ADVANCED INTERNAL MEDICINE RESIDENCY

TRAINING REQUIREMENTS

(A) INTRODUCTION

The Residency Programme in Advanced Internal Medicine is a 2 year comprehensive programme that aims to build on the knowledge, skills, attitudes and behaviour gained during the basic residency years to provide excellent evidence based medical care for adult patients admitted into the hospital or seen in the clinic for multiple medical conditions or undifferentiated symptoms or signs.

(B) PROGRAMME OVERVIEW

Core experiences of the Programme:

- The 2 year programme in advanced internal medicine should include a minimum of 18 months of training (no cap) in core internal medicine. This would include managing inpatients with acute medical problems, undifferentiated medical problems, multiple co-morbidities and with organ specific problems. The trainee is also expected to provide continuity ambulatory clinic experience once a week under supervision.
- During the two years of residency training, the resident could do up to a maximum 6 months of elective postings and each elective posting should be min. of 1 month and max. of 3 months. This would allow development of the broad expertise that is necessary to provide holistic and comprehensive patient care.

Objectives of the Training Programme:

To become an internist who is:

- **A Highly Proficient diagnostician:** in the assessment and diagnosis of acute or chronic multi-system illnesses or undifferentiated conditions.
- **A Highly Proficient provider of Integrated Care**: collaborating with other specialties in the management of patients in a holistic way.
- **A Highly Proficient Problem Solver**: who is able to find solutions to problems that imprecisely conform to established guidelines and available evidence.
- **A Highly Proficient Patient advocate**: who values patients' preferences and is able to personalize management strategies based on patients' socioeconomic and cultural needs.
- **A Highly Proficient Communicator**: who is able to counsel patients and family members and resolve conflicts
- **A Highly Proficient Leader and Innovator**: who provides evidence based, cost effective, and quality care devoid of conflicts of interest. Functions in leadership and management roles.
- **A Highly Proficient Teacher and Mentor**: Imparts essential knowledge, attitudes and skills that medical students, young doctors and other health professionals need to acquire if they are to adequately cope with the challenges of modern healthcare.

(C) ADMISSION REQUIREMENTS

- Residents who have successfully completed their Basic Internal Medicine residency programme and upon passing the required intermediate examination [MRCP/M.Med (Internal Medicine)]
- Trainees who have completed Basic Specialist Training programmes in Internal Medicine and have passed MRCP/M.Med (Internal Medicine)

(D) TRAINING SYLLABUS

Training requirements:

Clinical Exposure:

- The senior resident should be conducting daily morning and evening exit general medical ward rounds, managing at least 10 patients daily under supervision by consultant.
- The senior resident should run minimum of one weekly outpatient clinics in general medicine under supervision by a consultant for 18 months.
- The senior resident should manage at least 30 outpatients per month (for the compulsory 18 months General Medicine posting) under supervision by consultant.
- They should be actively involved in communication and ethical issues with respect to patient care during their clinical exposure.
- They should be doing at least 2 night calls per month for a minimum of 2 years.
- They should be providing consult services (inpatient and outpatient) for other medical and surgical departments

Procedural skills:

- The senior resident had already been certified as competent in the procedures listed in Annex A by the Programme Director of the IM residency programme. Hence, the senior resident should maintain proficiency and able to supervise junior doctors in performing bedside procedures listed in Annex A. The senior residents could either supervise the junior doctors or attend the simulation training.

  The Ultrasound assisted procedural training would be as part of the AIM training mandatory for the senior residents from AY 2021 cohort onwards. The training curriculum could be found in Annex B.

Teaching and Education:

- The senior resident should be actively involved in supervising junior residents during ward rounds, procedures and departmental CME activities.
- The senior resident should be actively involved in departmental CME activities like morbidity and mortality rounds, journal clubs, topic updates etc
- The senior resident should also be involved in undergraduate teaching.

Personal and Professional Development:

All senior residents will be encouraged to attend courses, conferences and personal development programmes to improve their knowledge and leadership skills.

All senior residents should attend Medical ethics, Professionalism and health law course conducted by Singapore Medical Association.

Research and Quality:

All senior residents are strongly encouraged to participate in research, scholarly activities and quality related projects under the guidance of senior clinicians during the 2 years of Advanced Internal Medicine residency programme. These should be done in addition to the clinical training. The senior residents are encouraged to present their work at local or international conferences.

Postings and rotation:

Rotation	Number of months
General Internal medicine Geriatric Medicine (in-patient) posting (GRM departments admitting by Age) could be recognized as General Medicine posting. This posting will be capped at maximum 3 months. Senior resident is not allowed to do any further Geriatric Medicine posting and have it recognized as elective posting.	Minimum 18 months (no cap)
Sub-specialty rotation Geriatric medicine Neurology Gastroenterology Cardiology Infectious diseases Renal medicine Endocrinology Respiratory medicine Haematology Medical Oncology Rheumatology Dermatology Palliative medicine Rehabilitation medicine Psychiatry MICU Tuberculosis Control Unit (TBCU)	Up to a maximum of 6 months elective. Each rotation should be minimum of 1 month and maximum of 3 months *Accredited posting (maximum 1 month) is allowed, subject to IM RAC’s review and approval.

Expected Competencies for Senior Residents

Competencies	Minimum expectations: Year 1	Minimum expectation: Year 2 (expectations in addition to year 1)
Patient Care	Leads and guides the junior resident towards a complete and comprehensive assessment of the patient, formulate the problem list and management plan using good clinical reasoning skills under consultant supervision. Able to anticipate complications and take appropriate actions. Knows owns limit and when to escalate for advice Able to lead, guide and perform bedside cardiopulmonary resuscitation. Able to perform all bedside procedures competently. Able to make decisions with respect to extent of care, DNR orders, end of life care and CCOD under supervision. Reviews and follows up on the plans of all patients during afternoon exit rounds. Able to assess and manage patients in ambulatory care under supervision. Knowledge of Advanced Medical Directives and Advanced Care Planning guidelines and its application to patient care.	Able to function as an independent consultant and team leader to guide all junior doctors to assess and manage all inpatients. Able to make independent decisions with regards to management of all inpatients, their discharge and follow up plans. Able to make independent decisions with regards to ethical issues, extent of care, end of life care, DNR orders and CCOD. Able to assess and manage patients in ambulatory care and patients referred for inpatient consults independently.
Medical Knowledge	Knows management of acutely ill, sick and critically ill patients. Demonstrates knowledge of all common medical conditions. Knowledge of indications, contraindications, advantages, disadvantages of diagnostic and therapeutic procedures and	Able to demonstrate qualities of a mentor and educator for all acute , chronic, complex, undifferentiated and multidisciplinary medical problems independently

	pharmacotherapy. Demonstrates comprehensive analysis and management of complex, undifferentiated and multidisciplinary cases. Knowledge of preventive care and maintenance of patients with chronic and multiple medical problems. Knows how to manage medicine throughout the lifespan – common presentations in pregnancy, common problems in menopausal women, common problems in geriatrics population and end-of-life care. Demonstrates Knowledge of local health care Screening policies Demonstrates ability to impart knowledge to all junior doctors in the team	
Practice based learning and Improvement	Able to set personal and team learning and improvement goals. Able to identify personal strengths and weaknesses. Involves in counselling and education of patients, families, students, residents and other health care professionals. Able to apply Evidence Based Medicine to daily clinical practice. Able to complete MINI-CEX evaluation of junior doctors and medical students under supervision. Knows clinical audit and quality improvement processes and be involved in audit/ improvement projects Preferably conduct research projects	Able to teach and guide juniors on Evidence based practice. Able to effectively teach, guide, counsel and evaluate junior doctors/residents and medical students. Knows and able to guide clinical audit and quality improvement processes and be involved or has completed audit/ improvement projects. Preferably complete a research project.
Interpersonal and Communication skills	Apply communication skills (compassion and empathy) to engage and reassure the patient in specific situations including:	Supervise juniors during communication encounters with patient and family.

	First encounters, history taking, physical examination, consent taking, discussing treatment options, counselling and breaking bad news. Communicate effectively extent of care and end of life issues with patients and their families. Communicate effectively within multidisciplinary teams Communicate effectively with referring doctors, and when referring a patient to another specialist. Apply communication skills to facilitate effective clinical handover and transfer of care. Able to conduct family conference to explain complex and difficult management plans, resolve conflicts and clarify care decisions under supervision. Able to answer complains and write medical reports	Able to conduct family conferences independently. Demonstrate excellent interpersonal communication skills to facilitate the function of multidisciplinary teams.
Professionalism	Respects patient autonomy and privacy. Responsible and accountable to patients, society and the profession. Demonstrates sensitivity and responsiveness to diverse patient cultures and preferences. Demonstrates respect, compassion, integrity and ethical behavior. Demonstrates behaviors that reflect an ongoing commitment to continuous professional development.	Display the ability to mentor and to train others in the team towards professional attitudes and behaviors in order to enhance team and individual effectiveness. Demonstrate personal behavior which contributes to building a productive culture within teams.
System based practice	Demonstrates ability to be a team leader and supervises all junior medical staff. Ensures proper hand over of patients. Provides appropriate transitions of	Efficient team leader and patient advocate for cost effective quality care for all patients Demonstrates a wider understanding of the healthcare system – funding, resource allocation, social implications, etc. Applies and encourages concepts of

	care. Able to work in interprofessional teams to enhance patient safety. Participates in identifying system errors and proposes reasonable solutions. Identifies functional and social issues of patient care and appreciates value of multidisciplinary and community based care. Provides appropriate discharge planning and follow up plans. Incorporates considerations of cost awareness and risk benefit analysis in patient care	quality and safety to clinical practice
Faculty Development	Able to teach and guide junior residents in clinical skills, procedures, and patient care Possess the broad-based IM knowledge to teach junior residents effectively Participate in co-ordinating medical students and junior residents teaching programs Participate in co-ordinating local examinations and courses (eg. MBBS/MRCP/M.Med)	Demonstrate highly proficient qualities of an educator (in teaching, giving lectures/talks) Able to appraise junior residents' learning and correct their deficiencies Able to help organise and develop training programs for the department / hospital / conferences Able to help develop assessment tools for learning for the department / hospital / PDs
	1. Conduct at least one department/junior resident teaching session every 3months (topic updates / mortality morbidity presentation / facilitation of MO case presentation, lectures, journal updates, etc) with feedback / evaluation from consultants. 2. Conduct at least one MINI CEX for one junior resident every 3 months. 3. Involve in teaching medical students bedside tutorials (year 2/3/5 medical students) with good end of posting feedback scores (at least 2 during the senior residency training period) 4. Attend educational courses: MINI CEX (compulsory) Optional courses: • Teaching for Effective Learning: Small Group Teaching (run by MEU)	

	• Teaching for Effective learning: Large Group Teaching • TBL Workshop: Using Team-based Learning in the Clinical Environment • Teaching for Effective Learning: Case Based Learning 5. Present papers or posters at conferences. At least one paper/poster presentation during the SR training.

(E) SUPERVISION AND WORK HOURS OF RESIDENTS

I. Supervision

All residents will be supervised by a designated training supervisor with whom the resident works closely on a monthly basis. The ratio of all teaching faculty to residents should be 1:1. The number of core clinical faculty to resident ratio must be no less than 1:2. 20% of resident's time must be protected for training activities (CME, case discussions, case write ups, etc).

II. Work Hours

Work hours can be defined as all clinical and academic activities related to residency training. Work hours must be limited to 80 hours per week, averaged over a month, including all on-calls. Residents must be allowed 1 day (i.e. 24 continuous hours) in 7 days free from all clinical administrative and academic responsibilities, averaged over a month. On-call hours must not exceed 24 + 6 hours. The senior residents are not allowed to see new cases during the additional 6 hours. Work hours must be tracked by the Programme Director.

(F) ASSESSMENT AND FEEDBACK

I. Log of operative / clinical experience

All residents are expected to keep a log of their clinical experience in the designated case log system.

II. Assessment

Program specific evaluation tools (eg: MINI CEX, CSR, MSF etc) could be used to assess and feedback progress of the residents' performance in the core competencies. These should be submitted to the PD and RAC on a 6 monthly basis for review.

III. Feedback

Residents should perform a yearly evaluation of teaching faculty and the training programme. These forms must be submitted to the RAC and kept absolutely confidential.

IV. Passing the Residency Year

Year of training	6 monthly Clinical Competency Committee recommendation (based of formative assessment, Journal presentation and blue letter evaluations)	Case and procedure logs (vetted by PD)	Attendance at CME (Structured department teaching programme) Note: Attendance for conference is not counted towards CME (Total of 160 hours over 2 years)	Leave
Year 1	**Clear pass**	**Satisfactory**	**Minimum 80 hours**	**Not exceeding HR policy**
Year 2	**Clear pass**	**Satisfactory**	**Minimum 80 hours**	**Not exceeding HR policy**

Criteria for Exit Certification by RAC

- Successfully completed 2 years of Advanced Internal Medicine training
- Successfully completed the logbook requirements
- Successful Pass recommendation by Clinical Competency Committee
- Attended Medical Ethics, Professionalism and Health Law course
- MRCP (UK) Specialty Certificate Examination in Acute Medicine should only be taken during the Advanced IM residency training period (i.e. from SR1 onwards).
- Senior residents are required to pass the MRCP (UK) Specialty Certificate Examination in Acute Medicine and the Exit Examination. Please refer to Annex C on the Exit Examination format and marking guidelines.

(G) CHANGES IN TRAINEESHIP PERIOD AND LEAVE OF ABSENCE

I. Changes in Training Period

Residency should be continuous. If a training programme is interrupted for any reason whatsoever, the RAC may at its discretion, require the resident to undergo a further period of training in addition to the minimum requirements of the programme or terminate the residency altogether. All residents are required to conform to the residency training plan as approved by the RAC and complete all the exit and training requirements within the maximum candidature.

II. Leave of Absence

All residents are to comply with the prevailing MOH policy on Leave of Absence.

III. Overseas Postings

Overseas attachment during Senior Residency training is not permitted with the exception of Radiation Oncology and Neurosurgery (refer to JCST Circular 114/14).

Annex A

No.	Procedure
1	Arthrocentesis (Eg: Knee Aspiration)
2	Thoracentesis / Chest Tube Insertion
3	Abdominal tap
4	Arterial line placement
5	Central line placement
6	Lumbar puncture
7	Endotracheal intubation
8	Ventilator management

Annex B

Training Requirement for Ultrasound Assisted Pleural, Ascites drainage/tap and Central Venous Catheter insertion via Internal Jugular and Common Femoral route

Content

1. Introduction

2. Objectives

3. Curriculum of the course

4. Certification of competency at performing Ultrasound assisted procedures

1. Introduction

a) This document serves as a guide for the training in ultrasound assisted procedures for the AIM senior residency programmes in Singapore, listed as follows:

   i) US assisted Pleural tap and/or drain
   ii) US assisted Ascites tap and/or drain
   iii) US assisted central venous catheter insertion via internal jugular and common femoral route

b) All SR1 are required to attend the Ultrasound training course (theory and practical).. They will maintain competency by continuing the hands-on training provided by individual hospital and would be certified competent by completing the required number of successful procedures stated in the logbook.

2. Objectives of the training programme –

a) To equip residents on basic knowledge of ultrasound and to have a good understanding of the role and utility of the ultrasound in pleural tap/drainage, abdominal tap/drainage and central line insertion.

b) To equip the residents with skills to recognize the anatomy and pathology (relevant to pleural effusion, ascites and vascular structures) on ultrasound images and to be able to determine suitability for bedside performance of such procedures.

c) To equip the residents with ultrasound skills needed to perform pleural tap/drainage, abdominal tap/drainage and central line insertion independently and safely.

3. Curriculum of the course

Curriculum of the Ultrasound assisted procedures course is divided into 3 modules

a) Module 1. Ultrasound physics

b) Module 2. Technique of performing ultrasound to obtain images and principles of image interpretation

c) Module 3. Technique of ultrasound assisted procedures in General Medicine cases

4. Certification of competency at performing Ultrasound assisted procedures

a) All senior residents are encouraged to continue practice with simulation (if possible) in their respective hospitals during the 2 years of training in order to keep their skills current.

b) All senior residents are to fulfil the following requirement to be competent in the following procedures:

Type of Ultrasound assisted procedure(s)	Min. number of procedures with DOPS
Pleural drainage and/or tap	5
Ascites drainage and/or tap	5
Central lines	3 Internal Jugular Veins (IJV) and 3 Femoral Veins (FV)

c) The senior residents are required to save the images of the scans, attach to their DOPS and file in their logbook. In addition, the logged entries must be signed off by the trainer(s) or supervisor(s) who has an oversight in the supervision of Ultrasound assisted procedure(s).

d) The senior residents will be certified competent in the above procedures by their Programme Director if they have attended the course on Ultrasound Assisted Procedure and fulfil the above requirements.

Annex C

Exit Examination Format

a. MRCP (UK) Specialty Certificate Examination in Acute Medicine

b. Clinical Viva on
- Clinical consultations
- Journal critique

There will be 3 stations (20 minutes each) for the Clinical Viva and it would be conducted like an OSCE:

1. General Medicine (a case scenario) – This section assesses the ability to approach and to resolve a complex or undifferentiated medical diagnostic problem. In addition to medical history and examination, investigations may include laboratory tests, X-rays, photographs and pathological data. Candidates may also be tested on management principles, which might extend reasonably beyond the core scenario.

2. Acute Medicine (a case scenario) – This section includes the recognition and management of a critically ill patient usually, but not exclusively, referred from other specialties. Questions on pathophysiological aspects of the disorder(s) may be asked. Candidates may be questioned about management principles, which might extend reasonably beyond the base scenario.

3. Journal critique – This section assesses the ability for critical analysis of information in the medical literature, and will be based on one peer-reviewed journal paper given to the candidates before the viva. In the 60 minutes of study time, candidates may be required to read limited amounts of supplementary data, linked with the main paper, to aid comprehension. Candidates may be tested on the wider principles of critical appraisal related to the context of the paper.

Total duration: 1 hour

Marking Guidelines (Clinical Viva)

Maximum total mark for each station = 80
Maximum total score = 240

Grade	Percentage (%)	Station score	Total score
Pass	≥60	≥48	≥144 (60%)
Borderline	50 to 58.8	40 to 47	120 to 143
Fail	48.8 or less	39 or less	119 or less

To pass the exit examination:

1. No failure in any station;
2. Must pass at least 2 stations. The candidate cannot pass with 2 borderline grades; and
3. Achieve an overall score of 144 or more out of 240 (60% or more).