####  **JOB DESCRIPTION**

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| 1. JOB IDENTIFICATION |
| Job Title: Specialist Medical Equipment TechnicianResponsible to: Medical Equipment and Specialist Services Workshop ManagerDepartment(s): Medical EquipmentDirectorate: Estates, Facilities and Capital ServicesOperating Division: EstatesHours per Week: 37.00No of Job Holders: 8Last Update: 19/02/2025 |

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| 2. JOB PURPOSE |
| The medical equipment department has assigned responsibility for managing all medical devices within NHS Fife and the delivery of technical support to the clinical teams.This post as part of a small team will provide a service for the maintenance and repair of a wide range of electro-medical, scientific and life support equipment to support the smooth running of clinical services meeting the overall needs of the organisation and in line with statutory and regulatory requirements applied to medical devices. The main base will be Victoria Hospital, Kirkcaldy, but the role will cover work throughout NHS Fife. |

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| 3. DIMENSIONS RELEVANT TO POST |
| The medical devices (>15000 assets) assigned to the responsibility of the medical equipment department are found in all clinical areas across NHS Fife covering a wide range of highly complex technologies.The department handles approximately 7000 technical jobs per annum from simple repairs to much higher-level specialist all-inclusive maintenance on complex devices such as baby incubators, coronary care monitoring equipment, ITU ventilators etcThe post holder will be expected to undertake maintenance and repair duties associated with delivering a medical equipment service to various sites within NHS Fife and as part of this role they will also be expected to work with equipment that is vital to life support in critical care and operating theatre areas of NHS Fife.The post holder will be expected to assist non specialist colleagues in their duties to enhance their knowledge and potential career progression.The post holder will act under the general direction of the medical equipment and specialist services workshop manager and with experience will be expected to operate with minimal supervision using own their initiative and judgement. This may involve providing non-clinical technical advice regarding equipment operation to medical staff.Some equipment is serviced under contract by external companies / agencies under Comprehensive Repair/Preventative Maintenance agreements. The post holder will be expected to provide assistance, including a “first look” service to avoid unnecessary call outs. They will also occasionally check work has been completed under such contracts.All remaining equipment is serviced internally with Planned Preventative Maintenance (PPM) routines in place and repairs of an average of 230 equipment breakdown requests per month.At all times the post holder will ensure they work ensuring compliance with NHS Fife’s safety standards and procedures. |
|  ORGANISATIONAL POSITION |
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| 5. ROLE OF DEPARTMENT  |
| The role of the medical equipment department is to undertake the necessary managerial, technical and professional responsibilities associated with providing medical devices that are safe, secure and appropriate for patients and staff for the delivery of healthcare within NHS Fife. The sphere of responsibility includes:* The maintenance and repair of all medical equipment in alignment with current regulatory and national requirements.
* Delivery of comprehensive technical support to other departments without which the service could not function.

The department also undertakes training of technical and clinical staff on the use of medical equipment and supports with high level technical advice to assist with the decision-making process for medical equipment procurement, implementation of safety bulletins involving medical equipment and investigation of equipment related incidents. |

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| 6. KEY RESULT AREAS |
| The role of the medical equipment and technical services department is to ensure electronic and electro-mechanical medical equipment is maintained in a condition to allow its safe and effective use in accordance with the requirements of the Medical and Healthcare products Regulatory Agency (MHRA) as laid down within the agency bulletins. The post holder’s aim is to assist in achieving this by providing the following services for all clinical departments covered: - **Technical / Clinical**1. Carry out scheduled routine servicing of equipment and recording the results in appropriate logs and files. Working to established equipment test procedures, functional tests, mechanical/electronic checks, electrical safety testing and calibrations, are carried out to comply with appropriate manufacturer’s guidelines, safety standards and good general engineering practise. These are done to ensure functional availability and accuracy and ensure they are safe for staff to operate and safe to patients. To facilitate this, frequent discussions are necessary with clinical/nursing staff to adjust plans in response to short-term clinical needs. Scheduling of maintenance is done via the National Medical Equipment Management Database eQuip.
2. Respond to equipment breakdowns communicated to the department, carrying out prompt, cost effective fault-finding and repair of equipment following complex manufacturers manuals and drawings to aid the procedure.
3. Carry out the commissioning and acceptance testing of new medical devices, ensuring that they are fit to use and configured to be in a safe condition for staff operation and patient care. When appropriate install this equipment in the clinical area, to the satisfaction and requirements of the end user, or assist others during installation. Communicate asset details to the information services team for entry in eQuip to ensure our asset register is current and up to date.
4. Monitor work conducted by external contractors engaged in maintenance contracts, or as part of new equipment purchasing agreements. When required, work with manufacturers and clinical staff and other medical equipment technicians within the NHS, to resolve technical issues relating to equipment repair, maintenance and quality standards that may occur with medical devices during use in the clinical environment.
5. To use relevant tools, equipment and testing instruments within safety guidelines as required.
6. As communicated and directed by the medical equipment and technical services workshop manager, implement and be aware of Medical Device Alerts issued by the Medical and Healthcare products Regulatory Agency (MHRA) or via NHS National Services Scotland (NSS) - Incident Reporting and Investigation Centre (IRIC), and other similar hazard warnings and manufacturers advisory letters or bulletins issued by other appropriate agencies and record all actions taken during these activities in the necessary system.
7. To carry out decontamination of medical equipment, contaminated by body fluids or other fluids which require the use of tools to access the contamination.
8. Carry out the technical investigation and testing of medical devices maintained by the medical equipment department, where these are involved in reported incidents and / or hazardous situations. Report results to the medical equipment and technical services workshop manager providing information suitable for completion of formal written reports.
9. Monitor equipment failure and operation for unusual or potential hazardous situations. Discuss these with the medical equipment and technical services workshop manager and take subsequent actions as directed, with the users or manufacturers.
10. Recommend condemnation of equipment where cost-effective repair is not considered possible, no longer required or if equipment has been deemed obsolete and carry out the disposal of these ensuring that decommissioned equipment is in a safe condition for disposal. Raise appropriate records to start the process of ensuring equipment is removed from the current asset register.
11. Assist in the annual servicing and calibration of general and special to type, test equipment.
12. Electrically safety test equipment loaned to wards /departments, by manufacturers or their agents, ensuring necessary indemnity forms are completed and recorded.
13. The post-holder sets their own priorities on a day-to-day basis for completion of outstanding preventative maintenance and repairs, working within general guidelines set by the medical equipment and technical services workshop manager, adapting to continuously changing demands from wards / departments.

**Administration** 1. Complete and maintain all record of their work and actions performed in achieving their technical/clinical functions, including servicing history, repairs, locations, and battery management routines for critical care equipment.
2. Follow an established stock control system to assist the sourcing, ordering and maintenance of adequate stock levels of a wide range of specialised parts and equipment accessories ensuring best price, quality and fit for purpose and following the Standing Financial Instructions of NHS Fife.
3. Assist in maintaining the workshop technical library by identifying and obtaining appropriate technical equipment handbooks that may occasionally be required and checking that those already held are available and up to date during their use.
4. Implement the health and safety policy within the department and promote safe working practices in all aspects of employment.
5. Involvement in the implementation and ongoing accreditation of an ISO 9001 management system.

**Teaching, Training** 1. Provide non-clinical technical operating advice to end users of medical equipment in wards / departments, where reported failures are assessed as being due to incorrect operation, or lack of knowledge.
2. Complete NHS Fife compulsory training e.g. NHS Fife induction training, fire safety training and manual handling training etc and carry out any updates as required.
3. Participate in internal technical training and external manufacturers training as required and pass on acquired knowledge with support and technical advice to others within the team.
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| 7a. EQUIPMENT AND MACHINERY |
| **Electronic Test Equipment**Electrical Safety Analyser, Digital Oscilloscope, Digital Multimeter, Frequency/Timer Counter, Infusion Device Analytical Equipment, Gas Analysis Equipment, Surgical Diathermy Analyser, Defibrillator Analyser, Pacemaker Analyser, Electrocardiograph Equipment Analyser, Tympanic Thermometer Calibration Equipment, Pressure Measurement Equipment, Foetal Monitor Performance Analyser. Oxygen Saturation Analyser, Bench Power Supply, Signal Generator**Medical Equipment**Patient Ventilator, Anaesthesia Systems, Infusion Systems (Syringe Drivers & Volumetric Pumps), Ultrasound Scanners, Patient Monitoring Equipment, Baby Incubators, Foetal Monitors, Defibrillators, Electrocardiograph Equipment, Blood Pressure Monitoring Equipment, Oxygen Therapy Equipment, Suction Equipment (Electrical & Pipeline), External Pacemakers, Flexible Endoscopes, Temperature Measurement Equipment, Operating Microscopes, Ophthalmic Lasers Ultraviolet Phototherapy equipment. Fluid Management Systems, Theatre Camera Systems, Pain Therapy Systems, Laboratory Equipment, Hemofiltration System, Bioelectrical stimulators, Physiotherapy exercisers and ultrasonic/electrical stimulation muscle treatment devices.**IT Equipment**Personal Computers, Computerised Test Equipment**Software**Specialist Vendor Service, Test and Calibration Software**Tools**Pedestal drill, Miniature soldering iron, General hand tools including precision tools, pressure gauges and meters |

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| **7b. SYSTEMS** |
| 1. Medical Equipment Database (eQuip) used to manage our medical equipment, spare parts and service history
2. Datix Risk Management System used to manage Hazard & Safety Action notices.
3. SafetyHub (Toolbox talk system).
4. Microsoft PowerPoint, Microsoft Excel, Microsoft Word, Outlook
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| 8. ASSIGNMENT AND REVIEW OF WORK |
| Work will originate from the medical equipment and technical services workshop manager however other work can originate from the head of the department, the medical devices group, health and safety groups, other NHS Fife Managers / Departments, self-generated and other external agencies and can be communicated by informal and formal meetings, written instructions or requests by telephone.No work on medical equipment should be carried out without a job request being created in eQuipThe post holder has a great deal of autonomy in carrying out their daily workload and will frequently work unsupervisedThe prioritisation of workload generated from planned preventative maintenance (PPM) and reactive repairs will be carried out by the post holder to meet the needs of the service unless otherwise directed by the medical equipment and technical services workshop manager or other line management.Work requirements or information may be disseminated to the post holder through organised staff meetings or informal meetings with company representatives and/ or line manager at the point of work.Work can be generated and reviewed from the continual analysis of the service provided and on-going attempts to improve standards or technology following recommendations from statutory legislation, technical bulletins, codes of practice and health and safety regulations.The standard of work and ability to meet objectives is reviewed by the medical equipment and technical services workshop manager on an ongoing basis and through regular 1-1 meetings.Work which is self-generated comes from the continual analysis of the service provided and ongoing attempts to improve standards or introduce new technology. |

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| **9. DECISIONS AND JUDGEMENTS** |
| Although instruction and advice are available from management the post holder is expected to plan, organise and prioritise proactive solutions to suit the needs of the service, applying skills, experience and judgement to minimise any risk to patients, staff, visitors and self which occur due to a failure of electro-medical systems.The post holder is expected to operate unsupervised using own initiative to establish the performance of a system and to compare, analyse and interpret the results to determine the appropriate remedial action.When dealing with essential repairs out-with normal working hours the post holder will use own judgement and make decisions to resolve problems and facilitate an efficient outcome. |

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| 10. MOST CHALLENGING/DIFFICULT PARTS OF THE JOB |
| The most challenging parts of the job are:1. Ensuring high standards of work are always achieved and to ensure all statutory, mandatory and national guidelines are followed.
2. Keeping pace with the advancement of new technologies in the electro-mechanical field.
3. Ensuring standards of service are maintained and improved.
4. Being flexible self-motivated and adaptable.
5. Working to the demands of the clinical teams within the required time constraints.
6. Much of the equipment is complex and requires prolonged periods of intense concentration during fault diagnosis, repair or calibration.
7. The workload is always unpredictable and requires frequent changing between priorities and jobs. This requires an ability to cope with several complex jobs running simultaneously.
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| **11. COMMUNICATIONS AND RELATIONSHIPS** |
| **Internal Communications**1. Medical equipment staff to discuss technical issues, performance and quality and to maintain motivation, training, discipline, and personal development
2. Managers and staff of other departments to discuss their requirements and give information on matters affecting their department
3. Head of compliance, medical equipment and technical services, medical equipment and technical services workshop manager to discuss all issues relating to policy, performance and service development.
4. Audit staff to answer queries on compliance and operational issues.
5. Liaison with the NHS Fife’s health & safety team
6. Dental, clinical and decontamination teams with regards to decontamination issues/strategies

**External Communications**1. Medical equipment professionals from other Health Authorities to exchange information.
2. Community staff, Patients, and Public representation groups.
3. Audit staff to answer questions / queries on compliance
4. Patients and / or their relatives when working in the wards

A positive, professional manner and attitude should always be projected to foster a good working relationship with all listed in this section |

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| **12. PHYSICAL, MENTAL, EMOTIONAL AND ENVIRONMENTAL DEMANDS OF THE JOB** |
| 1. Frequent moderate physical effort expended when moving and lifting heavy awkward patient connected electro-medical equipment.
2. Frequent working in a restricted position for short periods of time when working on medical equipment in a cramped environment (kneeling, crouching, twisting, bending and stretching.)
3. Frequent exposure to hazardous materials – blood, microbial contamination (MRSA, Hep C) and chemical spills.
4. Exposure to hazardous chemicals during cleaning, decontamination of contaminated medical equipment prior to repair.
5. Standard keyboard use - Typing skills normally acquired through practice.
6. Use of specialist test equipment / tools- skills requiring hand/eye co-ordination, normally acquired through practice.
7. Manipulation of fine tools, where accuracy is important through developed skills.
8. Advanced soldering skills normally acquired through practice.
9. Frequent light physical effort when walking between hospital locations
10. Exerts intense physical effort for short periods when pushing/pulling equipment or trolleys (>15Kg)
11. Prolonged concentration required frequently when fault finding on complex devices
12. Attending to emergency situations in theatres and intensive care areas with severely injured patients and occasionally corpses present
13. Intense concentration is required during procedures on equipment in the patient environment which can be distressing requiring the ability to focus on the job in hand without being emotionally affected by patients
14. Concentration required on technical or administrative work when subjected to unpredictable work patterns and frequent interruptions.
15. Frequent exposure to highly distressing circumstances when attending to emergency problems in critical care patient areas, (A&E; ITU; Theatres; CCU; SCBU) requiring intense concentration to highly complex equipment and its application in the patient environment, often with critically ill or injured patients undergoing care or treatment.
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| 13. KNOWLEDGE, TRAINING AND EXPERIENCE REQUIRED TO DO THE JOB |
| **Qualifications**A degree in physic or an engineering discipline or HNC/HND or equivalent qualification in electrical / electronic / instrumentation or another technical field with relevant experience.**Knowledge and Training**Knowledge gained by qualifications and training may include:1. A record of generic and specific competency on a wide range of complex, and highly complex, equipment demonstrating an understanding of its operation, technical function and application
2. An of understanding of risk management issues relating to maintenance of equipment
3. Demonstrate a good understanding of working within the National Health Services

**Experience**Wide and varied experience in the maintenance and repair of complex, and highly complex electrical / electronic or instrumentation / control equipment.Experience of the application of a range of technologies utilised in medical equipment within a healthcare environment.High level of IT literacy. |

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| **14. JOB DESCRIPTION AGREEMENT** |
| Job Holder’s Signature: Head of Department Signature: | Date:Date: |