

THE TAMIL NADU Dr. M.G.R. MEDICAL UNIVERSITY

69, ANNA SALAI, GUINDY, CHENNAI - 600 032.



SYLLABUS

OF

M.Sc. ACCIDENT AND EMERGENCY CARE TECHNOLOGY

ACADEMIC YEAR 2024 – 2025 SESSION ONWARDS

M.Sc. ACCIDENT AND EMERGENCY CARE TECHNOLOGY

(2 Years Degree Course)

Learning Objectives:

- Hands on training on Airway and Difficult Airway equipments (laryngoscope, bougie etc.) defibrillator, monitors, different surgical instruments, nebulization machine, ventilator etc.
 - Training in aseptic techniques
 - Exercise empathy and a caring attitude towards patients.
 - Maintain professional integrity, honesty and high ethical standards
 - Capability of handling adverse reactions and emergencies in ER.
 - Demonstrate skills in maintenance of equipments and proper documentation.
- Be a motivated teacher - defined as one keen to share knowledge and skills with a colleague or a junior or any learner.

Expectation from the future graduate in the providing patient care

1. Student should be able to demonstrate comprehensive knowledge of managing all types of emergencies including trauma.
2. Student should be able integrate knowledge with practice in handling and maintaining various equipments in ED
3. The student must be well versed with infection control and Biomedical waste management
4. Student must be capable of ED management, medical record ,consent and accreditation & management policies implementation

5. Student should be able to assist advanced patient care during Pre-hospital transport and ED.
6. Should be able to function as a part of a team, develop an attitude of cooperation with colleagues, and interact with the patient and the clinician or other colleagues to provide the best possible management.
7. Always adopt ethical principles and maintain proper etiquette in dealings with patients, relatives and other health care personnel and to respect the rights of the patient including the right to information, privacy and second opinion.
8. Student should have ability to work independently and take responsibility for his own work, collaborating in activities of clinical research, training ethical and evidence-based practices.

SYLLABUS (I year)

Preparatory EMS systems, Roles and Responsibilities of the Paramedic

The Basics

- Illness and injury prevention
- Medical and legal issues– Ethical Issues
- Vascular Access and Medication Administration
- Patient Communication

Airway

- Airway Management and ventilation
- Patient Assessment Patient History

Physical Examination

- Patient Assessment
- Critical Thinking and Clinical Decision Making
- Communications and Documentation

Trauma

- Trauma Systems and Mechanism of Injury
- Bleeding and shock
- Soft-Tissue Injury
- Burns

Head and Face Injuries

- Spine Injuries
- Thoracic Injuries
- Abdomen Injuries
- Musculoskeletal Injuries
- Injuries to the Abdomen and Genitourinary Tract
- Fractures, Dislocations, and Sprains
- Multiple Injuries

Principles of Advanced Trauma Life Support

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- The Multi casualty Incident–
- Responding to the call
- Communications and dispatching–
- Rescue and extrication– Emergency & Trauma Care Technology

Non – Emergency patients

- Amputees and artificial limb patients

General principles

- Patient positioning
- Lifting aids
- Blankets

Examinations and Assessment Pre-Hospital Special Procedures

- Major incidents
- Civil disturbances
- Hazardous substances
- Managing violence
- Assisting the Paramedic

Operations

- Ambulance Operations
- Medical Incident Command
- Terrorism and Weapons of Mass Destruction
- Rescue Awareness and Operations
- Hazardous Materials Incidents
- Crime Scene Awareness

II Year SYLLABUS

PREHOSPITAL CARE:

1. Emergency medical Services :

To be able to enumerate the fifteen key elements of EMS System .

PREHOSPITAL EQUIPMENT:

- To identify the four basic qualities of EMS Equipment –
- To identify the types of first response vehicles , communication equipment, PPE
- To be able to efficiently use EMR during transport and for patient intimation.
- To be able to use equipment for stabilization, resuscitation and treatment in the pre-hospital setting

DISASTER MANAGEMENT

Disaster Preparedness

- To define disaster, disaster planning, field emergency response
- To be able to work with agencies involved in planning
- To be able to do disaster exercises, hospital emergency operation plan, its components and execution.
- To enumerate Decontamination guidelines, triage and treatment
- To be a part of Field disaster response and ED Disaster response
- To effectively Communicate- disaster site to hospitals, distribution of casualties to receiving hospitals, management of on-site disaster medical teams from hospitals.
- ED Disaster Response with Triage Categories.

- To be able to work in collaboration with the disaster team in Natural disasters, trauma, chronic
- medical conditions, handling of bodies and in Bomb and blasts, Crush injuries
- To enumerate the Factors affecting Blasts, clinical features and Diagnosis.
- To describe Crush injury and Crush Syndrome.
- To be able to work as a team in Chemical disaster, know the Hazardous materials exposure limit guidelines
- To work as a team to recognize Bio-terrorism ,response to Bio-terrorism incident, infection control and decontamination
- To know the basics of Radiation injuries-Biological effects of ionizing radiation , emergency response planning, ED preparation, triage principles and treatment

RESUSCITATION

- To be able to recognize Sudden cardiac death, Prevention, Rescue .
- To know the basic Approach to Non-Traumatic Shock, Allergies and Angioedema
- To know the basics of Acid Base Disorders. Fluid and Electrolytes.
- To efficiently help in Procedures, Anaesthesia, Analgesia and wound management
- TO be able to define TOXICOLOGY, ABUSE, ASSAULT

SYSTEM WISE EMEERGENCIES

- TO explain the basics of CVS-chest pain, cardiogenic shock, syncope, venous thromboembolism including pulmonary embolism, Pulmonary disorders-Respiratory distress, Pneumothorax, Bronchial asthma and COPD, GIT-Upper and Lower GI bleed, Nausea vomiting and diarrhea, Bowel obstruction, Renal and genital disorders, Obstetrics-Abnormal uterine bleed, pelvic and adominal pain , non obstetric emergencies, obstetric emergencies
- To know the basics of Neonatal and paediatric trauma, transport and resuscitation
- To explain the features of INFECTIOUS DISEASES- Sepsis, Food and water borne illness
- To enumerate the Preventive aspects with regard to OCCUPATINAL EXPOSURE, STANDARD PRECAUTIONS to be followed
- To know the basics with regard to Stroke syndrome, spontaneous and subarachnoid and intracerebral haemorrhage, COMA, seizures.

TOXICOLOGY

- To be able to help efficiently in the GENERAL MANAGEMENT, SPECIFIC MANAGEMENT of THERMAL INJURY, CHEMICAL INJURY, CO POISONING, LIGHTNING AND ELECTRICAL INJURIES,BITES AND STINGS
- To analyse and explain HIGH ALTITUDE SITUATION, BURNS-ALL TYPES

- To explain the basics of ENDOCRINE DISORDERS-DM, HHNKCOMA, MYXOEDEMA CRISIS, THYROID STORM, HYPOADRENAL CRISIS.,HAEMATOLOGY AND ONCOLOGY DISORDERS
- TO know the basics of TRANSFUSION THERAPY
- To explain the basic emergencies related to ENT AND ORAL cavity,FACE, JAW, EYE DENTAL, DERMATOLOGY, PREGNANCY
- To explain the basics of REGION WISE TRAUMA-HEAD, NECK, SPINE, THORAX,PULMONARY, CARDIACABDOMEN, LANKS, EXTREMITIES, GENITOURINARY
- To know the basics of ORTHOPAEDICS-COMPARTMENT SYNDROME, COMPOUND FRACTURES, NEURO VASCULAR COMPLICATION, ACUTE OSTEOMYELITIS, SEPTIC ARTHRITIS, DISLOCATIONS
- To know the basic PSYCHIATRIC DISORDERS-Agitation, Delirium, Psychosis, substance abuse, Mood and anxiety disorders, Mental Health disorders of Elderly
- To know the basic handling of Abuse and Assault-Female and Male sexual assault, violence and abuse, abuse of elderly and impaired
- To enumerate the basic principles of handling TRANSPLANT RECIPIENTS, MORBID OBESITY, INJECTION DRUG ABUSERS, TRANSGENDERS, PALLIATIVE CARE, DEATH NOTIFICATION and LEGAL ISSUES