# Specialty Training Requirements (STR)

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| Name of Specialty: | Respiratory Medicine |
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## Contents

## Scope of Respiratory Medicine

*Respiratory medicine* is the medical specialty that focuses on the aetiology, diagnosis, treatment and prevention of diseases affecting the respiratory system.

## Purpose of the Residency Programme

The training programme aims to achieve the desired outcomes in the core competencies of patient care and procedural skills, medical knowledge, practice-based learning and improvement, systems-based practice, professionalism, interpersonal skills and communication and other competency (teaching and supervising others). Residents will be trained to become respiratory physicians by providing comprehensive care for both common and significant conditions, with key topics and procedures covered in depth, while also gaining broad exposure to less common or rare conditions.

## 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 where face-to-face on-site meetings are 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 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 / subspecialty programmes is regarded as 'mid-stream entry' because it requires the recognition of the overseas Junior Residency training / specialist accreditation of the base specialties respectively.*

## 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.

*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 Respiratory Medicine is 36 months Internal Medicine residency + 36 months Respiratory Medicine residency + 36 months candidature.*

*Nomenclature: Respiratory Medicine 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 care of patients with pulmonary diseases in general ward and outpatient setting |
| **EPA 2** | Managing patients with acute complex medical and surgical disorders in the ICU setting |
| **EPA 3** | Resuscitating, stabilizing and caring for unstable or critically ill patients with pulmonary diseases |
| **EPA 4** | Providing perioperative pulmonary assessment and care |
| **EPA 5** | Providing pulmonary medicine consultation to other specialties |
| **EPA 6** | Performing common pulmonary and critical care procedures |
| **EPA 7** | Interpreting pulmonary function test, and chest imaging |

### 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

Resident must demonstrate competence in:

- Managing care of patients with pulmonary diseases in general ward and outpatient setting (EPA 1)
- Managing patients with acute complex medical and surgical disorders in the ICU setting (EPA 2)
- Resuscitating, stabilizing and caring for unstable or critically ill patients with pulmonary diseases (EPA 3)
- Providing perioperative pulmonary assessment and care (EPA 4)
- Providing pulmonary medicine consultation to other specialties (EPA 5)
- Performing common pulmonary and critical care procedures (EPA 6)
- Interpreting pulmonary function tests and chest imaging (EPA 7)

Resident must demonstrate the ability to monitor and counsel National TB Care Centre (NTBCC) patients, and General Respiratory Medicine 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.

Resident must demonstrate knowledge of basic and clinical sciences in the following topics and be able to apply this knowledge to patient care:

- Acute lung injury, including radiation, inhalation, and trauma
- Circulatory failure
- Diffuse interstitial lung disease
- Disorders of the pleura and the mediastinum
- Iatrogenic respiratory diseases, including drug-induced disease
- Obstructive lung diseases, including asthma, bronchitis, emphysema, bronchiectasis
- Occupational and environmental lung diseases
- Pulmonary embolism and pulmonary embolic disease
- Pulmonary infections, including tuberculous, fungal, and those infections in the immunocompromised host (e.g., HIV-related infections)
- Pulmonary malignancy – primary and metastatic
- Pulmonary manifestations of systemic diseases, including collagen vascular disease and diseases that are primary in other organs
- Pulmonary vascular disease, including pulmonary hypertension and the vasculitis and pulmonary hemorrhage syndromes
- Respiratory failure, including the acute respiratory distress syndrome, acute and chronic respiratory failure in obstructive lung diseases, and neuromuscular respiratory drive disorders
- Sleep-disordered breathing

### 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

### 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

Residents must attend the structured National Training Programme (NTP) sessions and must attain a minimum of 70% attendance.

In the event of a protracted outbreak whereby face-to-face on-site meeting is disallowed and cross institution movement is restricted, face-to-face didactic meetings should be replaced by hybrid or fully virtual sessions.

### Learning Methods and Approaches: Clinical Experiences

Residents must undergo a minimum of 33 months of clinical rotations with:

a) Minimum 21 months in non-critical care respiratory medicine (pulmonary disease) rotations which includes compulsory 2 months NTBCC rotation in SR2 / SR3;
b) Minimum 3 months and maximum 6 months in Medical Intensive Care Unit (MICU); and
c) 6 months General Medicine and / or Geriatric Medicine rotation (2 months per residency year); and
d) 1 month Cross Cluster Rotation (CCR) in non-critical care respiratory medicine.

Residents must do only a maximum of 3 months of elective rotations in **only** one of the following 3 electives:

a) A minimum of 1 month and a maximum 3 months in respiratory / critical care research*, innovation or quality improvement project – During the period, residents must continue their clinics. *Topics must be reviewed by the PD and subject to approval by RAC.*

b) A minimum of 1 month and a maximum 3 months of clinical rotation in respiratory related sub-specialties*. *Posting in respiratory-related special interest areas are subject to approval by the Head of Departments and PDs of the respective Sponsoring Institutions.*
c) A minimum of 1 month and a maximum 3 months of Intensive Care Unit (ICU).
d) Residents must spend any remaining time in General Respiratory Medicine clinical rotations.

***List of pre-approved elective postings (Clinical and Research):**

1. Interventional pulmonology: includes bronchoscopy / pleuroscopy and rigid bronchoscopy
2. Sleep medicine
3. Asthma and Allergy
4. Interstitial Lung Disease (ILD) / Lymphangioleiomyomatosis (LAM) / Sarcoidosis
5. Pleural disease / Thoracic Ultrasound
6. Chronic Obstructive Pulmonary Disease (COPD) / Pulmonary Rehabilitation
7. Respiratory Infections, Bronchiectasis
8. Chronic ventilation [including Non-Invasive Ventilation (NIV)]
9. Pulmonary physiology & pulmonary function testing
10. Occupational lung disease

Any electives outside of this list must be approved by RAC.

Residents should only spend a maximum of 6 months in ICU rotations in total, or a maximum of 9 months for those who opt for an elective ICU rotation.

In the event of a protracted outbreak whereby face-to-face on-site meeting is disallowed and cross institution movement is restricted, the residents should resume their posting in own institution.

### 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. | Journal / Case Discussion | Residents must present journals / case discussions / topic reviews during department meetings (2 per year). |
| 2. | Quality Improvement Project | Residents must complete 1 quality improvement project by the end of SR3 year. |

In the event of a protracted outbreak whereby face-to-face on-site meeting is disallowed and cross institution movement is restricted, all the above activities should be replaced by hybrid or fully virtual sessions.

## Learning Methods and Approaches: Documentation of Learning

Residents must keep a log of their clinical and procedural experience in the designated Respiratory Medicine Logbook.

Residents from AY2022 must log and fulfil the minimum requirements of the following procedures:

| S/N | Bronchoscopy Procedures | Min requirement |
|---|---|---|
| 1 | Flexible Bronchoscopy (Total) Airway biopsy, aspirates, lavage and Transbronchial Lung Biopsies | Min number: 100 by end of SR2 |
| 2 | - Transbronchial Lung Biopsies (TBLB) | NA |
| 3 | Advanced Bronchoscopy (EBUS, navigational bronchoscopy, rigid bronchoscopy, airway ablative therapy or stenting) | NA |
| **S/N** | **Other Procedures** | **Min requirement** |
| 4 | Thoracocentesis | NA |
| 5 | Pleural Biopsy | (Optional) |
| 6 | Chest Drain Insertion | NA |
| 7 | Thoracoscopy | NA |
| 8 | Central Venous Catheterisation | NA |
| 9 | Endotracheal Intubation | NA |
| 10 | Arterial Line Placement | NA |
| 11 | Use of Ventilators | NA |
| 12 | Chest Ultrasonography | NA |
| 13 | Spirometry | NA |
| 14 | Body Plethysmography | NA |
| 15 | Tests of Diffusing Capacity | NA |
| 16 | Bronchoprovocation Test (pharmacologic) | Min number: 30 by end of SR3 |
| 17 | Exercise Challenge Test | NA |
| 18 | Cardiopulmonary Exercise Test | Min number: 3 by end of SR3 |
| 19 | Sleep Studies | Min number: 5 by end of SR3 |

Residents from AY2023 onwards must observe / perform and log the following procedures:

| S/N | Bronchoscopy Procedures | Min requirement |
|---|---|---|
| 1 | Flexible Bronchoscopy (Total)<br>Airway biopsy, aspirates, lavage and Transbronchial Lung Biopsies | To perform 110 (at least 10 during SR3) |
| 2 | - Transbronchial Lung Biopsies (TBLB)<br><br>*Can be part of the 110 Flexible Bronchoscopy.* | To perform 20 |
| 3 | Advanced Bronchoscopy (EBUS, navigational bronchoscopy, rigid bronchoscopy, airway ablative therapy or stenting)* | NA |
| **S/N** | **Other Procedures** | **Min requirement** |
| 4 | Thoracocentesis | To perform 5 |
| 5 | Chest Drain Insertion | To perform 20 |
| 6 | Thoracoscopy*<br><br>*(Advanced skill outside the ambit of the residency programme)* | NA |
| 7 | Central Venous Catheterisation | To perform 5 |
| 8 | Endotracheal Intubation | To perform 5 |
| 9 | Chest Ultrasonography | To perform 45 |
| 10 | Spirometry | To report 100 of which at least 3 are observed |
| 11 | Bronchoprovocation Test (pharmacologic)<br><br>*Can be part of the 100 Spirometry.* | To report 30 of which at least 3 are observed |
| 12 | Lung Volume Management (Body Plethysmography / Gas Dilution Method) | To report 100 of which at least 3 are observed |
| 13 | Tests of Diffusing Capacity | To report 100 of which at least 3 are observed |
| 14 | Exercise Challenge Test* | NA |
| 15 | Cardiopulmonary Exercise Test | To report 3 |
| 16 | Sleep Studies | To report 5 |

*Remark (*): No minimum requirement; not mandatory for exit but encouraged to be observed / performed under supervision*

## Summative Assessments

The current exit examination consisting of (1) Local MCQ Examination and (2) Viva Voce will be phased out in October / November 2025.

From AY2023 onwards, the exit examination will be (1) MRCP(UK) SCE in Respiratory Medicine and (2) Viva Voce. This table illustrates the changes in the components in the exit examination:

| | **Summative assessments (Current Format)** | **Summative assessments (New Format – from AY2023 onwards)** |
|---|---|---|
| SR3 | Viva Voce<br>*(3 stations, 10 minutes each)* | Viva Voce<br>*(5 stations, 12 minutes each)* |
| | Local MCQ examination<br>*(20 MCQs, 0.5 hours)* | MRCP(UK) SCE in Respiratory Medicine<br><br>*(2 SCE papers: 100 MCQs, 3 hours for each paper)* |
| SR2 | Nil | |
| SR1 | Nil | Nil |

| **S/N** | **Learning outcomes** | **Summative assessment components** | |
|---|---|---|---|
| | | MRCP(UK) SCE RM (can be taken from SR2 onwards) | Viva Voce |
| 1 | EPA 1: Managing care of patients with pulmonary diseases in general ward and outpatient setting | ✓ | ✓ |
| 2 | EPA 2: Managing patients with acute complex medical and surgical disorders in the ICU setting | ✓ | ✓ |
| 3 | EPA 3: Resuscitating, stabilizing and caring for unstable or critically ill patients with pulmonary diseases | ✓ | ✓ |
| 4 | EPA 4: Providing perioperative pulmonary assessment and care | ✓ | ✓ |
| 5 | EPA 5: Providing pulmonary medicine consultation to other specialties | ✓ | ✓ |

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|---|---|---|---|
| 6 | EPA 6: Performing common pulmonary and critical care procedures | ✓ | ✓ |
| 7 | EPA 7: Interpreting pulmonary function test, and chest imaging | ✓ | ✓ |