)  Operating Division: Lothian University Hospitals Division  Job Reference: 182697  No of Job Holders:  Last Update: 25 January 2019 | |
| JOB PURPOSE | |
| Provide medical equipment management services to a range of NHS and other customers, supporting the clinical use of a range of routine medical equipment in areas including critical care units, theatres, general wards, community and domiciliary sites. This includes fault finding, repairing breakdowns, performing scheduled preventive maintenance, safety checks and calibrating medical equipment. Tasks are performed by undertaking visual and functional checks. Planned preventative maintenance is carried out in line with standard operating procedures (SOPs). | |
| DIMENSIONS | |
| Provision of equipment management services to support an inventory of patient critical medical equipment with an estimated total value of £45 million across NHS Lothian.  The Medical Equipment Management service operates from four bases: The Royal Infirmary of Edinburgh (RIE), the Western General Hospital (WGH), The Royal Hospital for Children and Young People (RHCYP) and St John’s Hospital at Howden (SJH).  The post holder is employed within NHS Lothian and there may be a requirement to work flexibly across Lothian to meet service demands.  **Financial Responsibilities:**  Maintains stock control and order parts/supplies when necessary. | |
| ORGANISATIONAL POSITION | |
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| ROLE OF DEPARTMENT | |
| The role of the Department of Medical Physics is to facilitate the introduction of new and existing clinical technology and scientific methods into healthcare and to ensure their safe and effective use. The Department provides a range of specialised clinical and clinical-technical services and highly specialised expertise to NHS Lothian and to other organisations with which it has contractual arrangements. The department employs Healthcare Science staff with a variety of scientific and technical expertise, including physics, electronic & mechanical engineering and computer science. The Department is organised into five services that specialise in different areas of physics and engineering applied to medicine. The services are:  Clinical Engineering & Non-Ionising Radiation Physics,  Imaging Physics,  Medical Equipment Management,  Nuclear Medicine Physics, and  Radiation Protection.  **Services provided by the Equipment Management service:**  The Medical Equipment Management (MEM) service provides a comprehensive, full-lifecycle equipment management service, including medical equipment library services. From bases at the RIE, RHCYP, SJH and WGH it manages and maintains a wide range of medical devices (approximately 25,000 items with a value of £45 million) throughout the Division and to other hospitals, health centres in NHS Lothian, third parties and to patients in their homes. The service specifies, selects, commissions, calibrates, maintains (scheduled work), repairs and decommissions medical devices. It responds to medical device safety alerts issued by NHS Scotland and others, and investigates incidents involving medical devices. It trains professional users (doctors and nurses) in the safe use of medical devices. It supports and initiates R&D and service developments to enhance the use of technology in healthcare. | |
| KEY RESULT AREAS | |
| **Clinical/Technical (70%)**  The post holder provides PPM support for routine equipment including:   1. Commissioning and acceptance of new medical devices: Support acceptance checking and installation of new medical devices to ensure that devices are fit to use and are set-up according to agreed local configurations, so as to be in a safe condition for staff and patients. 2. Scheduled inspections: Carry out a quality assurance programme in accordance with the Department’s quality system, consisting of planned inspections (electrical safety, functional performance and calibration) on medical devices at periodic intervals to ensure functional performance, accuracy and safe handling for staff and patients. 3. Repair and maintenance: Carry out a reliable, repeatable and economic repair and maintenance service for a competency-based range of routine patient critical medical devices. Where appropriate, under direction, liaise with manufacturers or their agents who are responsible for carrying out work on medical devices under contract or an ad-hoc basis. 4. Decommissioning of equipment: Support the senior staff in the decommissioning of equipment as and when required, being mindful of environmental and information governance regulations relating to the disposal of medical equipment and ensuring that local procedures are followed; thereby ensuring that equipment is in an appropriate condition for disposal. 5. Record keeping: Maintain complete, contemporaneous and accurate records (both electronic and written) in relation to all medical equipment activities, in accordance with local procedures, clinical governance standards and best practice from the MHRA and Scottish Government.   **Administrative (25%)**   1. Participate in regular meetings, reviews and audits with fellow team members, the Workshop Manager/Sector Manager and/or the Head of Service. 2. Assist with the efficient ordering of spare parts and supplies as required. 3. Carry out the technical administrative duties of the department, including return of medical equipment to manufacturers.   **Professional (5%)**   1. Attend relevant manufacturers’ technical courses to ensure continuing knowledge of current medical devices. Keep abreast of medical and technical developments by participating in appropriate continuing professional development (CPD) conferences, meetings and workshops. 2. May demonstrate their own role to less experienced members of the team.   **General standards**   1. Ensure that all activities conform to statutory regulations and Board procedures, including Health and Safety regulations, NHS Lothian incident reporting procedures and mandatory training. Adheres to the health and safety responsibilities laid down in the Department Safety Handbook. Carries out the procedures required under the Health and Safety at Work Act 1974 to ensure a safe working environment for patients, visitors and employees. 2. To support NHS Lothian’s values of quality, teamwork, care and compassion, dignity and respect, and openness, honesty and responsibility through the application of appropriate behaviours and attitudes. | |
| a. EQUIPMENT AND MACHINERY | |
| The following are examples of equipment which will be used when undertaking the role.  The general types of diagnostic and therapeutic medical devices that the post holder may be required to have an awareness of, are:  Patient monitoring equipment,  Patient physiological diagnostic and data analysis systems,  Endoscopic and laparoscopic surgery systems,  Respiratory equipment,  Anaesthesia equipment,  Renal and haemofiltration equipment,  Oxygen therapy equipment,  Resuscitation equipment,  External cardiac pacemakers and cardiac assist devices,  Neurological stimulators,  Intravenous and neuraxial therapy devices, and  Electrosurgery equipment.  The post holder will be authorised to support and maintain a range of devices in accordance with the service’s competence and authorisation quality framework and subject to the successful completion of training.  The post holder will be required to use the following types of test equipment:  Standard electronic servicing equipment (e.g. oscilloscopes, multimeters, soldering iron and associated equipment and small hand tools), and  Specialised medical device test equipment (e.g. patient monitor simulators, energy analysers, electrical medical safety analysers, pressure and flow meters, pressure regulators, thermometers, chemistry monitoring equipment and conductivity meters).  **Note:** New equipment may be introduced as the organisation and technology develops, however training will be provided. | |
| b. SYSTEMS | |
| The following are examples of systems which will be used when undertaking the role:  The post holder will perform first-line work on isolated medical devices. When analysing problems with medical devices, the post holder will be required to consider the whole operating environment; this will include the patient, the clinical staff, the hospital network and the medical device or devices in use. Examples of such devices include:  Stand alone patient monitoring devices, and  Volumetric infusion devices.  The post holder will be required to use a range of operational technical, quality and clinical applications as required, including the organisation’s medical device management system and the Department’s Quality Management system.  **Note:** New systems may be introduced as the organisation and technology develops, however training will be provided. | |
| ASSIGNMENT AND REVIEW OF WORK | |
| The post holder works both under supervision and independently under the general direction of the Workshop Manager/Sector Manager.  The post holder is required to follow standard policies and procedures and to ensure that statutory regulations are followed.  The Workshop Manager/Sector Manager allocates specific duties and operational project work to the post holder, monitors overall progress and provides advice and guidance.  The post holder will have a personal development plan and be reviewed by the Workshop Manager/Sector Manager. | |
| DECISIONS AND JUDGEMENTS | |
| The post holder can be supervised or self-directing (depending on work), working within Departmental policies and procedures, exercising their judgement to help solve problems. This may include discussion with senior staff on making a risk assessment in relation to the repair or replacement of a device, taking into account the complexity of the device and the environment in which it is used; or making a recommendation to their Workshop Manager/Sector Manager.  Required to exercise judgement in prioritising their tasks and allocating time to the different aspects of their work by analysing and comparing the various options (e.g. routine maintenance work may need to be stopped mid-task to prioritise the assessment and repair of medical equipment that is critical to patient flow within the hospital).  Diagnose faults on routine medical devices and makes decisions as to how to repair in line with SOPs, in order to get the device back into operation as soon as possible, where necessary referring to a more senior colleague for assistance. | |
| MOST CHALLENGING/DIFFICULT PARTS OF THE JOB | |
| Balancing the clinical requirement to maintain medical device uptime against the need to maintain medical devices in a timely fashion, particularly in critical care areas.  Locating mobile medical devices and liaising with clinical staff for access to equipment.  Developing an understanding of the procedures and specialties in which medical equipment and devices are used. | |
| COMMUNICATIONS AND RELATIONSHIPS | |
| There is daily communication with team members within the Medical Equipment Management service, discussing operational activities and service priorities. There are regular team meetings at which all staff will participate.  There is frequent communication with other services within the Department of Medical Physics in relation to items of medical equipment for which there is a degree of shared responsibility.  There is frequent internal communication with staff at all levels within the organisation, including nursing and medical, communicating to understand and convey technical and operational issues in relation to items of medical equipment.  There is frequent communication with manufacturers and suppliers of medical devices (and their representatives) in relation to scheduling of repairs/maintenance and availability of spare parts.  Communication is by telephone, e-mail, face-to-face and through written reports, as appropriate. | |
| PHYSICAL, MENTAL, EMOTIONAL AND ENVIRONMENTAL DEMANDS OF THE JOB | |
| **Physical skills and effort.**  Manual dexterity: Use of fine hand tools and power tools on complex, high-density circuit boards for fault-finding, component replacement and equipment assembly, where accuracy is important.  Able to make accurate measurements using a wide range of complex test equipment.  Lifting, carrying and moving heavy medical devices and mounting them in the clinical area in line with manual handling protocols.  **Mental effort.**  Frequent requirement for periods of concentration for example when diagnosing and solving combinations of technical and user-related problems with medical devices, while subject to predictable working patterns and interruptions.  **Emotional effort.**  Dealing with occasional emotional circumstances involving clinical colleagues who are trying to manage clinical risks, while the post holder is subject to working under pressure of time, to resolve a technical issue.  **Working conditions.**  May be required to work in locations where the following risk factors may be present:  live electrical equipment,  blood-borne viruses and other infection control risks,  confined working spaces,  proximity to high pressure medical gases, and  unpredictable domiciliary working environments.  Consequently, the post holder is required to understand the hazards posed by the above risks, and take appropriate precautions to mitigate these risks and ensure compliance with statutory regulations and local health and safety rules. | |
| KNOWLEDGE, TRAINING AND EXPERIENCE REQUIRED TO DO THE JOB | |
| **Qualifications**  Professional science/engineering knowledge to SCQF level 7 (e.g. SVQ3, HNC in Electrical/Electronic Engineering) or equivalent training and experience.  **Skills and experience**  Experience of working with equipment, carrying out routine functional and safety tests.  Evidence of continuing professional development by, for example, attendance at appropriate courses.  Experience in the use of a range of general applications and database systems.  Effective interpersonal skills and a commitment to a multi-disciplinary team-based working environment.  **Scientific, technical and clinical knowledge**  Knowledge of how to carry out routine non-complex tests on medical devices. Experience of the calibration and safety testing of medical equipment or equivalent devices.  Knowledge of medical equipment (or equivalent devices) safety regulations.  An understanding of the clinical context in which medical devices are used and how they contribute to patient care and patient/staff safety. | |
| JOB DESCRIPTION AGREEMENT | |
| A separate job description will need to be signed off by each job holder to whom the job description applies.  Job Holder’s Signature:  Head of Department Signature: | Date:  Date: |