

STATEMENT OF EDUCATIONAL GOALS

Fellowship in Pediatric Rheumatology KK Women's & Children's Hospital Department of Paediatric Subspecialties

Eligibility: Applicants must have completed Paediatric Residency Training or Advance Specialist Training (AST)

Training duration: 12 – 36 month, hand-on course

The pediatric rheumatology subspecialty fellowship training program has been designed with two goals as follows:

1. To prepare our subspecialty residents in the diagnosis and treatment of children, adolescents, and young adults with complex, acute and chronic rheumatic diseases. This will require 12-24 months of training.
2. To prepare the subspecialty residents for a career in biomedical sciences as it relates to pediatric rheumatology. This will require 24-36 months of training.

Clinical

- **Breadth of Experience**
The program provides subspecialty residents with a thorough knowledge of normal growth and development with emphasis on the musculoskeletal system, as well as the correlation of pathophysiology with clinical diseases. The program will ensure the availability of all facilities and personnel necessary for the complete care of infant, child, adolescent, and young adult patients with rheumatic diseases. The program will ensure that each subspecialty resident has the opportunity to provide continuing responsibility for both acute and chronic rheumatic diseases in order to observe the natural history of the disease process and effectiveness of therapeutic programs. This will be accomplished by a continuity clinic in years 2 and 3.
- **Clinical Experience**
The clinical component of the program will provide broadly based experience with a variety of rheumatic and musculoskeletal diseases and is designed to develop the subspecialty resident's understanding of the pathophysiology of various rheumatic diseases and to promote competence in the clinical diagnosis and medical management of these disorders. This includes training in the selection, performance, and evaluation of procedures necessary for pathologic, physiologic, immunologic, microbiologic, and psychosocial assessment of rheumatic and musculoskeletal diseases.

This experience is achieved through the 6-session per week rheumatology and one session per week immunology clinics and inpatient consultations.

The program will provide sufficient experience for the residents to acquire skill in:

1. Therapeutic injection of diarthrodial joints
2. Nailfold capillary microscopy
3. Use and monitor for adverse reactions of non-steroidal anti-inflammatory drugs (NSAIDs), disease-modifying drugs (DMARDs), biologic response modifiers, glucocorticoids, cytotoxic drugs, and infectious / post-infectious therapy
4. Diagnostic aspiration of joints and interpretation of synovial fluid analysis.
5. Prescription of physical therapy, occupational therapy, splints, and other therapeutic modalities
6. Bone and joint imaging
7. Evaluation for surgical intervention, including participation in both preoperative and postoperative patient management
8. Interpretation and utilization of laboratory tests as they relate to rheumatic disorders
9. Understanding the indications for electromyographic (EMG) and nerve conduction studies
10. Performing biopsies of tissues relevant to rheumatic diseases
11. Slit lamp examination of the eye

The program will provide sufficient experience for the residents to become clinically competent in the management of common as well as uncommon rheumatic disorders. This includes but not limited to the followings:

1. Infectious / post-infectious syndromes; such as acute rheumatic fever, post-streptococcal reactive arthritis and Lyme disease, etc.
2. Juvenile idiopathic arthritis
3. Systemic lupus erythematosus and related disorders
4. Scleroderma both systemic and localized forms
5. Dermatomyositis / polymyositis
6. Systemic vasculitides including Henoch-Schonlein purpura, Wegener's granulomatosis, Churg Strauss granulomatosis, Kawasaki disease, polyarteritis nodosa, etc
7. Nonarticular rheumatic diseases including reflex neurovascular dystrophy and fibromyalgia
8. Infections of bones and joints
9. Neonates with consequences of maternal rheumatic diseases or medications for rheumatic diseases
10. Spondyloarthropathies, psoriasis, and other HLA B27-related disorders
11. Malignancies of bone and muscle
12. Disorders of collagen and connective tissue
13. Rheumatic aspects of immunocompromised (congenital or acquired) children

14. Rheumatic aspects of systemic diseases such as endocrine, metabolic, gastrointestinal and infectious diseases, skeletal dysplasias, and other systemic diseases
15. Sports injuries, including over use syndromes
16. Avascular necrosis, including Legg-Perthes syndrome
17. Osteochondroses syndromes (Osgood Schlatter disease, etc)

The program also provides instruction and experiences in:

1. Rehabilitative and psychosocial aspects of chronic rheumatic diseases as they affect the child.
2. Counseling chronically ill patients and their families is a component of the training program.
3. Health education, current health care legislation, biomedical ethics, and preventive measures.

- **Health care team**

The subspecialty residents will be exposed to formal sessions on organization and leadership of a comprehensive health-care team and utilization of the services of all relevant allied health professionals, including those in social services, rehabilitation, education, and mental health. There will also be education in the use of community resources in the care of children with rheumatic diseases. This will be accomplished through participation in the division's monthly general staff meeting and interaction with our nurses, social worker, physiotherapists/occupational therapists, psychologists, officer manager, and secretarial staff.

- **Adult Rheumatology Elective**

The subspecialty residents will be exposed to adult rheumatology through a 4 week elective during the first year (optional). They will rotate through the clinics of the Rheumatology Division (Tan Tock Seng Hospital, National University of Singapore Hospital or Singapore General Hospital) and will have an opportunity to see adults with rheumatic diseases.

- **Ophthalmology Elective**

The subspecialty residents will be exposed to pediatric ophthalmology through a 1 week elective during the first year (optional). They will rotate through the pediatric ophthalmology clinic where they will observe slit lamp examinations for evaluation of uveitis.

Research (for 24-36 month course)

- **Didactic program**

The subspecialty residents will have an opportunity to attend the courses, or seminars related to rheumatic or autoimmune diseases. This will provide an appropriate background for subspecialty residents in the basic and fundamental

disciplines related to the musculoskeletal system and rheumatic disease, eg, anatomy, biochemistry, embryology, genetics, immunology, molecular biology, pathology, pharmacology, physiology, biostatistics, and bioethics.

- **Research experience**

Subspecialty residents will be exposed to the research projects that are ongoing in the program. This will provide a comprehensive understanding of research methodology, grantsmanship, and scientific writing skills.

Teaching

Subspecialty residents will be given the opportunity to teach and to assume some departmental administrative responsibilities. Subspecialty will develop an understanding of the appropriate role of the pediatric generalist in subspecialty care and participate in the residency and continuing education activities. They will participate actively in conferences, lectures, and clinical experiences for general pediatric residents and other trainees. These teaching experiences include oral presentations and correlation of basic biomedical knowledge with the clinical aspects of the subspecialty. The program provides instruction in curriculum design and in the development of teaching material for the subspecialty residents.

The subspecialty residents will be responsible and actively participate in:

1. Bi-monthly journal club where critically journal reading skills are obtained.
2. Once a month case conference where critically thinking in patient care is exercised.
3. Once a month topic review where recent update or advances in different aspects of rheumatic diseases are reviewed.
4. Once a month Rheumatology and Immunology Staff meeting where multidisciplinary staffs involving in the care of children with rheumatic diseases attend. This meeting is aimed for the quality improvement in the care of patients.
5. (Optional but encouraged for 24-36 month course fellows) Local and international annual scientific meetings where research projects can be presented and exposure to the most recent updates in the field and exposure to international colleagues for collaborative projects take place.

Assessment

1. Case/s presentation and discussion (in and outpatient – new and existing cases)
2. Log book for cases and procedures
3. Formal quarterly evaluation in area as follows:

General Competencies for Pediatric Rheumatology Fellows

Competency	Evaluation Tools
<i>Patient Care:</i>	Gathers accurate, essential information from:
	<ul style="list-style-type: none"> • Medical interview (history)
	<ul style="list-style-type: none"> • Physical examination, general
	<ul style="list-style-type: none"> • Complete musculoskeletal examination
	<ul style="list-style-type: none"> • Medical records
	<ul style="list-style-type: none"> • Diagnostic procedures
	<ul style="list-style-type: none"> • Therapeutic procedures
	Makes informed recommendations for:
	<ul style="list-style-type: none"> • Diagnostic procedures
	<ul style="list-style-type: none"> • Therapeutic options
	<ul style="list-style-type: none"> • Preventative options
	Employs evidence-based medicine in:
	<ul style="list-style-type: none"> • Diagnostic decisions
	<ul style="list-style-type: none"> • Therapeutic decisions
Develops and implements patient management and care plans.	
Competently performs arthrocentesis and joint injections.	
<i>Medical Knowledge:</i>	Applies open minded, analytical approach to acquiring new knowledge.
	Accesses and critically evaluates current medical information and scientific evidence
	Develops clinically applicable knowledge of basic and clinical sciences that relate to rheumatology.
	Applies knowledge to:
	<ul style="list-style-type: none"> • Problem-solving
	<ul style="list-style-type: none"> • Clinical decision making
	<ul style="list-style-type: none"> • Critical thinking
	Participates effectively in education of colleagues and students (residents, students).
<i>Practice-Based Learning and Improvement:</i>	Identifies areas for improvement.
	Participates in implementation strategies to Enhance knowledge, skills, attitudes, and processes of care.
	Analyzes and evaluates practice experiences and formulates strategies to continually improve quality of patient practices.
	Develops and maintains a willingness to learn from errors; to improve the process of care.
	Uses information technology and other technologies to access and manage information
	Support patient care decisions
	Enhance patient education
	Enhance physician education

<i>Interpersonal and Communication Skills:</i>	Provides effective and professional consultation.
	Uses the following skills to effectively communicate with patients & families:
	<ul style="list-style-type: none"> • Listening
	<ul style="list-style-type: none"> • Questioning
	<ul style="list-style-type: none"> • Narrative
	Interacts with consultants in respectful and appropriate and appropriate manner.
	Maintains comprehensive, accurate, timely, and legible medical records.
Collaborates effectively with other team members, including nursing, OT/PT, social workers.	
<i>Professionalism:</i>	Demonstrates the following behaviors to patients, families, colleagues, team members, other coworkers:
	<ul style="list-style-type: none"> • Compassion
	<ul style="list-style-type: none"> • Integrity
	<ul style="list-style-type: none"> • Altruism
	<ul style="list-style-type: none"> • Respect
	Demonstrates sensitivity and responsiveness to gender, age, culture, religion, sexual orientation, socioeconomic status, beliefs, behaviors, and disabilities of patients, families, and colleagues.
	Adheres to:
	<ul style="list-style-type: none"> • Confidentiality
	<ul style="list-style-type: none"> • Scientific/academic integrity
	<ul style="list-style-type: none"> • Informed consent
	Recognizes and identifies deficiencies in peer performance.
Helps to garner resources and mechanisms to help deficiencies that are identified.	
<i>Systems-Based Practice:</i>	Understands, accesses, and utilizes resources, providers, and systems necessary to provide optimal care.
	Develops strategies to optimize care for the individual patient with knowledge of the limitations of the health care system available to the patient, family, and health care providers.
	Applies evidence-based strategies to diagnosis and prevention or treatment of disease conditions.
	Applies cost conscious strategies to diagnosis, management, and prevention of disease and conditions

	Collaborates effectively with other members of health care team to maximize optimal care and improve systematic processes of care.
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Supervision

The program director (currently head of the service) will oversee and monitor the entire training period of the Fellowship Training.