



IAP-ICC - COLLEGE OF PEDIATRIC CRITICAL CARE
**Curriculum for Indian Diploma in Pediatric Critical Care
(One-year training)**

SKILLS

All of the following skills as applicable to practice of Pediatric Critical Care

Respiratory: Maintenance of open airway, Suctioning the airway
Endotracheal intubation (oral and nasal)
Cricothyrotomy
Placement of an intercostal tube
Ventilation by bag and mask
Setting and changing modes of ventilation as per needs
Weaning from mechanical ventilation
Interpretation of arterial and mixed venous blood gases
Tracheostomy (desirable)
Interpretation of pulmonary function tests including bedside spirometry (desirable).

Cardiovascular :

ECG interpretation
Placement of central venous catheter (by different routes)
Placement of arterial catheter (by different routes)
Implementation of cardiovascular support (inotropic therapy)
Pericardiocentesis in acute tamponade
Antiarrhythmic therapy
Cardioversion and defibrillation
Thrombolysis
Placement of Swan Gauz catheter (desirable)

Neurologic

Basic interpretation of CT Scan/ MRI, EEG
Brain death protocol – calorie test, apnoea test
Intracranial pressure monitoring (desirable)

Metabolic & Nutritional –

Implementation of intravenous fluid therapy, enteral and parenteral nutrition

Hematologic

Interpretation of a coagulation profile and correction of homeostatic and coagulation disorders (anticoagulation and fibrinolytic therapy).
Implementation of blood component therapy.

Renal: Bladder catheterization,
Peritoneal dialysis,
Renal support techniques (desirable)

Psychosocial :

An Understanding of the effect of life threatening illnesses on patient and their families, and death and dying, and effectively communicate with the child and the family

General

- Has acquired skills in educating medical and paramedical professionals.
- Has acquired skills in handling the PICU equipments.
- Is oriented to principles of research methodology.

SYLLABUS**(I) EMERGENCY RESUSCITATION & ACUTE AIRWAY MANAGEMENT**

Cardiopulmonary resuscitation
Airway management in pediatric critical care
Transportation of Critically ill children

(II) RESPIRATORY FAILURE

Developmental physiology of Resp System.
Upper airway obstruction, including foreign bodies, infection and burns
Lower airway disease: bronchiolitis and asthma
Acute respiratory disease Syndrome (ARDS)
Neuromuscular disease and respiratory failure.
Chronic lung disease in infants and children
Principles and practice of Respiratory Support, mechanical ventilation and weaning.
Respiratory monitoring (pulse oximetry, capnography)
Oxygen therapy

(III) CARDIAC & CIRCULATORY FAILURE

Developmental Cardio-vascular physiology
Cardio respiratory interactions
Arrhythmias and their management
Shock and multi organ system dysfunction
Hypertensive emergencies
Cardiogenic pulmonary edema, Cardiomyopathies
Post operative management of the Cardiac surgical patient
Unusual causes of Myocardial ischemia, pulmonary edema and cyanosis
Hemodynamic monitoring relevant to Pediatric Critical Care.
Point of care Ultrasound

(IV) NEUROLOGIC INTENSIVE CARE

Evaluation of a comatose child
Pathophysiology and management of raised intracranial pressure
Monitoring of central nervous system
Theories of Brain resuscitation
Meningitis, Infectious Encephalopathies and other Central Nervous system Infections.
Status Epilepticus
Reyes syndrome and metabolic encephalopathies
Head and spinal cord injury
Cerebrovascular disease and vascular anomalies
Pediatric Drowning and near drowning
Brain Death, Organ, Donation and withdrawal of life support
Imaging and EEG interpretation.

(IV) IMMUNOLOGIC AND INFECTIOUS DISEASE CONSIDERATIONS

Overwhelming sepsis, SIRS, MODS
Severe infection due to aerobic and anaerobic bacteria, viruses, fungal and parasites.
Primary and Secondary Immunodeficiency
The critically ill child with human immunodeficiency virus (HIV) infection
Nosocomial infections
Principles of antibiotic selections and dosage schedules for Immunotherapy in critical illnesses.

(V) NUTRITION AND GASTROINTESTINAL EMERGENCIES

Nutrition and metabolic changes in critical illness
Principles of enteral and parenteral nutrition
Gastrointestinal and hepatic failure
GIT bleeding, peritonitis
Issues in Liver transplantation
Abdominal trauma, abdominal surgery, bowel obstruction

(VI) RENAL, ENDOCRINE AND METABOLIC DISORDERS :

Acute Renal Failure and renal replacement therapy
Renal disorders requiring Intensive Care
Endocrine, Mineral and Metabolic Disease in Pediatric Intensive Care

(VII) HEMATOLOGIC & ONCOLOGIC

Hematologic Disorders requiring Intensive Care
Intensive Care Management of the Child with malignant diseases.

Principles of anticoagulation, fibrinolytic therapy and blood component therapy.

(VIII) SPECIFIC POISONINGS & ENVIRONMENTAL EMERGENCIES

Intensive Care Management of common Poisonings.

Environmental Hazards: hypo-and hyperthermia, near drowning, electrocution, radiations, chemical injuries, animal bites.

(IX) SURGICAL AND ANESTHETIC CONSIDERATIONS

Multiple trauma in the Pediatric patient

Neuroendocrine response to stress

Analgesia, Sedation and post operative management in the Pediatric ICU.

Principles of neuromuscular blockade in the critically ill patient.

(IX) PICU ADMINISTRATION

- Pediatric Intensive Care Nursing
- Continuous quality improvement in the Pediatric Intensive Care Unit
- Ethical and legal aspects of Critical Care including 'Do not resuscitate' orders, principles of informed consent, withholding and withdrawing life support, organ donation.
- Outcome analysis including Measurement of severity of illness using PRISM, PIM and TIS scores

(X) GENERAL

Pharmacology, pharmacokinetics and drug interactions.

Transport of the critically ill child.

Management of the organ donor.

Participation in regional and national CME's seminars and conference in critical care and affiliation with such critical care organization is desirable.