

**CARDIOTHORACIC ANAESTHESIA FELLOWSHIP
ATTACHMENT PROGRAMME IN SGH**

Components	Information
1. Division/ Department	Anaesthesiology & Perioperative Medicine/ Anaesthesiology
2. Title of Programme	Fellowship in Cardiothoracic Anaesthesia
3. Relevant Registrations	<ul style="list-style-type: none"> • Temporary Registration with Singapore Medical Council (SMC) • Training employment pass application with Ministry of Manpower, Singapore (MOM) (upon successful Temporary Registration with Singapore Medical Council)
4. Overview 4.1 Background information	<p>SingHealth is a tertiary regional referral center with the largest cardiothoracic surgical center in Singapore for complex cardiothoracic surgical procedures. Being part of the National Heart Centre Singapore (NHCS), the largest national center for cardiovascular medicine, it provides care for patients requiring a wide variety of cardiothoracic and cardiologic procedures.</p> <p>The Department of Anaesthesiology in Singapore General Hospital (SGH) offers a 6-month or 12-month fellowship program for learners pursuing an interest in cardiothoracic anaesthesia as a subspecialty. Fellows will gain clinical experience through hands-on experience in managing a variety of cardiothoracic surgeries and cardiologic procedures (as elaborated below), and the opportunity to work in the hybrid theatre. Fellows will have the opportunity to gain exposure to the management of perfusion during cardiopulmonary bypass (CPB) and to the management of cardiothoracic surgical patients in the Cardiothoracic Intensive Care Unit. Observation at the diagnostic and imaging laboratories may be arranged.</p>
4.2 Goal/ aim(s)	<p>The 12-month programme aims to provide learners with a comprehensive knowledge on the practice of anaesthesia, surgical intensive care, and acute pain management for cardiothoracic surgical patients</p> <p>The 6-month programme is offered on a case-by-case basis for more mature or clinically experienced learners. It aims to provide a refresher and update in the practice of cardiothoracic anaesthesia for more complex, advance or minimally invasive procedures.</p>
4.3 Duration	6 months or 12 months
5. Target Audience	Learners who have interest and intention in pursuing cardiothoracic anaesthesia as a subspecialty. Learners with prior experience in cardiothoracic anaesthesia, for example during residency training, are preferred
5.1 Pre-requisite /eligibility requirement(s)	<p>General requirements for Temporary Registration for training (required by SMC):</p> <ul style="list-style-type: none"> • A basic medical degree from an accredited medical university or medical school • Passed the relevant national licensing examination in the country of conferment of basic degree, where applicable • Evidence of at least 12 months of houseman-ship / internship with a certificate of satisfactory completion of houseman-ship or equivalent • Been registered as a medical practitioner in the country where he is currently practising

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	<ul style="list-style-type: none"> • Been certified to be of good standing by the Medical Council or the relevant national authority <p>Note: The doctor should be in active clinical practice (and been registered as a medical practitioner in the countries of practice) for the 3 years preceding the application for medical registration in Singapore.</p> <p>In addition to the above criteria, Clinical Fellows must:</p> <ol style="list-style-type: none"> a) Fulfil English Language requirements of SMC if the medium of instruction for the basic medical qualification is <u>not</u> in English b) Have obtained a postgraduate medical qualification in anaesthesia in his/her native country or overseas c) Have a minimum of 2 years of postgraduate training experience in anaesthesia after obtaining the postgraduate medical qualification d) Be working currently as a registrar, senior resident or equivalent e) Have a valid BCLS and ACLS certification during the training period f) Be sponsored by (i) the government, or (ii) regional health authority or (iii) an appropriate institution in the home country. For (f)(iii), the doctor must be on current full-time employment (40 hours or more per week) with the sponsoring institution. <p>As a Clinical Fellow, the doctor will be allowed to be involved in patient care and make entries in patients' case note, communicate care plans to patients and fellow healthcare professionals, and perform procedures under <u>direct</u> supervision or Level 1 supervision under SMC's Supervisory Framework.</p> <p>Department's requirement, if any (only for Fellows in this subspecialty): Proficiency in placement of invasive catheters for haemodynamic monitoring is an advantage</p>
<p>6. Learning Objectives</p>	<p>This fellowship would allow the Fellow to acquire:</p> <ul style="list-style-type: none"> • A good grounding of physiology, pathophysiology, pharmacology as related to the heart / lungs/ thorax • Knowledge of delivery of cardi thoracic anaesthesia for a range of routine cardiologic, cardiothoracic and vascular procedures • Competency in placement of invasive catheters such as intra-arterial, central venous, pulmonary arterial and lumbar subarachnoid drains • Competency in paravertebral blocks and thoracic epidurals • Competency in placement of double lumen endotracheal tube, bronchial blocker and the use of fiberoptic bronchoscope • Ability to acquire the recommended cross-sectional views of transoesophageal echocardiography (TOE) examination, to recognize markedly abnormal cardiac structure and function, severe hypovolemia, large pericardial effusions, and the presence of intra-cardiac air • Knowledge of the pathophysiologic changes associated with cardiopulmonary bypass • Knowledge of principles of perioperative management of cardiothoracic surgical patients in the intensive care unit
<p>7. Course/Training Syllabus</p>	<p>The programme provides fellows with knowledge of perioperative care of adult patients</p> <ul style="list-style-type: none"> • With ventricular dysfunction.

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	<ul style="list-style-type: none"> • With cardiomyopathy. • With pulmonary hypertension. • With or for mechanical circulatory assist device implantation and explanation. • With Extracorporeal Membrane Oxygenation (ECMO) • With high-risk cardiothoracic disease for non-cardi thoracic surgery e.g., uncorrected congenital heart disease. • With or for heart transplantation. • For repair of ascending aortic aneurysm and dissection. • For repair of congenital heart disease in adulthood. • For percutaneous valve repair, valve implantation, endovascular stent procedures. • For resection of thoracic tumours e.g., lung cancer, mediastinal mass. • For surgical treatment of thoracic pathology e.g., empyema, pneumothorax, chest wall pathology. 												
8. Training Method	<p>Method of Supervision: Direct observation and feedback. Fellow will be supervised by an assigned supervisor at all times.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr style="background-color: #D3D3D3;"> <th colspan="3" style="text-align: center; padding: 5px;">TRAINING ACTIVITIES & METHODOLOGY</th> </tr> <tr style="background-color: #D3D3D3;"> <th style="width: 40%; padding: 5px;">Name of activity</th> <th style="width: 30%; padding: 5px;">Frequency / No. of sessions / Length of session</th> <th style="width: 30%; padding: 5px;">Teaching methodology</th> </tr> </thead> <tbody> <tr> <td style="padding: 5px;"> Reporting and Management of listed patients Daily work in operating theatres or cardiology catheterization laboratory </td> <td style="padding: 5px; vertical-align: middle;"> Daily 8 hours or when the rostered list ends </td> <td style="padding: 5px; vertical-align: middle;"> Discussion of indications and anticipated difficulties of procedures. Review of any complications of procedures Direct supervision </td> </tr> <tr> <td style="padding: 5px;"> Formalised Medical Education activities Echo Teaching & Echo Journal Club at NHCS Cardiovascular management meeting at NHCS </td> <td style="padding: 5px; vertical-align: middle;"> 1 hour at noon, every 2nd and 4th Wednesday of the month Weekly, 1 hour on Thursday morning </td> <td style="padding: 5px; vertical-align: middle;"> Didactic, discussion. Discussion of patients for intervention </td> </tr> </tbody> </table>	TRAINING ACTIVITIES & METHODOLOGY			Name of activity	Frequency / No. of sessions / Length of session	Teaching methodology	Reporting and Management of listed patients Daily work in operating theatres or cardiology catheterization laboratory	Daily 8 hours or when the rostered list ends	Discussion of indications and anticipated difficulties of procedures. Review of any complications of procedures Direct supervision	Formalised Medical Education activities Echo Teaching & Echo Journal Club at NHCS Cardiovascular management meeting at NHCS	1 hour at noon, every 2nd and 4th Wednesday of the month Weekly, 1 hour on Thursday morning	Didactic, discussion. Discussion of patients for intervention
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	<p>Continuous Medical Education (CME) activities including grand rounds and conferences</p> <p>CME and peer-review learning sessions at SGH</p>	<p>Weekly 1-2 hours</p>	<p>Didactic, discussion and scheduled presentation</p>
	<p>Research activity</p> <p>Audits and assistance in research projects</p>	<p>Department research and audit projects</p>	<p>Mentored by Consultant/Senior Consultant</p>
<p>8.1 Night Duties Requirement</p>	<p>No requirement for night or weekend duties</p> <p>Observation of after-hours emergency procedures e.g. heart transplantation, repair of ruptured ventricular septum is for training purposes</p>		
<p>8.2 Running of Clinics Requirement</p>	<p>No requirement for running of clinics</p> <p>Fellows can attend to patients at same day admission (SDA) unit for pre-operative assessment of patients coming for cardiothoracic or cardiologic procedures</p>		
<p>9. Assessment and Evaluation</p>	<p>Clinical Fellows will need to demonstrate their proficiency level based on the following competencies:</p> <p>1) Patient Care Formulates appropriate anaesthetic care plans for patient and discuss these plans with supervisors Optimizes care of core medical conditions Obtain informed consent Conducts anaesthesia (pre-anaesthetic equipment and machine check, appropriate monitoring, anaesthesia, postoperative disposition) Manages perianaesthetic complications</p> <p>2) Medical Knowledge Knowledge of anatomy, physiology, pharmacology, pathophysiology, general medicine and surgical procedure and application of this knowledge in the conduct</p>		

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	<p>of anaesthetic management of patients coming for cardiothoracic surgeries or cardiologic procedures</p> <p>3) Practice-Based Learning and Improvement Demonstrates self-directed learning Seeks timely guidance from supervisors appropriately</p> <p>4) Interpersonal and Communication Skills Communicates effectively with patients and family Communicates effectively with other healthcare professionals Demonstrates collegiality with colleagues in the ward/CTICU, SDA clinic, operating theatre and cardiologic catheterization laboratory Maintains clear documentation</p> <p>5) Professionalism Accepts responsibilities and follow through on assigned tasks Shows compassion and is respectful of patient's needs Safeguards patients' health information Knows own limits and consults appropriately Works well with other healthcare professionals Copes well with stressful clinical situations</p> <p>6) Systems-Based Practice Demonstrates patient safety principles and infection control practices</p>						
9.1 Assessment approaches	<p>Formative assessment:</p> <ul style="list-style-type: none"> Regular evaluation between Fellow and Supervisor / Program director/ Director of cardiothoracic anaesthesia/ Head of Department Reflective journal- logbook recordings of training activities <p>Summative assessment: Periodical assessment reports as required by Singapore Medical Council</p> <p>Feedback:</p> <ul style="list-style-type: none"> End-of-training feedback form as required by Singapore Medical Council End-of-training feedback session with SGH-PGMI 						
9.2 Evaluation Process 9.2.1 General overall grading system	<p>The general overall grading system evaluates the Clinical Fellow's performance upon completion of the fellowship programme. All Clinical Fellow will be given a general overall grading status at the end of the fellowship programme based on the grading criteria requirements incorporating the six competencies based knowledge, skills and performance that Clinical Fellow must demonstrate throughout the programme.</p> <table border="1" style="width: 100%; background-color: #4F81BD; color: white;"> <thead> <tr> <th style="background-color: #4F81BD; color: white;">Grading Status</th> <th style="background-color: #4F81BD; color: white;">Description</th> <th style="background-color: #4F81BD; color: white;">Grading Criteria Requirements</th> </tr> </thead> <tbody> <tr> <td style="background-color: #D9E1F2;">CMP</td> <td style="background-color: #D9E1F2;">Completes the programme</td> <td style="background-color: #D9E1F2;"> <ul style="list-style-type: none"> Satisfactory performance in all 6 competencies </td> </tr> </tbody> </table>	Grading Status	Description	Grading Criteria Requirements	CMP	Completes the programme	<ul style="list-style-type: none"> Satisfactory performance in all 6 competencies
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9.2.2 Options for Clinical Fellow who was graded with a (USP) for unsatisfactory performance	<p>Regular feedback to fellows to avoid such situations.</p> <p>Option for fellowship extension if mutually agreeable after discussion with supervisor, program director, Director of cardiothoracic anaesthesia, HOD Anaesthesiology and PGMI.</p>									
9.3 Criteria for Early Termination	<p>The attachment programme will be terminated early on the ground of the Clinical Fellow's poor performance, misdemeanour, misconduct, negligence or breach of any terms stipulated or referred to in the Fellowship Letter of Offer and Institution Terms and Conditions.</p> <p>The Clinical Fellow may also request to terminate the attachment programme for reasons such as serious illness or other personal obligations. The institution will review all requests for early termination with the Clinical Fellow and the Supervisor / Head of Department.</p>									
10. Course Administration	<p>Type of Certification: Certificate of Training</p> <p>Training Fee (recommended): S\$3,000 per month (excl prevailing tax)</p> <p>Programme Funding source: Self-funded</p>									
11. Number of Clinical Fellow to be accepted at any one time	2									