

Fellowship in Paediatric Emergency and
Intensive Care Medicine
Department of Paediatrics



All India Institute of Medical Sciences (AIIMS)
Jodhpur, Rajasthan, India

Curriculum of Fellowship Training:

Aims:

1. To implement the curriculum to train the qualified Pediatricians in understanding the basics of Pediatric emergency and intensive care medicine, simultaneously working towards progressive positive outcomes in the form of morbidity and mortality
2. To train the Pediatricians to develop skills and experience in early detection and management of Pediatric critical illnesses
3. To train the Pediatricians in basic and advanced mechanical ventilation and day to day care of a critically ill child
4. To train the Pediatricians in clinico- academic activities through various teaching programs, research, and publications related to Pediatric intensive care

It will Include:

1. Basic training in Pediatric emergencies and intensive care
2. Clinical skills in procedures, understanding equipment's, monitoring and resuscitation
3. Mechanical ventilation
4. Research programs, teaching skills
5. Designing a PICU: replica creation

Basic training in Pediatric emergencies and intensive care:

- Emergency and critical Pediatrics: Scope and need
- Pediatric emergency resuscitation and Pediatric advanced life support, Lifesaving procedures
- Common Pediatric emergencies
- Shock
- Sepsis and Hospital acquired infections
- Convulsion and Status epileptics
- Respiratory distress
- Cardiac emergencies including arrhythmias,
- CCF
- Tetanus

- Burns
- Snake Bite & Scorpion Envenomation –snakebite, scorpion bite
- Near drowning
- Hemorrhagic Syncope
- Anaphylaxis
- Hypertension
- Diabetic ketoacidosis
- Inborn error of metabolism :- Diagnosis/Immediate evaluation/screening and lab diagnosis/immediate measures (e.g.: Supplement, dietary restriction, intervention)
- Poisoning - diagnosis and management antidotes
- Neurological emergencies including ICP and coning
- Approach in a case of suspected brain death
- Taking care of a PICU child: basic nursing
- Taking care of a PICU child: anesthesia and analgesia
- Trauma, head injury and other surgical emergencies
- Transporting a sick child Safety and Bio waste management's
- Investigations in PICU: including radiology
- PRISM- PIM Score Record keeping in PICU
- Poisoning- diagnosis and management

Clinical skills in procedures, understanding equipment's, monitoring and resuscitation

- Asepsis and anesthesia and decision making in PICU emergency procedures
- Procedures in emergency medicine: tracheostomy, bronchoscopy, Needle drainage, Rapid IV access Rapid sequence intubation
- Vascular / Central line access: Jugular, subclavian, femoral and cut down access Arterial catheterization
- Intraosseus line Ventricular tap and
- Pleuro- centesis and peritoneal Tap
- Peritoneal dialysis

- Difficult intubations
- Monitoring: Needs, modalities and action Resuscitation:
 - θ Pediatric advanced life support: CPR, intubation and medicines
 - θ Monitoring a resuscitated child
- Equipment's
- Invasive and noninvasive equipment's
 - θ Multichannel Monitors, defibrillators
 - θ Nebulizers, suction,
 - θ O2 delivery systems
 - θ Ventilators
 - θ Machines: ECG, Doppler, Echo
 - θ EEG and ICP monitoring
 - θ Maintenance and record keeping

PICU Pharmacology

Knowing the common drugs used in PICU , understand their mechanism , adjustment of doses in various disorders.

Mechanical ventilation

- θ Basic physiology of respiratory system in a child
- θ Need for artificial ventilation
- θ Modalities and machines: know your ventilators
- θ ABG analysis; ABG actions
- θ Ventilation modes and needs, Airway dynamics
- θ Ventilation graphics, HFO (High frequency Ventilation), Trouble shootings
- θ Controlled ventilations, Assist ventilations
- θ Care of a ventilated child; Weaning from ventilators
- θ CPAP (Continuous Positive Airway Pressure), Tracheostomy, VAP (Ventilator associated Pneumonia)
- θ ARDS and its management

Designing a PICU: replica creation

- θ Understanding a need for PICU at periphery

- θ Point of Care PICU
- θ PICU designing: budget , management and maintenance
- θ Implementing a PICU protocol and a teaching program

ORGANIZATION OF TRAINING:

- Training programs will be in a multidisciplinary Centre and will be organized by trained specialist.
- There will be rotational posting during the training period to achieve the necessary skills

Pediatric Emergency-3 months

The trainee will be trained to identify the sick children in emergency and should be able to do triaging. It will be of utmost important to acquire the essential skills to stabilize the child in emergency in short span of time.

Pediatric surgery and anesthesia – 2 weeks each

Curriculum as per the respective departments, aimed at anesthesia, analgesia, handling difficult airways and perioperative issues related to fluid and airway dynamics and drugs

Pediatric Intensive care – 8 months

ASSESSMENT OF TRAINING: -

Each student to be evaluated every 3 months by program coordinator.

COURSE EVALUATION: -

The trainee gets the opportunity to evaluate the course.

LOG BOOKS: -

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

EXIT EXAMS: -

The degree is awarded after a final exit examination, at the end of the one-year training period as per institute policy.

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

- Regular academic sessions

- Case discussion and seminars
- Conferences / CMEs / Live workshops

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.
- 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 critical care training is to familiarize the trainee with

2. Identifying the sick child and initial stabilization
3. Care of sick child in intensive care
4. Invasive and non- invasive procedures
5. Basic and advance ventilation
6. The Fellow is expected to complete a project and at least two publications during the year.

Recommended reading

Author Name	Name of the Books	Publishing Company
Rogers	Textbook of Pediatric Critical Care	Wolters Kluwer
Zimmerman	Pediatric Critical care	Elsevier
David W Chang	Mechanical Ventilation	Delmar Thomson Learning
Fleisher and Ludwig	Textbook of Pediatric Emergency Medicine	Wolters Kluwer

Journals

S. No	Name of the Journal	ISSN print	ISSN online
1	Indian pediatrics	0019-6061	0974-7559
2	Indian Journal of Pediatrics	0019-5456	0973-7693
3	Paediatrics	0031-4005	1098-4275
4	Pediatric emergency Care	0749-5161	1535-1815
5	Pediatric Critical Care medicine	1529-7535	1947-3893