Entrustable Professional Activities (EPAs)

List of EPAs for Cardiology

EPA Title	EPA Entrustment Level to be Attained by Exit
EPA 1: Managing Cardiology Patients in the Emergency Room (ER) Setting	Level 4
EPA 2: Managing Cardiology Patients in the Critical Care (CCU) Setting	Level 4
EPA 3: Managing the General Cardiology Patient	Level 4
EPA 4: Managing Cardiology Patients using Invasive Cardiology	Level 3
EPA 5: Managing Cardiology Patients using Echocardiography	Level 3
EPA 6: Managing Cardiology Patients using Nuclear Imaging	Level 3
EPA 7: Managing Cardiology Patients with Arrhythmias and Rhythm Management Devices	Level 3

Entrustment Scale

Entrustment Level	Description
Level 1	Be present and observe, but no permission to enact EPA
Level 2	Practice EPA with direct (pro-active) supervision
Level 3	Practice EPA with indirect (re-active) supervision
Level 4	Unsupervised practice allowed (distant oversight)
Level 5	May provide supervision to junior learners

Cardiology EPA 1

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Title	**EPA 1 : Managing Cardiology Patients in the Emergency Room (ER) Setting**

Specifications and limitations	The ability to attend to patients referred by Emergency Room is a key skill for all cardiologists-in-training.
	
	Specification:
	• Initial assessment and triage of referred patients from the ER, including history taking, targeted physical examination, ordering and interpreting key cardiovascular investigations with emphasis on common emergencies originating from the ER.
	• Review and synthesise results, exercise appropriate decision making to arrive at a diagnosis and formulate a management plan including:
	  ○ Appropriate disposition of patients, either as a direct discharge from the emergency room or transfer to an appropriate inpatient setting (e.g. cardiac catheterisation laboratory, intensive care, high dependency ward or general cardiology ward)
	  ○ Communication with family and healthcare colleagues (including handover)
	  ○ Appropriate review of patients for new developments in the clinical situation
	
	Context
	• Adult patients referred from the ER

	Limitations • Does not apply to the neonatal or paediatric age groups
EPA Entrustment Level to be Attained by Exit	Level 4

Cardiology EPA 2

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Title	**EPA 2 : Managing Cardiology Patients in the Critical Care (CCU) Setting**
Specifications and limitations	The ability to manage critically ill cardiology patients admitted to the intensive care setting (including high dependency, critical care unit,) is an essential requirement for cardiologists. The general cardiologist should be well-versed in managing critically ill cardiac patients but is not expected to achieve the clinical competency of a trained intensivist. The specific functions defining this EPA include: • Initial assessment and triage of cardiology patients who are critically ill. • Initial stabilisation of the critically ill cardiology patient. • Gathering essential information through history, physical examination and initial laboratory, radiological and cardiovascular evaluation in order to make an appropriate diagnosis. • Management of patients' primary problem and application of current evidence to the patient care. • Assess patient for suitability and safety for transfer to lower acuity setting. • Engage in clear communication among members of the multidisciplinary team managing the patient. • Placing the patient at the centre of all management decisions through timely communication with patients and families. • Engages the family and patient in discussion of end-of-life issues. • Improve patient safety and clinical work processes through quality improvement projects. • Clinical research to advance medical knowledge and clinical outcomes in cardiovascular health.
	Limitations: • Does not apply to the neonatal or paediatric age groups • Competency of procedures performed on critical care cardiac patients such as right heart catheterisation, central line insertion, insertion of temporary pacing wire, intra-aortic balloon pump catheter, pericardiocentesis, device interrogation, bedside Echo, etc., are assessed in separate EPAs (EPAs 4 , 5 and 7)
EPA Entrustment Level to be Attained by Exit	Level 4

Cardiology EPA 3

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Title	**EPA 3 : Managing the General Cardiology Patient**
Specifications and limitations	Mastery of managing the "bread-and-butter" cardiology conditions is key to the training of all cardiology senior residents to become competent cardiologists. The care for general cardiology conditions can take place in both inpatient and outpatient settings. Specification: In the inpatient setting: • Initial assessment of patients admitted with cardiologic conditions, including history taking, cardiac-focused physical examination, ordering and interpreting key cardiovascular investigations with emphasis on common general cardiology conditions, such as coronary artery disease, congestive heart failure, valvular heart disease, arrhythmia, syncope, etc. • Review and synthesize results, exercise appropriate decision making to arrive at a diagnosis and formulate a management plan. • Appropriate referral to other medical or surgical specialties when adequate. • Appropriate referral to cardiac subspecialty care when adequate. • Appropriate consultation for cardiovascular risk factor control and primary disease prevention. • Communication with family and healthcare colleagues (including handover). • Appropriate review of patients for new developments in the clinical situation. • Engages the family and patient in discussion of end-of-life issues. In the outpatient setting: • Initial assessment of patients who presented to outpatient general cardiology clinic with common cardiologic conditions, including history taking, cardiac-focused physical examination, ordering and interpreting key cardiovascular investigations with emphasis on common general cardiology conditions, such as coronary artery disease, congestive heart failure, valvular heart disease, arrhythmia, syncope, etc. • Review and synthesize results, exercise appropriate decision making to arrive at a diagnosis and formulate a management plan. • Appropriate referral to other medical or surgical specialties when adequate. • Appropriate referral to cardiac subspecialty care when adequate. • Communication with family. Context • Adult patients admitted to general cardiology wards. • Adult patients referred to general cardiology outpatient clinics.
	Limitations • Does not apply to the neonatal or paediatric age groups
EPA Entrustment Level to be Attained by Exit	Level 4

Cardiology EPA 4

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Title	**EPA 4 : Managing Cardiology Patients Using Invasive Cardiology**
Specifications and limitations	The ability to perform common invasive cardiac procedures is a key skill for all cardiologists-in-training. Specification: • Understanding the appropriateness of various cardiac invasive procedures. The senior residents should understand the indications for right and left heart catheterization, right ventricular endocardial biopsy, and be able to estimate the risk and benefit of procedures performed for diagnostic reasons. Knowledge of comorbid factors that increase the risk of a procedure should be demonstrated. • Obtaining informed consent. The senior residents should communicate the risk and benefits of a procedure in a manner that is understood by the patient and address questions raised by the patient. In situations where the patient cannot give informed consent, the trainee should obtain consent from appropriate sources. • Obtaining vascular access, the senior residents should develop skills in obtaining vascular access to the internal jugular, subclavian and femoral veins as well as the femoral, radial and brachial artery. • Coronary angiography and ventriculography. The senior residents should develop skill in the injection of contrast material for angiography and recognize the potential complications of the use of x-ray contrast material. The senior residents should develop a high level of competence in the interpretation of hemodynamic data and angiographic data. • Pericardiocentesis. The senior residents should be able to understand the indications and potential risks of cardiac pericardiocentesis, and demonstrate adequate skills in performing the procedure. • Angioplasty, interventional procedures and Intra-aortic balloon counterpulsation. The senior residents will acquire sufficient exposure to the indications, performance and management of complications related to these procedures. They are, however, not expected to be the primary operator for these procedures. • Evaluating and treating complications. The senior residents should have full knowledge of complications of the procedures of diagnostic catheterization, the mechanisms for monitoring complications when suspected, and full knowledge and appropriate treatment of these complications. • Right ventricular endocardial biopsy. The senior residents should have full understanding of the indications for diagnostic endocardial biopsy. The senior residents should understand how the procedure is performed and have knowledge of the potential complications. Context • Adult patients in the inpatient setting, with procedures performed most commonly in the cardiac catheterization laboratory, CCU, high-dependency unit, or in selected cases bedside in the cardiac wards
	Limitations • Does not apply to the neonatal or paediatric age groups
EPA Entrustment Level to be Attained by Exit	Level 3

Cardiology EPA 5

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Title	**EPA 5 : Managing Cardiology Patients Using Echocardiography**
Specifications and limitations	The ability to perform and interpret echocardiographic studies is a key skill for all cardiologists-in-training. Specification: • Understand the basic aspects of ultrasound physics and instrumentations. • Perform routine transthoracic studies and to relate the findings to the patient's medical management. • Understand the indications and basic aspects of exercise echocardiography and pharmacologic stress echocardiography. • Understand the indications and basic aspects of transesophageal echocardiography (TEE). • Understand the indications and basic aspects of intracardiac echocardiography (ICE). • Perform patient counselling in preparing for and undergoing Echocardiographic procedures including TEE and stress Echo. Context: • Adult patients in both inpatient and outpatient settings
	Limitations • Does not apply to the neonatal or paediatric age groups
EPA Entrustment Level to be Attained by Exit	Level 3

Cardiology EPA 6

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Title	**EPA 6 : Managing Cardiology Patients Using Nuclear Imaging**
Specifications and limitations	Understanding the indications for nuclear cardiology imaging as well as interpretation of results from cardiac nuclear studies is a competency for cardiologists-in-training. Specification: • Select appropriate patients for nuclear cardiology imaging and choose the most suitable test modality • Appreciate and monitor for potential risks that may occur during cardiac stress testing • Basic interpretation of nuclear cardiology scan results • Ability to apply results to formulate an individualized management plan for the patient. Context: • Adult patients referred to the nuclear cardiology laboratory for SPECT myocardial perfusion imaging (MPI).
	Limitations • Does not apply to the paediatric age groups • Practical exposure to Positron Emission Tomography (PET) imaging is not readily available and not required although trainees are expected to have basic theoretical knowledge in cardiac PET.
EPA Entrustment Level to be Attained by Exit	Level 3

Cardiology EPA 7

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Title	**EPA 7 : Managing Cardiology Patients using Rhythm Management Procedures.**
Specifications and limitations	Arrhythmias are a common manifestation of adult cardiac disease. Managing these conditions and device therapy is an essential part of being an adult Cardiologist in Singapore. Specifications: • Knowing the underlying mechanism of cardiac electrical conduction and arrhythmia. • Knowing the indications for ECG, Holter/Event recording, Tilt table testing and invasive Electrophysiology study. • Interpret ECG and Holter/Event recording • Interpret basic electrograms in Electrophysiology study. • Interrogate basic functions of pacemakers and Implantable Cardioverter Defibrillator (ICD). • Interpreting device interrogations and integrating this with clinical data to assists in the diagnosis and management of patients with arrhythmias. • Communicating and documenting treatment options and management plans effectively to patients, families, referring physicians and health care professionals. Context: • Adult patients in both inpatient and outpatient settings
	Limitations • Does not apply to the neonatal or paediatric age groups
EPA Entrustment Level to be Attained by Exit	Level 3