Specialty Training Requirements (STR)

Name of Specialty:	Anaesthesiology
Chair of RAC:	Prof Ong Biauw Chi
Date of submission:	26 June 2025

Contents

Scope of Anaesthesiology

The clinic and ambulatory settings and hospital-based ancillary specialty of anaesthesiology includes the assessment of, consultation for, and preparation of patients for anaesthesia; relief and prevention of pain during and following surgical, obstetric, therapeutic, and diagnostic procedures; monitoring and maintenance of normal physiology during the perioperative period; management of critically ill patients; diagnosis and treatment of acute, chronic, and cancer-related pain.

Purpose of the Residency Programme

The purpose of the Anaesthesiology Residency Programme is to train specialists who are competent and can be entrusted to assess and prepare patients for anaesthesia; safely administer anaesthesia; and to monitor and maintain normal physiology during a patient's peri-operative period. Anaesthesiologists should be able to review and manage patients perioperatively in a holistic manner, relieve and prevent pain during and following surgical, obstetric, therapeutic, and diagnostic procedures; to manage critically ill patients; and to clinically manage cardiac and pulmonary resuscitation.

Admission Requirements

At the point of application for this residency programme:

a) Applicants must be employed by employers endorsed by Ministry of Health (MOH); and
b) Residents who wish to switch to this residency programme must have waited at least one year between resignation from his / her previous residency programme and application for this residency programme.

At the point of entry to this residency programme, residents must have fulfilled the following requirements:

a) Hold a local medical degree or a primary medical qualification registrable under the Medical Registration Act (Second Schedule);
b) Have completed Post-Graduate Year 1 (PGY1); and
c) Have a valid Conditional or Full Registration with Singapore Medical Council (SMC).

Selection Procedures

Applicants must apply for the programme through the annual residency intake matching exercise conducted by Ministry of Health Holdings (MOHH).

Continuity plan: Selection should be conducted via a virtual platform in the event of a protracted outbreak whereby face-to-face on-site meeting is disallowed and cross institution movement is restricted.

Less Than Full Time Training

Less than full time training is not allowed. Exceptions may be granted by Specialist Accreditation Board (SAB) on a case-by-case basis.

Non-traditional Training Route

The programme should only consider the application for mid-stream entry to residency training by an International Medical Graduates (IMG) if he/she meets the following criteria:

a) He/she is an existing resident or specialist trainee in the United States, Australia, New Zealand, Canada, United Kingdom and Hong Kong, or in other centres/countries where training may be recognised by the Specialist Accreditation Board (SAB).

b) His/her years of training are assessed to be equivalent to the local training by JCST and/or SAB.

Applicants may enter residency training at the appropriate year of training as determined by the Programme Director and RAC. The latest point of entry into residency for these applicants is Year 1 of the senior residency phase.

Separation

The PD must verify residency training for all residents within 30 days from the point of notification for residents' separation / exit, including residents who did not complete the programme.

Duration of Specialty Training

The training duration must be 36 months of junior residency and 24 months of senior residency.

Maximum candidature: All residents must complete the training requirements, requisite examinations and obtain their exit certification from JCST not more than 36 months beyond the usual length of their training programme. The total candidature for Anaesthesiology is 60 months Anaesthesiology residency + 36 months candidature.

"Make-up" Training

"Make-up" training must be arranged when residents:

- Exceed days of allowable leave of absence / duration away from training; or
- Fail to make satisfactory progress in training.

The duration of make-up training should be decided by the Clinical Competency Committee (CCC) and should depend on the duration away from training and / or the time deemed necessary for remediation in areas of deficiency. The CCC will review residents' progress at the end of the "make-up" training period and decide if further training is needed.

Any shortfall in core training requirements must be made up by the stipulated training year and / or before completion of residency training.

Learning Outcomes: Entrustable Professional Activities (EPAs)

Residents must achieve level 3 for EPAs 10 and 12 and level 4 for the other EPAs as follows by the end of residency training:

	Title
EPA 1	Performing preoperative / pre-procedural assessment and optimization of adult patients
EPA 2	Providing anaesthetic care for adult patients requiring general anaesthesia (GA)
EPA 3	Providing anaesthetic care for patients under regional anaesthesia (RA)
EPA 4	Assessing and managing patients with potentially difficult airway in the hospital setting
EPA 5	Assessing and managing patients with polytrauma in the perioperative setting
EPA 6	Managing critically ill patients in the intensive care unit (ICU)
EPA 7	Providing anaesthetic care for obstetric patients
EPA 7A	Managing parturients for labour epidural/combined spinal epidural (CSE)
EPA 7B	Managing parturients for Lower Segment Caesarean Section (LSCS)
EPA 8	Providing anaesthetic care for patients in a non-operating theatre setting
EPA 9	Providing anaesthetic care for paediatric patients between 3-16 years old
EPA 10	Managing adult patients for cardiovascular procedures and interventions

EPA 11	Assessing and managing patients with acute pain
EPA 12	Assessing and managing patients with chronic pain

Information on each EPA is provided in here*.*

Learning Outcomes: Core Competencies, Sub-competencies and Milestones

The programme must integrate the following competencies into the curriculum, and structure the curriculum to support resident attainment of these competencies in the local context.

Residents must demonstrate the following core competencies:

1) Patient care and Procedural Skills

Residents must demonstrate the ability to:

- Gather essential and accurate information about the patient
- Counsel patients and family members
- Make informed diagnostic and therapeutic decisions
- Prescribe and perform essential medical procedures
- Provide effective, compassionate and appropriate health management, maintenance, and prevention guidance

Residents must demonstrate the ability to:

- Make independent clinical decision-making and patient care, exhibiting sound clinical judgement in a wide variety of clinical situations;
- Function as a leader of peri-operative care teams;
- Provide key aspects of anaesthesia, pre-operative evaluation and immediate post-operative care of surgical patients, and assessment and treatment of critically ill patients and those with acute and chronic pain;
- Manage acute post-operative pain, including familiarity with patient-controlled intravenous techniques, neuraxial blockade, and other pain-control modalities;
- Manage specific needs of patients undergoing diagnostic or therapeutic procedures outside of surgical suites; and
- Maintain a comprehensive anaesthesia record for each patient as an ongoing reflection of the drugs administered, the employed monitoring, the used techniques, the observed physiologic variations, the required therapy provided and administered fluids.

2) Medical knowledge

Residents must demonstrate knowledge of established and evolving biomedical, clinical, epidemiological and social-behavioural sciences, as well as the application of this knowledge to patient care.

Residents must demonstrate knowledge of:

- Planning and administration of anaesthesia care for severe and complicated diseases patient as well as complex surgical procedures patients;
- Complex technology and equipment associated with these practices;
- Clinical anaesthesiology and related areas of basic science, as well as pertinent topics from other medical and surgical disciplines;
- Management of the multi-disciplinary complexity of the geriatric population; and
- Management of unique needs of ambulatory surgical patients.

3) System-based practice

Residents must demonstrate the ability to:

- Work effectively in various health care delivery settings and systems relevant to their clinical specialty
- Coordinate patient care within the health care system relevant to their clinical specialty
- Incorporate considerations of cost awareness and risk / benefit analysis in patient care
- Advocate for quality patient care and optimal patient care systems
- Work in inter-professional teams to enhance patient safety and improve patient care quality. This includes effective transitions of patient care and structured patient hand-off processes
- Participate in identifying systems errors and in implementing potential systems solutions
- Understanding operation room management issues for example, scheduling, financial planning, billing arrangements, professional liability, legislation and regulatory requirements and other aspects of management

4) Practice-based learning and improvement

Residents must demonstrate a commitment to lifelong learning.

Resident must demonstrate the ability to:

- Investigate and evaluate patient care practices
- Appraise and assimilate scientific evidence
- Improve the practice of medicine
- Identify and perform appropriate learning activities based on learning needs

5) Professionalism

Residents must demonstrate a commitment to professionalism and adherence to ethical principles including the SMC's Ethical Code and Ethical Guidelines (ECEG).

Residents must:

- Demonstrate professional conduct and accountability
- Demonstrate humanism and cultural proficiency
- Maintain emotional, physical and mental health, and pursue continual personal and professional growth
- Demonstrate an understanding of medical ethics and law

6) Interpersonal and communication skills

Residents must demonstrate ability to:

- Effectively exchange information with patients, their families and professional associates.
- Create and sustain a therapeutic relationship with patients and families
- Work effectively as a member or leader of a health care team
- Maintain accurate medical records

Other Competency: Teaching and Supervisory Skills

Residents must demonstrate ability to:

- Teach others
- Supervise others

Learning Outcomes: Others

Residents must attend Medical Ethics, Professionalism and Health Law course conducted by Singapore Medical Association (SMA) and Geriatric Medicine Modular Course by Academy of Medicine Singapore (AMS).

Curriculum

The curriculum and detailed syllabus relevant for local practice must be made available in the Residency Programme Handbook and given to the residents at the start of residency.

The PD must provide clear goals and objectives for each component of clinical experience.

Learning Methods and Approaches: Scheduled Didactic and Classroom Sessions

Residents must attend at least 70% of the following education sessions:

a) Multidisciplinary conferences
b) Morbidity and mortality conferences
c) Journal or evidence-based reviews
d) Case-based planned didactic experiences
e) Seminars, teaching sessions and workshops to meet specific competencies
f) Simulation, computer-aided instruction, workshops and CME conferences
g) Grand rounds
h) ETHER (Empowerment Through Holistic Education in Residency), a National combined teaching session for SRs.

Programme must organise teaching sessions on the following:

a) Clinical anaesthesiology and related areas of basic science, as well as pertinent topics from other medical and surgical disciplines.

b) Managing the specific needs of patients undergoing diagnostic or therapeutic procedures outside of the surgical suites.

c) Managing the specific needs of the ambulatory surgical patient.

d) Managing the problems of various patient populations such as geriatric population.

In the event of an outbreak and face-to-face on-site meeting is disallowed, the didactic and classroom sessions should be conducted via a virtual platform or other alternative ways of content delivery.

Learning Methods and Approaches: Clinical Experiences

Residents must complete the following rotations:

For JR:

- A minimum of 2 identifiable one-month rotations in obstetric anaesthesia, paediatric anaesthesia, neuroanaesthesia or cardiothoracic anaesthesia
- A minimum of 1 month in preoperative evaluation clinic
- A minimum of 2 weeks of caring for patients immediately after anaesthesia in the post-anaesthesia care unit
- A minimum of 4 months of critical care rotations
- A minimum of 2 months in pain medicine

For SR:

- A minimum of 1 month in pain medicine
- A minimum of 18 months of core anaesthesia training which consists of any of the following:

- Cardiothoracic, dental surgery, Electroconvulsive Therapy (ECT), Otorhinolaryngology (ENT) & Ophthalmology Surgery, General Surgery, Neurosurgery, Obstetrics, Obstetrics Epidural, Orthopaedic Surgery, Outpatient surgery, Paediatric surgery, Radiological procedures, Urology, Vascular surgery

In the event that cross institution movement is restricted in an outbreak, the learning objectives and goals of subsequent rotations should be fulfilled within the current institution where the resident is at, where feasible.

Elective rotations, if scheduled, should be directly relevant to anaesthesia training. and should be a minimum of 1 month and not more than 4 months in SR years.

Learning Methods and Approaches: Scholarly / Teaching Activities

Residents must complete the following scholarly and teaching activities:

	Name of activity	Brief description: nature of activity, minimum number to be achieved, when it is attempted
1.	Scholarly activity	Includes audit / research quality improvement or innovation project. Writing up case reports or series, and participate in at least one during JR and one during SR.
2.	Department teaching activities	Includes CME teaching, mortality and morbidity presentations, journal club presentation. Requirement for JR & SR to show evidence of the above activity in training portfolio.
3.	JR, or medical student teaching	Includes medical officer teaching, medical student tutorials / teaching sessions, junior resident modular teaching. Requirement for SR to show evidence of the above activity in training portfolio.

Learning Methods and Approaches: Documentation of Learning

Residents must log the following cases:

		Cumulative Procedure Case Requirements by Residency Year				
		R1	**R2**	**R3**	**R4**	**R5**
1)	Cardiac surgery with Cardio-pulmonary bypass (CPB) (EPA 10)			**10**		**15**
2)	Cardiac surgery off CPB (EPA 10)			**10**		**20**
3)	Thoracic Surgery (EPA2)			**10**		
4)	Head and neck surgery			**5**		**10**
5)	Upper gastrointestinal surgery			**5**		**10**
6)	Emergency gastrointestinal surgery			**1**		**10**
7)	Surgery requiring one lung ventilation (EPA 2)			**10**		
8)	Laparoscopic surgery			**5**		**10**
9)	Eye			**5**		**10**
10)	ENT			**5**		**10**
11)	Shared airway surgery			**5**		**10**
12)	Challenging airway management			**1**		**5**
13)	General Surgery			**20**		
14)	Gynaecology			**5**		
15)	Neurosurgical procedure (EPA 2)			**Total - 15**		
15 i)	Emergency neurosurgery (EPA2)			**10**		
16)	Obstetrics Lower Segment Caesarean Section (EPA 7b)			**10**		**20**
17)	Obstetrics Spinal / Epidural / Combined Spinal Epidural (CSE) (EPA 7a)			**10**		**40**
18)	Orthopaedic Surgery			**20**		
19)	Outpatient Surgery			**20**		
20)	Paediatric Surgery (EPA 9)			**Total - 125**		**Total - 155**
20 i)	Age 3 months or less (EPA 9)			**5**		
20 ii)	Age 4 months to 3 years (EPA 9)			**20**		
20 iii)	Age 4-12 years (EPA 9)			**100**		
21)	Geriatric patients undergoing surgery (EPA 2)			**30**		
22)	Morbidly obese patients (EPA 2)			**10**		
23)	Bariatric surgery			**2**		
24)	Spine surgery			**2**		**5**

	Cumulative Procedure Case Requirements by Residency Year				
	R1	**R2**	**R3**	**R4**	**R5**
25) Surgery requiring intraoperative neurophysiological monitoring (EPA 2)			**5**		
26) Peripheral nerve blocks		**Total - 10**	**Total - 20**	**Total - 30**	**Total - 40**
26 i) Upper limb blocks			**10**		
26 ii) Lower limb blocks			**10**		
26 iii) Truncal blocks			**5**		
27) Epidural / caudal*		**10**	**20**	**30**	**40**
28) Subarachnoid blocks*		**10**	**20**	**30**	**40**
29) Peripheral nerve block with catheter			**1**		**5**
30) Assessment / management of new patient with pain (EPA 11)			**20**		**25**
31) Chronic pain patient					**1**
32) Plastic Surgery			**5**		
33) Interventional radiology / MRI (EPA 8)			**5**		**10**
34) Urology			**5**		**10**
35) Vascular Surgery					**5**
36) Emergency trauma surgery			**4**		**8**
37) Transplant surgery					
38) ICU cases			**1**		**5**

Residents must write reflections on the following cases:

No.	Category	Min cases
1	Thyroid / Head and Neck Operations	3
2	Bariatric Surgery	3
3	Geriatric Patients presenting for surgery	3
4	Elective Upper Gastrointestinal Operations	3
5	Emergency Gastrointestinal Operations	3
6	Laparoscopic Surgery	3
7	Thoracic Surgery	3
8	Holistic management of polytrauma patients (EPA 5)	4
9	Cardiac Surgery – Coronary Bypass Surgery-on pump and off-pump	2
10	Cardiac Surgery – Other cardiac procedures e.g., Valve surgery, Automatic Implantable Cardioverter Defibrillator (AICD) insertions, pacemakers' insertion, pericardial window etc.	3
11	Cardiac Surgery – Vascular e.g., repair of AAA, grafts to aorta, femoral-popliteal bypass etc.	3
12	Regional Blocks of Various Anatomies	8
13	Spine Surgery	3

14	Urology surgery	3
15	Shared airway surgery e.g., dental, ENT, airway instrumentation, airway tumour	3
16	Challenging airway management in the hospital (in OT or outside OT such as management of difficult airway for elective surgery and the emergency compromised airway)	5
17	Ophthalmology	3
18	Neurosurgery	3
19	Challenging cases and additional special experience (e.g., long surgeries, massive blood transfusion)	3
20	Obstetrics Anaesthesia (EPA 7) - Caesarean sections	5
21	Obstetrics Anaesthesia (EPA 7) - Labour analgesia	5
22	Paediatrics	6
23	Anaesthesia in Remote Locations (EPA 8) e.g., MRI, Angiography (Interventional and Diagnostic procedures) MRI, cardiovascular lab	5
24	Pain Medicine (acute) (EPA 11)	5
25	Pain Medicine (chronic)	1
26	Intensive Care Unit	5
	Total:	96

Summative Assessments

	Summative assessments	
	Clinical, patient-facing, psychomotor skills etc.	Cognitive, written etc.
R5	EPAs (to be fulfilled at the required level of supervision)	EXIT: - MMed Part C which consists of 12 viva stations – 10min each (i.e.,120min)
R4	N.A.	N.A.
R3	MMed Part B OSCE which consist of 12 stations – 12min each (i.e.,144min) Can be attempted independent from the SAQ exam	MMed Part B SAQ exam which consist of 2 written papers with 8 SAQ in each paper (120min) MMed Part A which consists of 2 MCQ papers with 125 SBA type questions in each paper (150min each) - may be taken at any time during R1-R3
R2	N.A.	MMed Part A which consists of 2 MCQ papers with 125 SBA type questions in each paper (150min each) - may be taken at any time during R1-R3
R1	N.A.	MMed Part A which consists of 2 MCQ papers with 125 SBA type questions in each paper (150min each) - may be taken at any time during R1-R3

S/N	**Learning outcomes**	**Summative assessment components**			
		Part A MCQ 250 MCQs	Part B SAQ	Part B OSCE	Part C
1	Acquisition of medical knowledge that is required to form the basis of anaesthesia training which includes applied physiology, pharmacology, physics, principles of clinical monitoring, equipment, worksite safety (e.g., OT, radiology suites, MRI suites etc), applied anatomy (for procedures such as RA, invasive lines etc), acute medicine for resuscitation and perioperative medicine (management of chronic diseases perioperative period and also effect of anaesthesia and surgery). The require medical knowledge is also reflected in the medical knowledge component of **ALL** the EPAs submitted so far.	✓	✓ SAQ may cover applied physiology, pharmacology or discuss utility of various monitoring devices in management of patients		

2	EPA 1 - Performing preoperative / pre-procedural assessment and optimization of adult patients.	✓	✓	✓ Preop assessment / Mx, Inx or taking history or consent from SPs	✓
3	EPA 2- Providing anaesthetic care for adult patients requiring general anaesthesia (GA)		✓	✓ Discuss Mx plans, taking consent from SPs, application of equipment and bedside patient data	✓
4	EPA 3 - Providing anaesthetic care for patients under regional anaesthesia (RA)	✓	✓	✓ Procedure skills for RA and lines	✓
5	EPA 4 - Assessing and managing patients with potentially difficult airway in the hospital setting	✓	✓	✓ Discussion on assessment, Mx and equipment	✓
6	EPA 5 - Assessing and managing patients with polytrauma in the perioperative setting.	✓	✓	✓ Mx, Inx and equipment (ROTEM)	✓
7	EPA 6 - Managing critically ill patient in the intensive care unit (ICU).	✓	✓	✓ Assessment, Mx, Inx and equipment (ROTEM)	
8	EPA 7 - Providing anaesthetic care for obstetric patients.	✓	✓	✓ Procedure skills, Comm skills in addition to Mx.	✓
9	EPA 8 - Providing anaesthetic care for patients in a non-operating theatre setting.	✓	✓	✓ Assessment & Mx	✓

10	EPA 9 - Providing Anaesthetic care for Paediatric Patients aged between 3 to 16 years old.	✓	✓	✓ Assessment & Mx / SP Comms	✓
11	EPA 10 - Managing adult patients for cardiovascular procedures and interventions.	✓	✓	✓ Assessment, Mx, Inx and equipment (Echo findings	✓
12	EPA 11 – Assessing and managing patients with Acute Pain.	✓	✓	✓ Assessment, Mx and Comms SP	
13	EPA 12 – Assessing and managing patients with Chronic Pain.	✓	✓	✓ Assessment, Mx and Comms SP	
14	Medical Ethics				✓
15	Medical Laws / Regulations: e.g., Medical Advice, Consent, Duty of care		✓		✓
16	Professionalism & Communications				✓
17	Appraise & assimilate scientific evidence (Paper Critic and discussion)	✓			✓
18	Clinical Governance: Safety / Risk Mx		✓		✓
19	Clinical Governance: Providing effective healthcare: quality improvement; guidelines; VDC or VDOs				✓
20	Clinical Governance: Pt / Family / Diff Comms, Pt Exp, Feedback, Complaints Mx				✓
21	System based practice: Healthcare system, funding & future challenges in Singapore				✓

22	System base practice: Environmental impact of anaesthetic practice				✓
23	Anaesthesia Non-Technical Skills: Task Mx; Teamwork; Sit awareness; Decision Making.			✓ Crisis Mx	✓