

Mohamed R. El Tahan, MD

Professor of Cardiothoracic Anesthesia & Surgical Intensive Care

Mansoura University, Mansoura, Egypt

European Association of Cardiothoracic Anaesthesiology (EACTAIC) Education Chair

Application for EACTAIC accreditation in Anesthesia for Pediatrics Cardiac Surgery Program (PCA) in São Paulo/Brazil

Dear Prof. El Tahan,

It is with a great pleasure that we submit our application for EACTAIC accreditation in Anesthesia for Pediatrics Cardiac Surgery Program (PCA) in São Paulo/Brazil.

Since 2018, when our Centre (Dante Pazzanese Institute of Cardiology) has been accredited as one of the EACTAIC fellowship program for anesthesia in cardiac surgery (adults), a large number of younger anesthesiologists from Brazil and other countries in South America have been looking for a position in our program. Since then, 3 EACTAIC fellows have made the basic program and, currently we have other 3 fellows which are going to finish the basic program in February 2022.

Dante Pazzanese Institute of Cardiology has always been a reference for pediatrics heart surgery, cath-lab procedures and clinical treatment for congenital heart diseases. The hospital always had a large number of complex cases and long experience in this field. In meantime, anesthetists have been trained in the most different types of cardiac surgeries and procedures.

Our hospital is recognized as one of the most prestigious institutions specialized in the cardiovascular care (clinical, surgical and interventional procedures, including congenital heart diseases) of Latin America. Another important point is its strong connection with teaching, being pioneer in Brazil in the creation of formal programs of residency in Cardiology and Cardiovascular Surgery, constituting a strong postgraduate core "latu-sensu".

Recently, the IDPC and Education Center Aneste-Z® have signed an agreement of technical-educational cooperation for the practical training of anaesthesiologists in the field of cardiothoracic, vascular and heart transplant areas, which also includes pediatrics patients. Actually, Aneste-Z® is responsible for all the fellows' Theoretical and Practical Programs. This contract allows me, as the scientific director of Aneste-Z®, the EACTAIC-CTVA program director and the head of the hospital anesthesia department, free time to work

only with the fellows, which means that the minimum required of 20% of my weekly working hours for the fellows in each Adult and Pediatric programs (10% for adults and 10% for PCA programs), will be reached with no problems.

Currently, we have a very modern teaching-learning structure with a strong theoretical and practical programme to give to all the fellows the best training and, at least, the minimum number of procedures for training according to EACTAIC program recommendations. Our support team include anesthesiologists, cardiologists from different departments (Cath-lab, ICU) and cardiac surgeons, which are dedicated specifically to the congenital heart diseases team.

During this period, our curriculum also includes:

- A theoretical course for the PCA Program is offered to the fellows: this includes presential and online classes with topics strictly related to the anesthesia for congenital heart diseases (weekly). The teachers are cardiac anesthetists, cardiologists, cardiac surgeons and other teachers from different Universities.
- During the daily practice learning in the OR theaters, besides senior anesthetists, other expert instructors from Education Center Aneste-Z[®] are always present to assist the fellows.
- In addition, academic projects including preparation and publication of review articles, book chapters, clinical research or other academic activities are offered and strongly encouraged.
- Currently, we have a specific team for Anesthesia in Pediatrics Heart Surgeries, who help the fellows to receive the best training
- All instructors and coordinators are paid for their work
- We also have an agreement with HCOR (Hospital do Coração) that allows our fellows free access to the pediatrics heart surgeries and PICU in that hospital, where they can spend four weeks rotation (optional) during the program
- The fellows will receive their salary continuously during 1 year of the fellowship program

All these benefits are part of our program with free-access and no cost to the fellows.

As program director, I personally update our program according to the recent published regularities of the EACTAIC curriculum.

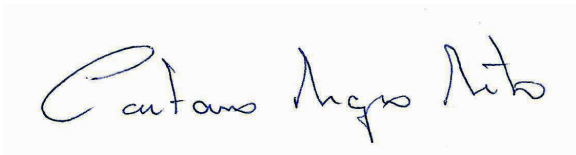
We believe that our Centre is able to accept two (02) EACTAIC fellows to the program yearly. Since when we were certified as an official EACTAIC Centre, we have been in great demand for São Paulo – EACTAIC-CTVA fellowship positions. I do believe the PCA program accredited by EACTAIC will succeed, as well.

We are very welcome to accept and offer a site visit if it is required.

Attached is the final EACTAIC application and the Program.

We are very grateful for your support and we look forward to hearing from you soon. Fell free to send any questions, and please do not hesitate to contact us.

Yours Sincerely,

A handwritten signature in black ink on a light gray background. The signature reads "Caetano Nigro Neto" in a cursive script.

Caetano Nigro Neto PhD; MD
Head of Anesthesia Section
Dante Pazzanese Institute of Cardiology

European Association of Cardiothoracic Anaesthesiology and Intensive Care (EACTAIC)

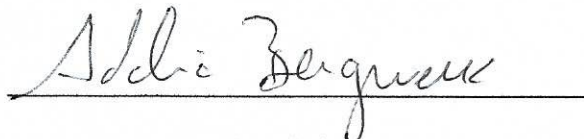
Education Committee

Education Chair Prof. Mohamed R. El Tahan, MD

São Paulo, December 15th, 2021

In order to fulfill the needs for training and education I guarantee that the program director and head of the anesthesia section Prof. Caetano Nigro Neto a minimum of 10% of weekly working time for training the fellows in the Anesthesia for Pediatrics Cardiac Surgery Program of the EACTAIC. Prof. Caetano Nigro Neto will also have a minimum of 10% of weekly working time for training the fellows in the CTVA Program for adult patients.

My best regards,



ADELIA BERGWERK

President of the Education Center – Aneste-Z

President of CASP – Clinica de Anestesia São Paulo

Application for Hosting EACTAIC Pediatric Cardiac Anesthesia (PCA) Fellowship Program

1. Fellowship Information

2. Institution Name **EACTAIC Pediatric Cardiac Anesthesia (PCA) Fellowship Program**

Address
Dante Pazzanese Institute of Cardiology
 Dr. Dante Pazzanese Street, 500
 Country: Brazil City: São Paulo

Will your center stand alone to host the PCA Fellowship Program Yes
 If, not please explain

3. Program Director(s)
 First name: Caetano Last name: Nigro Neto
 Affiliation: Ph.D, Colaborator Professor Ph.D Program Dante Pazzanese Institute of Cardiology - University of São Paulo (USP)
 Board Certification(s): Brazilian Society of Anesthesiology
 EACTAIC membership: yes If yes, membership's number: 100348
 Email: caenigro@uol.com.br Phone: 5511998412
 Mailing Address: Peixoto Gomide street 502/173-B ZIP:01409-000 - Sao Paulo -Brazil FAX: 5511333411
 Street: Dr. Dante Pazzanese street 500 - 11th floor
 Country: Brazil Region: São Paulo
 Zip code: 04012-909

The program 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 his or her responsibilities.

A documentary evaluation process will be undertaken at least once every 4 months.

Completion of the program will be acknowledged by the Department of Anesthesia and Intensive Care at the host centre in junction with European Association of Cardiothoracic Anaesthesiology and Intensive Care (EACTAIC) Candidate's requirements

4. Candidate's requirements

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

Language requirements: B2 Comments: Portuguese, Celpe-Bras Test

Specific requirements towards the attending fellow: Yes
 The requirements include training or work experience for (1) one year in Paediatric general anaesthesia and (2) one year in adult cardiac anaesthesia at any national or international recognized center, preferably EACTAIC hosting centers if possible

5. General Program Information

Aims, goals, and objectives of the PCA Fellowship Program

CIVA at Dante Pazzanese Institute of Cardiology (DIPC), Brazil, has been established with the aim of providing a solid clinical and academic experience in the perioperative management of paediatric patients undergoing complex cardiovascular procedures. The main objective of our programme is to teach the fellows to work independently to become a senior anaesthetist in paediatrics heart surgery.

Preferred Duration: 12 months * Of note, the training period should not be interrupted by frequent and/or prolonged periods of secondment to other divisions / departments.

Preferred Program Training: Match Interview 28

Number of Positions Per Year: 3 Type of fellowship training available: Clinical only

The fellow will have the opportunity to provide direct patient care during his/her training program, under supervision from the legal representative of the hosting institute. "i.e. hands-on practice". Yes

The mentor must provide the fellow with one-on-one clinical supervision during the first six-months of the training and based on the conditional independence on a case-by-case assessment by the mentor. Yes

Fellows may manage simple cases with supervision from elsewhere in the hospital, but complex cases must have direct supervision. Yes

According to educational attainment, would the mentor's supervision of the fellow become more indirect provided that the mentor should nevertheless be physically present in the hospital and promptly available within a short duration? Yes

Will the PCA fellowship training be not interrupted by prolonged periods of absence because of illness or personal circumstances? Yes

Absence from training for sick leave or personal circumstances requires a proportionate extension of the training period. Yes

Program Director and Faculty Members Research Interest and/or Clinical Expertise: Yes

* Please, list at least three names and include the list of publications for the faculty members with the application form.

Name	EACTAIC member	Certification in Cardiothoracic and Vascular Anesthesia	Additional Qualifications	Email address	Contact address
Program Director - Caetano Nigro Neto	Yes	Yes	Ph.D, Colaborator Professor Ph.D Program Dante Pazzanese Institute of Cardiology - University of São Paulo (USP)	caenigro@uol.com.br	Peixoto Gomide street 502/173-B ZIP:01409-000 - Sao Paulo -Brazil
Verônica Tadeu N da Silva Nascimento	Yes	Yes	Cardiac Anaesthesia Consultant / NBE	apocimento08@yahoo.com.br	Alanca street 110 apt 141 3P-04140-090 - São Paulo -Brazil
Genel Oliveira Nicácio	Yes	Yes	Cardiac Anaesthesia Consultant / Congenital Heart Diseases Anaesthesia Specialist	geneloliveira@gmail.com	Guatapé street, 212 ZIP:04147-070 - São Paulo -Brazil
Rafael Saurth Lindo	Yes	Yes	Cardiac Anaesthesia Consultant / Congenital Heart Diseases Anaesthesia Specialist	rsaurth85@hotmail.com	Chui street 207/62 ZIP:04104-051 - São Paulo -Brazil
Arthur Ribeiro Coutinho Furtado	Yes	Yes	Cardiac Anaesthesia Consultant / Congenital Heart Diseases Anaesthesia Specialist	arthurfurtado@hotmail.com	Martimiano de Carvalho street 926/ 121A ZIP: 01321-000 - São Paulo -Brazil
Mariana Nery Perfeito	Yes	Yes	Cardiac Anaesthesia Consultant / Congenital Heart Diseases Anaesthesia Specialist	mariana_n@hotmail.com	Dona Carolina street 60/ 703 ZIP: 04110-030 - São Paulo -Brazil
Mayara Francy Pereira Nunes	Yes	Yes	Cardiac Anaesthesia Consultant / Congenital Heart Diseases Anaesthesia Specialist	mayarfrancy@yahoo.com.br	José Antônio Coelho street 889/124 ZIP:04011-062 - São Paulo -Brazil

6. Resources

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

Resources	Yes / No	Days per week	Number
Total pediatric ward beds for congenital heart disease (CHD) patients	Yes	7	35
Number of PICU beds dedicated to CHD patients	Yes	7	12
Is there an emergency department in which CHD patients are managed 24 hours a day?	Yes	7	1
Are adult patients with CHD managed in the host center?	Yes	7	1
Total number of adult patients with CHD undergoing surgery	Yes	7	4
Total number of adult patients with CHD undergoing interventional cardiology	Yes	7	5
Is there monitoring and advanced life support equipment representative of current levels of technology?	Yes	7	1
Outpatient Clinic for perioperative evaluation of patients undergoing cardiothoracic and vascular procedures	Yes	7	1
24-hours acute pain service available for paediatric patients undergoing different procedures	Yes	7	1
Meeting Rooms	Yes	7	2
Classrooms with visual and other educational aids	Yes	7	4
Study areas for fellows	Yes	7	3

7. The skills and Responsibilities

Will your Program offer a 12 months fellowship education in fundamental clinical skills of medicine relevant to the practice of CHD?

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

Caring for inpatients in	Number of performed procedures/year	
	Center (1)	Center (2)
Total number of paediatric patients (16 years or younger) with CHD undergoing surgery using CPB per year	313	
Total number of paediatric patients (16 years or younger) with CHD undergoing surgery without using the CPB per year	48	
Total number of paediatric patients (8 years or younger) with CHD undergoing surgery using CPB per year	263	
Total number of paediatric patients (8 years or younger) with CHD undergoing surgery without using the CPB per year	17	
Total number of paediatric patients (one year or younger) with CHD undergoing surgery using CPB per year	187	
Total number of paediatric patients (one year or younger) with CHD undergoing surgery without using the CPB per year	36	
Total number of adult patients with CHD undergoing surgery using CPB per year	46	
Total number of adult patients with CHD undergoing surgery without using the CPB per year	9	
Total number of paediatric patients (16 years or younger) with CHD undergoing interventional cardiology per year	526	
Total number of adult patients with CHD undergoing interventional cardiology per year	132	
Cardiac surgery without CPB	48	
Interventional Cardiac Catheterization	550	
PICU	60	
Electrophysiology Lab (e.g. mapping, ablation, pacemakers, ICDs)	48	
Heart, Lung, and Heart/Lung Transplants	1	
ECLS, VAD Procedures	0	
Echocardiography Lab	480	
Tracheo-Bronchial Surgery	1	
Basic or Advanced Research	2	
Rotations in	Number of cases	
Paediatric cardiac anaesthesia	401	
Surgical cases with CPB	353	
VSD or ASD	80	
Atrioventricular septal defect	45	
Tetralogy of Fallot	53	
Lutheolide valve lesion	45	
Bicuspidal Aorta	30	
Fontan procedure	35	
Rastelli and Damus-Kaye-Stansel procedures, interatrial tunnel	20	
Other	45	
Surgical cases without CPB	48	
Mitral/Aortic/Tricuspid regurgitation	11	
Coarctation repair	10	
Pulmonary artery banding	10	
PDA closure	10	
Treatment of vascular rings	5	
Other	2	
Paediatric interventional cardiac catheterization	350	
Diagnostic	24	
Neonatal aortic or pulmonary vessel or valve lesion (e.g. Pulmonary artery stenosis, coarctation)	80	
ASD, VSD, or PDA device closure	180	
Other therapeutic	266	
Care of adult patients with CHD	132	

Trans-oesophageal and transthoracic echocardiography	450
Medical or surgical Critical Care Rotation	80
Pediatric EPs	40
Extracorporeal perfusion or ECLS technology (CPB, ECMO)	10
Pediatric thoracic anaesthesia	10
Basic Research	2
Clinical Research	2

All fellows entering the PCA Program will complete each of the fundamental medical knowledge of requirements included in the EACTAC PCA Curriculum Yes

All fellows entering the PCA Program will complete each of the fundamental clinical / technical skills of requirements included in the EACTAC PCA Curriculum Yes

Clinical Responsibility

The clinical responsibilities of the fellows include the preoperative preparation, direct patients care. This is required under direct supervision during the first 6 months. During the last 6 months of the programme the fellows are expected to work only with remote supervision. The fellows also must demonstrate competency in the placement of peripheral and central venous lines and arterial catheters with and without ultrasound imaging; must recognize unique characteristics of pediatric cardiac anatomy and airway management; to perform perioperative transoesophageal and basic transthoracic echocardiography in pediatric patients; to know the physiology of coagulation and properly interpret coagulation tests, as well as critically manage perioperative bleeding using drugs and transfusion therapy; to use rationally in the perioperative period the following groups of drugs: antiarrhythmics, inotropic, chronotropic, vasopressors, vasodilators, beta blockers, diuretics, to carry out a comprehensive preoperative assessment of the pediatric patient, rationally interpreting cardiovascular function tests Yes

Non-technical skills

Fellows must develop effective communication skills with members of other departments including surgeons, cardiologists, intensive care physicians, and nurses. Fellows must follow patients Safety Guidelines. The fellows are expected to act in a respectful, courteous, civil and ethical manner, in the best interest of their patients. Actively participate in basic and pediatric clinical research activities with the ability to critically interpret published literature and make significant contributions to research projects. Yes

List any other rotations (along with their duration, in months) offered in the Program to augment fellow learning (e.g. General adult cardiac anesthesia, Adult IEE, ...)

All activities will include patients with congenital heart disease, children and adults. During the program, the fellows will have their practical activities in rotations through the different sections of the hospital: operating rooms, outpatient clinics, intensive care unit (ICU) and Cath-lab for congenital heart disease procedures.

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

Will the fellow assume on call duties in the hospital? Yes

If yes please provide whether this will be only for PCA or will be for pediatric anesthesia and/or cardiac anesthesia?

How will be the financial aspects of these on call duties? The Anesthesia Company - CASP, which has a contract with the hospital will provide payments for any extra work that fellow does, including on-call duties.

Will the fellow have a free day following an on call duty? Yes

How will be the financial aspect of these on call duties. Please describe in detail. The on-call duties make at the hospital will be considered as an extra work, and will be paid by the Anesthesia Company - CASP, which has a contract with the hospital

Maximum Time in Non-Clinical Activities per week 8 hours

8. 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 10000.00 Currency Brazilian reals Is VAT / Taxes included? Yes

This opportunity is not funded by the centre No Source of financial support for the candidate: Educational grant

Will the working hours directives be respected according to the prevailing national law? Yes

9. Educational and Academic Programs

Didactic Sessions

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

	Weekly	Biweekly	Monthly	Quarterly	Semi-annually	Annually	Fellow's attendance would be monitored
Critical care appraisal of the literature (e.g., journal club)	No	No	Yes	No	No	No	Yes
Quality improvement (M&M, QA)	No	No	Yes	No	No	No	Yes
Board review (e.g., oral exams, keywords)	No	No	No	No	Yes	No	Yes
Grand rounds	Yes	No	No	No	No	No	Yes

Other (specify) Click here to enter text.

We have once a year, our National Congress that includes specific panels of pediatrics and cardiac anesthesia. In addition, other short courses (seminars) are offered by the congenital heart diseases department in our hospital for free, to all people involved with pediatrics patients.

Formal Course Work Available in <https://www.anestez.com.>; <https://ead.anestez.com.>; [instagram: anestez_z](https://ead.anestez.com.)

Extra-Institutional Educational Conference Support: N/A

The Opportunity for Exchange with other training facilities Yes The centre also has an agreement with HCDR (Hospital do Coração) that allows the fellows free access to the paediatrics heart surgeries and PICU. The fellows will receive their salary continuously during the exchange training relations during the fellowship program.

10. Assessment

The Program Director will evaluate each fellow every four months as per EACTAC regulations Yes

A documentary evaluation process will be undertaken at least once every four months. Yes

The 4-monthly evaluation will include:

360-degree evaluation	Yes
Clinical skills evaluation (CSE)	Yes
Personal reports from the faculty	Yes
Reflection and self-assessment by the fellow	Yes
Learning goals for the next four months	Yes
Feedback from the fellow on the quality of education	Yes

11. Practice-based Learning and Improvement

1. Briefly describe the main learning activities regarding non-clinical skills and their assessment during the fellowship

Fellows must make pre-anesthetic visits and attend multidisciplinary clinical meetings to learn about and participate in case discussions and surgical proposals, as well as discuss with the supervisor the anesthetic proposals for each case.

A documentary evaluation process will be undertaken at least once every four months.

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.

Each case will be individually analysed: clinical pathology, hemodynamic status of the patient, laboratory and imaging tests. Thus, an anesthetic-surgical plan will be drawn up that, together with the protocols, aim at the best possible results.

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

Through pre-anesthetic visits, multidisciplinary clinical discussions, protocols review and perioperative check list.

12. 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.

During the pre-anesthetic visit, the fellows are oriented to inform patients and the family the best way possible, of all the risks that patient will be submitted and the alternative treatments that may occur as a result of adverse events. Fellows are also required to participate in multidisciplinary meeting and discussions and multidisciplinary visits in the ICU.

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 participate in the daily OR scheduling meeting. This reunion is held by the head of OR, head of cardiac anesthesia and head of cardiac surgery. The fellow will be invited to plan according to department priorities and structure availability. Selecting the cases for morning and afternoon shifts, having in mind any possible emergency case. During the fellowship, the fellow will be part of a multidisciplinary team (cardiologist and anesthesiologist, nurse assistants, perfusionist vascular and cardiac surgeons), also during the management of every patient the fellow will need to interact with other consultants, to address patient-specific issues.

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.

The fellow will learn a lot about clinical information systems including electronic anesthesia records, Echo data management, and even online patient informed consent

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

The fellow will have full access / credentials to the prep clinic and inpatients electronic records.

5. Briefly describe how fellows will maintain a comprehensive anesthesia record for each patient, including evidence of pre- and post-operative anesthesia 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.

Fellows can monitor the evolution of patients both in daily ICU visits, or by electronic medical records, in multidisciplinary meetings as well as in direct discussions with anesthesia supervisors.

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.

In the prep anesthesia clinic, the fellow will always have to communicate with patients with different backgrounds.

During the Operation, the fellow will be supervised while communicating with the surgeon, the perfusionist and the nurses. Additionally the fellow will be asked to take actively part in the regular conferences and learn how to present patient records.

13. 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

We understand that all candidates for fellows should be healthy, polite, respectful and professional to everyone: patients, family members, colleagues, supervisors, etc., and it is not necessary to have a specific program for this.

14. 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 plan and demonstrate a clinical case at the conference. So, he/she has to do a literature research first and use information technology for that.

Further, the fellow has the opportunity to collaborate in clinical research or academic projects. The fellow, as a member of the anaesthesiology team, should show competencies in working with the various health care delivery settings and systems, coordinating patient care within the health care system with paying attention to the cost-containment and risk-benefit analysis in patient care.

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

In our hospital we work with MV system and all fellows will have access to it for consultations and preparation of seminars.

15. EACTAIC Site Visit (for 1-day)

Dates proposed for the visit (at least 3)

19/03/2022

or

26/03/2022

or

02/04/2022

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

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

Please fill in all required fields and send to eactaic@aingroup.eu



European Association of
Cardiothoracic Anaesthesiology
and Intensive Care

Checklist for Hosting EACTAIC Paediatric Cardiothoracic Anaesthesia Fellowship Programme

Institution Name

Address

Preferred Duration 12 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 before 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

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

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'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 12months.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
4. The head of the department or other advisory authority should approve the programme.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
5. The programme director should attain sufficient time to do his responsibilities.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No



European Association of Cardiothoracic Anaesthesiology and Intensive Care

If yes, please define	
<input style="width: 100%;" type="text" value="4"/>	hours per day
<input style="width: 100%;" type="text" value="5"/>	days per week
<input style="width: 100%;" type="text" value="20"/>	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 four 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 pediatric ward beds for congenital heart disease (CHD) patients.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
9.2 Available PICU beds dedicated to CHD patients	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
9.3 Is there an emergency department in which CHD patients are managed 24 hours a day?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
9.4 Are adult patients with CHD managed in the host centre?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
9.5 Is there monitoring and advanced life support equipment representative of current levels of technology?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
9.6 Available an outpatient Clinic for perioperative evaluation of patients undergoing cardiothoracic and vascular procedures	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
9.7 24-hours acute pain service available for paediatric patients undergoing different procedures	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
9.8 Available Meeting Rooms	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
9.9 Available classrooms with visual and other educational aids	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
9.10 Available study areas for fellows	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
9.11 The volume of cases. *	
9.5.1 Minimum of 100 paediatric cardiac surgery (age of 16 years or younger) per calendar year. (the majority with using the CPB)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
9.5.2 Minimum of 50 pediatric cardiac interventional procedures (age of 16 years or younger) per calendar year.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
9.5.3 50% of cases should be performed in children aged younger than four years.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
9.5.4 20% should be performed in children aged younger than one month.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
9.5.5 Available simultaneous management of adults with congenital heart disease (ACHD).	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
9.5.6 Accessibility for training in the electrophysiology procedures on paediatric patients.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
9.5.7 Accessibility for training in the dedicated paediatric intensive care unit for one month.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
9.5.8 Accessibility for training on the Extracorporeal perfusion or ECLS technology (CPB, ECMO)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
9.5.9 Accessibility for training on the paediatric thoracic anaesthesia	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
9.5.10 Accessibility for training on the basic and/or clinical research	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

Decision Approve Reject
Conditions Yes No

If yes, please define

Click here to enter text.

Submit

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

Anesthesia for Pediatrics Cardiac Surgery Program (PCA)

Aneste-Z Education Center

Fundação Adib Jatene / Clínica de Anestesia São Paulo

Dante Pazzanese Institute of Cardiology



São Paulo, Brazil

2022

OBJECTIVES

The Anesthesia for Pediatrics Cardiac Surgery Program (PCA) of the Education Center - Aneste-Z® was established with the aim of providing a solid clinical and academic experience to specialize anesthesiologists in the perioperative management of pediatric patients undergoing complex cardiovascular surgical procedures.

ORGANIZATION

The PCA is organized and directed by the head of Anaesthesia Section of Dante Pazzanese Institute of Cardiology - Dr. Caetano Nigro Neto, and coordinated by Dr. Gretel Nicolau.

Dr. Caetano Nigro Neto is the Brazilian EACTA representative, member of EACTA Education Committee, EACTA Subcommittee of Anesthesia and Cardiopulmonary Bypass, and Scientific Director of the Education Center Aneste-Z®.

Dr. Gretel Nicolau, MD is responsible for the local Anesthesia Congenital Heart Team, and specialist in Cardiovascular Anesthesia for Congenital Heart Diseases.

Recently, Dante Pazzanese Institute of Cardiology (IDPC) and Aneste-Z® have signed an agreement of technical-educational cooperation for the practical training of anaesthesiologists in the field of cardiothoracic, vascular and heart transplant areas, which also includes paediatric patients.

We will also have the support of the hospital head of Surgery Division (Dr. Mario Issa, MD, PhD), the head of Cardiovascular Surgery Section (Dr. Paulo Chaccor, MD), the head of Congenital Heart Diseases Division (Dra. Simone Pedra, PhD, NBE), the head of Non-invasive Diagnosis in Cardiology Department (Dr. Jorge Eduardo Assef, PhD, MD, NBE), the head of Doctoral Program (Dr. Amanda GMR Sousa, Prof., PhD, MD) as program collaborators.

The Anaesthesia Section of the hospital together with EACTAIC will acknowledge completion of the program. In particular, criteria for EACTAIC certification will be determined and communicated prior to the start of the fellowship and their fulfilment will be mandatory in order to receive the joint certification (IDPC and EACTAIC). A logbook for all clinical activities and a final examination exit, which includes research activities, are mandatory and planned.

REQUIREMENTS FOR SELECTION AS A FELLOW

The candidates must be board certified or board eligible according to Brazilian or European residency programme standards, and must be proficient in Portuguese Proficiency Test – CELPE BRÁS (Intermediate

Superior Level is required). It is also strongly recommended that candidates be proficient in the English language (B2 level).

The candidates must be also certified in training or work experience for (1) one year in Pediatric general anesthesia and (2) one year in adult cardiac anesthesia at any national or international recognized center, preferably EACTAIC hosting centers if possible.

PROGRAMME DURATION

The Anesthesia for Pediatrics Cardiac Surgery Programme at Dante Pazzanese Institute of Cardiology in São Paulo-Brazil is offered to anaesthesiologists from Brazil and worldwide. The program begins on March 1st and finishes at the end of February next year.

PROGRAMME STRUCTURE

The PCA is in according to the Brazilian Minister of Education (MEC) rules for post-graduate courses and includes the six core competencies required for medical residency programs to deliver high quality medical care: patient care, medical knowledge, practice-based learning and improvement, interpersonal and communication skills, professionalism and systems-based practice.

The PCA follows the described knowledge, technical, and non-technical skills included in the EACTAIC PCA Curriculum.

PROGRAM

During the program, the fellow is expected to act independently, however the six first month always with direct supervision; the last six months with remote supervision; be able to work with complex pediatrics cardiovascular procedures. In addition, the fellows will have on-call functions acting as a pre-senior anesthetist.

Clinical responsibilities and non-technical skills:

1. Understand embryology, anatomy and normal cardiovascular physiology;
2. Carry out a comprehensive preoperative assessment of the pediatric patient, rationally interpreting cardiovascular function tests;
3. Know the pathophysiological changes of simple, complex congenital heart diseases and its anesthetic implications;
4. Use rationally in the perioperative period the following groups of drugs: antiarrhythmics, inotropic, chronotropic, vasopressors, vasodilators, beta blockers, diuretics;
5. Understand the fundamental principles of extracorporeal circulation (ECC), extracorporeal membrane

oxygenation (ECMO) in congenital heart disease;

6. Know the physiology of coagulation and properly interpret coagulation tests, as well as critically manage perioperative bleeding using drugs and transfusion therapy;
7. Understand the changes in physiology associated with hypothermia;
8. Demonstrate ability to install and interpret data from arterial, central venous and pulmonary artery catheters;
9. Perform perioperative transesophageal and basic transthoracic echocardiography in pediatrics patients
10. Adapt and respond to stress and emergency situations, as well as coordinate actions with other professionals in intensive care units;
11. The fellow is expected to act in a respectful, courteous, civil and ethical manner, in the best interest of their patients;
12. Actively participate in basic and pediatrics clinical research activities with the ability to critically interpret published literature and make significant contributions to research projects.

During the course, the fellow will be directly supervised by a senior consultant (1:1). The program content is divided into:

- Theoretical-Scientific Program
- Clinical Practice Program

Theoretical-Scientific Program (220 hours workload)

The fellows will participate in a theoretical course with weekly classes based on themes in the area of pediatric cardiovascular anesthesia with lectures and seminars emphasizing the conduct of anesthesia in congenital heart disease, main procedures and protocols, in addition to anesthetic techniques, monitoring, anesthetic and vasoactive drugs used in the routine of cardiovascular anesthesia (program content delivered at the beginning of the course). (100 hours)

They will also participate in discussions of clinical cases, with an emphasis on discussing protocols, updating guidelines and improving quality. (100 hours)

They necessarily have to present clinical cases of high complexity in pediatric patients with congenital heart disease at conferences and related congresses. (20 hours)

Clinical Practice Program (1440 hours workload)

During the program, the fellows will have their practical activities in different sections of the hospital: operating rooms, outpatient clinics, pediatric intensive care unit (PICU) and Cath-lab for congenital heart disease procedures (Table 1). The practice will be divided into rotations during the current year, as follow:

Rotations

- **Complex Congenital Cardiovascular Anesthesia (11 months - 1320 hours).** The fellow will be supervised and trained to assume progressive responsibility for the perioperative anesthetic management of pediatric patients undergoing complex cardiovascular surgery. The aim of the program is to enable them to independently provide anesthesia care as a senior consultant in elective and emergency settings. Adequate exposure is provided by a variety of complex cardiovascular surgeries performed with and without cardiopulmonary bypass, including: ASD, VSD, PCA, Fallot's Tetralogy, Single Ventricle, Transposition of Great Arteries. During this rotation, the fellow will also acquire basic and intermediate knowledge of perioperative transesophageal echocardiography (TEE) in patients with congenital heart disease for the acquisition of standard images. Minimum exposure of 100 cases of cardiac surgery with CPB is required.

The fellow will also participate as a member of the cardiac anesthesia team for interventional cardiac procedures in congenital heart disease, standard and advanced: hemodynamic studies in complex congenital heart diseases, persistent ductus arteriosus occlusion, occlusion of atrial septal defect, ventricular septal defect occlusion, pulmonary artery stent placement, and hybrid surgical procedures.

During this rotation, the fellow will also accompany the perfusion team, including standard CPB and ECMO management, from machine preparation, installation to the removal.

- **Congenital Intensive Care Unit (ICU) (1 month - 120 hours):** During the rotation in the ICU, the fellow will follow the postoperative period of pediatric patients with complex cardiovascular pathology under the guidance and supervision of unit consultants. Will complete a repertoire of pertinent skills, including, among others, hemodynamic management and metabolic postoperative, use of pacemakers and chest drains; invasive and non-invasive respiratory support; sedation and controlled ventilation weaning protocols; renal replacement therapy; clinical neurological assessment and interpretation of neurological, thoracic and vascular images; management of bleeding control; learn the main local protocols.

The fellows are working under supervision for six months. Then with remote supervision afterward based on their dependency. A senior faculty member will always be available.

The fellow will be motivated to participate in national and/or international cardiothoracic conferences, at least once a year. In addition, participate in clinical trials and multicenter studies; writing of scientific articles; planning and presentation of clinical cases at conferences and congresses.

FELLOW TASKS AND RESPONSIBILITIES

The fellows will participate in the clinical routine, conferences at the Anesthesia Section, as well as the Clinical and Surgery Congenital Heart Diseases Section.

They will also prepare and motivate to present case reports and/or other researches in congresses. The method and didactic support will be provided through lectures and conferences offered by the Education Center Anestez[®]. In addition, academic projects including to prepare and to publish papers, book chapters, besides clinical research or other academic activities will be offered and strongly encouraged.

The fellows will be required to keep a log-book of all procedures in which they participated during the year.

ASSESSMENTS

The faculty members responsible for teaching fellows will provide the PCA Program Director with at least 3 critical evaluations of each fellow's progress and competence at four-month intervals using a standardized format (Appendix 1 and Appendix E - DOPS).

Another evaluation will assess essential and acquired character attributes, level of knowledge, clinical judgment, psychomotor skills and critical analysis of clinical situations (Appendix 2).

The PCA Coordinator will provide feedback to fellows on their evaluations at least every four months during their training, identifying areas in need of improvement, and will document the communication in writing. Fellows must obtain a satisfactory overall evaluation on completion of their training to receive certification. A portfolio containing a logbook of all cases undertaken by fellows is required for each assessment period.

The fellows will also make evaluations at four-month intervals, of the theoretical classes and practical training learning, to give feedback to the PCA Coordinator about their learning and training (Appendix 3).

At least one 360-degree MSF evaluation will be provided for 3 different nurse/medical staff until the end of the fellowship program.

CLINICAL TEAM AND INSTRUCTORS

The program director has extensive experience in anesthesia for cardiovascular and thoracic surgery in both adult and pediatric patients. Dr. Caetano Nigro Neto is responsible for the enrichment program, and he will provide substantial program leadership and supervision for the fellows, along with the coordinator, Dr Gretel Nicolau. In addition, other senior members of the anesthesia team will act to supervise and guide the trainees in daily clinical practice. The anesthesia team comprises more than 15 senior consultants with extensive experience and prior training in cardiovascular anesthesia. Other physicians in areas such as cardiology and cardiac surgery also collaborate with the program.

PROGRAM DIRECTOR

Caetano Nigro Neto, MD, PhD, TSA-SBA

- Collaborating Professor of the IDPC Graduate Program - USP
- Instructor in Teaching and Training Center - SBA
- Representative of Brazil at EACTAIC
- Member of the EACTAIC Education Committee
- Member of the EACTAIC Extracorporeal Circulation Subcommittee
- Director of CTVA – EACTAIC, São Paulo - Brazil
- Member of the International Committee - SCA
- Scientific Director – ANESTE-Z

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COLLABORATING INSTRUCTORS:

Dr. Adélia Bergwerk MD: Cardiovascular Anesthesia Specialist / President of the Aneste-Z® Education Center

Dr. Vinicius T. N. da Silva Nascimento MD; NBE: Coordinator of the Basic Practical Program / Specialist in Cardiovascular Anesthesia / Specialist in perioperative TEE- NBE

Dr. Gretel Oliveira Nicolau MD: Coordinator of the Anesthesia for Pediatrics Cardiac Surgery Program / Specialist in Cardiovascular Anesthesia / Specialist in Anesthesia for Congenital Heart Disease

Dr. Simone Pedra MD; PhD; NBE: Vice-Coordinator of the of the Anesthesia for Pediatrics Cardiac Surgery Program / Pediatric Echo cardiologist / Head of the IDPC Pediatrics Division

Dr. Emerson Costa MD: Vice-Coordinator of the Basic Practical Program / Specialist in Cardiovascular Anesthesia

Dr. Leonardo Izquierdo MD: Coordinator of the TEE Advanced Program in Cardiovascular Anesthesia / Specialist in Cardiovascular Anesthesia / Specialist in Advanced Anesthesia for Congenital Heart Disease / Specialist in Perioperative TEE

Dr. Carlos Augusto Cardoso Pedra; MD; PhD; FACC; FSCAI; FPICS: Head of the Interventional Laboratory of Congenital Heart Diseases; Head of the IDPC Pediatric ICU

Dr. José Cícero Stocco Guilhem MD; PhD: Pediatric Cardiac Surgeon

Dr. Alexander Takashi Hamada MD: Cardiovascular Anesthesia Specialist / Perioperative TEE Specialist

Dr. Mayara Francy Pereira Nunes MD: Cardiovascular Anesthesia Specialist/ Anesthesia Specialist for Congenital Heart Disease

Dr. Mariana Nery Perfeito MD: Specialist in Cardiovascular Anesthesia/ Specialist in Anesthesia for Congenital Heart Disease

Dr. Arthur Ribeiro Coutinho Furtado MD: Specialist in Cardiovascular Anesthesia/ Specialist in Anesthesia for Congenital Heart Disease

Dr. Radel Saurith Lindo MD: Cardiovascular Anesthesia Specialist/ Perioperative TEE Specialist/ Advanced Anesthesia Specialist for Congenital Heart Disease

APPLICATION PROCESS

Annually, the application process starts in October and ends in December. The candidates should email a cover letter to the program director stating her/his interest in the position, together with the following documents:

- 1) Letter of motivation
- 2) The Candidate should have a Medical Degree from a recognized University – Certified translated Portuguese, Spanish or English copy required
- 3) National Board Certification in Anaesthesiology
- 4) Current *Curriculum Vitae* (CV) - Translated Portuguese, Spanish or English copy required
- 5) Proof of Proficiency in Portuguese - CELPE BRÁS (Intermediate Superior Level is required)
- 6) EACTAIC member in good standing
- 7) (1) one year in Paediatric general anaesthesia and (2) one year in adult cardiac anaesthesia at any national or international recognised centre, preferably EACTAIC hosting centres if possible

The selection process is carried out through a public examination with curricular analysis and interview (SKYPE interview is possible), usually on the second Monday of January.

APPENDIX 1.

Overall Evaluation of the Fellow

Fellow: _____ Internship: _____

Evaluator: _____ Date: ____ / ____ / ____

For each item, circle the number that corresponds with your rating.

Additional comments can be completed on the back of the sheet.

- 1) Skills Can Improve
 - 2) Appropriate
 - 3) Superior
 - 4) Don't know
-
- a) Punctual, present and available at all times in the room
 - b) Shows proper professional appearance, organized and clean
 - c) Understands and respects the role of each nursing professional
 - d) Know his/hers limits and are able to ask for help when needed
 - e) Demonstrates care and interest in patient safety and comfort
 - f) Able to correct actions after feedback to improve patient care
 - g) Maintain respectful behavior even in stressful situations
 - h) Sincere in professional interaction
 - i) Able to take on other responsibilities when necessary
 - j) Maintains privacy and respectful of patients
 - k) Is assertive and proactive without being aggressive
 - l) Willing to answer questions and provide explanations
 - m) Access the location of surgical supplies, anesthetics and related patient documentation.
 - n) He/she is kind and cordial to the nursing staff and support staff.
 - o) Participates in pre-anesthetic assessment and placing the patient in the room
 - p) Knows how to listen and considers what others have to say (hierarchy)
 - q) Know how to use the hospital's computer system
 - r) Maintains legible handwriting and proper documentation

Appendix E (DOPS):

Appendix (E)

Direct Observation of Procedural Skills [DOPS] Assessment Form

Please complete the question using a cross (x). Please use black ink and CAPITAL LETTERS

Trainee's surname _____

Trainee's forename(s) _____

National license number (The NUMBER MUST BE COMPLETED) _____

Observation _____

National Code _____

Observed by _____

National license number (The NUMBER MUST BE COMPLETED) _____

Date (DD/MM/YYYY) □□/□□/□□□□

Signature of supervising doctor _____

What level of supervision does the trainee require for this procedure?	<input type="checkbox"/> Supervisor in theatre <input type="checkbox"/> Supervisor in theatre suite <input type="checkbox"/> Distant supervision
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What went well? *	
What could have gone better? *	
Plan for learning and development**	

Possible areas for feedback:

* <i>Planning, preparation, grasp of theoretical background, understood procedure and alternatives, plans and risks explained to patient, handling of patient, team communication, ability to cope with problems, mindful of cross-infection, ability to evaluate own performance, maintenance of records, post-procedure instructions, professional standards</i>
** <i>e-Learning, simulation, courses, targeted clinical experience, journal</i>

APPENDIX 2.

Daily Evaluation Form

Internship: _____ Date: ____/____/____

Fellow: _____

Assistant: _____

Objective of the internship discussed with the Assistant responsible at the beginning of the internship:

Y () N ()

Case discussion:

For each item, circle the number that corresponds with your rating.

Additional comments can be completed on the back of the sheet.

- 1) Needs more study
 - 2) Satisfactory
 - 3) Superior
-
- a) Medical knowledge and patient care
 - b) Anesthetic plan and clinical reasoning
 - c) Communication skills
 - d) Professionalism
 - e) Evidence based learning
 - f) Systematic clinical practice

Topics discussed:

Fellow Comment:

What was the most present or rare clinical situation seen today?

What did I learn today?

Medical knowledge and patient care: Acquisition of an accurate and complete medical history.

Anesthetic plan and clinical reasoning: Able to decide on the type of anesthesia, anticipate events and apply clinical knowledge to design a treatment plan.

Communication skills: The Trainee's ability to listen, convey correct information to the patient, family, surgeons, nursing staff and other clinical colleagues.

Professionalism: Show readiness to develop tasks related to patient service and care, respect privacy and confidentiality, be attentive to the needs of patients and families. Have a professionally organized and appropriate presentation.

Evidence based learning: Being able to collect relevant data from the literature to contribute to the anesthetic plan, be reflective and know when to seek help.

Systematic clinical practice: Always work in a team, appropriate use of clinical documentation, use service protocols and literature, in addition to knowledge of the institution's structure and resources.

Signature of the Fellow

APPENDIX 3.

FELLOW EVALUATION OF THE SECTOR INTERNSHIP:

General Supervision

Unsatisfactory Regular Good Great

Practical use

Unsatisfactory Regular Good Great

Theoretical Use (consider case discussions, and/or visits and/or classes, and/or seminars and/or article discussions)

Unsatisfactory Regular Good Great

Period that remained in the sector:

Enough Not enough, I would like more time Rotation is not necessary

Comments and Suggestions regarding your training period:

Table 1. EACTAIC PCA Fellowship Program, Anesthesia Section, Dante Pazzanese Institute of Cardiology, São Paulo - Brazil

	MONDAY	TUESDAY	WEDNSDAY	THURSDAY	FRIDAY
OR 1	X	X	X	X	X
OR 2	X	X	X	X	X
CATH-LAB	X	X	X	X	X
MRI / CT		X		X	
TEE/TTE	X		X		X
DENTIST					X
PICU	X	X	X	X	X

OR 1 and OR 2: Pediatric Cardiac Surgery Operate Room 1 and 2; **CATH-LAB:** Pediatric catheterization laboratory for diagnostic and procedures in congenital heart diseases; **MRI / CT:** Pediatrics images laboratory; **TEE/TTE:** Pediatrics echocardiography laboratory

This is an example of a weekly schedule during the fellow's rotation at Dante Pazzanese Institute of Cardiology – PCA Program

Each day in our section provides anesthesia for 2 cardiac surgery operating rooms. We also have hybrid procedures in a specific Hybrid Room.

Additionally, the fellows get the chance to perform anesthesia for dentist procedures in patients with congenital diseases

The fellow should also participate in anesthesia procedures and learn about cardiac diagnostic procedures like MRI, CT as well as TEE and TTE, at the outpatient diagnostic lab

The fellow will rotate at the cardiac PICU for at least one month