#### **NHS SCOTLAND JOB DESCRIPTION TEMPLATE**

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| JOB IDENTIFICATION |
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| Job Title: | Clinical Engineer - Specialist Practitioner Clinical Technologist - Medical Physics |
| Responsible to (insert job title): | Section Manager, Medical Equipment Management |
| Department(s): | Department of Clinical Physics and Bioengineering |
| Directorate: | Diagnostics |
| Operating Division: | Acute |
| Job Reference: |  |
| No of Job Holders: | 4 |
| Last Update (insert date): | 22/12/2023 |

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| 2. JOB PURPOSE |
| The post holder will contribute to the life cycle management of medical equipment, working in-line with standard operating procedures and to support the service by performing essential duties relating to the Asset Management System. Duties include, managing the life cycle of medical equipment through the repair, maintenance, and performance assurance checks on a wide range of specialist and highly complex medical devices. The post holder is also involved in the training of hospital staff and providing technical support to clinical services.The post holder is also responsible for specialist duties and will be involved in supervising and training Clinical Technologists and other trainees attached to the section.The post holder will work within the Medical Equipment Management Services Group in the South Sector, based at the Queen Elizabeth University Hospital (QEUH) campus.  |

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| **3. DIMENSIONS** |
| The post holder is a member of a team of over 100 Clinical Engineer Technologists working within Medical Equipment Management Services group within NHS Greater Glasgow and Clyde.Full life cycle management is provided for over 50,000 medical device assets. The service are involved in the specification, selection and procurement, planned preventative maintenance and performance assurance of medical equipment. Staff are directly involved in clinical support services and provide training for doctors, nurses and other healthcare professionals.Staff in Medical Equipment Management are expected to have an understanding and knowledge of the clinical use of the equipment so that advice on the use of, and any queries or problems associated with, equipment are dealt with in the manner most effective for the user.Services are provided to all Clinical Directorates in the South in both the Acute and HSCP Sectors and this post will be based in QEUH. The post-holder may be required to work at the other acute sites within the South Team, such as Queen Elizabeth University Hospital, Royal Hospital for Children (RHC) and Victoria ACH, to meet service provision demand. |

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| 4. ORGANISATIONAL POSITION  |
| Peripatetic Advanced Specialist W&C1 x Band 7Technical Manager,South Glasgow Team**Band 3 x 1** **Scotstar** **Team**Band 7 x 1Band 6 x 1**Victoria ACH** **Team**Band 7 x 1Band 6 x 1Band 4 x 1**Medical Team**Band 7 x 1 Band 6 x 4 (this post)Band 5 x 3Band 4 x 1Band 3 x1**RHC Team**Band 7 x 1Band 6 x 4Band 5 x 4Band 4 x 1Band 3 x 1**Neuro Team**Band 7 x 1Band 6 x 2Band 5 x 2**Surgical Team**Band 7 x 1Band 6 x 3 Band 5 x 2Band 4 x 1Band 3 x 1  |

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| 5. ROLE OF DEPARTMENT |
| The Medical Equipment Management Services Group, part of the Department of Clinical Physics and Bioengineering, provide expert advice on medical equipment and provide a full life cycle medical equipment management and maintenance service. Correct and accurate operation of medical devices is essential for safe diagnosis and treatment of patients. Services are provided to NHSGGC and to other healthcare establishments in neighbouring Health Boards. Staff also support research and development aimed at improving medical technologies and making them easier and safer to use.The Medical Equipment Management service works and is accredited to ISO 55001 Asset Management System for the provision of medical equipment repair, maintenance and equipment management services. |

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| 6. KEY RESULT AREAS |
| **Clinical / Technical – 70%**The post holder will provide whole lifecycle medical device management ensuring that at all times they comply with the Asset Management System.The duties of this post include: –1. To lead Diagnostic Ultrasound for Medical Equipment Management services in the South Sector, including managing frontline repairs / breakdowns, routine planned maintenance, quality assurance, clinical guidance and service support.
2. Commissioning of medical devices: complete acceptance checking and installation of new medical devices, including specialist and highly complex units, to ensure devices are safe for staff and patients.
3. Scheduled maintenance: carry out scheduled planned maintenance and quality assurance testing on medical devices, including specialist and highly complex units, in accordance with the Asset Management System.
4. Fault-finding and repair: carry out fault diagnosis on a broad range of medical devices, including specialist and highly complex equipment, using a planned and systematic approach making use diagnostic aids and test equipment. When required liaising with manufacturers and agents.
5. Decommissioning of medical devices: decommission medical devices following standard operating procedures.
6. Electrical safety testing: visual inspection and electrical safety testing of equipment for compliance with the Health and Safety at Work Act and Electricity at Work Regulations
7. Safety alerts / field safety notices: investigate, develop responses and complete jobs or actions that have been generated in response to a safety alert, safety notice, etc.
8. Incident investigation: lead technical equipment evaluation for medical devices involved in incidents, providing a report to the Section or Technical Manager.
9. Procurement: regularly involved in the evaluation of new medical devices as part of a procurement evaluation.
10. Call logging: to accurate and timely log calls for service, determining the urgency of any request and responding appropriately.
11. Record keeping: to maintain accurate and contemporaneous records on the Medical Equipment Management System in accordance with the Asset Management System policies and clinical governance requirements.
12. Device Configurations: ensuring that medical device configurations are recorded accurately, and maintained correctly on the appropriate medical devices.
13. The requisition of parts and consumables on a daily basis, contributing to savings where possible and ensuring prompt delivery of orders.

**Administration and Professional – 15%**1. To participate in meetings, short lived working groups and asset management system duties. This may include chairing a group or taking minutes.
2. Contribute to and at times lead the development of Core Procedures, Standard Operating Procedures, local policies and protocols within the service, ensuring that they meet the requirements of the Asset Management System.
3. Suggest and help to implement service improvements to work processes and medical device management.
4. Attend relevant manufacturers’ technical courses to ensure continued detailed and specialist knowledge of current medical devices. Keep up to date with medical and technical developments by participating in continuous professional development (CPD), conferences, meetings and workshops.
5. Occasionally becoming involved in Research and Development, including the testing of medical equipment and the construction of equipment for clinical and non-clinical uses.

 **Teaching, training and research – 15%**1. Assist with medical device training for technical and clinical users to operate, care for and look after a broad range of medical devices.
2. To support the training of new members of staff and to act as a mentor for any work placement students.
3. Be actively involved in the in-house Band 4 and Band 5 training programme, providing training and assessing competency. When required taking on the role of training supervisor.
4. Contribute towards the training of colleagues within the service by passing-on information acquired at training courses and through CPD, either through one-to-one / group teaching or by giving presentations.
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| 7a. EQUIPMENT AND MACHINERY |
| Staff work with a wide range of specialist and highly complex medical equipment e.g.* intensive therapy and anaesthetic ventilators
* anaesthetic machines and vaporisers
* diathermy and electro-surgical units
* critical care patient monitoring equipment
* neonatal incubators and resuscitation equipment
* defibrillators

Standard test equipment, mechanical and electronic workshop tools and machinery, for example: hand tools, drills, soldering irons, oscilloscopes, multi-meters, etc.Specialist test equipment, for example: pressure meters, ventilator analysers, electrical safety testers, Spo2 monitor testers, timers, etc.Anti-static equipmentComputer, Scanner, PrintersThe post holder requires basic familiarity with the operation of the application software of a number of computer based monitoring systems. This is required to resolve setup and operation problems.New medical devices may be introduced as the organisation and technology develops, training will be provided |
| **7b. SYSTEMS** |
| Computerised systems are used to maintain records associated with medical devices (such as eQuip) and for the control of purchasing parts and consumables (such as the PECOS stock ordering system).Staff use Microsoft Office products to produce memos, letters, spreadsheets, etc. and to import and export data for further analysis.The requirements of the Asset Management System operated by the Department. Standards are maintained through the use of standard operating procedures, document control, management of training and competency, parts and supplies control and accurate record keeping. Compliance to standards including*:* The Health and Safety at Work Act 1974, and Electricity at Work Regulations 1989.International Standards e.g. IEC 60601-1 MEDICAL ELECTRICAL EQUIPMENT – General Requirements for Safety.Medical Device Alerts produced by HFS, MHRA, etc. |

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| 8. ASSIGNMENT AND REVIEW OF WORK |
|  * The post holder works independently under the general direction of the Section Manager / Technical Manager
* The post holder will follow standard policies and procedures in line with the Asset Management System, they will contribute to the development of these and suggest changes as required.
* When SOPs are not available they will use their experience and knowledge to determine the safest work practice.
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| **9. DECISIONS AND JUDGEMENTS** |
| Self-directing, working within the Asset Management System, exercising their judgement to help solve problems. This may include 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 Section Manager. To discuss the use of, and problems involving, highly complex medical devices with clinical staff and recommend solutions (e.g. providing support and advice to clinical staff in a clinic when they have problems recording physiological data from patients; the solution may be improved staff training, equipment repair or a suggestion to use different equipment). Required to exercise judgement in prioritising highly complex 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). Diagnoses faults with highly complex medical devices and makes decisions as to how to go about the repair and what steps to take to get the device back into operation as soon as possible. The post holder is responsible for all decisions taken when working away from acute sites in an outlying district/community/domiciliary environment, for example whether or not equipment requires return to a workshop for repairs, taking into account the impact on service delivery. |

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| 10. MOST CHALLENGING/DIFFICULT PARTS OF THE JOB |
| Sustaining concentration during highly complex repair procedures whilst being frequently interrupted.Dealing with clinical pressures or anxious medical staff e.g. attending to an emergency breakdown of equipment during a surgical procedure whilst still connected to the patient.Investigating and correcting intermittent faults on medical equipment.Working to tight deadlines whilst maintaining high standards of work and assuring patient care.Prioritising their workload to ensure that clinical procedures run smoothly but also ensuring that the department meets its Key Performance Indicators.Advising medical/nursing staff that their use of equipment is incorrect or unsafe. This requires tact and diplomacy in often contentious situations. |

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| **11. COMMUNICATIONS AND RELATIONSHIPS** |
| The post holder will:* Work closely with the Section Manager, and through them, the Sector Technical Manager of Medical Equipment Management and all Clinical Technologists in the Department on a daily basis in aiding the provision of medical equipment management services;
* May compile reports for Section Manager or Sector Technical Manager
* Take part in internal audit of the operational policies as per the Asset Management System - this averages at 2 audits (external) per year and 8-12 (internal) audits per year.
* Maintain relationships with external manufacturers, suppliers and agents to facilitate a supply chain for the repair and maintenance of medical equipment.
* Communicate complex technical information to a wide range of NHS colleagues including medical and nursing staff, allied healthcare professionals and liaise with external service agents.
* Provide teaching and training to other staff (e.g. demonstrating and explaining the operation of an infusion pump to nursing staff).
* Provide technical and physiological information to medical/nursing staff during clinical procedures.
* Function in a diplomatic manner during complex and fraught situations (e.g. dealing with staff following equipment failure during a clinical procedure).
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| **12. PHYSICAL, MENTAL, EMOTIONAL AND ENVIRONMENTAL DEMANDS OF THE JOB** |
| **Physical**A high level of manual dexterity and accuracy in the manipulation of fine tools / screwdrivers and materials is required.Proficiency in various engineering and electronic practices is required e.g. the safe use of drills and physically inspecting electronic equipment, etc.Some equipment can be heavy or awkward to lift or move, frequently resulting in periods of moderate physical effort. Occasionally heavy medical equipment, in excess of 100Kg, needs to be moved e.g. anaesthetic machines. Occasionally medical equipment must be worked on in cramped and awkward positions.Keyboard skills are also required of the post holder.**Mental**Much of the equipment is highly complex and long periods of concentration are required during fault finding and calibration work.Several times during the day, staff are subject to interruptions and telephone calls from colleagues, clinical staff, etc. that require immediate attention and disrupt other work.The post holder must reprioritise work during unpredictable periods.**Emotional**Staff are exposed to distressed and critically ill patients when checking equipment that is still attached to the patient, e.g. during surgical procedures, intensive care ventilation and monitoring.The work requires diligence since incorrect actions or decisions can have serious consequences on patient care or result in a serious incident.**Environmental**Staff must exercise extreme care whilst live testing medical equipment due to the risk of electric shock.The working environment and equipment can often be contaminated with body fluids that must be decontaminated before proceeding. Special precautions must be taken in these circumstances.Staff regularly work with hazardous chemicals and a full knowledge of COSSH is essential e.g. anaesthetic agents. Potential exposure to X-rays during clinical procedures. |

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| 13. KNOWLEDGE, TRAINING AND EXPERIENCE REQUIRED TO DO THE JOB |
| **Qualifications**Professional engineering knowledge to SCQF level 9 (e.g., degree equivalent level, for example, acquired through BEng in Biomedical Engineering or Electronics, or a HND/ HNC plus short courses) or equivalent training and experience. Evidence of post graduate education or equivalent experience demonstrating specialist skills required within the role, for example maintaining competency in a portfolio of manufacturers’ training courses.SQA Diploma in Healthcare Technology Management or can demonstrate equivalent competency**Knowledge and Training**The post holder should demonstrate the following knowledge and skills:* Operation, function and clinical application of a broad range of complex medical equipment.
* Policies and practices of medical equipment management.
* Medical device support, including planned preventive maintenance (PPM), inspection, testing, calibration and repair.
* High level of understanding of patient / staff risks arising from equipment failure or misuse and how these can be minimised.
* Working knowledge of relevant legislation, national standards, professional and other guidelines.

.**Experience*** Practical experience of repair and maintenance on a broad range of complex medical equipment.
* Experience of electronics including fault-finding
* Experience of a range of equipment management processes.
* Application of technology to medical equipment in healthcare.
* Communication with other healthcare professionals.

Staff at this level will continue to develop and update their skills and knowledge.The post holder will be expected to attend relevant study days, short courses and presentations for generic and specific competency on a wide range of complex medical equipment and their impact on clinical management. |

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| **14. JOB DESCRIPTION AGREEMENT** |
| A separate job description will need to be signed off by each jobholder to whom the job description applies. Job Holder’s Signature: Head of Department Signature: | Date:Date: |