

JOB DESCRIPTION

1. JOB IDENTIFICATION

Job Title: Trainee Clinical Perfusionist

Responsible to: Clinical Perfusion Manager

Department(s): Clinical Perfusion

Directorate: Cardiothoracic Surgery

Operating Division: NHS Lothian

Job Reference: 050716

No of Job Holders:

Last Update (insert date):

2. JOB PURPOSE

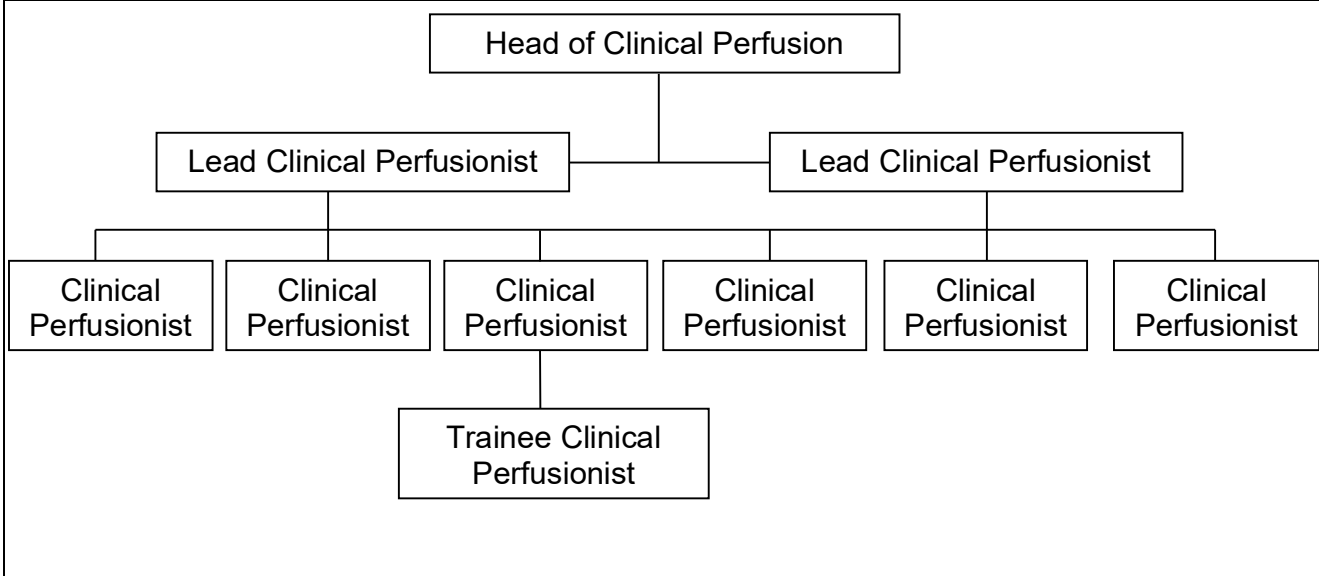
To undertake the necessary training and examinations to achieve the Accreditation Certificate/ MSc in Perfusion Science. To acquire clinical perfusion skills during routine and emergency procedures.

3. DIMENSIONS

The post holder's primary duties will be within the Cardio-thoracic Theatres and ITU, but with an additional commitment to provide perfusion support for the Regional Vascular Unit and Regional Liver Transplant Unit.

- Under the direct supervision of a qualified clinical perfusionist, provide significant, highly specialised, autonomously managed, direct care delivery.
- Assist in the delivery of the perfusion service.

4. ORGANISATIONAL POSITION



5. ROLE OF DEPARTMENT

The essential core services provided by the Perfusion department include the set-up, priming, de-airing and management of extracorporeal devices and circuitry for cardiac surgical procedures, thus maintaining vital life support, according to broad occupational and clinical policies.

A wide range of highly complex and routinely conflicting clinical information is assessed, interpreted and managed on a continual basis and appropriate autonomous action is taken. For example, blood pressure and flow, blood gases, gas exchange, anticoagulation status, ECG, acid base balance, fluid balance including blood transfusion and patient/blood temperatures.

The department provides a highly skilled service for complex procedures and specialised perfusion techniques deemed necessary for the individual patient requirement i.e. heart port, left heart bypass, vacuum assisted drainage, deep circulatory arrest, antegrade and retrograde cerebral perfusion, complex long-term extra-corporeal techniques i.e. extracorporeal membrane oxygenation (ECMO) and ventricular assist devices (VAD's). Providing operational back up to the ITU nursing staff while these life support systems are running.

6. KEY RESULT AREAS

- a) Assist in the day to day running of the perfusion department.
- b) Work within the protocols/guidelines defining the work of the perfusion department.
- c) Assist in the safe and appropriate use of specialist equipment and maintain equipment to protocols and standards set down within the clinical perfusion department.

Professional

- a) Maintain provisional registration with the College of Clinical Perfusion Scientists of Great Britain and Ireland attaining the academic standard necessary to qualify and attain accreditation with the college at the end of the course.
- b) Attain knowledge of a range of theories to direct practice, and develop evidence based guidelines for the management and delivery of care to the patient.
- c) Attain knowledge of up to date disease processes and conditions relevant to the conduct of cardiopulmonary bypass.
- d) With experience enhance specialist skills, knowledge and expertise in clinical practice. Using these skills to safely run and maintain cardiopulmonary bypass equipment.
- e) Become familiar with, and work within, the broad guidelines for “best practice” set out by the Society of Clinical Perfusion Scientists of Great Britain and Ireland.
- f) Accountable for ones own professional conduct and acknowledgement of professional boundaries following clinical/professional policies set down.

Clinical

- a) To develop specialist skills, knowledge and expertise in clinical practice. Applying these skills under the supervision of a qualified clinical perfusionist.
- b) Assist in the quality control, calibration and maintenance of expensive and complex medical equipment, ensuring equipment is maintained and calibrated according to legal and legislative regulations.
- c) Ensure employment of aseptic techniques during all clinical procedures.
- d) Develop skills to assess the patient’s relevant medical history, pathology and diagnosis to enable appropriate decisions concerning conduct of the procedure.
- e) To assist clinical perfusionists when running complex long-term extra-corporeal techniques i.e. extracorporeal membrane oxygenation (ECMO) and ventricular assist devices (VAD’s). Providing operational back up to members in the perfusion department.
- f) Be involved in the running of an intra-aortic balloon pump service and other specialist areas.
- g) Act and think clearly and calmly under acute time pressures and in emergency situations

Drug administration on Cardiopulmonary Bypass

- a) To adhere to both local and trust policies concerning drug administration in regards to perfusion.
- b) To administer drugs under the supervision of a qualified clinical perfusionist, according to local policy as necessitated by the clinical situation i.e. priming solutions, anticoagulants, inhalation anaesthetic agents, potassium, and cardioplegic solutions.
- c) To be responsible, under the supervision of a qualified clinical perfusionist for the administration of controlled and non-controlled drugs as specified in the local policy.
- d) Develop knowledge of the effects in both the pharmacokinetics and pharmacodynamics of commonly used cardiac drugs.
- e) Develop knowledge of how specific perfusion techniques can alter the effect and concentration of a range of drugs.

Finance Resource Management

- a) Assist in the management and cost effective use of very high cost perfusion disposables. Single item cost in excess of £500.
- b) Help oversee the maintenance of stock levels and expiration dates.
- c) Assist in the economic and effective use of resources.

Education

- a) Organise academic workload to achieve an MSc in Perfusion Science
- b) Consolidate specialist skills, knowledge and expertise in clinical practice.
- c) Attend national and international conferences to maintain, develop and contribute to the specialist knowledge leading to advances in clinical practice and present these findings to other members of the department/trust.
- d) Participate in scientific presentations to a wide target audience often in large numbers (6-100 people).

Service Development

- a) Ensure quality control, calibration and maintenance of expensive and complex medical equipment, ensuring accurate and safe use during clinical procedures.
- b) Assume delegated tasks as requested by line manager
- c) Contribute to the development and implementation of departmental protocols and procedures as relating to perfusionist duties.
- d) Contribute to the delivery of clinical governance and audit projects within the department.
- e) Interpret and implement national and local policies relevant to specialist clinical/service areas.
- f) Responsible for the care of all perfusion equipment, maintaining safe working order prior to use and that all faults are rectified.
- g) Manage the use and supply of consumables to maintain the services provided by the perfusion department and hence cardiothoracic theatres.
- h) Facilitate investigation into complaints, accidents/incidents made in respect of the clinical perfusion department, feeding back to the risk management for response.

Clinical Audit

- a) Assist with evaluation and changes in practice to improve quality of patient care.
- b) Utilise clinical perfusion data management software and maintain accurate paper and database records for every patient.
- c) Clear and accurate record keeping that can be easily accessible by all for the purpose of audit, stock control, finance, performance management, professional registration and bench marking purposes.
- d) Attend clinical audit meetings and, where appropriate, present relevant findings and audit data.

7a. EQUIPMENT AND MACHINERY

1. Heart Lung Machines with roller pumps and centrifugal support.
2. Dual Temperature Heater/Coolers.

3. Oxygen and air gas flow regulators with electronic oxygen/air blenders and in-line Isoflurane vapouriser.
4. Cell salvage machines.
5. Intra Aortic Balloon Pumps (IABP).
6. Blood gas analysers.
7. Inline monitoring systems.
8. Blood Clotting Monitors.
9. Various disposable items including Blood Oxygenators with associated bio-compatible tubing sets.

7b. SYSTEMS

- a) Maintain up to date and accurate individual patient case notes in line with the Society of Perfusion Scientists of Great Britain and Ireland and professional standards and local Trust policies.
- b) Create own clinical perfusion reports by utilising clinical perfusion data management software, and manage own database on a regular basis.
- c) Inputting information for individual patients into the On Course Perfusion Department Management System. An IT programme responsible for trace ability of disposable equipment and recovery of patient data for statistical and audit purposes.
- d) Manage Blood Gas Machine Quality Control, intra aortic balloon pump and autotransfusion records.
- e) Generate and file patient reports, clinical audit reports and clinical governance compliance/non-compliance reports with regard to the data protection act and NHS Lothian Trust policy.

8. DECISIONS AND JUDGEMENTS

- a) Interpret national and international guidelines and apply them to perfusion practice.
- b) Review patient notes for relevant medical history, pathology and diagnosis making appropriate clinical decisions regarding the conduct of extracorporeal support i.e. perfusion technique, cannulation, type of equipment, intravenous fluid, blood products and drug additions to prime
- a) Under supervision of a qualified perfusionist: assemble, prime, de-air and manage extracorporeal devices and circuitry for cardiac surgical procedures, thus maintaining vital life support, according to broad occupational and clinical policies as well as recent scientific evidence seeking advice when necessary.
- b) Assess, interpret and manage a wide range of highly complex and routinely conflicting clinical information on a continual basis and take appropriate autonomous action. For example, blood pressure and flow, anticoagulation status, ECG, fluid balance and patient/blood temperatures.
- c) Assess, interpret and take appropriate autonomous action to provide adequate gas exchange and maintain homeostasis whilst on cardiopulmonary bypass. For example, arterial and venous blood gases, electrolytes, acid base balance, haemoglobin and derivatives and blood glucose levels.
- d) Manage extremely complex procedures with supervision from a qualified perfusionist, making sound, informed decisions.
- e) To use professional clinical judgement in liaison with the Cardiac Surgeon and Anaesthetist to optimise the performance and conduct of the bypass procedure for the patients benefit.
- f) Discuss and evaluate options for best practice with colleagues as to individual patient

g) Demonstrate reflection of perfusion practice with peers.

9. MOST CHALLENGING/DIFFICULT PARTS OF THE JOB

Acting and thinking clearly and calmly under acute time pressures and in emergency situations.

Maintaining intense levels of concentration in all aspects of patient management for protracted periods of time, often greater than 5 hours, during the direct delivery of routine and specialist techniques. In particular, the monitoring of multiple strands of complex and frequently contentious data from various sources during cardiopulmonary bypass.

Working rapidly and accurately under extreme pressure during emergency and stressful situations whilst communicating in a proactive manner.

Be able to react to and deal with any critical incidents e.g., equipment failure, tubing ruptures and to rapidly assess and decide if and when an emergency change-out procedure is the appropriate response.

Accountable for the delivery of a highly specialised perfusion service across the trust, ensuring the service is effective and well coordinated.

10. COMMUNICATIONS AND RELATIONSHIPS

- a) Frequent, rapid, communication in an unambiguous and concise manner with consultant colleagues and other members of the multidisciplinary team. This may require the direct instruction on the use of particular devices and/or the use of unfamiliar or infrequently used techniques of a highly specialised nature.
- b) Communicate in an environment that is often noisy, emotive and highly charged.
- c) Communicate in a proactive manner, particularly in emergency and stressful situations.
- d) Offer pre-operative expert advice to medical staff on the suitability of equipment and devices for specific procedures, taking into account changes/deterioration in patients condition, laboratory data, near patient test results and other technically limiting factors. Resistance to implementation of particular techniques due to differences in expert opinion, inexperienced surgeon/anaesthetist must be overcome by tactful, clear and concise explanation.
- e) Relay sensitive information to members of the surgical team and other staff groups to ensure appropriate continuation of care for the patient.
- f) Discuss and advise clinicians within and outside immediate surgical team an appropriate care pathway for patients. This is particularly important for patients whose underlying pathology is not conducive to cardiopulmonary bypass.
- g) Communicate clearly with the perfusion team to ensure a full understanding of each procedure and task and its relevant importance.
- h) Develop and maintain relationships and effective communication mechanisms with trust staff, external organisations and their representatives.
- i) Demonstrate good negotiation skills in the management of conflict across a range of clinical situations.
- j) Manage complaints with confidentiality and deal with them sensitively and effectively, where appropriate ensure conflict does not arise.
- k) To form productive relationships with staff, patients and their relatives who may have challenging communication difficulties.

- l) Employ counselling skills with other members of staff after extremely stressful, highly emotional or traumatic events.

11. PHYSICAL, MENTAL, EMOTIONAL AND ENVIRONMENTAL DEMANDS OF THE JOB –

Physical Skills:

- a) Provide highly specialist expert clinical and technical skills during the delivery of direct patient care.
- b) Accomplished manual dexterity essential for construction and manipulation of the extra corporeal circuit often with limited time in an emergency situation.
- c) Working rapidly and accurately under extreme pressure during urgent or emergency procedures.
- d) Demonstrate highly developed, visual and perceptive skills including precise hand and eye co-ordination to ensure safe management of cardiopulmonary support.
- e) Act and think, quickly and clearly, often under acute time constraints to resolve unforeseen events and emergency situations during the conduct of direct care delivery.

Physical Demands:

- a) Have due regard for personal safety and safety of others with respect to moving and handling regulations.
- b) Responsible for the frequent (numerous times per day) movement of extremely heavy equipment (some greater than 250kg) between clinical areas, including transfer of the heart and lung machine to critical care, catheter lab and wards in emergency situations.
- c) Transfer of patient on specialist devices between wards and clinical areas.
- d) Transfer of disposables from delivery areas to stockroom and subsequently to theatre, these are often heavy and unwieldy.
- e) Heart Lung machines and their circuits are designed primarily in the best interests of the patient and therefore the ergonomic layout is less than optimal for the perfusionist who will frequently need to work in awkward and uncomfortable positions.

Mental and Emotional Demands:

- a) Maintain intense levels of concentration in all aspects of patient management for protracted periods of time, often greater than 5 hours, whilst manipulating vital aforementioned patient parameters during cardiopulmonary bypass to reduce the risk of patient morbidity and mortality.
- b) Maintaining equilibrium of control in response to working within a high-pressure area.
- c) Coping with an awareness that during the bypass procedure the patient is entirely dependent on the clinical perfusionist and that there is no margin of error.
- d) Maintain calm during emergency and high-pressure situations whilst continuing to communicate clearly and effectively with other members of the multi-disciplinary team.
- e) Maintain respect for and the dignity of, all patients under going treatment whether as an emergency or otherwise and in the event of a patient fatality during the procedure.
- f) Employ counselling skills to allow feedback from staff after difficult or traumatic cases.
- g) Develop appropriate strategies for dealing with death during procedures and turning of a patients life support.
- h) Employ counselling skills to allow feedback from staff after difficult or traumatic cases.
- i) To develop appropriate strategies for dealing with stress and stressful situations.

Environmental and working conditions

- a) Work on a daily basis with a constant exposure to body fluids and other potentially infectious/hazardous material whilst managing highly invasive, specialist devices during direct delivery of patient care.
- b) Must show a flexible approach to the demands of the environment these include and unpredictable workload, emergency procedures and deadlines.
- c) Disassemble and remove contaminated clinical waste from theatres safely and to ensure all equipment is disinfected.
- d) Working in a cold environment, (to keep the scrubbed members of the operating team cool in their gowns and under numerous lights and other heat producing equipment, the theatre temperature is set cooler than would be ideal for the un-scrubbed theatre staff, including the perfusionist).
- e) Adherence to infection control and universal precautions protocols leading to increased hand washing procedures and glove usage with potential reaction problems.
- f) Create, maintain and take responsibility for the health and safety environment within the work setting.

12. KNOWLEDGE, TRAINING AND EXPERIENCE REQUIRED TO DO THE JOB

QUALIFICATIONS

- BSc (hons) in a life science degree

KNOWLEDGE & EXPERIENCE

- MSc knowledge of routine and highly specialised techniques e.g. Extracorporeal Membrane Oxygenation.
- Networking: being able to work within and outside of the department with credibility out of area.
- Demonstrate continuing professional development towards accreditation and registration with the College of Clinical Perfusion Scientists of Great Britain and Ireland and the Health Professions Council.
- Familiar with a wide range of specialist and routine clinical perfusion techniques.
- Conversant with, and the limitations of, equipment and devices used for the direct delivery of routine and specialist clinical perfusion techniques to patients.
- Deliver training to others where appropriate.
- Advanced computer literacy and keyboard skills.
- Familiar with several data acquisition technologies, data presentation tools and their statistical basis.
- Conversant with health and safety guidelines (Trust wide and national) related to the use of particular devices, techniques, drugs and solutions.
- Evidence of policy and/or protocol development and post incident reporting. Knowledge of research methodology and statistics.

APTITUDE & ABILITIES

- High level of organisational skills.
- Ability to work as an autonomous practitioner or as part of a multidisciplinary team.
- Effective information technology skills including advanced keyboard skills and Microsoft Word, Excel, PowerPoint, Access and various hospital and perfusion databases.

- Ability to work efficiently and effectively in stressful or emotive situations for prolonged periods maintaining intense levels of concentration.
- Able to communicate highly complex and detailed information often in extremely difficult circumstances.
- Effective negotiating skills.
- Provides support, motivation and education for trainee and junior members of Clinical Perfusion to ensure learning outcomes are met.
- Attention to detail and accuracy.
- Able to interact with patients and their relatives where necessary.
- Accountable for own professional action.
- Good mentoring skills.
- Ability to teach different staff groups.

DISPOSITION / ATTITUDE / MOTIVATION

- Work in a calm, orderly manner both as an autonomous practitioner and as a member of the multidisciplinary team.
- Good organisational skills and an ability to lead others.
- Able to cope under pressure, particularly in intense situations.
- Conscientious in all aspects of clinical and professional work.

OTHER FACTORS

- Research and demonstrable aptitude for statistical analysis, presentation and publication of findings.
- Trainee membership of the Society of Clinical Perfusion Scientists of Great Britain and Ireland.

13. 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:

Date:

Head of Department Signature:

Date: