University Hospitals Plymouth NHS Trust

Cardiothoracic and Vascular Surgery
University Hospitals Plymouth NHS Trust
Derriford Road
Crownhill
Plymouth

PL6 8DH

Tel: 01752 202082
www.plymouthhospitals.nhs.uk

Professor Mahamed R El Tahan
Professor of Cardiothoracic Anaesthesia & Surgical Intesive Care Mansoura University, Manoura Egypt
Associate Professor of Cardiothoracic Anaesthesia Imam Abdulrahman Bin Faisal University, Dammam
Saudi Arabia
PO 40289
Al Khubar
31952
Saudi Arabia

3rd February 2024

Dear Professor al Tahan

Application to provide EACTA fellowship

University Hospital NHS Plymouth is applying to host the EACTA Fellowship and we are writing to confirm the arrangements agreed.

Dr Zuzana Blazejova, Consultant Cardiothoracic Anaesthetist and Dr Sean Edwards, Consultant Cardiothoracic Anaesthetist will host, administer and monitor this EACTA educational project.

10% of working hours in job plan for Dr Zuzana Blazejova will be allocatd to the EACTAIC CTVA Fellowship programme.

A designated teaching room with teaching facilities will be available within the Cardiothoracic Unit at Derriford Hospital.

The Fellows will be supported (time, travel and accommodation costs) to attend a 2 week ECMO teaching/training session in another unit to enable the candidates to receive all of the required modules of training.

The candidates will be offered the appropriate pay as per the Specialty Doctor Contract payscale (see below)

Specialty Doctor pay scale Pay scale code	**Years of experience**	**Basic Salary (£)**
MC75 – 01	0	52,530
MC75 – 02	1	52,530
MC75 – 03	2	52,530
MC75 – 04	3	60,519
MC75 – 05	4	60,519
MC75 – 06	5	60,519
MC75 – 07	6	67,465
MC75 – 08	7	67,465
MC75 – 09	8	67,465
Threshold		
MC75 – 10	9	74,675
MC75 – 11	10	74,675
MC75 – 12	11	74,675
MC75 – 13	12	82,400
MC75 – 14	13	82,400
MC75 – 15	14	82,400
MC75 – 16	15	82,400
MC75 – 17	16	82,400
MC75 – 18	17	82,400

We look forward to working with the EACTA education committee and wider EACTA, which we hope will bring an exciting opportunity for candidates to undertake this programme in the South West of the United Kingdom.

If you require any further information, please do not hesitate to contact me.

Yours Sincerely

University Hospitals Plymouth NHS Trust

C. Wells

Colette Wells
Service Line Cluster Manager for Cardiothoracic and vascular

M Dalrymple-Hay

Mr Malcolm Dalrymple-Hay PhD FECTS FRCS (C/Th)
Consultant Cardiothoracic Surgeon

European Association of Cardiothoracic Anaesthesiology

Application for Hosting EACTA Cardiothoracic and Vascular Anaesthesia Fellowship Programme

1. Fellowship Information — Basic Fellowship in Cardiothoracic Anaesthesia

Basic Fellowship in Cardiothoracic Anaesthesia

2. Institution Name — University Hospitals Plymouth

Address: Cardiothoracic Department , University Hospitals Plymouth ,Derriford Road , Plymouth PL6 8DH , United Kingdom

Website: www.plymouthhospitals.nhs.uk

Country: United Kingdom | Plymouth

3. Chair Name

First name	Peter	Last name	Robins
Email	peter.robins@nhs.net	Phone	

4. Programme Directors

First name	Sean	Last name	Edwards
Board Certification(s)	MBChB Medicine and Surgery, EACTAVI TOE certification		
Title/Affiliation	FRCA, EACTAVI TOE		
Number of original publications	5		
EACTA membership	Yes	If yes, membership's number	92891
ESA membership	No	If yes, membership's number	
Societies membership	No	If yes, membership's number	
Email	sean.edwards1@nhs.net	Phone	7749656570
Mailing Address	UHP Plymouth	Fax	
Street	Deriford Road , Plymouth , PL 68DH		
Country	United Kingdom	Region	Devon
Zip code	PL68DH		

First name	Zuzana	Last name	Blazejova
Board Certification(s)	MD , Diploma from Anaesthesia and Intensive care		
Title/Affiliation	MD		
Number of original publications	1		
EACTA membership	Yes	If yes, membership's number	443884
ESA membership	No	If yes, membership's number	
Societies membership	No	If yes, membership's number	
Email	zuzana.blazejova@nhs.net	Phone	
Mailing Address	UHP Plymouth	Fax	
Street	Deriford Road , Plymouth , PL 68DH		
Country	United Kingdom	Region	Devon
Zip code	PL68DH		

Will the Programme director devote sufficient time to provide substantial leadership to the programme and supervision for the fellows?

Yes

Will the Programme director review the fellows' clinical experience logs at least quarterly and verify completeness and accuracy?

Yes — nd remote supervision threafter dependent on formal assessment with the supervisor.

Does the national/international regulatory authority(s) recognizes the institutional CTVA Fellowship Programme?

Yes — If yes, please explain:

Completion of the programme will be acknowledged by the Department of Anaesthesia and Intensive Care at the host centre in junction with European Association of Cardiothoracic Anaesthesia (EACTA) Candidate's requirements

Yes

5. Candidate's requirements

The candidates must be board certified or board eligible according to European residency programme standards

Yes

Language requirements — Level: — Comments: English level IELTS exam or OET exam

Specific requirements towards the attending fellow:

Candidate must apply for national registration that allows him to work as a medacal practitioner in UK(GMC registration).This registration and any working visa reguirments must be obtained by attendee at own expence before candidate will be permited to provide patient care.Candidate must have valid BLS and ALS course if not need to obtain certificate before starting fellowship.if not attended elswere the courses can be visited here.

Candidate must apply for national registration that allows him to work as a medical practitioner in UK (GMC registration with licence to practice).The registration and any working visa must be obteined by attendee at own expence before the candidate will be permited to provide patient care. It would be highly appreciated if the candidate has followed a Basic Course on transoesophageal echocardiography bofore entering the fellowship. A valid ALS provider course certificate is obligatory for all medical practitioners working in UK.If not attended elswhere can be visited here.We expect candidate with passion who have a specific interest in vascular surgery as well.

6. General Programme Information

Aims, goals and objectives of the Fellowship Programme

Completion of the EACVI Theory examination in TOE, gain theatre-based experience in managing patients for cardiac, thoracic and major vascular procedures. Gain experience in the ICU management of cardiac, thoracic and vascular patients in the pre and post-operative phases. Involvement in departmental teaching programs (weekly) Engagement in at least 1x Quality Improvement (QI) project during the fellowhsip year, attendance at departmental "COntinuing Medical Education" meetings. Attendance and presentation at monthly morbidity and mortality meetings. Acquisition and development of practical skills including CVC insertion, vascath insertion, TOE imaging and advanced cardiac output monitoring.

Preferred Duration	12 months					
Preferred Programme Training	Start	September	1	End	September	1
Number of Positions Per Year	2	Type of fellowship training available			Clinical only	
If clinical, will the fellows be allowed to work with the patients under supervision					Yes	

Comments: Participant will be assesed ot the start of Fellowship program and dependiong on clinical abilities can get permission to work under indirect supervision . In the case of outstanding clinical abilities the candidate will be asked to participate in on call duties during the night and weekends . In that case that Faculty memeber will be on call back up and consultation.

Offered Advamced Training: No

7. Faculty — CTV Anaesthesia Faculty - Research Interest and/or Clinical Expertise. * **Please, list at least three names**.

Name	EACTA member	Certification in Cardiothoracic and Vascular Anaesthesia	Additional Qualifications	Email address	Contact address
Sean Edwards	Yes	Yes	EACVI TOE	sean.edwards1@nhs.net	Derriford Hospital
Craig Dunlop	Yes	YES	EACVI TOE	craigdunlop@nhs.net	Derriford Hospital
Zuzana Blazejova	Yes	yes		zuzana.blazejova@nhs.net	Derriford Hospital
Jennifer Hares	Yes			jennifer.hares1@nhs.net	Derriford Hospital

Patrycja Jonetzko	Yes			pjonetzko1@nhs.net	Derriford Hospital
	No				
	Yes / No				
Publications lists of the faculty's members in PubMed					
Attached					

8. Resources Check if each of the following is available at the host centre.

Resources	Yes / No	Number
Total cardiothoracic and vascular ward beds	Yes	7
Number of ICU beds dedicated to CTV patients	Yes	7
Is there an emergency department in which cardiothoracic patients are managed 24 hours a day?	Yes	7
An adequately designed and equipped post-anaesthesia care unit for cardiothoracic patients located near the operating room suite?	Yes	7
Is there monitoring and advanced life support equipment representative of current levels of technology?	Yes	7
Hybrid Operating Rooms	No	Days/week
Cardiac Operating Rooms	Yes	3
Thoracic Operating Rooms	Yes	1
Vascular Operating Rooms	Yes	2
Catheterisation Labs	Yes	2
Electrophysiology Labs	Yes	1
Pulmonology Labs	No	
Interventional Vascular Suits	Yes	1
Separate CVICU Facility	Yes	7
Animal Laboratory for research purposes	No	Days/week
Outpatient Clinic for perioperative evaluation of patients undergoing cardiothoracic and vascular procedures	Yes	5
24-hours acute pain service available for patients undergoing cardiac, thoracic and vascular procedures	Yes	7
Meeting Rooms	Yes	7
Classrooms with visual and other educational aids	Yes	7
Study areas for fellows	Yes	7
Office space for faculty members and fellows	Yes	7
Diagnostic facilities	Yes	7
Therapeutic facilities	Yes	7
24-hour laboratory services available in the hospital	Yes	7
Cardiac stress testing	Yes	7
Cardiopulmonary scanning procedures	Yes	7
Pulmonary function testing	Yes	7
Computers and IT support	Yes	7
Appropriate on-call facilities for men and women	Yes	7

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9. Clinical Skills and Responsibilities

Will your Programme offer a 12-24 months of fellowship education in fundamental clinical skills of medicine relevant to the practice of CTVA?

If yes, for each rotation or experience below, specify the duration (in months, four weeks = one month) during the 12-24 months of education in fundamental clinical skills.

Caring for inpatients in	Number of performed produces/year
Cardiac Surgery using CPB	1100
Cardiac Surgery without CPB	up to 10
Minimally-Invasive Cardiac Procedures	6
Interventional Cardiac Catheterization (e.g. TAVI, Mitraclip, ASD)	288
Electrophysiology Lab (e.g. mapping, ablation, pacemakers, ICDs)	866
Robotic Cardiac Surgery	not availible
Heart, Lung, and Heart/Lung Transplants	not availible
ECLS, ECMO, VAD Procedures	Offered as 2 week secondment (A Paid Trainin Exchnage Rotation)
Echocardiography Lab	over 1000
Thoracoscopic Surgery	over 150 (Including RATS)
Pulmonary Resection	272
Oesophageal Surgery	18
Tracheo-Bronchial Surgery	15
Interventional Pulmonology Procedures	No
Major Vascular Procedures	239
Neurological monitoring during major vascular surgery	55
Interventional Vascular Procedures	20
Acute and Chronic Pain Management for CTV patients	
Basic Research	
Clinical Research	Yes
Rotaions in	**Number of performed produces/year**
Cardiac anaesthesia	150
Thoracic anaesthesia	25
Anaesthesia for major supra-inguinal vascular procedures	25
Trans-esophageal and trans-thoracic echocardiography	100-150 (+ Dedicated echo lab placement for 2 weeks)
Medical or surgical Critical Care Rotation	minumum 1 month
Inpatient or outpatient cardiology	25
Inpatient or outpatient pulmonary medicine	10
Extracorporeal perfusion technology (CPB, ECMO,Nova-Lung.)	2 week rotation
Paediatric cardiothoracic anaesthesia	no
Basic Research	no
Clinical Research	no

Will all fellows entering the CTVA Programme complete each of the fundamental clinical skills of requirements?

If no, explain	Yes.

In the clinical anaesthesia setting, including nights and weekends, will faculty members at any time direct perioperative CTVA care, involving fellows, for more than two anaesthetizing locations simultaneously?

If Yes, describe	
Clinical Responsibility	Clinical task and responsibilities(ie. Working under indirect supervision) will depend on fellow s clinical performances(result of Clinical Skills Evaluations), the results of his/ her self - reflection and result of 360 degree feedback.

List any other rotations (along with their duration, in months) offered in the Programme to augment fellows' learning.

Lung US course available. Human factors course with "Sim-man". NHS Leadership course available. Southwest regional anaetshesia course (SOWRA) available.

Will advanced subspecialty rotations reflect increased responsibility and learning opportunities?	Yes
Maximum Time in Non-Clinical Activities	Fellow will be permitted 10% of allocated time for non-clincal activities to allow for continuign professional development

10. Financial Statement

An employment contract will be signed with the candidate		Yes		
Accommodation options are provided		No		
Transportation/travel options are provided		No		
Monthly Salary	Amount	52530-82400	Currency	British pound
This opportunity is not funded by the centre	No	Source of financial support for the candidate:		Host centre (monthly salary)
		Others		

11. Educational and Academic Programme

Didactic Sessions

Will faculty members' attendance be monitored?	Yes
Will fellows' attendance be monitored?	Yes
Will attendance be mandatory for faculty members?	Yes
Will attendance be mandatory for fellows?	Yes
Who of the following will provide content at conferences? Check all that apply.	Yes
Anaesthesiology faculty members from this department	Yes
Anaesthesiology faculty members from other sites	Yes
Non-anaesthesiologists from the primary clinical site	Yes
Non-anaesthesiologists from the participating sites	Yes
Visiting faculty members	No
Drug/industry representatives	Yes
Fellows	Yes
Others (specify): Click here to enter text.	

What will be the frequency of the following educational topics in the programme's schedule?

	Weekly	Bi-weekly	Monthly	Quarterly	Semi-annually	Annually
Critical care appraisal of the literature (i.e., journal club)	No	No	Yes	No	No	No
Quality improvement (M&M, QA)	No	No	Yes	No	No	No
Board review (e.g., oral exams, keywords)	No	No	No	Yes	No	No
Grand rounds	No	No	No	Yes	No	No

Other (specify) Click here to enter text.

Formal Course Work Available in	SOWRA (Southwest regional anaesthesia course). Lung ultrasound (FICE). Human factors course
Extra-Institutional Educational Conference Support:	Allocated study budget to the fellow up to £750 to be used according to fellow preferences.

In the Previous 5 Years, Fellows were 1st or 2nd Author On:

Abstracts		Peer-Reviewed Journal Articles	
Book Chapters		Other Publications	
Dedicated Research Time			

In the Previous Year, Fellows present an oral or poster presentation in a national or international meeting	Yes
The Opportunioty for Exchange with other training facilities	Yes

Patient Care CanMEDS competency framework

Competency Area / Skills	Settings/ Activities	Assessment Method(s)
1. Basic Training		
1. I. General patient assessment and risk estimation		
Assessment of patients based on physical examination and history with use of appropriate laboratory tests and examinations. Level C	Self study of institutional protocols	
Scores evaluation, e.g., physical status in accordance with American Society of Anesthesiologists (ASA). Level D	Participation in pre -operative screening process during consultancy hours	Clinical Skills Evaluation
Airway evaluation. Level C	on site training , lectures	Clinical Skills Evaluation
Interpretation and limitations of peri-operative monitoring, including invasive and non-invasive cardiac function tests, pulmonary function tests, blood gas analysis, common radiological imaging, coagulation tests, liver and renal function tests, endocrine function tests, and drug monitoring. Level C	on site training , lectures	Clinical Skills Evaluation
Selection and planning of the individual anesthesia technique. Level C	on site training , lectures	Clinical Skills Evaluation
Postponement or cancellation of surgery decision making. Level C	on site training , lectures	Clinical Skills evaluation
Participation in multi-disciplinary (morbidity) conferences. Level C	in person	
Pre-operative fasting, pre-medication and adaptation of pre-operative drug therapy. Level C	teaching materials , on site training	Clinical Skills Evaluation
1. II. Anesthesia management – cardiac surgery		
Workplace preparation following environmental safety measures and checklists. Level C	on site training	
Use of technical and medical equipment, inclusive advanced hemodynamic monitoring, neuromonitoring, coagulation monitoring and basic peri-operative TEE. Level C	teaching materials , on site training	Clinical Skills Evaluation
Provision of safe induction, maintenance, and emergence from anesthesia. Level C	on site training	Clinical Skills Evaluation

Defibrillation, cardioversion. Level D	teaching materials , on site training	Clinical Skills Evaluation
Transvenous pacemaker insertion and modes of action; use of a temporary pacemaker. Level C	teaching materials , on site training	Clinical Skills Evaluation
Central and peripheral venous (ultrasound-guided) access and peripheral arterial catheterization, pulmonary artery catheterization, arterial blood gas collection, and gastric tube insertion. Level D	teaching materials , on site training	Clinical Skills Evaluation
Blood salvage and transfusion. Level D	self study, internal protocol , on site training	Clinical skills evaluation
Organ systems and hemostasis homeostasis maintenance throughout cardiac surgery procedures. Level C	self study , on site training	Clinical Skills Evaluation
Interpretation of point-of-care coagulation monitoring such as rotational thromboelastometry (ROTEM) and thromboelastography (TEG). Level C	self study , internal protocol , on site training	Clinical skills Evaluation
Management of patients on cardiopulmonary bypass. Level C	on site training , rotation on ECP department	Clinical Skills Evaluation
Diagnosis and management of intraoperative critical incidents including. Level C - allergic reactions, anaphylaxis, - gas embolism, aspiration pneumonia and pneumothorax, - hypoxia, hypercarbia, hypoventilation, hyperventilation, high ventilator peak inspiratory pressures, - hypertension (systemic / pulmonary), hypotension, arrhythmias, myocardial ischemia, cardiac failure, cardiopulmonary resuscitation, - oliguria, anuria, - intra-operative blood gas and electrolyte disturbances, - intra-operative awareness, - adverse blood products transfusion reaction, - coagulopathy and excessive bleeding, - systemic inflammatory response syndrome (SIRS) / postoperative vasoplegic syndrome (PVS)	self study , on site training , simulation in simulation suite	Clinical skills Evaluation
Management of patient transport to and from the intensive care unit (ICU). Level C	on site training	Clinical Skills Evaluation
Consideration of ethical and medico-legal aspects. Level C	online courses	
1. III. Anesthesia management – thoracic surgery		
Bronchoscopic examination to verify the position of a lung-separation device and to confirm the correctness of the bronchus to be stapled and the patency of the other bronchi. Level C	teaching sessions , on site training	quarterly assesment talks , clinical skills evaluaton
Provision of safe induction, maintenance, and emergence from anesthesia in patients undergoing thoracic surgery of varying complexity, including airway management, the decision of which drug to use, one-lung ventilation technique, and management of intraoperative adverse events. Level C	involvment in pre assesment, WHO case discussion in the morning , on site training	clinical skills evaluation , quarterly assesments talks
Management of most common peri-operative critical incidents and complications including: Level C - bronchospasm, - hypoxemia, hypercapnia, - pneumothorax,	on site training during ICU rotation	clinical skills evaluation
One-lung ventilation with a double-lumen tube. Level C	teaching sessions , on site training	clinical skills evaluation , quarterly assesments talks
One-lung ventilation with other techniques (e.g., Arndt blocker, EZ blocker). Level B	teaching sessions , on site training	clinical skills evaluation
Postoperative pain management, including epidural and paravertebral analgesia. Level C	rotation with pain team, on site training	Clinical Skills Evaluation, qarterly assesment tasks
Additional techniques in pain management (e.g., epidural analgesia, truncal blocks, multimodal analgesic techniques). Level B	on site training	pain team clinic
1. IV. Anesthesia management – major vascular surgery		
Pre-operative assessment, risk stratification and medical management of vascular patients. Level D	attendance in pre assesment clinic, high risk patient clinics	clinical skills evaluation , quarterly assesments talks
Provision of safe induction, maintenance, and emergence from anesthesia in patients undergoing vascular surgery of varying complexity, including airway management, the decision of which drug to use, hemodynamic management, and management of intraoperative adverse events. Level C	on site training , lectures	Clinical Skills Evaluation
Management of the most common perioperative critical incidents and complications including Level C - acute kidney injury, - neurological insults, - paraplegia,	on site training , departmental teaching	clinical skills evaluation , quarterly assesments talks
Management of elective and emergency open abdominal aortic aneurysms (AAA) and AAA repair. Level D	on site training , lectures	clinical skills evauation
Management of carotid endarterectomy, angioplasty, or stenting. Level D	on site training , lectures	Clinical Skills Evaluation
1.V. Post-operative care/ Critical care		
Physical examinations and patient assessment (e.g., respiratory and peristaltic sounds, temperature gradient capillary refill). Level D	preassesment clinic, MDT	clinical skills evauation
Applying sedation, general anesthesia, multimodal analgesia. Level D	on site training , departmental teaching	Clinical Skills Evaluation
Management of the airways, inclusive of emergency intubation. Level D	on site training , lectures	clinical skills evaluation , quarterly assesments talks
Central venous, peripheral venous, arterial catheters, and pleural drains insertion using aseptic techniques. Level D	vascular access team shedowing , on site training	clinical skills evaluation , quarterly assesments talks
Gastrointestinal tube insertion. Level D	on site training	Clinical Skills Evaluation
Airway maneuvers inclusive of suction of endotracheal secretions, tracheotomy (percutaneous), bronchoalveolar lavage and sampling. Level D	airway course , on site training	Clinical Skills Evaluation
Invasive ventilation including prone position ventilation and weaning strategies. Level D	on site training	Clinical Skills Evaluation
Delivery of continuous positive pressure ventilation and non-invasive ventilation. Level D	on site training	Clinical Skills Evaluation

Hemodynamic stabilization and management, inclusive of pacing, cardioversion, defibrillation, advanced and basic life support, vasoactive and inotropic therapy, advanced cardio-vascular monitoring. Level B	on site training , departmental teaching	Clinical Skills Evaluation
Volemia management and fluids administration. Level D	on site training , lectures	Clinical Skills Evaluation
Management of blood product transfusion and coagulopathies correction. Level D	departmental teaching , on site training	clinical skills evaluation , quarterly assesments talks
Renal replacement therapy and acute renal failure. Level B	departmental teaching , on site training	clinical skills evaluation , quarterly assesments talks
Identification of relevant pre-existing co-morbidities. Level D	on site training during ICU rotation	Clinical Skills Evaluation
Responding to trends in physiological variables. Level D	on site training	Clinical Skills Evaluation
Patient transportation inter- and intra-hospital. Level B	on site training	Clinical Skills Evaluation
Arterial and central venous line cannulation (ultrasound-guided). Level D	on site training	Clinical Skills Evaluation
Myocardial infarction, pulmonary embolism, tamponade, hypovolemia. Level D	on site training , lectures	Clinical Skills Evaluation
Assessment of intravascular volume status. Level C	on site training , lectures	clinical skills evaluation , quarterly assesments talks
Recognition of substantial pericardial or pleural effusion. Level B	lung ultrasound teaching, on site training	Clinical Skills Evaluation
1. VI. Basic peri-operative echocardiography		
Basic levels of peri-operative TEE and lung and vessel ultrasonography as performed in the operating room. Level C	regular teaching lessons on heart works , Lung ultrasound teaching course	clinical skills evaluation , quarterly assesments talks
Performance of the recommended number of peri-operative echocardiography exam according to EACVI / EACTA certification guidelines. Level D	all performed TEE and lung ultrasound will be documented in logbook	ed TEE will be documented by logbook and sign off by educational
1. VII. Anesthesia management – interventional procedures in cardiology		
Safe induction of, maintenance of, and emergence from anesthesia in patients undergoing interventional cardiac procedures, including the decision of which drug to use, ventilation techniques, management of airways and management of intraoperative adverse events. Level C	on site training	Clinical Skills Evaluation
Sedation for invasive procedures in cardiology. Level D	on site training , lectures	Clinical Skills Evaluation
Sedation and anesthesia outside the operating theatre, also considering the local organization and the specific patients and procedures. Level D	on site training	Clinical Skills Evaluation
1. VIII. Extracorporeal perfusion management		
Providing the theoretical background of extracorporeal circulation and associated subject areas, including: Level D - Anticoagulation monitoring and management. - Cardioprotective measures (cardioplegia, hypothermia). - Acid-base management (alpha-stat vs. pH-stat). - Management of complications, e.g., air entry, CPB failure.	shedowing perfusionist , departmental teaching	clinical skills evauation
2. Advanced training		
In cooperation with the local Program Director, after the completion of the basic training, the fellow can design the advanced training to include any or a combination of the following options.		
2. I. Anesthesia management – cardiac surgery		
Clinical management of patients with pericardial diseases. Level D		
Management of cardiomyopathy patients and of those with congenital and acquired valvular heart disease, electrophysiological disturbances, congenital heart disease, heart failure, infectious and neoplastic cardiac diseases. Level D		
2. II. Anesthesia management – thoracic surgery (as described previously, as well as the followings:)		
Alternative ventilation techniques in thoracic surgery (e.g., jet ventilation). Level D		
Principles of postoperative chronic pain management. Level D		
2. III. Anesthesia management – major vascular surgery (as described previously, as well as the followings:)		
The use of rapid ventricular pacing (RVP) during deployment of the stent for TEVAR. Level B		
Pain management for patients undergoing vascular procedures. Level B		
Anesthesia for peripheral vascular procedures. Level C		
Care of patients undergoing limb amputation. Level D		
Pain management, with particular reference to critical limb ischemia. Level B		
2.IV. Post-operative management/ Critical care (as described previously, as well as the followings:)		
Interpretation of invasive and non-invasive cardiovascular monitoring. Level D		
Use of inotropes and vasodilators. Level D		
Management of intra-aortic balloon counter pulsation and other mechanical circulatory support devices. Level C		
Detection of problems occurring with extracorporeal circulation management. Level C		
Anesthesia for procedures in intensive care, including emergency resternotomy, re-intubation, tracheostomy or cardioversion. Level D		
Principles and management of chest drains. Level D		
2. V. Advanced perioperative echocardiography (as described previously, as well as the followings:)		
2. VI. Heart and/or lung transplantation		
Central venous pressure invasive arterial monitoring, pulmonary artery catheter insertion and interpretation. Level D		
TEE for monitoring of left and right ventricular function and diagnosis of primary graft dysfunction / failure. Level C		
Insertion and management of thoracic epidurals Level D		
2.VII. Organizational module		

Communicating effectively with patients and their families. Level D		
Communicating effectively with surgical colleagues. Level D		
Communicating with the intubated patient. Level D		
Recognizing the need for senior help. Level D		
Maintaining accurate clinical records. Level D		
Presentations at departmental meetings. Level D		
Participation in multi-disciplinary clinical audits. Level C		
Commitment to continued professional development. Level D		
2.VIII. Research module		
Ability to help design a clinical or basic science research project or part of it as a member of the investigative team. Level D		
Ability to help complete an ethics application. Level C		
Ability to discuss basic statistical approaches. Level C		
Ability to consent, recruit, and follow up research participants according to regulatory frameworks. Level C		
Ability to help analyze data. Level C		
Ability to contribute to disseminating study results in abstracts, presentations and publications. Level C		

Medical Knowledge

Indicate the activity(ies) (lectures, conferences, journal clubs, clinical teaching rounds, etc.) in which residents will demonstrate knowledge in each of the following areas. Also indicate the method(s) used to assess competence.

Area of Knowledge	Settings/ Activities	Assessment Method(s)
1. Basic Training		
1.I. General patient assessment and risk estimation (Level A)		
Physiology of the heart, the circulatory system and the respiratory system. Basic knowledge of embryological development of cardiac, thoracic and vascular structures.	clinical teaching	quarterly assesment talks , clinical skills evaluaton
Pre-operative invasive and non-invasive assessment of cardiac diseases and interpretation of results including electrocardiogram (ECG), chest X-ray, echo-cardiography, cardiac stress testing, coronary angiography, cardiac magnetic resonance imaging (cMRI), and computer tomography (CT).	clinical teaching	Clinical skills Evaluation
Pre-operative pulmonary evaluation and interpretation of the results, including arterial blood gas and acid-base analysis, pulmonary function tests, oximetry and thoracic imaging.	clinical teaching	Clinical skills Evaluation
Patient information and informed consent including medico-legal aspects, appraisal of discernment and consent capacity.	on site training	Clinical skills Evaluation
Principles of risk and outcome assessment and relevant scoring systems (e.g., EuroSCORE).	clinical teaching	Clinical skills Evaluation
1. II. Anesthesia management – cardiac surgery (Level A)		
Knowledge of anesthetic agents and their effects on cardiac function and in patients with cardiac diseases.	departmental teaching , on site training	Clinical skills Evaluation
Principles of intraoperative pharmacology and relevant medication, including positive inotropes, chronotropes, vasoconstrictors, vasodilators, and anti-arrhythmic agents.	departmental teaching , on site training	clinical skills evaluation
Principles of patient blood management, including specific diagnostic tools, application of relevant medication and blood products.	departmental teaching , on site training	clinical skills evaluation
Principles of basic hemodynamic monitoring and relevant techniques, such as arterial pressure measurement, central venous pressure.	departmental teaching , on site training	clinical skills evaluation
Principles of relevant neuromonitoring techniques (e.g., processed electro-encephalography (pEEG), near-infrared sonography (NIRS), somato-sensible evoked potentials (SSEP), motor evoked potentials (MEP).	clinical teaching, on site training	clinical skills evaluation
Principles of conventional cardiopulmonary bypass techniques. Principles of myocardial preservation. Effects of cardiopulmonary bypass on human physiology, organ function, and pharmacology.	clinical teaching, on site training	clinical skills evaluation
Basic principles of common procedures in cardiac surgery, such as coronary artery bypass grafting (CABG).	clinical teaching, on site training	clinical skills evaluation , quarterly assesments talks
1. III. Anesthesia management – thoracic surgery (Level A)		
Principles of pulmonary evaluation as described previously, and basic knowledge in the interpretation of results from pulmonary function tests, lung perfusion testing and CT.	departmental teaching , on site training	clinical skills evaluation , quarterly assesments talks
Knowledge of the bronchial anatomy.	departmental teaching , on site training	clinical skills evaluation , quarterly assesments talks
Knowledge about relevant anesthetic agents and their effects in patients with lung diseases.	departmental teaching , on site training	clinical skills evaluation , quarterly assesments talks
Principles of intraoperative pharmacology and relevant medication, including bronchodilators and steroids.	clinical teaching, on site training	clinical skills evaluation , quarterly assesments talks
Basic principles of common procedures in thoracic surgery (mediastinoscopy, video-assisted thoracoscopic surgery (VATS), open lung resection, pneumonectomy).	clinical teaching, on site training	clinical skills evaluation , quarterly assesments talks
Basic principles of endoscopic pulmonary procedures, such as bronchial stenting and endoscopic lung volume reduction (ELVR).	clinical teaching, on site training	clinical skills evaluation , quarterly assesments talks
1. IV. Anesthesia management – major vascular surgery (Level A)		
Knowledge of peri-operative management for vascular patients undergoing vascular interventions, including anesthetic choices, perioperative monitoring, and risk identification.	clinical teaching, on site training	Clinical Skills Evaluation
Basic principles of the peri-operative management of lumbar drainage for aortic interventional procedures.	clinical teaching, on site training	clinical skills evaluation , quarterly assesments talks
Basic principles of spinal cord protection during surgical and interventional aortic procedures.	clinical teaching, on site training	clinical skills evaluation , quarterly assesments talks
Basic principles of neuromonitoring.	clinical teaching	Clinical Skills Evaluation
1. V. Post-operative care/ Critical care (Level A)		

Scoring systems in the ICU (e.g. the Sequential Organ Failure Assessment (SOFA), the Simplified Acute Physiology Score (SAPS), the Confusion Assessment Method (CAM)-ICU).	clinical teaching	clinical skills evaluation , quarterly assesments talks
Etiology, pathophysiology, diagnosis and treatment plans / bundles according to international standards for specific critical conditions in cardiothoracic and vascular surgery patients.	departmental teaching , on site training	clinical skills evaluation , quarterly assesments talks
Circulatory failure (heart failure, shock, cardiorespiratory arrest, cardiac arrhythmias, ischemic heart disease, pulmonary embolism, bleeding complications, vasoplegia).	departmental teaching , on site training	clinical skills evaluation , quarterly assesments talks
Anaphylaxis.	clinical teaching, on site training	clinical skills evaluation , quarterly assesments talks
Respiratory failure, including adult respiratory distress syndrome (ARDS), pulmonary edema, pneumothorax, pneumonia.	clinical teaching, on site training	clinical skills evaluation , quarterly assesments talks
Acute kidney injury and failure.	departmental teaching , on site training	clinical skills evaluation , quarterly assesments talks
Gastrointestinal failure, peritonitis, pancreatitis, liver failure, non-occlusive mesenteric ischemia (NOMI).	departmental teaching , on site training	clinical skills evaluation , quarterly assesments talks
Neurological failure (delirium and coma, cerebral ischemia and bleeding).	clinical teaching, on site training	clinical skills evaluation , quarterly assesments talks
Airway and chest injuries.	clinical teaching, on site training	clinical skills evaluation , quarterly assesments talks
Aortic injuries.	clinical teaching, on site training	clinical skills evaluation , quarterly assesments talks
Infectious diseases (systemic inflammatory response syndrome (SIRS) and sepsis, including sepsis bundle strategy).	clinical teaching, on site training	clinical skills evaluation , quarterly assesments talks
Coagulation disorders (disseminated intravascular coagulopathy (DIC), heparin resistance, heparin-induced thrombocytopenia, severe bleeding, transfusion reaction).	clinical teaching, on site training	clinical skills evaluation , quarterly assesments talks
Equipment and apparatus (equipment design, physics, standards, limitations; e.g. non-invasive and invasive postoperative ventilation, continuous renal replacement therapy devices, non-invasive and invasive hemodynamic monitoring).	clinical teaching, on site training	clinical skills evaluation , quarterly assesments talks
Indication, contraindication, drug selection, complications: sedation, anesthesia, analgesia, neuromuscular relaxation, nutrition.	clinical teaching, on site training	clinical skills evaluation , quarterly assesments talks
Multimodal and pre-emptive analgesia concepts.	clinical teaching, on site training	clinical skills evaluation , quarterly assesments talks
Weaning and extubation criteria.	clinical teaching	clinical skills evaluation , quarterly assesments talks
Transfer and discharge criteria.	clinical teaching, on site training	clinical skills evaluation , quarterly assesments talks
Indications for and application of extracorporeal circulation in intensive care patients for cardiac and / or respiratory support (e.g., ECMO).	clinical teaching, on site training	clinical skills evaluation , quarterly assesments talks
1. VI. Basic peri-operative echocardiography (Level A)		
Principles of basic theory of peri-operative cardiac echocardiography according to the European Association of Cardiovascular Imaging (EACVI) / EACTA process of certification for TEE.	weekly departmental teaching , manekine training , on site training	clinical skills evaluation , quarterly assesments talks
1. VII. Anesthesia management – interventional procedures in cardiology (Level A)		
Basic principles of common procedures in interventional cardiology, such as coronary angiography, ablation, transcatheter aortic valve replacement (TAVR), and mitral / tricuspid clipping with relevant complications.	on site training	clinical skills evaluation , quarterly assesments talks
Procedural sedation guidelines from the European Board of Anaesthesiology (EBA)/ European Society of Anaesthesiology (ESA).	self study , on site training	clinical skills evaluation , quarterly assesments talks
Monitoring and capnography use according to the safety recommendations from EBA.	on site training	clinical skills evaluation , quarterly assesments talks
1. VIII. Extracorporeal perfusion management (Level A)		
Basic principles of extracorporeal perfusion.	departmental teaching , on site training	clinical skills evaluation , quarterly assesments talks
Types of extracorporeal circuits, e.g., cardiopulmonary bypass (CPB), extracorporeal membrane oxygenation (ECMO).	departmental teaching , on site training	clinical skills evaluation , quarterly assesments talks
Types, composition and mechanisms of cardioplegic solutions.	departmental teaching , on site training	clinical skills evaluation , quarterly assesments talks
Cardioprotective measures.	departmental teaching , on site training	clinical skills evaluation , quarterly assesments talks
Safety recommendations for extracorporeal circulation from the European Board of Cardiovascular Perfusion (EBCP).	departmental teaching , on site training	clinical skills evaluation , quarterly assesments talks
2. Advanced training		
2. I. Anesthesia management – cardiac surgery (Level A)		
Principles of advanced hemodynamic monitoring and relevant techniques, such as use of the pulmonary artery catheter, continuous cardiac output monitoring and measurement.	departmental teaching , on site training	**clinical skills evaluation , quarterly assesments talks**
Principles of modified cardiopulmonary bypass (minimized CPB, left-heart CPB) and the off-pump revascularization technique.	departmental teaching , on site training	**clinical skills evaluation , quarterly assesments talks**
Principles of advanced procedures in cardiac surgery and clinical management of affected patients (valve surgery and thoracic aortic surgery, including ascending, transverse, and descending aortic surgery with circulatory arrest).	departmental teaching , on site training	**clinical skills evaluation , quarterly assesments talks**
Principles and state of the art of mechanical support including intra-aortic balloon pumps, and extracorporeal membrane oxygenation.	departmental teaching , on site training	**clinical skills evaluation , quarterly assesments talks**
Current state of temporary and long-term mechanical circulatory support (ventricular assist devices, total artificial hearts).	departmental teaching , on site training	**clinical skills evaluation , quarterly assesments talks**
Principles of use of inhaled pulmonary vasodilators (nitric oxide (NO), prostaglandins).	clinical teaching, on site training	**clinical skills evaluation , quarterly assesments talks**
Principles of fast-track surgery.	clinical teaching, on site training	**clinical skills evaluation , quarterly assesments talks**
2.II. Anesthesia management – thoracic surgery (Level A)		

Principles of common procedures in thoracic surgery (open and thoracoscopic lung resections, robotic lung resection, lung volume reduction surgery, mediastinoscopy, pneumonectomy).	departmental teaching , on site training	**clinical skills evaluation , quarterly assesments talks**
Principles of diagnostic and interventional bronchoscopic surgery (lung volume reduction, bronchopulmonary lavage; endoscopic, rigid fiber optic and laser resection; bronchial stenting and sealing).	departmental teaching , on site training	**clinical skills evaluation , quarterly assesments talks**
Principles of peri-operative management of esophageal surgery for varices, neoplastic, colon interposition, foreign body, stricture, and tracheoesophageal fistula.	departmental teaching , on site training	**clinical skills evaluation , quarterly assesments talks**
2. III. Anesthesia management – major vascular surgery (Level A)		
Knowledge of perioperative management of TEVAR and EVAR.	departmental teaching , on site training	**clinical skills evaluation , quarterly assesments talks**
Knowledge of the principles of perioperative management of lumbar drainage for aortic interventional procedures.	clinical teaching, on site training	**clinical skills evaluation , quarterly assesments talks**
Excellent knowledge of the principles of spinal cord protection during surgical and interventional aortic procedures.	clinical teaching, on site training	**clinical skills evaluation , quarterly assesments talks**
Excellent knowledge of the principles of cerebral function monitoring.	departmental teaching , on site training	**clinical skills evaluation , quarterly assesments talks**
2. IV. Post-operative management/ Critical care (Level A)		
Knowledge of cardiac and thoracic physiology.	departmental teaching	**quarterly assesment talks**
Postoperative cardiac critical care, including analgesia, sedation and ventilation.	departmental teaching , on site training	**quarterly assesment talks , clinical skills evaluaton**
Postoperative care and analgesia after thoracic surgery.	on site training	**clinical skills evaluation**
An understanding of the management of cardiac pacing modes.	departmental teaching , on site training	**clinical skills evaluation , quarterly assesments talks**
An understanding of extracorporeal membrane oxygenation and other devices used for mechanical circulatory support.	departmental teaching , on site training	**clinical skills evaluation , quarterly assesments talks**
2. VII. Advanced perioperative echocardiography (Level A)		
Advanced level of knowledge in peri-operative cardiac echocardiography according to the EACVI/ EACTA process of certification guidelines.	weekly departmental teaching , manekine training , on site training	**clinical skills evaluation , quarterly assesments talks**
2. VIII. Heart and/or lung transplantation (Level A)		
Understanding of the physiology and clinical presentations of end-stage heart and lung disease and surgical options for their management.	n/a	
Understanding of the principles of heart transplantation and clinical management of affected patients.	n/a	
Knowledge of current limitations of organ transplantation and efforts to increase the suitable donor pool.	n/a	
Understanding of the multidisciplinary nature of patient evaluation and listing for transplantation.	n/a	
Knowledge of the principles of donor optimization, management and allograft retrieval.	n/a	
Knowledge of the principles of ex-vivo heart and lung perfusion.	n/a	
Understanding of the physiology of the denervated organ.	n/a	
Understanding of the surgical conduct of heart transplantation and knowledge of intra-operative and immediate postoperative care, including stability of induction, ventilation, oxygenation, hemodynamic support, and allograft and noncardiac organ protection.	n/a	
Understanding of primary graft dysfunction and indications for mechanical circulatory support.	n/a	
Understanding of the surgical options for lung transplantation, including minimally invasive lung transplantation and various intraoperative extracorporeal support mechanisms.	n/a	
Knowledge of intra-operative and immediate postoperative care, including protective ventilation, oxygen delivery, hemodynamic support, indications for inhaled NO and other pulmonary vasodilators, allograft and non-pulmonary organ protection.	n/a	
Knowledge of the principles of primary lung dysfunction and conservative and extracorporeal treatment options, including indications for and techniques of ECMO.	n/a	
Understanding of immunosuppressive regimens and the role of postoperative infections and sepsis.	n/a	
2. IX. Research module (Level A)		
Principles of clinical trials, including design, end points, inclusion / exclusion criteria, reporting requirements.	n/a	
Understanding of Good Clinical Practice (GCP) requirements for clinical research involving patients.	n/a	
Understanding of European and specific national ethics frameworks, including research ethics applications, clinical regulatory frameworks and hospital site-specific assessment.	n/a	
Principles of sample size and study power determinations and basic statistical evaluation	n/a	
Principles of patient and data confidentiality agreements.	n/a	
Understanding tools for data collection, analysis and reporting.	n/a	

Principal international basic science priorities in the field of cardiac anesthesia.	n/a	
Ethics and practicalities of biological sample collection, storage and biobanking	n/a	
Principles and ethics of scientific publishing.		

12. Assessment

The Programme Director will evaluate each fellow every 3 months	Yes		
Assessment tools			
360-degree evaluations	Yes	Clinical skills evaluations	Yes
Personal reports from the faculty	Yes	Self-assessment by Fellow	Yes
Learning goals for the next three months	Yes	Feedback from Fellows	Yes
A logbook will be available	Yes	Reports of Evaluation will be available	Yes

The Programme Director will give an appraisal for each fellow every 3 months	Yes
The faculty and trainee should agree a joint evaluation both fellow's progress and the training programme, and devise a plan for addressing any perceived difficulties or deficiencies.	yes
Training programmes should encourage fellows to provide a written confidential evaluation of the programme.	yes
External evaluation / assessment will be held as per EACTA regulations	Yes
The centre will be able to maintain a register of those fellows who have entered and successfully completed a training programme in order to continue its accreditation as a training centre	Yes
There will be regular opportunities for Fellows to provide confidential written evaluations of the faculty and program to the EACTA Education Chair	yes
Periodic evaluation of patient care (quality assurance) is mandatory. Subspecialty trainees in cardiac, thoracic, and vascular anesthesia will be involved in continuing quality improvement and risk management.	yes
Trainees in cardiac, thoracic and vascular anesthesia will actively participate in the periodic evaluation and reassessment of the Fellowship training goals and objectives	yes
Should unforeseen circumstances arise such as personal conflict between a Fellows and tutors, this should be reported immediately to the Chair of the Education Committee.	yes
At the end of the training period, the centre would acknowledge in writing successful completion of a fellow training.	yes

13. Practice-based Learning and Improvement

1. Briefly describe one planned learning activity in which fellows engage to: identify strengths, deficiencies, and limits in their knowledge and expertise (self-reflection and self-assessment); set learning and improvement goals; and identify and perform appropriate learning activities to achieve self-identified goals (life-long learning).

Fellow will get regular feedback from residents and member of faculty also will be expected to undergo apreisal and 360 degree evaluation as per NHS system requirments.

2. Briefly describe one planned quality improvement activity or project that will allow the fellows to demonstrate an ability to analyse, improve and change practice or patient care. Describe planning, implementation, evaluation and provisions of faculty support and supervision that will guide this process.

Candidate will be expected to prepare and quality improvement project which will be presented on the day of departmental meeting.

3. Briefly describe how fellows will receive and incorporate formative evaluation feedback into daily practice

Candidate will have an oportunity to discuss the daily cases on an informative basis with a member of faculty and will get personal feedback . A 360 degrees feedback will take a place after 6 months and the results will be discussed than.

4. Briefly describe one example of a learning activity in which fellows engage to develop the skills needed to use information technology to locate, appraise, and assimilate evidence from scientific studies and apply it to their patients' health problems. The description should include:

During the fellowship candidate will be expected to prepare an presentation of critical appraisal with regard Cardiac or thoracic Anaesthesia.

5. Briefly describe how fellows will participate in the education of patients, families, students, fellows, and other health professionals.

Candidate will be requested to participate regularly and actively at journal clubs and M&M meetings . He or she will be expected to take and active part on this meetings.

14. Interpersonal and Communication Skills

1. Briefly describe one learning activity in which fellows demonstrate competence in communicating effectively with patients and families across a broad range of socioeconomic and cultural backgrounds, and with physicians, other health professionals, and health-related agencies.

After a period of introduction candidate will be expected to shedow high risk preassesment clinics and over time to take more acrive role in this process. Candidate will also be expected to participate in conferencews of other disciplines (cardiology , cardiothoracic , ICU). Over time is fellow expected to take more active role.

2. Briefly describe one learning activity in which fellows demonstrate their skills and habits to work effectively as members or leaders of a health care team or other professional group. In the example, identify the members of the team, responsibilities of the team members, and how team members communicate to accomplish responsibilities.

Candidate will get an introduction in the system of pre and postoperative check procedures and pre-operative breefing and postoperative team debreefing process.They will be expected to take an active role in this process. We regularly organising simulations for various scenarios.Candidate will be expected to attend this simulation trainings.

3. Briefly describe how fellows will be provided with opportunities to act in a consultative role to other physicians and health professionals related to clinical information systems.

Candidate will be expected to participate actively and on regular basis in the MDT meetings and ground rounds in ICU. With progress in his training the candidate will be asked to act as consultant with distant supervision and with senior member of staff backup.

4. Briefly describe how fellows will be provided with opportunities to maintain comprehensive, timely, and legible medical records, if applicable

Candidate will receive comprehensive induction to patient record system and also to prescription system. At the start of fellowship will be fully supervised to understand how to maintain patient record and also use the prescribing system.

5. Briefly describe how fellows will maintain a comprehensive anaesthesia record for each patient, including evidence of pre- and post-operative anaesthesia assessment, an ongoing reflection of the drugs administered, the monitoring employed, the techniques used, the physiologic variations observed, the therapy provided as required, and the fluids administered.

Deriford hospital s using electronic patient record system at all workplaces including theatre and ICU.Candidate will be provided E- learning and copmprehensive introduction by admin team at the start of fellowship.

6. Briefly describe how fellows will create and sustain a therapeutic relationship with patients, engage in active listening, provide information using appropriate language, ask clear questions, provide an opportunity for comments and questions, and demonstrate sensitivity and responsiveness to cultural differences, including awareness of their own and their patients' cultural perspectives.

The candidate will be involved in the pre - operative screening process by attending the consultation hours at least once a month. After an initial period where the candidate will be accompanied by member of staff will be expected to work mmore independently with supervision.

15. Professionalism

Briefly describe the learning activity(ies), other than lecture, by which fellows demonstrate a commitment to carrying out professional responsibilities and an adherence to ethical principles, including: compassion, integrity, and respect for others; responsiveness to patient needs that supersedes self-interest; respect for patient privacy and autonomy; accountability to patients, society, and the profession; and sensitivity and responsiveness to a diverse patient population, including to diversity in gender, age, culture, race, religion, disabilities, and sexual orientation

Candidate will become step by step responsible for the whole processin accompaying a patient through the perioperative process.During the process will be continuously indirectly or directly supervised by an experienced member of staff or his mentor.

15. Systems-based Practice

1. Describe the learning activity(ies) through which fellows achieve competence in the elements of systems-based practice: working effectively in various health care delivery settings and systems, coordinating patient care within the health care system; incorporating considerations of cost-containment and risk-benefit analysis in patient care; advocating for quality patient care and optimal patient care systems; and working in inter-professional teams to enhance patient safety and care quality

Candidate will have oportunity to participate at MDT meetings . The meetings are intended to find optional treatment for patients presented.

2. Describe an activity that fulfils the requirement for experiential learning in identifying system errors and implementing potential systems solutions.

Candidate may attend a meeting of internal review board on fatalities as an observer.Candidate is expected to keep all the information discussed as highly confidential.

16. EACTA Site Visit (for 1-day)

Dates proposed for the visit (at least 3) 15/04/2024 or 10/05/2024 or 5.6.2024

I hereby accept the regulations of the Hospital Visiting especially to take in charge the travel costs and the hotel accommodation of the 2 reviewers on the most reasonable base

Yes

Other comments: We would prefere to make use of standard accreditation fee

To be completed by the Head of department or the authorised deputy.

Please fill in all required fields and send to eacta@aimgroup.eu

European Association of Cardiothoracic Anaesthesiology and Intensive Care

Checklist for Hosting EACTAIC Adult Cardiothoracic Anaesthesia Fellowship Programme

Institution Name	University Hospitals Plymouth
Address	Derriford Road Plymouth PL6 8DH United Kingdom
Preferred Duration	☒ **12 months** for basic training year ☐ **12 months** for advanced training year

Type of fellowship programme offered:

☒ Cardiothoracic and Vascular Anaesthesia
☐ Cardiovascular Anaesthesia
☐ Cardiothoracic Anaesthesia
☐ Cardiac Anaesthesia only
☐ Thoracic and Vascular Anaesthesia

Type of fellowship training available:

☒ Clinical only
☐ Clinical / Basic Research
☐ Clinical / Clinical Research
☐ Basic Research only
☐ Clinical Research only

Legal statement

The applying trainee should be either a licensed anaesthesiologist or have a completed training certificate in anaesthesia. ☒ Yes ☐ No

Working hours directives will be respected according to the prevailing national law. ☒ Yes ☐ No

The head of the department approves the programme of the hosting centre. ☒ Yes ☐ No

An agreement between the CEO or an authorized representative of the institution and Programme Director at the host centres for the EACTAIC Fellowship Training Programmes to free the former to have a dedicated minimum of 10% of weekly working time for training the trainees in the Fellowship Training Programmes is submitted to EACTAIC. ☒ Yes ☐ No

The programme directors, faculty members and trainees would maintain a good standing EACTAIC membership. ☒ Yes ☐ No

Declaration of financial sources

The financial support of the EACTAIC Fellowship will be regulated by an individual agreement between the hosting centre and the fellow. ☒ Yes ☐ No

The hosting centre declares the financial sources policy. ☒ Yes ☐ No

EACTAIC will divide the hosting centres into two categories as follows; Category (A): The hosting centres which can offer monthly salary payments and Category (B): The hosting centres which cannot provide salary payments; instead, the candidates may be supported by an educational grant, scholarship, or are self-sponsoring, etc.

Preferred Fellowship Category: ☒ **Category A** ☐ **Category B**

European Association of Cardiothoracic Anaesthesiology and Intensive Care

The candidates can choose between the hosting centres in the two categories. ☐ Yes ☒ No

A signed consensus between the hosting centre and trainee regarding both parties' financial arrangement and responsibilities will be delivered to EACTAIC. ☒ Yes ☐ No

An employment contract will be signed with the candidate ☒ Yes ☐ No

Accommodation options are provided ☐ Yes ☒ No

Transportation/travel options are provided ☐ Yes ☒ No

Monthly Salary: **Amount** 3000-4000acc nat pay **Currency** pounds

The centre does not fund this opportunity ☐ Yes ☐ No

Source of financial support for the candidate:

☒ Host centre (monthly salary)
☐ Candidate's centre
☐ Scholarship
☐ Educational grant
☐ Award
☐ Candidate's expenses
☐ Others

Please, describe: Monthly salary provided by host centre

Programme Training and facilities of the host centre

1.	The fellow should be authorized to provide direct patient care during their training programme under the supervision of the programme director and faculty members, "i.e., hands-on practice."	☒ Yes ☐ No
2.	Uninterrupted training for 12 months for the "basic" training programme.	☒ Yes ☐ No
3.	Uninterrupted training for 12 months for the "advanced" training programme.	☐ Yes ☒ No
4.	At least two faculty members should be involved.	☒ Yes ☐ No
5.	Evaluation of the fellows should be done every four months or end of each advanced rotation module.	☒ Yes ☐ No
6.	Every four months, a complete evaluation report should be submitted to the EACTAIC Education Chair. [https://www.eactaic.org/wp-content/uploads/2020/11/EACTA-Three-Monthly-Evaluation_09.11.2020.pdf]	☒ Yes ☐ No
7.	A portfolio/logbook will be performed monthly and signed by the programme director	☒ Yes ☐ No
8.	The programme director and a minimum of two faculty members declare in writing that they will dedicate sufficient time (i.e., minimum 10% of working time) to attend to their responsibilities. 4 hours per week	☒ Yes ☐ No
9.	At least one of the faculty is transesophageal echocardiography (TOE) certified (e.g., EACVI-EACTAIC joint accreditation, Association of Cardiothoracic Anaesthesia and Critical Care (ACTACC) or National Board of Echocardiography (NBE)).	☒ Yes ☐ No
10.	The hosting centre has:	
10.1.	Available intensive care unit (ICU) of postoperative anaesthesia care unit (PACU) for cardiac, thoracic and vascular patients.	☒ Yes ☐ No
10.2.	Designed and equipped post-anaesthesia care unit (PACU), high-dependency unit (HDU), or an ICU incorporating a PACU.	☒ Yes ☐ No
10.3.	Available emergency room (ER) 24 hrs. a day (24/7).	☒ Yes ☐ No
10.4.	Operating rooms (ORs) to be adequately equipped for cardiac, thoracic and vascular procedures (advanced haemodynamic monitoring, TOE, neuromonitoring, coagulation monitoring, blood-saving (salvage) devices).	☒ Yes ☐ No
10.5.	Available an outpatient Clinic for perioperative evaluation of patients undergoing cardiac, thoracic, and vascular procedures	☒ Yes ☐ No

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10.6.	24-hours acute pain service available for patients undergoing different cardiac, thoracic, and vascular procedures	☒ Yes ☐ No
10.7.	Available Meeting Rooms	☒ Yes ☐ No
10.8.	Available classrooms with visual and other educational aids	☒ Yes ☐ No
10.9.	Available study areas for fellows	☒ Yes ☐ No
10.10.	The volume of cases and training in the followings;	
10.10.1.	A minimum of 100 cardiac cases using cardiopulmonary bypass (CPB) during the basic training year will be available per fellow per year.	☒ Yes ☐ No Click here to
10.10.2.	30% of the cases are non-coronary artery bypass grafts (CABG).	☒ Yes ☐ No Click here to
10.10.3.	An "optional" 3-to-6-month advanced cardiac anaesthesia training module will be available for each fellow if the centre offers the advanced training year.	☐ Yes ☒ No basic training
10.10.4.	A programme director should personally perform a minimum of 100 cardiac anaesthesia cases per annum.	☒ Yes ☐ No
10.10.5.	Training in thoracic anaesthesia (A minimum of 25 cases per fellow or 1.5 months during the basic training year and an "optional" 3-to-6-month advanced training module if the centre offers the advanced training year).	☒ Yes ☐ No
10.10.6.	Training in supra-inguinal vascular anaesthesia. (A minimum of 25 cases or one month per fellow during the basic training year and an "optional" 3-to-6-month advanced training module if the centre offers the advanced training year).	☒ Yes ☐ No
10.10.7.	Training in interventional vascular (TEVAR, EVAR) and neuromonitoring.	☒ Yes ☐ No
10.10.8.	Accessibility for training in a dedicated intensive care unit (ICU) or postoperative anaesthesia care unit (PACU) for caring of cardiac, thoracic and vascular patients for one month during the "basic" training year and an "optional" 3-to-6-month advanced training module if the centre offers the advanced training year.	☒ Yes ☐ No
10.10.9.	Training in anaesthesia for interventional catheterization laboratory procedures for two weeks during the "basic" training year and longer if the centre offers an advanced training module in cardiac anaesthesia.	☒ Yes ☐ No
10.10.10.	Training in electrophysiology study (EPS) procedures (pacemakers, implanted cardioverter/defibrillator (ICDs), mapping, ablations, etc.).	☒ Yes ☐ No
10.10.11.	Training in the Extracorporeal perfusion technology with a perfusionist in the management of patients who have mechanical support in situ, e.g., intra-aortic balloon pump (IABP), extracorporeal membrane oxygenation (ECMO) and ventricular assist device (VAD) for two weeks during the basic training year.	☒ Yes ☐ No
10.10.12.	Training in the Echocardiography Lab mainly on transthoracic echocardiography for two weeks during the basic training year.	☒ Yes ☐ No
10.10.13.	Basic training in TOE will be available.	☒ Yes ☐ No
10.10.14.	Advanced training in TOE will be available.	☒ Yes ☐ No
10.10.15.	Accessibility for training on the basic and/or clinical research	☒ Yes ☐ No
10.10.16.	These requirements will be applied to all new fellows	☒ Yes ☐ No

Decision ☐ Approve ☐ Reject
Conditions ☐ Yes ☐ No

If yes, please define Click here to enter text.

Please fill in all required fields and send them to eactaic@aimgroup.eu and EACTAIC Education Chair

Cardiothoracic and Vascular Anaesthesia Fellowship Programme

Department of Cardiothoracic Anaesthesia
University Hospitals Plymouth NHS Trust

https://southwestctanaesthesia.com

Contents

Abbreviations

CTVA – Cardiothoracic and vascular anaesthesia
UK – United Kingdom
TOE – Transoesophageal echocardiography
POC – Point of care
TEG – Thromboelastography
UHP – University Hospital Plymouth
CICU – Cardiac Intensive Care Unit
EACTA – European association of cardiothoracic anaesthetists
SCTS – Society of cardiothoracic surgeons
BSE – British society of echocardiography
CPET – Cardiopulmonary exercise testing
EVAR – Endovascular aortic aneurysm repair
TEVAR – Thoracic endovascular aortic aneurysm repair
PICCO – Pulse contour cardiac output monitoring
SvO_2 – Mixed venous oxygen saturation
NIRS – Near infrared spectroscopy
EEG – Electroencephalogram
DHCA – Deep hypothermic cardiac arrest
VATS – Video-assisted thoracoscopic surgery
RATS – Robotically assisted thoracoscopic surgery
EBUS – Endobronchial ultrasound-assisted biopsy
ERAS – Enhanced recovery after surgery
IABP – Intra-aortic balloon pump

1. Aims and Objectives

The Cardiothoracic and Vascular Anaesthesia (CTVA) Fellowship Programme at University Hospitals Derriford (UK) has been established with the aim of providing exemplary tertiary clinical experience tailored to Anaesthetists who plan to become experts in the perioperative management of patients undergoing complex cardiothoracic and vascular procedures.

Upon completion of the CTVA Fellowship Programme the Fellow will have acquired the following:

1. Knowledge and skills to provide independent perioperative anaesthetic care with subspecialty expertise in cardiothoracic and vascular anaesthesia.
2. Developed advanced expertise in adult perioperative transoesophageal echocardiography (TOE), including EACVI theoretical exam, advanced intraoperative haemodynamic measurement and structural assessment including 3D echo.
3. Experience in managing complex intraoperative haematological disturbances including massive haemorrhage and post-cardiopulmonary bypass coagulopathy with the aid of advanced point-of-care (POC) testing using thromboelastography (TEG)
4. Participated actively in Departmental meetings, morbidity and mortality reviews and regular journal clubs.

2. Sponsoring Institution

The Department of Cardiothoracic Anaesthesia at University Hospital Plymouth (UHP) manages the advanced training program accredited by the Royal College of Anaesthetists contributing to UK trainees completing their formal training in Anaesthesia to consultant level.

As an additional part of postgraduate medical education, UHP will assume responsibility for the CTVA Fellowship Programme and ensure that the Programme Director has sufficient protected time

and financial support to dedicate towards the educational and administrative responsibilities of the Programme.

3. Cardiothoracic Anaesthesia Department

Dr Zuzana Blazejova – Programme director, Consultant Cardiothoracic Anaesthetist
Dr Sean Edwards – Program Supervisor, Consultant Cardiothoracic Anaesthetist
Dr Patrycja Jonetzko - Consultant Cardiothoracic Anaesthetist
Dr Craig Dunlop - Consultant Cardiothoracic Anaesthetist
Dr Jennifer Hares - Consultant Cardiothoracic Anaesthetist

For more detailed information please see: https://southwestctanaesthesia.com/01449a4d57aa404293ce5c62410b212d

4. Organisation

Completion of the programme will be recognised by Department of Cardiothoracic & vascular Anaesthesia at UHP in conjunction with the European Association of Cardiothoracic Anaesthesiology and Intensive Care (EACTAIC). Criteria for EACTAIC certification will be determined and communicated prior to the start of the Fellowship commencement date and their fulfilment of the prespecified criteria will be mandatory to receive joint certification.

5. Programme Duration and Structure

The CTVA Fellowship is offered for a duration of 12 months which includes a 1 month rotation on the Cardiac Intensive Care Unit

(CICU), 6 months in cardiac surgery, 6 weeks in thoracic theatres, 1 month in vascular theatres and additional speciality allocation in the echo lab for 2 weeks, interventional cardiology suite for 2 weeks and 2 weeks with our perfusion team. A maximum of two applicants per year may be accepted into the programme to facilitate high quality teaching and supervision of the successful candidates.

Fellowship Year 1

[5.1] Month 1 - Introduction

- Introduction to the clinical CTVA division, mentored by Faculty members and the Program Director
- Collaborating with the fellow to organise the following activities for the 12-month fellowship program:
    1. Attendance at medical education programmes in the CTVA department including:
        - Weekly Cardiothoracic teaching organised by Cardiothoracic Surgeons
        - Monthly "Continuing Medical Education" meetings
        - Morbidity and mortality meetings
        - Journal club where current cardiothoracic articles are reviewed and presented
        - Teaching tailored towards Intensive Care Medicine training

    2. Attendance at echocardiography training including consideration of attending the following educational courses and sessions:
        - In-house TTE and TOE simulator training using our state of the art TOE simulator

- Regular bi-monthly TOE training sessions with a diverse range of topics including diastolic dysfunction and 3D echocardiography
- Annual EACTA Echo meeting
- Participation in national/international cardiac and thoracic conferences (e.g., Annual EACTA, SCTS, BSE)
- Considering a date to sit the EACVI TOE theoretical examination depending on prior TOE skillset.

[5.2] Month 2-7 – Cardiac Surgery

Clinical work as a CTVA team member, supervised by a consultant faculty member. This phase of the fellowship program will include:

- Cardiac patient preoperative evaluation and optimization based on risk indices and pre-operative testing. These include spirometry, cardiopulmonary exercise testing (CPET), stress echocardiography and attendance at various multidisciplinary team meetings to facilitate shared decision making with the patient.
- Anaesthesic care for standard cardiac surgical (e.g., CABG and single valve surgery, endocarditis repair and ascending aortic surgery)
- Post-anaesthesia care and pain management including "fast track" of suitable patients to facilitate early discharge.
- Advanced cardiac life support (ACLS) training and engagement with other simulation scenarios using our in-house simulator
- Acquisition of knowledge, skills and practice in advanced haemodynamic monitoring including the following:
  - Swan-ganz derived cardiac output using PA-catheter
  - Thermodiliutional cardiac output using "PICCO" catheter
  - Continuous SvO_2 assessment using bespoke SvO_2 catheter
  - Multiple arterial pressure measurements

- Lumbar drainage with cerebrospinal fluid (CSF) pressure measurement
- Acquisition of basic TOE skills using the in-house TTE / TEE simulator and in the operating room.
- Acquisition of knowledge, skills and familiarisation with neuromonitoring techniques and interpretation of results including Near-infrared spectroscopy (NIRS) and continuous electroencephalogram (EEG)

- Acquisition of knowledge, skills and practice of point-of-care coagulation testing and interpretation of results using TEG-6 POC monitoring.

Continuous evaluation of the Felloẃs progress by the programme directors will include regular meetings where discussion of goals, achievements and their theatre case-log and echo log will be evaluated. Formal feedback forms will be completed for the fellow to keep as a record of their progress.

Towards the end of the 6 month period increasingly complex exposure will be provided including open ascending aortic procedures, minimally invasive mitral valve repair, emergency, re-do and combined cardiac surgery, thoracic aortic surgery with deep hypothermic circulatory arrest (DHCA), transcatheter aortic valve implantation (TAVI), TEVAR, hybrid procedures.

[5.3] Month 8-9 – Cardiac Intensive Care Unit (CICU)

On-call duties will include cover of the CICU as well as involvement in emergency out-of-hours cases such as aortic dissections, tamponade, infarcted ventricular septal defects (VSD's) and other emergency cardiothoracic cases. Note that all out of hours operating is performed with the on-site support and presence of cardiothoracic

anaesthesic consultants and fellow engagement is purely in an educational capacity.

Daily working on the CICU includes engagement in educational ward rounds, attending weekly "Long stay MDT" meetings, siting and interpreting advanced haemodynamic monitoring modalities and communicating with patients and their relatives.

[5.4] Month 9 – 10.5 – Thoracics (6 weeks)

Rotation in the Division of Thoracic Anaesthesia for a 6 week period (depending on pre-Fellowship thoracic anaesthesia qualifications and experience) with a focus on the management of high-risk patients. Our thoracic service is focussed around "Enhanced Recovery After Surgery" (ERAS) which involves thorough MDT and work-up pre-operatively, minimally invasive surgical techniques and multi-modal analgesic therapy to facilitate early mobilisation and discharge from hospital.

Our thoracic service includes lobectomy via open thoracotomy, video-assisted thoracoscopic surgery (VATS) and robotically assisted thoracoscopic surgery (RATS). We also perform "shared-airway" procedures including endobronchial ultrasonic biopsy (EBUS), rigid bronchoscopy, tracheal and endobronchial stenting as well as thymectomy via open and robotically-assisted routes. The fellow will also have the opportunity to anaesthetise patients for open oesophagectomy via the "Ivor Lewis" method.

The fellow will become proficient in siting and troubleshooting double-lumen tubes and bronchial blockers to achieve one-lung ventilation. There is also the opportunity to become proficient at various regional anaesthetic block techniques including paravertebral, erector-spinae, serratus anterior and thoracic epidural in selected cases.

Independent performance and diagnostic interpretation of standard TOE images in the operating room under the supervision of accredited consultants. TOE experience will include acquisition of basic 3D images, assessment of LV and RV function, assessment of valvular pathology as well as advanced measures of cardiac output and diastolic dysfunction. During the fellowship year a TOE case logbook will be mandatory in order to gather cases for formal TOE accreditation via one of the internationally recognised examination routes.

[5.5] Month 10-11 – Vascular

Rotation in the Division of Vascular Anaesthesia for a 1-month period (depending on pre-Fellowship Vascular anaesthesia qualifications and experience) This section of the rotation will be supervised by anaesthetists in the "General" department of Derriford Hospital who we are in close working collaboration with.

This section of the rotation will include vascular patient preoperative evaluation and optimization based on risk indices, MDT discussion and additional tests such as CPET where appropriate. Anaesthetic care for standard vascular procedures will include carotid endarterectomy (including awake under local anaesthetic), abdominal aortic aneurysm repair and peripheral revascularisation procedures.

[5.6] Month 11-12 – Additional Rotations

As part of the EACTAIC fellowship accreditation process the fellow will have access to rotations within the echo lab. This will be over a 2 week period which will likely be interspersed with the other rotations throughout the year. We have availability for TTE, TOE and

DSE lab allocation depending on the fellow's logbook and preferences.

We have secured agreement for a 2 week placement at a registered UK ECMO center to allow to fellow exposure to both VA and VV ECMO. This can be dovetailed into the fellowship year at a time convenient for both the fellow and the accepting center.

Aside from TAVI and TEER procedures in the cath lab there will be additional opportunity for a formal 2 week placement in the cath lab for procedures requiring anesthetic involvement. These include pericardial drainage, ablation procedures, cardioversions and complex PCI.

6. Requirements for Selection as a Fellow

Candidates must be registered with the General Medical Council (GMC) and demonstrate proficiency in the English language (IELTS or OET as per GMC requirements) Please see the GMC website for up to date guidelines on working in the UK if applying from overseas. Candidates should have completed their undergraduate qualification in Medicine (MBChB, MD or equivalent).

7. Tasks and Responsibilities of the Fellow

The CTVA Fellowship provides education and training in the perioperative care of adult patients undergoing cardiac, vascular and thoracic surgery as well as interventional cardiology procedures. The

Fellow will provide routine clinical patient care and participate in clinical conferences and defined postgraduate educational activities as per the “Program Structure” in Section 5.

The Fellow will be undergo teaching and training in transoesophageal echocardiography through attendance of formal courses, utilizing the in-house TTE / TOE simulator, and during bedside teaching in the operating room and CICU. The Fellow should assume an active part in the preparation and presentation of difficult cases to discuss with colleagues

8. Evaluation

The Fellow’s progress will be evaluated and discussed with the Fellow every 4 months by the programme directors. The Fellow is required to maintain an accurate procedure logbook both for cases and for TOE experience.

The Fellow’s professional attitude, knowledge and clinical judgment will be assessed as well as his/her practical skills, social interaction and teamworking, efficiency of list management and performance in emergency clinical scenarios. The fellow will be involved in quality assurance and audit activity that occurs within the CTVA department.

9. Faculty

Both the programme director and the supervisor are board-certified in Anaesthesia and have the requisite specialty expertise in cardiothoracic anaesthesia at Consultant level. The Programme director has certification in Intensive Care Medicine as well as cardiothoracic anaesthesia.

The Programme supervisor has certification in adult perioperative TOE (EACVI) as well as Anaesthesia (FRCA). Both are current members of the Anaesthetic faculty with educational and administrative experience. The programme director and supervisor will be supported by other senior anaesthetists within the CTVA team who will also function as mentors and educators in daily clinical practice.

Dr Zuzana Blazejova

Consultant Cardiothoracic Anaesthetist

Director of the Cardiothoracic and Vascular Anaesthesia Fellowship programme

Department of Cardiothoracic Anaesthesia UHP, University Hospitals Plymouth, Derriford Rd, Plymouth, PL6 8DH, United Kingdom

Phone: +44 7539 615707

Email: zuzana.blazejova@nhs.net

Dr Sean Edwards MBChB FRCA EACVI

Consultant Cardiothoracic Anaesthetist

Supervisor of Cardiothoracic and Vascular Anaesthesia Fellowship programme

Department of Cardiothoracic Anaesthesia UHP Plymouth.

University Hospitals Plymouth, Derriford Rd, Plymouth, PL6 8DH, United Kingdom

Email: sean.edwards1@nhs.net

10. Application Process

Applications are welcome throughout the year. The applicant should email a cover letter to the programme director stating her/his interest in the position, together with the following information:

1. Letter of motivation
2. Current Curriculum Vitae (CV)
3. National Board Certification in Anaesthesia (and other sub-specialties if applicable such as ICM)
4. Residence and Employment Permit for the United Kingdom (if applicable)
5. List of Publications and Presentations

For further information please contact:

Department of Cardiothoracic Anaesthesia
Adult Cardiothoracic and Vascular Fellowship Programme
University Hospitals Plymouth
Derriford road
Plymouth PL6 8DH
United Kingdom
Email: zuzana.blazejova@nhs.net
Phone: +44 7539 615707

11. Fellowship Contract and Financial Agreement

The Fellowship contract consists of the employment contract for full time staff Anaesthetist (GMC registered in UK) as offered by University Hospitals Plymouth NHS Trust. The salary and benefits are according to the NHS pay scale depending on person qualification and experience.

12. Appendix 1 – Fellowship Resources

[12.1] In-House Resources

University Hospitals Plymouth NHS Trust is the main teaching hospital in the Southwest of the United Kingdom. It is a highly active centre for clinical medicine, medical education, research and provides all of the tertiary specialist services for the Southwest including Cardiothoracics and Neurosurgery.

The Cardiothoracic Department consists of cardiac surgery, thoracic surgery, vascular surgery as well as cardiothoracic anaesthesia. Anaesthesia for cardiology procedures and vascular procedures are under the management of the General Anaesthesia Department which we work with in close collaboration.

Anaesthetic Faculty and the consultant body have extensive experience in perioperative care for surgical and interventional / "hybrid" treatment of all types of cardiovascular pathologies. Non-invasive and invasive diagnostic and therapeutic modalities are readily available, which include, but are not limited to, transoesophageal and transthoracic echocardiography, cardiovascular, thoracic and neuroimaging (CT, MRI, PET), cardiac stress testing, cardiac catheterization and catheter-based interventions including right and left heart catheterisation, electrophysiology lab and interventions, intraoperative neuromonitoring and interventional neuroradiology.

The Fellow will have the opportunity to work in the department's three core cardiac surgery operating rooms, one vascular surgery operating theatre, one thoracic surgical theatre as well as one emergency surgical theatre, one electrophysiology lab, three cardiac catherization labs, and in the CICU which consists of 16 beds.

The CICU provides post-operative care for all cardiac surgical patients, selected thoracic surgical patients and selected vascular surgical patients who require ICU admission e.g. AAA – repair. Our

CICU is a modern facility with negative pressure side rooms together with a dedicated “High-dependency” HDU area.

[12.2] Fellowship education

- In-house TTE / TOE simulator training sessions
- Daily bed-side teaching on the CICU
- TOE teaching in the operating theatre under direct consultant supervision
- Daily scheduled operating list allocation to ensure a diverse variety of case exposure
- Weekly departmental educational sessions and TOE case discussions with faculty
- Monthly morbidity & mortality meetings with the opportunity to present cases from an anaesthetic perspective
- Monthly didactic TOE/TTE teaching sessions.
- Yearly attendance of one dedicated Echo course (national at BSE, international at EACTA/EACVI) is encouraged
- Attendance at annual cardiovascular anaesthesia educational or Scientific Meetings (SCTS, EACTA etc) is also encouraged

13. Appendix 2 - Surgical procedures & interventions

University Hospitals Plymouth NHS Trust provides the following Cardiothoracic and Vascular surgeries:

1. Vascular Surgery

- Ruptured AAA - 12 (4 EVAR)
- Infrarenal AAA (elective) - 29 (16 EVAR)
- Lower limb amputation – 22
- Lower limb revasularisation – 149
- Carotid endarterectomy - 27

2. Cardiac Surgery (April 2022 to April 2023)

- Aortocoronary bypass grafting – 437
- Aortic valve replacement – 174
- Ascending aorta and valve replacement – 37
- Transapical TAVI – 22
- Transfemoral TAVI – 264
- Mitral Valve replacement – 63
- Mitral Valve repair – 43
- Mini invasive Mitral valve procedures – 6
- IABK numbers - 10

3. Interventional Cardiology and Rhythmology

- Transfemoral aortic valve implantation (TF-TAVI) - 132
- “Pascal” Transcatheter “edge to edge” repair – 3
- “Mitra-clip” Transcatheter “edge to edge” repair – 2 (4 booked)
- Intracardaic defibrillator (ICD) implantation / explantation - 145
- Arrythmia ablation and cartography - 262
- Pacemaker implantation (VVI, DDD, BiV) - 459
- Pacemaker lead explantation - 24

4. Thoracic Surgery (data from 2022)

Elective procedures - 407

- Lung resection 272
- Rigid bronchoscopy 36
- Pleural procedures 28
- Mediastinal procedures (Thymectomy etc..) 20
- Ivor Lewis Oesophagectomy 18

Urgent procedures – 131

- Trauma 65
- Drainage of empyema or infection 45
- Others 21

[12.4] Cardiac Anaesthesia Exposure

Fellows are supervised and trained to assume graded and progressive responsibility in the perioperative anaesthetic management of adult patients undergoing major Cardiothoracic and Vascular Surgery. The aim of the programme is to enable them to provide, independently, specialized cardiac anaesthesia care at the consultant level in both elective and emergent scenarios by the end of the fellowship program.

The training includes education in pre-operative assessment and intraoperative anaesthesia management in the operating theatre, interventional suites and remote areas.

Our dedicated perfusion team will provide training on all aspects of cardiopulmonary bypass relevant to the cardiac anaesthetist

Anticoagulation and transfusion management; of post- anaesthesia care, pain management and cardiac life support.

Adequate exposure will be provided to a variety of cardiac and thoracic aortic surgeries performed on- and off-cardiopulmonary bypass, including minimally invasive cardiac surgery on both the aortic and mitral valves. In addition the fellow will accumulate a high caseload of transcatheter interventions, pacemaker use and surgical as well as interventional / EP treatment of cardiac arrhythmias during the cardiology attachment of their fellowship.

Fellows will receive in-depth theoretical and practical training and supervision in TOE, with the aim of advanced level proficiency and completion of the EACVI theory exam. In our practice, nearly every adult undergoing cardiac surgery receives a pre- and postsurgical TOE exam so exposure to cases is high. The fellow will perform and document their TOE exams with progressive independence and

review each with a senior faculty colleague at regular intervals.

Training will be provided in perioperative coagulation monitoring (laboratory and point-of-care including ACT and TEG-6) and the benefits and drawbacks of an algorithm-based perioperative management tool will be explored. Our management of coagulopathy includes the use of factor concentrates and fibrinogen concentrates as well as close collaboration with the haematology service for challenging cases.

Monitoring and protection of CNS integrity and function is a high priority in our practice. Fellows will be educated in the regular use and interpretation of an array of neuromonitoring techniques including EEG/processed EEG, NIRS-based cerebral and tissue oximetry and in the principles of CNS protection via appropriate blood flow, temperature and blood gas management. Emboli reduction and antegrade / retrograde cerebral perfusion techniques will also be employed in selected cases.

[12.5] Vascular Anaesthesia Exposure

Fellows will obtain consultant level proficiency in the anaesthetic management of adults undergoing major vascular surgery. This encompasses all typical vascular surgeries such as carotid endarterectomy under local or general anaesthesia, open repair of the abdominal aorta including ruptured aneurysms, and endovascular repair of the abdominal aorta (contained rupture, aneurysms, dissections) as well as TEVAR for complex Type B Aortic dissections.

[12.6] Thoracic Anaesthesia Exposure

Clinical work and training of fellows includes anaesthetic management of adults undergoing thoracic procedures. This includes video-assisted thoracoscopic surgery (VATS), open thoracotomies and robotic surgery. The fellow will achieve expertise at consultant level in lung isolation and single-lung ventilation techniques with the use of double- lumen endotracheal tubes, various types of bronchial blockers, and with associated imaging modalities such as fiberoptic bronchoscopy and continuous integrated endoscopic airway visualization. They will use (ultrasound-guided) paravertebral blocks, erector spinae plane blocks, serratus plane blocks and “PECS” blocks for perioperative anaesthesia and analgesia optimisation.

[12.7] Intensive Care Medicine

The Department of Cardiothoracic Anaesthesia has its own designated CICU with 16 beds. Patients undergoing complex Cardiology and Vascular procedures are usually managed in the General ICU which is under the governance of the General Anaesthesia Department.

During their CICU rotation the fellow will be responsible for the care of patients under the guidance and close supervision of ICU consultants. They will have the opportunity to develop skills including but not limited to;

- Management of postoperative hemodynamic disturbances, fluid balance and metabolic derangement
- Management of epicardial and temporary pacemakers
- Management and troubleshooting of chest drains (including placement)
- Invasive and non-invasive respiratory support including high-flow nasal oxygenation techniques
- Fast-track management of selected patients via a dedicated ERAS pathway

- Sedation and weaning protocols in complex long stay patients
- Intermittent and continuous renal replacement therapy
- Management of intra-aortic balloon pump (IABP)
- Clinical neurological and delirium assessment
- Interpretation of neurological, thoracic and vascular imaging via multiple modalities.

14. Appendix 3 – Proposed Timetable of Activity

Proposed EACTAIC Fellow Rotation

Cardiac Rotation					
Placement	Monday	Tuesday	Wednesday	Thursday	Friday
AM	Cardiac	*Rest*	Cardiac	Cardiac	TAVI
PM	Cardiac	*Rest*	Cardiac	Cardiac	TAVI

Thoracic / Vascular /+ Additional Rotation					
Placement	Monday	Tuesday	Wednesday	Thursday	Friday
AM	EP Lab / Vascular	Rest	Robotic surgery	Teaching	Shared airway
PM	EP Lab / Vascular	Rest	Robotic surgery	TOE clinic	Thoracics

ICU Rotation

"Red Week"					
Placement	Monday	Tuesday	Wednesday	Thursday	Friday
AM	CICU	CICU	CICU	TOE teaching	Rest
PM	CICU	MDT	CICU	CICU	Rest
"Green Week"	Friday	Saturday	Sunday		
AM	CICU	CICU	CICU		
PM	CICU	CICU	CICU		

15. Appendix 4 – Departmental References

Dr Craig Holdstock BMBS BSc PGCE FRCA
Consultant Cardiothoracic Anaesthetist - University Hospitals Plymouth NHS Trust
craigholdstock@nhs.net

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SGLT-2 Inhibitors Guideline on Cardiac Intensive Care Unit 2023
Pre-assessment (Consolidated Guidance)

Review and update section on co-existing medical conditions 2020

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Diving Medicine for Anaesthetists - Part II. C Edge, P Wilmshurst
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Dr Peter Robbins FRCA FICM
Consultant Cardiothoracic Anaesthetist

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Dr Mohandas Jayarajah

Consultant Cardiothoracic Anaesthetist

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Dr Patrycja Jonetzko, Lek med (Hons) MD DTMH FRCA

Consultant Cardiothoracic Anaesthetist
University Hospitals Plymouth NHS Trust

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Dr Sean Edwards

Consultant Cardiothoracic Anaesthetist
MBChB FRCA EACVI

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Dr Zuzana Blazejova

Consultant Cardiothoracic Anaesthetist

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First Clinical Experience with the Pressure Sensor-based Autoregulation of Blood Flow in an Artificial Heart. Authors: Ivan Netuka, Yuriy Pya, Bastien Poitier, Peter Ivak, Miroslav Koňařík, Jean Christophe Perlés , Zuzana Blažejová, Hynek Říha, Makhabbat Bekbossynova, Assel Medresova , Piet Jansen , Christian Latrémouille