NATIONAL POSTGRADUATE MEDICAL COLLEGE OF NIGERIA

RESIDENCY TRAINING CURRICULUM AND GUIDELINES

FACULTY OF EMERGENCY MEDICINE

APPROVED BY THE SENATE ON 23RD JULY, 2020

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NATIONAL POSTGRADUATE MEDICAL COLLEGE OF NIGERIA

FACULTY OF EMERGENCY MEDICINE

CURRICULUM AND GUIDELINES

FOR

RESIDENCY TRAINING PROGRAMME

IN

EMERGENCY MEDICINE

TOWARDS

THE FELLOWSHIP OF THE MEDICAL COLLEGE IN

EMERGENCY MEDICINE (F.M.C.EM)

FIRST EDITION 2020

TABLE OF CONTENTS

Title page..... 1
Table of contents..... 2

ACKNOWLEDGEMENT 5

CHAPTER 1

Historical background..... 6

CHAPTER 2

Introduction and Programme Philosophy..... 8

CHAPTER 3

Mission statement..... 10

Vision statement 10

CHAPTER 4

The Residency Training Programme in Emergency Medicine..... 11

Admission Requirements..... 11

Accreditation of Transferable Competences..... 12

Summary of Competences 14

CHAPTER 5

Basic Science Training..... 15

Applied Physiology..... 15

Pathology..... 17

Anatomy..... 18

Blue Printing For Basic Sciences MCQ 20

CHAPTER 6

Junior Residency Training..... 23

Goals of Junior Residency Training..... 23

Format of Training..... 23

Clinical Rotation by Academic Year for Junior Residency 23

Learning Methods..... 24

Calculation of Credit Units 25

Mandatory Courses..... 27

Core Programme

1. General Emergency Medicine..... 27
2. Paediatric Emergency Medicine..... 30
3. Anaesthesia..... 37
4. Critical Care Medicine..... 38
5. Internal Medicine..... 41

6. Surgery in General..... 47
7. Otolaryngology/Ophth 52
8. Obstetrics & Gynaecology..... 53
9. Psychiatry..... 54
10. Diagnostic Radiology..... 55
Summary of Part I Credit Units..... 56
Summary of Blue Printing For Part I MCQ 64
Blue Printing for Part I OSPE 65
Blue Printing for Part I OSCE 66

CHAPTER 7
Senior Residency Training..... 67
Entry Requirements..... 67
Goals of Senior Residency Programme..... 67
General Educational Objectives..... 67
Format of Training..... 68
Clinical Rotations by Academic Year for Senior Residency 68
Learning Methods..... 69
Elective Subspecialties 70

Part II Compulsory Courses..... 71
Neonatal Critical Care 71
Point of Care Ultrasonography 72
Research Methodology 72
Health Resources Management 73
Summary of Part II Credit Units..... 74
Blue Printing for Part II MCQ 75
Blue Printing for Part II OSVVA 78
Blue Printing for Part II OSCE 78
Summary of Clinical Rotation by Academic Year..... 79
Summary of Clinical Rotation by Credit Units and Contact Hours 80

CHAPTER 8
Evaluation..... 81
Formative Assessment..... 81
Summative Assessment..... 81
Pre-Residency Fellowship Examinations..... 82

Part I Fellowship Examinations..... 82
Part II Fellowship Examinations..... 83
The Proposal..... 83
The Dissertation..... 84
CHAPTER 9
The M.D Programme..... 86
Admission Requirement 86
Method of Application 86
Research Proposal 86
Examination of Dissertation..... 86
Recommended Field of Study..... 87
Course Outlines 88

CHAPTER 10
Accreditation..... 91
Accreditation Criteria..... 91

ACKNOWLEDGEMENT

This curriculum was put together after reviewing the current curricula of the existing College Faculties and the curriculum documents of some International Postgraduate Colleges and Emergency Medicine Associations; African Federation of Emergency Medicine(AFEM), International Federation of Emergency Medicine (IFEM), Komfo Anokwe Teaching Hospital Ghana, Royal College of Emergency Medicine, to mention a few.

CHAPTER 1

HISTORICAL BACKGROUND

Emergency Medicine (EM) is a relatively new medical specialty when compared with other age-old specialties such as Surgery, Internal Medicine and Paediatrics. In the United Kingdom, the Casualty Surgeons Association (CSA) was the forerunner of the specialty while in the United States of America, the American College of Emergency Physicians was responsible for setting standards for training as far back as 1976. The two organizations continue to champion the course of the specialty in their respective domain until 1991 when in collaboration with the Canadian Association of Emergency Physicians (CAEP) and the Australasian College for Emergency Medicine (ACEM) founded the International Federation of Emergency Medicine (IFEM). It is pertinent to mention that the first Emergency Residency Programme in the world began in 1970 at the University of Cincinnati while the first Fellowship of the Faculty of Accident and Emergency Medicine (FFAEM) took place in October 1996.

These activities paved the way for the establishment and practice of Emergency Medicine globally. Currently there are almost one hundred countries where EM is recognized and practiced as a specialty of Medicine. Three stages of Emergency Medicine development exist : Underdeveloped, Developing and Mature. In underdeveloped systems, EM is not recognized as its own field and specialty systems for patient care do not exist. In developing systems, EM is recognized as a specialty, residency training is usually underway and a National EM society

often exists. In mature systems, academic EM, subspecialty fellowships, national databases and peer-reviewed journals are well established

In Sub-Saharan Africa, very few countries have standard training programmes and functional Emergency Medicine Associations. In order to move with global trends in Postgraduate Medical Training and improve the National Emergency Medical System(EMS), the National Postgraduate Medical College of Nigeria (NPMCN) recognized EM as a principal specialty in 2014 and created the Faculty of Emergency Medicine by the inauguration of the Faculty Board on the 27th May 2019.The establishment and recognition of a Faculty of EM has put Nigeria well on its way of developing a responsive and relevant EMS spearheaded by trained and certified practitioners. The Faculty Board was given the mandate to develop the Curriculum and the training guidelines for EM and to work out the modality for the take-off of the programme in the college and country as a whole.

CHAPTER 2

INTRODUCTION AND PROGRAMME PHILOSOPHY

Emergency Medicine is a medical specialty based on the knowledge and skills required for the prevention, diagnosis and management of the acute and urgent aspects of illness and injury affecting patients of all age groups with a full spectrum of undifferentiated physical and behavioural disorders. It further encompasses an understanding of the development of pre-hospital and in-hospital emergency medical systems and the skills necessary for their developments.

In Nigeria, the high levels of violence, road traffic crashes, armed robbery attacks and rampant diarrhoea diseases highlight the need for efficient and responsive Emergency Medical System (EMS). This need, coupled with the dearth of Emergency Physicians, is the basis for the establishment of a training programme in Emergency Medicine in the country. The specialist training programme must conform to National and Institutional Regulations and must take into consideration the educational structure of the College and the existence of other Faculty Programmes.

The Emergency Physician should demonstrate competences in the following areas:

- S/He should be equipped with requisite knowledge and skills to make unequivocal decisions for the management of all forms of acute injury and illness.
- S/He should possess high standard of professional and ethical behaviours
- S/He should acquire specialized communication and interpersonal skills
- S/He should possess the ability to undertake, publish and teach research

- S/He should acquire management skills that will enable him excel in leadership role, conflict resolution and interpersonal relationships
- S/He should enjoy impacting knowledge on the junior colleagues

Therefore, the Faculty of Emergency Medicine of the National Postgraduate Medical College of Nigeria seeks to train specialists in Emergency Medicine who are able to attend, with competency and proficiency, the numerous critical illnesses confronting the Nigerian Society.

The specialist equipped with the competencies mentioned above should function adequately as a practicing Consultant Emergency Physician.

CHAPTER 3

MISSION STATEMENT

To train Emergency Physician who will demonstrate competency and proficiency in the care of patients with acute injury and illness.

VISION STATEMENT

To establish Emergency Medicine as a medical specialty in Nigeria and produce dedicated Emergency physicians who will ensure excellence in Emergency care to reduce morbidity and mortality.

CHAPTER 4

THE RESIDENCY TRAINING PROGRAME IN EMERGENCY MEDICINE

The National Postgraduate Medical College of Nigeria (NPMCN) was established by the National Postgraduate Medical College Decree No. 67 of September 24, 1979, now Cap N59 Laws of Federation of Nigeria 2004. It was charged with the responsibility of conducting professional postgraduate examinations for candidates in the various specialized branches of Medicine and Dentistry.

The Residency Training Programme (RTP) of the Faculty of Emergency Medicine of the NPMCN takes place in designated accredited training institutions approved by the Senate of the College. These institutions are visited at regular intervals of two/five years by the Faculty Board to ensure compliance with stipulated training guidelines.

ADMISSION REQUIREMENTS

- Bachelor of Medicine, Bachelor of Surgery (MB.BS) or its equivalent from a recognised University.
- Full registration with MDCN (Medical & Dental Council of Nigeria)
- Evidence of completion of the National Youth Service or its exemption
- Pass in the Primary Fellowship Examinations in Emergency Medicine of the National Postgraduate Medical College or its equivalent

ASSOCIATE MEMBERSHIP

All trainees must enrol as Associate Members with the National Postgraduate Medical College of Nigeria at the commencement of training in an accredited institution.

Application for registration as an Associate Fellow is obtainable from the Head of each accredited training centre or from the College. All completed forms should be returned to the College Registrar not later than four months from the admission date into the residency programme. Candidates not registered as an Associate Fellow of the College will not be allowed to sit for the Part I or Part II Fellowship Examination of the College.

NOTE: All updates, developments and regulations for examinations, trainings and courses are published on National Postgraduate Medical College e-portal <www.npmcn.edu.ng> The website must be visited regularly for changes and developments.

DURATION OF TRAINING.

The duration of the training programme is six (6) years comprising of three years Junior Residency Programme (Part I) and three years of Senior Residency Programme (Part II).

PART I COURSE

This is the formative stage of the programme. Residents are expected to rotate through core and allied specialties that would expose them to patients with acute injury and illness. In these postings, Residents will acquire appropriate cognitive and technical competencies that will enable them examine, investigate, resuscitate and treat patients who present acutely across a variety of settings. The course is therefore divided into Core and Specialty-related postings as follows :

CORE

General Emergency Medicine	: 8 Months
Anaesthesia	: 3 Months
Critical Care Medicine	: 3 Months
Paediatric Emergency Medicine	: 3 Months

SPECIALTY-RELATED

Internal Medicine	: 6 Months
Surgery	: 6 Months
Obstetrics & Gynaecology	: 2 Months
Psychiatry	: 1 ½ Months
Otorhinolaryngology/Head & Neck	: 1 ½ Months
Diagnostic Radiology	: 2 Months

The Faculty is aware of the existence of experienced Casualty Officers in our various training centres and has therefore made provision for them under Accreditation of Transferable Competences (ATC).

ACCREDITATION OF TRANSFERABLE COMPETENCES (ATC)

ATC is applicable to any doctor who had acquired verified competences in any of the core postings listed above. Such doctor must possess recognized and verifiable certificates and

needs not repeat the posting if there is a desire to join the Emergency Residency Training Programme. However the following guidelines must be fulfilled :

ATC is applicable to the following categories of doctors :

I) Doctors who have completed core training programme in an acute specialty will be granted exemption from rotations related to that specialty.

II) Doctors who have acquired core Emergency Medicine competences while working in Emergency Medicine post. This category of doctors will need to fulfil the following additional conditions before they can be admitted into the programme :

iia) They must possess a minimum of two years current working experience in an Emergency Department with a patient load not less than 20,000 visits/year and which provides care at all hours.

iib) Each applicant will be subjected to individualised assessment of transferable competences by the Faculty Board .

iic) The maximum duration of waiver that can be granted is six months at the Junior Residency stage.

COURSES AND LOG BOOK

The Residents are expected to attend the following courses organized by the College/Faculty during the Junior Residency Programme

Basic Life Support Course (BLS)
Advanced Cardiac Life Support Course(ACLS)
Advanced Trauma Life Support Course(ATLS)
Ethics in Clinical Practice

Update /Review Course in Emergency Medicine

A log book in which Clinical and Technical activities will be recorded should be obtained by the Resident at the inception of the programme.

EXAMINATION

Upon completion of the above-stated postings, the Resident is expected to write the Part I Fellowship Examinations, a success in which gives him the opportunity to move to the next stage of the programme.

PART II COURSE.

Upon passing the Part I Fellowship examinations, candidates are eligible for admission to the Senior Residency Training period of three years during which they are expected to build on knowledge gained during the Junior Residency Course. They are expected to perform at a higher level and demonstrate increasing level of personal responsibility for patient care. They

also consolidate their technical skills and engage in the teaching of Junior Residents. Each candidate is expected to carry out a research project leading to the writing of a dissertation.

At this stage the Residents that are interested in the M.D programme will register for the course in the first year, submit a proposal in the first or second year and defend their dissertation at least six months before the final Fellowship examinations.

The mandatory Part II courses include :

- Research Methodology Course
- Health Resources Management Course
- Advanced Paediatric Life Support Course(APLS)

CORE POSTINGS

Advanced General Emergency Medicine	: 18 Months
Advanced Paediatric Emergency Medicine	: 6 Months
Advanced Neonatal Critical Care	: 1 Month
Advanced Critical Care Medicine	: 3 Months
Advanced Anaesthesia	: 3 Months
Point of Care Ultrasonography	: 2 Months
Electives/ Advanced E.M (M.D) Seminars	: 3 Months

Upon completion of the Senior Residency programme and the passing of Part II Fellowship Examinations, the Candidate is eligible for appointment as Consultant Emergency Physician.

SUMMARY OF COMPETENCES TO BE ACQUIRED DURING THE TRAINING.

1. Cognitive Skills
2. Psychomotor Skills
3. Research Skills
4. Teaching Skills
5. Communication Skills
6. Management Skills

CHAPTER 5

BASIC SCIENCE TRAINING

There is no formal training at the Primary level. Candidates are expected to have passed the Primary Fellowship Examinations before admission to the programme. However an outline of the Basic Medical Sciences as applied to Emergency Medicine is included in this Curriculum for completeness.

Course Objectives: The goal of the Primary Fellowship examinations is to ensure that the candidate has refreshed and updated his basic science knowledge as it relates to the assessment and management of acute Medical and Surgical conditions.

The Basic Sciences Curriculum shall include:

- Applied Physiology
- Applied Anatomy
- Principles of Pathology

APPLIED PHYSIOLOGY

I) SCOPE

II) This includes Biochemistry, Chemical Pathology and Pharmacology. Candidates are expected to have a detailed knowledge of the various aspects as related to Emergency Medicine.

III) Aspects of Physiology to be covered

a) General Physiological Principles

Structure, mechanism and integration of living Cell.
Osmotic pressure, membrane transport, Water and Sodium balance
Peri-operative Fluid Management.

b) Acid Base Balance And Imbalance

pH of body fluids and Buffer Systems of the body.
Respiratory acidosis` and alkalosis.
Clinical Syndromes in acid base imbalance

c) Effects of Physical Agents

Radiation, Hypothermia, Hyperbaric Oxygen
Ultrasound and Magnetic therapy in Emergency Medicine
Regulation of body temperature

d) Cardiovascular system

Structure and Properties of heart muscle
Origin and spread of cardiac impulse; Cardiac cycle
The Electrocardiogram & its interpretation
Heart rate & arrhythmias

Systemic Circulation including arterial blood pressure; its measurement and factors maintaining it.

Physiology of Cardiac Output

Hypertension; Hypotension

Shock; Classification

Venous pressure including CVP measurement

Adult Respiratory Distress Syndrome(ARDS)

e) Haemopoietic System

Blood Lymph and CSF haemostasis.

Blood components

Anaemia; Classification

Haemostasis; Coagulation & Coagulation defects

Blood groups ; Immunoglobulins

Reticulo - Endothelial System

f) Respiratory System

Control of Respiration; Mechanics of ventilation

Oxygen transport/Carbon dioxide transport

Hypoxia; Hypercarbia

Oxygen therapy, Toxicity

Chronic mountain illness, Decompression illness

Cyanosis

Oxygen therapy, abnormal breathing patterns

Pulmonary Function tests

g) Renal System

The Kidney and haemostasis

Physiology of Urine formation

Physiology of micturition

Uraemia

h) Gastrointestinal System

Deglutition, gastrointestinal motility & its functional disorders

Digestion & Absorption; Disorders of absorption

i) Endocrine System

General principles of endocrine physiology

Metabolic and endocrine response to trauma

j) Nervous System

Structure and function of Nervous tissues

Brain including functional divisions of cortex, medulla, limbic system, brain stem and cerebellum.

Intracranial pressure

Spinal cord and reflexes

CSF haemostasis

Physiology of Pain and Sedation

Consciousness & the higher integrative functions

k) Reproductive System

Physiological changes in Pregnancy
Physiology of Pregnancy, Labour, Puerperium, & Menstruation

l) The Liver

Normal hepatic/biliary functions
Changes in hepatic & biliary structure and functions in disease
Liver function tests

m) Pharmacology

General principles, route of administration, mechanisms of action, metabolism & excretion of drugs
Drug interactions and toxicity ; Drug abuse
Familiarity with the following drugs is essential
General and local Anaesthetics
Muscle relaxants
Vasopressors
Systemic analgesics
Drugs used in acute emergencies(Anaphylaxis, Cardiac arrest, shock)

- Bronchodilators
- Antiarrythmics
- Antibiotics
- Antihypertensives etc

PATHOLOGY

i) SCOPE:

A thorough and detailed knowledge of the basic principles of pathology including biochemistry, haematology, immunology, microbiology, histopathology and molecular biology.

ii) General Principles underlying disease processes:

Inflammation, Trauma, Degeneration, Regeneration, Repair, Hypertrophy, Atrophy, Hyperplasia, Thrombosis, Embolism, Infarction, Neoplasm, Circulatory disorder.
Pigments and its disorders
Heterotopic calcification and calculi, Renal failure, Hepatic failure, Jaundice and Amyloidosis.
Laboratory Diagnosis

iii) Haematology

Anaemia, Leukaemia, Myeloproliferative disorders,

Hemorrhagic disorders and Haemoglobinopathies

Principles Underlying blood transfusion

iv) Microbiology

Acute pyogenic infections, Wound infections, Nosocomial infections

Tuberculosis, Syphilis, Actinomycosis, Viruses

Principles of disinfection and sterilization

Principles of immunology and Allergy

v) METABOLIC PATHOLOGY

Disorders of glucose metabolism: Diabetes, glycogen storage disease

Vitamin D deficiency, Osteoporosis, Osteomalacia

Fluid and electrolyte imbalance

vi) CHEMICAL PATHOLOGY

Basic principles of fluid and electrolyte imbalance

Blood chemistry, Hepatic Function tests

vii) TUMOURS AND ONCOLOGY

Carcinogenesis

Spread of malignant tumours

The physics and Effect of ionization

The principles of therapy

Radiotherapy, Immunotherapy and Chemotherapy

GENETICS

Common inheritance patterns seen in Emergency Medicine

ANATOMY

i) Scope

A sound knowledge of Anatomy required for the practice of Emergency Medicine must include general knowledge of regional, applied, surface, radiological and cross-sectional anatomy. The candidate is expected to know the surface projections positions, relations, vascular supply, lymphatic drainage and innervations of each individual organ.

ii) Head and Neck

The Scalp, Cervical vertebrae

Anatomy of the Eye, Ear, Nose

Topography of the anterior and lateral regions of the neck; the root of the neck

Anatomy of the Airway

Pharynx and larynx

Cervical fascia, carotid sheath

Anatomy of the Great Veins/Arteries

Brachial plexus

iii) NEURO-ANATOMY

The brain surface anatomy

The cranial nerves

The meninges

Venous sinuses, Cerebral vessels

CSF formation and flow

Spinal cord and its centres

Essentials of development of the brain, spinal cord and vertebra

iv) Thorax and Abdomen

Anatomy of the thoracic and abdominal walls, abdominal incisions

Osteology of thoracic cage. Thoracic inlet

Anatomy of the back and vertebral column

v) PELVIS AND PERINEUM

Development, gross anatomy and microscopic structure of the pelvic viscera and the perineum.

Pelvic osteology

vi) The Limbs

Osteology of the Limb bones

Pelvic and Shoulder girdles

Classification and description of joints

Surgical Anatomy of the Hand

Axilla, Cubital fossa, Popliteal fossa

THE PRIMARY EXAMINATIONS :

: shall be a 3-hr examination(CBT) of two papers.

: Paper 1 consists of 100 single best- answer MCQ in Applied Physiology and Pharmacology.

: Paper 2 consists of 100 single best-answer MCQ in Applied Anatomy and Pathology.

The following table shows the stratification of primary multiple choice questions.

Table 1. Distribution of Questions for the Primary Fellowship Examinations in Emergency Medicine

LEARNING OBJECTIVE	SPECIFIC TOPICS	Number OBJECTIVE QUESTIONS	TAXONOMY			PERCENTAGE COURSE COVERAGE
			LEVEL 1	LEVEL II	LEVEL 111	
BASIC & APPLIED ANATOMY 30%	Head & Neck	15	7	5	3	7.5
	Thorax	10	3	3	4	5
	Abdomen	6	2	1	3	3
	Pelvis& Perineum	6	2	2	2	3
	Musculoskeletal	15	6	5	4	7.5
	Embryology	5	2	1	2	2.5
	Histology	3	2	1	-	1.5

PATHOLOGY 20%	General Principles	10	5	3	2	5
	Microbiology	8	3	3	2	4
	Oncology	6	3	2	1	3
	Haematology	4	1	1	2	2
	Histopathology	2	-	1	1	1
	Metabolic Pathology	4	1	1	2	2
	Immunology	2	-	1	1	1
	Parasitology	2	-	1	1	1
	Genetics	2	1	1	-	1
PHYSIOLOGY 35%	General Physiology Principles	5	2	-	3	2.5
	Cardiovascular System	15	6	6	3	7.5
	Respiratory	15	6	6	3	7.5
	Gastrointestinal	6	2	2	2	3
	Renal	6	2	2	2	3
	Endocrine	6	2	2	2	3
	Haemopoietic	6	2	2	2	3
	Nervous	6	2	2	2	3
	Reproductive	5	2	1	2	2.5
	General Principles	10	4	4	2	5
	Drugs Interaction and	5	1	2	2	2.5

PHARMACOLOGY 15%	Toxicity					
	Drugs Used in Emergencies	5	1	1	3	2.5
	General & Local Anaesthetics	5	2	2	1	2.5
	Systemic Analgesics	5	2	2	1	2.5
TOTAL		200	74	66	60	100

Level 1: Recall of Facts Level II: Application and Comprehension Level III : Analysis&Evaluation

CHAPTER 6. JUNIOR RESIDENCY TRAINING PROGRAMME.

The main prerequisite for this level is a pass in the primary fellowship examination of the Faculty of Emergency Medicine; or its equivalent or exemption there from. In addition the trainee must be in a training post in an institution accredited by the National Postgraduate Medical College of Nigeria.

This part is expected to expose the trainee to the rudiments of emergency medicine and to a gradual and progressive experience in the act of managing acute injury and illness.

The trainee will be made to rotate through the core and allied specialties during these three years.

GOALS OF JUNIOR RESIDENCY TRAINING.

1. Ability to triage and treat any medical/ surgical emergencies in mass-casualty incidents.
2. Ability to manage critically ill and multiply injured patient.
3. Ability to diagnose and treat as well as anticipate immediate and remote complications of ocular, otolaryngological, psychiatric, obstetrical, orthopaedic, paediatric, cardio-respiratory, hematological , endocrine, neurological, urologic and gastrointestinal emergencies.
4. Ability to recognize basic instruments used in emergency conditions by each subspecialist.
5. Ability to understand the role of the Emergency Physician in an Emergency System Department.
6. Ability for effectively manage the operations of an emergency department and prehospital emergency medical services.
7. Ability for critical appraisal of the medical literature and research methodology as applied to the principles of acute care situations.
8. Demonstrate knowledge of emergency care for the trauma patient.
9. Demonstrate a practice of emergency medicine that is caring, empathic, conscientious and culturally competent.

FORMAT OF TRAINING.

The Junior Residency Programme is organized in such a way that Residents are made to rotate through Clinical departments throughout the three years and take a month vacation leave during the course of the year (Table 2)

TABLE 2. CLINICAL ROTATION BY ACADEMIC YEAR FOR JUNIOR RESIDENCY TRAINING

	Year 1	Year 2	Year 3
EMC 722: General Emergency Medicine	**2 Months**	**3Months**	**3 Months**
EMC 723: Pediatric Emergency Medicine	**1 Month**	**2Months**	**-**
EMC 724: Anaesthesia	**2 Months**	**-**	**1 Month**
EMC 725: Critical Care	**-**	**2 Months**	**1 Month**
EMC 726: Neonatal Critical Care	**-**	**-**	**-**
EMC 727: Internal Medicine	**2 Months**	**2 Months**	**2 Months**
• **EMC 727.1: Cardio vascular**			

• **EMC 727.2: Respiratory**			
• **EMC 727.3: Nephrology**			
• **EMC 727.4: 727D.4.1Gasroenterology/ 727D.4.2Neurology**			
• **EMC 727.5: Infectious**			
• **EMC 727.6: Derma/Haem/Rheu**			
EMC 728: General Surgery	**2 Months**	**2 Months**	**2 Months**
• **EMC 728.1: Trauma**			
• **EMC 728.2: Gastrointestinal**			
• **EMC 728.3: Urology**			
• **EMC 728.4: Musculoskeletal** • **EMC 728.5: Paed. Surg**			
EMC 729: ENT/Ophth	**-**	**-**	**1.5 Months**
EMC 730: Obstetrics/Gynec	**2 Months**	**-**	
EMC 731: Psychiatry	**-**		**1.5 Months**
EMC 732: Diagnostic Radiology	**1 Month**	**1 Month**	**-**

ROTATIONAL POSTINGS IN EMERGENCY MEDICINE.

The Resident in Emergency Medicine does a minimum of 60-hr week with every hour spent doing hands-on learning in the emergency department, clinics, wards, intensive care units, operating theatres, seminars and at the scene of accidents.

Every posting in E.M consists of

i) One-hr per day early morning radiological review
ii) Two-hr per day Ward round, tutorial and or self-directed learning
iii) Two-hr per week Departmental grand round
iv) Four-hr per day of clinic, surgical skill exposure or theatre session.
v) On-call duty as determined by the department

LEARNING METHODS

The trainee would be exposed to the educational training programme of the institution/department during the rotational postings.

This consists of:

. Didactic lectures
. Seminars and symposia
. Journal publication and review
. Clinical meetings
. Clinical case conference
. Clinical supervision / case demonstration
. Ward round/bedside teaching

. Use of audio-visual aids
. Revision update courses
. Self directed learning
. Simulation

COURSE CREDIT UNITS FOR JUNIOR RESIDENCY TRAINING IN EMERGENCY MEDICINE

In accordance with NUC guidelines, ONE CREDIT UNIT is equivalent to

a) 1 hour per week of lectures or tutorials or self-instruction for 15 weeks(15-lecture hours)
b) 3 hours per week of term paper work for 15 weeks (45- term paper hours)
c) 3 hours per week of practicals or clinics for 15 weeks(45-practical hours)

NOTE :

One-year course work is equivalent to three-semester course work (leaving allowance for 4 weeks Annual Leave.)

CALCULATION OF CREDIT UNITS FOR A THREE-MONTH POSTING

. Early morning X-ray conference : 1 hr/day x 5 days x 12 weeks = 60 hr

. Tutorial/ Self-directed learning/Ward round : 2 hr/day x5 days x 12 weeks =120 hr

. Departmental grand round : 2 hr/week x 12 weeks = 24 hr

TOTAL= 60 + 120 + 24 = 204 hr = 14 Credit units

. Clinics/ Practicals/ Theatre : 4 hr/day x 5 days x 12 weeks = 240 hr = 5 Credit units

. Using a 60-hr per week working template : 60 – 37hr =23 hr(This is the Call-duty hr/week)

. Call-duty : 24 hr/week x 12 weeks = 288 hr = 6 Credit units

, Therefore Credit Units for the 3-month posting = 14 + 5 + 6 = 25 Credit Units(Leaving allowance for vacation leave)

Table 3 : CREDIT UNITS FOR PART I ROTATIONAL POSTINGS(CORE SPECIALTIES)

POSTINGS	DURATION	CONTACT LECTURES (Hr/wk)	CONTACT HOURS/WK	CREDIT UNITS
EMC722 General Emergency Medicine	8 Months	5	60	67

EMC723 Paediatric Emergency Medicine	3 Months	5	60	25
EMC724 Anaesthesia	3 Months	5	60	25
EMC725 Critical Care Medicine	3 Months	5	60	25

Table 4: CREDIT UNITS FOR PART I ROTATIONAL POSTINGS(ALLIED SPECIALTIES)

POSTINGS	DURATION	CONTACT LECTURES (Hr/wk)	CONTACT HOURS/WK	CREDIT UNITS
EMC727 Internal Medicine : 727.1Cardiovascular 727.2Respiratory 727.3Nephrology 727.4.1Gastroenterology 727.4.2Neurology 727.5Infectious 727.6Derm/Haem/Rheum	 1 M 1 M 1M 1M 1M 1M	5	60	50
EMC728Surgery in General : 728.1Trauma 728.2Gastrointestinal 728.3Urology 728.4Musculoskeletal 728.5 Paed.Surg	 1M 1M 1M 2M 1M	5	60	50
EMC729ENT/Ophth	1.5M	5	60	12.5
EMC730 Obs/Gynae	2.0 M	5	60	17
EMC731 Psych.	1.5M	5	60	12.5
EMC732Diagnostic Radiology	2 M	5	60	17

Minimum total number of credit units for a full 36-month postings = 142 + 159 = 301 Credit Units

PART I MANDATORY COURSES

CBC 701 BLS / ACLS
CBC 702 ATLS
CBC 703 Ethics in Clinical Practice
EMC 710 Faculty Update Course

SYLLABUS FOR PART 1

1 EMC 722 GENERAL EMERGENCY MEDICINE (67 Units)

1A. Learning Objectives :

The trainee :

Ai) should be familiar with the principles of pre-hospital care including triage at the scene of accident and on arrival in hospital.

Aii) should be able to obtain accurate and complete history ; undertake comprehensive physical examination; make differential diagnoses; and come up with therapeutic options and discharge plans.

Aiii) should be able to identify and treat life threatening and potentially life threatening injuries and illness

Aiv) should be able to access and manage the patient in respiratory distress and shock, including the use of crystalloids, cross-matched blood, type-specific and type O blood.

Av) should understand the principles of cerebral resuscitation in brain illness.

Avi) should know when to request for and recognize the significance of the various investigations and monitoring procedures in use in acute situations.

Avii) should demonstrate competency in all resuscitative skills (BLS, ATLS, ACLS, APLS) and commonly used procedural skills (airway management, deep venous access, urethral catheterisation, etc)

Aviii) should demonstrate competency in the core procedures used on non-emergent patients e.g repair of lacerations, reduction and immobilization of extremity injury, slit lamp examination.

Aix) should be able to recognize the indication for, and demonstrate the ability to perform common core emergency procedures: thoracic needle decompression, chest tube insertion, pericardiocentesis, celiotomy, tracheostomy etc)

Ax) should know the principles of management of chest, abdominal, pelvic, genitourinary, facial, head, spine and burn injury and be conversant with trauma scores.

Axi) should be able to recognize the indications for each of the emergency surgical procedures peculiar to each surgical specialty

Axii) should demonstrate an awareness of the available information systems to support patient care and discharge planning.

1B. COURSE CONTENT

1. Anaphylaxis

2. Choking

3. Cardiac arrest; Cardiac arrhythmias; Myocardial infarction.

4. Respiratory failure

5. Airway obstruction; Foreign bodies, Atelectasis, Pleural effusion, Tension Pneumothorax, Haemothorax, Cardiac tamponade, Flail chest.

6. Pulmonary embolism.

7. The Unconscious patient.

8. Subarachnoid haemorrhage, Subdural haemorrhage, Extradural haematoma

9. Traumatic brain injury

10. Pathology and types of Shock

11. Epidemiology of accidents and emergencies

12. Pathology and generic principles of management of abdominal, thoracic, facial, hand, musculoskeletal, head, pelvic, spinal, genitourinary, blast, radiation, lightning and electrical injuries.

13. The polytraumatized patient.

14. Crush syndrome ; Rhabdomyolysis

15. Sepsis; Septic shock

16. Acute kidney injury

17. Acute abdomen

18. Epistaxis, haemoptysis, haematemesis

19. Acute heart failure

20. Hypertensive encephalopathy

21. Ischaemic stroke

22. Diabetic ketoacidosis

23. Meningitis

24. Tetanus

25. Ectopic pregnancy

26. Seizures

27. The Red eye

28. Vertigo

29. Fever of unknown origin

30. Classification of surgical wounds and principles of wound management and tissue coverage.

31. The violent patient

32. Sickle cell crises

33. General principles of toxicology and management of poisoned patients

34. Disaster medicine

35. Abuse and assault in Emergency medicine

36. Medicolegal and ethical issues in Emergency medicine

1C. CLINICAL AND TECHNICAL SKILLS.

1. Principles of triage
2. Cardiopulmonary resuscitation procedures
3. Basic and advanced airway management : oropharyngeal, nasopharyngeal and endotracheal intubation; laryngeal- mask and bag-mask ventilation.
4. Haemodynamic monitoring, simple and invasive procedures. Indications and use of central venous and arterial lines
5. Interpretation of results : plain X-ray for skeletal injuries, CT, MRI for head, chest, and pelvic injuries, ultrasound for soft tissue pathologies, arterial blood gases, ECG for cardiac function, EEG for cerebral function, blood chemistry and haematology
6. Foetal monitoring in pregnancy and assessment of foetal viability
7. Bimanual and speculum vaginal examination
8. Slit lamp examination
9. Otoscopy
10. Emergency delivery
11. Assessment of the unconscious patient : Glasgow coma scale etc
12. Nebulization and assessment of peak flow
13. Tetanus prophylaxis
14. Lumbar puncture
15. Bladder catheterisation including cystostomy
16. Manipulation of fractures and dislocations under anaesthesia, including splinting of fractures
17. Fasciotomy
18. Removal of foreign bodies from the eye, ear, nose and throat and the airway.
19. Wound exploration, irrigation and closure
20. Incision and drainage
21. Surgical airway : tracheostomy, cricothyroidotomy
22. Episiotomy
23. Thoracentesis
24. Paracentesis
25. Laparotomy
26. Amputations
27. Core emergency modalities in point of care Ultrasound including
    - Basic echo
    - Lung

-Trauma and Critical care
- Musculoskeletal applications
-First trimester obstetrics
-Genitourinary applications for kidney and bladder assessment

2. EMC 723 PAEDIATRIC EMERGENCY MEDICINE(25 Units)

Paediatrics is a medical specialty focussed on the knowledge and skills required for the prevention, diagnosis and management of all aspects of illness and injury affecting children of all age groups (0-18 years). Paediatric Emergency Medicine (PEM) is a subspecialty of both Paediatrics and Emergency Medicine.

The child is not a mini adult. The child has its peculiar anatomic and physiologic features with a spectrum of pathological conditions that is different from that encountered in adult. The learning objectives, course content and the technical skills are therefore not exactly the same as in the adult.

2A. LEARNING OBJECTIVES

The trainee :

Ai) should be familiar with the peculiar anatomic, physiologic and pathologic characteristics of the paediatric patient

Aii) should be familiar with the principles of prehospital care including triage at the scene of accident and on arrival in hospital.

Aiii) should have the ability to look after patients with a wide range of pathologies from life threatening to the self limiting, within all paediatric age groups in the emergency department setting.

Aiv) should be able to conduct a primary assessment and take appropriate steps to stabilise and treat critically ill and injured children.

Av) should be familiar with paediatric formulas and drug doses for various paediatric situations/conditions

Avi) should have the ability to rapid stabilisation with intravenous access and fluid or blood administration when necessary

Avii) should be conversant with the differential diagnosis and management of airway obstruction in children

Avii) should be able to describe the causes of loss of consciousness in children

Aviii) should be able to recognize and treat shock in children

Aix) should be able to do a clinical assessment of the child with fever and employ the traffic light system to identify the likelihood of serious illness.

Ax) should be able to identify the early warning signs of sepsis; initiate early resuscitative measures including the early goal-directed therapy.

Axi) should be familiar with the pathology and principles of management of chest, abdominal, spine, neck and burn injuries.

Axii) should acquire basic and advanced paediatric life support skills

Axiii) should develop a high index of suspicion and ability to recognise child abuse

Axiv) should be familiar with the causes and management of acute abdomen in children

Axv) should know the differential diagnosis of painful limp in children

Axvi) should be familiar with the peculiar features and treatment of paediatric fractures

Axvii) should be able to demonstrate competency in the core procedures used in paediatric emergencies.

2B. COURSE CONTENT

1. Cardiology

a. Heart failure
b. Arrhythmia
c. Syncope
d. Cardiac inflammation
e. hypotension

2. Dermatology

a. Life threatening allergies
b. Eczema
c. Bites and infestations
d. Non blanching rash

3. Endocrinology and metabolic medicine

a. Diabetes Ketoacidosis (DKA)
b. Hypoglycaemia
c. Adrenal insufficiency
d. Acid Base balance

4. Gastroenterology

a. Acute abdominal pain
b. Diarrhoea &Vomiting
c. Severe Acute Malnutrition: stabilization phase
d. Surgical ; Appendicitis, GIT obstructions - intussusception, volvulus etc
e. Gastro intestinal bleeding
f. Acute liver failure
g. Recurrent abdominal pain
h. Non-surgical abdominal pains
i. Constipation

5. Gynaecology and Obstetrics

a. Ectopic

b. STDs
c. Septic abortion
d. Urogenital malformation in ED(Emergency Department)

6. Haematology and Oncology

a. Severe malaria
b. Sickle cell
c. Anaemia
d. Purpura
e. Disseminated intravascular Coagulopathy (DIC)
f. Leukaemia/ lymphoma
g. Immunocompromised patient

7. Infection, Immunology and Allergy

a. Sepsis, SIRS and Septic shock
b. Febrile child
c. vaccine preventable- DPT, TB, Yellow fever, Hepatitis
d. Common exanthems
e. Needle stick
f. Allergic conditions and Anaphylaxis
g. Kawasaki disease

8. Neonatology

a. Congenital heart disease
b. Jaundice
c. Sepsis
d. Perinatal asphyxia

9. Nephro-urology

a. Urinary tract infection(UTI)
b. Hypertension
c. Acute scrotal pain
d. Peritoneal dialysis

10. Neurology

a. Coma
b. Meningitis
c. Cavernous sinus thrombosis
d. Seizures
e. Headache
f. Intra Cranial space occupying lesions
g. Stroke syndrome

11. Neurosurgery

a. Blocked shunt
b. Infected shunt

12. Ophthalmology

a. Trauma
b. Conjunctivitis
c. Chemical injury
d. Bell's palsy
e. Glaucoma
f. Cataract
g. retinoblastoma

13. Orthopaedics

a. Shoulder
b. Elbow
c. Wrist
d. Hand
e. Pelvis hip
f. Knee
g. Leg
h. Ankle
i. Foot
j. Plastic surgery

14. Poisoning and accidents

a. Burns
b. Drowning

15. Major incident

a. mass casualty

b. disaster

c. epidemics

16. Respiratory medicine with Ear, Nose and Throat

a. Asthma
b. Acute stridor
c. Pneumothorax
d. Bronchiolitis
e. Pneumonia
f. Pertussis
g. Earache and discharge
h. Traumatic ear conditions
i. Epistaxis
j. Nasal trauma
k. Acute throat infections
l. Airway obstruction
m. Dental problems

17. Trauma(Management of the injured child)

a. Anticipates injury patterns in common trauma presentations in each age group.
b. Demonstrates knowledge of the PED management of:
c. The child with polytrauma and potential major trauma
d. Bleeding disorders in trauma, (recognition and management of massive Haemorrhage)
e. Chest trauma: perform and facilitate key chest procedures e.g. chest drain insertion
f. Abdominal and pelvic trauma, including the application of pelvic binders
g. Acute head and spinal injury, including spinal cord injury
h. Acute drowning and immersion injury
i. Acute burn injuries (including electrical burns), and subsequent complications
j. All limb-threatening injuries, including open fractures, and been able to reduce
k. Injuries compromising nerve or vascular supply
l. All fractures and ligamentous injuries
m. A dislocated joint, and is able to reduce the joint and manage the onward referral
n. All lacerations and open wounds
o. Rhabdomyolysis and compartment syndrome
p. Crush injury
q. Major burns
r. Spinal injury

18. Child health

Child and Adolescent Mental Health; Performs a mental health assessment relevant to PED care. Risk-stratifies children attending the PED with acute mental health issues to identify those who require admission or urgent intervention

a. Child Protection and children in special circumstances
b. Physical abuse; Demonstrates an understanding of presentation patterns which suggest physical or psychological abuse, is able to stratify risk, and engages with allied professionals in accordance with national and local policies and guidance. Demonstrates an understanding of how societal issues, such as sex trafficking, involvement with gang culture and female genital mutilation (FGM) may impact on children presenting to the PED.
c. Sexual abuse
d. Self-harm
e. Neglect

2C. CLINICAL AND TECHNICAL SKILLS.

1. Acute Life Support/Resuscitation procedures

a. Manual airway clearance manoeuvres

b. Heimlich manoeuvre

c. Airway insertion

d. Oxygen delivery techniques

e. Orotracheal and nasotracheal intubation

f. Mechanical ventilation

g. Use of Continuous Positive Airways Pressure

h. Replacement of tracheostomy tube

i. Cricothyrotomy and percutaneous trans-tracheal ventilation

j. Needle thoracentesis

k. Intraosseous line insertion

l.Direct current electrical cardioversion defibrillation

m. External cardiac pacing

n. Pericardiocentesis

o. Tube thoracostomy

2. Dentistry

a. Re-implantation of tooth
b. Splinting of tooth
c. Reduction of TMJ dislocation

3. ENT Procedures

a. Control of epistaxis with cautery, anterior packing, posterior packing and balloon replacement
b. Cerumen removal
c. Incision and drainage of auricular haematoma
d. Aural wick insertion.
e. Foreign Body Removal i. Nose ii. Ear iii. In soft tissue iv. Eye v. Ring removal.

4. Gastrointestinal procedures

a. Oro/nasogastric tube replacement and care
b. Gastrostomy tube replacement /care
c. Gastric lavage
d. Hernia reduction
e. Reduction of rectal prolapse
f. Stabilization of perforations

5. Genitourinary;

a. Paraphimosis reduction
b. Urethral catheterisation

6. Minor Surgical Procedures

a. Infiltration of local anaesthetic
b. Incision and drainage of abscesses
c. Incision and drainage of paronychia
d. Evacuation of subungual haematoma
e. Wound exploration and irrigation
f. Wound repair with glue, adhesive strips and sutures
g. Fingernail/nail bed injuries
h. Emergency management of amputation

7. Musculoskeletal Techniques

a. Immobilisation techniques
b. Application of Broad Arm Sling
c. Application of Collar and Cuff
d. Application of Thomas Splint
e. Pelvic stabilisation techniques
f. Spinal immobilization/log rolling

8. Fracture/dislocation reduction techniques

a. Shoulder dislocation
b. Elbow dislocation
c. Phalangeal dislocation
d. Supracondylar fracture with limb-threatening vascular compromise
e. Patellar dislocation
f. Ankle reduction,

9. Plaster techniques

a. Back slabs
b. Splints
c. POP

10. Neurological Procedures

a. Lumbar puncture

11. Obstetric and Gynaecological Procedures

a. Normal delivery
b. Gynaecological speculum examination

12. Ophthalmic Procedures

a. Conjunctival irrigation
b. Contact lens removal
c. Eversion of eyelids
d. Use of slit lamp

13. Pain relief and sedation

a. Pain scoring
b. Non-pharmacologic measures
c. Pharmacologic approaches
d. Local anaesthetics
e. Regional nerve blocks
f. Procedural sedation techniques

3. EMC 724 ANAESTHESIA (25 Units)

This curriculum lists the specific knowledge, skills and competences to be attained during the period of training in anaesthesia. The management of the airway is a key skill of the emergency medicine physician and the period of training in anaesthesia will give the grounding needed to look

after the airway safely and effectively. The trainee will be expected to be competent in cardiopulmonary resuscitation in all age groups and in special circumstances. The trainee will be expected to demonstrate the fundamentals to the delivery of safe anaesthesia and sedation in ASA 1 and ASA 2 patients presenting for emergency procedures.

3A. LEARNING OBJECTIVES.

The trainee :

Ai) should be able to undertake preoperative assessment including airway assessment and optimisation of the emergency surgical patient.

Aii) must be familiar with the drugs used in anaesthetic practice (premedication, induction agents, volatile anaesthetic agents, muscle relaxants, local anaesthetic agents)

Aiii) should learn the principles of pain management including the pharmacology of analgesia drugs.

Aiv) should learn the principles of sedation including the pharmacology of sedative drugs.

Av) should be conversant with clinical, noninvasive and invasive monitoring techniques.

Avi) should demonstrate knowledge of the principles of general anaesthesia ,regional anaesthesia and monitored anaesthetic care especially in emergencies (surgical, obstetrical and paediatrics).

Avii) should demonstrate ability to administer local anaesthetics including knowledge of the pharmacology of local anaesthetic agents.

Aviii) should be able to recognise cardiorespiratory arrest and develop skills in cardiopulmonary resuscitation in adults, children and newborns including do not resuscitate (DNR) and advanced directives.

Aix) should demonstrate a clear understanding of basic and advanced airway management ; bag-valve-mask device, nasotracheal and endotracheal intubation.

Ax) should understand the indications for oxygen therapy and proper use of various oxygen therapy devices

Axi) should demonstrate ability to obtain a surgical airway .

Axii) should demonstrate ability to intubate in emergency situations including rapid sequence induction, obesity, pregnancy, increased intracranial/intraocular pressure.

Axiii) should be familiar with indications for admission to Critical Care Unit.

3B. COURSE CONTENT

1. Pharmacology and Pharmacokinetics of
   : intravenous anaesthetic agents
   : muscle relaxants
   : volatile anaesthetic agents
   : anticholinergic
   : anticholinesterase
   : local anaesthetic drugs
   : analgesics
   : sedative agents

2. Physiology of Pain and pain management
3. Anaesthetic equipments
4. General anaesthesia
5. Regional anaesthesia
6. Local anaesthesia
7. Rapid sequence induction
8. Cardiopulmonary resuscitation
9. Respiratory obstruction
10. Monitoring in Anaesthesia

3C. CLINICAL AND TECHNICAL SKILLS

- Basic airway maintenance techniques
- Use of airway management devices
- Manual ventilation
- Laryngeal mask airway insertion
- Prepare equipment and demonstrate Trachea intubation
- Cricothyrotomy – needle and surgical
- Failed intubation drill
- Recovery position
- Perform CPR
- Safe defibrillation
- Anaesthesia machine check
- Deliver anaesthesia for ASA 1 & 2 patients
- Rapid sequence induction
- Simple peripheral nerve blocks, Biers' block
- Sedation
- Transfer medicine
- Management of Critical incidents

4. EMC 725 CRITICAL CARE MEDICINE (25 Units)

The trainee will be exposed to the critical care setup and management of various critical conditions in the Intensive care unit as well as transfer of the critically ill patient. There will also be a progression in the knowledge and skills of patient monitoring in ICU.

The trainee will be expected to understand the principles of ventilatory support in various clinical situations and initiate ventilation in an appropriate patient

4A. LEARNING OBJECTIVES

The trainee :

Ai) should learn the principles of intensive care unit including indications for admission.

Aii) should learn the application and indications of Scoring Systems in the ICU.

Aiii) should be familiar with prehospital management of mass disasters and transport of the critically ill patient.

Aiv) should demonstrate the ability to rapidly perform history and physical examination in critically ill patients.

Av) should demonstrate knowledge of principles of management of cardiovascular, respiratory, neurological, obstetrical critically ill patients

Avi) should demonstrate ability to perform the following procedures:

:Oro -tracheal intubation

: Nasotracheal intubation

: Cricothyroidotomy

:Needle thoracostomy

:Tube thoracostomy

:Central intravenous placement

:Arterial line placement

:Arterial blood gases (ABG)analysis

:Foley catheterisation

:Cardiopulmonary resuscitation

:Defibrillation and cardioversion

Avii) should know the indications and complications of ventilation and demonstrate the ability to manage a patient on ventilator.

Aviii) should be familiar with the parameters used for monitoring respiratory functions.

Aix) should understand the indications and complications and rational use of direct and indirect haemodynamic monitoring in the critically ill patients.

Ax) should demonstrate ability to use and interprete data from ECG monitors, ECGs, Cardiac outputs, arterial blood gases, pulse oximetry, haemodynamic monitoring end tidal carbon dioxide monitors.

Axi) should learn the indications for safe delivery of fluids and vasoactive drugs to haemodynamic and metabolic endpoints using Early Goal Directed Therapy.

Axii) should learn the principles of pharmacology and the routes and dosages of drugs recommended for use in cardiac arrest, Shock, sepsis, cardiac failure, respiratory failure, arrhythmias.

Axiii) should demonstrate an understanding of legal and ethical issues in Critical care.

4B. COURSE CONTENT

1.Monitoring techniques

2. Airway management

3. Cardiopulmonary resuscitation

4. Oxygen therapy

5. Cardiac arrest

6. Arrythmias

7. Sepsis

8. Shock

9. Acute respiratory failure

10 Acute renal failure
11 Hepatic failure

12. Cerebrovascular Accident
13. Coma
14. Multiple Injury
15. Severe Burns & Inhalation Injury
16. Neurological Diseases

4C. CLINICAL AND TECHNICAL SKILLS

- Appropriate asepsis for procedures
- Arterial calculation
- Blood Gases measurement and interpretations
- Central line insertion and interpretation of post-procedure CXR
- Measurement and interpretation of central venous pressure.
- Initiation of ventilation
- Discontinuation of ventilation
- Cardioversion and temporary pacing
- Principles of monitoring of respiratory function
- Use of vasoactive drugs and electrolytes
- Actions required for accidental displacement of tracheal tube or tracheostomy

5. EMC 727 INTERNAL MEDICINE (50 Units)

5A. EMC 727.1 CARDIOVASCULAR

5A.1 LEARNING OBJECTIVES

The trainee :

5A.1i) should have the ability to identify, investigate and treat any cardiovascular emergency presenting in the ED

5A.1ii) should learn the clinical features, investigations and management of patients at risk of sudden cardiac death.

5A.1iii) should have a clear understanding of hypertensive urgency and hypertensive emergency; and be able to describe their pathogenesis and principles of treatment.

5A.1iv) should be able to recognise, investigate, diagnose and treat circulatory failure

5A.1v) should be able to describe the clinical, ultrasonographic and MRI features of pulmonary embolism

5A.1vi) should be able to recognise and treat acute heart failure.

5A.2 COURSE CONTENT

5A.2i) Congenital Heart Disorders

5A.2ii) Ischaemic Heart Diseases

5A.2iii) Arrythmias

5A.2iv) Inflammatory and Infectious Cardiac disorders

5A.2v) Vascular and thromboembolic Disorders

5A.2vi) Contractility Disorders, Pump failure

5A.3 CLINICAL AND TECHNICAL SKILLS

5A.3i) ECG and its interpretation

5A.3ii) Blind Pericardiocentesis

5B.EMC 727.2 RESPIRATORY.

5B.1 LEARNING OBJECTIVES

The trainee :

5B.1i) should be able to identify, investigate and treat respiratory emergencies presenting in the ED

5B.1ii) should learn the causes, and treatment of respiratory obstruction.

5B.1iii) should be familiar with the guidelines for use of oxygen in respiratory failure.

5B.1iv) should be familiar with the use of severity markers in Asthma and the indications for referral to ICU

5B.1v) should have a working knowledge of Non invasive ventilation.

5B.2 COURSE CONTENT

5B.2i) Acute Respiratory Failure

5B.2ii) Lobar Pneumonia/ Asthma/ TB

5B.2iii) Chronic Obstructive Pulmonary Disease

5B.2iv) Spontaneous Pneumothorax

5B.2v) Haemoptysis

5B.2vi) DVT/Pulmonary embolism

5B.2vii) Acid-Base Disturbance

5B.3 CLINICAL AND TECHNICAL SKILLS

5B.3i) Arterial blood gas analysis

5B.3ii) Thoracentesis

5B.3iii) Nebulization and assessment of Peak flow

5B.3iv) X-ray and CT interpretation of chest pathologies

5C. EMC 727.3 NEPHROLOGY

5C.1 LEARNING OBJECTIVES

The trainee :

5C.1i) should be able to identify, investigate and treat genitourinary emergencies presenting to the ED.

5C.1ii) should demonstrate knowledge of the differential diagnosis, investigations, and initial management of patients presenting to ED with oliguria.

5C.1iii) should be familiar with fluid and electrolyte disturbances in Acute Kidney Injury (AKI)

5C.1iv) should be able to recognise the presentation and treatment of renal calculi

5C.1v) should be able to describe the acute indications for dialysis.

5C.1vi) should be able to recognise the clinical features and prescribe treatment for thyroid storm and diabetic ketoacidosis.

5C.2 COURSE CONTENT

5C.2i) Acute Kidney Injury

5C.2ii) Urinary Stones

5C.2iii) Urinary tract infections

5C.2iv) Diabetes Mellitus

5C.2v) Thyroid Diseases

5C.2vi) Adrenal disorders

5C.2vii) Acid-base Disorders

5C.2viii) Electrolytes Disorders

5C.2vix) Rhabdomyolysis

5C.3 CLINICAL AND TECHNICAL SKILLS

5C.3i) Bladder catheterisation

5C.3ii) Ultrasound of kidneys and bladder

5C.3iii) Interpretation of Urinalysis – dip and microscopy

5C.3iv) Interpretation of Serum electrolytes

5C.3v) Interpretation of ABG and VBG.

5D.EMC 727.4.1 GASTROENTEROLOGY

5D.1 LEARNING OBJECTIVES

The trainee :

5D.1i) should be able to identify, investigate and treat gastrointestinal emergencies presenting to the ED

5D.1ii) should be able to describe the differential diagnosis, investigations and management of a patient with vomiting

5D.1iii) should be able to describe the causes, presentation, and management of Gastro-intestinal bleeding.

5D.1iv) should be able to describe the causes, presentation and management of Intestinal obstruction.

5D.1v) should be familiar with the causes, clinical features and management of acute Liver failure

5D.1vi) should be familiar with the multifarious manifestations of Peptic ulcer disease(PUD) t

5D.2 COURSE CONTENT

5D.2i) Acute Abdomen/ Intestinal Obstruction

5D.2ii) Inflammatory Bowel Disease

5D.2iii) Gastrointestinal Bleeding

5D.2iv) Peptic Ulcer Disease

5D.2v) Jaundice

5D.2vi) Portal Hypertension

5D.2vii) Pancreatitis; Cholecystitis

5D.2viii) Hernia

5D.2ix) Medical/ Surgical Causes of Abdominal Pain

5D.3 CLINICAL AND TECHNICAL SKILLS

5D.3i) Gastric tube placement : NGT, OGT and GT replacement

5D.3ii) Paracentesis

5D.3iii) Peritoneal fluid analysis

5D.3iv) Abdominal ultrasound

5D.3v) X-ray and CT interpretation of abdominal conditions

5E. EMC 727.4.2 NEUROLOGY

5E.1 LEARNING OBJECTIVES

The trainee :

5E.1i) should be able to identify, investigate and treat neurologic emergencies presenting to the ED

5E.1ii) should be conversant with the pathogenesis, clinical assessment, investigation and treatment of unconsciousness

5E.1iii) should be conversant with the clinical presentation, investigations and management of status epilepticus

5E.1iv) should be able to describe the pathogenesis and management of acute spinal cord compression.

5E.1v) should be familiar with the risk factors, the grading and the management of atraumatic subarachnoid haemorrhage.

5E.1vi) should be able to assess the patient with acute headache

5E.2 COURSE CONTENT

5E.2i) Headache

5E.2ii) Vertigo

5E.2iii) Acute stroke

5E.2iv) Transient ischaemic attacks(TIA)

5E.2v) Atraumatic subarachnoid haemorrhage

5E.2vi) Seizures

5E.2vii) Inflammatory and infectious disorders

5E.2viii) Vascular disorders

5E.2ix) Cauda equina

5E.2x) Spinal cord syndromes

5E.2xi) Cranial and peripheral nerve disorders

5E.2xii) Acute spinal cord compression

5E.3 CLINICAL AND TECHNICAL SKILLS

5E.3i) Lumbar puncture and interpretation of CSF analysis

5E.3ii) Brain death examination

5F.EMC 727.5 INFECTIOUS DISEASES

5F.1 LEARNING OBJECTIVES

The trainee :

5F.1i) should be able to identify, investigate and treat life threatening infectious emergencies presenting to the ED

5F.1ii) should learn the pathophysiology, risk and prognostic factors, complications and treatment of Sepsis.

5F.1iii) should be familiar with the clinical evaluation of a febrile patient

5F.2 COURSE CONTENT

5F.2i) Common tropical diseases : Schistosomiasis, Malaria

5F.2ii) Sepsis and Septic shock

5F.2iii) HIV infections and AIDS

5F.2iv) Food and water borne infectious diseases

5F.2v) Tetanus

5F.2vi) Rabies

5F.2vii) Nosocomial infections

5F.2viii) Streptococcal Toxic shock syndrome

5F.2ix) Fever of Unknown origin

5F.2x) CNS infections

5F.2xi) Needle stick injuries

5F.3 CLINICAL AND TECHNICAL SKILLS

5F.3i) Rational use of antibiotics

5G EMC 727.6 DERMATOLOGY, HAEMATOLOGY, RHEUMATOLOGY

5G.1 LEARNING OBJECTIVES

The trainee :

5G.1i) should be able to identify, investigate and treat dermatological, haematological and rheumatologic emergencies presenting to the ED

5G.1ii) should be able to recognise different types of skin lesions

5G.1iii) should learn the use of blood and blood products in the ED

5G.1iv) should be familiar with the systemic manifestations and treatment of Rheumatoid arthritis

5G,1v) should be able to recognise the complications of malignancies and chemotherapy

5G.2 COURSE CONTENT

5G.2i) Anaemias

5G.2ii) Vascular disorders : Ischaemia and bleeding. Acquired bleeding disorders (DIC, coagulation factors deficiency)

Drug induced bleeding (anticoagulants, antiplatelets, fibrinolytics). Idiopathic thrombocytopenic purpura.

5G.2iii) Transfusion reactions

5G.2iv) Complications of Lymphomas and leukaemia

5G.2v) Rheumatoid arthritis

5G.2vi)Congenital : haemophilia, von Willebrand's disease, Sickle Cell Disease, hereditary haemolytic anemia

5G.2vii) Herpes zooster, Eczema, Psoriasis

5G.2viii) Backache

5G.2ix) Gout

5G.3 CLINICAL AND TECHNICAL SKILLS

5G.3i) Arthrocentesis

5G.3ii) Ultrasound of the joint

6. EMC 728 SURGERY IN GENERAL (50 Units)

6A. EMC 728.1 TRAUMA

6A.1 LEARNING OBJECTIVES

Trainee :

6A.1i) should learn the generic principles of trauma management

6A.1ii) should be able to describe the pathology, presentation and management of life threatening chest and abdominal trauma.

6A.1iii) should have the ability to investigate and manage patients with head and spinal injuries

6A.1iv) should have a clear understanding of the pathogenesis and management of secondary brain injury and the use of Glasgow Coma Scale in head injury

6A.1v) should be conversant with the indications for emergency laparotomy

6A.1vi) should be aware of the indications for resuscitative thoracotomy and referral to Cardiothoracic unit

6A.1vii) should understand the principles of fluid replacement in burns

6A.2 COURSE CONTENT

6A.2i) Chest trauma

6A.2ii) Abdominal trauma

6A.2iii) Pelvic trauma

6A.2iv) Head injury

6A.2 v) Maxillo-facial injury

6A.2vi) Spine trauma

6A.2vii) Burns

6A.3 CLINICAL AND TECHNICAL SKILLS

6A.3i} Needle thoracentesis

6A.3ii) Tube thoracostomy

6A.3iii) X-ray interpretations of Chest, abdominal, facial, pelvic injuries

6A.3iv) CT interpretation of thoracic, head and spine injuries

6A.3v) Focussed assessment with sonography in trauma (FAST)

6B. EMC 728.2 GASTROINTESTINAL

6B.1 LEARNING OBJECTIVES

The trainee :

6B.1i) should be able to recognise, investigate and treat acute gastrointestinal illness and injury presenting to the ED.

6B.1ii) should be conversant with the medical and surgical causes of abdominal pain

6B.1iii) should understand the pathogenesis and management of intestinal obstruction

6B.1iv) should be able to describe the causes, investigations and principles of management of bowel perforation

6B.2 COURSE CONTENT

6B.2i) Abdominal pain

6B.2ii) Bowel obstruction

6B.2iii) Bowel perforation

6B.2iv) Appendicitis

6B.2v) Acute pancreatitis

6B.2vi) Acute cholecystitis

6B.2vii) Abdominal aortic aneurysm

6B.2viii) Aortic dissection

6B.3 CLINICAL AND TECHNICAL SKILLS

6B.3i) X-ray and CT interpretation of bowel obstruction

6C EMC 728.3 UROLOGY

6C.1 LEARNING OBJECTIVES

The trainee :

6C.1i) should be able to recognise, investigate and treat urological emergencies presenting to the ED

6C.1ii) should be able to describe the causes of haematuria and the indications for admission into the ED

6C.1iii) should be familiar with the causes of renal colic and their management

6C.1iv) should be able to diagnose the pathology of acutely painful scrotum and prescribe treatment for testicular torsion

6C.1v) should be able to describe the causes of priapism

6C.2 COURSE CONTENT

6C.2i) Scrotal swellings

6C.2ii) Renal Stones

6C.2iii) Priapism

6C.2iv) Urinary tract infection(UTI)

6C.2v) Urinary retention

6C.3 CLINICAL AND TECHNICAL SKILLS

6C.3i) CT and Ultrasound interpretation of renal stones

6C.3ii) X-ray interpretation of Kidney, Ureter & Bladder(KUB) pathologies

6C.3iii) Urethral catheterisation

6C.3iv) Suprapubic cystostomy

6D EMC 728.4 MUSCULOSKELETAL

6D.1 LEARNING OBJECTIVES

The trainee :

6D.1i) should be able to recognise, investigate and treat musculoskeletal emergencies presenting to the ED

6D.1ii) should be able to describe the classification, pathology and the principles of management of open fractures

6D.1iii) should be familiar with the presentation and management of hip fractures in the elderly

6D.1iv) should be able to recognise the presentation of, and management of acute osteomyelitis and septic arthritis

6D.1v) should be able to recognise the clinical features of, and the treatment of compartment syndrome

6D.1vi) should be familiar with the indications and contraindications for non-operative and operative treatment of long bones fractures

6D.1vii) should have a clear understanding of the principles of management of hand injuries/infections

6D.2 COURSE CONTENT

6D.2i) Fractures and Dislocations

6D.2ii) Hip fractures

6D.2iii) Colle's fracture

6D.2iv) Osteomyelitis

6D.2v) Septic arthritis

6D.2vi) Gout

6D.2vii) Hand injuries/ Hand infections

6D.3 CLINICAL AND TECHNICAL SKILLS

6D.3i) Reduction and splinting of fractures with orthosis and plaster of Paris

6D.3ii) Manipulation and reduction of dislocations under local/general analgesia

6D.3iii) Tetanus immunisation schedule

6D.3iv) Fasciotomy

6D.3v) Arthrocentesis

6D.3vi) Wound debridement

6E. EMC 728.5 PAEDIATRIC SURGERY

6E.1 LEARNING OBJECTIVES

The trainee :

6E.1i) should be able to recognise, investigate and treat surgical paediatric emergencies presenting to the ED.

6E.1ii) should be able to describe the embryology and pathology of the common congenital anomalies of the gastrointestinal and central nervous systems.

6E.1iii) should be able to interact with children of different stages of development to elicit the history and undertake a careful, sensitive and flexible examination.

6E.1iv) should acquire the special skills needed for treating emergency situations (e.g airway management and vascular access) in children.

6E.1v) should be familiar with the peculiar paediatric drug dosages and interpretation of investigations.

6E.1vi) should be able to describe the clinical presentation, differential diagnosis and management of acute abdomen in different paediatric age groups.

6E.1vii) should know and respect the legal framework and ethical issues relating to children in the ED including consent and confidentiality.

6E.2 COURSE CONTENT

6E.2i) Abdominal Injury : blunt and penetrating

6E.2ii) Physical Abuse

6E.2iii) Meckel's diverticulum

6E.2iv) Hypertrophic Pyloric Stenosis

6E.2v) Acute appendicitis

6E.2vi) Typhoid perforation

6E.2vii) Adhesive Intestinal obstruction

6E.2viii) Obstructed Strangulated Hernia

6E.2ix) Intussusception

6E.2x) Hydrocephalus

6E.2xi) Hirschsprung's disease & Anorectal malformation

6E.2xii) Scrotal mass

6E.3 CLINICAL AND TECHNICAL SKILLS

6E.3i) Calculation of fluid and electrolyte requirement in shock and dehydration

6E.3ii) X-ray interpretation of acute abdomen

6E.3iii) Paediatric vascular access, including umbilical lines

6E.3iv) Gastrostomy tube replacement

6E.3v) Barium enema

6F. EMC 729 OTOLARYNGOLOGY/HEAD AND NECK/OPHTHALMOLOGY (12.5 Units)

6F.1 LEARNING OBJECTIVES

The trainee :

6F.1i) should be able to recognise, investigate and treat ENT and ocular emergencies presenting to the ED.

6F.1ii) should learn the clinical assessment, the differential diagnosis and treatment of acutely red eye.

6F.1iii) should be familiar with the presentation and management of life threatening ENT conditions

6F.1iv) should be able to describe the pathogenesis and management of epistaxis.

6F.1v) should be able to make a clinical diagnosis of Temporo-mandibular joint dislocation (TMJ).

6F.2 COURSE CONTENT

6F.2i) Conjunctivitis

6F.2ii) Corneal ulcer

6F.2iii) Anterior uveitis

6F.2iv) Corneal trauma

6F.2v) Subconjunctival haemorrhage

6F.2vi) Acute glaucoma

6F.2vii) Acute visual loss

6F.2viii) Foreign bodies in the Eye. Ear, Nose, Throat and the Oesophagus

6F.2ix) Otitis media

6F.2xi) Tympanic perforation

6F.2xii) Epistaxis

6F.2xiii) Tonsilitis

6F.2xiv) Peritonsilar abscess

6F.2xv) Epiglottitis

6F.2xvi) Retropharyngeal abscess

6F.3 CLINICAL AND TECHNICAL SKILLS

6F.3i) Otoscopy

6F.3ii) Slit lamp examination

6F.3iii) Removal of foreign bodies from the orifices

6F.3iv) Control of epistaxis with cautery, anterior packing, and balloon placement.

6F.3v)Aural wick insertion

6F.3vi) Conjunctival irrigation

6F.3vii) Contact lens removal

7. EMC 730 OBSTETRICS AND GYNAECOLOGY (17 Units)

7A. LEARNING OBJECTIVES

The trainee :

Ai) should be able to recognise, investigate and treat obstetric and gynaecologic emergencies presenting to the ED

Aii) should be able to recognise the clinical presentation and management of ectopic pregnancy

Aiii) should be able to describe the causes and management of antepartum and post partum haemorrhage

Aiv) should be familiar with the clinical features, investigations, complications and management of pre-eclampsia

Av) should be able to evaluate sexual assault victims

7B. COURSE CONTENTS

1, Antepartum and post partum haemorrhage
2.Pre-eclampsia and eclampsia
3.Obstructed labour
4.Uterine rupture
5.Deep vein and amniotic fluid embolism
6.Acute foetal distress
7.Hyperemesis gravidarum
8.Spontaneous miscarriage
9.Ruptured ectopic pregnancy
10.Ruptured ovarian cyst
11.Rape/Assault
12.Pelvic inflammatory disease

7C CLINICAL AND TECHNICAL SKILLS

1. Bimanual vaginal and speculum examination
2. Use of ultrasound in pregnancy
3. Rhesus prophylaxis
4. Uterine massage for PPH
5. Emergency delivery
6. Instrumental delivery
7. Caesarian section
8. Manual vacuum aspiration skill

8.EMC 731 PSYCHIATRY (12.5 Units)

8A. LEARNING OBJECTIVES

The trainee :

Ai) should possess the ability to perform comprehensive, culturally appropriate psychiatric assessment of patients of all ages in emergency situations, and to provide evidence-based bio-psycho-socio-cultural management plan, mindful of the impacts of patients physical health.

Aii) should demonstrate ability to manage the agitated, suicidal, homicidal and depressed patient using psychotherapeutic, pharmacological, biological and socio-cultural interventions.

Aiii) should be familiar with the pharmacology of drugs used in psychiatry and the associated toxicologic syndromes

8B. COURSE CONTENT

1.Behaviour disorders :

: affective disorders, confusion and consciousness disturbances

: intelligence disturbances, memory disorders, psychomotor disturbances,

: perception disturbances, thinking disturbances

2.Acute psychosis
: Mania
: Severe depressive illness
: Impulsive control disorders

3. Anxiety Disorders
: Conversion Dissociative disorders
: Panic Attack
:Severe Stress Disorders

4.Deliberate self harm(Self poisoning and injury)
: Suicidal attempt

5. Aggression/violence
: Homicidal tendencies

6. Medication Overdose

7. Severe extrapyramidal side effects of medications(including Neuroleptic malignant syndrome, serotonin syndrome, lithium toxicity etc)

8. Substance use disorders(Acute intoxication overdose and withdrawal states)

9. Psychiatric Syndromes due to medical conditions and trauma
: Delirium
: Acute brain syndrome

10. Psychiatric in special groups: Child and adolescents, geriatric and perinatal psychiatry

8.C CLINICAL AND THERAPEUTIC SKILLS

1. Psychiatric history taking, mental state examination, physical examination and diagnostic formulation in an emergency situation unit.

2. Restraining methods (Chemical, Mechanical and other de-escalation methods)

3. Communicating bad news

4. Psychological intervention techniques (e.g conflict resolution to the patient, treating team and patient relatives) and crises management containing distress.

5. Psychopharmacology and other relevant therapeutic methods

9.EMC 732 DIAGNOSTIC RADIOLOGY (17 Units)

9A. Learning Objectives

The trainee

Ai) should be familiar with the various imaging modalities available in emergencies.

Aii) should be able to assess the strengths and weaknesses of these imaging modalities.

Aiii) should be in a position to choose the most appropriate radiological study in emergency situations based on safety and cost effectiveness

Aiv) should be able to carry out relevant ultrasound diagnostic procedures and know its applicability in certain therapeutic procedures.
Av) should be able to read and interprete the findings of these radiological investigations

9.B COURSE CONTENTS
1, Principles of X-rays, Ultrasound, CT and MRI
2. Introduction to imaging equipment
3. Hazards in Imaging
4. Guidelines on reading and writing radiological reports
.

9.C CLINICAL AND TECHNICAL SKILLS
1. Interpretation of radiological results
2.Writing a radiological report
3.Undertake common diagnostic radiological procedures (CXR, Ultrasound of abscess, abdomen etc)
4.Active participation in CT, MRI and interventional radiography.

SUMMARY OF CREDIT UNITS FOR PART I COURSE.

1. Radiological Round: 1 hr/day x 5 days= 5hr/week for 135 weeks= 675 hr = **45 credit units**.
2. Tutorial/ Ward round/ Self instruction learning: 2hr/day x5 days=10hr/week for 135 weeks=1350 hr = **90 credit units**

3. Departmental Grand round : 2hr/week for 135 weeks =270hr = **18 credit units**

4. Clinics, Practicals or theratre : 4hr/day x 5 days= 20hr/week for 135 weeks= 900hr =**60 credit units**

5. Call duty (using a 60-hr working template) : 24hr/week for 135 weeks = 1080 hr = **72 credit units**
6. Mandatory Faculty Update Course(EMC 710) :30hr/week for 2 weeks = 60 hr = **4 credit units**
7. Mandatory BLS/ ACLS courses(CBC 701) : 8hr/day for 1 week = 32 hr = **2 credit units**
8. Mandatory ATLS course(CBC702) : 30hr/week = 30 hr = **2 credit units**

Total Credit Units for Part I(After adjustment for Vacation Leave) = **293 Credit Units**

A minimum of **293 Credit units** over a period of 36 months in the appropriate postings will make a candidate eligible to sit for Part I fellowship examinations

The Part 1 Fellowship examinations consist of

i) Paper 1(3hr) :Screening Part 1 MCQ : 100 questions in Paper A(Core EM) and 100 questions in Paper B(Allied Specialties)
ii) Paper 2(2hr) : 40 Short answer- questions(Core & Allied EM)
iii) Paper 3(1hr) : 2 Long essay questions(Core EM)
iv) Objective Standardized Long Case(OSLAC) : 2hr
v) Objective Structured Clinical Examination(OSCE) & Picture test : 2hr

TABLE 5 BLUE PRINTING FOR PART I PAPER1 MCQ IN CORE SPECIALTIES IN EMERGENCY MEDICINE.

LEARNING OBJECTIVE	CREDIT UNITS	SPECIALTY TOPICS	NUMBER OBJ QUESTION	TAXONOMY			% COURSE COVERAGE
				LEVEL 1	LEVEL II	LEVEL 111	
GENERAL		Life Threatenng Emergencies	10	3	4	3	10.0
		Airway Management	10	2	4	4	10.0
		Trauma	10	2	3	5	10.0

EMERGENCY MEDICINE 25%		Prehospital Emergency Care Services	3	1	1	1	3.0
		Disaster Medicine	3	1	1	1	3.0
		Environmental Emergencies	3	-	1	2	3.0
		Oncological Emergencies	3	1	1	1	3.0
		Toxicology	3	1	1	1	3.0
		Abuse	2	1	-	1	2.0
		Legal Aspects	3	-	1	2	3.0
		Life Threatening Emergencies	3	-	1	2	3.0
PAEDIATRIC EMERGENCY MEDICINE 10%		Trauma	3	-	1	2	3.0
		Breathing Difficulties in Children	3	1	1	1	3.0
		The Unconscious Child	2	-	-	2	2.0
		Gastro-Intestinal Disorders	2	1	-	1	2.0
		Blood Disorders	2	-	1	1	2.0
		Musculoskeletal Conditions	3	1	1	1	3.0
		Fever ;Fluid/ Electrolyte	2	-	1	1	2.0
ANAESTHESIA 7.5%		Principles&Practice	6	1	3	2	6.0
		Anaesthetic Equipment & Monitoring	4	1	1	2	4.0
		Pharmacologicagents in Anaesthesia	3	1	1	1	3.0
		Regional Anaesthetic Techniques &	2	-	-	2	2.0

		Procedural Sedation					
CRITICAL CARE MEDICINE 7.5%		Indication for admission to CCU	2	1	-	1	2.0
		Monitoring Devices &Techniques	5	1	2	2	5.0
		Life Saving Procedures	5	1	2	2	5.0
		Pharmacology of drugs commonly used in CC Units	3	1	1	1	3.0
TOTAL			100	22	33	45	100%

TABLE 6 BLUE PRINTING FOR PART I PAPER 1 MCQ IN MEDICAL SPECIALTIES

LEARNING OBJECTIVE	CREDIT UNITS	SPECIALTY TOPICS	NO OBJ QUESTION	TAXONOMY			% COURSE COVERAGE
				LEVEL 1	LEVEL II	LEVEL 111	
CARDIOVASCULAR		Life threatening Emergencis, Pathophysiology	2		1	1	2
		Diagnosis, Clinical Instrumentation & Measurement	1	1			1
		Pharmaceutics	1		1		1

		Emergency Dept Management/Definitive Mgt.	1			1	1
RESPIRATORY		Life Threatening Emergencies	1	1			1
		Acute Respiratory Conditions, Pathophysiology	2		1	1	2
		Resuscitative Procedures	1		1		1
		Emergency Dept Management	1			1	1
RENAL/ENDOCRINE		Acute Kidney Injury, Rhabdomyolysis	2		1	1	2
		Thyroid Emergencies, Diabetic Emergencies	2		1	1	2
		Emergency Dept Mgt	1		1		1
GASTROENTEROLOGY NEUROLOGY		Life Threatening Emergencies	1	1			1
		Upper & Lower GI Bleeding	2		1	1	2
		Radiodiagnosis	1		1		1
		Emergency Dept Mgt, Definitive Mgt	1		1		1
INFECTIOUS		Pathophysiology; Sepsis, CNS Infection	2		1	1	2

		Needle stick injuries	1		1		1
		Therapeutic Agents	2		1	1	2
DERM/HAEM/RHEU		Life Threatening Conditions	2	1		1	2
		E.D Management	1		1		1
		Haemoglobinopathies, Blood transfusion	2		1	1	2
TOTAL			30	4	15	11	30%

TABLE 7 BLUE PRINTING FOR PART I PAPER 1 MCQ IN SURGICAL SPECIALTIES

LEARNING OBJECTIVE	CREDIT UNITS	SPECIALTY TOPICS	NO OBJ QUESTION	TAXONOMY			% COURSE COVERAGE
				LEVEL 1	LEVEL II	LEVEL 111	
GASTRO INTESTINAL		Acute Abdomen Diff Diagnosis Pathophysiology	2		1	1	2
		Abdominal Aortic Aneurysym, Acute Limb Ischaemia	2	1	1		2
		Diagnostic Tools & Procedures	2	1		1	2
		Definitive Management	1			1	1

UROLOGY		Acute Urological Emergencies	2	1	1		2
		Haematuria, Urinary Tract Infection	2	1		1	2
		Radiodiagnosis	2		1	1	2
		Emergency Dept Management	1			1	1
MUSCULOSKELETAL		Life & Limb Threatening Emergencies	2		1	1	2
		Bone & Joint Infections	1		1		1
		Acute Fractures & Dislocations	2	1	1		2
		Hand Injuries/Hand Infections	2	1	1		2
		Emergency Dept Management	1			1	1
PAEDIATRIC & NEUROSURGERY		Congenital Intestinal Obstruction Pathophysiology	2	1		1	2
		CNS Malformations, Hydrocephalus, S.bifida	2	1	1		2
		Fluid & Electrolyte Therapy in Children	3		1	2	3

		Child Abuse	1		1		1
TOTAL			30	8	11	11	30%

TABLE 8 BLUE PRINTING FOR PART I PAPER 1 MCQ IN OTHER ALLIEDSPECIALTIES

LEARNING OBJECTIVE	CREDIT UNITS	SPECIALTY TOPICS	OBJ QUESTION	TAXONOMY			% COURSE COVERAGE
				LEVEL 1	LEVEL II	LEVEL 111	
ENT/OPHTH/DENTAL 5%		The Acutely Red Eye	3	1	1	1	3
		Facial Trauma&Dental Emergencies	2	1	1		2
		ENT Emergencies	3	1	1	1	3
		Emergency Department Management	2		1	1	2
Obstetrics & Gynaecology 5%		Gynaecological Emergencies	3	1	2		3
		Obstetric Emergencies	3	1	1	1	3
		Trauma&Pregn; Emergency Contraception, Rhesus prophylaxis	2	1	1		2
		Emergency Department Management	2		1	1	2

PSYCHIATRY 5%		Psychiatric Emergencies	3		2	1	3
		Drug Abuse, Toxicologic Syndromes	3	2	1		3
		Medico-legal aspects of Psychiatric illness	2	1	1		2
		Emergency Department Management	2		1	1	2
Diagnostic Radiology 5%		Indications/ Limitations in Emergency	2	1	1		2
		Principles & Uses of Ultrasound	3		2	1	3
		Interpretation of Results	3		1	2	3
		Hazards of Imaging	2	1	1		2
			40	11	19	10	40%
		TOTAL	100	23	45	32	100%

Level 1- Recall of Facts Level 2- Application & Comprehension Level 3- Analysis & Evaluation

TABLE 9 SUMMARY OF BLUE PRINTING FOR PART I MCQ

	SPECIALTY CONTENT	WEIGHTING %	NUMBER OF MCQ
1	General Emergency Medicine	25	50
2	Paediatric Emergency Medicine	10	20
3	Anaesthesia	7.5	15
4	Critical Care Medicine	7.5	15
5	Internal Medicine	15	30
	Cardiovascular		5
	Respiratory		5
	Renal/Endocrine		5
	Gastroenterology/Neurology		5
	Infectious		5
	Derm/Haem/Rheu		5
6	General Surgery	15	30
	Gastrointestinal		7
	Urology		7
	Musculoskeletal		8
	Paediatric/Neurosurgery		8
7	Otolaryngology/Ophth	5	10
8	Obstetrics & Gynaecology	5	10
9	Psychiatry	5	10
10	Diagnostic Radiology	5	10
	TOTAL	100%	200

TABLE 10 BLUE PRINTING FOR PART I OSLAC MANNED STATIONS

STATION	COMPETENCY	REMARKS
1	HISTORY	Core Specialty
2	HISTORY	Allied Specialty
3	HISTORY	Allied Specialty
4	CASE PRESENTATION	
5	PHYSICAL EXAMINATION	Core Specialty
6	PHYSICAL EXAMINATION	Core Specialty
7	PHYSICAL EXAMINATION	Allied Specialty
8	POST ENCOUNTER PROBE	
9	INVESTIGATION	Lab results + structured question by
10	INVESTIGATION	The examiner.
11	TREATMENT	Structured treatment questions(written/
12	TREATMENT	oral by examiner

TABLE 11 BLUE PRINTING FOR PART 1 OSCE MANNED (5) AND UNMANNED (15) STATIONS

STATION	COMPETENCY	REMARKS
1	TRADITIONAL VIVA	CORE SPECIALTY
2	TRADITIONAL VIVA	ALLIED SPECIALTY
3	SPOT DIAGNOSIS	CORE SPECIALTY
4	SPOT DIAGNOSIS	ALLIED SPECIALTY
5	COUNSELLING	ALLIED SPECIALTY
6	DATA INTERPRETATION	
7	DIAGNOSTIC RADIOLOGY	
8	PHARMACOLOGICAL AGENTS	
9	CLINICAL INSTRUMENTATION	
10	COMMUNICATION/ETHICS	
11	EMERGENCY DEPT MANAGEMENT	
12	EMERGENCY DEPT MANAGEMENT	
13	LIFE-SAVING INTERVENTION	
14	LIFE-SAVING INTERVENTION	
15	EMERGENCY MEDICAL SERVICES	
16	TRAUMA	
17	TRAUMA	
18	LIFE THREATENING CONDITION	
19	LIFE THREATENING CONDITION	
20	COMMUNICATION/ETHICS	

CHAPTER 7

SENIOR RESIDENCY TRAINING

ENTRY REQUIREMENT

The Senior Residency training programme commences after the trainee must have successfully completed the Junior Residency rotational postings and has passed the Part I fellowship examinations of the Faculty of Emergency Medicine.

GOALS OF THE SENIOR RESIDENCY TRAINING IN EMERGENCY MEDICINE

The trainee should be able to:

1. Demonstrate a practice of emergency medicine that is caring, efficient, cost effective and culturally competent without prejudice.
2. Acquire further training in the act of assessing, investigating, stabilising and treating patients with undifferentiated acute illness**.**
3. Demonstrate mastery of the management of the airway in the paediatric and adult age groups.
4. Demonstrate mastery of the emergent and life-threatening conditions that present to ED

5. Demonstrate competency and proficiency in the commonly used core procedures and monitoring techniques

6 Demonstrate mastery of the principles of ATLS, ACLS and APLS

7. Demonstrate an awareness of the available information systems to support patient care and discharge planning

8. Critically appraise the medical literature and research methodology and apply these principles to acute care situations
9. Take the lead and demonstrate the capacity to work in multi professional teams
10. Demonstrate a capacity to manage flow, input and through put in a busy ED
11. Demonstrate compassion in breaking bad news and discussing prognosis with the patients' families.

GENERAL EDUCATIONAL OBJECTIVES

The Senior Residency programme aims to equip the trainee who has passed the Part I fellowship examinations with the relevant knowledge , attitudes, competence and specialized professional and managerial skills required to practice as consultant in emergency departments.

This stage of the programme exposes the trainee to graduating complex situations in EM which allows him to perform at a higher proficiency level than during the junior residency. The senior resident thus assumes progressive responsibilities for patient care and emergency department management and possesses the potential to work with all inpatients and supporting specialities as

well as primary care and pre-hospital services. More opportunities are provided at this stage to research and teach junior colleagues, allied professional and medical students.

By the end of the senior residency programme , each successful resident is expected to be able to perform effectively as a consultant Emergency Physician that can run a typical emergency department.

FORMAT OF THE TRAINING

The Senior residency training lasts a minimum of thirty six months and covers essentially the core areas of EM : General Emergency Medicine, Paediatric Emergency Medicine, Anaesthesia, Neonatal Critical Care and Critical Care Medicine. In addition, the trainee will be expected to have some training in Ultrasonography and will have the opportunity to undertake one elective posting. Residents interested in the M.D programme will register and submit their research proposal in the first or second year and defend their dissertation at least six months before the exit Fellowship examinations.

The candidate for the M.D programme will undergo instructional courses in one specialty area approved by the Faculty Board.

TABLE 12. CLINICAL ROTATIONS BY ACADEMIC YEAR FOR SENIOR RESIDENCY TRAINING

	FOURTH YEAR	FIFTH YEAR	SIXTH YEAR
EMC 822: Advanced General Emergency Medicine	5 Months	5 Months	8 Months
EMC 823: Advanced Paediatric Emergency Medicine	-	3 Months	3 Months
EMC 824: Advanced Anaesthesia	1 Month	2 Months	-
EMC 825: Advanced Critical Care	-	2 Months	1 Month
EMC 826: Advanced Neonatal Care	1 Month	-	-
EMC 827: Advanced Point of Focus Ultrasonography	2 Months	-	-
EMC 828: Elective	1Month		
EMC 998.: Advanced E.M Seminars	2 Months		
EMC 999 Dissertation			

LEARNING METHODS

The trainee would be exposed to the educational training programme of the institution during the postings/rotations.
This consists of:

. Didactic lectures
. Seminars and symposia
. Journal publication and review
. Clinical meetings
. Clinical case conference
. Clinical supervision / case demonstration
. Ward round/bedside teaching
. Use of audio-visual aids
. Revision update courses
. Self directed learning
. Simulation

COURSE CREDIT UNITS FOR SENIOR RESIDENCY TRAINING IN EMERGENCY MEDICINE

CORE POSTINGS

One(1) hour of lecture/tutorial/self-instructional learning every week for three months = 1 credit unit

Three (3) hours of clinical exposures/skills acquisition every week for three months = 1 credit unit

NOTE :

1 year course work = 3- semester course work(leaving allowance for Annual Leave)

Table 13: CREDIT UNITS FOR SENIOR RESIDENCY ROTATIONAL POSTINGS

POSTINGS	DURATION	CONTACT LECTURES (Hr/wk)	CONTACT HOURS/WK	CREDIT UNITS
EMC 822: Advanced General E.M	18 M	5	60	150
EMC 823: Advanced Paediatric E,M	6 M	5	60	50
EMC 824: Advanced Anaesthesia	3 M	5	60	25
EMC 825: Advanced Critical Care Medicine	3 M	5	60	25
EMC 826: Advanced	1 M	5	60	8

Neonatal Critical Care				
EMC 827: Advanced Radiology	2 M	5	60	17
EMC 828: Elective	1 M	5	60	8
EMC 998:Advanced E.M Seminars	2 M	5	60	6
EMC999:Thesis/Dissertation				12

Minimum total number of credit units for complete 36-months postings = **283 units** PLUS **12 units** for Thesis PLUS **6 units** for M.D Seminars.

The Part II programme is a three-year supervised residency training course spread as follows :

First Year :

1. Advanced General Emergency Medicine - 5 Months
2. Advanced Point of Care Ultrasonography - 2 Months
3. Advanced Anaesthesia - 1 Month
4. Advanced Neonatal Critical Care - 1 Month
5. Elective - 1 Month
6. Emergency Medicine Seminar - 2 Months

It is recommended that Ultrasonography and other diagnostic radiology postings be done early to enable the trainee employ the skills in the remaining stages of the training.

ELECTIVE SUBSPECIALTIES.

1. Emergency Medical Toxicology
2. Public Health Emergencies
3. Blood Service Medicine
4. Disaster Medicine
5. Electrocardiography Laboratory
6. Critical Care Ultrasonography
7. Hyperbaric Medicine

The Resident can select one or two of these topics for his/her elective posting.

Second Year :

1. Advanced General Emergency Medicine - 5 Months
2. Advanced Paediatric EmergencyMedicine - 3 Months
3. Advanced Anaesthesia - 2 Months

4. Advanced Critical Care Medicine - 2 Months

Third Year

1. Advanced General Emergency Medicine - 8 Months
2. Advanced Paediatric Emergency Medicine - 3 Months
3. Advanced Critical Care Medicine - 1 Month

Although the resident should have been exposed to the same core postings at the junior residency stage, the senior residency exposes the trainee to a broader scope with a higher level of proficiency.

PART II COMPULSORY COURSES

Research Methodology

APLS Course

Health Resources Management Course

Any other course prescribed by the College or Faculty Board

COURSE OUTLINES

EMC 826 NEONATAL CRITICAL CARE (8 units)

LEARNING OBJECTIVES

The trainee should be able to

i) Perform perinatal and neonatal resuscitations
ii) Resuscitate, stabilise and diagnose high-risk neonates
iii) Evaluate fluid, electrolyte and nutritional requirements of the high-risk newborn
iv) Perform Newborn Life Support

COURSE CONTENTS

1. APGAR Score
2. Normal Child development
3. Indications for admission into Neonatal Critical Care ward
4. The Premature infant
5. Perinatal and Neonatal resuscitation
6. Newborn Life Support

CLINICAL AND TECHNICAL SKILLS

1. Basic respiratory airway

2. CPR

3. EBT

4. Fluid and Electrolyte therapy

EMC 827 POINT OF CARE ULTRASONOGRAPHY (17 units)

LEARNING OBJECTIVES

The trainee should be familiar with the use of ultrasound

i) for rapid diagnosis and procedure guidance in acute and critical care
ii) in Abdominal Aortic Aneurysm, Deep Venous Thrombosis and Obstetrics

COURSE CONTENTS

1. Indications for Point of Care Ultrasonography in Trauma, General Surgery and Obstetrics
2. Principles & Uses of Point of Care Ultrasonography
3. Intraperative Ultrasonography.

CLINICAL AND TECHNICAL SKILLS

1. Extended focussed assessment sonography in trauma(EFAST)
2. Abdominal Aortic Aneurysm(AAA) assessment
3. Focussed Emergency Echocardiography in Resuscitation(FEER)
4. Deep Venous Thrombosis(DVT) assessment
5. Central Venous Access with Ultrasound guidance

CBC 802 RESEARCH METHODOLOGY (2 units)

- General Introduction
- And Spectrum of Research (Types of Health Research and Limitations
- Writing Research Proposal- Planning and Protocol Development
- Principle and Practice of Clinical Governance
- Research Problems, Objectives, Variables, Study Population, Sampling and Questionnaire Design
- Good Clinical Practices and Clinical Trials
- Role of Computer in Medical Research (EPI INFO and SPSS)
- Literature Review, Search Engines, Systematic Review and Meta-analysis
- Correlation, Association Regression
- Ethical Considerations in Medical Research
- Evidenced Based Health Care
- Writing of Dissertation and Defence
- Statistical Consideration in Research
- Basic Principles and Method of Writing Papers For Publications in Journal
- Budget and Sources of Funding for Research

CBC 803 HEALTH RESOURCES MANAGEMENT (2units)

- Overview Management
- Management of Change
- Human Resources Management
- The Policy Process
- Team Building
- Case Studies / Scenarios of Health Resources Management
- Finance for Non-Financial Managers(1)
- Finance for Non-Financial Managers(2)
- Performance Management
- Emotional Intelligence
- Sustainable Development
- Quality Assurance
- Organization and Evaluation of Health Service
- Principle of Health Care Planning
- Health Care Financing
- Materials Resources Management
- Public Private Partnership
- Risk Management
- Strategic Management
- Problem Solving and decision making skills
- Legal Aspects of Medical Practice
- Financial Planning for Physicians
- Leadership Principles and Practice

At the end of the training , a resident should be proficient in managing life- threatening conditions encountered in the Emergency Department :

. Anaphylaxis

. Cardiac Arrest

. Respiratory Failure

. Circulatory Failure

. Complete Airway obstruction

-Traumatic

- Infective

. Life threatening Chest injuries

-Tension Pneumothorax

- Open Pneumothorax

- Massive Haemothorax

-Flail Chest

- Cardiac Tamponade

.Pulmonary Embolism

. Acute Renal Failure

. Sepsis

. Subarachnoid Haemorrhage

. Status Epilepticus

. Acute Stroke

. Hypertensive Emergencies

. Shock

. Major pelvic disruption with haemorrhage

. Diabetic Ketoacidosis

. Hypokalaemia/ Hyperkalaemia

. Erythema Multiformes

. Serotonin Syndrome

. Crush Syndrome

SUMMARY OF CREDIT UNITS FOR PART II COURSE.

1. Radiological round : 1hr/day x 5days= 5hr x 135weeks(9 semesters)= 675hr = **45 credit units**

2. Tutorial or Ward round or Self-instructional learning : 2hr/day x 5days= 10hr x 135 weeks= 1350 hr = **90 credit units**
3. Departmental grand round : 2hr/week = 2hr x 135 weeks = 270 hr = **18 credit units**
4. Clinics, Practicals or theatre : 4hr/day x 5 days = 20hr x 135 weeks = 900 hr = **60 credit units**
5. Call duty(using a 60-hr/week working template) : 24hr/week = 24hr x 135 weeks = 1080hr =**72 credit units**
6. Mandatory M.D Seminars(EMC998) for M.D candidates = **6 credit units** (90hr)
7. Mandatory Health Management Course(CBC803) : 30hr/week = 30hr = **2 credit units**
8. Mandatory Research Methodology Course(CBC 802) : 30hr/week = 30hr = **2 credit units**
9. Dissertation, Proposal; literature gathering EMC 999) : = **12 credit units**

TOTAL NUMBER OF CREDIT UNITS for Part II (After adjusting for Annual Leave) = **293 Credit Units PLUS 12 credit units** for dissertation

A minimum of 293 Credit units over a period of at least 36 months in the appropriate postings and submission of dissertation will make a candidate eligible to sit for the PART II Final Fellowship Examinations

TOTAL NUMBER FOR THE WHOLE PROGRAMME = **293+ 293 = 12 = 598 units**

The Part II Fellowship examinations shall consist of :

i) Written Paper(2Hr) : 150 Single best-answer MCQ on Core EM
ii) Objective Structured VIVA(OSVVA) 2Hr
iii) Objective Structured Clinical Examination (OSCE) and
iv) Dissertation Defence : 1Hr

TABLE 14 Blue Printing for Part 2 MCQ Examinations

LEARNING OBJECTIVE	CREDIT UNITS	SPECIALTY TOPICS	NO OBJ QUESTION	TAXONOMY			% COURSE COVERAGE
				LEVEL 1	LEVEL II	LEVEL 111	
GENERAL EMERGENCY MEDICINE 53%		Life Threatening Emergencies	13	2	3	8	8.7
		Airway Management	12	3	2	7	8.0
		Major Trauma	10	2	2	6	6.7
		Prehospital Emergency Care Services	5	1	2	2	1.3
		Disaster Medicine	5	2	1	2	1.3
		Environmental Emergencies	5	2	1	2	1.3
		Oncological Emergencies	5	1	2	2	1.3
		Toxicology	5	1	1	3	2.0
		Abuse	5	2	1	2	1.3

		Medicolegal Aspects	5	2	1	2	1.3
		Health Care Financing	5	2	2	1	0.7
		Human Resources Mgt	5	1	2	2	1.3
PAEDIATRIC EMERGENCY MEDCINE 17%		Life Threatening Emergencies	3	1	1	1	0.7
		Trauma	3	-	1	2	1.3
		Breathing Difficulties in Children	3	1	1	1	0.7
		The Unconscious Child	2	-	1	1	0.7
		GastroIntestinal Disorders	2	-	1	1	0.7
		Blood Disorders	2	-	-	2	1.3
		Musculoskeletal Conditions	3	-	1	2	1.3
		Fever	2	-	1	1	0.7
		Fluid & Electrolyte	2	-	1	1	0.7
		Research Methods	3	1	1	1	0.7
		Principles&Practice of Gen Anaesthasia	6	1	1	4	2.7
		Anaesthetic Equipment & Monitoring	4	1	1	2	1.3

ANAESTHESIA 10%		Pharmacological Agents in Anaesthasia	3		2	1	0.7
		Regional Anaesthetic Technique & Procedural Sedation	2		1	1	0.7
CRITICAL CARE MEDICINE 10%		Indications for admission to CCU	2		1	1	0.7
		Monitoring Devices &Techniques	5	1	2	2	1.3
		Life Saving Procedures	5	1	1	3	2.0
		Pharmacological interventions in ICU patients	3	-	2	1	0.7
		Life Saving Intervention					
Neonatal Critical Care/ Point of Care Ultrasonography 10%		New born Life support	2		1	1	0.7
		Neonatal Problems/ Resuscitation	5		2	3	2.0
		Principles	4	1	1	2	1.3

		of Pocus					
		Indications of Pocus	4	1	1	2	1.3
TOTAL			150	30	45	75	

Level 1: Recall of Facts Level II : Application & Comprehension Level III : Analysis & Evaluation

TABLE 15 BLUE PRINTING FOR PART II OSVVA

STATION NO	SPECIALTY TOPICS	TOOLS	REMARKS
1	Trauma	Xray	Structured Questions Checklist
2	Paediatric Emergency Medicine	Clinical Photograph Xray	Instructions for Candidate/Examiner
3	Life/Limb threatening Emergency	Picture	
4	Diagnostic Procedures/Monitoring	Manikins, clinical Instrumentation Results of investigation	
5	EMS		
6	Life Saving Interventions		
7	ED Management	Lab Result	
8	Misc: Medicolegical, Clinical Audit, Research Methods, Pathophysiology etc		

TABLE 16 BLUE PRINTNG FOR PART 2 OSCE STATIONS

STATION	COMPETENCY	REMARKS
1	Major Trauma	
2	EMS	
3	POCUS	
4	Research Methods	
5	Healthcare Management	
6	Medicolegal aspects	
7	Diagnostic Procedure	
8	Therapeutic Procedure	
9	Monitoring Techniques	
10	Monitoring Techniques	
11	Clinical Audit	
12	Clinical Instrumentation	
13	Life-Saving intervention	
14	Life-Saving Intervention	
15	Limb threatening Conditions Diagnosis &Treatment	
16	Life-threatening conditions	
17	Pharmaceutics	
18	Toxidromes	
19	Paediatrics; cong. disorder	
20	Trauma	

TABLE 17. SUMMARY CLINICAL ROTATION BY ACADEMIC YEAR FOR E.M PROGRAMME							
S/N	**ROTATION**	**YEAR 1**	**YEAR 2**	**YEAR 3**	**YEAR 4**	**YEAR 5**	**YEAR 6**
1.	**EMC 722/822.General Emergency Medicine**	**2 months**	**3 months**	**3 months**	**5mont**	**5 months**	**8 months**
2.	**EMC 723/823.Paediatric Emergency Medicine**	**1 month**	**2 months**	**-**	**-**	**3Months**	**3 months**
3.	**EMC 726/826.Neonatal Critical Care**	**-**	**-**	**-**	**`1 month**	**-**	**-**
4.	**EMC 730.Obstetrics and Gynaecology**	**2 months**	**-**	**-**	**-**	**-**	**-**
5.	**EMC 727.Internal Medicine**	**2 months**	**2 months**	**2 months**	**-**	**-**	**-**
6.	**EMC 728.General Surgery**	**2 months**	**2 months**	**2 months**	**-**	**-**	**-**
7	**EMC 731.Psychiatry**			**1.5 months**			
8	**EMC 729.ENT/Ophthalmology**			**1.5 months**			
9	**EMC 724/824.Anaesthesia**	**2 months**	**-**	**1 month**	**1 month**	**2 months**	**-**
10.	**EMC 725/825.Critical Care Medicine**	**-**	**2 months**	**1 month**	**-**	**2 months**	**1 month**

11.	**EMC 732/827.Radiology**	**1 month**	**1 month**	**-**	**2 months**	**-**	**-**
12.	**EMC 828/998.Elective/M.D Seminars**	**-**	**-**	**-**	**3 months**	**-**	**-**

TABLE 18. SUMMARY CLINICAL ROTATION BY CREDIT UNITS AND CONTACT HOURS FOR EM PROGRAMME.

S/N	COURSE CODE	ROTATION	DURATION (MONTH)	CREDIT UNIT	CONTACT HOUR
1	EMC 722	General Emergency Medicine	8	67	1005
2	EMC 723	Paediatric Emergency Medicine	3	25	375
3	EMC 724	Anaesthesia	3	25	375
4	EMC 725	Critical Care	3	25	375
5	EMC 726	Neonatal Critical Care	0	-	-
6	EMC 727	Internal Medicine	6	50	750
7	727.1	Cardiovascular	1	8	125
8	727.2	Respiratory	1	8	125
9	727.3	Nephrology	1	8	125
10	727.4	Gastroenterology	1	8	125
11	727.5	Infectious	1	8	125
12	727.6	Derm/Haem/Rheu	1	8	125
13	EMC 728	General Surgery	6	50	750
14	728.1	Trauma	1	8	125
15	728.2	Gastrointestinal	1	8	125
16	728.3	Urology	1	8	125
17	728.4	Musculoskeletal	2	17	250
18	728.5	Paediatric	1	8	125
19	EMC 729	ENT/Ophth	1.5	12.5	187.5
20	EMC 730	Obstetrics/Gynae	2	17	250
21	EMC 731	Psychiatry	1.5	12.5	187.5
22	EMC 732	Diagnostic Radiology	2	17	250
23	EMC 822	Advanced Emergency Medicine	18	150	2250
24	EMC 823	Advanced Paediatric EM	6	50	750
25	EMC 824	Advanced Anaesthesia	3	25	375
26	EMC 825	Advanced Critical Care	3	25	375
27	EMC 826	Advanced Neonatal Critical Care	1	8	125
28	EMC 827	Advanced Diagnostic Radiology	2	17	250
29	EMC 828	ELECTIVE	1	8	125
30	EMC 998	MD SEMINARS	2	6	90
	TOTAL		72	590	8845

CHAPTER 8

EVALUATION.

Evaluation and assessment will be both formative and summative.

FORMATIVE ASSESSMENT.

The formative assessment will be done in the training institutions using appropriately designed form (student's portfolio) and log book. This brings to the fore the need for institutional training programme which exposes the trainee to systemic schedule of didactic teaching. Each training institution would develop its Student's Global Assessment Form while the Faculty Board designs the log book which the trainee must obtain at the commencement of the training. The student's Global Assessment Form, which is completed at the end of each rotational posting, assesses the interpersonal, psychomotor, teaching, research, communication and management skills of the resident while the log book contains a detailed record of the activities done in the course of the posting. It is pertinent to mention that the trainee must satisfy the minimum number requirement of each of the technical/ surgical competences to get signed for the respective examination. Both forms must be completed by the consultant and the head of the training department preferably at the end of every procedure and posting.

It is recommended that the residents should be exposed during training to frequent mock examinations to boost their competences in examination techniques.

In addition to the student's assessment form and log book, an annual report on the progress of each resident is required to be sent by the training institution to the College secretariat for record purposes.

The objectives of the formative assessment are as follows :

1. To determine the degree of convergence of educational goals and students achievement
2. To provide a basis for feedback to students in order to help them improve their knowledge and competence.
3. To furnish teachers and clinical supervisors with relevant information about the quality of their teaching.
4. To serve as an effective tool for ensuring the maintenance of high quality health care for patients.
5. To certify students for admission to the Part I and Part II examination of the Faculty.

SUMMATIVE ASSESSMENT:

The summative evaluation will be done as three professional examinations corresponding to each phase of training. The examinations are conducted twice yearly.

APPLICATION FOR COLLEGE CERTIFYING EXAMINATIONS.

The Fellowship examinations are held twice a year in March/ May and September/ November. A call for application is published in at least one of the National dailies during the first week of June (for November examinations) and the first week of December (for May examinations). Candidates are expected to watch out for, and comply with the requirements of these advertisements.

Pre-residency Primary Fellowship Examinations.

Eligibility : M.B, B.S or its equivalent registrable with MDCN

The examination is held twice (March and September) in a year in nine designated centers within the country.

The examination follows the following format :

Paper 1 (1.5 Hr) : Single best-answer MCQ in Applied Physiology and Pharmacology.

Paper 2 (1.5 Hr) : Single best-answer MCQ in Applied Anatomy and Pathology.

Each paper shall consist of 100 Questions, each with a stem and four derivative statements.

Examination Results :

The Pass mark is 50%. This will be determined before the examination using the modified Angoff Standard setting method.

THE PART I FELLOWSHIP EXAMINATIONS

To be eligible to sit for the Part I Examinations, a candidate must

i) Have passed the primary examinations of the faculty or exempted there from
ii) Have completed 36 months rotational postings in the Core areas of Emergency Medicine and Allied specialties
iii) Have satisfactorily performed all the prescribed surgical and technical procedures
iv) Have been duly signed up in the Certificate of training

Candidates must therefore submit their portfolio and log book at the same time as they submit their application for the examination.

PART I FELLOWSHIP EXAMINATIONS

The examination consists of four parts namely,

i) Paper 1 (3hr) : First part screening examination consisting of two MCQ papers in Principles of Core Emergency Medicine and in Principles of Acute Care as related to the Allied specialties of Medicine, Surgery and their subspecialties respectively. Candidates are expected to obtain at least, a borderline pass mark (50%) in the two papers before proceeding to the next stage of the examination.

ii) Two theory papers consisting of both the short essay and long essay questions.

Paper 2 (2hr) : shall consist of 40 short-answer questions on Core and Allied Subspecialties. Each question could be answered within three minutes.
Paper 3 (1hr) : shall consist of 2 long essays on Core Emergency medicine

iii) Objective Standardized Long Case (OSLAC) consisting of manned stations

iv) Objective Structured Clinical Examination (OSCE) and Picture test

OSLAC : This is a series of clinical scenarios in which the candidate is made to go through the whole gamut of history- taking, physical examinations, investigations and treatment as if s/he was undertaking a long case. Simulated patients, manikins, radiological pictures and laboratory results are the materials in use. There will be 12 stations; each for ten minutes. All candidates are exposed to the same scenarios.

OSCE : This will focus on the other aspects of the syllabus; communication. Ethics, data interpretation, counselling, monitoring etc. The OSCE will be in three sections : Manned and Unmanned stations and Picture test.

60 questions picture test for 30 min(computer-based slide projection covering wide area of EM).

5 questions Manned stations

15 questions Unmanned stations

CONDITION FOR PASS.

To be considered successful in the Part 1 examinations, the candidate must obtain a borderline Pass mark (50%) in each of the three sections of the examinations. The Pass mark is determined by the Modified Angoff Standard setting method.

PART II FELLOWSHIP EXAMINATIONS

On satisfactory completion of the minimum three-year rotational postings in an accredited institution, a senior resident may present himself for the Part II Final Examination, which shall consist of ;

1. Written Paper (2 Hr) : shall consist of 150 single best – answer MCQ on core EM, each with a stem and four derivatives
2. OSCE (1hr) : This consists of 15/20 stations on various aspects of the Senior Residency Syllabus,
3. OSVVA(2HR) : This consists of 8 stations on structured VIVA on various aspects of the EM curriculum.
4. Dissertation defence (M.D candidates are exempted): 1hr.

THE PROPOSAL.

As a prelude to dissertation , the candidate shall submit a research proposal to the College not later than 12 months before the date of the examination.

The Proposal must

i) Be cleared by the Ethics Committee of the training institution

ii) Be perused by two supervisors, one of which must be a fellow of the NPMCN of at least five years standing

iii) Be certified by the Head of Department in the training institution

iv) Must have been subjected to a formative assessment.

The format of the Proposal is as follows –

1. Title page
2. Declaration page
3. Certification page

4. Introduction
5. Justification of the Study
6. Literature Review
7. Aims and Objectives
8. Proposed Methodology
9. Referencee
10. Appendix
    - Questionaire
    - Consent form

OBJECTIVES OF THE DISSERTATION

The objectives of the dissertation is to test the candidate's ability to initiate a research project, determine the research objectives, conduct the study, collect and analyse scientific research data and interprete the results scientifically and objectively.

FORMAT OF THE DISSERTATION

1.A title page (featuring the title of the work, name of author, name of college, fellowship in view and date)
2.The Declaration page.
3.A Dedication page
4. The Attestation page
5. The Acknowledgement Page.
6. The Summary or Abstract

The main work begins with a summary of the dissertation featuring the *key points*, in about 200 - 300 words. Nothing should feature in the summary that has not been presented in greater detail in the main body of the work.

The abstract should be in the 'Structured format'

7. Chapter 1 : Introduction

The introductory chapter should contain a clear *definition* of the problem to be studied, including a *justification* for the study, a brief description of the *scope of the study and a statement of the objectives of the study.*

8. Chapter 2 :Review of the Literature
9. Chapter 3 :Statement of objectives of the study.
10.Chapter 4 : Materials and Method. A description of the study design, otherwise titled "Materials and Method" of study, including a description of the statistical analysis intended to be used for processing the results.
11. Chapter 5 : The Results
12. Chapter 6 : The Discussion
13. Chapter 7 : Conclusions and Recommendations
14. References, using the system proposed by the International Committee of medical Journal Editors, "Uniform Requirements for manuscripts submitted to biomedical Journals" Br.Med. J. 1988, 296. 401 – 5 which is also reproduced in the College's Research Methodology Handbook.

When a candidate is appearing for the oral examination in his dissertation , s/he is required to bring a copy of the dissertation paged in the same way as the three copies previously submitted for the examination.

Examination Results

The Pass mark P (50%) in the written, OSVVA, OSCE and the dissertation is determined by the Modified Angoff Standard Setting Method.

In order to pass the Examination, a candidate must:

(a) Have his Dissertation accepted and

(b) obtain a Pass mark P (50%) in the written, the OSVVA and the OSCE.

However, a candidate who has his Dissertation accepted but fails in the other aspects of the examination, shall repeat the examination but will not be required to submit to another Dissertation defence.

A candidate who has minor editorial corrections may be awarded a Pass and directed to make the corrections while submitting the bound copies to the College

A candidate, having passed the other aspects of the examination but whose Dissertation needs major restructuring shall be referred in the Dissertation.

A candidate who has passed the other aspects of the examination, but has minor corrections in the Dissertation, may be awarded a Provisional pass, in which case he is expected to submit the work to a nominated assessor within three months of the examination after which he may be awarded a full pass.

No candidate may earn a Reference in the other aspects of the examination, and a Provisional Pass in the Dissertation.

CHAPTER 9.

THE M.D PROGRAMME.

PREAMBLES

The M.D (Doctor of Medicine) of the National Postgraduate Medical College of Nigeria is a postgraduate academic degree that is equivalent to the Ph.D

The requirements for graduation for the M.D programme is a minimum duration of 8 semesters and a minimum workload of 48 credit units of which 12 credit units are for the thesis, 30 credit units for course work, 4 credit units for mandatory courses and 6 credit units for seminars. Residency training is full time for 48 weeks per year (leaving allowance for Annual Leave). This translates to 3 semesters per year and 9 semesters at the end of a three-year Junior Residency training. It is expected that the 30 credit units course work is covered during the Junior Residency training.

2. ADMISSION REQUIREMENTS

2.1 Candidate shall be an associate fellow in a recognized Emergency Medicine Training programme.

2.2 Candidate must have completed the Junior Residency training in Emergency Medicine

2.3 Candidate must submit a research proposal to the College at the time of application for the programme.

2.4 Candidate must be sponsored by two supervisors who are willing to supervise the research work of the candidate.

3. METHOD OF APPLICATION

Interested residents should indicate their intention by obtaining appropriate application form from the College in the first year of the Senior Residency Training. The completed application form must be accompanied by a RESEARCH PROPOSAL at the time of submission.

4. RESEARCH PROPOSAL

A research proposal submitted by the candidate should exhibit all the features enumerated in Chapter 8, page 64 of this Curriculum. The submitted proposal shall be subjected to formative assessment within 8 weeks and the resident shall be informed of its acceptability , modification or rejection.

5. EXAMINATION OF THE DISSERTATION

5.1 The average duration of the dissertation shall be one year

5.2 No candidate is eligible to sit for the examination before passing the Part I Fellowship examination

5.3 The examination shall take place at least 6 months before the resident is due for the FINAL Fellowship examinations.

5.4 Each candidate shall be examined by three examiners ; at least one of whom must be an assessor of the proposal.

5.5 The examination shall take place during the May or November examinations and shall last for a minimum of one hour.

6. COURSE WORK

6.1 The Faculty Board has identified four areas of specialization in which the candidate can do a detailed study.

Each candidate is expected to choose one of these subjects and lead the discussion on different aspects in three separate seminars organized by his/her department.

The seminar shall be moderated by the Head of Department or the most senior lecturer in the area of study.

6.2 RECOMMENDED FIELDS OF STUDY FOR THE M.D IN EMERGENCY MEDICINE

1. Pre-hospital Emergency Care System
2. Clinical Toxicology
3. Environmental Medical Emergency
4. Child and Geriatric Abuse

7. COURSE OUTLINES

EMC 998.1 PREHOSPITAL EMERGENCY CARE SYSTEM

This course describes the administration, structure and resources of Pre-hospital Emergency care System. It sheds light on the collaboration among the different professionals that operate the system.

LEARNING OBJECTIVES

The trainee should

i) Be conversant with the principles of Emergency Medical Services
ii) Demonstrate a thorough knowledge of the Model and Local systems of EMS
iii) Be able to evaluate the training and scope of practise of the allied professionals
iv) Understand the need to categorise Care and Trauma centers
v) Familiar with the various means of transportation from scene of accident

vi) Be able to perform mass casualty incident management and disaster planning

COURSE CONTENT

1. Principles of Emergency Medical Care
2. The Model and Local Systems of EMS
3. Intra- and inter-facility communication
4. Evacuation and Transportation
5. Mass Casualty incident Management

CLINICAL AND TECHNICAL SKILLS

1. Airway Management
2. Cental venous access
3. Tube thoracostomy
4. Haemodynamic Monitoring setup

EMC 998.2 CLINICAL TOXICOLOGY

Advanced Clinical Toxicology is all about drugs and other substances that can be abused intentionally or inadvertently. Many drugs are involved but the candidate is expected to be familiar with those commonly abused in our environment

LEARNING OBJECTIVES

The trainee should

1. Study the pathophysiology of poisoning
2. Understand the different methods of identifying the poison
3. Be conversant with the clinical presentation and principles of management of drug poisoning
4. know the specific treatment of the commonly abused drugs in our environment
5. Be familiar with the roles of the various specialists in the management of affected patients

COURSE CONTENT

1. Classification of poisoning
2. Toxidromes
3. Principles of drug interactions
4. Principles of management of poisoning
5. Pathophysiology and management of commonly abused drugs
6. The merits and demerits of antidotes used in drug poisoning

CLINICAL AND TECHNICAL SKILLS

1. Airway Management
2. Cardiopulmonary Resuscitation
3. ECG
4. Gastric lavage
5. Haemodialysis

EMG 998.3 ENVIRONMENTAL EMERGENCY

Environmental emergency deals with medical conditions that may result from adverse environmental situations. It also focuses on the dangers that may be associated with swimming, electricity and radiation exposures.

LEARNING OBJECTIVES

The trainee is expected to know

i) The pathological changes that occur in adverse environmental situations
ii) The differential diagnosis and the indications for CPR in each medical condition

iii) the initial life-saving measures to be taken at the scene of incident
iv) The process of decontamination in radiation exposure
v) The treatment modalities of hypothermia, heat illnesses, electrical injuries, drowning and radiation contamination.

COURSE CONTENTS

1. Hypothermia
2. Hyperthermia. Heat exhaustion. Heat stroke
3. Electrical injuries
4. Drowning and Near drowning
5. Diving emergencies
6. Radiation incidents

CLINICAL AND TECHNICAL SKILLS

1. CPR
2. Ability to interprete ECG
3. Peritoneal lavage/dialysis

EMC 998.4 CHILD AND GERIATRIC ABUSE

Children and the elderly are often abused because they are incapacitated mentally and/or physically. The abuser is usually a close relation or caregiver. Women are also at risk. The essence of this course is to highlight the nature of the abuse, the clinical presentation and the principles of management of the resultant injuries.

LEARNING OBJECTIVES

The trainee should

i) Know the different types of Child and Geriatric abuse
ii) Understand the motives behind the abuse
iii) Be familiar with the modus operandi of the abusers
iv) Understand the multifarious clinical presentations and principles of management
v) Be familiar with the role of social worker, the family physician and the law enforcing agents in the management of the situation

COURSE CONTENTS

1.Types of Child Abuse

2. Abuse in the Elderly

3. Clinical Presentation and Principles of Management

4. Legal aspects of Abuse

CLINICAL AND TECHNICAL SKILLS

1. High index of suspicion/ Detailed Clinical examination
2. Interpretation of Radiological investigations
3. Speculum examination
4. Airway management

CHAPTER 10

ACCREDITATION OF TRAINING CENTERS FOR EMERGENCY MEDICINE TRAINING PROGRAMME.

INTRODUCTION:

Training programme in Emergency Medicine must meet the basic standard and the standard for quality development for postgraduate medical education. These standard criteria expose the trainees to integrated practical, clinical and theoretical instructions in patients' care. Apart from this, the training programme must be recognized by the National Postgraduate Medical College which has the responsibility and authority for coordinating and assessing the individual training center.

ACCREDITATION CRITERIA:

Therefore any institution that will be accredited for training in Emergency Medicine must satisfy certain conditions.

An accredited Training Center should:

1. possess the financial and infrastructural capacity to run a training programme in which the trainee will have sufficient exposure to clinical, theoretical and practical instructions and acquire the core competences described in the main curriculum.
2. have a functional, well-equipped and well-maintained Emergency Department which opens all hours and receives a large patient population, of all ages and both sexes, with a wide variety of acute clinical problems. The Emergency department must be run by specialist Emergency physicians who are themselves fellows of the National Postgraduate Medical College or are Fellows of other recognised Colleges.
3. offer services in the relevant Core and Allied specialties.
4. parade a sufficient number of qualified and competent trainers who must be Fellows of the National Postgraduate Medical College with a minimum of 5 years post-qualification experience in the Core areas of Emergency Medicine and Allied specialties.
5. have an avenue for systemic audit of clinical performance in support of provision of emergency care.
6. provide both space and opportunity for practical and theoretical study as well as for research activities including libraries, internet access and venues for seminars and lectures.
7. have laboratory and diagnostic imaging departments in support of provision of emergency care

The Faculty of Emergency Medicine of the NPMCN is a new faculty and the Board is of the opinion that it may not be feasible to commence training in all the Teaching Hospitals at the outset.

The newly created Faculty Board is therefore proposing the following way-out:

1. Pilot centers should be identified in each of the six geopolitical zones of the country.
2. The identified center must receive a minimum of 40,000 cases every year in the Emergency department/ Childrens' Emergency room.

3. The Head of the ED/CHER in the center must be a fellow of the NPMCN with a minimum of 8 years post qualification experience and with evidence of BLS/ACLS or ATLS certification.
4. A training programme director and Clinical supervisor must be appointed by the center to oversee the smooth running of the programme. The director must be either a specialist in Emergency Medicine or a specialist who has been practising Emergency Medicine for the past eight years.
5. Emergency Medicine encompasses many specialties; almost all of which currently exist as Faculties in the NPMCN. The trainers will therefore be Fellows of the NPMCN with at least 8 years post qualification experience in the following specialties :

    Anaesthesia
    Critical Care Medicine
    Paediatrics
    Trauma
    Obstetrics and Gynaecology
    Psychiatry
    Internal Medicine
        Cardiology
        Respiratory
        Neurology
        Nephrology
        Haematology
        Infectious
        Dermatology
        Rheumatology
        Pharmacology
        Geriatrics
    Surgery in General
        General Surgery
        Trauma
        Musculoskeletal Surgery
        Paediatric Surgery
        Urology
        Otolaryngology/ Head & Neck
        Ophthalmology
        Cardiothoracic
        Maxillo-facial
        Burns & Plastic
        Neurosurgery
6. Emergency Physicians in diaspora and within the country should be encouraged to partner with the College in the training of competent and proficient Emergency Physicians.
7. The pilot centers must be visited, recognized and accredited by the Faculty Board before commencement of training.
8. The Faculty Board will utilize the College guidelines during the accreditation exercise.