

International Course for Fellowship Training
For Certification in Pediatric Interventional Cardiology
Pediatric Cardiology Unit, Division of Pediatrics, Faculty of Medicine,
Prince of Songkla University

1. Course Title:

International Fellowship Training in Pediatric Interventional Cardiology

2. Certificate Title:

Certificated in Pediatric Interventional Cardiology

3. Course Owner:

Pediatric Cardiology Unit, Division of Pediatrics, Faculty of Medicine, Prince of Songkla University (PSU)

4. Program director:

Assistant Professor Supaporn Roymanee, MD

5. Mission of training:

Pediatric Interventional Cardiology, one of the important cores in pediatric cardiology. This involves basic and advanced knowledge and practices in interventional treatment of congenital, valvular, and structural heart disease, which tends to have an increasing role in both current and future managements within these fields. This includes fundamental aspects (angiography, hemodynamics, vascular access, etc.), key concepts of cardiac catheterization procedures in each disease (valves, septal defects, fistula, etc.) and emphasizes understandings in indication, patient selection and complications. Nonetheless, many countries and areas still lack interventionists as well as supporting systems to deal with patients with congenital defects, which could be potentially treated with transcatheter management.

Regarding pediatric interventional cardiology, PSU has been recognized as one of the leading centers in Thailand and the Asia-Pacific region as having experience in interventional treatment of congenital heart disease for a decade. Therefore, we aim to train pediatric cardiac interventionists, expand the interventional network, so as to be more easily

accessed in addition to furthering our advancement in this field for the greater good of society.

6. Scope of training:

Pediatric interventional cardiology involves practical aspects of interventional treatment in congenital and structural heart disease that requires an integrated knowledge of basics in cardiac catheterization and practical techniques in procedures.

Pediatric interventional cardiology comprises of clinical competencies in:

- Scientific knowledge of interventional cardiac catheterization: basic sciences in cardiac catheterization, clinical knowledge in diagnostic and treatment procedures and evidence-based medicine
- Patient care: clinical skills, investigation, problem-solving skills, decision-making skills and treatment procedures

7. Program contents:

This is a 12-month training course, for international trainees. The course is divided into two, 6-month levels; so as to ensure that trainees are able to receive appropriate experiences to both learn and increase their knowledge.

- Level 1: 1st 6-month-period. This cover knowledge and practices involving basic issues and procedures in patients with simple lesions which is conducted under supervision of the corresponding staff.
- Level 2: 2nd 6-month-period. This will cover knowledge and practices in more complex procedures under supervision of the corresponding staff. In addition, trainees will be trained to act as leaders of the team in procedure planning. This period also includes an elective (1-3 months) in other institutes that relate to pediatric cardiac intervention; depending on the trainee's preference.

Activity schedule

Date	Time	
	9.00-12.00	13.00-16.00
Monday	OPD cardio and echo clinic (Pre-cath evaluation and F/U)	1 st , 3 rd week: Grand round 2 nd , 4 th week: Intervention conference
Tuesday	Cardiac catheterization	
Wednesday	OPD cardio and echo clinic (Pre-cath evaluation and F/U)	OPD cardio (case follow up)
Thursday	Cardiac catheterization	
Friday	Echo clinic (Post-cath evaluation)	Conference by schedule

Academic schedule

Date	Time	
	8.30-9.00	13.00-16.00
Monday	-	1 st , 3 rd week: Grand round 2 nd , 4 th week: Intervention conference
Tuesday	Pre-cath case briefing	-
Wednesday	-	-
Thursday	Pre-cath case briefing	-
Friday	-	1 st week: Topic review 2 nd week: Journal club 3 rd week: Lecture 4 th week: Morbid and mortality conference/Radiology conference

8. Common knowledge in pediatric interventional cardiology:

1. Evaluation and Management Prior to Catheterization
2. Manual Techniques of Cardiac Catheterization
3. Hemodynamic Evaluation of Congenital Heart Disease
4. Angiography of Congenital Heart Disease

5. Other imaging modalities in the cath lab
6. Diagnostic catheterization: indication, technique and complications
7. Catheter Intervention: Balloon Angioplasty
8. Catheter Intervention: Balloon Valvotomy
9. Defect Closure: Disc devices
10. Defect Closure: Coils/Plug Embolization
11. Stents
12. Other Catheterization Laboratory Techniques and Interventions
13. Catheterization of Adult Patients, with Congenital Heart Disease (ACHD)
14. Anesthesia in the Catheterization Laboratory
15. Cardiac catheterization in specific Lesions: single ventricle (pre-op Glenn/Fontan), Tetralogy of Fallot with pulmonary atresia, Pulmonary atresia with intact ventricular septum, others
16. Hybrid procedures

9. Common procedures in pediatric interventional cardiology

This is a list of procedures for trainees, which is aimed for them to perform or observe during the training period. The number of each procedure can be adjusted; depending on situations (e.g., COVID-19 pandemic)

Skill	Observer	Perform
1. Transthoracic echocardiogram		/ (250 cases)
2. Transesophageal echocardiogram		/
3. Pericardiocentesis		/
4. Balloon pulmonary valvuloplasty		/
5. Diagnostic cardiac catheterization		/ (100 cases)
6. Device closure: ASD, VSD, PDA, PFO or others		/ (30 cases)
7. Valvuloplasty and angioplasty		/ (30 cases)
8. Stent placement		/ (20 cases)
9. Balloon atrial septostomy		/ (5 cases)
10. Advanced cardiac intervention (e.g., PPVI, TAVI or hybrid operation)	/	

11. Cardiac CT/cardiac magnetic resonance	/	
12. Electrophysiology study/radio frequency catheter ablation	/	
13. Fetal echocardiography	/	
14. Temporary pacemaker placement and setting adjustment (transcutaneous and transvenous)	/	

10. Number of international trainees and the application process

1. Number of international trainees: 1 trainee/year
2. Eligible applicant: An international doctor, certified in pediatric cardiology.
3. Application process:
 - Send your curriculum vitae; including, academic degree and working experience in addition to an introduction letter to the program director: Assistant Professor Supaporn Roymanee at jjewsr@yahoo.com
 - The trainee must declare any support funding from their country, and enclose an official letter from any sponsor.
 - After acceptance for training, the faculty will send a confirmation letter for the visa application; as the trainee will require a visa to enter Thailand. The faculty cannot influence any visa application, except for the issue of its letter of acceptance for training and working in our institute.
 - The training fee and organization fee must be paid by the trainee. Currently, the training fee for all international fellows is 5,000 \$ per year. The faculty will provide accommodation during the training period. However, the cost of living and the accommodation fee must be paid by the trainee

11. In-training trainee evaluation:

During the training period there are several in-training assessments to evaluate clinical competency; including,

1. Direct observation procedural skills (DOPS) in clinical practice: assessed by attending staff every month
2. Logbook evaluation
3. Multisource feedback (360° evaluation) from attending staff, residents and nurses every 3 months
4. Long case examination every 6 months to assess competency of the trainee, as to whether they can apply their basic knowledge to patient care, discuss risks and benefits, plan and perform procedures and follow post-procedure care.

After passing the final evaluation, the trainee will receive a certificate of completion from the Division of Pediatric Cardiology, Faculty of Medicine, Prince of Songkla University.

12. Research:

Research and research presentations are not compulsory for international trainees. If the trainee is required to carry out research during the training period, please declare this in the introduction letter. The unit will provide research experience, and will provide an opportunity to present the research in either a national or international conference in pediatric interventional cardiology.