

Specialty Training Requirements (STR)

Name of Specialty:	Paediatric Medicine
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Scope of Paediatric Medicine

Paediatric medicine is the branch of medicine that deals with the health of infants, children, and adolescents. Childhood and adolescence are the periods of greatest growth, development, and maturation of the various organ systems. Paediatric medicine would also address the influence of health and disease on the growing and developing child/ young person during this period.

Purpose of the Residency Programme

The purpose of the Paediatric Medicine Residency Programme is to train specialists who are competent and can assume responsibility for children's physical, mental and emotional progress from conception to maturity. Paediatricians must be concerned with social or environmental influences, which have a major impact on the health and well-being of children and their families and recognise that the young are often among the most vulnerable or disadvantaged in society.

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 Ministry of Health 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 Specialist Accreditation Board (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.

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 72 months, comprising 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 Paediatric Medicine specialty is 72 months Paediatric Medicine + 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 the 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	Providing holistic care for children of all ages including health screening.
EPA 2	Performing common procedures in general paediatric practice
EPA 3	Resuscitating and stabilising term and pre-term newborns
EPA 4	Caring for the newborn in the hospital setting
EPA 5	Managing children with acute, common paediatric diagnoses in an ambulatory, emergency or inpatient setting
EPA 6	Managing severely ill children in emergency or inpatient settings
EPA 7	Providing care for critically ill children as a member of an intensive care team
EPA 8	Providing appropriate care for children with complex, chronic, or special health care needs
EPA 9	Providing initial management for children with abnormal development and behaviour
EPA 10	Providing initial management for children presenting with surgical conditions in an ambulatory, emergency or inpatient setting
EPA 11	Facilitating the transition of children with chronic illness from paediatric to adult healthcare

Information on each EPA is provided in [here](#).

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 Competences:

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:

- Knowledge of the indications, contraindications and complications of practical procedures and diagnostic investigations and ability to communicate this information to the parents and/or the child
- Ability to obtain informed consent according to national guidelines
- Knowledge and ability to prescribe sedation and pain relief
- Ability to practise aseptic technique and safety precautions when appropriate
- Ability to provide and maintain proper documentation of patient information
- Ability to communicate appropriate medical information when making requests for investigations or consultation
- Ability to interpret test results and respond appropriately
- Ability to perform defined essential practical procedures
- Ability to prescribe safely for the newborn and for children of all ages
- Ability to acquire basic computer skills to enable utilisation of the hospital-specific patient management networks
- Ability to perform electronic retrieval of medical literature
- Ability to access electronic information networks

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 competence in:

1. GENERAL CLINICAL COMPETENCIES

- Development – physical, emotional, social and educational
- Growth and nutrition
- Adolescence

2. SPECIALITY-SPECIFIC COMPETENCIES

- 1) Behavioural Paediatrics
- 2) Cardiology
- 3) Dermatology
- 4) Endocrinology
- 5) Gastroenterology and Hepatology
- 6) Genetics and Dysmorphology
- 7) Haematology and Oncology
- 8) Infection and Immunology
- 9) Metabolic disorders
- 10) Musculoskeletal disorders and Rheumatology
- 11) Neonatology
- 12) Nephrology
- 13) Neurology and Developmental Paediatrics
- 14) Ophthalmology
- 15) Respiratory medicine and diseases of the ear, nose and throat

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

The milestones are still being worked on and will be included once these have been approved.

Learning Outcomes: Others

Competency Based Assessment (CBA)

CBA must be used to determine the overall competence of Senior Residents as a Paediatrician in various clinical settings and this should be based on the learning roadmap or competency milestones to be achieved during residency training. Senior Residents should be assessed monthly using the CBA rating form at each rotation as the validity of this tool will increase with the number of assessments throughout training. Senior Residents must complete a minimum of 39 CBA over 36 months. Senior Residents should include a minimum of 6 written medical reports during the assessment process as part of the clinical scenario they are being assessed in. CCC must convert all the monthly CBA ratings to an overall competency score and give each Senior Resident an average of the overall competency scores every 6 months.

The resident must achieve a minimum score of 3.5 out of 5 by the end of Senior Residency to be eligible to sit for the exit exam.

The CBA can be applied to the following Practice Based Scenarios over 36 months:

1. Running specialist clinic (minimum 3 i.e., 1 per year)
2. Children's Emergency Clinic (minimum 3)
3. Conducting Intensive Care Ward Round (minimum 3)
4. Conducting Neonatal Ward Round or Call (minimum 6)
5. Conducting Paediatric Ward Round (minimum 18)

Conducting written communications (medical reports, mortality reports, referral letters, discharge letters (minimum 2 per year).

Medical Ethics, Professionalism and Health Law course

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

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 on average attend a minimum of 16 hours of dedicated educational and learning activities each month. These could be a combination of didactic sessions or bedside teaching sessions facilitated by faculty and peers. In the event of an outbreak whereby face-to-face on-site teaching sessions are disallowed, these learning activities should be conducted online.

The programme must schedule the following learning activities:

Type of scheduled learning activities	Learning outcomes
Case based discussion	<i>Develop clinical reasoning skills.</i>
Clinical skills teaching (history taking, communication, physical examination)	<i>Develop skills in history-taking, physical examination and communication skills.</i>
Core lectures for residents	<i>Acquire knowledge in various paediatric topics based on the syllabus found in the Paediatric Medicine Training Guide.</i>
Department CME lecture	<i>Acquire knowledge in various paediatric topics as well as general knowledge.</i>
Department peer review round	<i>Acquire knowledge in patient care, develop clinical reasoning and system-based practice skills.</i>
Journal club	<i>Acquire skills in evidence-based medicine.</i>
Mock code	<i>Develop knowledge and skills in resuscitation.</i>
Morbidity and mortality round	<i>Acquire knowledge in patient care, develop clinical reasoning and system-based practice skills.</i>
PICU grand round	<i>Acquire knowledge in patient care and develop clinical reasoning skills.</i>
Radiology round	<i>Acquire knowledge and skills in interpretation of various radiological investigations.</i>

Residents must attend the following courses/workshops during their residency training:

Workshops/Courses	Expected Year of Attendance
Basic Cardiac Life Support	R1
Paediatric Advanced Resuscitation Course	R1
Sedation Course	R1
Evidence based medicine workshop	Any time during residency training
Communication workshop	R1-R3
Ethics Workshop	Any time during residency training
Health Care Delivery Course	Any time during residency training

Learning Methods and Approaches: Clinical Experiences

Residents must have adequate clinical exposures in the following:

The First 3 years of Residency Training (R1-R3):

Postings	Number of Months	Remarks
General Paediatrics	At least 12 months	
Neonatology	6 months	With no more than 4 months in NICU.
Paediatric Sub specs: a. Ambulatory paediatrics b. Allergy and immunology c. Adolescent medicine d. Cardiology e. Emergency paediatrics f. Endocrinology g. Genetics, h. Gastroenterology and hepatology i. Haematology and Oncology j. Infectious disease k. Critical care medicine l. Nephrology m. Neurology and developmental paediatrics, n. Pulmonology/respiratory medicine o. Rheumatology		Resident must receive adequate exposure to the paediatric subspecialties as stated.

The Senior Residency Years (R4-R6):

Postings	Number of Months	Remarks
General Paediatrics & Adolescent Medicine	12 months	Adolescent Medicine is embedded into General Paediatrics postings hence there is no specific rotation for Adolescent Medicine.
Neonatology	6 months	
Children's Emergency	Compulsory 6 months throughout the 6 years	Additional rotations may be undertaken, however, should not exceed 12 months during the 6 years of residency.
Minimum of 3 Subspecialties: a. Allergy and immunology b. Cardiology c. Emergency paediatrics		

d. Endocrinology e. Genetics f. Gastroenterology and hepatology g. Haematology and oncology h. Infectious disease i. Critical care medicine j. Nephrology, k. Neurology and developmental paediatrics l. Pulmonology/respiratory medicine m. Rheumatology		
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Elective Rotation (non-mandatory)

Residents may do an **elective rotation** (up to a maximum of 3 months' duration) in any of the paediatric subspecialties within the department or other specialty departments within the hospital or external elective (other hospitals in Singapore). The elective rotation is only allowed depending on PD's assessment on the benefits of elective rotation for the resident, the manpower availability and whether cross department or cross institution rotation is feasible.

Accreditation for research training during senior residency training is allowed up to a maximum of 6 months.

Learning Methods and Approaches: Scholarly/Teaching Activities

Residents must participate in a core curriculum in scholarly activities which must include formal lectures. Residents must perform a case presentation with literature review at least once every 6 months.

Senior residents must participate and produce written evidence of at least one of any of the following scholarly activity by the end of residency:

- Presentation of the results of a research project at a local, regional or international conference
- Writing of guidelines
- Clinical practice improvement / quality improvement projects
- Successful submission of an external grant
- First author paper published in a peer-reviewed journal, preferably a hypothesis-driven piece of work, or a critical meta-analysis of the literature, or a systematic review of clinical practice
- Part of a thesis submission for a PhD or Masters of Clinical Investigation
- Book chapter

Residents must participate in teaching and supervision of assigned medical students doing their paediatric rotation as well as interns and junior residents in their rotations at least once during their senior residency.

Learning Methods and Approaches: Documentation of Learning

- Residents must keep a log of their clinical and procedural experience in the designated Paediatric Medicine Training Logbook/Portfolio.
- Residents must document the clinical cases they have seen (Case Logs) and practical procedures they have seen or performed (Procedure Logs) regularly.
- Residents must log a minimum of 50 cases in each academic year.
- Residents must see and log in a variety of clinical cases during every 6-month training period.

Junior Residents (R1-R3) must complete the following procedures prior to progression to Senior Residency:

1.	Anthropometric measurements	Simulated procedures are accepted due to SI regulations on credentialing requirements for certain procedures.
2.	Use of inhalers	
3.	Use of peak flow meter	
4.	Injections	
5.	Urine test (dipstick)	
6.	Rectal route of medication administration	
7.	Nasogastric tube insertion	
8.	Blood taking	
9.	Peripheral venous cannulation	
10.	Capillary blood sampling	
11.	Peripheral arterial cannulation	
12.	Urethral catheterisation	
13.	Lumbar puncture	

Senior Residents (R4-R6) must complete the following procedures prior to completion of residency training:

1.	Percutaneous central venous catheter insertion	Simulated procedures are accepted due to SI regulations on credentialing requirements for certain procedures. Senior Residents (R4-R6) are required to complete these procedures prior to exit exam.
2.	Placement of peripherally inserted central catheter (PICC)	
3.	Chest tube insertion	
4.	Bone marrow trephine	
5.	Administration of surfactant	

The Case Logs and Procedure Logs must be reviewed regularly and signed off by the supervisors. Feedback to the residents on their Case Logs and Procedure Logs must be given during meeting with faculty supervisor after each CCC meeting every 6 months and when necessary.

Summative Assessments

	Summative assessments	
	Clinical, patient-facing, psychomotor skills etc.	Cognitive, written etc.
R6	1. Nil	<u>1. Adolescent Review</u> (refer D.R5 for detailed explanation) <u>2. Exit Examination</u> VIVA – 4 stations: Neonatology General Paediatric Paediatric Emergency Journal Paper (each station is tested for 20 minutes – total 1 hour and 20 mins)
R5	Nil	Nil
R4	Nil	Nil
R3	MMed/MRCPCH	MMed/MRCPCH
R2	Nil	MMed/MRCPCH
R1	Nil	Nil

S/N	<u>Learning outcomes</u>	<u>Summative assessment components</u>				
		VIVA - Neonates	VIVA – Paeds Emergency	VIVA – Gen Paeds	VIVA - Journal	Adolescent Medicine Write-Up
1	Patient Care	√	√	√		√
2	Medical Knowledge	√	√	√	√	√
3	Practice Based Learning & Improvement				√	√
4	Interpersonal & Communication Skills	√	√			
5	Professionalism	√	√		√	√
6	System -based practice	√	√		√	√