OBJECTIVES FOR PEDIATRIC SURGERY TRAINEES 

ON OFF-SERVICE ROTATIONS

Pediatric Intensive Care Unit (PICU)

1. Medical Expert/Clinical Decision-Maker

A- Knowledge Objectives

i. anatomy, physiology and pathophysiology of the respiratory system
ii. the principles and theory of mechanical ventilation and other methods of respiratory support
iii. principles and interpretation of invasive and non-invasive hemodynamic monitoring
iv. physiology and pathophysiology of shock
v. the pathophysiology and management of heart failure and cardiac arrhythmias across the pediatric age-groups
vi. anatomy and physiology of patients with congenital heart disease; pre and post operatively
vii. pathophysiology, investigation and monitoring of raised intracranial pressure
viii. criteria required for the clinical diagnosis of brain death and indications for ancillary investigation
ix. the major pathophysiologic entities associated with neuromuscular disease
x. the indications and ethical implications of long term mechanical ventilation
xi. the pathophysiology of renal failure and liver failure
xii. the differential diagnosis of an acute abdomen in the Pediatric Critical Care Unit
xiii. the various components and effects of pediatric trauma in the critical care unit
xiv. the complications of pediatric oncologic diseases and their treatment
xv. differential diagnoses of thrombotic states and bleeding disorders
xvi. fluid, electrolyte and nutritional requirements of critically ill patients
xvii. transport physiology and problems associated with patient transport
xviii. extra-corporeal membrane oxygenation (ECMO): indications in neonates and older children, techniques of cannulation, monitoring, and complications

B- Skills Objectives

i. application of skills from PALS, APLS and ATLS
ii. intravenous (both peripheral and central) and intraosseous access in a critically ill child
iii. airway management including placement of and oro- and naso-tracheal intubations, and rapid sequence intubation
iv. insertion of hemodialysis catheters for CRRT
v. exposure to transcutaneous synchronized cardioversion, defibrillation and pacing
vi. interpretation and trouble-shooting measurements from ICP monitor
2. Communicator
   i. to understand the issues involved in communicating bad news
   ii. to be able to explain complicated medical issues regarding diagnosis and prognosis
   iii. demonstrate respect and understanding for the role of each member of the health care team
   iv. effectively communicate with subspecialty services during consultation requests and follow-up discussions
   v. recognize the importance of clear documentation in patient's health care record
   vi. demonstrate conflict resolution skills
   vii. effectively communicate appropriate positive and negative feedback on performance of junior trainees

3. Collaborator
   i. to consult effectively and in a timely manner with other members of the PCCU health care team and with subspecialty services
   ii. to communicate care plans clearly and precisely to all members of the allied health teams
   iii. to demonstrate leadership and work in a collaborative manner with fellow learners

4. Manager
   i. understand the demands of working in a PCCU including the personal physical and emotional stressors associated with the environment
   ii. effectively balance time and prioritize between patient care, learning needs, stress management and outside activities
   iii. understand issues regarding health resource allocation and the impact on patient management

5. Health Advocate
   i. understand the diverse determinants of health across patients
   ii. is aware of the medico-legal considerations in the PCCU
   iii. is aware of societal programs available for prevention of many PICU conditions such as head injury, near drowning etc.
   iv. understand the impact of critical care on the long-term functional outcome and quality of life of patients
   v. demonstrate proficiency with obtaining informed consent
   vi. understand the concepts of "best-interest" and "futility"
   vii. provide caring and compassionate end-of-life care to patients and their families

6. Scholar
i. facilitate education of other learners in the PICU
ii. application of evidence based medicine principles and current literature to patient management decisions on a daily basis
iii. participate in teaching sessions on basic critical care topics

7. Professional

i. exhibit appropriate personal and interpersonal professional behaviour in interactions with other health care staff and patient and family members
ii. understand the impact of personal moral and ethical value systems on the care of individual patients and families
iii. ensure detailed and complete follow-up and handover of all patients under the residents care
iv. demonstrate effective conflict resolution skills and appropriate code of conduct

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