NHS Grampian

Job Description

Job Title:	**Senior Clinical Perfusionist**
Department(s):	**Clinical Perfusion**
Location:	**Aberdeen Royal Infirmary**
Hours:	**37 hours per week**
Band / Salary:	**Band 8A (£62,681 - £67,665)**
Contract:	**Fixed Term for 12 months**
Job Reference:	**CI222893**

Job Holder reference:
This job description is intended as a guide to the main responsibilities of the post and not as an exhaustive list of duties and tasks. The postholder may be required to undertake other duties appropriate to his/her grade, which are not listed above, at the direction of his/her manager. The job description may be amended from time to time after consultation with the postholder.

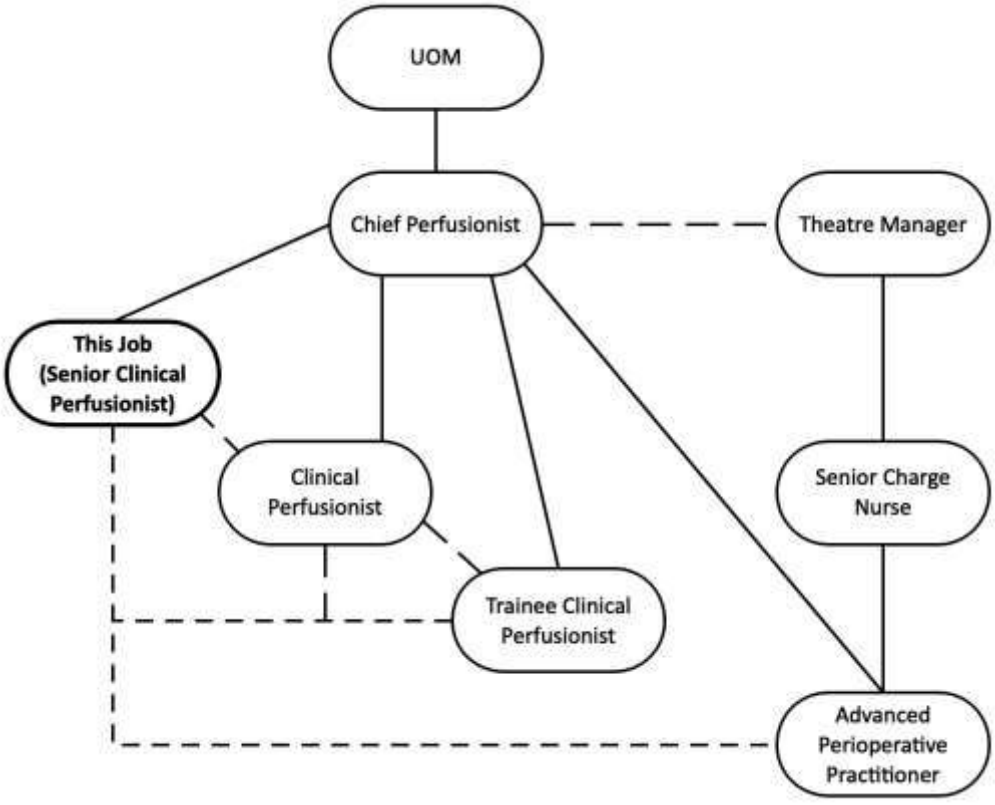
JOB PURPOSE

As an experienced and autonomous practitioner, leads by example and acts as a role model, clinically manages and controls the temporary replacement of a patient's cardiopulmonary function to enable cardiac surgery to take place and to support that function during other interventions. To operate auxiliary equipment for the benefit of patient safety and the effectiveness of clinical outcome.

Whilst on call, the post holder is solely responsible for the out of hours on call service for the North of Scotland.

The post holder mentors Trainee Clinical Perfusionists and Theatre Practitioners Higher Level, participates fully in the development and training of the team and is responsible for the development, testing and evaluation of new clinical procedures and equipment.

Organisational Chart



1	**Communication and relationship skills** a) Communicate highly complex condition related information to members of the multi-disciplinary team / other professions. This information is presented as multi-stranded, highly variable and often conflicting. The postholder assesses and makes autonomous decisions taking into account patient changes/ deterioration, laboratory data, Point of Care (POC) testing and other technically limiting factors. The post relies heavily on two way communication whilst carrying out Cardiopulmonary Bypass (CPB), which is often a highly emotive and challenging environment where highly complex information needs to be exchanged on an ongoing basis throughout the procedure. The surgeon and anaesthetist need to be aware of the Senior Clinical Perfusionist's actions at all times and vice versa. b) Advise other colleagues on a range of clinical therapy issues and facilitate their own problem solving skills. This requires the use of tactful, clear and concise explanations where resistance is encountered due to differences of opinion or where views may be challenged c) Develop and maintain relationships and effective and proactive communication mechanisms with staff, their representatives and staff organisations so that the service is able to secure participation in and favourable reactions to its aims and objectives. d) Utilise a variety of strategies to communicate highly complex, sensitive information about the service area to staff, Line Manager, Service Manager, other organisations and the general public. e) Employ excellent communication and interpersonal skills in highly emotive, highly stressful and potentially antagonistic or hostile situations. This is especially important in highly stressful, urgent and emergency procedures and cases with unusual pathologies, where split second judgement is required. f) Demonstrate excellent negotiation skills in the management of conflict across a range of situations e.g. having the confidence /skill to know when to interrupt the surgeon whilst operating to give him/her information that is necessary but often unwelcome. g) Form productive relationships with others who may be under stress and/or have challenging communication difficulties. These relationships can be used to provide support after extremely stressful, highly emotional or traumatic events. h) Work closely with colleagues in the multi disciplinary team agreeing decision making relevant to the patient management. i) Be a motivated member of the team and to engage in all departmental activities. j) Deal with complaints sensitively, avoiding escalation where possible. k) Employ excellent presentation skills to promote multidisciplinary and inter-departmental education to a range of audiences (e.g. Formal teaching of complex perfusion related topics to groups of 20 clinical professionals and informal clinical based teaching to smaller groups during CPB procedures).
2	**Knowledge, training and experience** a) An MSc in Clinical Perfusion Science or equivalent qualification. Current registration and accreditation of the College and Society of Clinical Perfusion Scientists of Great Britain and Ireland is essential and must comply with the mandatory annual re-accreditation process. In addition, highly specialist clinical perfusion knowledge is required, obtained through advanced theoretical and practical study programs e.g. the Glenfield Hospital ECMO programme and Medtronic's Perfusion Cannulae Flow Dynamics course or equivalents. These courses provide the individual with the required advanced level of knowledge to facilitate in-house training for colleagues, other staff, and ultimately better patient management leading to better patient outcome.

	The extensive experience necessary for the post can only be acquired with an in-depth knowledge gained over several years post accreditation. This comes from regular collaboration with other perfusion and medical colleagues, medical representatives and their product specialists, sometimes internationally. As new procedures are developed, the post holder is central in developing new techniques and circuits to allow them to be undertaken. b) Promote a culture of continuous professional development for mandatory post accreditation education by attending conferences, both locally and internationally. Keep up to date with clinical advances and developments in specialist area of expertise for the promotion and maintenance of good practice. c) Identify personal/professional development evidenced by personal development plan/professional portfolio developed within an appraisal framework, including objectives relating to the clinical specialism. d) Deliver local, regional and national clinical guidelines informed by evidence for clinical specialism. e) Attend relevant training and development in order to maintain and develop skills and knowledge required of Perfusionists working in the field and maintain up to date College of Perfusionists of Great Britain and Ireland registration. f) Demonstrate knowledge of, and adherence to, the Society of Perfusionists of Great Britain and Ireland's professional and clinical, national and local guidelines. g) Deliver specialist training (formal and informal) to others locally, regionally, nationally and internationally in area of clinical expertise. h) Deliver and apply the principles of clinical governance to professional practice. i) Broad experience and knowledge of routine and highly specialised clinical techniques including CPB, Ventricular Assist Device (VAD), Extracorporeal Membrane Oxygenation (ECMO) , Vacuum Assisted Venous Drainage (VAVD), Deep Hypothermic Circulatory Arrest (DHCA), Selective Antegrade Cerebral Perfusion (SACP), Intra-Aortic Balloon Pump (IABP) therapy and blood conservation techniques. j) Deep understanding of the capabilities of the clinical equipment used to conduct routine and highly specialised procedures and tests, eg..Heart lung machine, Data Management software, centrifugal pumps, blood cardioplegia systems, Cerebral Saturation monitoring, blood conservation equipment such as Cell Salvage and Thrombo-Elastography (TEG), and POC testing. k) Full knowledge of clinical hazards and emergency procedures.
3	**Analytical and judgemental skills** a) Monitor and act upon a wealth of complex, multi-stranded clinical information on a continual basis; constantly monitoring and analysing various screens displaying both patient and pump data. Patient information includes pressures, oxygen saturations, temperatures and ECG, whilst pump controls and data monitoring are displayed on several screens, incorporating pump flows, pressures, temperatures and timers. This information is presented whilst the post holder is concurrently monitoring circuit status and interacting with other associated equipment. Using this information, exercise sound and informed decision making to take appropriate autonomous action. Optimal gas exchange and haemostasis are achieved by constant manipulation of these parameters. b) Adapt to meet individual patient circumstances, reviewing patient notes for relevant medical history, pathology and diagnosis, making appropriate autonomous clinical decisions regarding the conduct of extracorporeal support i.e. Perfusion technique, cannulation, type of equipment, intravenous fluids, blood products and drug additions to prime. c) Discuss and evaluate options for optimising individual case management with

	medical colleagues; pre-operatively it is important to discuss suitability of equipment and devices for a specific, often highly complex procedure. Use of experience and judgement to advise on best course of action when resistance to particular techniques is encountered due to differences in opinion, often where inexperienced surgeon/anaesthetist are involved. d) Anticipate potential communication breakdown and conflict, and when it occurs generate and suggest actions and solutions. Demonstrate excellent negotiation skills in the management of conflict across a range of situations e.g. having the confidence /skill to know when to interrupt the surgeon whilst operating to give him/her information that is necessary but often unwelcome. e) Demonstrate the ability to reflect on practise with peers and mentors. f) Target training, formal and informal appropriately to the needs of individuals and professional groups within the organisation. Provide expert one to one tuition to trainee Clinical Perfusionists as a mentor and assessor. g) Reflect on and evaluate training provided. Provide support after extremely stressful, highly emotional or traumatic events.
4	**Planning and organisational skills** a) Support and deliver a work programme for all clinical areas across several sites. May have to allocate staff out of hours in the absence of the Chief Perfusionist. b) Manage and prioritise own caseload/workload independently, responding to scheduling changes due to urgent and emergency work. c) Contribute to the development of innovative and specialist techniques within and external to NHS Grampian. d) Responds in emergency out of hours cases, co-ordinating timings and equipment required with the Multi-disciplinary Team. Monitor and maintain stock levels at all times including acquiring equipment and disposables often at extremely short notice. e) In the event of emergency out of hours work will adjust theatre allocations for the next working day and leave notification for the Chief Perfusionist and Theatre Manager.
5	**Physical Skills** a) Possess highly developed auditory, visual and perceptive skills in dealing with a mass of information on a second to second basis in the delivery of routine and highly specialist perfusion techniques. Continuously monitor patient haemodynamics, pump parameters and blood gases on multiple display screens for the duration of the case. Must possess excellent hand eye co-ordination and manual dexterity to perform the tasks safely, efficiently and accurately to deliver a high standard of perfusion e.g. Termination of CPB is a highly skilled procedure, requiring ambidextrous use of limbs, line clamps and pump controls to finely balance blood flow and gas rates with filling the heart to achieve haemodynamic stability. b) Act quickly, accurately and think clearly, often under acute time pressures, in order to resolve emergency situations such as equipment malfunction. The extracorporeal circuit is the sole method of life support to the patient and any delay in response/action could result in adverse patient outcome or death i.e. failure of any component of the CPB circuit must be rectified quickly. The postholder must diagnose the fault and aseptically repair the circuit, using sterile surgical clamps, scalpel blades and tubing cutters. This requires a high degree of physical co-ordination, precise knowledge of the circuit and flow dynamics within it to cut blood filled tubing with extreme accuracy. c) Provide highly specialist clinical and technical skills in the delivery of routine and highly complex perfusion services. Each CBP procedure requires sitting at the

	heart lung console in a restricted position for periods ranging from 2 to 8 hours or greater whilst concentrating on the multi-stranded, highly variable parameters for which the postholder is responsible. During the working day, relief is normally available however this is dictated by clinical demands and staffing levels. During out of hours, as the sole Perfusionist, unable to have breaks e.g. comfort breaks, meal breaks, during procedures as no other member of the cardiac surgical team is capable of managing the heart lung machine and the patient's artificial support. d) Circuit adaptations and design require a high degree of precision and accuracy. Circuits are constructed from separate sterile components using sterile surgical clamps, scalpel blades and tubing cutters. e) Setting up quickly and accurately under emergency conditions. This requires moving of heavy equipment into optimal positions within the clinical environment, then performing set-up and priming tasks rapidly whilst maintaining sterility to deliver a high standard of perfusion. f) Travelling between sites safely and when responding to call outs, driving in a safe manner.
6	**Responsibilities for patient/client care** a) Delivers highly specialised clinical perfusion service across NHS Grampian, ensuring that the service is effective, taking a lead role in the provision of advanced procedures. b) Demonstrates highly specialist skills, knowledge and expertise in clinical practice, and applies these skills to the supervision and training of others throughout the department and providing specialist advice to the multidisciplinary team. c) Assists in developing strategies for the management and delivery of high quality care for the patient group, monitoring and benchmarking against other comparable units. d) Setting up, priming and operating Heart Lung Machine (HLM) and VAD equipment for cardiac surgery procedures, according to the perfusion procedures and protocols and to play a full role in the routine cardiac surgery programme. Setting up, priming and troubleshooting for ECMO procedures. e) Assesses the patient for relevant medical history, pathology and diagnosis and make appropriate clinical decisions and advise medical staff concerning the conduct of the procedure i.e. type of cannula, size and type of equipment, type of priming solution. f) Makes on the spot clinical decisions based on interpretation of results from various complex tests and patient observations, and alters management of patient treatment during CPB, VAD, ECMO procedures and Intra-Aortic Balloon Pump (IABP) therapy to optimise outcome and reduce patient risk. g) Administers drugs, according to local policy and as necessitated by the clinical situation i.e. priming solutions, blood, anticoagulants, aprotinin, vasoconstrictors, bicarbonate, inhalation anaesthetic agents, potassium, and cardioplegia solution. h) Whilst on call, being the sole Perfusionist responsible for the out of hour's emergency on call service for the North of Scotland (with the exception of cell salvage). i) Perform and advise on all perfusion procedures and specialist techniques e.g. left heart bypass, VAVD, ECMO, VAD, DHCA, SACP, Intra-Aortic Balloon Pump (IABP) therapy and blood conservation techniques. j) Undertake and interpret POC testing, including blood gas, activated clotting time (ACT) and Thromboelastography (TEG) analysis. k) Prepare and operate the equipment and disposables to perform vacuum assisted venous drainage (VAVD). l) Prepare and operate the equipment and disposables to perform carbon dioxide flushing of the operative field.

	a) Advises Nursing, Surgical and Anaesthetic staff on less common procedures and decide on the best course of action during CPB and ECMO as clinical need dictates during the procedure. Advise staff on perfusion related issues e.g. Cell Salvage within NHS Grampian. m) Implement and take a full role in departmental and individual projects, with a commitment to research based clinical practice. n) Contribute to evidence based clinical practice to maximise clinical effectiveness. o) Create, maintain and take responsibility for a healthy and safe environment within the working setting. p) Ensure adequate policies are in place in order to protect the patient from the spread of infection. q) Liaise with Chief Perfusionist and medical staff agreeing workload for the unit in order to meet contractual requirements advising of problems in advance.
7	**Responsibilities for policy and service development implementation** a) Lead in the development of protocols, ensuring these are in place for each specified area of the clinical perfusion service. Monitor, develop and review documentation, cascading findings or suggestions to Chief Perfusionist. E.g. development of protocol and hardware to provide cerebral perfusion during complex Aortic cases. b) Use specialist knowledge to make pro-active decisions when change to service policies is appropriate and beneficial – e.g. changing ECMO policy to provide assembled and primed circuits where appropriate. c) Authority in the absence of the Chief Perfusionist to tailor working hours/working area of cell salvage staff to meet service demands across hospital sites. d) Deliver perfusion team objectives and projects to ensure a seamless running of service. e) Negotiate with others around service issues and caseload management, and advise Chief Perfusionist/line management on issues of service delivery including shortfall, service pressures and activity. f) Facilitate the investigation of complaints, accidents/incidents made in respect of the Perfusion Department, feeding back to the Chief Perfusionist. g) Support staff to ensure that team objectives and policies are implemented.
8	**Responsibilities for financial and physical resources** a) Safe use of expensive and highly complex equipment. For example the heart lung machines are valued in excess of £100,000. b) Support a perfusion equipment profile, ensuring that all equipment is in safe working order and regularly maintained with adequate records of work undertaken. Appropriate action should be instigated where equipment is found to be faulty. c) Take responsibility for the department's adherence at all times to NHS Grampian's standing orders, standing financial instructions, donations and gifts policy. d) Ensures quality control and calibration of expensive and complex medical equipment to ensure accurate and safe use during clinical procedures. e) Monitor and maintain stock levels at all times including acquiring equipment and disposables often at extremely short notice.
9	**Responsibilities for human resources** a) Take responsibility for mentoring and supervising trainee and newly accredited clinical perfusion staff on a one to one basis; identify training and development needs through the use of feedback and discussion, creating an environment of support and growth through appraisal and personal development plans.

	b) Regularly support and assist the student training within the team and be involved in the continued development and implementation of the in house training program, including maintaining the departmental training manual. c) Responsible for training of cell salvage technicians across several sites within NHS Grampian. d) Organise adequate and appropriate supervision and mentoring for colleagues and other staff. Deliver training to staff on a range of subjects relating to clinical specialism. e) Assist in the development and maintenance of a cohesive workforce. f) Promote reflective practice within the team e.g. teaching session where newly acquired information is disseminated after attending a conference. g) Facilitate the development of problem solving skills for all staff within the scope of the in house training and clinical skills workshops. h) Provide specialist teaching as required by other staff groups, e.g. Physiotherapists, paramedics, nurses, doctors and students on specific techniques. i) Identify training needs for the perfusion team, creating an environment of support and growth, organising accreditation and re-registration documentation, through post accreditation continuous professional development.
10	**Responsibilities for information resources** a) Maintain appropriate activity records and information for audit, finance, performance management, professional registration and benchmarking purposes. b) Maintain up to date and accurate patient case notes in line with Society of Perfusionists of Great Britain and Ireland and professional standards and local Trust policies. c) Responsible for entering patient/case data into perfusion department database (Sorin Connect Data Management System) and Electronic Patient Record (SCI Store). d) From these databases, generate activity reports for clinicians (e.g. Consultant Cardiac Surgeons and Anaesthetists). e) Report incidents and near misses into Datix as required.
11	**Responsibilities for research and development** a) Undertake research projects in conjunction with Consultant/s to promote perfusion research. b) Regularly undertakes on-site product evaluation for perfusion and cell salvage related hardware and disposables for procurement and clinical purposes e.g. evaluation of new oxygenators as they are introduced to market, which is an ongoing process. c) Participates regularly in clinical studies and local and national audits, producing data as required for Perfusion or other disciplines e.g. recording CPB related data or withdrawing blood samples from circuit for use in Perfusion MSc projects or ongoing clinical trials requested by medical staff. d) As experienced and autonomous practitioner, demonstrate flexibility and innovation to facilitate, manage and evaluate change in practice to improve quality of care for the patient e.g. modifications to CPB or ECMO circuit design driven by evidence based practice and local demand. e) Lead in areas of CPB and ECMO circuit design relevant to local requirements e.g. production of customised tubing pack designed to speed up component replacement in an oxygenator failure.

12	**Freedom to act** a) Manage highly complex cases independently as a highly experienced autonomous practitioner, guidance may be sought from peers or Chief Perfusionist. b) Monitor and act upon a wealth of highly complex and routinely conflicting multi-stranded clinical information on a continual basis, exercising sound and informed decision making with regard to the constant well being of the patient. Using this information, take appropriate autonomous action through constant manipulation of blood pressures and flows, gas flows, anti-coagulation status, ECG, fluid balance and patient/blood temperatures to ensure optimal gas exchange and haemostasis. c) Guided by broad occupational policies, whilst independently initiating action, based on advanced clinical knowledge, as needs of the patient continually evolve intra-operatively on a case by case basis. d) Adapt to meet individual patient circumstances, reviewing patient notes for relevant medical history, pathology and diagnosis, making appropriate autonomous clinical decisions regarding the conduct of extracorporeal support i.e. Perfusion technique, cannulation, type of equipment, intravenous fluids, blood products and drug additions to prime. e) Whilst on call, being the sole Perfusionist responsible for the out of hour's emergency service for the North of Scotland, the postholder will exercise clinical judgement and interpret policies and protocols. f) Monitor and evaluate own highly specialist service delivery and that of others in the specialism / team. g) Work independently accessing appraisal within an individual performance framework at pre determined intervals.
13	**Physical effort** a) Having due regard for own personal safety with respect to moving and handling regulations. b) Movement of heavy equipment up to 250 Kg with physical aids several times daily between clinical areas, and may include transfer of patients on specialist devices between wards and clinical areas. This may involve pushing equipment to other areas such as ITU, cath lab and RACH. c) Each CPB procedure requires sitting at the heart lung console in a restricted position with for long periods ranging from 2 to 8 hours or greater whilst concentrating on the multi-stranded, highly variable parameters for which the postholder is responsible. During the working day relief will be available, subject to clinical status and staffing levels, however out of hours there will be no such relief. d) Dismantling and removal, without mechanical assistance, of potentially infectious waste from clinical areas, several times daily. This waste typically weighs 5-10 Kg and occasionally more. e) Restocking with disposable items and fluids between two separate areas.
14	**Mental effort** a) CPB frequently requires prolonged periods of concentration. During every CPB procedure, the postholder monitors and acts upon a wealth of highly complex and routinely conflicting multi-stranded clinical information on a continual basis, exercising sound and informed decision making with regard to the constant well being of the patient. Using this information, takes appropriate autonomous action through constant manipulation of blood pressures and flows, gas flows, anti-coagulation status, ECG, fluid balance and patient/blood temperatures to ensure

	optimal gas exchange and haemostasis. b) The postholder, as an integral part of the Cardiac Surgery team has to deal daily with other categories of staff, frequently in stressful situations. They will be expected to provide instant solutions to clinical and technical problems and be expert in troubleshooting these and/or providing alternative solutions. c) Act quickly, accurately and think clearly, often under acute time pressures, utilising unusual resources and lateral thinking to resolve emergency situations such as equipment malfunction. d) Be flexible to the demands of the environment including unpredictable workload, emergency procedures, deadlines and multi site working. Operating lists are subject to last minute changes as emergencies or staffing issues occur.
15	**Emotional effort** a) The management of CPB holds with it a great responsibility and is recognised as a highly stressful undertaking that is emotionally extremely demanding by its very nature. The majority of patients arrive for theatre in a relatively stable clinical condition, though frequently patients are in heart failure or have chronic kidney disease and the decisions made by the post-holder have the potential to cause further injury and/or death to an already sick patient during CPB i.e. any microscopic air left in the circuit by the post-holder may lead to neurological deficits, ranging from confusion to stroke with any gross air proving fatal to the patient. b) In the operative period immediately after termination of CPB, patients can become unstable very quickly, occasionally requiring re-commencement of CPB to support the patient while major complications are investigated. This can be very stressful as the focus is on achieving effective circulatory support quickly, whilst ensuring that safety protocols are adhered to. c) In instances where surgery has proved futile or major complications during a procedure have led to traumatic injury to a patient, the post-holder will be responsible for the withdrawal of circulatory support. d) In cases of long-term support to the patient in an ITU setting such as ECMO, the Perfusionist will be present with upset carers and relatives who may be in the room with the critically ill patient.
16	**Working conditions** a) Whilst adhering to local health and safety policies and exercising utmost care and attention, blood and bodily fluid spills are occasionally unavoidable. This is due to surgical techniques or technical limitations of equipment employed e.g. occasionally blood splashes from Aortic and Venous cannulae as they are inserted and removed from patients under high blood pressures. b) When disposing of equipment the post-holder is frequently exposed to contained patient body fluids (circuit blood volume ranging from 2-5 litres) as this equipment is handed from the surgical field, with inherent risks of infection, e.g. Hepatitis A,B,C; HIV; MRSA. c) Work with infection control and health and safety guidelines in order to deal appropriately with conditions related to patient contact as they arise. d) Take precautions as to the protection of patients and self from the spread of infection within the workplace. e) Occasional exposure to volatile anaesthetic gases from exhaust fumes if the device to remove fumes is not functioning correctly. f) Frequently exposed to high levels of stress in the operating theatre, and must deal with this calmly and responsibly.

Abbreviations and Acronyms

ACT – Activated Clotting Time
CPB – Cardiopulmonary Bypass
DHCA – Deep Hypothermic Circulatory Arrest
ECMO – Extracorporeal Membrane Oxygenation
HLM – Heart/Lung Machine
IABP – Intra Aortic Balloon Pump
POC – Point of Care
SACP – Selective Antegrade Cerebral Perfusion
TEG – Thromboelastography
VAD – Ventricular Assist Device
VAVD – Vacuum Assisted Venous Drainage

PERSON SPECIFICATION		
POST/GRADE: Senior Clinical Perfusionist / Band 8A **LOCATION:** Aberdeen Royal Infirmary **WARD/DEPARTMENT**: Perfusion Dept, Main Theatre Suite		
The Person Specification should meet the demands of the job and comply with current legislation. Setting unnecessary standards may, for example, unfairly discriminate against one sex, the disabled or minority racial groups. Applicants should be assessed in relation to their ability to meet the real requirements of the job as laid down in the job description. With the exceptions relating to displaced and disabled candidates noted in Sections 5.3 and 5.4 of this policy, shortlisted candidates must possess all the essential components as detailed below.		
GENERAL REQUIREMENTS		
Factor	Essential	Desirable
Qualifications / Training.	MSc in Perfusion Science or equivalent qualification. Current registration and accreditation with College and Society of Clinical Perfusion Scientists GB and Ireland.	CCPSGBI Advanced Accreditation Certificate. Management and/or leadership qualifications. Teaching qualifications and/or certified courses.
Experience.	An experienced, autonomous perfusion practitioner, capable of leading by example and acting as a role model. Competencies and experience operating auxiliary equipment for the benefit of patient safety and the effectiveness of clinical outcome.	Significant post qualification experience/Senior Perfusionist. Knowledge and experience of ECMO devices and circuits. Competent in use of Intra-Operative Cell Salvage.
Skills/Knowledge.	Good communication skills, ability to communicate effectively with people across a range of disciplines. Ability to work in high pressure clinical environments, under own initiative. Maintain high level of concentration for long periods.	Effective Leadership.
Additional job requirements Eg. unsocial hours.	Out of hours on call service for the North of Scotland - participating in a safe and effective 24/7 on call rota.	

Level of Disclosure check required	PVG Clearance	