

Application for Hosting EACTA Cardiothoracic and Vascular Anaesthesia Fellowship Programme

1. Fellowship Information		Basic Fellowship in Cardiothoracic and Vascular Anaesthesia	
2. Institution Name		SANTORSOLA UNIVERSITY HOSPITAL	
Address		VIA ERCOLANI	
Website		www.aosp.bo.it	
Country		Italy	City BOLOGNA
3. Chair Name		First name ANDREA	Last name CASTELLI
		Email andrea.castelli@aosp.bo.it	Phone
4. Programme Directors		First name MASSIMO	Last name BAIOCCHI
Board Certification(s)		ANAESTHESIA AND INTENSIVE CARE	
Title/Affiliation		DIRECTOR OF CARDIOTHORACIC AND VASCULAR INTENSIVE CARE UNIT AND VV-ECMO PROGRAM	
Number of original publications		18	
EACTA membership		YES	If yes, membership's number 100675
ESA membership		NO	If yes, membership's number
Societies membership		YES	If yes, membership's number SIAARTI, ITACTA
Email		massimo.baiocchi@aosp.bo.it	
Phone		0039 347 44 32 960	
First name MARIA		Last name BENEDETTO	
Board Certification(s)		ANAESTHESIA AND INTENSIVE CARE	
Title/Affiliation		REFERENT FOR TOE/TTE, MEMBER OF VADs, VA-VV ECMO and HEART/LUNG TRANSPLANT TEAMS	
Number of original publications		18	
EACTA membership		YES	If yes, membership's number 100910
ESA membership		NO	If yes, membership's number
Societies membership		YES	If yes, membership's number SIAARTI, ITACTA
Email		mariebenedettoanestesista@gmail.com	
Phone		0039 3934324092	
Mailing Address		Sant'Orsola Malpighi	
Street		Viale Giambattista Ercolani, 4	
Country		Italy	
Zip code		40138	
Region		Emilia Romagna	

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

The fellow must be proficient in Italian language (B2 LEVEL is required), or English language (B2 LEVEL is required). Interpersonal communication with staff and faculty members will be guaranteed in English language. In those cases of language barrier with patients and/or families one of the tutor and faculty member will help to provide the best communication.

6. General Programme Information

Aims, goals and objectives of the Fellowship Programme

The Fellowship Programme aims to give anaesthesiologists of any country of origin, religion or gender, who have already finished their residency, a specific training in adult and paediatric cardiothoracic and vascular anaesthesia and ITU, heart and lung transplant and mechanical assist devices.

The fellows will have the opportunity to gain extensive experience in trans-thoracic and trans-oesophageal echocardiography.

After completion of the programme, they should be able to work independently in the field of cardiac, thoracic and vascular anaesthesia and/or ITU.

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 January 11 End

Number of Positions Per Year

1 Type of fellowship training available

January 11

Clinical / Basic Research

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

Comments Yes, the Fellow will have for the first three months of training a direct supervision from the mentor and later on a close supervision from the faculty.

Offered Advanced Training

no

7. Faculty

CTVA 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
MASSIMO BAIOCCHI	Yes	YES	HEAD OF ADULT CARDIOTHORACIC AND VASCULAR ITU, VA AND VV ECMO LEADER, MEMBER OF HEART/LUNG TRANSPLANT TEAM.	massimo.baiocchi@aosp.bo.it	
ANDREA CASTELLI	YES	YES	DIRECTOR OF CARDIOTHORACIC AND VASCULAR ANAESTHETIC DEPARTMENT	andrea.castelli@aosp.bo.it	
MARIA BENEDETTO	Yes	YES	CONSULTANT IN ADULT CARDIOTHORACIC ANAESTHESIA AND ITU, REFERENT FOR 2D/3D TEE/TTE, MEMBER OF LUNG TRANSPLANT, ASSIST DEVICES, VV ECMO AND VA ECMO TEAMS	mariebenedettoanestesista@gmail.com	
MARTA AGULLI	Yes	YES	CONSULTANT IN PAEDIATRIC CARDIAC ANAESTHESIA AND ITU	marta.agulli@aosp.bo.it	
ELISA CERCCHIERINI	Yes	YES	CONSULTANT IN ADULT CARDIOTHORACIC AND VASCULAR ANAESTHESIA AND ITU, WITH INTEREST IN COAGULATION AND ASSIST DEVICES, SENIOR MEMBER OF VV AND VA ECMO TEAMS	elisa.cerchierini@aosp.bo.it	
CHIARA CAPOZZI	Yes	YES	CONSULTANT IN ADULT CARDIOTHORACIC AND VASCULAR ANAESTHESIA AND ITU, MEMBER OF VV ECMO TEAM. LEADER OF TEACHING PROGRAM AND JOURNAL CLUB	chiara.capozzi@aosp.bo.it	
ILARIA TURRIZIANI	Yes	YES	CONSULTANT IN CARDIAC INTENSIVE CARE AND PAEDIATRIC CARDIAC ANAESTHESIA, WITH INTEREST IN MECHANICAL VENTILATION STRATEGIES	ilaria.turriziani@aosp.bo.it	
SARA TOMASINI	Yes	YES	CONSULTANT IN ADULT and PAEDIATRIC CARDIOTHORACIC AND VASCULAR ANAESTHESIA AND ITU, WITH INTEREST IN BRAIN MONITORING	sara.tomasini@aosp.bo.it	
MARCO ADVERSI	Yes	YES	CONSULTANT IN ADULT CARDIOTHORACIC AND VASCULAR ANAESTHESIA AND ITU, WITH INTEREST IN THORACIC ANAESTHESIA AND MAJOR AORTIC SURGERY/MEMBER OF ECMO TEAM	marco.adversi@aosp.bo.it	
FABRIZIO CUCCINIELLO	Yes	YES	CONSULTANT IN CARDIOTHORACIC AND VASCULAR ANAESTHESIA AND ITU WITH INTEREST IN NERVOUS BLOCKADES APPLIED TO THE VASCULAR AND THORACIC SURGERY	fabrizio.cucciniello@aosp.bo.it	
VALENTINA RONCARATI	Yes	YES	CONSULTANT IN ADULT CARDIAC SURGERY, WITH INTEREST IN AORTIC SURGERY AND A MEMBER OF THE LUNG TRANSPLANT and VV ECMO TEAMS	valentina.roncarati@aosp.bo.it	

DEL TUFO CARMELA	Yes	YES	CONSULTANT IN ADULT CARDIOTHORACIC AND VASCULAR SURGERY, WITH INTEREST IN THORACIC SURGERY	carmela.deltufo@aosp.bo.it
GHIGI VALENTINA	YES	YES	CONSULTANT IN ADULT CARDIAC SURGERY	valentina.ghigi@aosp.bo.it
BARBERA NICCOLO' ANTONINO	YES	YES	CONSULTANT IN ADULT CARDIAC SURGERY AND A MEMBER OF THE LUNG TRANSPLANT and VV ECMO TEAMS	niccolo.barbera@aosp-bo.it

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 / week	Number available
Total cardiothoracic and vascular ward beds	Yes	7	124
Number of ICU beds dedicated to CTV patients	Yes	7	36
Is there an emergency department in which cardiothoracic patients are managed 24 hours a day?	Yes	7	1
An adequately designed and equipped post-anaesthesia care unit for cardiothoracic patients located near the operating room suite?	No	Days/week	only ICU and HDU beds
Is there monitoring and advanced life support equipment representative of current levels of technology?	Yes	7	
Hybrid Operating Rooms	Yes	5	2
Cardiac Operating Rooms	Yes	5	4
Thoracic Operating Rooms	Yes	5	2
Vascular Operating Rooms	Yes	6	2
Catheterisation Labs	Yes	5	3
Electrophysiology Labs	Yes	5	3
Pulmonology Labs	Yes	5	1
Interventional Vascular Suites	Yes	5	2
Separate CVICU Facility	Yes	Days/week	
Animal Laboratory for research purposes	No	Days/week	
Outpatient Clinic for perioperative evaluation of patients undergoing cardiothoracic and vascular procedures	Yes	4	1
24-hour acute pain service available for patients undergoing cardiac, thoracic and vascular procedures	Yes	7	
Meeting Rooms	Yes	7	3
Classrooms with visual and other educational aids	Yes	5	2
Study areas for fellows	Yes	7	2
Office space for faculty members and fellows	Yes	7	1
Diagnostic facilities	Yes	7	
Therapeutic facilities	Yes	7	
24-hour laboratory services available in the hospital	Yes	7	
Cardiac stress testing	Yes	5	
Cardiopulmonary scanning procedures	Yes	7	
Pulmonary function testing	Yes	6	
Computers and IT support	Yes	5	
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	1300
Cardiac Surgery without CPB	100
Minimally-Invasive Cardiac Procedures	250
Interventional Cardiac Catheterization (e.g. TAVI, Mitraclip, ASD)	180
Electrophysiology Lab (e.g. mapping, ablation, pacemakers, ICDs)	500
Robotic Cardiac Surgery	0
Heart, Lung, and Heart/Lung Transplants	50
ECLS, ECMO, VAD Procedures	70
Echocardiography Lab	1500
Thoracoscopic Surgery	500
Pulmonary Resection	400
Esophageal Surgery	5
Tracheo-Bronchial Surgery	100
Interventional Pulmonology Procedures	1000
Major Vascular Procedures	1500
Neurological monitoring during major vascular surgery	800
Interventional Vascular Procedures	1000
Acute and Chronic Pain Management for CTV patients	1000
Basic Research	15
Clinical Research	15
Rotations in	Number of performed produces/rotation
Cardiac anaesthesia	100
Thoracic anaesthesia	50
Anaesthesia for major supra-inguinal vascular procedures	70
Trans-esophageal and trans-thoracic echocardiography	100
Medical or surgical Critical Care Rotation	1 month
Inpatient or outpatient cardiology	
Inpatient or outpatient pulmonary medicine	
Extracorporeal perfusion technology (CPB, ECMO, Nova-Lung)	10
Paediatric cardiothoracic anaesthesia	25
Basic Research	Optional during the basic training
Clinical Research	

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

Before starting the program a contract will be signed depending on mutual agreement between the hosting centre and the fellow. The fellow would have the opportunity to provide direct care to the patients with direct supervision during the first 3 months or more according to the demonstrated competency.

A training in paediatric cardiac surgery and paediatric cath lab may be offered to the fellows as part of the 7 months training in cardiac anaesthesia. A basic TOE course will be offered to the fellow together with the opportunity to collect echo cases under the supervision of the echo referent, both in theatre and ITU. Pleural drainage and percutaneous tracheostomy logbook will be offered to the fellow during his rotation in the cardiac ITU. A basic training in the management strategies of heart-lung transplant patients and ventilation strategies during vcmo may be offered to the fellows as part of the basic training in cardiac or thoracic anaesthesia with specific related lessons. A specific training in peripheral and central nervous blockade applied to the vascular and thoracic surgery will be offered to the fellow. A specific training in the neuromonitoring during major aortic surgery will be offered to the fellow.

Will advanced subspecialty rotations reflect increased responsibility and learning opportunities? Yes

Maximum Time in Non-Clinical Activities 1 week in 12 months

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	Currency
This opportunity is not funded by the centre	No
Source of financial support for the candidate:	Candidate's centre
Others	scholarship, educational grant, award, self sponsoring

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	Yes
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	Yes	No
Board review (e.g., oral exams, keywords)	No	No	No	Yes	Yes	No
Grand rounds	Yes	No	No	No	No	No

Other (specify) Click here to enter text.

Formal Course Work Available in The formal training courses and congress are provided by the ITACTA (Italian society of cardiothoracic anaesthesia and ITU) once a year in Bologna. A formal master in paediatric cardiology for paediatric cardiac anaesthetists is provided in our centre. There are no formal simulation courses, but we do teaching sessions for tracheostomy, bronchoscopy, TEE/TTE both in OR and ICU

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

Abstracts	<input type="text" value="2"/>	Peer-Reviewed Journal Articles	<input type="text" value="0"/>
Book Chapters	<input type="text" value="1"/>	Other Publications	<input type="text"/>
Dedicated Research Time	<input type="text" value="2 hours twice per week, during afternoons"/>		

In the Previous Year, Fellows present an oral or poster presentation in a national or international meeting

The Opportunity for Exchange with other training facilities

Patient Care

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	literature assessment, preoperative clinical evaluation in the surgical and medical ward	direct tutor supervision
Scores evaluation, e.g., physical status in accordance with American Society of Anesthesiologists (ASA). Level D	literature assessment, preoperative clinical evaluation in the surgical and medical ward	direct tutor supervision
Airway evaluation. Level C	literature assessment, preoperative clinical evaluation in the surgical and medical ward	direct tutor supervision
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	literature assessment, preoperative clinical evaluation in the surgical and medical ward	direct tutor supervision
Selection and planning of the individual anesthesia technique. Level C	literature assessment, preoperative clinical evaluation in the surgical and medical ward	direct tutor supervision
Postponement or cancellation of surgery decision making. Level C	literature assessment, preoperative clinical evaluation in the surgical and medical ward	direct tutor supervision
Participation in multi-disciplinary (morbidly) conferences. Level C	literature assessment, preoperative clinical evaluation in the surgical and medical ward	direct tutor supervision
Pre-operative fasting, pre-medication and adaptation of pre-operative drug therapy. Level C	literature assessment, preoperative clinical evaluation in the surgical and medical ward	direct tutor supervision
1. II. Anesthesia management – cardiac surgery		
Workplace preparation following environmental safety measures and checklists. Level C	literature assessment, daily practice and teaching in the OR	supervision in the OR
Use of technical and medical equipment, inclusive advanced hemodynamic monitoring, neuromonitoring, coagulation monitoring and basic peri-operative TEE. Level C	literature assessment, daily practice and teaching in the OR	supervision in the OR
Provision of safe induction, maintenance, and emergence from anesthesia. Level C	literature assessment, daily practice and teaching in the OR	supervision in the OR
Defibrillation, cardioversion. Level D	literature assessment, daily practice and teaching in the OR	supervision in the OR
Transvenous pacemaker insertion and modes of action; use of a temporary pacemaker. Level C	literature assessment, daily practice and teaching in the OR	supervision in the OR
Central and peripheral venous (ultrasound-guided) access and peripheral arterial catheterization, pulmonary artery catheterization, arterial blood gas collection, and gastric tube insertion. Level D	literature assessment, daily practice and teaching in the OR	supervision in the OR
Blood salvage and transfusion. Level D	literature assessment, daily practice and teaching in the OR	supervision in the OR
Organ systems and hemostasis homeostasis maintenance throughout cardiac surgery procedures. Level C	literature assessment, daily practice and teaching in the OR	supervision in the OR
Interpretation of point-of-care coagulation monitoring such as rotational thromboelastometry (ROTEM) and thromboelastography (TEG). Level C	literature assessment, daily practice and teaching in the OR	supervision in the OR
Management of patients on cardiopulmonary bypass. Level C	literature assessment, daily practice and teaching in the OR	supervision in the OR
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).	literature assessment, daily practice and teaching in the OR	supervision in the OR
Management of patient transport to and from the intensive care unit (ICU). Level C	literature assessment, daily practice and teaching in the OR	supervision in the OR
Consideration of ethical and medico-legal aspects. Level C	literature assessment, daily practice and teaching in the OR	supervision in the OR
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	literature assessment, daily practice and teaching in the OR	supervision in the OR
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	literature assessment, daily practice and teaching in the OR	supervision in the OR
Management of most common peri-operative critical incidents and complications including: Level C - bronchospasm, - hypoxemia, hypercapnia, - pneumothorax, - pulmonary hypertension.	literature assessment, daily practice and teaching in the OR	supervision in the OR
One-lung ventilation with a double-lumen tube. Level C	literature assessment, daily practice and teaching in the OR	supervision in the OR
One-lung ventilation with other techniques (e.g., Arndt blocker, EZ blocker). Level B	literature assessment, daily practice and teaching in the OR	supervision in the OR
Postoperative pain management, including epidural and paravertebral analgesia. Level C	literature assessment, daily practice and teaching in the OR	supervision in the OR
Additional techniques in pain management (e.g., epidural analgesia, truncal blocks, multimodal analgesic techniques). Level B	literature assessment, daily practice and teaching in the OR	supervision in the OR
1. IV. Anesthesia management – major vascular surgery		
Pre-operative assessment, risk stratification and medical management of vascular patients. Level D	literature assessment, daily practice and teaching in the OR	supervision in the OR
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	literature assessment, daily practice and teaching in the OR	supervision in the OR

Management of the most common perioperative critical incidents and complications including Level C - acute kidney injury, - neurological insults, - paraplegia, - post-operative pulmonary embolism	literature assessment, daily practice and teaching in the OR	supervision in the OR
Management of elective and emergency open abdominal aortic aneurysms (AAA) and AAA repair. Level D	literature assessment, daily practice and teaching in the OR	supervision in the OR
Management of carotid endarterectomy, angioplasty, or stenting. Level D	literature assessment, daily practice and teaching in the OR	supervision in the OR
1.V. Post-operative care/ Critical care		
Physical examinations and patient assessment (e.g., respiratory and peristaltic sounds, temperature gradient capillary refill). Level D	literature assessment, daily practice and teaching during icu and ward rounds	supervision in the ICU and surgical ward
Applying sedation, general anesthesia, multimodal analgesia. Level D	literature assessment, daily practice and teaching during icu and ward rounds	supervision in the ICU and surgical ward
Management of the airways, inclusive of emergency intubation. Level D	literature assessment, daily practice and teaching during icu and ward rounds	supervision in the ICU and surgical ward
Central venous, peripheral venous, arterial catheters, and pleural drains insertion using aseptic techniques. Level D	literature assessment, daily practice and teaching during icu and ward rounds	supervision in the ICU and surgical ward
Gastrointestinal tube insertion. Level D	literature assessment, daily practice and teaching during icu and ward rounds	supervision in the ICU and surgical ward
Airway maneuvers inclusive of suction of endotracheal secretions, tracheotomy (percutaneous), bronchoalveolar lavage and sampling. Level D	literature assessment, daily practice and teaching during icu and ward rounds	supervision in the ICU and surgical ward
Invasive ventilation including prone position ventilation and weaning strategies. Level D	literature assessment, daily practice and teaching during icu and ward rounds	supervision in the ICU and surgical ward
Delivery of continuous positive pressure ventilation and non-invasive ventilation. Level D	literature assessment, daily practice and teaching during icu and ward rounds	supervision in the ICU and surgical ward
Hemodynamic stabilization and management, inclusive of pacing, cardioversion, defibrillation, advanced and basic life support, vasoactive and inotropic therapy, advanced cardio-vascular monitoring. Level B	literature assessment, daily practice and teaching during icu and ward rounds	supervision in the ICU and surgical ward
Volemia management and fluids administration. Level D	literature assessment, daily practice and teaching during icu and ward rounds	supervision in the ICU and surgical ward
Management of blood product transfusion and coagulopathies correction. Level D	literature assessment, daily practice and teaching during icu and ward rounds	supervision in the ICU and surgical ward
Renal replacement therapy and acute renal failure. Level B	literature assessment, daily practice and teaching during icu and ward rounds	supervision in the ICU and surgical ward
Identification of relevant pre-existing co-morbidities. Level D	literature assessment, daily practice and teaching during icu and ward rounds	supervision in the ICU and surgical ward
Responding to trends in physiological variables. Level D	literature assessment, daily practice and teaching during icu and ward rounds	supervision in the ICU and surgical ward
Patient transportation inter- and intra-hospital. Level B	literature assessment, daily practice and teaching during icu and ward rounds	supervision in the ICU and surgical ward
Arterial and central venous line cannulation (ultrasound guided). Level D	literature assessment, daily practice and teaching during icu and ward rounds	supervision in the ICU and surgical ward
Myocardial infarction, pulmonary embolism, tamponade, hypovolemia. Level D	literature assessment, daily practice and teaching during icu and ward rounds	supervision in the ICU and surgical ward
Assessment of intravascular volume status. Level C	literature assessment, daily practice and teaching during icu and ward rounds	supervision in the ICU and surgical ward
Recognition of substantial pericardial or pleural effusion. Level B	literature assessment, daily practice and teaching during icu and ward rounds	supervision in the ICU and surgical ward
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	theoretic and practical training (former course, simulation, teaching in the OR	supervision by referent consultant for TTE/TEE
Performance of the recommended number of peri-operative echocardiography exam according to EACVI / EACTA certification guidelines. Level D	practical training in OR/ICU	supervision by referent consultant for TTE/TEE
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	literature assessment, daily practice and teaching in the OR	supervision in the OR
Sedation for invasive procedures in cardiology. Level D	literature assessment, daily practice and teaching in the OR	supervision in the OR
Sedation and anesthesia outside the operating theatre, also considering the local organization and the specific patients and procedures. Level D	literature assessment, daily practice and teaching in the OR	supervision in the OR
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.	literature assessment, daily practice and teaching in the OR	supervision in the OR and clinical case discussion
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 resection, 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	Setting/ 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.	literature assessment, lectures and conferences, JC	daily discussion during practice
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).	literature assessment, lectures and conferences, JC	direct supervision
Pre-operative pulmonary evaluation and interpretation of the results, including arterial blood gas and acid-base analysis, pulmonary function tests, oximetry and thoracic imaging.	literature assessment, lectures and conferences, JC	direct supervision
Patient information and informed consent including medico-legal aspects, appraisal of discernment and consent capacity.	literature assessment, lectures and conferences, JC	direct supervision
Principles of risk and outcome assessment and relevant scoring systems (e.g., EuroSCORE).	literature assessment, lectures and conferences, JC	direct supervision
1. II. Anesthesia management – cardiac surgery (Level A)		
Knowledge of anesthetic agents and their effects on cardiac function and in patients with cardiac diseases.	literature assessment, lectures and conferences, JC	daily discussion during practice
Principles of intraoperative pharmacology and relevant medication, including positive inotropes, chronotropes, vasoconstrictors, vasodilators, and anti-arrhythmic agents.	literature assessment, lectures and conferences, JC	daily discussion during practice
Principles of patient blood management, including specific diagnostic tools, application of relevant medication and blood products.	literature assessment, lectures and conferences, JC	daily discussion during practice
Principles of basic hemodynamic monitoring and relevant techniques, such as arterial pressure measurement, central venous pressure.	literature assessment, lectures and conferences, JC	daily discussion during practice
Principles of relevant neuromonitoring techniques (e.g., processed electro-encephalography (pEEG), near-infrared sonography (NIRS), somato-sensibile evoked potentials (SSEP), motor evoked potentials (MEP).	literature assessment, lectures and conferences, JC	daily discussion during practice
Principles of conventional cardiopulmonary bypass techniques. Principles of myocardial preservation. Effects of cardiopulmonary bypass on human physiology, organ function, and pharmacology.	literature assessment, lectures and conferences, JC	daily discussion during practice
Basic principles of common procedures in cardiac surgery, such as coronary artery bypass grafting (CABG).	literature assessment, lectures and conferences, JC	daily discussion during practice
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.	literature assessment, lectures, conferences, JC	daily discussion during practice
Knowledge of the bronchial anatomy.	literature assessment, lectures, conferences, JC	daily discussion during practice
Knowledge about relevant anesthetic agents and their effects in patients with lung diseases.	literature assessment, lectures, conferences, JC	daily discussion during practice
Principles of intraoperative pharmacology and relevant medication, including bronchodilators and steroids.	literature assessment, lectures, conferences, JC	daily discussion during practice
Basic principles of common procedures in thoracic surgery (mediastinoscopy, video-assisted thoracoscopic surgery (VATS), open lung resection, pneumonectomy).	literature assessment, lectures, conferences, JC	daily discussion during practice
Basic principles of endoscopic pulmonary procedures, such as bronchial stenting and endoscopic lung volume reduction (ELVR).	literature assessment, lectures, conferences, JC	daily discussion during practice
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.	literature assessment, lectures, conferences, JC	daily discussion during practice
Basic principles of the peri-operative management of lumbar drainage for aortic interventional procedures.	literature assessment, lectures, conferences, JC	daily discussion during practice
Basic principles of spinal cord protection during surgical and interventional aortic procedures.	literature assessment, lectures, conferences, JC	daily discussion during practice
Basic principles of neuromonitoring.	literature assessment, lectures, conferences, JC	daily discussion during practice
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).	literature assessment, lectures, conferences, JC	daily discussion during practice
Etiology, pathophysiology, diagnosis and treatment plans / bundles according to international standards for specific critical conditions in cardiothoracic and vascular surgery patients.	literature assessment, lectures, conferences, JC	daily discussion during practice
Circulatory failure (heart failure, shock, cardiopulmonary arrest, cardiac arrhythmias, ischemic heart disease, pulmonary embolism, bleeding complications, vasoplegia).	literature assessment, lectures, conferences, JC	daily discussion during practice
Anaphylaxis.	literature assessment, lectures, conferences, JC	daily discussion during practice
Respiratory failure, including adult respiratory distress syndrome (ARDS), pulmonary edema, pneumothorax, pneumonia.	literature assessment, lectures, conferences, JC	daily discussion during practice
Acute kidney injury and failure.	literature assessment, lectures, conferences, JC	daily discussion during practice
Gastrointestinal failure, peritonitis, pancreatitis, liver failure, non-occlusive mesenteric ischemia (NOMI).	literature assessment, lectures, conferences, JC	daily discussion during practice
Neurological failure (delirium and coma, cerebral ischemia and bleeding).	literature assessment, lectures, conferences, JC	daily discussion during practice
Airway and chest injuries.	literature assessment, lectures, conferences, JC	daily discussion during practice
Aortic injuries.	literature assessment, lectures, conferences, JC	daily discussion during practice
Infectious diseases (systemic inflammatory response syndrome (SIRS) and sepsis, including sepsis bundle strategy).	literature assessment, lectures, conferences, JC	daily discussion during practice
Coagulation disorders (disseminated intravascular coagulopathy (DIC), heparin resistance, heparin-induced thrombocytopenia, severe bleeding, transfusion reaction).	literature assessment, lectures, conferences, JC	daily discussion during practice
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).	literature assessment, lectures, conferences, JC	daily discussion during practice
Indication, contraindication, drug selection, complications: sedation, anesthesia, analgesia, neuromuscular relaxation, nutrition.	literature assessment, lectures, conferences, JC	daily discussion during practice
Multimodal and pre-emptive analgesia concepts.	literature assessment, lectures, conferences, JC	daily discussion during practice

Weaning and extubation criteria.	literature assessment , lectures, conferences, JC	daily discussion during practice
Transfer and discharge criteria.	literature assessment , lectures, conferences, JC	daily discussion during practice
Indications for and application of extracorporeal circulation in intensive care patients for cardiac and / or respiratory support (e.g., ECMO).	literature assessment , lectures, conferences, JC	daily discussion during practice
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.	literature assessment , lectures, conferences, JC	daily discussion during practice, individual examination
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.	literature assessment , lectures, conferences, JC	daily discussion during practice
Procedural sedation guidelines from the European Board of Anaesthesiology (EBA)/ European Society of Anaesthesiology (ESA).	literature assessment , lectures, conferences, JC	daily discussion during practice
Monitoring and capnography use according to the safety recommendations from EBA.	literature assessment , lectures, conferences, JC	daily discussion during practice
1. VIII. Extracorporeal perfusion management (Level A)		
Basic principles of extracorporeal perfusion.	literature assessment , lectures, conferences, JC	daily discussion during practice
Types of extracorporeal circuits, e.g., cardiopulmonary bypass (CPB), extracorporeal membrane oxygenation (ECMO).	literature assessment , lectures, conferences, JC	daily discussion during practice
Types, composition and mechanisms of cardioplegic solutions.	literature assessment , lectures, conferences, JC	daily discussion during practice
Cardioprotective measures.	literature assessment , lectures, conferences, JC	daily discussion during practice
Safety recommendations for extracorporeal circulation from the European Board of Cardiovascular Perfusion (EBCP).	literature assessment , lectures, conferences, JC	daily discussion during practice
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.		
Principles of modified cardiopulmonary bypass (minimized CPB, left-heart CPB) and the off-pump revascularization technique.		
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).		
Principles and state of the art of mechanical support including intra-aortic balloon pumps, and extracorporeal membrane oxygenation.		
Current state of temporary and long-term mechanical circulatory support (ventricular assist devices, total artificial hearts).		
Principles of use of inhaled pulmonary vasodilators (nitric oxide (NO), prostaglandins).		
Principles of fast-track surgery.		
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).		
Principles of diagnostic and interventional bronchoscopic surgery (lung volume reduction, bronchopulmonary lavage; endoscopic, rigid fiber optic and laser resection; bronchial stenting and sealing).		
Principles of peri-operative management of esophageal surgery for varices, neoplastic, colon interposition, foreign body, stricture, and tracheoesophageal fistula.		
2. III. Anesthesia management – major vascular surgery (Level A)		
Knowledge of perioperative management of TEVAR and EVAR.		
Knowledge of the principles of perioperative management of lumbar drainage for aortic interventional procedures.		
Excellent knowledge of the principles of spinal cord protection during surgical and interventional aortic procedures.		
Excellent knowledge of the principles of cerebral function monitoring.		
2. IV. Post-operative management/ Critical care (Level A)		
Knowledge of cardiac and thoracic physiology.		
Postoperative cardiac critical care, including analgesia, sedation and ventilation.		
Postoperative care and analgesia after thoracic surgery.		
An understanding of the management of cardiac pacing modes.		
An understanding of extracorporeal membrane oxygenation and other devices used for mechanical circulatory support.		
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.		
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.		
Understanding of the principles of heart transplantation and clinical management of affected patients.		
Knowledge of current limitations of organ transplantation and efforts to increase the suitable donor pool.		
Understanding of the multidisciplinary nature of patient evaluation and listing for transplantation.		
Knowledge of the principles of donor optimization, management and allograft retrieval.		
Knowledge of the principles of ex-vivo heart and lung perfusion.		
Understanding of the physiology of the denervated organ.		
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.		
Understanding of primary graft dysfunction and indications for mechanical circulatory support.		
Understanding of the surgical options for lung transplantation, including minimally invasive lung transplantation and various intraoperative extracorporeal support mechanisms.		
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.		
Knowledge of the principles of primary lung dysfunction and conservative and extracorporeal treatment options, including indications for and techniques of ECMO.		

Understanding of immunosuppressive regimens and the role of postoperative infections and sepsis.		
2. IX. Research module (Level A)		
Principles of clinical trials, including design, end points, inclusion / exclusion criteria, reporting requirements.		
Understanding of Good Clinical Practice (GCP) requirements for clinical research involving patients.		
Understanding of European and specific national ethics frameworks, including research ethics applications, clinical regulatory frameworks and hospital site-specific assessment.		
Principles of sample size and study power determinations and basic statistical evaluation		
Principles of patient and data confidentiality agreements.		
Understanding tools for data collection, analysis and reporting.		
Principal international basic science priorities in the field of cardiac anaesthesia.		
Ethics and practicalities of biological sample collection, storage and biobanking		
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 trainees 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 anaesthesia will be involved in continuing quality improvement and risk management.

Yes

Trainees in cardiac, thoracic and vascular anaesthesia 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 fellow is requested to perform the anaesthetic or ITU activity. After the OR or ITU shift, the supervisor and the fellow will discuss the fellow performance (including self-assessment by the fellow) to point out deficiencies to work on and to give all the positive feedback.

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 fellow's progress will be evaluated and discussed with the fellow every two months by the program director (including the fellow self-assessment)

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

The fellow will be assigned to one of the faculty consultants with whom he/she will perform a debriefing and will receive a short feedback

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:

The fellow will be asked to attend educational sessions, given and organized by the faculty members. For example, we will routinely organize a journal club meeting in which the fellow will learn from scientific evidences related to our activity and translate them into clinical practice. They will be not only related to clinical management guidelines but also to specific skills connected to our routine practice.

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

The fellow will participate to the preoperative visit held the day before surgery where the patient and family are informed about the intraoperative and post-operative steps. During ICU rotations, the fellow may be asked to hold class lectures during the IC sessions.

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 will be involved in the preoperative patient clinical assessment and in the communication process with family and relatives (the latter in case of paediatric cardiac patients). The fellow will be encouraged to use his second or third language to help foreigner families and this setting is often occurring in paediatric cardiac surgery.

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 fellow will be asked to attend the daily ITU ward round held by the clinical leader and he will be asked to identify which patients are suitable for discharge to the HDU and, according to that, how many new interventions may take place in theatre in a specific day.

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.

During the ICU rotations the fellow will be asked to take part to multidisciplinary team discussions regarding the most complex clinical cases. This means for example discussion with cardiac surgeons and cardiologists in case of heart transplant or LVADS, with thoracic surgeons and respiratory physiologists in case of lung transplants, with the infectious disease consult in cases of septic shock and so on.

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

The fellow will have credentials to fully access the clinical electronic database. During OR rotations, the fellow will be asked to fill in the anaesthetic chart. During ICU rotations the fellow will be asked to fill in the daily medical notes and to maintain a comprehensive file with the most complex cases.

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.

The fellow will be asked to become confident with our electronic and paper databases in order to record every change in drug administration and vital sign related to a specific patient. In our institution, we adopt GALILEO, and ICP systems

[Empty text box]

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 anesthetic team of our institution will routinely involve fellows at all stages of the patient pathway, from the preoperative evaluation, during which specific medical advices may be requested, to the operating room setting and the ICU setting where he will expedite the patient weaning and discharge to the ward. Fellows may be asked to use their mother tongue to eventually improve communication with foreign families.

[Empty text box]

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

Fellow professionalism will be evaluated in terms of being always in time, of showing a team spirit, of evaluating the ethical aspects of the clinical management. Fellow will be also involved in the settings where the care withdraw is decided. We are planning to discuss every 6 months in a table round the ethical evaluation of the patient as human being and the different situations that may bring him to death.

[Empty text box]

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 will receive some teaching from the anesthetic cardiac leader about human and material resource management, and some teaching from the program director about the optimization of patient care system and risk-benefit analysis in patient care.

[Empty text box]

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

the fellow will be asked to attend hospital meetings about safety, mortality and systematic errors.

[Empty text box]

16. EACTA Site Visit (for 1-day)

Dates proposed for the visit (at least 3) or or

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

Other comments

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

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

FACULTY PUBLICATION LIST

MASSIMO BAIOCCHI

“Combined heart and liver transplantation. What indication? What management?” 2006, 23 (Suppl 38): O57

Rivista /Editore: **European Journal of Anaesthesiology**

“A randomized controlled trial of Levosimendan to reduce mortality in high-risk cardiac surgery patients (CHEETAH): Rationale and design”

Am Heart J. 2016 Jul;177:66-73. doi: 10.1016/j.ahj.2016.03.021. Epub 2016 Apr 23.

“Levosimendan for hemodynamic support after Cardiac Surgery”

The New England Journal of Medicine 2017 May 25;376(21):2021-2031. doi: 10.1056/NEJMoa1616325. Epub 2017 May 21. PubMed PMID:28320259

“Mortality in Cardiac Surgery (MYRIAD): A randomized controlled trial of volatile anesthetics. Rationale and Design” **Contemporary Clinical Trials 2017** Aug;59:38-43. doi: 10.1016/j.cct.2017.05.011. Epub 2017 May 19. PubMed PMID:28533194

“Nonsurgical Strategies to Reduce Mortality in Patients Undergoing Cardiac Surgery: An Updated Consensus Process” **Journal of Cardiothoracic and Vascular Anesthesia 2018** Feb;32(1):225-235. doi: 10.1053/j.jvca.2017.06.017. Epub 2017 Jun 7. Review. PubMed PMID 29122431

Observant II: studio osservazionale per la valutazione di efficacia delle procedure transcateretere con dispositivi di nuova generazione nel trattamento della stenosi aortica sintomatica severa. Protocollo di Studio” **Giornale Italiano di Cardiologia** 18(Suppl):1-6. June 2017

“Experienced use of dexmedetomidine in the intensive care unit: a report of a structured consensus”. D.Pasero, F. Sangalli, M.Baiocchi, I, Blangetti et al.**Turk J Anaesthesiol Reanim** 2018; 46:176-83

“Percutaneous pulmonary artery venting via jugular vein while on peripheral extracorporeal membrane oxygenation running: a less invasive approach to provide full biventricular unloading”. Antonio Loforte, Massimo Baiocchi et al. **Annals of Cardiothoracic Surgery** Vol 8, n 1, 2019 doi: 10.21037/acs.2018.08.06

“Volatile Anesthetics versus Total Intravenous Anesthesia for Cardiac Surgery”. G. Landoni, M.Baiocchi, et al.

The New England Journal of Medicine March 2019 Mar 28;380(13):1214-1225. doi: 10.1056/NEJMoa1816476 Epub 2019 Mar 19. PubMed PMID: 30888743

“Percutaneous Pulmonary Artery Venting via Jugular Vein While on Peripheral Extracorporeal Life Support.”

Loforte A, Baiocchi M, Dal Checco E, Gliozzi G, Fiorentino M, Lo Coco V, Martin Suarez S, Marrozzini C, Biffi M, Marinelli G, Pacini D. ASAIO J. 2020 Mar;66(3):e50-e54. doi: 10.1097/MAT.0000000000000991 PubMed PMID:31885090

“Extracorporeal life support during and after bilateral sequential lung transplantation in patients with pulmonary artery hypertension”. Dell’Amore A, Baiocchi M, et al Artificial Organs 2019 Dec 30; doi:10.1111/aor.13628. PubMed PMID 31885090

“Extracorporeal Membrane Oxygenation for Respiratory Failure”. M.Quintel, R.Barlett, M.Grocott, A.Combes, M.V.Ranieri, M.Baiocchi, S.Nava, L.Gattinoni. Anesthesiology 2020 May; 132(5):1257-1276. doi:10.1097/ALN.0000000000003221. PubMed PMID: 32149776

“Heart failure: role and point of view of cardiac intensivist”. Benedetto M, Nardozi L, Baca GL, Loforte A, Baiocchi M. Cardiovasc Diagn Ther 2020. doi: 10.21037/ cdt-20-339

“Veno-venous Extracorporeal Membrane Oxygenation Support in Covid-19 respiratory distress syndrome: initial experience”. Loforte A, Dal Checco E., Benedetto M, Baiocchi M. ASAIO J. 2020 Jun 10.1097/MAT.0000000000001198. Published online 2020 May 6. doi: 10.1097/MAT.0000000000001198

“Epidemiology of invasive pulmonary aspergillosis among COVID-19 intubated patients: a prospective study”. M. Bartoletti, R. Pascale, M. Cricca, M. Rinaldi, A.Maccaro, L.Bussini, G.Fornaro, T.Tonetti, Giacinto Pizzilli, Eugenia Francalanci, L.Giuntoli, A.Rubin, A.Moroni, S.Ambretti, F.Trapani, O.Vatamanu, V.M.Ranieri, A.Castelli, M.Baiocchi, R.Lewis, M.Giannella, P.Viale, PREDICO study group Clinical Infectious Diseases, 28 July 2020. ciaa1065, <https://doi.org/10.1093/cid/ciaa1065>

Use of critical care resources during the first 2 weeks (February 24-March 8, 2020) of the Covid-19 outbreak in Italy. Ann Intensive Care. 2020. PMID: 33044646

“Indications, timing and coagulation management for tracheostomy during extracorporeal membrane oxygenation support”
M. Baiocchi, M. Benedetto, V. Ferrari
Current Challenges in Thoracic Surgery (CCTS) (in press)

Book Chapter “*Ecmo for Postcardiotomic Shock*” In “ECMO-Extracorporeal Life Support in Adults”

M.Baiocchi, F.Caramelli, G.Frascaroli. Editors:Fabio Sangalli, Nicolò Patroniti, Antonio Pesenti Springer. ISBN: 978-88-470-5426-4 (Print) 978-88-470-5427-1 (Online)

Book Chapter “Intraoperative Anesthesiological Monitoring and Management”
in book “Mechanical Circulatory Support in End Stage Heart Failure” pp 183-191

M.Baiocchi, M.Benedetto, G.Frascaroli. Editors: A.Montalto, A.Loforte, F.Musumeci, T.Krabatsch, M. Slaughter

Book Chapter "*Anesthesia and Intensive Care Management for Cardiac Transplantation*", book "Heart Transplantation". M.Baiocchi, M.Benedetto, M.Agulli, G. Frascaroli. DOI: 10.5772/intechopen.79837

MARIA BENEDETTO

BMC Anesthesiol. 2012 Dec: **Starting with ultrasonography decreases popliteal block performance time in inexperienced hands: a prospective randomized study.** Cataldo R, Carassiti M, Costa F, Martuscelli M, Benedetto M, Cancilleri F, Marinozzi A, Martinelli N.

Journal of Cardiothoracic and Vascular Anesthesia 2015 June: **Inhaled nitric oxide in lung transplantation in a large volume centre: Evidence or tradition?** (abstract at **EACTA 2015**) Benedetto M, Romano R, Baca G, Sarridou D, Fischer A, Simon A, Marczin N

Nitric Oxide. 2015 Sep: **Inhaled nitric oxide in cardiac surgery: Evidence or tradition?** Benedetto M, Romano R, Baca G, Sarridou D, Fischer A, Simon A, Marczin

Minerva Anestesiologica 2017 Jul: **Serratus anterior plane block for right minithoracotomy revision after mitral valve repair** Costa F, Nenna A, Barbato R, Benedetto M, Agrò FE

"Heart failure: role and point of view of cardiac intensivist". Benedetto M, Nardozi L, Baca GL, Loforte A, Baiocchi M. **Cardiovasc Diagn Ther 2020**. doi: 10.21037/ cdt-20-339

"Veno-venous Extracorporeal Membrane Oxygenation Support in Covid-19 respiratory distress syndrome: initial experience". Loforte A, Dal Checco E., Benedetto M, Baiocchi M. **ASAIO J. 2020 Jun 10.1097/MAT.0000000000001198**. Published online 2020 May 6. doi: 10.1097

Use of critical care resources during the first 2 weeks (February 24-March 8, 2020) of the Covid-19 outbreak in Italy. **Ann Intensive Care. 2020. PMID: 33044646**

"Indications, timing and coagulation management for tracheostomy during extracorporeal membrane oxygenation support" **Current Challenges in Thoracic Surgery (CCTS)** (in press)

Book Chapter: “Properties and Composition of Plasma Substitutes” Agrò Felice Eugenio, Benedetto Maria; **Body Fluid Management: from physiology to therapy**”; Springer 2012

Book Chapter: “How to maintain and restore fluid balance: colloids” Agrò Felice Eugenio, Fries Dietmar, Benedetto Maria; **Body Fluid Management: from physiology to therapy**”; Springer 2012

Book Chapter:” Body Fluid Management in Abdominal Surgery Patients” Agrò Felice Eugenio, Volta Carlo Alberto, Benedetto Maria; **Body Fluid Management: from physiology to therapy**”; Springer 2012

Book Chapter:”Fluid Management in Trauma Patients” Candela Chiara, Benedetto Maria, Agrò Felice Eugenio; **Body Fluid Management: from physiology to therapy**”; Springer 2012

Book Chapter: “Infusion-Related Complications” Di Pumpo Annalaura, Benedetto Maria, Agrò Felice Eugenio; **Body Fluid Management: from physiology to therapy**”; Springer 2012

Book Chapter: “Commercially available Crystalloids and Colloids” Vennari Marialuisa, Benedetto Maria, Agrò Felice Eugenio; **Body Fluid Management: from physiology to therapy**”; Springer 2012

Book Chapter: “Fluid Management: Questions and Answers” Benedetto Maria, Candela Chiara, Agrò felice Eugenio; **Body Fluid Management: from physiology to therapy**”; Springer 2012

Book Chapter : “Principles of Pharmacoeconomics” Felice Eugenio Agrò, Marialuisa Vennari, Maria Benedetto; **Body Fluid Management: from physiology to therapy**”; Springer 2012

Book Chapter : “Fluid Management and Electrolyte Balance” Felice Eugenio Agrò, Marialuisa Vennari, Maria Benedetto; **Body Fluid Management: from physiology to therapy**”; Springer 2012

Book Chapter: “Acid - Base Balance and Blood Gas Analysis” Felice Eugenio Agrò, Marialuisa Vennari, Maria Benedetto; **Body Fluid Management: from physiology to therapy**”; Springer 2012

Co.author of the book “**Postoperative Critical Care for Cardiac Surgical Patients**”, Springer 2014, Prof Ali Dabbagh

Book Chapter “Intraoperative Anesthesiological Monitoring and Management”
in book “**Mechanical Circulatory Support in End Stage Heart Failure**” pp 183-191
M.Baiocchi, M.Benedetto, G.Frascaroli. Editors: A.Montalto, A.Loforte, F.Musumeci,
T.Krabatsch, M. Slaughter

Book Chapter “*Anesthesia and Intensive Care Management for Cardiac Transplantation*”, book “**Heart Transplantation**”. M.Baiocchi, M.Benedetto, M.Agulli, G. Frascaroli. DOI: 10.5772/intechopen.79837

ANDREA CASTELLI

Epidemiology of invasive pulmonary aspergillosis among COVID-19 intubated patients: a prospective study.

Clin Infect Dis. 2020 Jul 28;ciaa1065. doi: 10.1093/cid/ciaa1065. Online ahead of print.

Acute type A aortic dissection: Rationale and outcomes of extensive repair of the arch and distal aorta.

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Successful defibrillation verification in subcutaneous implantable cardioverter-defibrillator recipients by low-energy shocks.

I.Clin Cardiol. 2019 Jun;42(6):612-617. doi: 10.1002/clc.23184. Epub 2019 Apr 25.

Factors influencing liberation from mechanical ventilation in coronavirus disease 2019: multicenter observational study in fifteen Italian ICUs.

J Intensive Care. 2020 Oct 15;8:80. doi: 10.1186/s40560-020-00499-4. eCollection 2020.

Routine minimalist transcatheter aortic valve implantation with local anesthesia only.

Cardiovasc Med (Hagerstown). 2020 Oct;21(10):805-811. doi: 10.2459

CHIARA CAPOZZI

[Factors influencing liberation from mechanical ventilation in coronavirus disease 2019: multicenter observational study in fifteen Italian ICUs.](#)

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ELISA CERCHIERINI

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Checklist for Hosting EACTA Thoracic Anaesthesia Fellowship Programme

Institution Name SANT' ORSOLA UNIVERSITY HOSPITAL

Address Via Ercolani, Bologna (Italy)

Preferred Duration 12 months 24 months

Type of fellowship training available:

- Clinical only
 Clinical / Basic Research
 Clinical / Clinical Research
 Basic Research only
 Clinical Research only

Financial Statement

**** The financial sources policy should be declared by the host centre.**

**** There should be a clear consensus between the host centre and the trainee about the financial statement prior to the joining the programme.**

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 Currency

This opportunity is not funded by the centre Yes No

Source of financial support for the candidate:

- Host centre (monthly salary)
 Candidate 's centre
 Scholarship
 Educational grant
 Award
 Candidate's own expenses
 Others

Please, describe

SCHOLARSHIP, SELF SPONSORING, GRANT

Programme Training and facilities of the host centre

1. The fellow should be authorized to provide direct patient care during his/her training programme under supervision of the programme director and faculty's members "i.e. hands-on practice"	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
2. Declaration of financial recourses and signed agreement between the host centre and trainee.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
3. Uninterrupted training for 12-24 months.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
4. The programme should be approved by the head of department or other advisory authority.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
5. The programme director should attain sufficient time to do his responsibilities. If yes, please define	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<input type="text" value="2"/> hours per day	
<input type="text" value="4"/> days per week	
<input type="text" value="16"/> days per month	
6. At least two faculty members should be involved.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
7. Evaluation should be done every 6 months.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
8. A portfolio / logbook will be performed monthly and signed by the programme director	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
9. The hosting centres should have:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

9.1	Available ICU for both general and thoracic procedures.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
9.2	Available ER for 24 hr. a day (7/24).	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
9.3	Operating rooms (ORs) are adequately equipped for thoracic procedures (fiberoptic bronchoscopy, different lung isolation tools (double lumen endobronchial tubes, bronchial blockers, etc.), high frequency ventilation, advanced haemodynamic monitoring, trans-oesophageal echocardiography (TOE), blood saving devices).	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
9.4	Designed and equipped post-anaesthesia care unit (PACU) / or high-dependency unit (HDU) for thoracic procedures.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
9.5	Volume of cases. *	
9.5.1	Minimum 200 thoracic cases using either thoracoscopy or open thoracotomy approaches /1 yr. (20% of them should be open thoracotomy)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
9.5.2	Accessibility for training on high frequency ventilation, extracorporeal membrane oxygenation (ECMO), and Nova-Lung.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
9.5.3	Accessibility for training on interventional pulmonology procedures (diagnostic bronchoscopy, biopsy, stenting, mass excision, sealing, cryo-coagulation, Laser, etc.).	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
9.5.4	Accessibility for training on the different techniques for lung isolation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
9.5.5	Accessibility for training on the different techniques for management of one lung ventilation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
9.5.6	Accessibility for training on the different techniques for acute post-thoracic surgery pain management including paravertebral, epidural, truncal nerve blockades, and ultrasound guided blocks.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
9.5.7	Accessibility for training on the management of chronic post-thoracic surgery pain.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
9.5.8	Two weeks training in each of the followings;	
9.5.8.1	Inpatient or outpatient pulmonology medicine.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
9.5.8.2	Pulmonology laboratory.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
9.5.8.3	Medical or surgical critical care.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
9.6	Minimum 10 major tracheo-bronchial surgery cases / 1 yr. *	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
9.7	Minimum 30 mediastinal surgery case / 2 yr. *	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

Decision Approve Reject

Conditions Yes No

If yes, please define

Click here to enter text.

* There are several possible types of clinical fellowships can be approved by EACTA according to the availability of these facilities at the host centre, as follows;

- Cardiothoracic and Vascular Anaesthesia Fellowship Programme
- Cardiothoracic Anaesthesia and Cardiothoracic Intensive Care Fellowship Programme
- Advanced Cardiothoracic and Vascular Anesthesia and Intensive Care Fellowship Programme
- Paediatric Cardiothoracic Anaesthesia Fellowship Programme
- Thoracic Anaesthesia Fellowship Programme

Please fill in all required fields and send to eacta@mci-group.com

Submit

Weekly Schedule for Rotation in Cardiac Anaesthesia

	Monday	Tuesday	Wednesday	Thursday	Friday
MORNING	- Valve/Aortic Surgery	- Aortic /Aortic Arch Surgery	- Mini thoracotomy	- Valve/Aortic surgery	- Valve surgery
AFTERNOON	PRE-operative evaluation+ JC/TOE—TTE teaching	CABG/Valve surgery	CABG/ valve surgery	PRE-operative evaluation	CABG/Valve surgery

This is an example of a weekly schedule during the fellow's basic cardiac anaesthesia rotation at Sant' Orsola University Hospital.

Each day our department provides anaesthesia for 4 cardiac surgery operating rooms.

CABG-surgery consists mainly in on-pump procedures. Minimally invasive surgery consists mainly in right mini thoracotomy for mitral valve repair or replacement, mini sternotomy for aortic valve surgery or Bioventrix procedures.

Our centre performs a lot of aortic surgery (from Bentall procedures, to EVITA and FROZEN ELEPHANT TRUNK procedures).

Weekly Schedule for the Non-Cardiac, Non-ICU Rotations

	Monday	Tuesday	Wednesday	Thursday	Friday
MORNING	-		-		-
	Open Vascular Surgery	Mitraclip	Vascular surgery	Thoracic surgery	Thoracic Surgery
	Endovascular Surgery				
AFTERNOON	PRE-operative evaluations+ JC/TOE teaching	TAVI	Vascular surgery	PRE-operative evaluation	Vascular Surgery
			Endovascular Surgery		

Weekly schedule during the fellow's non-cardiac and non-ICU rotation period at the Sant' Orsola University Hospital.

Open Vascular Surgery means supra-inguinal procedures like open abdominal aortic aneurism repair.

Vascular surgery stands for lower limb procedures like peripheral artery revascularization procedures.

Endovascular surgery stands for: EVAR, FEVAR, TEVAR procedures and endovascular aortic arch surgery.

At hoc variation on this schedule is possible depending on the daily case load for each surgical discipline. These changes will be evaluated permanently by the programme directors in order to expose the fellow to as many interesting cases as possible during his/her rotation.

Weekly Schedule for the Rotation in the Intensive Care Unit

	Monday	Tuesday	Wednesday	Thursday	Friday
MORNING	-	-	-	-	-
	ICU	ICU	ICU	ICU	ICU
AFTERNOON	Journal Club/ TTE-TOE teaching (mainly 3 hours)	ICU	ICU	ICU	ICU

This is an example of a weekly schedule during the fellow's ICU rotation period at the Sant'Orsola University Hospital.

Most often the fellow will provide postoperative care for acute adult cardiothoracic and vascular surgical patients in the ICU.

All intubated patients are admitted to the ICU after surgery, since we don't have a PACU.

All patients extubated in the operating room are admitted to the HDU.

The echocardiography is routinely performed at the patient bedside (both TTE and TOE).

Weekly Schedule for the Rotation in the Intensive Care Unit

Echo-report will be performed for each procedure under the supervision of the program directors.

Once a week a teaching session will be performed. Once a month a mortality meeting will be performed.