European Association of Cardiothoracic Anaesthesiology

Application for Hosting EACTA Cardiothoracic and Vascular Anaesthesia Fellowship Programme

1. Fellowship Information

Basic Fellowship in Cardiothoracic and Vascular Anaesthesia

Advanced Fellowship in Cardiothoracic and Vascular Anaesthesia

2. Institution Name

Institute of Anaesthesiology, Heart and Diabetes Center Bad Oeynhausen, Ruhr-University Bochum, Germany

Address: Georgstrasse 11, 32545 Bad Oeynhausen, Germany , vvondossow@hdz-nrw.de; Tel.-Nr: +495731971128

Website:

Country: Germany | City: Bad Oeynhausen

3. Chair Name

First name: Vera | Last name: von Dossow

Email: vvondossow@hdz-nrw.de | Phone: 4.95732E+11

4. Programme Director

First name: Vera | Last name: von Dossow

Board Certification(s): Anesthesiology, Intensive Care Medicine, Transplantation Medicine

Title/Affiliation: Univ.-Prof. Dr.

Number of original publications: 78

EACTA membership	Yes	If yes, membership's number	102203
ESA membership	Yes	If yes, membership's number	1801501
Societies membership	Yes	If yes, membership's number	DGAI

Email: vvondossow@hdz-nrw.de | Phone: 4.95732E+11

Mailing Address: Institute of Anaesthesiology , Heart and Diabetes Center Bad | Fax:

Street: Georgstrasse 11

Country: Germany | Region:

Zip code: 32545 Bad Oeynhausen

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

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

No | 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: B2 | Comments:

Specific requirements towards the attending fellow:

Candidates for the fellowship program should have finished their residency training. The fellow must be board certified or board eligible according to European residency standards and must be proficient German language (B2 level is required) in order to apply for German work –permission as a physician. In addition, German approbation (licence to practice) is obligatory. Otherwise clinical duties as a member of the cardiac anaesthesia team are not possible. The fellow must obtain all working requirements and registrations on his /her own expense.

6. General Programme Information

Aims, goals and objectives of the Fellowship Programme

The OWL Fellowship programme has been restructed according to the 2nd edition of published EACTA-curriculum see the attached new HDZ-Fellowship-Program

Preferred Duration: * Of note, the training period should not be interrupted by frequent and/or prolonged periods of secondment to other divisions / departments.

Preferred Programme Training: Start: July 1 | End: June 31

Number of Positions Per Year: 6 seats (3 basic/3 advanced) | Type of fellowship training available: Clinical / Basic Research

If clinical, will the fellows be allowed to work with the patients under supervision: Yes

Comments: Our center was accreditated in March 2019. Due to high requests for the EACTA-fellowship training we incraesed in accordance with the educational board the fellow-positions up to 3 for basic and 3 for advanced per year. We hereby state, that we have enough capacity of patient volume (more then 7500 patients/year) and our faculty together with the program director has enough time to occupy on 6 fellows.In case of german approbation and after completion of the residency programme the fellow can work under supervision. Depending on the fellow's abilities and skills he/she can do on-call clinical duties during night and weekends. There is always a faculty member on call for back-up.

Offered Advamced Training: Yes

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
Vera von Dossow	Yes	yes	Intensive Care	vvondossow@hdz-nrw.de	Institute of anaesthesiology, Heart and Diabetescentre Bad Oeynhausen, address see above
Nikolai Hulde	Yes	yes	EACVI-TEE	nhulde@hdz-nrw.de	Institute of anaesthesiology, Heart and Diabetescentre Bad Oeynhausen, address see above
Astrid Bergmann	Yes	yes	EACVI-TEE	abergmann@hdz-nrw.de	Institute of anaesthesiology, Heart and Diabetescentre Bad Oeynhausen, address see above
Ioana Belciu	Yes	yes	EACVI-TEE	ibelciu@hdz-nrw.de	Institute of anaesthesiology, Heart and Diabetescentre Bad Oeynhausen, address see above
Helmut Warkentin	Yes	yes	Intensive Care	hwarkentin@hdz-nrw.de	Institute of anaesthesiology, Heart and Diabetescentre Bad Oeynhausen, address see above
Gunung Sasono	Yes	Yes	Intensive Care	gsasono@hdz-nrw.de	Institute of anaesthesiology, Heart and Diabetescentre Bad Oeynhausen, address see above

Publications lists of the faculty's members in PubMed

1.von Dossow V, Welte M, Zaune U, Martin E, Walter M, Rückert J, Kox WJ, Spies CD. Thoracic epidural anesthesia combined with general anesthesia: the preferred anesthetic technique for thoracic surgery. Anesth Analg 2001; 92: 848-54

2.von Heymann C, Langenkamp J, Dubisz N, von Dossow V, Schaffartzik W, Kern H, Kox WJ, Spies CD. Posttraumatic immune modulation in chronic alcoholics is associated with multiple organ dysfunction syndrome. J Trauma 2001; 52: 95-103

3.Wauer H, Groll G, von Dossow V, Mäding K, Becher G, Lachmann B, Kox WJ. Experimental results of the „open-lung concept" Anaesthesiol Reanim 2002;27:32-7

4.von Dossow V, Schilling C, Beller S, Vargas Hein O, von Heymann C, Kox WJ, Spies CD. Altered immune parameters in chronic alcoholic patients at the onset of infection and of early septic shock. Critical Care 2004; 8: R312-321

5.Spies CD, von Dossow V, Jentschman G, El-Hilali R, Egert J, Fischer M, Schröder T, Höflich C, Sinha P, Paschen C, Mirsalim P, Brunsch R, Hopf J, Marks C, Wernecke KD, Pragst F, Ehrenreich H, Müller C, Tonnesen H, Oelkers W, Rohde W, Stein C, Kox WJ. Altered cell-mediated immunity and increased postoperative infection rate in chronic alcoholic patients. Anesthesiology 2004; 100:1088-100

6.Vargas Hein O, Misterek K, Tessmann JP, von Dossow V, Krimpove M, Spies CD. Time course of endothelial damage in septic shock: prediction of outcome. Crit Care 2005; 9: R307-314

7.Sander M, von Heymann C, Foer A, von Dossow V, Grosse J, Dushe S, Konertz WF, Spies CD. Pulse contour analysis after normothermic cardiopulmonary bypass in cardiac surgery patients. Crit Care 2005; 9:R729-34

8.von Dossow V, Rothard K, Wauer H, Redlich U, Vargas Hein O, Kox WJ, Spies CD. Circulating immune parameters predicting the progression of hospital-acquired pneumonia to septic shock. Critical Care 2005; 9: R662-669

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10.von Dossow V, Bähr N, Moshirzadeh M, von Heymann C, Braun JP, Vargas Hein OV, Sander M, Wernecke KD, Konertz W, Kox WJ, Spies CD. Clonidine prevents deterioration of T-cell mediated immunity after cardiac surgery. Anesth Analg 2006; 103:809-14

11.Breuer P, von Dossow V, von Heymann C, Griesbach M, von Schickfus M, Mackh E, Hacker C, Elgeti U, Konertz W, Wernecke KD, Spies CD. Effects of preoperative carboanhydrates on ASA physical status III-IV cardiac surgery patients. Anesth Analg 2006; 103:1099-108

12.Sander M, von Heymann C, von Dossow V, Spaethe C, Konertz WF, Jain U, Spies CD. Increased interleukin-6 after cardiac surgery predicts infection. Anesth Analg 2006; 102:1623-9

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25.Sander M, Neumann T, von Dossow V, Schoenfeld H, Lau A, Eggers E, Spies C. Alcohol use disorder: risks in anesthesia and intensive care medicine. Internist 2006; 332: 334-6
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Check if each of the following is available at the host centre.

Resources	Yes / No	Number	n
Total cardiothoracic and vascular ward beds	Yes	1	500
Number of ICU beds dedicated to CTV patients	Yes		61
Is there an emergency department in which cardiothoracic patients are managed 24 hours a day	No		
An adequately designed and equipped post-anaesthesia care unit for cardiothoracic patients located near the operating room suite?	Yes	4	
Is there monitoring and advanced life support equipment representative of current levels of technology?	Yes	7	
Hybrid Operating Rooms	Yes	4	2025 one additional hybrid OR plannned
Cardiac Operating Rooms	Yes	7	
Thoracic Operating Rooms	Yes	1	
Vascular Operating Rooms	Yes	1	2025 one additional vascular OR planned
Catheterisation Labs	Yes	5	
Electrophysiology Labs	Yes	3	
Pulmonology Labs	Yes	1	
Interventional Vascular Suits	Yes	1	
Separate CVICU Facility	Yes	1	
Animal Laboratory for research purposes	Yes	1	
Outpatient Clinic for perioperative evaluation of patients undergoing cardiothoracic and vascular procedures	Yes	1	
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	2	
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	1	
Cardiopulmonary scanning procedures	Yes	1	
Pulmonary function testing	Yes	1	
Computers and IT support	Yes	7	
Appropriate on-call facilities for men and women	Yes	7	

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	**2000**
Cardiac Surgery without CPB	**2000**
Minimally-Invasive Cardiac Procedures	**500**
Interventional Cardiac Catheterization (e.g. TAVI, Mitraclip, ASD)	**1000**
Electrophysiology Lab (e.g. mapping, ablation, pacemakers, ICDs)	**1000**
Robotic Cardiac Surgery	**0**
Heart, Lung, and Heart/Lung Transplants	**69/5**
ECLS, ECMO, VAD Procedures	**215/215/110**
Echocardiography Lab	**2000**
Thoracoscopic Surgery	**100**

Pulmonary Resection	50
Oesophageal Surgery	0
Tracheo-Bronchial Surgery	5
Interventional Pulmonology Procedures	0
Major Vascular Procedures	250
Neurological monitoring during major vascular surgery	200
Interventional Vascular Procedures	100
Acute and Chronic Pain Management for CTV patients	yes
Basic Research	yes
Clinical Research	yes

Rotaions in	Number of performed produces/ basic year	Number of performed produces/ advanced year
Cardiac anaesthesia	150 (7 month)	3 to 6 months
Thoracic anaesthesia	25 (1,5 month)	3 months
Anaesthesia for major supra-inguinal vascular procedures	20 (1 month)	3 months
Trans-esophageal and trans-thoracic echocardiography	150 (0,5 month)	3 months
Medical or surgical Critical Care Rotation	1 month	
Inpatient or outpatient cardiology	0,5 month	
Inpatient or outpatient pulmonary medicine	optional	
Extracorporeal perfusion technology (CPB, ECMO,Nova-Lung.)	0,5 month	
Paediatric cardiothoracic anaesthesia	optional	3 months
Basic Research	no	
Clinical Research	yes	3 months

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: NO

Clinical Responsibility:

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

Hospitation at an international fellowship centre (ie. Athen, Sao Paolo or Bonn)

Will advanced subspecialty rotations reflect increased responsibility and learning opportunities? No

Maximum Time in Non-Clinical Activities: Depending on the fellow and his/her research interest

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	6979.74	Currency	Euro
This opportunity is not funded by the centre		No	Source of financial support for the candidate:	Host centre (monthly salary)
			Others	Depending on the candidate. With German approbation and completing residency in anesthesiology, a two-year contract for the fellowship-program (basic and advan

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	No
Non-anaesthesiologists from the participating sites	No
Visiting faculty members	No
Drug/industry representatives	No
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)	Yes	No	No	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	Yes	No	No	No

Other (specify) Click here to enter text.

Formal Course Work Available in: 2021 TEE course is offered also for fellows to participate free of charge at HDZ organized by Institute of anetshesiology. WE have the accreditation for "focused perioperative echokardiography" from the Geramn Association of Anesthesiology and Intensive Care (DGAI). In addition all of our disciplines have in house courses , all of them are free of charge.

Extra-Institutional Educational Conference Support: German work group " Cardiac Anesthesia " annual conference meeting DGAI, EATCAIC annual meeting, EACTAIC Masterclass for extracorporeal circulatory support (Athen, Greece)

Abstracts	1	Peer-Reviewed Journal Articles	7
Book Chapters	1	Other Publications	1
Dedicated Research Time	during advanced /2-4 hours/week		

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	Daily premedication visit under supervision	Preoperative evaulation according to clinical standard operating procedure
Scores evaluation, e.g., physical status in accordance with American Society of Anesthesiologists (ASA). Level D	Daily premedication visit under supervision	Frailty assessment, cognitive test: Clock drawing test , functional assessment (Handgrip strengh, Time up and go; Tinetti test)

Airway evaluation. Level C	According to national guidelines	Difficult airway management training , brocnhoscopy simulator
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	Premedication visit, interdisciplinary conference daily for risk stratification	daily case presentations
Selection and planning of the individual anesthesia technique. Level C	Interactive case presentation	interactive case discussion with program director and faculty
Postponement or cancellation of surgery decision making. Level C	according to clinical standard operating procedures	Assessment Interview
Participation in multi-disciplinary (morbidity) conferences. Level C	monthly participation,	Assesment Interview
Pre-operative fasting, pre-medication and adaptation of pre-operative drug therapy. Level C	conference with pharmacologist	Therpeutic drug monoitoring
1. II. Anesthesia management – cardiac surgery		
Workplace preparation following environmental safety measures and checklists. Level C	communication skills	TEAM TIME OUT, SBAR, CIRS
Use of technical and medical equipment, inclusive advanced hemodynamic monitoring, neuromonitoring, coagulation monitoring and basic peri-operative TEE. Level C	according to clinical standard operating procedures	Assessment Interview
Provision of safe induction, maintenance, and emergence from anesthesia. Level C	according to clinical standard operating procedures	daily direct observation of procedural skills
Defibrillation, cardioversion. Level D	Teaching of technical skills during first three month	daily direct observation of procedural skills
Transvenous pacemaker insertion and modes of action; use of a temporary pacemaker. Level C	Teaching of technical skills during first three month	daily direct observation of procedural skills
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 of technical skills during first three month	daily direct observation of procedural skills
Blood salvage and transfusion. Level D	teaching during the first three month	daily direct observation of procedural skills
Organ systems and hemostasis homeostasis maintenance throughout cardiac surgery procedures. Level C	teaching during the first three month	daily direct observation of procedural skills
Interpretation of point-of-care coagulation monitoring such as rotational thromboelastometry (ROTEM) and thromboelastography (TEG). Level C	teaching during first three month., clinical SOP	daily direct observation of procedural skills
Management of patients on cardiopulmonary bypass. Level C	teaching during first month of the fellowship by direct supervisor	direct observation procedural skill
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	theoretical teaching during first three month of fellowship	Knowledge Assessment Interview
Management of patient transport to and from the intensive care unit (ICU). Level C	practical teaching together with supervisor	direct observation procedural skill
Consideration of ethical and medico-legal aspects. Level C	theoretical teaching during the fellowship, quaterly participation on ethic conference	Knowledge assessment interview
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	Bronchoscopy simulation, theoretical part of thoracic anesthesia by monthly lectures, self-study	direct observation procedural skills: knowlegde assessment interview
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	Clinical teaching by supervisor, self-study	Knowledge Assessment Interview, direct observation procedural skills
Management of most common peri-operative critical incidents and complications including: Level C - bronchospasm, - hypoxemia, hypercapnia, - pneumothorax	Clinical teaching, interactive discussion with supervisor	Knowledge Assessment Interview, direct observation procedural skills
One-lung ventilation with a double-lumen tube. Level C	Clinical teaching by supervisor, self-study	Knowledge Assessment Interview, direct observation procedural skills
One-lung ventilation with other techniques (e.g., Arndt blocker, EZ blocker). Level B	Clinical teaching by supervisor, self-study	Knowlegde Assessment Interview
Postoperative pain management, including epidural and paravertebral analgesia. Level C	Clinical teaching, daily postanaesthesia visit	Knowledge Assessment Interview
Additional techniques in pain management (e.g., epidural analgesia, truncal blocks, multimodal analgesic techniques). Level B	self-study, teaching by supervisor	Knowledge Assessment Interview
1. IV. Anesthesia management – major vascular surgery		
Pre-operative assessment, risk stratification and medical management of vascular patients. Level D	Interactive case presentation , daily premedication visit	Knowledge Assessment Interview
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	Clinical teaching by supervisor , daily examamination	direct observation procedural skills
Management of the most common perioperative critical incidents and complications including Level C - acute kidney injury, - neurological insults, - paraplegia	Clinical teaching, interactive discussion with supervisor	Knowlegde Assessment Interview
Management of elective and emergency open abdominal aortic aneurysms (AAA) and AAA repair. Level D	Clinical teaching, interactive discussion with supervisor	Knowledge Assessment Interview
Management of carotid endarterectomy, angioplasty, or stenting. Level D	Clinical teaching, interactive discussion with supervisor	Knowledge Assessment Interview
1.V. Post-operative care/ Critical care		
Physical examinations and patient assessment (e.g., respiratory and peristaltic sounds, temperature gradient capillary refill). Level D	Clinical teaching under supervison	Knowledge Assessment
Applying sedation, general anesthesia, multimodal analgesia. Level D	daily examination under supervision, self-study	Knowledge Assessment
Management of the airways, inclusive of emergency intubation. Level D	self-study, simulation emergency intubation	Knowledge Asssessmend
Central venous, peripheral venous, arterial catheters, and pleural drains insertion using aseptic techniques. Level D	daily examination under supervision,	Assessment Interview

Gastrointestinal tube insertion. Level D	daily examination under supervision	Assessment Interview
Airway maneuvers inclusive of suction of endotracheal secretions, tracheotomy (percutaneous), bronchoalveolar lavage and sampling. Level D	daily examination under supervision, self-study	Assessment Interview
Invasive ventilation including prone position ventilation and weaning strategies. Level D	daily examination under supervision, webinar	Assessment Interview
Delivery of continuous positive pressure ventilation and non-invasive ventilation. Level D	theoretical interactive discussion, self-study	Assessment interview
Hemodynamic stabilization and management, inclusive of pacing, cardioversion, defibrillation, advanced and basic life support, vasoactive and inotropic therapy, advanced cardio-vascular monitoring. Level B	daily examination under supervision, self-study	
Volemia management and fluids administration. Level D	theoretical interactive discussion, self-study	Assessment Interview
Management of blood product transfusion and coagulopathies correction. Level D	theoretical interactive discussion	Knowledge Assessment Interview
Renal replacement therapy and acute renal failure. Level B	theoretical interactive discussion, seminar, self-study	Assessment Interview
Identification of relevant pre-existing co-morbidities. Level D	Interactive theoretical discussion with the instructor	Assessment Interview
Responding to trends in physiological variables. Level D	theoretical interactive discussion, self-study	Assessment Interview
Patient transportation inter- and intra-hospital. Level B	examination under supervision	Assessment Interview
Arterial and central venous line cannulation (ultrasound-guided). Level D	daily examination under supervision	Procedural observation practical skills
Myocardial infarction, pulmonary embolism, tamponade, hypovolemia. Level D	theoretical interactive discussion with instructor	Assessment Interview
Assessment of intravascular volume status. Level C	daily examination under supervision, self-study	Procedural observation practical skills
Recognition of substantial pericardial or pleural effusion. Level B	daily examination under supervision	Procedural observation practical skills
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	Clinical teaching with the instructor, self-study	TEE-Simulation, Knowledge Assessment Interview, TEE-Logbook
Performance of the recommended number of peri-operative echocardiography exam according to EACVI / EACTA certification guidelines. Level D	Clinical teaching with the instructor, self-study	Knowledge Assessment
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	Daily examination under supervision	Knowledge Assessment, direct observation procedural skill
Sedation for invasive procedures in cardiology. Level D	monthly clinical conferences, theoretical interactive discussion with instructor	Knowledge Assessment, Logbook
Sedation and anesthesia outside the operating theatre, also considering the local organization and the specific patients and procedures. Level D	Anesthesia organization, operation management, theoretical interactive discussion with the instructor, process optimazation, planing surgical procedures	Knowledge Assessment
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	please refer to ICU rotation, daily examination under supervision	Knowledge Assessment
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	monthly conferences, theoretical interactive discussion with instructor, self-study	Knowledge Assessment
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	daily examination under supervision during rotation	Knowledge Assessment
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	techniques of fiberoptic bronchoscopy, jet ventilation (theoretically as not available), self study, interactive discussion with instructor	Knowledge Assessment
Principles of postoperative chronic pain management. Level D	during thoracic rotation	Knowledge Assessment
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	daily examination under supervision during rotation	Direct observation procedural skill
Pain management for patients undergoing vascular procedures. Level B	self-study, daily examination under supervision	Direct observation procedural skill
Anesthesia for peripheral vascular procedures. Level C	monthly clinical conference, self-study, standard operating procedure	Assessment Interview
Care of patients undergoing limb amputation. Level D	daily examination undre supervision	Assessment Interview
Pain management, with particular reference to critical limb ischemia. Level B	as mentioned before	Assessment Interview
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	please see Rotation to ERACS Unit in the fellowship program,	Assessment Interview
Use of inotropes and vasodilators. Level D	daily examination under supervision , self-study, clinical conference	Knowledge Assessment Interview
Management of intra-aortic balloon counter pulsation and other mechanical circulatory support devices. Level C	daily examination under supervision, ICU interdisciplinary rounds	Knowledge Assessment Interview
Detection of problems occurring with extracorporeal circulation management. Level C	theoretical two-day session with perfusionist	Knowledge Assessment Interview
Anesthesia for procedures in intensive care, including emergency resternotomy, re-intubation, tracheostomy or cardioversion. Level D	daily examination under supervision, theoretical interactive	Assessment interview
Principles and management of chest drains. Level D	during Icu roatation, self--study	Direct observation procedural skill
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	theoretical teaching in weekly conferences, practical examination under supervision	Assessment Interview
TEE for monitoring of left and right ventricular function and diagnosis of primary graft dysfunction / failure. Level C	daily examination under supervision of the TEE -instructor, self-study, case presentations	Direct observation procedural skill
Insertion and management of thoracic epidurals Level D	self-study, teaching by supervisor during optional rotation thoracic anesthesia	Assessment Interview
2.VII. Organizational module		

Communicating effectively with patients and their families. Level D	Daily examination and supervision	Direct observation procedural skill
Communicating effectively with surgical colleagues. Level D	Daily examination and supervision	Direct observation procedural skill
Communicating with the intubated patient. Level D	Daily examination and supervision	Direct observation procedural skill
Recognizing the need for senior help. Level D	Daily examination and supervision	Direct observation procedural skill
Maintaining accurate clinical records. Level D	Daily examination and supervision	Direct observation procedural skill
Presentations at departmental meetings. Level D	Daily examination and supervision	Direct observation procedural skill
Participation in multi-disciplinary clinical audits. Level C	Daily examination and supervision	Direct observation procedural skill
Commitment to continued professional development. Level D	Daily examination and supervision	Direct observation procedural skill
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	preparation and planning together with program director	Presentation in clinical conference/congress meetings
Ability to help complete an ethics application. Level C	participation in an ethical case conference	written sumary of the ethical case conference
Ability to discuss basic statistical approaches. Level C	theoretical interactive discussion with the program director	short communication abstract of retrospective design
Ability to consent, recruit, and follow up research participants according to regulatory frameworks. Level C	basic recommendation of GCP guidelines, involvement in clinical studies	Assessment Interview
Ability to help analyze data. Level C	Theoretical interactive discussion with the program director	Assessment Interview, descriptive data analysisi, Mann Withney U, Fischer`s Exact Test
Ability to contribute to disseminating study results in abstracts, presentations and publications. Level C	theoretical interactive discussion with the programm director	Preparing a Poster presentation for congress meeting

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 round together with students from Ruhr-University Bochum	Knowledge Assessment Interview
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 round together with students from Ruhr-University Bochum	Knowledge Assessment Interview
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 round together with students from Ruhr-University Bochum	Knowledge assessment Interview
Patient information and informed consent including medico-legal aspects, appraisal of discernment and consent capacity.	Clinical teaching round together with students from Ruhr-University Bochum	Knowledge Assessment Interview
Principles of risk and outcome assessment and relevant scoring systems (e.g., EuroSCORE).	Clinical teaching round during premedication visit with instructor	Knowledge Assesment Interview
1. II. Anesthesia management – cardiac surgery (Level A)		
Knowledge of anesthetic agents and their effects on cardiac function and in patients with cardiac diseases.	Clinical teaching round with the instructor , self-study	Assessment Interview
Principles of intraoperative pharmacology and relevant medication, including positive inotropes, chronotropes, vasoconstrictors, vasodilators, and anti-arrhythmic agents.	self-study	Assessment Interview
Principles of patient blood management, including specific diagnostic tools, application of relevant medication and blood products.	clinical teaching round with the instructor , self-study	Knowledge Assessment Interview
Principles of basic hemodynamic monitoring and relevant techniques, such as arterial pressure measurement, central venous pressure.	clinical teaching round with the instructor , self-study	Assessment Interview
Principles of relevant neuromonitoring techniques (e.g., processed electro-encephalography (pEEG), near-infrared sonography (NIRS), somato-sensible evoked potentials (SSEP), motor evoked potentials (MEP).	self-study, monthly clinical conference,	Assessment Interview
Principles of conventional cardiopulmonary bypass techniques. Principles of myocardial preservation. Effects of cardiopulmonary bypass on human physiology, organ function, and pharmacology.	daily examination under supervision	Direct observation procedural skills
Basic principles of common procedures in cardiac surgery, such as coronary artery bypass grafting (CABG).	Daily examination under supervision, self-study	Assessment interview
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.	theoretical interactive discussion with Instruuctor	Assessment Interview
Knowledge of the bronchial anatomy.	self-study	Knowledeg Assessment Interview
Knowledge about relevant anesthetic agents and their effects in patients with lung diseases.	self-study, Webinar EACTA	Knowledge Assessment Interview
Principles of intraoperative pharmacology and relevant medication, including bronchodilators and steroids.	self-study, monthly clinical conference,	Knowledge Assessment Interview
Basic principles of common procedures in thoracic surgery (mediastinoscopy, video-assisted thoracoscopic surgery (VATS), open lung resection, pneumonectomy).	self-study, Webinar HDZ/Vienna	Assessment Interview
Basic principles of endoscopic pulmonary procedures, such as bronchial stenting and endoscopic lung volume reduction (ELVR).	theoretical seminar, pneumologist HDZ	Assessment Interview
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.	self-study, monthly clinical conference,	Assessment Interview
Basic principles of the peri-operative management of lumbar drainage for aortic interventional procedures.	self-study , theoretical interactive discussion	Assessment Interview
Basic principles of spinal cord protection during surgical and interventional aortic procedures.	self-study , during vascular rotation	Knowledge assessment Interview, Power Point presentation
Basic principles of neuromonitoring.	self-study, during vacsular rotation	
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).	see ERACS Unit in the fellow-programm	Assessment Interview
Etiology, pathophysiology, diagnosis and treatment plans / bundles according to international standards for specific critical conditions in cardiothoracic and vascular surgery patients.	according to clinical internal standard operating procedures	Assessment Interview, Logbook
Circulatory failure (heart failure, shock, cardiorespiratory arrest, cardiac arrhythmias, ischemic heart disease, pulmonary embolism, bleeding complications, vasoplegia).	according to clinical standard operating procedures ,	Assessment Interview, Logbook
Anaphylaxis.	During rotation to ERACS Unit	Assessment Interview, Logbook
Respiratory failure, including adult respiratory distress syndrome (ARDS), pulmonary edema, pneumothorax, pneumonia.	During rotation to ERACS Unit , daily examination under supervision	interdisciplinary grand rounds, intensive care visit, logbook

Acute kidney injury and failure.	During ERACS Unit, daily examination under supervision	interdisciplinary grand rounds, intensive care visit, logbook
Gastrointestinal failure, peritonitis, pancreatitis, liver failure, non-occlusive mesenteric ischemia (NOMI).	Theoretical interactive discussion with instructor	Assessment Interview
Neurological failure (delirium and coma, cerebral ischemia and bleeding).	theoretical interactive discussion with the instructor,active participation in the frailty and delirum management team	Assessment Interview, logbook
Airway and chest injuries.	ERACS Unit	Knowledge Assessment Interview
Aortic injuries.	theoretical interactive discussion with the instructor	Knowledge Assessment Interview
Infectious diseases (systemic inflammatory response syndrome (SIRS) and sepsis, including sepsis bundle strategy).	daily examination under supervision	Knowledge Assessment Interview, Logbook
Coagulation disorders (disseminated intravascular coagulopathy (DIC), heparin resistance, heparin-induced thrombocytopenia, severe bleeding, transfusion reaction).	LVAD Workshop participation,	Knowledge Assessment Interview, Logbook
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).	In the OR and ERACS Unit is all equipment available for an advanced hemodynamic monitoring (EDARDS-Lifescience Acumen Cuff and Sensor, PAK) daily examination under supervision	Knowledge Assessment Interview, Logbook
Indication, contraindication, drug selection, complications: sedation, anesthesia, analgesia, neuromuscular relaxation, nutrition.	During ERACS rotation ,daily examination under supervision	Knowledge Assessment Interview, Logbook
Multimodal and pre-emptive analgesia concepts.	during ERACS Rotation, daily examination under supervision, self-study	Knowledge Assessment Interview
Weaning and extubation criteria.	during ERACS rotation, daily examination under supervision, self-study	Knowledge Assessment Interview, logbook
Transfer and discharge criteria.	during ICU rotation, daily examination under supervision, self-study	Knowledge Assessment Interview
Indications for and application of extracorporeal circulation in intensive care patients for cardiac and / or respiratory support (e.g., ECMO).	during ERACS rotation, daily examination under supervision, self-study	Knowledge Assessment Interview, Logbook
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.	Daily examination under supervision of TEE instructors, self-study	TEE-Simulation, Knowledge Assessment Interview, TEE-Logbook
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.	Daily examination under supervision, self-study	Assessment Interview, Logbook
Procedural sedation guidelines from the European Board of Anaesthesiology (EBA)/ European Society of Anaesthesiology (ESA).	daily examination, self-study, monthly conferences, Tavi-Board conference participation	Assessment Interview, Logbook
Monitoring and capnography use according to the safety recommendations from EBA.	daily examination under supervision	Assessment Interview, Logbook
1. VIII. Extracorporeal perfusion management (Level A)		
Basic principles of extracorporeal perfusion.	theoretical and practical interactive discussion with perfusionist	Assessment Interview
Types of extracorporeal circuits, e.g., cardiopulmonary bypass (CPB), extracorporeal membrane oxygenation (ECMO).	theoretical and practical interactive discussion with perfusionist, monthly clinical conference	Assessment Interview
Types, composition and mechanisms of cardioplegic solutions.	theoretical and practical interactive discussion with perfusionist, monthly clinical conference	Assessment Interview
Cardioprotective measures.	theoretical and practical interactive discussion, self-study	Assessment Interview
Safety recommendations for extracorporeal circulation from the European Board of Cardiovascular Perfusion (EBCP).	self-study, EACTAIC Masterclass Circulatory support	Assessment Interview
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.	daily examination under supervision	Assessment Interview, Logbook
Principles of modified cardiopulmonary bypass (minimized CPB, left-heart CPB) and the off-pump revascularization technique.	daily examination under supervision, self-study	Assessment Interview, logbook
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).	daily examination under supervision	Assessment interview, clinical case presentation during weekly clinical conference
Principles and state of the art of mechanical support including intra-aortic balloon pumps, and extracorporeal membrane oxygenation.	self-study, during ICU rotation	Assessment interview, clinical case presentation during weekly clinical conference
Current state of temporary and long-term mechanical circulatory support (ventricular assist devices, total artificial hearts).	daily examination under supervision, theoretical interactive discussion, self-study	Assessment interview, Logbook
Principles of use of inhaled pulmonary vasodilators (nitric oxide (NO), prostaglandins).	daily examination under supervision, self-study, clinical teaching rounds	Knowledge Assessment interview, Journal Club presentation
Principles of fast-track surgery.	daily examination under supervision, self-study	Assessment Interview, Logbook
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).	seminar thoracic anesthesia quaterly , self-study	Knowledge Assessment Interview
Principles of diagnostic and interventional bronchoscopic surgery (lung volume reduction, bronchopulmonary lavage; endoscopic, rigid fiber optic and laser resection; bronchial stenting and sealing).	daily examination under supervision, self-study, thoracic anesthesia seminar	Konwledge Assessment Interview , direct observation procedural skill
Principles of peri-operative management of esophageal surgery for varices, neoplastic, colon interposition, foreign body, stricture, and tracheoesophageal fistula.	theoretical inetractive discussion with instructor	Knowledge Assessment Interview
2. III. Anesthesia management – major vascular surgery (Level A)		
Knowledge of perioperative management of TEVAR and EVAR.	during vacsular rotation theoretical and practical teaching	Konwledge Assessment Interview , direct observation procedural skill
Knowledge of the principles of perioperative management of lumbar drainage for aortic interventional procedures.	self-study, theoretical teaching	Assessment Interview
Excellent knowledge of the principles of spinal cord protection during surgical and interventional aortic procedures.	theoretical seminar vascular surgeon	Assessment Interview
Excellent knowledge of the principles of cerebral function monitoring.	theoretical seminar vascular surgeon	Assessment Interview
2. IV. Post-operative management/ Critical care (Level A)		

Knowledge of cardiac and thoracic physiology.	self-study	Assessment Interview
Postoperative cardiac critical care, including analgesia, sedation and ventilation.	during ICU rotation	Interactive round
Postoperative care and analgesia after thoracic surgery.	during ICU rotation	Interactive critical care round
An understanding of the management of cardiac pacing modes.	during ICU rotation , self-study	Assessment Interview
An understanding of extracorporeal membrane oxygenation and other devices used for mechanical circulatory support.	during ICU rotation as mentioned before	Assessment Interview
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.	according to EACTA/EACVI guidelines, Self-study,	EACTA-EACVI Logbook
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.	theoretical teaching rounds monthly , self-study	Assessment Interview
Understanding of the principles of heart transplantation and clinical management of affected patients.	examination under direct supervision by instructor	Assessment Interview
Knowledge of current limitations of organ transplantation and efforts to increase the suitable donor pool.	self-study	PUBmed-Research, Assessment Interview
Understanding of the multidisciplinary nature of patient evaluation and listing for transplantation.	2-day hospitation in the transplantation office HDZ	Logbook
Knowledge of the principles of donor optimization, management and allograft retrieval.	2-day hospitation in the transplantation office HDZ	Logbook
Knowledge of the principles of ex-vivo heart and lung perfusion.	self-study	Assessment Interview
Understanding of the physiology of the denervated organ.	self-study	Assessment Interview
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.	theoretical interactive discussion with surgeon, monthly conference	Assessment Interview
Understanding of primary graft dysfunction and indications for mechanical circulatory support.	theoretical inetractive discussion with instructor	Assessment Interview
Understanding of the surgical options for lung transplantation, including minimally invasive lung transplantation and various intraoperative extracorporeal support mechanisms.	monthly session together with cardiac surgeons, interactive discussion	Assessment Interview
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.	examination under supervision, self-study	Knowledge Assessment Interview
Knowledge of the principles of primary lung dysfunction and conservative and extracorporeal treatment options, including indications for and techniques of ECMO.	thoracic anesthesia session , weekly clinical conference	Assessment Interview, Logbook
Understanding of immunosuppressive regimens and the role of postoperative infections and sepsis.	2-day visit on transplant ward HDZ	logbook
2. IX. Research module (Level A)		
Principles of clinical trials, including design, end points, inclusion / exclusion criteria, reporting requirements.	Interactive research seminar monthly	Logbook
Understanding of Good Clinical Practice (GCP) requirements for clinical research involving patients.	GCP guidelines course basic and advanced	Logbook
Understanding of European and specific national ethics frameworks, including research ethics applications, clinical regulatory frameworks and hospital site-specific assessment.	self-study , GCP guideline course basic and advanced	Logbook
Principles of sample size and study power determinations and basic statistical evaluation	Principles of statistic analysis, self-study	Logbook
Principles of patient and data confidentiality agreements.	Clinical study nurse office: 1-day hospitation	Logbook
Understanding tools for data collection, analysis and reporting.	Clinical study nurse office: 1-day hospitation	Logbook
Principal international basic science priorities in the field of cardiac anesthesia.	self-study	Logbook
Ethics and practicalities of biological sample collection, storage and biobanking	Biobanking HDZ: 1-day hospitation	Logbook
Principles and ethics of scientific publishing.	theoretical interactive discussion with program director	Logbook

12. Assessment

The Programme Director will evaluate each fellow every 3 months: Yes / No

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).

The structure of the Fellowship is comprehensive and will expose the fellow to every clinical aspect of the field of Cardiothoracic Anesthesia. Through direct supervision, the assessment through the supervisor as well as regular assessment interviews; the fellow will be able to objectively define his strengths, deficiencies and limits. After that, a constructive and objective feedback will guide the fellow into his needed learning activities and the supervisor will accordingly concentrate on the ‚weak points" of the fellow.

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.

The fellowship will include several activities to measure the quality of clinical outcome and to reflect this measurement on patient care. Reviews of morbidity or mortality data are held regularly at our center, Case reviews are always encouraged for interesting or challenging cases. Our internal SOPs (Standards of Practice) are always under continuous reviewing and updating. Also, we would regularly review the effectiveness of our teaching program.

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

Through regular assessment the fellow will obtain an objective feedback of his/her clinical outcome. The feedback will be followed by a change of the learning environment that fits the needs of the fellow. The feedback will be considered effective only if it was reflected in the appropriate evidence-based practice that would improve patient care.

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:

Fellows are encouraged to look for the best evidence available to be implemented into patient care. Our center has subscriptions and connections to most medical databases free of charge and they are always available for fellows.

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

Our centre has a dynamic teaching environment on all levels from the medical student up to the university Professor. Fellows are required to educate and reassure family members of patients. Also, as in every university hospital, medical students are usually attached to fellows in order to get a simple overview of cardiothoracic anaesthesia.

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.

The fellow is required at some point to run the pre-anesthetic clinic with a supervisor. He/she will inform the patient and the accompanying family about the flow of the procedure and the possible risk in a professional and compassionate way. The fellow would use a simple approach that fits the patient's social level and cultural background. The fellow will also regularly communicate with other disciplines (Cardiothoracic surgery, Cardiology, Pulmonary diseases and ICU) and run active constructive discussions for the benefit of the patient. After anesthetic care of patients, the hand-over to cardiothoracic ICU is very structured and follows a well-established concept (SBAR).

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.

The flow of work in the anesthesia department is well divided between members according to their level and expertise. The fellow is required to work in harmony with other team members in order to get the best possible outcome. A very important activity to implement team work ist proper hand-over and team-debriefing process. Daily morning rounds and case presentation of the operating programm define the role of each team member including the fellow.

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.

Fellows are required to provide care to patients on a consultative basis such as postoperative analgesia, difficult airway management and intubation, sedation in the radiology department or difficult peripheral venous access. Also, fellows will be involved in teaching physicians from other disciplines such as cardiac surgery residents, cardiology residents and medical students basic anesthetic skills such as intubation and venous puncture. The fellow will be also included in student lectures as well.

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

Our centre is well-equipped with modern electronic patient data systems including PDMS- anaesthesia protocols that are efficient and precise. The fellow will obtain a comprehensive introduction to the electronic patient records system and how to deal with patient information.

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.

Our centre uses a very modern electronic patient data management system (Copra) at all anaesthetic stations and on the cardiothoracic and cardiological ICU. The fellow will be trained to use this system and to document all relevant anesthetic data.

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 fellow will first engage in pre-anaesthetic visits under supervision in order to have an overview of potential difficulties in communication with different cultures. The fellow is required to demonstrate sensitivity and responsiveness to patients' cultural differences as well as worries regarding treatment. All possible risks must be announced in a professional manner and the therapeutic plan must be shared with the patient

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

Fellows are required to adhere to the main principles of professional clinical practice, which are: providing the best available clinical care, maintaining good medical practice by keeping knowledge and skills up to date, willing to get involved in teaching and training as well as assessing others, building good relationships with patients from different backgrounds and respecting their confidentiality, maintaining good working relationships with colleagues and being honest and trustworthy and act with integrity.

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

The fellow is required to work as part of a team, displaying good communication and interpersonal skills, he/she must be able to work in interprofessional teams to enhance patient safety and improve patient care quality. The fellow must interact not only

with the patient but also with the patient's family, caretakers, consultants, and fellow members of the medical care team.
Fellows will also need to exercise flexibility as situations change. The fellow must understand and weigh the risks and benefits of each procedure, treatment plan, and goal in patient care. The fellow must also be aware of certain costs and be able to alleviate them when needed (by using alternative treatment solutions).

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

During M&M conferences, fellows will have the chance to discuss complicated cases and to have an open error environment with staff members in order to identify suboptimal treatments or errors and to provide solutions that would alter practice and improve patient care quality and safety.

16. EACTA Site Visit (for 1-day)

Dates proposed for the visit (at least 3) 20/08/2024 or 27/08/2024 or 04/09/2024

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

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	Institute of Anesthesiology and pain therapy Heart and Diabetes Center Bad Oeynhausen NRW, Ruhr-University Bochum, Campus OWL Bielefeld University, Germany
Address	Georgstraße 11, 32545 Bad Oeynhausen, Germany Email: vvondossow@hdz-nrw.de Phone: +49 5731 97 1128
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**

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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** 6.979,74 € **Currency** Click here to enter text.

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 Click here to enter text.

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). Cardiac arrest Center certification	☒ 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 In progress for 2025	☐ 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 Click here to
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

HDZ NRW

UNIVERSITÄTSKLINIKUM DER **RUHR-UNIVERSITÄT BOCHUM**
MEDIZINISCHE FAKULTÄT OWL UNIVERSITÄT BIELEFELD

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Mohamed R. El Tahan, MD
Professor of Cardiothoracic Anaesthesia
& Surgical Intensive Care
Mansoura University, Mansoura, Egypt

Datum: 16.07.2024
Sekretariat: apoewe
Durchwahl: 97-1128
Telefax: 97-2196

EACTA Fellowship - Reaccreditation

Dear Prof. El Tahan,

we fully support the educational strategy of Prof. von Dossow regarding the reaccreditation of the EACTAIC fellowship program. It has been an important step to increase the expertise and knowledge in cardiothoracic and vascular anesthesia at our Heart and Diabetes Center Bad Oeynhausen.

We hereby confirm that the program director Prof. Vera von Dossow has a dedicated minimum of 10% of weekly working time for training the trainees in the Fellowship and Exchange Training Programmes.

Yours sincerely,

Dr. med. Karin Overlack
Geschäftsführerin
Herz- und Diabeteszentrum NRW
Bad Oeynhausen

HDZ NRW
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European Association of Cardio-Thoracic
Anaesthesiology (EACTA) Education Chair

Datum: 11.07.2024
Sekretariat: apoewe
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Reaccreditation: OWL-Fellowship program

Dear Prof. El Tahan,

We hereby kindly request reaccreditation of our basic and advanced fellowship program. Since we started the program in 2019, in total 5 fellows completed successfully the Basic program (K. Al-Zawaidi, I. Belciu, N. Hulde, H. Warkentin, G. Sasono), and 2 fellows completed successfully the Advanced program (I. Belciu, N. Hulde). 4 passed written exam of EACVI TEE, 2 fellows are already TEE-EACVI accredited (I. Belciu, N. Hulde).

Since the beginning of the EACTA Fellowship program there is a remarkable request for OWL-EACTA-fellowship positions. Most of these colleagues are from other hospitals and apply to enter in our institute of anesthesiology to participate the EACTA fellowship program. In addition, besides the high-volume cardiac surgical program (> 4000 cases incl. Heart/Lung transplantation (110) and LVAD Implantations (80/year) as well as congenital cardiac surgery), since 2019 there has been an increased number of interventional cardiac procedures. This is due to three new chief positions; the director for cardiology (Prof. Rudolph), director for electrophysiology/rhythmology (Prof. Sommer) and pediatric cardiology (Prof. Schubert). These interventional procedures include TAVI-program, mitral/Tricuspid valve clip, implantable defibrillators, pacemaker devices as well as congenital interventional cardiac procedures for newborns and pediatrics, but also EMAH patients.

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As our center has been already accredited last year in March 2019, there is no need for a site visit. As far as you know there is favorable feedback from the above mentioned five graduates. We have also favorable feedback evaluations from students from Ruhr-University of Bochum.
As program director I corrected and reorganized (especially the second advanced year) the OWL-fellowship program according to the recent and newly published regularities of the EACTA curriculum (please find attached curriculum pdf).
We therefore kindly apply for reaccreditation for our EACTAIC OWL-Fellowship program with three fellow positions respectively basic and advanced.
As program director I hereby state, that our faculty has enough capacity to cover the teaching and educational instructor skills for the applied fellowship positions.
Please find attached also the Checklist and the final EACTA application-pdf.

We are very grateful for your support and we look forward to hearing from you. If you have further questions, please do not hesitate to contact us.

Yours sincerely

Univ.-Prof. Dr. med. Vera von Dossow
Director of the Institute of Anaesthesiology
Heart and Diabetes Center NRW, Ruhr-Universität Bochum
Bad Oeynhausen, Germany

	Monday	Tuesday	Wednesday	Thursday	Friday
OR 2 **7:15- 22:00**	LVAD Implantation Herat Transplantation Complex cardiac surgery Aortic surgery	LVAD Implantation Heart Transplantation Complex Cardiac surgery Aortic Surgery	LVAD Implantation Heart transplantation Complex Cardiac surgery Aortic Surgery	LVAD Implantation Heart Transplantation Complex cardiac surgery Aortic Surgery	LVAD Implantation Heart transplantation Complex Cardiac surgery Aortic Surgery
OR 3 **7:00-20:00**	Off-Pump Surgery Complex Re-Do Surgery Vascular Surgery	Off-Pump Surgery Complex Re-Do Surgery Vascular Surgery	Off-Pump Surgery Complex Re-Do Surgery Vascular Surgery	Off-Pump Surgery Complex Re-Do Surgery Vascular Surgery	Off-Pump Surgery Complex Re-Do Surgery Vascular Surgery
Hybrid -OR 4 **7:00-15:00**	Thoracic surgery Open and Endoscopic Lung transplantation Electrophysiology probe revision (with CPB)	Thoracic surgery Open and Endoscopic Lung transplantation Electrophysiology probe revision (with CPB)	Thoracic surgery Lung transplantation Electrophysiology probe revision (with CPB)	Thoracic surgery Lung transplantation Electrophysiology probe revision (with CPB)	Thoracic surgery Lung transplantation Electrophysiology probe revision (with CPB)
Hybrid-OR 5 **7:00-17:30**	TAVI Tendyne Tricuspid Valve Intervention	TAVI Tendyne Tricuspid Valve Intervention	TAVI Tendyne Tricuspid Valve Intervention	TAVI Tendyne Tricuspid Valve Intervention	TAVI Tendyne Tricuspid Valve Intervention
OR 6 **7:00-20:00**	Complex cardiac surgery Conventional coronary bypass surgery Aortic Dissection	Complex cardiac surgery Conventional coronary bypass surgery Aortic dissection	Complex cardiac surgery Conventional coronary Bypass Surgery Aortic Dissection	Complex cardiac surgery Conventional Coronary Bypass Surgery Aortic Dissection	Complex cardiac surgery Conventional Coronary Bypass Surgery Aortic Dissection
OR 7 **7:00-20:00**	Off-Pump Surgery Combined Surgery	Off-Pump Surgery Combined Surgery	Off-Pump Surgery Combined Surgery	Off-Pump Surgery Combined Surgery	Off-Pump Surgery Combined Surgery
OR 8 **7:00-20:00**	Minimal-invasive Valve Surgery, Off-Pump Surgery (OPCAP, MIDCAB) Aortic Surgery	Minimal-invasive Valve Surgery, Off-Pump Surgery (OPCAP, MIDCAP) Aortic Surgery	Minimal-invasive Valve Surgery, Off-Pump Surgery (OPCAP, MIDCAB Aortic Surgery	Minimal-invasiv Valve Surgery, Off-Pump Surgery (OPCAP, MIDCAB) Aortic Surgery	Minimal-invasive Valve Surgery, Off-Pump Surgery (OPCAB, MIDCAB) Aortic Surgery
OR 9 **7:00-15:00**	Revision **surgery** VAC Minor digital amputation		Revision surgery VAC		Revision surgery VAC Minor digital amutation

Planned 2025 Hybrid-OR 9	Vascular Surgery (endovascular and open)	Vascular Surgery (endovascular and open)	Vascular Surgery (endovascular and open)	Vascular Surgery (endovascular and open)	Vascular Surgery (endovascular and open)
Planned 2025 OR 10	Vascular Surgery	Vascular Surgery	Vascular Surgery	Vascular Surgery	Vascular Surgery
Paediatric catheter Lab 7:00-15:00	Paediatric interventional Procedures		Paediatric interventional procedures		
Catheter Lab 2 7:00-15:00	Mitral Valve Clip	Mitral Valve Clip	LAA Occusion	Mitral Valve Clip	Mitral Valve Clip
Catheter Lab 3 7:00-15:00		Tricuspid Clip	EVAR	Tricuspid Clip	
Catheter Lab 4 (Emergency)	Cardiac Arrest Centre	Cardiac Arrest Centre	Cardiac Arrest Centre	Cardiac Arrest Centre	Cardiac Arrest Centre
Catheter Lab 5 or 6 7:00-15:00		Interventional Electrophysiology Ablation Heart Insufficiency			Interventional Electrophysiology Heart Insufficiency
Catheter Lab 7 7:00-15:00	Electrophysiology procedures PM, CRT-D, Revision Surgery, Micra, LBB,	Electrophysiology procedures PM, CRT-D, Revision Surgery, Micra, LBB,	Electrophysiology procedures PM, CRT-D, Revision Surgery, Micra, LBB,	Electrophysiology procedures PM, CRT-D, Revision Surgery, Micra, LBB,	Electrophysiology procedures PM, CRT-D, Revision Surgery, Micra, LBB,
MRI 7:00-15:00				Pediatric MRI	
ERACS Intensive Care Unit 10:00-18:30	ERACS and ERATS	ERACS and ERATS	ERACS and ERATS	ERACS and ERATS	ERACS and ERATS
6:45-7:00	Early daily discussion	Early daily discussion	Early daily discussion	Early daily discussion	Early daily discussion
14:00-15:00			Biweekly Interprofessional education		

15:30-16:30				Weekly clinical education	
16:00-17:00			Monthly morbidity and mortality session (interdisciplinary)		
15:30-16:30	On demand: TEE Session Simulator	On demand: TEE Session Simulator	On demand: TEE Session Simulator	On demand: TEE Session Simulator	On demand: TEE Session Simulator