



MGM SCHOOL OF BIOMEDICAL SCIENCES, NAVI MUMBAI

(A constituent unit of MGM INSTITUTE OF HEALTH SCIENCES)

(Deemed to be University u/s 3 of UGC Act 1956)

Grade “A⁺⁺” Accredited by NAAC

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Curriculum for

Ph.D. Operation Theatre and Anesthesia Technology

Academic Year 2025 - 26

Syllabus of Ph.D entrance Operation Theater & Anesthesia Technology

UNIT I: PRE-OPERATIVE ASSESSMENT:

1. History Taking - Chief complaints, present illness, past history, Personal history, Family history, Birth history, immunization. Medications therapies, Allergy, Occupation, Social status, Previous Surgeries & Anesthesia. Deep breathing exercises- Exercises, physiotherapy, Chest physio postural drainage. Weight reduction, counseling soft surgical diet, Bowel preparation. Medications- Drugs to be discontinued/ stopped, Drugs to be continued. Oral & dental hygiene
2. ASA grading: its interpretation and importance. Airway assessment - Mallampati, Wilson, IDL, Cormack and Lehane, thyromental, interincisor gap, anterior mandibular protrusion, cervical spine extension, sternomental distance.
3. Trauma - Shock grades.
4. MEWS- Modified Early Warning Score Emergency Nature.
5. Type of patients & presentation: Pain, distension, bleeding, vomiting, GI disturbances, oliguria, anuria, oedema, respiratory insufficiency.
6. Cardiac Fitness Index - Goldman Parsonnet, cardiac risk factors, NYHA, METs, Charlson's comorbidity index.

UNIT II: Surgical Equipment's:

1. Principle of Surgical equipment and their uses, Members of surgical team; Role of operation theatre technician; Various techniques of incisions.
2. Operating tables; Suction machine; Diathermy machine;
3. Types of Operation table and positions, use of Diathermy machine, use of Suction machine, Suction tubes, lights, checking and arranging of instruments on the table, instrument trolleys

UNIT III: ANESTHETIC EQUIPMENTS AND PROCEDURES:

1. Airway equipment and their accessories
 - Surgical airway equipment,
 - Optical laryngoscopes
 - Airway introducers,
 - Alternative to intubation Equipment's for difficult airway

UNIT IV: ADVANCED ANESTHESIA TECHNIQUES:

1. Vascular cannulation:
 - Central neuraxial blockade,
 - Potential benefits of central neuraxial block,
 - Mechanism of action,
 - Spread, uptake & elimination,

- Ultrasound for central neuraxial blockade
 - Peripheral nerve blocks
 - Post anesthesia care
2. General anesthesia:
 - Types and techniques,
 - Awareness during anesthesia,
 - Complications,
 - The long-term effects of general anaesthesia,
 - Management of general anesthesia
 3. Anesthetic emergencies:
 - Airway emergencies,
 - Anaphylaxis,
 - Local anesthetic toxicity,
 - Malignant hyperthermia
 4. ACID - BASE DISORDERS AND FLUID BALANCE- ABG analysis, Normal ABG value, Crystalloid and colloids: Differences, indications, Monitoring drip rate, Fluid balance: Intake/output chart
 5. BLOOD TRANSFUSION- Blood Grouping and cross matching, Whole blood, packed RBC, Blood components and indications, Technique of blood transfusion, Complications of Blood Transfusion, Anaphylactic reaction.

UNIT V: Anesthesia Techniques and management:

1. Anesthesia Techniques:
 - Sedations
 - Spinal anesthesia
 - Epidural anesthesia
 - General anesthesia
2. Anesthesia Management:
 - Premedication
 - Patient Positioning,
 - i/v fluids,
 - Transfusions
3. Peripheral nerve blocks and Post anesthesia care
4. ACID - BASE DISORDERS AND FLUID BALANCE- ABG analysis, Normal ABG value, Crystalloid and colloids: Differences, indications

Director