

RHEUMATOLOGY SENIOR RESIDENCY

TRAINING REQUIREMENTS

(A) INTRODUCTION

Rheumatology is a subspecialty of Internal Medicine that is devoted to the diagnosis and therapy of rheumatic diseases, their causes, pathology, diagnosis, and treatment. Rheumatic diseases often affect the connective tissues and related structures such as joints, muscles, and bones and sometimes other internal organs (e.g., kidneys, lungs, blood vessels, brain). The diseases may be caused by inflammation, degeneration or autoimmunity. As these conditions are often multi-systemic and complex, patients will benefit from the care of a rheumatologist.

The length of training in Rheumatology is 3 years for one to be eligible for certification to become a specialist rheumatologist in Singapore.

(B) PROGRAMME OVERVIEW

The total duration of training that is accredited by ACGME-I is 2 years from R4 to R5 year.
The total duration of training that is accredited by JCST is 1 year (R6).

(C) TRAINING REQUIREMENTS R4 – R5

ACGME-I's advanced specialty requirements can be found here: <http://www.acgme-i.org/web/requirements/specialtypr.html>

ACGME-I Advanced Specialty Requirement for Rheumatology states that the educational program in rheumatology must be 24 months in length, of which a minimum of 12 months must be devoted to clinical experience. The Core Curriculum Outline for Rheumatology Senior Residency Programs in Singapore approved by the Rheumatology Residency Advisory Committee (RAC) in March 2013 (Appendix 1).

Clinical

1. Senior residents will experience structured continuity/ambulatory or subspecialty clinic experience that exposes them to the breadth and depth of rheumatology. This experience should include:
 - Average two half-day sessions each week throughout the 24 months of ACGME-I accredited education;
 - Must include an appropriate distribution of patients of each gender and a diversity of ages;
 - Continuity patients should not be limited to one disease type, but should expose fellows to patients with a broad variety and stage of disease;
 - Each senior resident should, on average, be responsible for four-to-eight patients during each *continuity clinic* half-day session;
 - Each senior resident should, on average, be responsible for no more than 15 patients during each half-day *ambulatory* session;
2. Senior residents will experience inpatient rheumatology training through taking consultations (referrals) or managing patients hospitalised under the rheumatology ward service.

3. Senior residents must have experience in the role of a rheumatology consultant in both the inpatient and ambulatory settings, under supervision appropriate for their level of competency. This includes leading the ward team which consists of the junior residents, medical students and rheumatology nurse practitioner/ advanced practice nurse.
4. Senior residents are required to demonstrate the 6 core competencies stipulated in the Core Curriculum (Appendix 1).

Procedures and technical skills

Senior residents must demonstrate competence in the following procedures:

- Examination and interpretation of synovial fluid under conventional and polarized light microscopy;
- Performance of arthrocentesis of peripheral joints and periarticular/soft tissue injections. The mandatory procedures are listed in Appendix 2.
- Performance and interpretation of diagnostic ultrasonography of painful musculoskeletal structures commonly encountered in a rheumatology clinic, including synovial joints, periarticular soft tissues, tendons, and ligaments.

Specific Requirements for the supervision of these procedural skills are:

1. Direct supervision of procedures performed by each senior resident must occur until proficiency has been acquired and documented by the program director. Proficiency in procedural skills will be assessed through the Direct Observation of Procedural Skills (DOPS) assessment. All senior residents will have to attain "Meets expectations" grade for 3 DOPS before they are deemed competent in that particular procedure. Thereafter, the senior resident can perform these procedures independently with intermittent checks by faculty.
2. All procedures should be documented in each senior resident's log book, including indications, outcomes, diagnoses, and supervisor(s). The records will be reviewed at each 6-monthly Clinical Competency Committee Meeting and should be submitted for review to the RAC prior to the exit exam in the third year.

Postings and Rotations

There were no specific requirements listed by ACGME-I. However, the structure of training across the various sponsoring institutions consists of inpatient consultation (referrals), wards and clinics (as described above), which are scheduled throughout the 2 years; of various duration, at the discretion of individual training programs. In addition, it is suggested that programs with the qualified faculty members and facilities provide education in paediatric rheumatic diseases.

Didactic Sessions

There were no requirements listed in the ACGME-I advanced specialty requirements. However in the foundational requirements for IM related specialties (<http://www.acgme-i.org/web/requirements/SubspecialtyFoundational.pdf>), the educational program should have regularly scheduled didactic sessions.

- These may include grand ward rounds, journal clubs, interprofessional combined conferences, case-based topic review, morbidity and mortality conference.
- All core conferences must have at least one faculty member present, and must be scheduled as to ensure peer-peer and peer-faculty interaction.
- Patient-based teaching must include direct interaction between fellows and faculty members, bedside teaching, discussion of pathophysiology, and the use of current evidence in diagnostic and therapeutic decisions. The teaching must be:

- a) conducted on inpatient, outpatient, and consultative services; and,
- b) conducted with a frequency and duration that ensures a meaningful and continuous teaching relationship between the assigned supervising faculty member(s) and fellows.

Senior residents' scholarly activities

There were no requirements listed in the ACGME-I advanced specialty requirements. However in the foundation requirements for IM related specialties (<http://www.acgme-i.org/web/requirements/SubspecialtyFoundational.pdf>), the majority of fellows must demonstrate evidence of scholarship conducted during the senior residency through one or more of the following: publication of articles, book chapters, abstracts, or case reports in peer-reviewed journals; publication of peer-reviewed performance improvement or education research; peer-reviewed funding; or, peer-reviewed abstracts presented at regional, state, or national specialty meetings.

(D) TRAINING REQUIREMENTS R6

1. Foundational Requirements

The R6 year must be in compliance with ACGME-I's Foundational Requirements.

Foundational requirements for IM related specialties: <http://www.acgme-i.org/web/requirements/SubspecialtyFoundational.pdf>

Foundational requirements for all other specialties: <http://www.acgme-i.org/web/requirements/internationalfoundational.pdf>

2. Specialty Specific Requirements

Clinical experience, Postings/rotations

Minimum Requirements by Rheumatology RAC with individual program maintaining the flexibility to modify the schedule accordingly:

- 1) Inpatient Rheumatology: At least 4 to 6 months
- 2) Continuity/Ambulatory Clinics: At least 2 half-day per week throughout the year
- 3) General Medicine/Geriatric Medicine rotations: 2 months per year (i.e. R4-R6) as required by MOH
- 4) Research: 2 to 6 months depending on whether the senior resident is on a research track; with at least a poster presentation by the end of the third year for all senior residents
- 5) Electives: Structured electives approved by Rheumatology RAC. Senior residents may choose to do these electives, if not already done so in the first 2 years of training. Electives include:
 - Rehabilitation Medicine
 - Musculoskeletal allied health eg. Physiotherapy, Occupational therapy, Podiatry etc
 - Sports Medicine
 - Musculoskeletal Pain Clinic
 - Laboratory Medicine
 - Immunodermatology
 - Paediatric/Adolescent Rheumatology
 - Clinical Immunology/Allergy
 - Musculoskeletal Ultrasound

Procedures and technical skills

The mandatory procedures are listed in Appendix 2.

Didactic sessions

Senior residents in the R6 year should still continue to attend the core curriculum lectures given (National Core Rheumatology Series). They should also participate in journal clubs, case conferences and research curriculum lectures organized by their respective Rheumatology departments. Other educational meetings may include multi-disciplinary meetings with hand and orthopaedics surgery, histopathology meetings, grand rounds and morbidity/mortality reviews. In addition to above, they are strongly encouraged to attend continuing medical education activities organized by the Singapore Society of Rheumatology and Academy of Medicine: Chapter of Rheumatologists.

Senior residents' scholarly activities

In addition to those detailed required for R4-R5, the senior resident is encouraged to

1. Give public lectures to educate the patients and the public on various rheumatic diseases.
2. Support the activities or even stand for office in the executive committees of related organizations.
3. Do a 1st Author Publication

3. Senior Resident Competencies

By the end of R6 year, senior residents are expected to have attained competencies in medical knowledge, patient care, practice-based learning and improvement, interpersonal and communication skills, professionalism and system based practice to the level expected of a new, independent practitioner (consultant in Rheumatology).

	R6
1. Patient Care	<ul style="list-style-type: none">• Senior Residents must be able to provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health.• Senior Residents must demonstrate competence in:<ul style="list-style-type: none">▪ the practice of health promotion, disease prevention, diagnosis, care, and treatment of patients of each gender, from adolescence to old age, during health and all stages of illness;▪ treatment of:<ul style="list-style-type: none">▪ crystal induced synovitis;▪ infection of joints and soft tissues;▪ metabolic diseases of bone;▪ non-articular rheumatic diseases, including fibromyalgia;▪ non-surgical exercise-related (sports) injury;▪ polymyositis;▪ osteoarthritis;▪ osteoporosis;▪ regional musculoskeletal pain syndromes, acute and chronic musculoskeletal pain syndromes, and exercise-related syndromes;▪ rheumatoid arthritis;▪ scleroderma/systemic sclerosis;

	<ul style="list-style-type: none"> ▪ Sjögren's Syndrome; ▪ spondyloarthropathies; ▪ systemic diseases with rheumatic manifestations; ▪ systemic lupus erythematosus; and, ▪ vasculitis. <ul style="list-style-type: none"> ▪ examination and interpretation of synovial fluid under conventional and polarized light microscopy; ▪ interpretation of radiographs of normal and diseased joints, bones, periarticular structures, and prosthetic joints; ▪ assessment and management of musculoskeletal pain; ▪ performance of arthrocentesis of peripheral joints and periarticular/soft tissue injections, including instruction and experience in performing these procedures under ultrasound guidance; and, ▪ performance and interpretation of diagnostic ultrasonography of painful musculoskeletal structures commonly encountered in a rheumatology clinic, including synovial joints, periarticular soft tissues, tendons, and ligaments.
2. Medical Knowledge	<p>Senior Residents must demonstrate knowledge of established and evolving biomedical, clinical, epidemiological, and social-behavioral sciences, as well as the application of this knowledge to patient care. Senior Residents must demonstrate knowledge of:</p> <ol style="list-style-type: none"> 1. the scientific method of problem solving and evidence-based decision making; 2. the indications, contraindications, limitations, complications, techniques, and interpretation of results of those diagnostic and therapeutic procedures integral to the discipline, including the appropriate indications for and use of screening tests and procedures; the indications for and interpretation of: <ul style="list-style-type: none"> ▪ arthroscopy; ▪ biopsy specimens, including histochemistry and immunofluorescence of tissues relevant to the diagnosis of rheumatic diseases; ▪ bone densitometry; ▪ CT of lungs and paranasal sinuses for patients with suspected or confirmed rheumatic disorders; ▪ electromyograms and nerve conduction studies for patients with suspected or confirmed rheumatic disorders; ▪ MRI of the central nervous system (brain and spinal cord) for patients with suspected or confirmed rheumatic disorders; ▪ plain radiography, arthrography, ultrasonography, radionuclide scans, CT, and MRI of joints, bones, and periarticular structures; ▪ arteriograms (conventional and MRI/magnetic resonance angiogram (MRA)) for patients with suspected or confirmed vasculitis; ▪ Schirmer's test; ▪ parotid scans and salivary flow studies; and, ▪ ultrasound scans of normal and painful musculoskeletal structures commonly encountered in a rheumatology clinic, including synovial joints, periarticular soft tissues,

	<p>tendons, and ligaments.</p> <ol style="list-style-type: none"> 3. the anatomy, basic immunology, genetic basis, cell biology, and metabolism pertaining to rheumatic diseases, disorders of connective tissue, metabolic disease of bone, osteoporosis, and musculoskeletal pain syndromes; 4. the pathogenesis, epidemiology, clinical expression, treatments, and prognosis of the full range of rheumatic and musculoskeletal diseases; 5. the physical and biologic basis of the range of diagnostic testing in rheumatology, and the clinical test characteristics of these procedures; 6. the pharmacokinetics, metabolism, adverse events, interactions, and relative costs of drug therapies used in the management of rheumatic disorders; 7. the aging influences on musculoskeletal function and responses to prescribed therapies for rheumatic diseases; 8. the essential components of quality experimental design, clinical trial design, data analysis, and interpretation of results, and the importance of adherence to ethical standards of experimentation; 9. the appropriate employment of principles of physical medicine and rehabilitation in the care of patients with rheumatic disorders; and, 10. the indications for surgical and orthopaedic consultation, including indications for arthroscopy and joint replacement/arthroplasty.
3. Practice-based Learning and Improvement	Senior Residents must demonstrate the ability to investigate and evaluate their care of patients, to appraise and assimilate scientific evidence, and to continuously improve patient care based on constant self-evaluation and life-long learning.
4. Interpersonal and Communication Skills	Senior Residents must demonstrate interpersonal and communication skills that result in the effective exchange of information and collaboration with patients, their families, and health professionals.
5. Professionalism	Senior Residents must demonstrate a commitment to carrying out professional responsibilities and an adherence to ethical principles.
6. Systems-based Practice	Senior Residents must demonstrate an awareness of and responsiveness to the larger context and system of health care, as well as the ability to call effectively on other resources in the system to provide optimal health care.

(E) LOG OF OPERATIVE / CLINICAL EXPERIENCE

All senior residents must keep a log of the procedures done and clinical experience using the electronic logging system as recommended by Rheumatology RAC.

(F) ASSESSMENT

I. Supervisors Assessment

The supervisor's evaluation of the resident should be performed at the end of every rotation using the designated form and this will be collectively reviewed by Core Competency Committee (CCC) of each program. At the end of 3 years, the CCC will determine if the SR has achieved the core competencies and milestones, thereby fulfilling the eligibility criteria set forth by RAC to be recommended for the

rheumatology exit examination. The CCC reports for the SR will be submitted to the RAC for the 6-monthly RAC Meet-The-Trainee (MTT) sessions.

II. Feedback

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

III. Formative Assessment

R4	R5	R6
<p><u>Formative Assessment : Adult Rheumatology In-Training Examination (ACR ITE)</u></p> <p>It is mandatory for all senior residents in Rheumatology to sit for the ACR ITE once a year. The purpose of ITE is to evaluate the residents' knowledge of basic science and the management of clinical problems related to Rheumatology.</p>		-
<p><u>Evaluation Tools</u></p> <p>The Programme Directors (PDs) could use more than 1 of the following evaluation tools to assess the senior resident.</p> <ol style="list-style-type: none"> 1. Direct Observation of Procedural Skills (DOPS) 2. Mini-CEX 3. Topic Presentation/Journal Club Presentation 4. Case-based Discussion 5. 360 Multi-Source Feedback 6. Patient's survey 7. Procedure and Case Logs 8. Teaching Skills Evaluation 9. Audit/Quality Improvement Project 10. End of Rotation Evaluation 11. MOH Common Evaluation Form (Form C1) 12. Objective Structured Clinical Examination (OSCE) 13. Rheumatology ITE 14. CCC Evaluation 15. Final Summative Evaluation Form (end of residency programme) 		

(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*).

APPENDIX 2

		Requirement for inflight SRs			Requirement for SRs from 2020 intake onwards		
		(the min. number of procedures stated is cumulative and not by per residency year)			(the min. number of procedures stated is cumulative and not by per residency year)		
	Procedures (Mandatory)	Min. No for certification of competency	Min. No of procedures by end of SR2	Min. No of procedures by end of SR3	Min. No for certification of competency	Min. No of procedures by end of SR2	Min. No of procedures by end of SR3
1	Shoulder arthrocentesis /injection	3	5	8	3	3	5
2	Subacromial bursitis injection	3	3	5	3	3	5
3	Elbow arthrocentesis /injection	3	3	5	3	3	5
4	Wrist injection	3	5	8	3	3	5
5	MCPJ/PIPJ/MTPJ injection	3	5	8	3	3	5
6	Knee arthrocentesis /injection	3	10	15	3	10	15
7	Ankle arthrocentesis /injection	3	5	8	3	3	5
8	De Quervain's or flexor tenosynovitis injection	3	3	5	3	3	5