# POSTGRADUATE INSTITUTE OF MEDICINE
# UNIVERSITY OF COLOMBO

## Prospectus

## BOARD CERTIFICATION IN PAEDIATRIC INTENSIVE CARE

*(To be effective from the year 2015)*



*BOM – 03.10.2015*
*Senate – 28.09.2016*

**Table of Contents**

**This prospectus is made under the provisions of the Universities Act, the Postgraduate Institute of Medicine Ordinance, and the General By-Laws No. 1 of 2016 and By-Laws No. 2 of 2016 for Degree of Doctor of Medicine(MD) and Board Certification as a Specialist**

## 1. Background and Justification/Introduction

Pediatric Intensive Care medicine also known as pediatric critical care medicine is defined as the science of treating children with, at risk of or recovering from potentially life threatening failure of one or more organ systems. It involves the combination of definitive treatment (treatment of definitive diagnosis and disease modification) and supportive care (correction of abnormal physiological parameters).

Pediatric Intensive care comprises constellation of knowledge and practice which are well represented in variety of other specialties. The specialist in Pediatric Intensive Care transcends the traditional borders of medical specialties bringing all these competencies together in one specialist enabling a unique approach to critical illness.

This document identifies the aims and objectives, outcomes and processes of postgraduate specialist training leading to a specialist in Pediatric Intensive Care. It defines the structure and methods of learning, teaching, feedback and supervision.

## 2. Eligibility for entry to the Pediatric Intensive Care Training Programme

Entry in to Pediatric Intensive care training program requires successful completion of MD Pediatric examination. Applicant should not be board certified or enrolled for training in other specialties or subspecialties at the time of selection for Pediatric Intensive care training.

## 3. Selection Process

The candidates will be selected on the merit based ranking results of the MD (Paediatrics) Examination. The positions available will be offered to the candidates by the BOSP based on the recommendations made by the Ministry of Health. The candidates, on the basis of the order of merit, would make the appropriate selection for training in Pediatric Intensive care.

## 4. Number to be selected for training

Number of trainees recruited for Pediatric Intensive care training will depend on the training positions available. This will be decided by BOSP in consultation with ministry of health after each MD Pediatric examination. Once the selection is made, the candidate would come under the general purview of the Special Committee of the BOS Paediatrics that deals with Paediatric Intensive Care. Each candidate would be allocated to a “Professional Mentor” by the BOSP. He/she would guide the trainee throughout the training programme.

## 5. Outcome Competencies and Learning Objectives

The Pediatric intensive care training program is designed to produce a specialist in Pediatric Intensive Care who is competent in the holistic care of critically ill children. It is expected that the newly Board certified Specialist is up-to-date with current developments and has all the requisite skills and knowledge.

Objectives and competencies define the knowledge, skills and attitudes that should be acquired, enhanced and maintained during the Pediatric Intensive care training. It is expected that within each competency and objective trainees will

1. Accumulate knowledge
2. Learn how to apply the knowledge
3. Show how an action is performed with the help of applied knowledge

## 6. Structure of the Training Program

### 6.1. Overview

The training program in Pediatric Intensive care medicine is for a minimum of four years with prescribed terms in local and overseas Pediatric intensive care units. The units are to be approved/accredited by the board of study in Pediatrics and should provide adequate experience in core Pediatric intensive care aspects detailed in the objectives and competencies.

### 6.2. Local training -24 months

These 24 months intended to provide core pediatric intensive care training and foundation training in related disciplines. The trainee will be given a list of approved units of different disciplines by the BOSP for selection.

The local training in Pediatric intensive care is outlined in the table below.

**Outline of Local Training in Paediatric Intensive Care**

| Specialty | Accredited units | Duration |
|---|---|---|
| Core Pediatric Intensive care | MICU – LRH | 9 months |
| | PICU – Other Centres in Teaching Hospitals approved by the BOSP | 3 months |
| Pediatric anesthesia | LRH | 2months |
| Pediatric Cardiothoracic anesthesia and ICU | LRH | 2month |
| Neonatal intensive care | NICU SJGH | 1month |
| | NICU CSHW | 1month |
| Radiology | LRH | 1month |

| | | |
|---|---|---|
| Pediatric cardiology | LRH | 1month |
| Nephrology | LRH/Prof Unit Peradeniya | 2 weeks |
| ENT | LRH/ SBCH Peradeniya | 2weeks |
| Pediatric SICU | LRH | 2weeks |
| A&E | LRH | 2weeks |
| Neurosurgery ICU | NHSL | 2weeks |
| Adult Accident service | NHSL | 2weeks |
| Adult Cardiothoracic anesthesia and ICU | NHSL | 1 month |

### 6.3. Overseas training

Overseas training should be in approved centers of excellence abroad. Trainee may arrange multiple centers approved by BOSP to cover this 24 month period but at least 12 months should be continuous and in one center. Training should provide adequate experience including hands on training to cover core pediatric intensive care training detailed in the objectives and competencies.

### 6.4. Research Project

Successful performance and presentation of a **second research project**, directly relevant to paediatric intensive care is a **mandatory requirement** to be eligible for the PBCA, in addition to the research project that may have been carried out during the General Paediatric training. The Research Project could be undertaken at any time, either in Sri Lanka or abroad.

It may be either hospital based or community based and could include clinical, epidemiological, genetic or immunological components. It may be observational or interventional in type.

The candidate should be directly involved in and be personally responsible for every component of the research project. If any component has not had the candidate's input the project will be disqualified.

The study proposal must be ***assessed and approved by the BOS before embarking on the proposed study***.

It should be submitted as a completed research report along with a soft copy **and** evidence of publication or oral/poster presentation to be assessed and approved by the BOS.

The publication should be a first author publication in a journal and the oral/poster presentation should be first author in a scientific meeting, local or overseas, approved by the BOS.

The trainee has to provide documentary proof of oral/poster presentation and/or publication of the research project to the BOS. The documentation includes signed letters from the Scientific Congress and/or the journal concerned.

**Please refer to the General Paediatric Prospectus for the following information**

1. Format for submission of the research proposal
2. Assessment of project report by 02 reviewers
3. Scientific meetings for presentation and journals for publication of research

## 7. Curriculum and Content areas

Details of the curriculum and the content areas are given in ***Annexure I***

## 8. Learning Activities

Method of Delivery and Learner Support Systems

Within the training program following learning methods will be available for the trainees to achieve learning objectives:

1. Self-directed learning
2. Experiential learning
3. Problem based and collaborative learning
4. Formal information dissemination and other resources

## 9. Trainers and training units

### 9.1. Training Units

Training in Paediatric Intensive Care should be based at established units accredited by the BOSP, which offer a full range of diagnostic and treatment facilities for all forms of critical care in Paediatric practice.

### 9.2. Trainers

Specialist in Pediatric Intensive Care with at least 3 years' experience after board certification will be appointed as trainers for core pediatric intensive care training. Training in other related disciplines will be done by trainers recognized by BOSP.

## 10. Monitoring progress

### 10.1. Progress reports

Each completed major component of the training programme should be followed by the submission of a progress report by the supervisor / trainer. ***Refer annex II***
These reports should be received by the PGIM within one month of completing the relevant section of training.

*The onus of ensuring that these reports are sent in time to the PGIM is entirely on the trainee*.
He or she should liaise with the trainers and make sure that the reports are received by the PGIM in time. This includes local as well as foreign training.

Any grade more than 03 would be a satisfactory evaluation result. The grading of less than 03would be considered to constitute an adverse report.

Unsatisfactory progress reports will be discussed at the Board of Study and contents will be communicated to the trainee and the subsequent trainer/s, where this is deemed necessary for support purposes. The trainee will be informed of the steps taken-which may involve advice, guidance, lengthening or repetition of the said training.

Satisfactory Progress Reports are a mandatory requirement to qualify for the Pre – Board Certification Assessment

### 10.2. In Service Training Assessment during local training

The trainee is expected complete following assessments during this period.

1. Multisource Feedback (MSF)- 2
2. Directly Observed Practical Skills (DOPS)- 15
3. Case based Discussions (CBD)-12 minutes per CBD -14
4. Mini Clinical Evaluation (MCE) - 4
5. Discharge Summaries & Referral Letters (DSRL) - 6
6. Evaluation of Teaching Skills- (ETS)- 2
7. Communication Skills (CS)- 4

**Refer *Annexure III* for assessment forms**

**Workplace Based Assessments**

| Appointment/Placement | In-service Training Assessment |
|---|---|
| Core Pediatric Intensive care | DOPS (08),<br>CBD(06),DSRL(5)ETS(2),CS(3),MSF(2) |
| Pediatric anesthesia | DOPS(1) |
| Pediatric Cardiothoracic anesthesia and ICU | CBD(1),<br>MCE(2),DOPS(1) |
| Neonatal intensive care | DOPS(3),CBD(2),CS(1)DSRL(1) |
| Radiology | |
| Pediatric cardiology | |
| Nephrology | CBD(1) |
| ENT | |
| Pediatric SICU | CBD(2) |
| A&E LRH | CBD(2) |
| Neurosurgery ICU | CS(1) |
| Adult Accident service | CBD(1) |
| Adult Cardiothoracic anesthesia and ICU | CBD(2),DOPS(2) |

### 10.3 Portfolio

The PBCA should be based on assessment of portfolio maintained by the trainee during the period of post MD training. Content of the portfolio should encompass all of learning outcomes mentioned below and contains evidence of achievement of these outcomes by the trainee.

1. Subject expertise
2. Teaching
3. Research and Audit
4. Ethics and medico legal issues
5. Information technology
6. Lifelong learning
7. Reflective practice

***Refer Annexure IV for details***

## 11. Eligibility for Pre – Board Certification Assessment (PBCA)

The following criteria have to be fulfilled to be eligible to appear for the PBCA.

1. Satisfactory completion of all components of training
2. Successful completion, presentation and publication of the Research Project
3. Satisfactory progress reports of local and overseas training
4. Satisfactorily completed PTR forms (available at PGIM website)
5. Submission of completed portfolio

## 12. Format of Pre Board Certification Assessment (PBCA)

**Portfolio Assessment**

The candidate is expected to maintain a Portfolio from the commencement of his training programme on a continuous basis. He/she is expected to update it at regular intervals. The responsibility of ensuring such remains with the trainee. The Trainer (at each respective stage) is expected to supervise and direct the trainee on compilation of the document.

When the trainee is eligible for PBCA three (3) copies of the completed portfolio should be submitted to the examination branch of PGIM. The PBCA should take the form of a final, summative assessment of the trainee's portfolio, carried out by two independent examiners from the relevant subspecialty, appointed by BOSP and approved by the Senate of the University of Colombo. A third examiner will be nominated by the BOSP from General Paediatrics or any other subspecialty to improve objectivity**.**

The overall assessment should be based on each of the main sections, which should be assessed as satisfactory or not on overall basis.

The portfolio will be marked by the examiners using the rating scale**.** The candidate will have to secure a minimum of five or more for all seven components mentioned above at each examiner's assessment.

The trainee will be called for a *Viva voce* examination during which he/she will be questioned on the portfolio.

**PBCA failed candidate**

- A trainee who fails on the Portfolio assessment will be advised in writing by the panel on exactly how the portfolio could be improved. In such a case, the necessary corrections and amendments have to be made by the trainee and the portfolio submitted to the PGIM within 03-06 months to be assessed by same panel of examiners and a viva voce based on the resubmitted portfolio. A trainee, who still fails, would undergo a third portfolio evaluation and viva voce by a different panel of examiners appointed by the BOS within two months.
- If the trainee is successful at the second assessment and viva voce, the date of Board Certification will be backdated as done routinely. **If unsuccessful even at the second evaluation, the date of Board certification will be the date of passing the subsequent PBCA following further training for a minimum period of 6 months in a unit selected by the BOS.**

## 13. Board Certification

A trainee who has successfully completed the PBCA is eligible for Board Certification as a specialist in Paediatric Intensive Care on the recommendation of the BOSP.

The trainee is required to do a power point presentation of 10- 15 minutes, to the BOSP which should be based on local and overseas training received, together with a component indicating the future mission and vision of the trainee.

## 14. Recommended reading

- Rogers Text Book of Pediatric Intensive Care
- Pediatric Critical Care Fuhrman and Zimmerman
- Pediatric Critical Care Medicine Anthony Slonim
- Pediatric and neonatal critical care transport Peter Barry BMJ
- The ICU book Paul Marino
- The Manual of Emergency airway management
- Physics Pharmacology and physiology for anesthetists Matthew Cross
- Wards anesthetic equipment
- Parks Pediatric Cardiology For practitioners
- Principals and practice of mechanical ventilation Martin J Tobin Guyton or Ganong
- Basic Physics and measurement in anaesthesia - Paul D Davis
- Manual of Emergency and critical care ultrasound
- Nelsons text book of Paediatrics
- Illustrated field guide in congenital heart disease and repair scientific software solutions
- OH' intensive care manual
- Concise guide to paediatric arrhythmias, Christopher Wren, Publishers Wiley and-Blackwell
- Clinical application of mechanical ventilation, David , W. Chang
- Respiratory Physiology -The essentials by John B. West
- Emergency Ultrasound Made Easy - by Justin Bowra & Russell E. McLaughlin
- Paediatric Critical Care Medicine - Basic Science and Clinical Evidence Derek S.Wheeler & Hector R. Wong

**Journals**

- Pediatric Critical Care Medicine (PCCM)
- Critical Care Medicine (CCM)
- Pediatrics
- Anaesthesia and Intensive Care
- Continuing Education in Anaesthesia Critical care and Pain

- Current Anaesthesia and Critical Care
- Pediatric Respiratory Reviews
- Critical Care Clinics
- NEJM
- BMJ
- Pediatric Emergency Care
- Paediatric Cardiology
- British journal in Anaesthesia

## 15. Contributors to development and revision of prospectus

The following members deserve specific mention for their contribution,
Dr. Srilal de Silva, Dr. Nalin Kitulwatte, Dr.MAM Faizal, Dr Manjula Heewageeganage,
Dr Deshan Adihetty, Dr Samantha Deshapriya

## Annexure I - Curriculum and content areas

**Domains and themes of learning objectives and competencies – summary**

This section lists and defines key learning objectives and competencies trainee should acquire during training.

### 1 Medical (Clinical) expert

1.1. Basic science

- Introduction
- Evidence based medicine
- General pharmacology
- Applied anatomy, applied physiology and system based pharmacology
- Principals of measurement and clinical monitoring

1.2. ICU care

- The approach to acutely ill
- Principals of management of Systems failure
- Diseases and disease process – medical and surgical
- Care of neonate in the PICU
- Therapy
- Procedural skills
- Supportive care of the critically ill
- Monitoring , measurements , investigations and interpretation of them
- Cardiopulmonary resuscitation and crisis recourse management
- Transport of critically ill

### 2 Communicator

- Principals of communication with patients, families and colleagues
- End of life care
- Organ donation

### 3 Collaborator

- Working in multidisciplinary teams
- Negotiations
- Conflict resolution

### 4 Manager

- Administration and Quality assurance

### 5 Health advocate

- Patient
- Community

**6 Scholar (educator)**

- Research
- Teaching Clinical supervision and mentoring

**7 Professional**

- Ethics
- Professional behavior

**<u>Domains and themes of learning objectives and competencies</u>**

**(Detailed description)**

**1. Medical expert**

*1.1. Basic science*

- Introduction

  Trainees are required to acquire sound knowledge in basic science relevant to Pediatric intensive care during early part of the training. These are the pillars that subsequent knowledge will be built upon.
- Evidence based medicine (EBM)

  Trainee should understand the scientific method, its application in research and principals EBM and should be able to use these principals to perform or critically evaluate published research.
- General pharmacology
  - How drug affect the patient-Pharmacodynamics
  - How the body handle the drugs in health and disease – pharmacokinetics
- Applied anatomy, applied physiology and system based pharmacology

  An understanding of the principals of physiology, anatomy and pharmacology related to body systems in health and disease are an essential component of the management of critically ill child. The trainee should have sound theoretical and applied knowledge in physiology, anatomy and clinical pharmacology and should be able to use this knowledge in managing patients with varied clinical situations in Pediatric intensive care. This includes knowledge in
  - Basic cellular physiology
  - The cardio vascular system
  - The respiratory system
  - The autonomic system
  - The renal system
  - The musculoskeletal system
  - The body fluids and electrolytes
  - The nervous system
  - The hematological system
  - The immune system
  - Metabolism, nutrition endocrine system and thermoregulation
  - Maternal fetal and neonatal medicine

- Principals of measurement and clinical monitoring

Trainees should be able to

  - explain the mathematical and physical principles on which common ICU monitoring is based
  - explain specific techniques used in common ICU devices (clinical measurements)
  - explain errors and limitations of monitoring
  - apply this knowledge to monitor patients with organ failure

*1.2. ICU Care*

A. Approach to acutely ill

The specialist in Pediatric Intensive Care requires extensive knowledge of medical and surgical conditions and should be able to define the clinical problems and instigate a management plan. To acquire this ability trainees are expected to acquire following knowledge and skills

Resuscitation

- Trainee should be able to identify comprehensive range of life threatening problems in a critically ill child and institute appropriate life supporting therapy. This include
- Triage of critically ill and ability to decide when to commence, discontinue and withhold resuscitation
- Under take emergency management including difficult airway skills and vascular access skills
- Obtain relevant information rapidly with quick objective examination to find out rapidly reversible problems (e.g. tension pneumothorax)
- Plan out routine investigations to find out other rapidly reversible problems (e.g. Hypoglycemia)
- Monitor vital parameters and recognize and respond rapidly to adverse trends in monitored parameters
- Post resuscitation management

**Following resuscitation of the patient, the trainees should be able to effectively undertake the continuing management of acutely ill. This involves ability to**

Re-assessment

- Perform through clinical history taking and examination
- Recognize disease, system failure, pathological process or complication of therapy
- Decide appropriate investigations to support diagnosis

Problem definition

- Generate appropriate list of problems and differential diagnosis
- Initiate management plan despite the ambiguity or absence of differential diagnosis

Generation of solutions to the patient's problems

- Logically compare all potential solutions to the patients problems and assign weight and priorities to them
- Decision making
- Planning
- Progress

Consultation and collaboration

Management of critically ill child requires multidisciplinary approach with inputs from many disciplines. Trainees are expected to consult and collaborate effectively. This involves

- Recognizing trainees' limitations to provide optimal care
- Acquiring a wide knowledge of disease states to enable recognition of the need to consult
- Knowledge of how when and who to ask for second opinion

Assessment of illness severity and outcome prediction

Trainee should have knowledge on various scoring systems developed to assess likely outcome from acute illness. This involves

- Knowledge on clinical and physiological markers used to assess illness severity
- Understand the various scoring systems used in Pediatric critical care and their usefulness and limitations

**B. Systems failure**

Individual or multi system failure is a common occurrence in PICU. Systems failure may be due to local cause or systemic disease process. Trainee should have a sound knowledge on system failures, their pathogenesis, management and prevention and outcome. Following list highlights some of the common system failures and core knowledge the trainees expected acquire.

**Acute circulatory failure**

- Understand the current concepts of pathogenesis of shock
- Know the steps in the management of shock according to the aetiology and in response to physiological data
- Understand the sequelae of shock, their prevention and management.

Respiratory failure

- Distinguish acute from chronic respiratory failure and understand the implications for management
- Understand the pathophysiology and management principals of Acute Lung Injury
- Understand the principals of oxygen therapy and mechanical ventilation

**Renal failure**

- Know the pathophysiology of AKI and ways of preventing it
- Know how to identify patients at risk of developing renal failure and therapies that have prophylactic benefit and indication for their use
- Understand the complication of renal failure and their management
- Know various modalities of renal replacement therapy and their indications

**Neurological failure**

- Understand the importance cerebral perfusion pressure, cerebral oxygenation and ways of optimizing them
- Indications for intracranial pressure monitoring and ways of treating raised ICP
- Know the indication for urgent brain imaging
- Know the indications for neurosurgical consultation
- Understand the complications of prolonged unconsciousness and ways to prevent them

### C. Disease and disease processes

The specialist in Pediatric Intensive Care is required to manage wide range of diseases which may be either medical or surgical. Trainees should acquire broad knowledge of these conditions. Few examples of these and an outline of learning objectives appears below

**Congenital Heart Disease**

- Know the signs and symptoms and pathogenesis and complications of congenital heart disease
- Know the principals of post op cardiac surgical care and undertake it effectively
- Know the various therapeutic and monitoring modalities for congenital heart disease

**Severe Trauma**

- Ability to function as a trauma team leader
- Know how to approach to a critically injured child
- Ability to recognize life threatening injuries and complications and able to manage them

**Sepsis**

- Understand the pathophysiology and diagnostic criteria of sepsis
- Be familiar with the currently available guidelines on sepsis e.g. surviving sepsis guideline
- Know the principals of selecting appropriate empirical antibiotics based on clinical features and antibiotic sensitivity patterns
- Know the risk factors for health care associated infection and use of appropriate infection control methods

**D. Care of the neonate in the PICU**

It is not uncommon for a neonatal patient to be admitted to PICU and the specialist in Pediatric Intensive Care has to manage newborn. In this context the specialist in Pediatric Intensive Care should be able to address life threatening conditions pertaining to newborns, institute appropriate management.

To acquire these skills trainee is expected to be able to

- Describe physiological changes that occur at birth
- Demonstrate knowledge of anatomical and physiological differences between neonates and children
- Manage airway, obtain vascular access including umbilical catheterization and perform neonatal resuscitation
- Recognize and manage conditions specific to neonates e.g. Birth asphyxia, IRDS, Meconium aspiration, PPHN
- Describe and perform specific therapies which may be different to Pediatric patient e.g. Fluid therapy, sedation, vasoactive therapy
- Manage post-op neonatal patient with congenital problems
- Demonstrate the skills for preparation and performance of neonatal transport

**E. Therapy**

Management of critically ill children involves therapy to reverse life threatening physiological derangements and specific therapy for underlying disorders. Trainee should have sound knowledge of these therapeutic modalities which include pharmacological, mechanical and surgical treatments. Some of the main treatment modalities and their learning objectives appear below.

**Fluid therapy**

- Know the pros and cons for crystalloids and colloids and various fluid types available in PICU based on current evidence.
- Understand the principals of blood and component therapy
- Ability to formulate a fluid regime with appropriate fluid, volume and rate of administering.
- Know the ways of assessing adequacy of fluid therapy and has the ability to form alternative fluid regime if goals are not met.

Inotropic / Vasopressor Therapy

- Understand the effects of critical illness and other concurrent therapies on receptor function
- Choose an appropriate vasoactive medication based on clinical condition and therapeutic goals
- Extensive knowledge on vasoactive medications including receptors, effects, dose range, administration and complications

Respiratory therapy

- Sound knowledge on airway management
- Understand principals of mechanical ventilation
- Understand the principals and goals of disease specific ventilation
- Ability to choose the appropriate mode of respiratory support
- Know the principals of setting goals and ability to adjust ventilator settings to achieve those goals
- Know the problems and complications of respiratory therapy
- Understand the role and risks of non-respiratory therapy in respiratory failure (e.g. prone positioning).

**F. Procedural skills**

The specialist in Pediatric Intensive Care is required to perform wide range of procedures for therapeutic and monitoring purposes. Trainees are required to master these skills and acquire knowledge of indications, contraindication and complications. A list of skills that trainees are expected to master appears in the appendix.

**G. Supportive care of the critically ill**

Successful recovery of critically ill child depends on support of all organ systems irrespective of the system primarily affected by presenting illness. This holistic approach is one of the main tasks expected to be mastered by the specialist in Pediatric Intensive Care. Long term support may be required while injured tissues and organs heal and while physiological derangements resolve. Trainee should understand this holistic approach and ways of preventing complications associated with long term management.

Below are the examples of supportive care and their learning objectives

**Nutritional support**

- Know the principals of nutritional support in critically ill including ways of assessing, consequences of malnutrition, modalities of nutritional supplementation and their limitations.

**Metabolic support**

- Know the pathophysiology of electrolyte, acid base and glucose abnormalities in critically ill
- Know the principals of treating these abnormalities

**General care**

- Trainees should be able to formulate an appropriate plan for care of bowels, skin, mouth, eyes and maintenance of mobility and muscle strength in critically ill.

**Prevention of complications**

❖ Health care associated Infection

- Understand the risk of colonization with potentially pathogenic microorganisms and the factors associated with patient, staff and environmental colonization.
- Understand the difference between colonization and infection
- Know different types of health care associated infections relevant to PICU, their diagnosis, treatment and prevention.
- Ability to propose and implement plan for the care of CVC, Urinary catheters and ventilated babies.
- Know the principals of rational antibiotic usage in PICU

❖ Ventilator associated Lung Injury (VILI)

- Know the pathogenesis and risk factors for VILI
- Understand the manifestation of volutrauma, barotrauma,and biotrauma and oxygen toxicity
- Understand the ways of preventing above complications e.g. VAP bundle

❖ Thromboembolic disease

- Understand the pathogenesis and risk factors for venous arterial and cardiac thrombosis
- Know the different prophylactic regimes and their benefits and risks.
- Know the signs and symptoms of thromboembolism and know how to confirm the diagnosis

❖ Stress ulceration

- Know the pathogenesis and risk factors for stress ulceration
- Understand the benefits and risks of different prophylactic regimes
- Know therapeutic regimes available for GIT bleeding

❖ Alleviation of pain, stress and anxiety

- Know various ways of treating pain and anxiety in critically ill including their adverse effects
- Understand need for adequate rest and sleep in a critically ill child

**H. Monitoring, measurement, investigations and interpretation of data**

Monitoring is a vital part of managing critically ill child in the PICU. Trainees need to have a broad knowledge in monitoring, measurements and investigations. This means understanding indications, limitations and complications of techniques involved.

- Bedside monitoring
- ECG monitoring
- Non-invasive BP monitoring
- Invasive BP monitoring
- Pulse oximeter monitoring
- End tidal CO2 monitoring
- Advanced hemodynamic monitoring including echocardiography, non-invasive cardiac output monitoring
- Measurements and calculations related monitoring including cardiac index, pulmonary vascular resistance index, oxygen extraction ratio, oxygen delivery and consumption, PaO2 to $FiO_2$ ratio and oxygenation index
- Intracranial pressure monitoring

**Lab investigations**

- Understand the indications and limitations of investigations relevant to PICU
- Ability to interpret the results of these investigations and apply their relevance to manage patients

**Organ imaging**

- Ability to decide the relevant imaging technique for a particular condition e.g. CT, MRI, X-RAY, angiography Ultrasound etc.
- Understand the basic principles and features of imaging modalities and ability to identify abnormalities
- Ability to perform focused ultrasonography and echocardiography related to critically ill child

EEG and evoked potentials

**I. Cardiopulmonary resuscitation, rapid response teams crises resource management**

Despite the ongoing management, sometimes patient may go into cardiac arrest. Effective resuscitation is required to revive these patients. Support of the deteriorating by a rapid response cardiac arrest teams is vital in certain situations

Cardiopulmonary resuscitation

- Trainees should possess Pediatric and neonatal life support certification from a body recognized by board of study in Pediatrics
- Trainees should be able to train other medical staff in effective CPR

**Crisis resource management and rapid response**

- Trainees should have an understanding on human factors that leads to errors during a medical crises
- He/she should be able to respond to an emergency in a positive organized and effective manner and direct the resuscitation team
- Trainee should have an idea of organization required for an effective rapid response team and preferably participate in such a team some time during the training period

**J. Transport of critically ill**

Transport of critically ill children is required in settings such as pre-hospital, intra-hospital and inter-hospital. Safe transport requires maximizing safety for patient and transport team at the same time improving or maintaining patient's clinical status. Trainee should be actively involved in transportation of sick children both intra-hospital and inter hospital and retrieval of Inter-hospital transfers.

- Trainees should be familiar with current standards of transport of critically ill children
- Know the equipment required for safe transport
- Understand the principals of communication between referring, transporting and receiving staff

**2. Communicator**

**A. Principals of communication with patients, families and colleagues**

To provide quality care for patients it is essential to establish affective relationship with patients, families and other health care professionals. To achieve this it is important to develop and use the communication skills built around trust, understanding, respect, empathy and confidentiality. Trainees are expected to master the skill of effective communication (verbal and written) and know principals related to it, which include

- Ability to communicate effectively with parents, families and other health care professionals
- Ability to organize, conduct and lead multi-disciplinary teams to communicate with parents and families
- Understand the principals of open disclosure
- Understand the principals of conflict resolution and negotiation
- Understand the principals of debriefing
- Trainees should successfully complete a standard communication skills course

**B. End of life care**

- Introduction
- The care of children who are dying and their families is an important part of Pediatric Intensive care. Trainees should acquire competence in managing the process of limiting, withdrawing or withholding treatment in collaboration with child, families and other healthcare teams. This involves
- Understanding that the primary goal of medical treatment is to benefit the patient by restoring or maintaining patient's health
- Understanding that the primary goal of medical treatment is in the best interest of the child
- Understanding that application of medical technology at times cause unnecessary and excessive suffering for the child with little or no benefit
- Knowing that it may be appropriate to withdraw treatment when death is imminent
- Ability to implement alternative care/comfort care and plan that focuses on relief of suffering, when death is imminent.

**C. Organ donation**

Trainees are expected to learn principals, structure and process of organ donation program and managing a potential organ donor in PICU. The expected qualities and abilities include:

- Familiar with documentations pertaining to organ donation
- Understand the principals of physiological support of the organ donor
- Ability to communicate effectively and sensitively with family and other medical teams regarding organ donation.

**3 Collaborator**

**D. Working in multidisciplinary teams**

Teamwork is essential to the functioning of an ICU. Effectiveness of the team is greater than the sum effectiveness of the individual team members. Good team work increases staff moral but absence of it is a causal factor in many adverse events. The trainees are expected to be able to

- Lead multidisciplinary team effectively
- Support individual team members
- Communicate effectively with the team
- Recognize a poorly functioning team and find solutions

**E. Negotiations**

- Trainees are required to acquire negotiation skills that required understanding the needs of other parties and finding solution which prevent conflicts. Trainee should be able to
- Understand other professional's perspectives
- Respect and acknowledge differences misunderstandings and limitations of self and other professionals that may interfere with effective team work.
- Use the negotiation skills to iron out differences and to formulate common goals and thereby prevent conflicts

**F. Conflict resolution**

Conflict may occur in PICU in diverse circumstances and may involve patients and families, colleagues, administrators allied health professionals and administrators. The environment of high stress, high risk, differing values, beliefs and cultures and high work load make conflict more likely. The specialist in Pediatric Intensive Care is expected to anticipate sources of conflict and effectively diffuse conflict.

Trainee should be able to

- Describe sources of conflict in an ICU environment
- Explain principals of conflict resolution
- Use the principles of conflict resolution to resolve conflict

**4 Manager**

**G. Administration and quality assurance**

Efficient running of PICU is an important part that determines the patient outcome. In addition to acquiring clinical skills and knowledge trainees are expected to be competent in administration and quality assurance of PICU. This involves knowledge and competencies in administration, organization, staffing, design and equipment. Trainees should also be knowledgeable in implementation of quality improvement programs and the need of clinical audits.

Required competencies include

- Ability to lead the daily ward round
- Understand the requirement when designing a PICU and ability to adopt according to the local conditions
- Understand the process of selecting, ordering and maintaining equipment
- Know the principals of guideline/protocol synthesis and where applicable participate in such activity
- Know the care bundles commonly used in PICU and their implementation
- Know the ways of assessing compliance with guidelines/protocols or care bundles and where applicable participate in such activities.
- Understand the factors governing optimum staff establishment for specialists, junior doctors and nurses

- Understand the quality improvement cycle
- Understand the importance of evidence by audits in quality improvement
- Implement/ participate in such a program where applicable
- Know the importance of adverse event report and ability to design such activity

**5. Health advocate**

**Patient**

- The specialist in Pediatric Intensive Care is at times expected to address general health issues of patients and families beyond the care of specific critical illness. Trainees are to be able to
- Identify factors determining health including socioeconomic, lifestyle and environmental factors and advice patients and families
- Assist individual patients and their families in navigating health care systems and accessing health care and resources.
- Advocate patients and their families in their dealing with other health care professionals

**Community**

Trainees are to be able to

- Describe health care system of the country and the individual hospital and the function of the PICU within that system
- Identify the determinant of health in the population served
- Communicate to general public on critical care issues
- Actively promote risk reduction and patient safety

**6. Scholar (Educator)**

**Research**

See learning activities for details

**Teaching Clinical supervision and mentoring**

Trainees are expected to understand principals of adult learning and should involve in teaching medical colleagues, medical students, nurses and allied staff. Participate in a course such as APLS instructor course is encouraged.

They also should be able to supervise and when required mentor junior colleagues and other professionals.

**7. Professional**

**Ethics**

Understanding of principals of ethics is essential for maintenances of highest standards of practice, teaching and research. Specialist in Pediatric Intensive Care should understand the patient's personal and cultural context within the local legal and cultural environment when giving care. The trainees should have a good

understanding on ethical principals involved in Pediatric Intensive care within the frame work of following objectives.

- Principals of informed consent
- Ability to understand the influence of cultural, religious backgrounds of children and their families and their attitudes and believes when providing intensive care.
- Understand the principals of withdrawing and withholding treatment whilst maintaining care
- Understand the delivery of compassionate end of life care
- Know the principals and issues involving diagnosis of brain death
- Understand the ethical principals involved in research
- Understand the importance of consent, privacy and non-maleficence when patients are involved in teaching.

**Professional behavior**

Understanding the norms of professional behavior is essential to maintain highest standards of practice, teaching and research in intensive care. The trainees are expected to know the basics of professional behavior and are expected to deliver highest quality care with integrity, honesty and compassion.

**Guidelines for appointments**

| | |
|---|---|
| Paediatric cardio thoracic ICU | 1. To understand the pathophysiology of congenital cardiac lesions (understanding of cardio-respiratory interactions)<br>• VSD/ASD/PDA<br>• TOF<br>• TGA<br>• TAPVD<br>• DUCT dependent circulation<br>• Single ventricle physiology<br>2. Post op cardiac patients – management principles<br>3. Monitoring and management of post op cardiac patients<br>• CO monitoring techniques<br>• CVP, PA lines<br>4. Rational use of inotropes.<br>5. Physical principles of monitoring<br>• Physics of transducers<br>• Setting up a transducer |

| | |
|---|---|
| Anaesthesia, analgesia and airway management in pediatric intensive care traning | **Knowledge**<br>The pharmacology of commonly used anaesthetic agents, sedatives, analgesics and muscle relaxants<br>Know the indications for their use and side effect profiles<br>Know the principles of inhalational anaesthesia<br>Know the AAGBI minimum standards for monitoring<br>Know the indications for a rapid sequence induction<br>Know the patient factors that increase risk of anaesthesia<br>Understand the effect of different anaesthetic agents on intracranial pressure<br>Understands the importance of the pre-operative assessment<br>Understands the ASA classification<br>Knowledge of fasting periods in relation to the urgency of surgery / intervention<br>Knowledge of regional analgesia (e.g. Epidurals) and anticipated side-effects/complications<br><br>**Skills**<br>Recognise the child who requires airway intervention and ventilation<br>Be able to perform a rapid sequence induction<br>Be able to perform an inhalational anaesthetic<br>Be able to check an anaesthetic machine and adjunct equipment<br>Be able to manage the airway expertly<br>Be able to monitor a child for level of anaesthesia and degree of muscle relaxation<br>Be able to plan for a difficult or failed intubation<br>Be able to safely anaesthetise an ASA I or II patient independently<br>Recognise the child with cardiovascular compromise and tailor the anaesthetic accordingly<br>Be able to employ appropriate airway techniques, including laryngeal mask airway (LMA), bag/mask and endotracheal intubation<br>Be able to undertake a pre-operative assessment, including ASA status<br>Keep an appropriate and legible anaesthetic record<br><br>**Attitudes & behaviour**<br>Recognise when expert assistance is needed<br>Recognise the importance of the others members of the team in administering a safe<br>Anaesthetic |

| | |
|---|---|
| | **Workplace training objectives**<br>Be able to undertake a pre-operative assessment, including ASA status<br>Be able to check an anaesthetic machine and adjunct equipment<br>Be able to safely anaesthetise an ASA I or II patient independently<br>Be able to employ appropriate airway techniques, including laryngeal mask airway (LMA), bag/mask and endotracheal intubation<br>Be able to perform a rapid sequence induction<br>Be able to perform an inhalational anaesthetic<br>Be able to plan for a difficult or failed intubation |
| Paediatric surgical ICU | 1. Management of various Pediatric surgical patients including<br>a. Pre and post op diaphragmatic hernia<br>b. Immediate post op tracheostomy<br>c. Traumatic brain injury<br>2. Post op pain and fluid management |
| NICU | Ability to place UVC/UAC<br>Ability to intubate<br>Extreme prematurity<br>Neonatal Jaundice<br>NEC<br>HIE<br>Apnea and bradycardia<br>Intra cranial haemorrhages |
| Paed cardiology | 1.To understand the anatomy, pathophysiology, symptomatology and natural history of common pediatric cardiac disorders<br>2.To develop the ability to interpret ECG and to have a knowledge in principles of management of arrhythmias<br>3. To understand the basics of pacing, how to operate a pacing box<br>4.To have a knowledge on principles of management of Cardiac failure<br>5. Pharmacology and uses of<br>• Inotropes<br>• Vasodilators<br>• Antiarrhythmics<br>6.To understand the basics of cardiac catheterization and device closure of cardiac lesions<br>7. To understand the surgical options for cardiac lesions and their principles<br>• TOF<br>• Pulmonary atresia<br>• TGA<br>• TAPVD<br>• Coarctation of aorta<br>• Valvular lesions<br>8. Basic echocardiography |

| | |
|---|---|
| Accident service | 1.Assessment of severely injured child (poly-trauma)<br>2. Cervical spine stabilization including application of collar and log rolling<br>3.Intial stabilization and Management of severely injured child<br>• Thoracic trauma<br>• Abdominal trauma<br>• Traumatic brain injury<br>4.Assesment and management of a child with burns |
| Radiology | 1.Interpretaion of CT, CXR, MRI<br>2. USS – basics with reference to USS guided procedures relevant to critical care<br>• Vascular access<br>• Fluid responsiveness - State of IVC/ RA filling<br>• Chest drain insertion<br>• USS brain of an infant<br>• USS guided drainage<br>• USS of thorax / abdomen to look for fluids and bladder volume |
| ENT | 1.To understand basics of congenital and acquired ENT anomalies which is relevant to airway<br>2.Principles of tracheostomy including<br>• Indications<br>• Immediate post op care<br>• Long term care<br>• How to trouble shoot emergencies with tracheostomy<br>3.Principles of sleep studies<br>4.Endoscopy to check airway patency |
| Dialysis Unit | 1.Principles of fluid and solute removal in various dialysis techniques<br>2.PD, HD, CRRT<br>• Indications<br>• Procedure<br>• Complications<br>3.To familiarize with the equipment used for Dialysis<br>4.Insertion of a<br>• PD catheter<br>o Trocar<br>o guide wire<br>• HD or CVVH catheter e.g. VASCATH<br>5.Dialysis prescription for critically ill child |

| | |
|---|---|
| ENT Appointment | Period of Appointment : 2 weeks<br>Hospital : ENT unit Lady Ridgeway hospital<br>Date of commencement<br>Date of completion<br>Objectives of the Appointment<br>Learn the anatomy of upper airways.<br>Managing upper airway obstruction<br>Familiarize with bronchoscopy procedures as an observer<br>Learn tracheostomy<br>Indication<br>Insertion as an observer<br>Tracheostomy care<br>Managing trouble shooting |

**Learning objectives – Subject wise**

| | |
|---|---|
| CNS | Brain stem death |
| CNS | Brain cooling |
| CNS | decreased level of consciousness |
| CNS | Neuro-protective ventilation |
| CNS | Status epileptics in children |
| CNS | ICP – manage and interpret ICP monitoring |
| CVS | anaphylaxis & anaphylactic shock |
| CVS | abnormal cardiac rhythms |
| CVS | Post-operative cardiac – pathophysiology |
| CVS | Post-op ; Heamo-dynamic |
| CVS | Low cardiac output – signs and symptoms |
| CVS | Cardiac surgical procedures |
| CVS | Congenital heart diseases with abnormal pulmonary blood flow |
| CVS | Dengue shock syndrome |
| CVS | heart failure |
| CVS | hypertensive emergencies |
| CVS | septic shock |
| CVS | CVP measurements |
| CVS | Inotropes & vasopressors |
| CVS | Non-invasive cardiac output monitoring |
| Emergency | Triage methodology |
| Emergency | Mass casualties management |
| Fluids | Dehydration |

| | |
|---|---|
| Fluids | Fluid & electrolyte disturbances |
| Fluids | High volume IV infusion techniques |
| Haematology | Coagulation disorders |
| Haematology | Haematological disorders |
| Haematology | Massive blood transfusion |
| Haematology | Blood components administration |
| Haematology | Febrile neutropenia |
| Liver | Acute liver failure |
| Metabolic | DKA |
| Metabolic | Acid base disorders |
| Metabolic | Hypothermia |
| Miscellaneous | Drowning |
| Miscellaneous | Electrical injury |
| Miscellaneous | Withdrawal of life support |
| Miscellaneous | Identify and minimize risk of critical incidence and adverse events |
| Miscellaneous | Scoring system in critical care |
| Miscellaneous | Risk management meeting |
| Miscellaneous | End of life care |
| Miscellaneous | Palliative care |
| Miscellaneous | Interpretation of results related to PICU |
| Miscellaneous | Monitoring of critically ill patients in critical care |
| Miscellaneous | Recognition, assessment and stabilization of critically ill patients |
| Neonatology | Extreme prematurity |
| Neonatology | Premature babies |
| Neonatology | Neonatal Jaundice |
| Neonatology | NEC |
| Neonatology | HIE |
| Neonatology | Apnea and bradycardia |
| Neonatology | Intra cranial haemorrhages |
| Nutrition | Nutritional prescriptions |
| Oncology | Oncology patients |
| Pain | Pain management of sick children |
| Pharmacology | Antibiotics strategies |
| Poisoning | Poisoning |
| Poisons | Snake bites & Envenomation |
| Radiology | Interpretation of X-ray, CT, MRI, isotopes etc |
| Renal | Acute Kidney injury |
| Renal | Dialysis – CRRT |

| | |
|---|---|
| Renal | Dialysis – Haemodialysis |
| Renal | Dialysis – Peritoneal |
| Resuscitation | cardiac arrest & rhythms |
| Resuscitation | Post-resuscitation care |
| RS | Chest Physiotherapy |
| RS | Chronic lung disease |
| RS | PPHN |
| RS | Surfactant therapy |
| RS | Capnography |
| RS | Croup / Stridor |
| RS | Epiglottitis |
| RS | Pneumonia & ARDS & VILI |
| RS | Respiratory failure |
| RS | status asthmatics |
| RS | Upper airway obstruction |
| RS | Oxygen therapy |
| RS | Nitric oxide therapy |
| Surgical | Post-operative surgical – pathophysiology |
| Surgical | Post-op Neurological – pathophysiology |
| Surgical | Burns & scald – |
| Surgical | Structured assessment & stabilization of an injured child |
| Transplant | Physiological support of organ donor |
| Transplant | Solid organ transplant |
| Ventilation | Ventilation – Conventional |
| Ventilation | ventilation - Disease specific |
| Ventilation | Ventilation – High Frequency |
| Ventilation | Ventilation – Non-invasive |

**Procedures in PICU**

| Procedures in PICU |
|---|
| Arterial line insertion |
| Arterial punctures |
| Bag and mask ventilation |
| bleeding techniques |
| Exchange transfusion |
| Trans-illumination of the chest |
| Broncho alveolar larvage |
| Bronchoscopy |
| Capillary blood sampling |
| Central line insertion – Femoral |

| |
|---|
| Central line insertion – Internal jugular |
| Central line insertion – Subclavian |
| Collection of blood from arterial lines |
| Collection of blood from central lines |
| Defibrillation |
| Echo cardiograph |
| Electrocardiogram procedure |
| Extubation |
| change of ETT |
| FAST scan |
| ICP - Bolt insertion |
| Intercostal tube insertion |
| Intra osseous access |
| Intubation – elective |
| Intubation – nasal |
| Intubation – RSI |
| Laryngeal mask insertion |
| Lumbar puncture |
| Needle / Surgical Cricothyroidotomy |
| Needle thoracocentesis |
| Paracentesis |
| PD insertion |
| Pericardiocentesis |
| Peripheral Intravenous access |
| Peripherally inserted Central / long line (PIC) |
| Retrieval of sick children |
| Supra-pubic aspiration |
| Taking blood cultures |
| Tracheal suctioning |
| Transportation of ill children |
| Umbilical arterial access |
| Umbilical venous access |
| urethral catheterization |
| USS to identify venous and arterial access |

**Clinical measurements**

| |
|---|
| Learning objectives in PICU |
| Non-invasive blood pressure monitoring |
| Invasive blood pressure monitoring |
| Multipara monitors |
| Pulse oximetry |
| Mechanical Ventilators |

**Annexure II – Progress Report**

**POSTGRADUATE INSTITUTE OF MEDICINE**
**UNIVERSITY OF COLOMBO, SRI LANKA**
**BOARD OF STUDY IN PAEDIATRICS**
**MD IN PAEDIATRIC INTENSIVE CARE**
**PROGRESS REPORT**

**Important Information**

- For each period of training all nominated supervisors are required to either complete an individual report or co-sign a report
- Training will not be certified without the final supervisor's report

**TRAINEE'S DETAILS AND TRAINING POSITION**

Full name of the trainee :

Report period from : to

Training position :

**TRAINER'S DETAILS**

Full name of trainer :

Qualifications :

Hospital :

E mail :

**ASSESSMENT OF THE CURRENT PERIOD OF TRAINING**

Please rate the trainee's performance for each topic area by placing a rating of 1-5 (or N/A) in the box next to each topic area

**Rating Scale** 1 - Falls far short of expected standards
2 - Falls short of expected standards
3 - Consistent with level of training
4 - Better than expected standards
5 - Exceptional performance
N/A Not Applicable for this training period

| | |
|---|---|
| **Medical Knowledge**<br>Demonstrates up-to-date knowledge required to manage patients | |
| **Application of Medical Knowledge**<br>Shows ability to use the knowledge and other derived evidence based information | |
| **Procedural Skills**<br>Demonstrates ability to perform practical/ technical procedures | |
| **Interpersonal/ Communication Skills**<br>Demonstrates ability to communicate with patients and their families | |
| **Clinical Judgment**<br>Demonstrates ability to integrate cognitive and clinical skills, and consider alternatives in making diagnostic and therapeutic decisions | |
| **Responsibility**<br>Accepts responsibility for own actions and understands the limitations of own knowledge and experience | |
| **Punctuality** | |
| **Problem Solving Skills**<br>Critically assesses information, identifies major issues, makes timely decisions and acts upon them | |
| **Humanistic Qualities**<br>Demonstrates integrity and compassion in patient care | |
| **Respect**<br>Shows personal commitment to honouring the choices and rights of other persons | |
| **Moral and Ethical Behaviour**<br>Exhibits high standards of moral and ethical behavior towards patients and families | |
| **Professional Attitudes and Behaviour**<br>Shows honesty at all times in their work, put patient welfare ahead of personal consideration | |
| **Patient Management**<br>Shows wisdom in selecting treatment, adopt management to different circumstances | |

| | |
|---|---|
| **Psychological Development**<br>Demonstrates ability to recognize and/ or respond to psychological aspects of illness | |
| **Medical Care**<br>Effectively manages patients through integration of skills resulting in comprehensive high quality care | |
| **Research Methodology**<br>Understands scientific methodology; participate in research studies by formulating and testing hypothesis and analyzing the results | |
| **Quality Assurance**<br>Demonstrates ability to initiate and evaluate Quality Assurance programmes | |
| **Record Keeping**<br>Maintains complete and orderly records and up-to-date progress notes | |
| **Discharge/ Planning Summaries**<br>Ensues that all problems are explained prior to discharge from hospital; prepare concise and prompt discharge summaries | |
| **Reports**<br>Complete succinct and accurate reports without delay; communicates with referring practitioner for continuing care | |
| **Relationships with Medical Staff**<br>Maintains the respect of his/ her colleagues | |
| **Relationships with Health Professionals**<br>Demonstrates ability to work well and efficiently in the health care team; values the experience of others | |
| **Relationships with Clerical Staff**<br>Relates easily to members of staff; maintains team spirit and encourages cooperation | |
| **Organization Skills**<br>Demonstrates ability to plan, coordinate and complete administrative tasks associated with medical care | |
| **Self-Assessment**<br>Accepts the limits of own competence and functions within own capabilities; seeks advice and assistance when appropriate; accepts criticism | |
| **Continuing Education**<br>Shows a resourceful attitude towards continuing education to enhance quality of care | |

Please comment on any **strengths and weaknesses** that the trainee displayed with regard to the above areas

| |
|---|
| Strengths:- |
| Weaknesses:- |

**SUMMARY OF THE TRAINING YEAR**

| | | |
|---|---|---|
| **A.** | **Are you satisfied with the overall performance of the trainee during the period covered by this report?** | |
| | If no, are there any specific factors which may have affected this trainee's performance or do you have any reservations about performance? | |
| | | |
| **B.** | **Did the trainee take any leave during the period covered by this report?** | |
| | If yes, please indicate the periods and types of leave and whether prior approval was obtained. | |
| **TRAINER'S COMMENTS** | | |
| | | |

---------- ----------

Trainee's signature: Date

---------- ----------

Trainer's Signature Date

**Annexure III – In Service Training Assessment forms**

**POST GRADUATE INSTITUTE OF MEDICINE**
**UNIVERSITYOF COLOMBO, SRI LANKA**
**INSERVICE TRAINING ASSESSMENT**
**MD IN PAEDIATRIC INTENSIVE CARE**

**Case Based Discussion (CBD)**

| | | | | |
|---|---|---|---|---|
| **Trainee's name** | | | | |
| **Date of assessment**(dd/mm/yyyy) | | | | |
| **Training Centre** | | | | |

| **Core Paediatric Intensive care / Pediatric anesthesia / Pediatric Cardiothoracic anesthesia and ICU / Pediatric SICU / Adult Accident service**<br>**Case :** | **Satisfactory** | **Unsatisfactory** | **Not applicable** |
|---|---|---|---|
| **1. History taking and information gathering** | | | |
| Did the trainee take an adequate history and gather enough information from relatives, staff, notes or other colleagues to help decision making? | | | |
| **2. Assessment and differential diagnosis** | | | |
| The focus here is on a targeted clinical examination that, combined with domain 1, allows full assessment and the assimilation of a differential diagnosis. It is important that more than one diagnosis is considered, but the most likely diagnosis should also be highlighted. | | | |
| **3. Immediate management and stabilisation** | | | |
| Having made a full assessment, was the immediate management appropriate? Did the patient require urgent action? Was that action taken? Was it effective? Was appropriate help sought? | | | |
| **4. Further management and clinical judgement** | | | |
| Once patient was stable, were further management decisions appropriate? Were appropriate drugs given? Were relevant tests ordered? Was the patient managed/admitted to the appropriate clinical area? | | | |
| **5. Identification of potential problems and difficulties** | | | |
| Did the trainee identify potential problems? | | | |

| | | | |
|---|---|---|---|
| **6. Communication with patient, staff and colleagues** | | | |
| How was communication dealt with by the trainee? Were intervention options discussed with the patient? Was there good communication with patient's relatives, staff and other colleagues? | | | |
| **7. Record keeping** | | | |
| The records should be legible, signed, dated and timed. All necessary records should be completed in full. | | | |
| **8. Overall clinical care** | | | |
| The case records and the trainee's discussion should demonstrate that this episode of clinical care was conducted in accordance with good practice and to a good overall standard. | | | |
| **9. Understanding of the issues surrounding the clinical focus chosen by the assessor** | | | |
| The clinical focus must be one of the topics identified in the assessment schedule. The trainee should show an understanding *appropriate to their experience*. | | | |
| Document the reflective learning in a separate form | | | |

Print Name (Supervisor) …… Signed
…….Date ……

Name & signature by trainee
……

**POST GRADUATE INSTITUTE OF MEDICINE**
**UNIVERSITYOF COLOMBO, SRI LANKA**
**IN SERVICE TRAINING ASSESSMENT**
**MD IN PAEDIATRIC INTENSIVE CARE**

**MINI CLINICAL EVALUATION (MCE)**

| | | | | |
|---|---|---|---|---|
| **Trainee's name** | | | | |
| **Date of assessment**(dd/mm/yyyy) | | | | |
| **Training Centre** | | | | |

| **Core Paediatric Intensive care / Pediatric anesthesia / Pediatric Cardiothoracic anesthesia and ICU / Pediatric SICU / Adult Accident service**<br>**Case :** | **Satisfactory** | **Unsatisfactory** | **Not applicable** |
|---|---|---|---|
| **1. History taking and information gathering** | | | |
| Did the trainee take an adequate history and gather enough information from relatives, staff, notes or other colleagues to help decision making? | | | |
| **2. Assessment and differential diagnosis** | | | |
| The focus here is on a targeted clinical examination that, combined with domain 1, allows full assessment and the assimilation of a differential diagnosis. It is important that more than one diagnosis is considered, but the most likely diagnosis should also be highlighted. | | | |
| **3. Immediate management and stabilisation** | | | |
| Having made a full assessment, was the immediate management appropriate?<br>Did the patient require urgent action? Was that action taken? Was it effective? Was appropriate help sought? | | | |
| **4. Further management and clinical judgement** | | | |
| Once patient was stable, were further management decisions appropriate? Were appropriate drugs given? Were relevant tests ordered? Was the patient managed/admitted to the appropriate clinical area? | | | |
| **5. Identification of potential problems and difficulties** | | | |
| Did the trainee identify potential problems? | | | |
| **6. Communication with patient, staff and colleagues** | | | |
| How was communication dealt with by the trainee? Were intervention options discussed with the patient? Was there good communication with patient's relatives, staff and other colleagues? | | | |

| | | | |
|---|---|---|---|
| **7. Record keeping** | | | |
| The records should be legible, signed, dated and timed. All necessary records should be completed in full. | | | |
| **8. Overall clinical care** | | | |
| The case records and the trainee's discussion should demonstrate that this episode of clinical care was conducted in accordance with good practice and to a good overall standard. | | | |
| **9. Understanding of the issues surrounding the clinical focus chosen by the assessor** | | | |
| The clinical focus must be one of the topics identified in the assessment schedule. The trainee should show an understanding appropriate to their experience. | | | |
| Document the reflective learning in a separate page | | | |

Print Name (Supervisor) …… Signed
…….Date ……

Name & signature by trainee
……

**POST GRADUATE INSTITUTE OF MEDICINE**
**UNIVERSITYOF COLOMBO, SRI LANKA**
**IN SERVICE TRAINING ASSESSMENT**
**MD IN PAEDIATRIC INTENSIVE CARE**

**DIRECTLY OBSERVED PROCEDURAL SKILLS (DOPS)**

| | | | | |
|---|---|---|---|---|
| **Trainee's name** | | | | |
| **Date of assessment**(dd/mm/yyyy) | | | | |
| **Training Centre** | | | | |

| **Direct Observation of Clinical Skills assessment form (DOPS)** | **YES** | **NO** | **Comments** |
|---|---|---|---|
| Understands **indications** and **contraindications** for the procedure | | | |
| **Explained** procedure to patient | | | |
| Understands relevant **anatomy** | | | |
| Satisfactory **preparation** for procedure | | | |
| **Communicated** appropriately with patient and staff | | | |
| Full **aseptic** technique | | | |
| Satisfactory **technical** performance of procedure | | | |
| **Adapted** to unexpected problems during procedure | | | |
| Demonstrated adequate **skill** and **practical fluency** | | | |
| Maintained **Safe** practice | | | |
| **Completed** procedure | | | |

| | | | |
|---|---|---|---|
| Satisfactory **documentation** of procedure | | | |
| Issued clear **post-procedure instructions** to patient and staff | | | |
| Maintained **professional** demeanor throughout procedure | | | |

Document the reflective learning in a separate form

Supervisor's name
……Signed …….Date ……

Trainee's name
…… Signed …….Date ……

**POST GRADUATE INSTITUTE OF MEDICINE**
**UNIVERSITYOF COLOMBO, SRI LANKA**
**IN SERVICE TRAINING ASSESSMENT**
**MD IN PAEDIATRIC INTENSIVE CARE**

**MULTI SOURCE FEEDBACK (MSF)**

| | | | | | |
|---|---|---|---|---|---|
| **Trainee's name** | : | | | | |
| **Date of assessment**(dd/mm/yyyy) | : | | | | |
| **Training Centre** | : | | | | |
| **Year of training**: | : | **1** | **2** | **3** | **4** |

**Length of working relationship (in months)** :

You will be expected to provide a feedback on the work performance of the trainee with anonymous feedback of at least 2 members of the hospital staff (seniors, peers, juniors, nurses and other health professionals)

| Grading | Unsafe | Below Expectations | Borderline | Meets expectations | Above Expectations | Well above expectations | Unable to comment |
|---|---|---|---|---|---|---|---|
| | **F** | **E** | **D** | **C** | **B** | **A** | |
| Ability to diagnose patient problems | | | | | | | |
| Ability to formulate appropriate management plans | | | | | | | |
| Ability to manage complex patients | | | | | | | |
| Awareness of his own limitations | | | | | | | |
| Responds to psychosocial aspects of patients | | | | | | | |
| Appropriate utilization of resources e.g. ordering investigations | | | | | | | |
| Ability to coordinate patient care | | | | | | | |
| Technical skills (appropriate to current practice) | | | | | | | |
| Ability to apply up-to-date / evidence based medicine | | | | | | | |
| Ability to manage time effectively / prioritize | | | | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Ability to deal with stress | | | | | | | |
| Commitment to learning Willingness and effectiveness when teaching/training colleagues | | | | | | | |
| Communication with carers and/or family | | | | | | | |
| Ability to recognize and value the contribution of others | | | | | | | |
| Accessibility / reliability | | | | | | | |
| Leadership skills | | | | | | | |
| Punctuality | | | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| **Overall performance | Unsafe | Below Expectation | Borderline | Meets Expectation | Above Expectation | Well above Expectation |

**** Mandatory for the trainer to complete**

| | |
|---|---|
| Trainer's comments: | Suggestion for development |
| Action agreed upon | |

Assessor's position : Consultant ☐ Senior Registrar ☐

Assessor's signature : _____ Assessor's Name : _____

Trainee's comments :

Trainee's signature : _____

**POST GRADUATE INSTITUTE OF MEDICINE**
**UNIVERSITYOF COLOMBO, SRI LANKA**
**IN SERVICE TRAINING ASSESSMENT**
**MD PAEDIATRIC INTENSIVE CARE**

**ASSESSMENT OF TEACHING SKILLS**

| | | | | | |
|---|---|---|---|---|---|
| **Trainee's name** | : | | | | |
| **Date of assessment**(dd/mm/yyyy) | : | | | | |
| **Training Centre** | : | | | | |
| **Year of training**: | : | **1** | **2** | **3** | **4** |
| **Clinical setting** | : | In-patient | ETU/OPD | Neonatal Unit | Intensive Care unit |
| | | | | | |
| **Other (Please specify)** | | | | | |

Please insert a brief summary of the teaching skill assessed

| | |
|---|---|
| | |

**Please grade the below areas using the given scale:**

| | Unsafe | Below Expectations | Borderline | Meets expectations | Above Expectations | Well above expectations | Unable to comment |
|---|---|---|---|---|---|---|---|
| | **F** | **E** | **D** | **C** | **B** | **A** | |
| **Clarity and Organization (all sessions)** | | | | | | | |
| Presents material in a logical sequence | | | | | | | |
| Summarizes major points of lesson | | | | | | | |
| Method of communication medium | | | | | | | |
| Demonstration of physical signs | | | | | | | |
| **Effective communication** | | | | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Projects voice clearly, with intonation; easily heard | | | | | | | |
| Demonstrates and stimulates enthusiasm | | | | | | | |
| Varied explanations for complex and difficult scenarios | | | | | | | |
| material, using examples to clarify points | | | | | | | |
| Defines unfamiliar terms, concepts and principles | | | | | | | |
| Listens to students' questions and comments | | | | | | | |
| **Interaction with students** | | | | | | | |
| Information up-to-date | | | | | | | |
| Demonstrates advanced preparation for teaching sessions | | | | | | | |

| **Overall performance | Below Expectation | Borderline | Meets Expectation | Above Expectation | Well above Expectation |
|---|---|---|---|---|---|

**** Mandatory for the trainer to complete**

| Areas of strength | Suggestion for development |
|---|---|
| Action agreed upon | |

Assessor's position : Consultant ☐ Senior Registrar ☐

Assessor's signature : _____ Assessor's Name : _____

Trainee's comments :

Trainee's signature : _____

**POST GRADUATE INSTITUTE OF MEDICINE**
**UNIVERSITYOF COLOMBO, SRI LANKA**
**IN SERVICE TRAINING ASSESSMENT**
**MD IN PAEDIATRIC INTENSIVE CARE**

**COMMUNICATION SKILLS**

| | | | | | |
|---|---|---|---|---|---|
| **Trainee's name** : | | | | | |
| **Date of assessment**(dd/mm/yyyy) : | | | | | |
| **Training Centre** : | | | | | |
| **Year of training**: : | **1** | **2** | **3** | **4** | |
| **Clinical setting** : | In-patient | ETU/OPD | Neonatal Unit | Intensive Care unit | |
| | | | | | |
| **Other (Please specify)** | | | | | |

Please insert a brief summary of the communication scenario assessed

| |
|---|
| |

**Please grade the below areas using the given scale:**

| | Unsafe | Below Expectations | Borderline | Meets Expectations | Above Expectations | Well above Expectations | Unable to comment |
|---|---|---|---|---|---|---|---|
| | F | E | D | C | B | A | |
| **Conduct of Interview** | | | | | | | |
| Introduction, clarifies role | | | | | | | |
| Rapport | | | | | | | |
| Empathy and respect | | | | | | | |
| **Appropriate explanation and negotiation** | | | | | | | |
| Clear explanation, no jargon | | | | | | | |
| Assessment prior knowledge of patient | | | | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Appropriate questioning style | | | | | | | |
| Explores and responds to | | | | | | | |
| concerns and feelings | | | | | | | |
| Summarises and checks understanding | | | | | | | |
| Offer support and plan the management | | | | | | | |
| Time for questions | | | | | | | |
| **Accuracy of information given** | | | | | | | |
| Appropriate selection of information | | | | | | | |
| Accuracy of information | | | | | | | |

| ****Overall performance** | **Below Expectation** | **Borderline** | **Meets Expectation** | **Above Expectation** | **Well above Expectation** |
|---|---|---|---|---|---|
| | | | | | |

**** Mandatory for the trainer to complete**

| Areas of strength | Suggestion for development |
|---|---|
| Action agreed upon | |

Assessor's position : Consultant ☐ Senior Registrar ☐

Assessor's signature : _____ Assessor's Name : _____

Trainee's comments :

Trainee's signature : _____

**POST GRADUATE INSTITUTE OF MEDICINE**
**UNIVERSITYOF COLOMBO, SRI LANKA**
**IN SERVICE TRAINING ASSESSMENT**
**MD IN PAEDIATRIC INTENSIVE CARE**

**Discharge Summaries, Referrals & Letters (DSRL)**

| | | | | | |
|---|---|---|---|---|---|
| **Trainee's name** | : | | | | |
| **Date of assessment**(dd/mm/yyyy) | : | | | | |
| **Training Centre** | : | | | | |
| **Year of training**: | : | **1** | **2** | **3** | **4** |
| **Clinical setting** | : | In-patient | ETU/OPD | Neonatal Unit | Intensive Care unit |
| | | | | | |
| **Other (Please specify)** | | | | | |

Please insert a brief summary of the scenario assessed

| |
|---|
| |

**Please grade the below areas using the given scale:**

| | Unsafe | Below Expectations | Borderline | Meets Expectations | Above Expectations | Well above Expectations | Unable to comment |
|---|---|---|---|---|---|---|---|
| | **F** | **E** | **D** | **C** | **B** | **A** | |
| **Problem List** | | | | | | | |
| Is there a medical problem list? | | | | | | | |
| Are any obvious and significant problems omitted? | | | | | | | |
| Are any irrelevant problems listed? | | | | | | | |
| **History** | | | | | | | |
| Is there a record of the family's current concerns being sought of clarified? | | | | | | | |
| Is the document history appropriate to the problems and questions? | | | | | | | |

| **Examination** | | | | | | | |
|---|---|---|---|---|---|---|---|
| Is the documented examination appropriate to the problems and questions? | | | | | | | |
| **Overall assessment** | | | | | | | |
| Is the current state of health or progress clearly outlined? | | | | | | | |
| Are the family's problems or questions addressed? | | | | | | | |
| Is/are the referring doctor's questions addressed? | | | | | | | |
| Is a clear plan of investigation or non-investigation recorded? | | | | | | | |
| Are the reasons for the above plan adequately justified? | | | | | | | |
| Are all the known treatments, or absence of treatment, recorded clearly? | | | | | | | |
| Are all the doses clearly stated in formal units? | | | | | | | |
| Is adequate justification given for any changes to treatment? | | | | | | | |
| Is there an adequate record of information shared with the family? | | | | | | | |
| **Follow up** | | | | | | | |
| Is it clear whether or not hospital follow-up is planned? | | | | | | | |
| Is the purpose of follow up adequately justified? | | | | | | | |
| **Clarity** | | | | | | | |
| Is there much unnecessary information? | | | | | | | |
| Does the structure of the letter flow logically? | | | | | | | |
| Are there any sentences you do not understand? | | | | | | | |

| ****Overall performance** | **Below Expectation** | **Borderline** | **Meets Expectation** | **Above Expectation** | **Well above Expectation** |
|---|---|---|---|---|---|
| | | | | | |

**** Mandatory for the trainer to complete**

| Areas of strength | Suggestion for development |
|---|---|
| Agreed action | |

Assessor's position : Consultant ☐ Senior Registrar ☐

Assessor's signature : _____ Assessor's Name : _____

Trainee's comments :

Trainee's signature : _____

**Annexure IV - Portfolio**

Content of the portfolio should encompass all of learning outcomes mentioned below and contains evidence of achievement of these outcomes by the trainee.

1. Subject expertise
2. Teaching
3. Research and Audit
4. Ethics and medico legal issues
5. Information technology
6. Lifelong learning
7. Reflective practice

Subject expertise

- Progress reports from supervisors on a prescribed format
- ISTA forms
- Log of procedures carried out
- This section must include evidence that the trainee has acquired the essential knowledge, skills and competencies related to the subspecialty

Teaching

- Undergraduates
- Postgraduates
- Ancillary health staff

Research and audit relevant to specialty or subspecialty

- Research papers published
- Abstracts of presentations

Ethics and Medico – legal issues

- Completed Professionalism Observation Forms(from integrated learning component of Professionalism Strand)
- Completed PTR forms

PTR forms **(*Refer General Paediatric Prospectus)*** should be completed according to the instructions and submitted to the PGIM every six months by the trainee. A satisfactory PTR report is a requirement for PBCA.

Information technology

- Participation in training programmes /workshops
- Evidence of searching for information and application of findings in practice

Life- long learning

- Participation in conferences and meetings

Reflective practice the fundamental basis of Portfolio maintenance is reflective practice which is an important tool in postgraduate training.

Reflective practice consists of:-

Focused self-assessment

Reflecting on experience

Reflecting on strengths, weaknesses and areas for development

Design of own strategies that leads to improvement in practice

**Narration of at least one learning event experienced by the trainee, in relation to each of the above outcomes, with reflection on what and how the trainee learned from this experience.**

**The trainee is expected to continue updating the portfolio during the local and foreign training.**

**Prior to the Pre-Board Certification Assessment (PBCA), a panel of two examiners appointed by the BOS will assess the completed portfolio. A satisfactory Portfolio Assessment Report is a mandatory requirement for the PBCA.**

**For further details refer General Paediatrics Prospectus.**

**Portfolio Assessment Report**

Subject expertise, teaching, research and Audit, ethics and medico legal issues, information technology and lifelong learning will be assessed according to the rating scale mentioned below.

| | Marks/10 |
|---|---|
| Fail | 3 |
| Borderline | 4 |
| Pass | 5 |
| Good pass | 6 |
| Excellent pass | 7+ |

Reflective practice will be assessed according to the following rating scale given below.

| | | Marks/10 |
|---|---|---|
| Fail | Has not completed Reflective cycle | 3 |
| Borderline | Has only described the learning experience | 4 |
| Pass | Analyzed the reasons for the experience & the reasons for outcome | 5 |
| Good Pass | Evaluated how the outcome could have been different if a different course of action was taken | 6 |
| Excellent Pass | Provided high quality evidence for implementing changes | 7+ |