Specialty Training Requirements (STR)

Name of Specialty:	General Surgery
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Contents

Scope of General Surgery

The practice of GS encompasses the provision of comprehensive care to the patient with surgical disorders of the abdomen and its contents, the alimentary tract, skin, soft tissues, vascular, breast, endocrine organs, and trauma. The practice of surgery also encompasses surgical evaluation and management of patients with oncologic, transplantation, paediatric, and intensive care disorders including burns; and recognition and initial management of acute severe conditions of the cardiothoracic, urologic, gynaecologic, neurologic, and otolaryngologic systems. Surgeons possess surgical judgement, which includes knowledge and technical skills, and the ability to integrate the acquired knowledge into the clinical situation to provide comprehensive care. Comprehensive surgical care includes the evaluation, diagnosis, operative and non-operative treatment of surgical disorders and the appropriate disposition and follow-up of patients.

Purpose of the Residency Programme

GS residency programme is designed to provide the resident with individualised surgical training and progressive patient care responsibilities that stimulate inquiry and a passion for lifelong learning. They will be equipped with core competencies in patient care, medical knowledge, practice-based learning, interpersonal and communication skills, and professionalism and system-based practice. Residents will receive broad-based training to achieve core competencies in the entire spectrum of sub-disciplines of GS. The programme aspires that each resident develops into a well-grounded and independent General Surgeon who provides high quality, patient-centred care, has sound decision making and ownership for patient safety.

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 MOH 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 a mid-stream entry to residency training by an International Medical Graduate (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 SAB; and
b) His / Her years of training are assessed to be equivalent to the local training by Joint Committee on Specialist Training (JCST) and / or SAB.

Applicants may enter residency training at the appropriate year of training as determined by the Programme Director (PD) 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 60 months, comprising of 36 months of Junior Residency and 24 months of Senior Residency. From AY25 intake onwards, the training duration must be 72 months, comprising of 36 months of Junior Residency and 36 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 GS is 60 months GS residency + 36 months candidature. From AY25 intake, the total candidature for GS is 72 months GS 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 CCC and should depend on the duration away from training and / or the time deemed necessary for remediation in areas of deficiency. The CCC should 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 of the following EPAs by end of R2 (excluding EPA 4), and Level 4 by the end of residency training:

	Title
EPA 1	Managing Surgical Outpatient Clinics
EPA 2	Leading Ward Rounds
EPA 3	Managing Patients During Calls
EPA 3A	Performing Calls
EPA 3B	Performing Emergency Surgical Procedures Appendicectomy: Level 3 by R3, Level 4 by R4 Rest of procedures listed: Level 4 by the end of residency training
EPA 4	Running Elective Outpatient Endoscopy Sessions

Residents must achieve level 4 of the following EPAs by the end of R3:

	Title
EPA 5	Performing Elective Surgical Procedures: 1. Ray or partial foot amputation for peripheral vascular disease 2. Open inguinal hernia repair

Residents must achieve level 3 of the following EPAs by the end of residency training:

	Title
EPA 5	Performing Elective Surgical Procedures:

	3. Laparoscopic cholecystectomy with or without intraoperative cholangiogram 4. Open segmental colectomy 5. Small bowel resection or gastrojejunostomy 6. Hemithyroidectomy 7. Simple mastectomy

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 proficiency in the following areas:

(a) Manual dexterity appropriate to their level of training
(b) Ability to develop and implement patient care plans suitable for their level including effective pain management
(c) Management of patients with complex and severe illnesses, as well as major injuries
(d) Management of general surgical issues in transplant patients.

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 a solid understanding of the following areas:

(a) Core knowledge across key surgical areas, including: the abdomen and its contents, the alimentary tract, skin, soft tissues, and breast, endocrine surgery, head and neck surgery, paediatric surgery, surgical critical care, surgical oncology, trauma (including non-operative management), and the vascular system
(b) Critical appraisal of relevant scientific literature
(c) Basic science principles as they relate to clinical surgical practice
(d) Applied surgical anatomy and pathology
(e) Principles of wound healing
(f) Homeostasis, shock, and circulatory system physiology
(g) Hematologic conditions
(h) Immunobiology and the fundamentals of transplantation
(i) Oncology
(j) Surgical aspects of endocrinology
(k) Surgical nutrition, along with fluid and electrolyte management
(l) Metabolic response to injury
(m) Physiology of burns and the initial management of burn injuries

3) Systems-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

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).

Residents must complete the following courses as stipulated:

Mandatory course	Requirements
Basic Cardiac Life Support (BCLS)	Valid Certification throughout residency
Advanced Cardiac Life Support (ACLS)	Valid Certification throughout residency
Advanced Trauma Life Support (ATLS)	Valid Certification throughout residency
Basic Surgical Skills Course (Suturing, Wound Closure, Anastomosis) or equivalent	To be completed by end of R1
Fundamental Critical Care Support (FCCS) or equivalent	To be completed by end of R2
Basic Laparoscopic Surgery or equivalent	To be completed by end of R2

Evidence Based Medicine and Biostatistics Course or equivalent	To be completed by end of R3

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 the teaching sessions as stipulated below:

1. Ten Multidisciplinary conferences yearly
2. Twenty Morbidity and mortality conferences yearly
3. Five Journal or evidence-based reviews yearly
4. Five Case-based planned didactic experiences yearly

Learning Methods and Approaches: Clinical Experiences

The programme must schedule clinical rotations based on the following principles:

1. Residents must, at a minimum, undergo rotations covering the following core clinical services: Breast, Upper GI, Colorectal, Hepato-pancreato-biliary, Vascular and Head & Neck / Endocrine Surgery. A single rotation can serve to fulfil more than one core service (e.g. breast and head and neck surgery combined under “endocrine surgery”), provided the programme is satisfied that the core clinical competencies relevant to that sub-specialty can be achieved.
2. Residents must have adequate clinical exposure to surgical oncology, acute care surgery and trauma as part of their rotations.
3. Residents must rotate to Anaesthesiology / ICU for at least three months during junior residency.

Each Junior Residency rotation must be a minimum of one month (preferably two months with some exceptions), while each Senior Residency rotation must be a minimum of three months.

Training requirement for AY2025 intake onwards:
Residents must do three months of rotations in another sponsoring institution during Senior Residency.

In the event of a protracted outbreak, arrangements should be made for requisite postings to be done within the same hospital or re-arrangements to the order of the postings within the same training year should be made, to allow for the postings to be completed in due course.

Learning Methods and Approaches: Scholarly/Teaching Activities

Training requirement for AY2025 intake onwards:

Residents must complete a quality improvement or patient safety learning module before completion of residency.

Residents must produce 1 scholarly activity per year; this would include, a quality improvement project, or a publication in a peer reviewed journal, a poster, abstract or oral presentation at a local or overseas conference, or a departmental journal club where significant effort has been put into the research and presentation of a topic. The scope must be surgical topics, quality improvement, patient safety or medical education.

In the event of a protracted outbreak, research and quality improvement projects should continue *(as they are conducted within the site of practice)*, with meetings for the research and quality improvement projects conducted via virtual platforms.

Learning Methods and Approaches: Documentation of Learning

Residents must log the following cases in MedHub:

1. Minimum 750 cases with specified minimum number of cases for each surgical domain, including minimum of 150 cases in the chief residency year, as first performing surgeon.
2. Endoscopy: OGD (Min. 200), Colonoscopy (Min. 100).

To ensure sufficient breath of operative experience, residents must complete the following minimum number of cases for the various categories:

- Skin, Soft Tissue and Breast 25
- Head and Neck 24
- Alimentary Tract 72
- Abdomen 65
- Liver 4
- Pancreas 3
- Vascular 44
- Endocrine 8
- Operative Trauma 5
- Trauma Non-Operative 20

- Laparoscopic 85

The documents will be reviewed by PDs and CCC during CCC meetings. The documents will be submitted to RAC for review as eligibility criteria to take the Joint Specialty Fellowship Examination (GS).

Summative Assessments

	Summative assessments	
	Clinical, patient-facing, psychomotor skills etc.	Cognitive, written etc.
R6 Applicable for AY 2025 intake onwards	**JSF Examination (Clinical)**: At least 6 short cases and 2 medium-length cases, total 60 mins	**JSF Examination (Viva):** 4 stations, 90 mins total
R5 Applicable for AY 2024 and before intake	**JSF Examination (Clinical)**: At least 6 short cases and 2 medium-length cases, total 60 mins	**JSF Examination (Viva):** 4 stations, 90 mins total The written exam is applicable to all intakes including residents not successful in the last ABMS MCQ 2026 diet. **JSF Examination (Written):** 200 SBA questions, 320 mins total
R4	N.A.	N.A.
R3	N.A.	Training requirement for AY2024 and before intake: MMed (Surgery) Viva 5 stations,100 mins total Training requirement for AY2025 intake onwards: Primary MMed (Surgery) Part 3 / MHKICBSC Part 3 Examination Part 3: OSCE 16 stations (with 2 additional preparatory stations) to assess basic and applied sciences, communication and clinical skills Each station is 9 minutes inclusive of a 1-minute reading time

R2 R1	N.A.	Training requirement for AY2025 intake onwards: Primary MMed (Surgery) Part 1&Part 2 / MHKICBSC Part 1& Part 2 Examination Part 1: MCQ format 180 items of applied basic science 3 hours Part 2: Extended matching questions (EMQ) 150 items that assess clinical problem-solving 3 hours Training requirement for AY2024 and before intake: The IMRCS Part A is a five-hour MCQ exam consisting of two papers taken on the same day. The AM paper is three hours and the PM paper is two hours in duration. Part B of the IMRCS is an objective structured clinical exam (OSCE). It tests: Anatomy and surgical pathology; Applied surgical science and critical care; Clinical and procedural skills; and Communication skills.

S/N	**Learning outcomes**	**Summative assessment components**			
		Component a: MCQ	Component b: Exit Viva	Component c: Clinical Examination	Component d: Direct Observation
1	Managing a surgical outpatient clinic	✓	✓	✓	✓
2	Perform a ward round	✓	✓	✓	✓
3	Perform calls	✓	✓	✓	✓
4	Running endoscopic session	✓	✓	✓	✓
5	Run elective surgery/procedure	✓	✓	✓	✓