Residency Program
Master of Surgery (MS)
Curriculum (Phase-B)

Anaesthesiology

Bangabandhu Sheikh Mujib Medical University
Dhaka, Bangladesh

Contents

1. Introduction:

The Bangabandhu Sheikh Mujib Medical University Residency Program in Anaesthesiology is a five year Program leading to MD in anaesthesia academic degree. The degree is accredited by the competent authority of the university after prescribed examination schedule. A total of five years residency Program divided into phase-A (two years) followed by Phase-B (Three years). Having completed Phase-A Program each resident shall enter into the Phase-B.

The principles of residency Program:

1. Is competency based
2. Is planned
3. Is evaluated
4. Is supervised
5. Has clear objectives and
6. Allows time for study.

There is certain generic professional skill that includes:

1. Attitude and behavior
2. Communication
3. Audit
4. Presentation
5. Teaching
6. Management
7. Ethics and law

2. Goals and Objectives:

General Objectives:

1. To produce Anaesthesiologists who are well informed, independent and clinically competent perioperative consultant physicians.

2. To produce Anaesthesiologists who will be acknowledged as role model for others to follow.
3. To provide structured training in Anaesthesiology in Bangladesh and thus act as standard protocol for other institutions in our country.
4. Generation of specialist Anesthesiologists having successful completion of five years residency Programs would be eligible to be accredited with Doctor of Medicine (MD) degree offered by Bangabandhu Sheikh Mujib Medical University through definite accreditation procedure.

Specific objectives:

These objectives are what trainees need to learn. They are presented as:

1. Knowledge
2. Clinical management that applies knowledge and clinical skills to manage the patient in perioperative period
3. Skills (clinical and technical)
4. Attitudes and behavior

Phase-B

Residency Year 3

At the commencement of the 3rd year the resident should :

1. Choose elective major and can conduct thesis on this subspecialty within 06 months training including collection and compilation of data. During the first six months, the resident will select, prepare and submit the protocol for ethical clearance. This work will go on simultaneously with prescribed rotation.
2. Demonstrate clinical competence in handling all types of elective and emergency cases on General Surgery, Obstetrics and Gynaecology, Orthopaedic and OMF surgery with minimal consultant supervision

3. Understand the basic principles of anaesthesia for subspecialties e.g., ENT surgery, Ophthalmology, Neuro surgery, Paediatric Surgery, Cardiac Surgery , Pain and Palliative Care.

Residency Year 4

At the end of year 4 the resident should:

1. Able to demonstrate clinical competence in handling majority of anaesthetic problems.
2. Have undergone a comprehensive training Program in most of the sub-specialties of anesthesia.

Residency Year 5

1. The resident will become CLINICALLY competent to handle all elective and emergency cases in all specialties of Anesthesia, ICU, Palliative Care and Pain management.
2. Approved research work for thesis has to be completed before appearing in MD Final examination organized by the competent authority of Bangabandhu Sheikh Mujib Medical University.

3. Admission Requirements for Phase-B Training:

Residents who have successfully completed Phase-A training and passed Phase-A final Examination are eligible for enrolment in the Phase-B Program.

4. Phase-B Curriculum Structure:

The training is designed to develop both the generic and specialty-specific attributes necessary to practice independently as a consultant anaesthesiologists. The aim is to train individuals to provide the highest standard of service to patients requiring anaesthetic care. This includes the development of positive attitudes towards lifelong learning and the ability to adopt to future technological advances and the changing expectations of society.

In depth specialty-specific educational and training Program in this phase will make the resident competent and prepare them for specialty qualification. It will provide educational Program covering the specialty of anaesthesiology and its allied subspecialties, Biostatistics, Research methodology and Medical education along with rotation specific clinical training.

5. Teaching and Learning Methods:

Each year, resident will be placed for didactic teaching Program (Knowledge) and clinical training (skills) in an assigned block comprises of three months. Phase-A comprises of 07 (seven) and Phase-B comprises of 11 (eleven) blocks respectively. One block will merge with major block placement for completion of thesis work.

5.1 Teaching Program

The bulk of learning occurs as a result of clinical experiences (experimental learning, on –the job learning) and self directed study. The degree of self – directed learning will increase as trainees become more experienced. Teaching and learning occurs using several methods that range from formal didactic lectures to planned clinical experiences. Aspects covered will include knowledge, skills and practices relevant to their discipline in order to achieve specific learning outcomes and competences. The theoretical part of the curriculum presents the current body of knowledge necessary for practice. This can be imparted using the followings:

a) Knowledge (Didactic Teaching Program)

Didactic teaching will be held on two days in a week in the parent department. It comprises of basic sciences, clinical topics related to anesthesia, intensive care, palliative care and pain management.

b) Departmental Academic Meetings

The residents are expected to participate in all departmental meetings and conferences, the journal club and research activities of the department on the allocated date and it will be notified in advance:

- Journal Club
- Morbidity and Mortality meeting
- Case Presentations
- Audit Meeting
- Research Meeting
- Anaesthesia Quality Care Issues
- Guest Lecture (S)

5.2 CLINICAL TRAINING (skills development)

Operating Theatre and outside operating theatre Rotation

During the three years period, residents will be placed for block rotation. The block will be as follows:

1. General Surgery and Liver Transplant Anaesthesia- Three Months.
2. Orthopaedic, Emergency and Dental / Faciomaxillary Surgery Anaesthesia
   a. Orthopaedic Surgery-one month
   b. Emergency Anaesthesia-one month
   c. Dental and Faciomaxillary-one month
3. Urological Surgery and Renal Transplant Anaesthesia
4. Paediatric Surgery Anaesthesia
5. Neurosurgery Anaesthesia
6. Gynaecological and Obstetrical anaesthesia -analgesia
   a. Gynaecology-one month
   b. Obstetrics two-months
7. Pain and Palliative Care
   a. Acute Pain-one month
   b. Chronic Pain-one month
   c. Palliative Care-one month

8. Cardiothoracic Anaesthesia and Cardiac ICU
    a. Cardiovascular-one month
    b. Cardiac ICU-one month
    c. Thoracic-one month
9. Otolaryngology, Ophthalmology / ECT Anaesthesia
    a. Otolaryngology-two months
    b. Ophthalmology-15days
    c. ECT-15days
10. Intensive Care Unit
    a. Medical ICU-two months
    b. Surgical ICU-15days
    c. Neonatal ICU-15days

(Residents will choose their field of thesis work from any subspecialty listed above where they will be placed for six months period as major.)

6. Record of Training:

The evidence require to confirm progress through training includes: number of procedures and outcomes

- Details of the training plan agreed with weekly timetables and duty roster.
- Confirmation of attendance at events in the educational Program at departmental and interdepartmental meetings and other educational events
- Confirmation (certificates) of attendance at subject-based/skill- training/instructional course.
- Recorded attendance at conference and meetings.
- A properly completed logbook with entries capable of testifying to the training objectives which have been attained the standard of performance achieved.
- CME activity.
- Supervisor's reports on observed performance (in the workplace): of duties, practical procedures of presentations made and teaching activity, of advising and working with others, of standards of case notes, correspondence and communication with others.

6.1 Logbook

The Residents will maintain LOG BOOK from their enrolment to finish the residency Program and dully signed by supervisor / facilitator in each block. The logbook should incorporate all entries of academic/professional work done during the period of training made on a daily basis and signed be the supervisor. Residents are required to maintain completed and duly certified logbook which is mandatory for appearing in Phase final examination.

6.2 Portfolio

This is collection of evidence documenting trainee's learning and achievements during their training. The trainee takes responsibilities for the portfolio's creation and maintenance. It will form the basis of assessment of progression

7. Research:

Development of research competencies forms an important part of the residency Program curriculum as they are an essential set of skills for effective clinical practice. Undertaking research helps to develop critical thinking and the ability to review medical literature. Every resident shall carry out work on an assigned thesis work under the guidance of a recognized supervisor the project shall be written and submitted in the form of a Thesis.

8. Assessments:

The assessment for certification of the MD degree of the University is comprehensive, integrated and phase-centered attempting to identify attributes expected of specialists for independent practice and lifelong learning and covers cognitive, psychomotor and affective domain. It keeps strict

reference to the components, the contents the competencies and the criteria's laid down in the curriculum. Assessment includes both **formative assessment** and **summative (Phase-B final) Examination.**

8.1. Formative Assessment

Formative assessment will be conducted throughout training phases. It will be carried out for tracking the progress of residents, providing feedback, and preparing them for final assessment (phase completion exams). There will be continuous (day to day) and periodic type of formative assessment.

i) **Continuous (day to day) formative** assessment in classroom and work place settings provides guide to a resident's learning and a faculty's teaching / learning strategies to ensure formative lesson / training outcomes.

ii) **Periodic formative assessment** is quasi-formal and is directed to assessing the outcome of a block placement or academic module completion. It is held at the end of block placement of Academic Module

iii) **Academic Module Units of the Academic Curriculum.**
End of Block Assessment (EBA) is a periodic formative assessment and is undertaken after completion of each training block, assessing knowledge, skills and attitude of the residents. Components of EBA are written examination, structured clinical assessment (SCA), medical record review, logbook review and portfolio assessment. Incomplete block training must be satisfactorily completed by undergoing further training for the block to be eligible for appearing in the next phase completion examination. Any block will be considered as incomplete it resident remain absent from his/ her training place more than 10 days.

Formative assessment for academic modules for biostatics and research methodology and medical education is done in the first nine months of Phase-B training. Residents getting unsatisfactory grade must achieve satisfactory grade by appearing the re-evaluation examination before sitting for the Phase-B final examination for certification.

8.2. Summative Examination

The Phase-B final examination can be undertaken only after passing the Phase-A final examination and after successful completion of Phase-B training upon acceptance of thesis wine. The Phase-B final examination is considered as the exit examination.

Phase final examination will have following components:

- Written examination
- Clinical examination :
  - Long case (1)
  - Short cases (4)
  - Structured Clinical Assessment (SCA-12 stations)
- Oral examination
- Thesis evaluation

9. Supervision and Training Monitoring:

As training progresses the resident should have the opportunity for increasing autonomy consistent with safe and effective care for the patient. Residents will at all times have a supervisor, responsible for overseeing their education and training.

Supervisors are responsible for supervision of learning throughout the program to ensure patient safety, service delivery as well as the progress of the resident with learning

and performance. They set the lesson plants based on the curriculum, undertaken appraisal, review progress against the curriculum, give feedback on both formative and summative assessments and ensures proper recording and signing of the logbook. The residents are made aware of their limitations and are encouraged to seek advice and receive help at all times.

The Course coordinator of each department coordinates all training and academic activities of the program in collaboration with the course manager(s). The course director of each faculty directs guides and manages curriculum activities under his/her jurisdiction and is the person to be reported to for all events and performances of the residents and the supervisor.

10. Curriculum Implementation, Review and Updating:

Both Supervisors and residents are expected to have a good knowledge of the curriculum and should use it as a guide for their training Program. Since Anaesthesiology has historically been rapidly changing specialty the need for review and up-dating of curriculum is evident. The curriculum is specifically designed to guide an educational process and will continue to be the subject of active redrafting to reflect changes in both Anaesthesia and educational theory and practice. Residents and supervisors are encouraged to discuss the curriculum and to feedback on content and issue regarding implementation with the course director. Review will be time tabled to occur annually for any minor changes to the curriculum.

11. Phase-B Syllabus:

General Objectives

A. Learn to perform preoperative evaluation

1. Learn to collect and synthesize preoperative data and to develop a rational strategy for the perioperative care of the patient.

2. Learn a thorough and systematic approach to preoperative evaluation of patients with systemic diseases. Perform preoperative medical evaluations of patients undergoing many different types of operations, both of inpatients and outpatients but especially elderly patients with complex medical illnesses.
3. Learn to prioritize problems and to present cases clearly and systematically to attending consultants.
4. Develop working relationships with consultants in other specialties to assist in preoperative evaluation.
5. Learn to interact with preoperative patients and develop effective counseling techniques for different anesthetic techniques and perioperative procedures. Learn to assess and explain risk of procedure and take informed consent.

B. Learn anesthetic techniques and skills and understand to operate different equipment

Develop optimum plans depending on patients condition. Know the special considerations and

Techniques required to anesthetize patient in locations inside and outside of the operating room,

1. Place standard monitors, for example, electrocardiogram, noninvasive blood pressure device,
2. precordial stethoscope, neuromusclar blockade monitor, pulse oximeter, and capnograph.
3. Perform airway management by knowing various procedures and equipment:

They should know how to use/do

i) Direct laryngscopy using curve and straight blade
ii) Laryngeal mask airway

They should be familiar with

a. Fiberoptic techniques

b. Light wand techniques
c. Blind techniques
d. Combitube

3. Awake intubation
a) Topical/Local anaesthesia for airway
b) Airway nerve block, for example, superior laryngeal nerve and glossopharyngeal nerve block

4. Learn anesthetic maintenance: appropriate choice and use of anesthetic drugs and adjuvant drugs such as muscle relaxants and how to monitor their effects
   a. Assessment of Anesthetic depth.
   b. Assessment of volume status
   c. Replacement of intraoperative fluid losses
   d. Appropriate use of blood and blood products
   e. Effect of different types of surgical procedures on anesthetic management, for example, effects of aortic cross-clamping
   f. Appropriate use of intraoperative laboratory tests- blood gas, coagulation tests etc.

5. Become skilled in catheterizing or cannulating the following vessels for sampling blood, measuring concentrations or pressures, or administering drugs of fluids:
   a) Veins: all ages and all sizes
   b) Arteries: radial and other sites
   c) Central vessels: internal jugular, subclavian, and "long-arm" routes

6. Become skilled in using and interpreting the following routine noninvasive and invasive monitors intraoperatively and others:
   a) Electrocardiogram with ST-segment analysis
   b) Noninvasive blood pressure

   c) Capnograph: values and changes in values and waveform.
   d) Pulse oximetry: values and changes in values
   e) Neuromuscular blockade monitor
   f) Invasive arterial pressure: waveform and changes in the waveform
   g) Central venous pressure: values and waveform
   h) Pulmonary artery pressure: Values and waveforms, pulmonary capillary wedge tracing
      i) Cardiac output
      ii) Mixed venous oxygen saturation
      iii) Evoked potential
      iv) Transesophageal echocardiography: basic understanding

7. Become skilled in techniques for regional anesthesia
   a) Brachial plexus blockade: interscalene, supraclavicular, axillary techniques with and without nerve stimulator for localization
   b) Spinal anesthesia (including continuous spinal where appropriate)
   c) Epidural anesthesia: lumbar, caudal, and thoracic.
   d) Lower extremity blockade: femoral, sciatic, and lateral femoral cutaneous nerves
   e) Upper extremity blockade: ulnar, median, and radial nerves
   f) Bier's block
   g) Cervical plexus block

8. Become skilled in discontinuing anesthesia and monitoring emergence from anaesthesia
   a) Reversal of neuromuscular blockade
   b) Determination of appropriate time for extubation
   c) Monitoring of airway function during and after emergence

9. Become familiar with/skilled in perioperative pain management
   a) Postoperative epidural infusion (opiates, local anesthetics)
   b) Patient-controlled analgesia
   c) Adjunctive nerve blockade
10. Become skilled in use of techniques for conscious sedation and monitored anaesthesia care
   a) Selection of patients for conscious sedation
   b) Selection of drugs for use in conscious sedation
   c) Monitoring techniques helpful in controlling depth of sedation
   d) Recognition of when conscious sedation has become unconscious sedation
11. Know how to successfully resuscitate, and develop skill of Basic Life support and Advance Cardiac Life support.
12. Work with other members of the OR team, including surgeons and nurses, to optimally care for surgical patients, especially develop communications skill.

11.1 Common Competences to be repeated during Phase-B which were previously conducted in Phase-A

11.2 Blocks in Phase-B

Residents will be placed in different blocks as per the following arrangement. Each block consists of following components.

- Aims & Objectives
- Knowledge
- Skill
- Assessment

Individual Blocks: Already mentioned under clinical training section before (page no- 04 & 05)

Block General Surgery Anaesthesia

Preoperative Evaluation, Preparation and Premedication
Concomitant Disease
Anaesthesia Considerations: Cholecystectomy, Appendectomy, Bowel Obstruction and Perforation
Bowel Resection, Colorectal and anal canal
Acute Gastrointestinal Bleeding, Splenectomy, Pancreatic and Hepatic Resection
Portal Shunting Procedures
Adrenal Surgery
Postoperative Management

Block Orthopaedic, Dental / Faciomaxilary and Emergency Anaesthesia

Anaesthesia for Orthopedic Surgery

Preoperative Assessment and preparation of the Patient for Orthopedic Surgery
Concomitant Disease
DVT prophylaxis
Choice of Anaesthetic Technique – Risks/Benefits of GA vs Regional
Anaesthetic Considerations: Major Lower Extremity Arthroplasty Surgery, Shoulder Surgery
Fractures
Surgery under Tourniquet, Cement implantation syndrome
Postop Pain Management, Postop Complications
Fat Embolism, Pulmonary Embolism
Compartment Syndrome .

Emergency anaesthesia (Trauma)

Trauma Protocol and Role of Anaesthesia
Assessment and Management Principles in Acute Blunt Penetrating and Airway trauma

Head and Spinal Cord Injury, Thoracic, CVS, Abdominal Trauma, Major Orthopedic Trauma
Hypotension in the trauma patient
Management of the Acutely Traumatized Patient in the OR, for Repeated Surgical Procedures.

Dental & Faciomaxilary Surgery
Preoperative Assessment & Preparation
Anaesthetic Considerations in: Maxillary / Mandibular surgery
Anaesthesia for dental surgery.

Block Genitourinary Surgery and Renal Transplant Anaesthesia
a. Preoperative Evaluation, Preparation, Premedication and Concomitant Disease.
b. Renal protection
c. Anaesthetic Considerations for
i) Nephrectomy
ii) Lithotripsy
- Percutaneous lithotripsy
- Extracorporeal shock wave lithotripsy (ESWL)
- potential problem

iii) Prostate surgery
- Transurethral Resection of the Prostate
- Anaestesia for TURP
- List the complications of TURP
- Describe the TURP syndrome and its treatment
- Recognize and treat hyponatermia;
- Know different anesthetic options
- Irrigation fluid options: know advantages and disadvantages of each
- Prostatectomy: Open and Laparoscopic

iv) Complex urological cases
- renal tumour resection and LN clearance with extensive dissection;
- radical cystectomy and conduit reconstruction - 4-6 hours.
- complicationsanaesthesia related- i) regional ii) general iii) procedure related

v) Endourologic Procedures
- Urethral
- Bladder
- Ureteral

vi) Kidney transplant
- Preoperative Assessment, Preparation and Management of Recipient for Kidney
- Major problems in patients with renal disease
- Monitoring
- Drugs
- Management of Transplant Patient for Non-transplant surgery
- Transplantation Immunology
- Management of Cadaver Organ Donor

vii) Cystoscopy
viii) Circumcision
ix) Postop Management
x) Pain management

Block Paediatric Surgery Anaesthesia
Preoperative Assessment
Monitoring and Specialized Equipment for Paediatric Anaesthesia
Perioperative Fluid and Electrolyte Management – Fasting Guidelines
Perioperative Temperature Management
Anaesthetic Management of the Paediatric Patient

Common Paediatric Syndromes and Emergencies:
TE fistula, FB in airway, epiglottitis, pyloric stenosis
Child with Recent URTI, Difficult Airway, Trauma
Congenital Heart Disease for non-cardiac surgery
Pain Management and Regional Anaesthesia
Anaesthesia outside the OR

Block Neurosurgery Anaesthesia
Preoperative Evaluation, Appropriate Investigations, Preoperative Optimization
Monitoring, EEG, Evoked Potentials, ICP, Transcranial Doppler
Anaesthetic Consideration: Increased ICP, Supratentorial Masses, Posterior fossa surgery
Cerebral Aneurysms, Occlusive Cerebrovascular Disease, AVM, Spinal Cord Surgery
Interventional neuroradiology, Epilepsy Surgery, Pediatric Neurosurgery
Neuroendocrine Disease, Induced Hypotension
Severe head injury, Spinal cord injury, Subarachnoid hemorrhage, Seizures Complications
Electrolyte Disorders – SIADH, Cerebral salt-wasting syndrome
Air embolism, intracranial hypertension
Methods of Brain Protection, Postoperative Management

Block Gynaecological and Obstetrical anaesthesia - analgesia
Gynaecological surgeries anaesthesia
Laparoscopic assisted procedures & anaesthesia
Obstetrical anaesthesia
Preop Assessment, Medical Diseases in the Parturient
Principles of Fetal Assessment and Monitoring
Informed Consent in the Obstetrical Patient
Methods of Pain Management for Labour and Delivery
Regional Anaesthesia, Pharmacologic Agents, Other modalities
Effects of Anaesthesia/Analgesia on uterine blood flow/uterine activity

Management of Preterm Labour, Prolapsed cord, Pre-eclampsia, Eclampsia, HELLP
Abnormal Presentations, Shoulder dystocia
Pre and Post-partum Hemorrhage, Uterine Dehiscence, Uterine Inversion,
Cesarean Section, Non-obstetrical Surgery in the Pregnant Patient
CPR in the Pregnant Patient, Neonatal Resuscitation
Complications, Amniotic Fluid Embolism

Block Pain and Palliative Care Pain
Principles and Techniques of Acute Pain Management, Systemic Opioids
Non-opioid analgesics, PCA, Regional techniques & Nerve blocks
Principles and Techniques of Chronic Pain Management
Medications, Psychological Support
Neuroablative techniques
Neuroaugmentative techniques - spinal cord stimulation
TENS, Organization of a multi-disciplinary pain service

Palliative Care
A. Introduction to palliative care : The basic principles of palliative care
B. Communication Skills, Ethical and Spiritual Issues
By the end of the section the student should be able to learn.
- The basic skills in communicating with a patient
- Strategy for breaking bad news handling the responses
- Ethical issues in palliative care
- Concept of spiritual distress

C. Management of Palliative Care Emergencies and Non-Malignant Disease
By the end of the section the student should be able to:
- Recognize the following common urgent problems and

propose appropriate management for spinal cord compression, superior vena cava obstruction, haemorrhage, convulsion and hypercalcemia.

- Demonstrate how increased knowledge and understanding of the following conditions like end-stage
- respiratory disease, chronic heart failure, multiple sclerosis and motor neuron disease can improve the palliative management of patients.

C. The Last 48 Hours of Life , Practical Issues and Bereavement

By the end of the section the student should be able to:

- Recognize the signs and symptoms when death is approaching
- Make a holistic assessment of the needs of the patient and their family at this stage.
- Recognize the manifestations of the grieving process in bereaved adults and children and describe ways to help them.

Block Cardiothoracic Anaesthesia and Cardiac ICU

Cardiac Anaesthesia

Preoperative evaluation, appropriate Investigations, risk Stratification, monitoring, Use of Hemodynamic Monitoring, TEE

Anaesthetic Considerations in Patients with CAD, CHF - Right and Left ventricular dysfunction, Hypertension, Cardiomyopathies, Tamponade, Valvular Disease, Dysrhythmias, Pacer, Defibrillator

Congenital Heart Disease, Minimally invasive CABG, Management of CPB, Ventricular Assist Devices

Postoperative Management, Pain Management

Postoperative Complications - Ischemia, MI, Arrhythmias, LVF, RVF, Neurological Complications

Cardiogenic Shock - Pathophysiology and Management, ACLS Protocol

Thoracic Anaesthesia

Preoperative Assessment, Appropriate Investigations, Risk Stratification

Specific Considerations in Pulmonary Malignancies

Preoperative Optimization,

Considerations in Specific Respiratory Diseases: Asthma, COPD, Cystic Fibrosis, Pulmonary Fibrosis,

Pulmonary Hypertension

Anaesthetic Considerations: One Lung Anaesthesia, Bronchoscopy, Mediastinoscopy, Lobectomy, Pneumonectomy, Tracheal Resection, Thoracoscopic Surgery,

Postoperative Management, Techniques of Post-Thoracotomy Analgesia

Otolaryngology, Ophthalmology / ECT Anaesthesia

Block Anaesthesia for ENT Surgery

Preoperative Assessment, Preparation and Concomitant Disease

Anaesthetic Considerations for Ear and Nasal Surgery

Tonsillectomy/Adenoidectomy

Laryngoscopy / laryngeal surgery, bronchoscopy

ENT tumors, ENT infections, tracheostomy

Postoperative Care, Postoperative Complications, Pain Management

Anaesthesia for Ophthalmological surgery

Preoperative Assessment, Preparation and Concomitant Disease

Considerations of intraocular pressure

Effects of ophthalmologic medications

Technique of and Complications of Retrobulbar and Peribulbar Block

Anaesthetic Considerations in open eye injuries, cataract Surgery, retinal Surgery, strabismus Surgery

Postoperative Complications

Electroconvulsive therapy (ECT)

Preoperative assessment

Anesthetic techniques and drug effects on seizure duration

Hemodynamic responses and appropriate treatment

Block Intensive Care Unit

Knowledge of indications, techniques used and complications of invasive and noninvasive monitoring in critical care setting

CT insertion-Blakemore/Linton tube

Pathophysiology and management of pain and sedation in ICU

Respiratory failure, methods of mechanical ventilation, modes of weaning

Shock, Sepsis, MODS / SIRS, Coma, Status Epilepticus, Burn, Hypothermia, Acute Intoxications

Endocrine dysfunction, nutritional support & NPO Criteria

Transport of Critically Ill Patients

Brain Death

Organization, Design, Staffing and delivery of Critical Care Services

High dependence Unit