



PIE

Practical Intermediate Echocardiography for Critical Care Singapore

Date: 11 - 12 August 2025

Where: Tan Tock Seng Hospital, Singapore

Cost: AUD1,300 (working in Singapore)¹

²Participants NOT working in Singapore and from

- high income countries AUD2,000
- upper middle income countries AUD700
- lower middle to low income countries AUD400

¹Partially sponsored by Tan Tock Seng Hospital and APICS 2025.

²Places are limited. Definitions of income status defined by *The World Bank*.

Faculty

- Chew Si Yuan, Singapore
- Fong Wee Kim, Singapore
- Lau Yie Hui, Singapore
- Rita Ibrahim, Jakarta
- Sandra Hui, Singapore
- Stephen Huang, Sydney
- Other senior trainers

Organizer

- APICS 2025
- Tan Tock Seng Hospital
and



[https:// niccer.asn.au](https://niccer.asn.au)

Contact:

Conference secretary

Ms Lisa Deaman
secretary@niccer.asn.au

Registration:

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Introduction

PIE is a new transthoracic echocardiography (TTE) course targeting at more experienced or advanced practitioners,

- who are **already performing basic level echo** but would like to **advance their skills and apply Doppler echo** in their daily practice
- who are already **performing Doppler echo** but want to **perfect their Doppler skills** or want to learn more on **principles of Doppler assessments**

The course objective is to equip practitioners with the skills to properly assess cardiac function and haemodynamics in patients who are critically ill. There is a well balance of didactic lectures and hands-on practice in this course, and aims to fill the “gap” between basic and advanced critical care echo.

Course content

The course covers basic principles and clinical topics, with the emphasis on Doppler assessment. Topics* may include:

- Basics principles:
- *Revisiting anatomy and views in TTE, and probe navigation*
- *Principles of Doppler & tissue Doppler*
- *Cardiac output measurements by Doppler*
- *The Bernoulli's equation and assumptions*
- *Pulmonary artery pressure estimations*
- *Tissue Doppler and applications*
- *Mean pressure gradient, pressure half-time, and their applications in valvular assessments*
- *The continuity equation and its applications*
- *Assessing LV filling pressures*
- *Different types of dynamic LV outflow obstructions*
- *Pitfalls of Doppler measurements*
- Case studies on Doppler applications in various clinical scenarios.

*Note that not all topics are offered due to time limitation. Suitable topics will be decided by the local organizer in discussion with the PIE team.

Who should attend?

Participants should have **attended a basic level echo course**, e.g. RACEplus, and have **performed at least 30 basic level TTE studies** or are comfortable in getting the standard TTE views.

Cost

Please note that this course is intended for doctors working in Singapore, and only a limited number of places are available for doctors working elsewhere.

Reference material (not included)

McLean, Huang & Hilton (eds) *Oxford Textbook of Advanced Critical Care Echocardiography*, Oxford University Press, Oxford.



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*Practical Intermediate Echocardiography
for Critical Care*

Singapore

Tentative Program

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Day 1

- 0900 Welcome and introduction
0915 Probe navigation in TTE views
0945 Hands-on warm-up: Probe navigation in TTE views
1030 Morning break
1050 Lectures:
 Doppler principles
 Cardiac output measurement
1145 Hands-on: Colour Doppler and CO measurements
1245 Lunch
1330 Lectures:
 Pulmonary artery pressure estimation
 Tissue Doppler principles
1415 Hands-on: PAP estimation and tissue Doppler
1515 Afternoon break
1530 Mean PG and pressure half-time
1600 Hands-on: mean PG and PHT
1645 Q & A
1700 Finish

Day 2

- 0900 Pitfalls in haemodynamic measurements
0940 Hands-on:
 Revisiting CO, PASP and tissue Doppler
1030 Morning break
1045 Continuity equation and applications
 - *aortic stenosis: effective orifice area*
 - *regurgitation volume / fraction*
 - *Septal defects: Qp:Qs*
1115 Hands-on: Continuity equation
1215 Lunch
1300 Assessing LV filling pressures
1330 Hands-on: LV filling pressures
 - *E/A, e', E/e', TR velocity or PASP, LAV*
1430 Dynamic outflow obstruction
1500 Afternoon break
1515 Fun with Doppler Quiz
1620 Case study from Sydney
1640 Q&A
1700 Finish