

Fellowship in Paediatric Nephrology

Department of Paediatrics



All India Institute of Medical Sciences (AIIMS)

Jodhpur, Rajasthan, India

Syllabus for Fellowship in Pediatric Nephrology

Introduction:

Pediatric nephrology began taking shape as a unique area of practice after the term was first published in medical literature in 1963.

Renal disorders carry a high morbidity and mortality. Many children succumb to acute renal injury occurring as a comorbidity with acute illnesses. Renal management in children is different than adults, not only owing to their small size but also the nature of their illnesses are a lot different than adults. It requires a special expertise to recognize the disorders early and institute management as most of these can be well controlled to provide the patient an otherwise normal life.

The burden of renal diseases especially chronic renal failure in India is increasing every year. The number of children requiring dialysis and renal transplant is on a rise owing to not only the lack of availability of the donors but also their tiny size precludes many nephrologists to care for them. Most of the adult nephrologists are either not trained to or are unable to create access for their dialysis, and many times the manpower is not trained enough to handle children. It is important that people are specially trained in this area to recognize and handle these problems and provide them utmost guidance and care for them. We need people who can create access for Pediatric Dialysis, recognize occult renal disorders and treat it. This in its own sense would go a long way in decentralizing the care of these children requiring highly specialized care.

The Department of Pediatrics, AIIMS, Jodhpur is well established and has faculty having dedicated exposure to Pediatric Nephrology during their training.

AIIMS, Jodhpur was established by the Government of India with the aim of correcting regional imbalance in quality tertiary level health care. AIIMS, Jodhpur is a Centre of excellence in medical education, training, health care and research imbued with scientific culture, compassion for the sick and commitment to serve the underserved. Pediatric Nephrology care is available only at selected centres in India. Starting a dedicated Pediatric Nephrology fellowship at AIIMS, Jodhpur will provide level of experience, training and conceptual tool that will enable fellow not only expertise as a practitioner but will give them foundation to ultimately start

nephrology care for indigent children. As a trained fellow in Pediatric Nephrology, he will be able to develop network to collect data and answer the relevant research questions. There are wide variations and regional imbalances in care of children suffering from renal diseases which is concentrated in Metropolitan cities. It is important to recognize some of these issues such as Acute Kidney Injury early to salvage renal function and reduce the morbidity and burden of end stage renal failure to which the patient may progress if not treated timely.

Definition:

Fellows in Pediatric Nephrology will be fully qualified Pediatrician who will have a further period of training in Pediatric Nephrology program which will be practical and evidence based. The development of such educational programs will adequately prepare pediatric resident for Pediatric Nephrology in their practice.

Aim of the training:

The aim of the fellowship is to provide to the candidate an intellectual environment conducive to learning the exemplary practice of Pediatric Nephrology and inculcating evidence-based practice.

Objectives of the training:

The trainee requires a sound understanding of Pediatric Nephrology including:

- Management of acute and chronic renal failure, Nephrotic syndrome and other acute and chronic renal illnesses
- Evaluation of Renal disorders in their totality.
- Doing and Interpreting FF test, Water Deprivation Test and Blood Gas analysis and Urine Analysis
- Assessing need for and performing, Hemodialysis, Peritoneal Dialysis and Plasma Exchange
- Assessing need for and assisting and performing, Renal Biopsy (Ultrasound Guided)

ORGANIZATION OF TRAINING:

A. Training program would be in a multidisciplinary centre and organized by trained specialist in Pediatric Nephrology

B. The centre would use the guidelines and protocols of national and international professional bodies [such as ISPN (Indian Society of Pediatric Nephrology)/IPNA (International Pediatric Nephrology Association) and ISN (International Society for Nephrology)] which are reviewed at regular intervals.

THE MEANS OF TRAINING:

1. The trainees would participate in all relevant activities of the training unit such as the care of Out -Patients and In -Patients, on call duties during both day and night, also participating in educational activities, including the teaching of other health professionals. Participation in audit and clinical or basic research is essential.

3. Educational tools

- Text books written by leading and experienced Authors
- Video tapes /CD ROMS
- Simulators
- Special instruments:
 - To learn hand and eye co-ordination
 - To learn depth perception
 - To learn tactile sensations

4. The training would be structured throughout with clearly defined targets to be met after specified intervals. An education plan would be drawn up in consultation with the trainees at the beginning of each attachment and progress would be monitored regularly, by means of log book.

ASSESSMENT OF TRAINING: - As per Institute Policy

LOG BOOKS: -

The log books are to be submitted for monthly evaluation of the progress and to evaluate the learning curve.

TRAINING PROGRAMME SYLLABUS: -

A: General Principles:

Each Fellowship student is required to possess a comprehensive knowledge in the diagnosis and management of infants, children, and adolescents with renal disorders. This includes both inpatient and outpatient experience. The fellow would have extensive exposure to the performance and interpretation of peritoneal dialysis, hemodialysis, renal biopsies and plasma pheresis. He or she would gain experience in management of Nephrotic syndrome, Systemic Lupus Erythematosus/Vasculitis/Chronic Nephritic syndromes, Structural malformations of Kidney and Urinary tract, UTI, Bladder disorders, evaluation and management of Nephrolithiasis/RTA and care of children with Chronic Kidney disease and those on dialysis. He/she would also possess sufficient knowledge and experience in research methodology and development and is expected to complete a research project during the tenure of his fellowship.

CLINICAL SKILLS FOR FELLOWSHIP

1. Management of acute and chronic renal disorders with special emphasis on Nephrotic Syndrome and CKD
2. Insertion of Dialysis Catheters (Hemodialysis and Peritoneal Dialysis) and Renal Biopsy
3. Interpretation of Renal radiology/ Pathology
4. Performance of necessary clinical, bedside investigations and interpreting the same to establish the diagnosis and inculcate evidence-based practice.

Duration and Rotation:

Attend to the pediatric nephrology clinic every week consisting of the referred patients from Pediatric OPD, follow up of AKI, CKD, Nephrotic syndromes under the supervision of consultants. To assist in maintaining record of all pediatric nephrology patients and their follow up. Supervising the care of Pediatric Nephrology patients admitted in Pediatric wards.

One month rotation to the Dialysis unit along with closely supervising all pediatric dialysis being conducted by the unit.

Observe/Supervised kidney biopsy.

Take responsibility of arranging and managing Dialysis and other procedures of patients admitted under nephrology

To present Journal clubs and seminar pertaining to recent developments in Pediatric Nephrology and discuss the same with faculty.

Supervision:

Initially, the fellow will be fully supervised by the Faculty posted in the area. In the course of training, the level of supervision will be tapered according to the experience and confidence gained.

Overview of training

Clinical knowledge will be acquired by a variety of means, including close liaison with appropriate medical and surgical and radiological meetings. Multidisciplinary meetings would be emphasized.

The following inter-relationships are important:

1. The trainee would be encouraged and given the opportunity to attend and lead appropriate clinico-radiological and multidisciplinary meetings.
2. The trainee would be encouraged to attend appropriate educational meetings and courses.
3. The trainee would participate in and initiate relevant clinical audit.
4. Trainees will be expected to be familiar with current pediatric nephrology literature.
5. The trainee would be encouraged to participate in research, and to pursue one or more projects up to and including publication. An understanding of the

principles and techniques used in research, including the value of clinical trials and basic biostatistics, would be acquired. Presentation of research and audit results at state and national meetings would be encouraged.

6. The trainee would continue to participate in the on-call rotation, with appropriate consultant back up.

The academic activities of the program in the hospital would include: -

- Regular academic sessions
- Case discussion and seminars

Research:

The fellow will have to:

1. See 20 cases of quality analysing and discussing which will be certified by the faculty of the department.
2. Present at one regional and one national conference.

Tentative schedule for fellow in Pediatric Pulmonology:

Ward work	Dialysis Rounds/Procedures
General Paediatric OPD to attend with faculty	Radiology meeting / Paediatric Pulmonology seminar/case presentation/seminar (Alternate week)
Clinical grand round Ward work and procedures.	Pediatric Nephrology Journal Club/Seminar alternate week
General Paediatrics case presentation Pediatric ward rounds OPD/attend with faculty	Paediatric Nephrology Audit of Procedures/Dialysis patients discussion
Clinico-pathological conference	Pediatric Nephrology Clinic

General Paediatric OPD (Alternate week)	
General Paediatric seminar Integrated teaching/Ward work	

- Participate in the daily teaching sessions within the department, and make regular presentations.
- Take part in Inter-departmental meetings relevant to the area posted.

To sum up:

The goal of the Pediatric Nephrology training is to familiarize the trainee with

2. Managing acute and chronic renal disorders.
3. Identifying the patients requiring dialysis along with the most suitable modality (HD/PD) and instituting the same for the patient.
4. Diagnosis and work up of all renal patients
5. Assist and perform renal biopsy and placement of catheters for Hemodialysis/ Peritoneal dialysis.
6. Performing Fludrocortisone Frusemide test/ Water deprivation test / evaluation of chronic renal disorders etc.

Recommended reading

Author Name	Name of the Books	Publishing Company
Avner Ellis D.	Pediatric Nephrology	Springer
Denis F Geary, F Schaefer	Comprehensive Pediatric Nephrology	Mosby, Elsevier
RN Srivastava, Arvind Bagga	Pediatric Nephrology	Jaypee Brothers
John T Daugirdas, PG Blake,	Handbook of Dialysis	Lippincott Williams and Wilkins