

CERTIFIED FELLOWSHIP IN PEDIATRIC ONCO-CRITICAL CARE

[Syllabus Approved by Board of Studies, Medical & Health Sciences]

Programme Code	:	HLTH14A16
Programme Details	:	2-YEARS HBNI CERTIFIED FELLOWSHIP IN PEDIATRIC ONCO-CRITICAL CARE
Programme Learning Outcomes (PLOs / PSOs)	:	MENTIONED [COMMON FOR ALL 2 YRS HBNI CERTIFIED FELLOWSHIPS OFFERED AT TMC]
Eligibility Criteria	:	MD/DNB IN ANESTHESIOLOGY OR CHEST MEDICINE OR PEDIATRICS).
Duration of the Course	:	2 YEARS
Programme Structure (Credit-Based)	:	NA
Detailed Course Syllabus	:	ATTACHED
Teaching–Learning Methodologies	:	2 YEARS PROGRAM
Examination & Evaluation System	:	ANNUAL APPRAISAL FOLLOWED BY UNIVERSITY FINAL EXAMINATION
Internship / Project / Dissertation Guidelines	:	NA
Program In Charge	:	PROF. VIJAYA PATIL (vijayapatil@yahoo.com)

CERTIFIED FELLOWSHIP (PEDIATRIC ONCO-CRITICAL CARE)

Programme Code: HLTH14A16

Programme Outcome:

- The HBNI Fellowship Programmes at Tata Memorial Centre are designed to develop competent, ethical, and academically oriented healthcare professionals with advanced knowledge and skills in their respective specialties and subspecialties.
- At the completion of the fellowship, candidates are expected to demonstrate excellence in clinical practice, patient-centred care, multidisciplinary teamwork, communication, professionalism, and evidence-based decision-making.
- Fellows shall acquire the ability to independently evaluate, diagnose, plan, and manage patients while adhering to institutional protocols, quality standards, patient safety practices, and ethical principles in healthcare delivery.
- The fellowship programmes also aim to foster academic growth, research aptitude, lifelong learning, and leadership qualities among trainees.
- Fellows are expected to actively participate in teaching, seminars, journal clubs, conferences, audits, and research activities, thereby contributing to the advancement of medical science and institutional development.
- Upon successful completion of the programme, the fellow should be capable of functioning independently as a skilled specialist/subspecialist with competence in clinical services, academics, research, and collaborative healthcare practice in tertiary care and oncology-focused settings.

DETAILED SYLLABUS

- **Practical procedures**
- **Peri-operative care**
- **End of life care**
- **Transport**
- **Patient safety and health systems management**
- **Professionalism**
 - Fellows will learn how to evaluate and manage critically ill children using evidence based care and medical decisionmaking in a team setting.
 - Fellows will learn, understand and utilize critical care monitoring techniques used to measure pathophysiologic processes during critical illness.
 - Fellows will learn to perform lifesaving procedures required for stabilization and management of critically ill children.
 - Fellows will develop knowledge of ethical and social issues encountered in the management of critically ill patients and their families, including end of life care.
 - Fellows will Demonstrate knowledge of the pathophysiology, evaluation and management of acutely ill children.
 - Fellows will refine the ability to prioritize diagnostic and therapeutic interventions along with skill in the resuscitation of children with unstable vital signs.
 - Fellows will refine skills in the interpretation and use of physiologic parameters, such as ABG's, blood pressure, RR, cardiac output, central venous pressure, etc.
 - Fellows will develop experience in the performance of invasive procedures, such as tracheal intubation, central vein cannulation, arterial line placement etc. and also Understand the indications and risks of each of these procedures.
 - Fellows will refine skills in management of patients requiring mechanical ventilation.
 - Fellows will learn to effectively work with multiple consultants in complex medical cases.
 - Fellows will develop the communication skills needed to act as an integrated team member with nurses, technicians, fellows, residents, and faculty.

▪ **INTERNAL ASSESSMENT**

- Progression of fellow's scholarly activity will be reviewed twice yearly in the form of assessment and appraisals done by external and Internal Faculty. At the conclusion of each month of clinical service fellows will be evaluated via a brief survey on specific skills and administrators, through supervised acquisition of experience in management and problemsolving in a multidisciplinary intensive care unit.
- The 24month curriculum would include rotation in ICU along with additional clinical rotations in Anesthesia, Pulmonary , Palliative care , Radiology , BMT and lab servicesetc.Fellows will also devote time and effort to academic interests including research and training in Quality Improvement projects and will be expected to complete a QI project during the course of training. Research time for fellows will be protected to devote to scholarly work, with the exception of working onweekends, onrotations and when there is not a conflict with critical clinical responsibilitiesThe fellows will have enough exposure to hands-on training such as use of point-of-care ultrasound in the ICU, advanced hemodynamic monitoring, Blood purification techniques etc.

▪ **TEACHING AND TRAINING ACTIVITIES**

- The 24-month pediatric critical care fellowship training program will include 18 months of clinical onco critical care with 1 -month Airway and procedural skills training in the OR (Under pediatric anesthesiologist and critical care facultycover) and 6 months' research experiencewith elective postings.Every candidate admitted to the fellowship programme shall pursue the course on full time basis in the institution under the guidance of a teacher/Mentor for assigned period of the course. Work hours during these clinical weeks will consist of both day and night shifts.
- The fellowship would include clinical training in the diagnosis and treatment of respiratory, cardiovascular or neurologicfailure, principles of organ support such as ventilator management, renal replacement therapy, critical care transport etc. During their training all Fellows will spend equal time caring for medical and surgical ICU patients.The didactic sessions would include core physiology, focusing on essential principles of cardiopulmonary, renal, hepatic, acid-base physiology etc. The training program would focus on development of knowledge, skills and attitudes (behavior), all essential components of education. The theoretical knowledge would be imparted to the fellows through bedside formal and informal discussions, journal clubs, seminarsetc.

- Every fellow would be required to present a minimum of 20 topics based on the Curriculum, the topics and dates of which would be given in advance. The fellows would work up cases, learn management of cases by discussion with faculty of the department. All Clinical responsibilities will have to be undertaken under direct supervision of a consultant intensivist, with increasing responsibility and autonomy being granted to more experienced and competent fellows.
- The fellows will have excellent opportunity to develop right attitude toward patient care, towards colleagues & other staff and parental counseling.

▪ **DEVELOPMENT OF COMPETENCIES**

- **Domains of competencies**
 - o Resuscitation and Disease management of the acutely ill children
 - o Diagnosis: Assessment, Investigation, Monitoring and Data Interpretation

▪ **GOALS OF THE FELLOWSHIP PROGRAM**

Goals of Fellowship Program is to Provide an environment that will help fellows to:

- Develop skills, knowledge and expertise in managing complex critically ill oncology children.
- Encourage and develop understanding and performing clinical research
- Help Develop expertise at organization, analysis of data and also contribute to ground-breaking and paradigm shifting clinical research.
- Encourage Ethical and evidenced-based Practice.
- Help Develop administrative skills and insights required for career planning, leadership, and excellence in patient care.

▪ **PROGRAMME OBJECTIVES**

- The purpose of the fellowship is to train clinicians to become knowledgeable pediatric intensivists, competent in the comprehensive management of any life-threatening condition in children and young adults. The objective will be to provide fellows with a learning environment that will enable them to become expert clinicians and leaders in the field of Pediatric Critical Care Medicine. The faculty will work closely with each fellow throughout their 2 years of training to tailor his/her experience to meet individual career aspirations.

- During a total of 96 weeks of training, fellows will develop skills critical to management of the critically ill oncology kids, including patient triage, leadership of a large team of trainees, cooperation with nursing leadership, and ongoing process improvement.
- We believe that with the training, mentorship, and opportunities available in the program, Fellows will be attractive and highly competitive to the full cadre of professional opportunities, including academic positions, at leading facilities.

▪ **CORE CURRICULUM**

- The curriculum will be geared towards preparing the fellows to meet the challenges of being an excellent pediatric intensivist.
- The Curriculum is designed in such a way that it will help to provide fellows with an understanding of the pathophysiology of life threatening disease and injury, and the cognitive and technical skills necessary to independently diagnose and manage critically ill oncology children. It will foster an environment of intellectual curiosity, advance the fellows' knowledge of the basic principles of research and mentor each fellow in the pursuit of scholarly activity related to pediatric onco critical care. It will enable fellows to become effective educators in pediatric onco critical care medicine. It will also help the fellows become efficient

▪ **PROPOSAL FOR HBNI PEDIATRIC ONCO -CRITICAL CARE FELLOWSHIP PROGRAM (YEAR 2022)**

- At The Tata Memorial Center, we continuously strive to improve the quality and standard of care in treating children with cancer. We care for children with the empathy and try to save these precious lives in a family centered, compassionate, and caring environment, and utilize evidence-based approaches to their treatments. Our Post-Doctoral Critical Care Program (DM Critical Care Medicine) which was started in 2012 has been at the forefront in developing
- Critical Care Specialists to help deliver the highest quality care to patients across the country and abroad. We admit 3 Critical Care trainees in Adult post-doctoral program (DM Critical Care Medicine) accredited by the MCI (3 Years course)

▪ **PEDIATRIC ONCO-CRITICAL CARE FELLOWSHIP**

- We aim to now start a Pediatric Onco Critical care fellowship program, a fully accredited twoyear program that would combine clinical and research experience to enable the trainee to gain knowledge and expertise in Pediatric Onco Critical care. Tata Memorial Center is a tertiary referral center for pediatric oncology in India treating approximately 2,000 new cancer children per year. TMH Intensive Care Unit is a 24 bedded unit with combined medical & surgical patients with an average daily census of approximately 30 patients of which nearly 40% patients being from the pediatric oncology discipline. The children admitted to the ICU present with wide variety of critical illnesses related to oncology. TMH also has a separate BoneMarrow Transplant unit. TMHICU is a closed unit with approximately and nearly 500 children are admitted annually and the number continues to grow. Our diverse ICU patient population includes pediatric medical oncology, surgical oncology, neuro oncology etc.
- The department has 8 Core Critical Care Faculty (who cover both the medical and surgical ICU services), two of which are trained and qualified in pediatric intensive care allowing adequate attending staff coverage to assure an excellent learning environment for the fellow. The ICU has 1 :2 nursing ratio and 4 ICU technicians on duty round the clock at any given time. There is also a complete spectrum of pediatric subspecialty consultants all of whom excel in their fields.

▪ **ADMISSION PROCESS & ELIGIBILITY CRITERIA**

We Propose to apply for two Fellow position every year

- Admission to the Fellowship course will be through Entrance Examination and Personal interview conducted by the Academic section of Tata Memorial Center which is accredited under
- Homi Bhabha National Institute, a deemed to be university.

▪ **ELIGIBILITY**

Medical graduate who has qualified with MD/DNB (Anesthesia or Chest Medicine or Pediatrics) and fulfill the eligibility criteria for admission to Fellowship courses at HBNI

- **The framework of the teaching programme**
 - o Bedside case discussion - Daily

- o Difficult Case presentations & discussion- once a week
- o Seminar — Once a week
- o Journal club- Once a week
- o Grand round presentation - by departmental rotation
- o Faculty lecture teaching- once a month
- o Mortality & morbidity meeting — once a month

▪ SYLLABUS HIGHLIGHTS

- Domains in Pediatric Intensive Care Medicine curriculum would include
- Understanding Basic sciences & Stewardship of Resources
- Resuscitation and management of critically ill child
- Clinical assessment, investigation, and therapeutic interventions & Organ support
- Information Technology, Data interpretation and monitoring
- Peri-operative care, Mechanical Ventilation etc.
- Ethics, Professionalism, Compassionate and family oriented care, End of life & Palliative Care
- Acute disease management like Sepsis and other diseases
- Research in Pediatric Critical Care
- Evidence-Based Medicine in Pediatric Critical Care
- Outcomes in Pediatric Critical Care Medicine
- Safety and Quality Assessment in the Intensive Care Unit
- Principles of Invasive Monitoring, Echocardiography etc.
- Nutrition in the Critically Ill Child etc.

▪ FELLOWSHIP EXIT EXAMINATION

- The summative assessment of competence will be done in the form of Exit Examination
- Theory: Maximum 100 marks (10 short notes, 10 marks each)
- behaviors that map to the essential developmental competencies, milestones, entrustable professional activities and on domains of practice such as patient care, knowledge, practice based learning and improvement, interpersonal and communication skills, professionalism, and systems based practice. A formative and summative feedback will be given that will allow fellows to continuously reflect and improve upon their knowledge and

skills. Fellows will also receive feedback on their presentations and teaching from faculty and other trainees (co-fellows, residents, students).

▪ **MENTORING**

- Fellows will be assigned a consultant mentor at the beginning of their period of training. At an initial meeting the fellows' expectations and requirements will be determined and a programme devised to fulfill those. There will be monthly meetings between fellows and mentors to ensure that these are being met. Fellows will be assessed by each consultant every 3 months and their progress will be discussed by the consultant group. The mentor will then provide feedback to the fellow and they will devise an approach to any identified problems or deficiencies. The mentor will perform a formal 6 or 12 monthly appraisal for each fellow.

▪ **TEACHING OPPORTUNITIES**

- For effective faculty development while during training, fellows will have the opportunity to get involved in teaching medical students, residents, nursing staff, and/or other fellows/faculty members. All fellows will get involved in teaching informal clinical "chalk talks" to other residents on a weekly basis. Fellows will have to be trained in Difficult airway, hemodynamic monitoring, PALS and run periodic Mock Code (monthly)

▪ **RESEARCH & QI TRAINING**

- The program will give fellows the opportunity to perform ethical clinical research relevant to the practice of Pediatric onco critical care. The program will also allow fellows to pursue their interests in a structured manner in order to produce quality research addressing significant questions in pediatric critical care. Every Fellow would be required to carry out research projects and write a thesis/ dissertation in accordance with HBNI guidelines. The goal will be to have fellows conceive an original research hypothesis, develop and execute an investigative protocol, present findings at a national conference, and submit a manuscript to a peer-reviewed medical journal prior to completion of the program. Also every fellow must have done a scientific poster and /or have one oral presentation during their fellowship period in a recognized conference.
- Journal club: The fellows would evaluate, summarize and discuss the scientific article critically in journal clubs. The faculty will suggest the article and moderate the discussion,

with participation of other faculty members and resident doctors. The scientific knowledge, strengths and limitations will be highlighted.

- Practical: Maximum 100 marks (Clinical Examination and viva)
- Passing Criteria — Minimum 50% in each Examination
- Faculty, Division of Critical Care Medicine, Department of Anesthesiology, Critical Care & Pain

1. Dr Vijaya Patil

Professor and Head, Anaesthesia, Critical Care and Pain

2. Dr Sheila Myatra

Professor

3. Dr Shilpushp Bhosale

Professor

4. Dr Amol Kothekar

Professor

5. Dr Sudivya Sharma

Asso Professor

6. Dr Ketan Kataria

Asso Professor