Specialty Training Requirements (STR)

Name of Specialty:	Endocrinology
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Note : In addition to the training requirements stated in this STR, residents must comply with any other regulatory requirements or practice-based requirements mandated by the healthcare institutions or place of practice.

Scope of Endocrinology

Endocrinology is the branch of Medicine that deals with the study of the structure, function and disorders of the endocrine system. The endocrine system is made of the endocrine glands and their secretory products – hormones - that control a wide range of metabolic and homeostatic systems within the human body including growth and development, body composition, sexual maturation and fertility.

The specialty includes the diagnosis and management of the most common endocrine disorder - Diabetes Mellitus as well as a number of other common and rarer endocrine disorders that can manifest across all age groups. These include diseases of the pituitary / hypothalamus, thyroid and parathyroid, adrenal glands, pancreatic islets, ovaries and testes. Metabolic disorders include diabetes mellitus, eating disorders, obesity, dyslipidaemias, calcium disorders and metabolic bone disease.

Purpose of the Residency Programme

The programme objectives are for residents to:

1. Integrate basic and advanced endocrine physiology and pathophysiology as related to diabetes and endocrine disorders
2. Acquire the knowledge and skills to become competent experts in managing common and complex diabetes and endocrine conditions across a broad range of demographic and socio-economic patient groups.
3. Acquire the technical and practical skills that are required by a consultant in endocrinology, diabetes and metabolism.
4. Develop leadership skills and professional attitudes to manage teams that offer cost-effective, ethical and humanistic care of patients with diabetes and disorders of endocrinology and metabolism.
5. Recognise concepts of basic clinical research and to provide opportunities for other scholarly activities including teaching, an experience in grant writing, presenting in scientific meetings and authorship for publication in scientific journals

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) Have completed local Internal Medicine Residency programme and attained the MRCP (UK) and / or Master of Medicine (Internal Medicine) (NUS) qualifications or equivalent. Potential residents without these qualifications will

need to seek ratification from Joint Committee on Specialist Training (JCST) before they can be considered for the programme; and

b) 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 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 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 (PD) and RAC. The latest point of entry into residency for these applicants is Year 1 of the senior residency phase.

Note: Entering at Year 1 of the senior residency phase by IMG in any of the IM-related programmes is regarded as 'mid-stream entry' because it requires the recognition of the overseas Junior Residency training.

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 24 months.

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 (IM residency + AIM) of their training programme. The total candidature for AIM is 36 months Internal Medicine residency + 24 months AIM residency + 36 months candidature.

Nomenclature: AIM residents will be denoted by SR1, SR2 and SR3 according to their residency year of training.

Duration of Specialty Training

The training duration must be 36 months.

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 (IM residency + Endocrinology residency) of their training programme. The total candidature for Endocrinology is 36 months Internal Medicine residency + 36 months Endocrinology residency + 36 months candidature.

Nomenclature: Endocrinology residents will be denoted by SR1, SR2 and SR3 according to their residency year of training.

"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 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 4 of the following EPAs by the end of residency training:

	Title
EPA 1	Managing patients with endocrine emergencies
EPA 2	Managing patients with endocrine disorders in the outpatient setting

EPA 3	Managing patients with endocrine disorders in the inpatient setting
EPA 4	Performing Fine Needle Aspiration Cytology (FNAC) of thyroid nodules in an ambulatory setting

Information on each EPA is provided in *Annex C.R3*.

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:

- Provide patient care that is compassionate, appropriate, and effective for the inpatient treatment of endocrine problems.
- Evaluate rare endocrine cases and obtaining historical subtleties that may not often be volunteered by the patient
- Be a role model in gathering subtle and reliable information as well as eliciting physical signs from the patient for junior members of the healthcare team.
- Interpret more advanced diagnostics tests and be wary of the pitfalls of doing each test.
- Make appropriate clinical decision based on the results of more advanced diagnostic tests.
- Recognise disease presentations that deviate from common patterns and that require complex decision making.
- Manage complex or rare endocrinological conditions.
- Make independent decisions with regards to management of all inpatients, their discharge and follow up plans.
- Customise care in the context of the patient's preferences and overall health.
- Function as an independent consultant and team leader to guide all junior doctors to assess and manage all inpatients.
- Assess and manage patients in ambulatory care and patients referred for inpatient consults independently
- Know how to manage endocrinology throughout the lifespan – from developmental endocrinology, adolescence, antenatal issues, and reproductive issues to aging in endocrinology.

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 established and evolving scientific information relevant to the inpatient management of endocrine disorders and also demonstrate the application of this knowledge to patient care.

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

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

Residents must demonstrate the ability to:

- Be a mentor and educator for all acute or chronic, complex, endocrine problems
- Impart knowledge to all junior doctors in the team

Learning Outcomes: Others

Residents must attend Medical Ethics, Professionalism and Health Law course conducted by Singapore Medical Association (SMA).

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

The programme must schedule the following didactic sessions:

1. Case-based discussions
2. Grand Rounds or Teaching Rounds
3. Journal Club
4. Multidisciplinary meeting
5. Morbidity and Mortality meetings
6. National Teaching Programme (NTP)

Residents must attend at least 70% of the scheduled didactic sessions, with a minimum of 70% attendance for NTP

In the event of a protracted outbreak, the didactic sessions should be conducted via virtual platforms.

Learning Methods and Approaches: Clinical Experiences

Residents must complete the following rotations and clinic sessions:

i) 2 weeks of Nuclear Medicine
ii) 2 weeks of Laboratory Medicine
iii) 2 months of General Medicine per year
iv) 5 clinic sessions of Reproductive Endocrinology/ Gestational Diabetes Mellitus
v) 8 clinic sessions with Paediatric Endocrinology

In the event of an outbreak, training should continue as far as possible and make up sessions should be put in place when the situation allows. In the event of a prolonged outbreak, online teaching with the relevant specialist(s) should be put in place.

Learning Methods and Approaches: Scholarly/Teaching Activities

Residents must complete the following scholarly / teaching activities:

	Name of activity	**Brief description: nature of activity, minimum number to be achieved, when it is attempted**
1.	Teaching and supervision	5 hours per year
2.	Providing talks or teaching presentations	2 presentations per year

In the event of cessation of cross-cluster movement, training should be limited to the site of practice. Two mitigating measures should be implemented:

1. Ensuring that, as far as possible, learning outcomes are met at the site of practice.
2. If meeting learning outcomes is not possible, delaying them until cross-cluster movement is feasible.

Elective Scholarly Activity that is encouraged

	Name of activity	***Brief description: nature of activity, when it is attempted***
1.	*Research, improvement or audit project involvement*	*Involvement at any stage or in the entirety of a research or quality improvement project, ideally leading to presentation or peer-reviewed publications*

Learning Methods and Approaches: Documentation of Learning

Residents must perform and log a minimum of 20 Fine Needle Aspiration Cytology.

Summative Assessments

	Summative assessments	
	Clinical, patient-facing, psychomotor skills etc.	Cognitive, written etc.
R6	N.A. *Note: These skills are assessed predominantly using work-based assessments which, under the current framework, are classified as formative assessments – mini-CEX, EbD, DOPS, MSF. Though formative, the outcome of EPA-based assessments are used to determine competency of trainees to progress to next year of training. In general, SRs are able to progress if they are able to achieve required competency as specified in EPA description and are not flagged up for professionalism issues. Rather than a single assessment, it's the combined information from various sources that's taken into consideration, during the discussion of CCC.*	3 Case write-up Exit which consists of 6 viva stations – 15min each (i.e.,90min)
R5		2 Case write-up Specialty Certificate Examinations (SCE)
R4		1 Case write-up

S/N	**Learning outcomes**	**Summative assessment components**		
		Component a: MCQ (SCE)	Component b: Write-Up	Component c: Viva
1	EPA 1: Managing patients with endocrine emergencies	✓	✓	✓
2	EPA 2: Managing patients with endocrine disorders in the outpatient setting	✓	✓	✓

3	EPA 3: Managing patients with endocrine disorders in the inpatient setting	✓	✓	✓
4	EPA 4: Performing Fine Needle Aspiration Cytology (FNAC) of thyroid nodules in an ambulatory setting	Performance of Fine Needle Aspiration (FNA) as a practical procedure: The assessment of EPA 4 is done though logging of 20 FNA procedures, and the achievement of entrustment level 4 by the end of the 3rd year of training.		