

International Course for Fellowship Training: Certification in Interventional Cardiology

Cardiology Unit, Division of Internal Medicine, Faculty of Medicine,
Prince of Songkla University

1. Course Title:

International Fellowship Training in Interventional Cardiology

2. Certificate Title:

Certificated in Interventional Cardiology

3. Course Owner:

Cardiology Unit, Division of Internal Medicine, Faculty of Medicine, Prince of Songkla University

4. Program director:

Sirichai Cheewaatanakornkul MD

5. Teaching Faculty

- 1) Assoc. Prof. Woravut Jintapakorn, MD
- 2) Saranyou Suwanugson, MD
- 3) Asst. Prof. Noppadol Chamnarnphol, MD
- 4) Sirichai Cheewaatanakornkul, MD
- 5) Ply Chichareon MD, PhD
- 6) Thanapon Nilmoje, MD
- 7) Treechada Wisaratapong, MD

6. Training mission:

Interventional Cardiology, one of the main pillars of cardiology, involves basic and advanced knowledge and practices in the interventional treatment of coronary artery disease, and congenital, valvular, and structural heart disease as they tend to have a more significant role in current and future management strategies in these fields. It includes fundamental aspects (angiography, hemodynamics, vascular access, etc.), and key concepts of cardiac catheterization procedures in regards to each disease (valves, septal defects, etc.). It focuses on developing a deep understanding of indications, patient selection and complications. Nevertheless, many countries

and areas still lack an intervention and supporting system in order to deal with complex coronary artery disease and structural heart issues that could be potentially treated with a transcatheter management approach.

In regards to adult interventional cardiology, PSU has been recognized as one of the leading centers in Thailand and in the Asia-Pacific region, with a decade of experience in interventional treatment. We aim to train interventionists, improve accessibility by expanding the interventional network and further our advancement in this field, in order to benefit society.

7. Scope of training:

Interventional cardiology involves practical aspects of interventional treatment in regards to coronary and structural heart disease requiring an integrated knowledge of the basics in cardiac catheterization as well as practical techniques in therapeutic procedures.

Therapeutic procedures include percutaneous coronary interventions and stent implantations, the use of rotational atherectomy, aspiration and thrombectomy, CTO desobstruction (antegrade and retrograde), intravascular imaging (IMUS and OCT), intravascular physiology (FFR), Rotational atherectomy, intra-aortic balloon conterpulsation and Extracorporeal membrane oxygenation (ECMO). A wide range of percutaneous structural procedures are performed, including Balloon valvuloplasty (mitral, aortic, pulmonic), Valvular implantation (TAVI, Transeptal mitral valve in valve therapy, transcatheter edge-to-edge mitral valve repair), LAA closure, and ASD and VSD closure (performed by pediatric interventional cardiologists).

8. Program contents:

This is a 12-month training course for the international trainee. The course is divided into two 6-month levels to ensure that trainees could receive the appropriate level of experience to learn and build up their knowledge.

- Level 1: 1st 6-month-period. This will cover knowledge and practices involving basic issues and procedures in patients with simple lesions who are under the supervision of the corresponding staff.
- Level 2: 2nd 6-month-period. This will cover knowledge and practices in connection to complex procedures under the supervision of the corresponding staff. In addition, trainees will be trained to act as team leaders in regards to planning procedures.

Activity schedule

Monday	Cardiac catheterization (9.00-16.30)
Tuesday	PCI Clinic (case follow up) (9.00-12.00) + Cardiac catheterization (13.00-16.30)
Wednesday	Cardiac catheterization (9.30-16.30)
Thursday	Cardiac catheterization (8.30-16.30)
Friday	Cardiac catheterization (9.30-16.30)

Academic schedule

Monday	2 nd , 4 th week: CVT conference (8.00-9.00)
Tuesday	
Wednesday	
Thursday	2 nd week: Cath conference (12.00-13.00)
Friday	4 th week: Advanced Intervention review (8.30-9.30)

9. Common knowledge in interventional cardiology:

- 1) Evaluation and Management Prior to Catheterization
- 2) Manual Techniques of Cardiac Catheterization
- 3) Hemodynamic Evaluation of coronary and congenital Heart Disease
- 4) Angiography of coronary artery disease
- 5) Imaging modalities and physiology in the cath lab (IVUS, OCT, FFR)
- 6) Diagnostic catheterization: indication, technique and complication
- 7) Coronary Intervention: Balloon angioplasty, Percutaneous coronary intervention (PCI)
- 8) Valvular intervention: Balloon valvuloplasty, Percutaneous Mitral Valvuloplasty, Aortic Valvuloplasty, TAVI, Mitral clip, Percutaneous transcatheter mitral valve therapy (transeptal mitral valve in valve)
- 9) Vascular closure device: Angioseal, Perclosed device
- 10) Rotational atherectomy devices.
- 11) Mechanical support devices (Intra-aortic balloon pump, ECMO)
- 12) Other Catheterization Laboratory Techniques and Interventions including Rt heart catheterization, Pulmonary balloon arterial angioplasty, Alcohol septal ablation
- 13) Catheterization and intervention of the adult patient with congenital heart disease (ACHD)

10. Common procedures in interventional cardiology

This is a list of procedures that trainees should perform or observe during the training period. The number corresponding to each procedure may be adjusted depending on wider external factors (e.g., COVID-19 pandemic)

Skill	Observer	Perform
Diagnostic cardiac catheterization		/ (200 cases)
Percutaneous coronary intervention (Balloon and stenting)		/ (75 cases)
Intravascular imaging (IVUS, OCT, FFR)		/ (30 cases)
Rotational atherectomy		/ (10 cases)
Vascular closure devices		/ (30 cases)
Right heart catheterization		/ (10 cases)
Balloon valvuloplasty (Aortic, Mitral, Pulmonic)	/	
Advance structural intervention (e.g., TAVI, Mitral clip)	/	
ECMO cannulation and initial setup	/	

11. Number of international trainees and application process

- 1) Number of international trainees: 1 trainee/year
- 2) Eligible applicant: An international doctor certified in cardiology.
- 3) Application process:
 - Trainee must send his/her curriculum vitae including information about his/her academic degrees and working experience as well as a personal introduction letter to the program director: Sirichai Cheewatanakornkul, sirichai.chee@gmail.com
 - The trainee must declare the level of funding support secured from his/her country and enclose an official letter from the sponsor, confirming this.
 - After acceptance for the training, the faculty will send a confirmation letter to support the trainee's visa application. The trainee will require a visa to enter Thailand. The faculty cannot influence the outcome of any visa application. Nevertheless, the faculty will issue a letter, for immigration purposes, confirming the trainee's acceptance for training and working in our institute.

The trainee is liable to pay for the training and the organizational fee; currently, in regards to all international fellows, the total is set at 4,000 USD/year. The faculty will provide accommodation during the training period. However, accommodation, living costs and

personal health insurance must be paid by the trainee and are not included in the aforementioned total fee.

12. 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 monthly by the attending staff
- 2) Logbook evaluation
- 3) Multisource feedback (360° evaluation) by attending staff, residents and nurses every 3 months
- 4) Long case examination, every 6 months, to assess the competency of the trainee and whether he/she can apply basic knowledge in relation to patient care, discuss risks and benefits, plan and perform procedures and deliver appropriate post-procedure care.
- 5) After passing the final evaluation, the trainee will receive a certificate of completion from the Division of Cardiology, Faculty of Medicine, Prince of Songkla University.

13. Research:

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