GENERIC COMPONENTS

OF

THE SENOR RESIDENCY TRAINING PROGRAMME

IN

INTERNAL MEDICINE

1.0 INTRODUCTION

The senior residency of the FMCP programme is the last phase of the formal postgraduate training in Internal Medicine in Nigeria. Internists who wish to become consultants and/or Faculty Members in Internal Medicine in Nigerian Universities must undergo this phase of the training to obtain FMCP.

2.0 Goals of the Senior Residency Programme.

The goal of the Faculty and College is to produce humane and academic physicians to meet the healthcare, academic and other needs of Nigeria and the global population, building on competences acquired during the junior residency training of the FMCP programme or other similar programs.

3.0 Objectives of the Senior Residency Programme. The resident at the end of the advanced training should be able to demonstrate competencies in knowledge, skills, attitudes and behaviors that would enable him function as a humane, professional and astute academic physician.

The scope of knowledge will include;

- In-depth knowledge in general internal medicine
- In-depth knowledge in a sub-specialty of internal medicine
- Understanding of the clinical, basic and behavioral sciences, medical ethics, social sciences and medical jurisprudence that underlie the practice of internal medicine.
- Comprehend the concept of evidence-based medicine
- Understand the Basic concepts of health economics
- Knowledge of public health and health policy.

The senior resident should demonstrates high level of competence in

- Clinical judgment
- Problem solving, critical reasoning and analysis
- Demonstration and application of research
- Research methodology and quality assurance
- Application of medical knowledge to patient care, patient education, family education and the education of other members of the health care team
- Medical Informatics; , for excellent gathering of knowledge and information, Searching and critically reviewing of medical literature
- Assessment of the Risk – benefit ratio of management options.
- Interpersonal and communication skills that ensure effective information exchange with individual patients and their families
- Functioning as a supervisor, trainer and teacher in relation to colleagues, medical students and other health professionals
- Teaching art of history-taking, thorough physical examinations and use of appropriate diagnostic and technical procedures
- Technical skills in performing advanced medical procedures

- Efficient management of human and material resources

The senior resident should also inculcate the attitude for an astute physician.

- He should Inculcate and appreciate the value of teamwork in the delivery of healthcare.
- Recognize the importance of appropriate, effective and compassionate patient care
- Exhibits high level of professionalism
- Demonstrate interest in and ability to act as an advocate for the patient
- Recognize limitation of his ability and the importance of prompt and appropriate referral
- Inculcate the concept of lifelong teaching and learning
- Demonstrate an understanding of the practice of scholastic activity

4.0 ADMISSION REQUIREMENTS INTO THE SENIOR RESIDENCY TRAINING

Applicants for Senior Residency Programme

Applicants for acceptance as senior residents into the FMCP program must have completed a minimum of twenty four (24) months of General Internal Medicine (GIM) training in approved postings and obtained the FMCP (Part I) or equivalent qualification approved by the Faculty. The trainee must register an intention to pursue training as a general internist or a sub-specialty internist within six months of admission as a Senior Resident in an accredited institution.

5.0 TRAINING CENTERS

Training centers for SENIOR RESIDENCY are mainly university hospitals and specialist hospitals (and any other NPMCN accredited hospitals) that have resources qualifying them to be accredited to offer advanced training in internal medicine. Training may be completed in one or more centers. It is obligatory that accredited hospitals for senior residency training in advanced medicine provide an appropriate environment for training and satisfactory support of the fellowship programme. During training, residents offer services in the training hospitals under the supervision of consultants. The accreditation guidelines provide further details about criteria for accrediting training centers.

6.0 SENIOR RESIDENCY TRAINING FORMAT AND DURATION

TRAINING FORMAT

There are two main training tracks to complete the residency training in Internal Medicine and become eligible for the award of the Fellowship of the Faculty: the General Internal Medicine (GIM) track and the sub-specialty Internist (SSI) track. The admission requirements are the same for both tracks.

1. General Internal Medicine Track

The training shall last a minimum of 36 months in an accredited institution or institutions. The specialist senior registrar shall, in addition, attend course(s) in Hospital Management, Research Methodology, and other areas detailed in the general curriculum of the senior FMCP programme.

2. Sub-specialty Internist Track

The training period for a resident who opts for one of the subspecialties of Internal Medicine (*Aviation Medicine;* Cardiology; Clinical Haematology and Oncology; Clinical Pharmacology and Therapeutics; Dermatology and Genitourinary Medicine; Emergency and Critical Care Medicine; Endocrinology, Diabetes and Metabolism; Geriatrics; Gastroenterology; Infectious Diseases; Clinical Immunology; Nephrology; Neurology; Rheumatology; Respiratory Medicine and S*ports Medicine*) shall be for a minimum period of 36 months. The training shall take place in a NPMCN accredited institution that has been accredited for senior residency programme in that subspecialty. However, the training may be done in more than one institution to ensure full exposure in the subspecialty, provided the planned programme is approved by the Faculty board on the recommendation of the relevant subspecialty committee. The sub-specialty internist training must include a minimum of six months in a laboratory or research center related to the subspecialty which is included in the core subspecialty rotation and a posting to Emergency Department/ICU of not less than 3 months which is included in general internal medicine rotation.

The curriculum for training in each subspecialty is in two parts: A generic component common to all advanced trainees in internal medicine and the specialty – specific components.

6.1 GENERIC COMPETENCIES

The generic components of the advanced training curriculum for all residents include acquisition of requisite competences in the areas of:

KNOWLEDGE; The senior resident should

- Comprehend knowledge of established and evolving clinical and biomedical sciences and application of this knowledge to education of others and patient care
- Know and apply the basic and clinically supportive sciences which are appropriate the their subspecialty
- Understand how their clinical practice and professional practice affects other healthcare professionals, the healthcare organization and the society at large
- Know methods of controlling healthcare costs and how to allocate resources

SKILLS

- Patient care; provide patient care that is appropriate, compassionate and effective for heath-promotion, prevention of illness, treatment of specific diseases and end-of-life care
- Gather essential and accurate information about their patients
- Communicate effectively and demonstrate respectful and caring behavior when interacting with patients and their families
- Demonstrate appropriate clinical decision making – make informed decisions about diagnostic and therapeutic interventions based on patient information, patient preferences, up-to-date scientific evidence and clinical judgement.
- Develop and carry out patient management plans

- Competently perform all medical procedures considered essential for practice
- Demonstrate ability to counsel and educate patients and their caregivers (families)
- Demonstrate the ability to work in a multidisciplinary team to provide patient-focused care

Communication; senior residents must demonstrate interpersonal and communication skills that enable them to establish and maintain professional relationships with patients, caregivers (families) and other healthcare professionals

- Use effective listening skills and possess the ability to elicit and provide information using effective non-verbal, questioning, and explanatory skills
- Develop a therapeutic and ethically sound relationship with patients
- Work effectively with others as a member or the leader of a health-care team or other professional group

BEHAVIOUR; senior residents must demonstrate behaviors that reflect a commitment to ethical practice, a responsible attitude towards their patients, their profession and the society.

The senior resident should

- demonstrate a commitment to ethical principles especially but not limited to confidentiality of patient information, informed consent, provision or withholding of clinical care and business practices
- demonstrate sensitivity and responsiveness to patients' age, culture and disabilities
- demonstrate respect, compassion and integrity and a responsiveness to the needs of patients and society that supersedes self-interest
- demonstrates accountability to patients, society and profession
  develops a commitment to excellence and on-going professional development

ATTITUDES; **The senior resident should**

- possess the ability to use information technology to manage information, access online medical literature and support their own education
- be able to locate, appraise and assimilate evidence from scientific studies related to their patients' health problems
- apply knowledge of study designs and statistical methods to appraise clinical studies and information on effectiveness of diagnostic and therapeutic methods
- obtain and use information about their own patient population and the larger population from which their patients are drawn
- facilitate the learning of students, junior residents and other healthcare professionals

6.2. METHODS OF EXPERIENTIAL LEARNING AND TEACHING

These may vary somewhat from one subspecialty to another but in general would include lectures in various forms, seminars and tutorials, independent study/self-directed learning, demonstrations and teaching in clinical and/or laboratory postings in the following settings:

1. Daily morning reviews
2. A posting to medical emergency and ICU for at least three months
3. Participation at medical grand rounds for updates in key areas of medicine
4. Clinical pathological conferences
5. Unit and/or departmental morbidity and mortality data review
6. Weekly meeting on advances in medicine
7. Journal club;
8. Evidence based practice approach to patient care
9. Attendance at teaching/consultant ward rounds
10. Special postings as appropriate
11. Project proposal writing
12. Project execution, defending project report
13. Scientific meetings, workshops, seminars and conferences; on updates in subspecialty area of interest, career development, professionalism, time management, teaching methods, leadership skills, basic and advanced life support, stress reduction and avoiding physician burn-out, advancing personal and professional life and research methodology.

6.3. EVALUATION OF TRAINING PROCESS

The training programme of the SENIOR RESIDENTS of the FCMP is monitored and audited through the following mechanisms:

The Training centers

A director of training is appointed for the accredited department in each hospital. Each training institution is required to set up a Residency Training committee that is chaired by a senior consultant in the hospital. Trainees are required to complete appraisal forms annually. These forms are forwarded to the Faculty Curriculum Committee for review and advice. The appraisal form also includes a section for comments by the trainee .Facilities are visited for accreditation and interaction with stakeholders periodically to appraise the programme. Feedback received from trainers, trainees and training centers as well as concerns or deficiencies identified are taken into consideration in reviewing the program.

The Faculty's monitoring committee assesses *trainee performance* such as information about average duration of training, scores, pass and failure rates at examinations, success and dropout rates. Other monitoring indices include time spent by the trainees on the programme and tracking the progress of graduates of

the program as well as the acceptance of the program nationally and internationally.

Reports from faculty and accreditation visits are forwarded to the senate of the National Postgraduate Medical College of Nigeria for further consideration, action, and/or directives. The College has the final authorization on monitoring of training centers.

7.0. THE DISSERTATION IN PARTIAL FULFILMENT OF GRADUATION REQUIREMENTS

One of the unique features of FMCP program is the requirement that trainees complete and successfully defend a dissertation. The dissertation is mandatory for trainees who opt to follow the subspecialty tract to obtaining a fellowship.

7.1. OBJECTIVES OF DISSERTATION

The goal of the dissertation in the fellowship program is to produce a physician that is proficient in the conduct of research. In the course of preparing the dissertation, the candidate should demonstrate the ability:

- To identify researchable health problems
- To clearly define a subject chosen for study (the subject should be clinical or have explicitly stated clinical application)
- To clearly identify specific aims of a study designed to address a researchable question i.e. be able to define the scope and objectives of the study bearing in mind the feasibility of the research project in terms of time, materials and human resources available.
- To demonstrate a working knowledge of study design, data collection, data storage, analytical techniques, computer skills, statistical and graphical techniques needed for planning and executing a research project
- To conduct a critical appraisal of the biomedical literature using standard internationally accepted databases such as Medline® . To design the materials and method of the study in such a way as to obtain results that are relevant to the objective of the study and can be reproduced by other researchers
- To collect, collate and evaluate research data
- Using appropriate statistical tools and softwares to analyze the research data and draw logical conclusions from them
- To experience the process and technicalities of scientific writing and communication so as to be able to apply for research grants and publish biomedical papers

- To understand the "why and how" research contributes to good clinical practice and evidence-based practice
- To discuss the findings in relation to existing body of knowledge on the subject demonstrated an understanding of the rights of patients, consent and ethics in human research.

It is required that candidate's personal involvement in the performance of the study reported must be clearly stated, and obviously identifiable. A report of the management of a clinical problem, retrospective or otherwise, in which the personal input of the candidate in the management of the patients is not obvious is not acceptable.

The dissertation must be based on an approved proposal supervised wholly or partly by a Fellow of the College in the intended subspecialty.

7.2. FORMAT OF THE RESEARCH PROPOSAL

The approval for proposals must be obtained at least 12 months prior to the proposed Part 2 examination date at which the dissertation is intended to be defended. As such submissions must be received, within 18 months of commencing the program. A proposal shall be type-written, not exceed 5000 words (exclusive of references and appendices), using times new roman font and a font size of 12 type written, double-spaced with the following format:

a. Title page
b. Abstract: maximum 250 words
c. Introduction (including hypothesis and/or research question and justification for the study): maximum 1000 words
d. Short review of relevant literature: maximum 1500 words
e. Aims and objectives: maximum 150 words
f. Subjects and methods: 2000 words
g. Expected results: maximum 100 words
h. References (not more than 20)
i. Appendices to include budget, timelines and details of methodologies
j. List of abbreviations

For sections b-g a word count should be provided on the title page.
Four copies of the proposal and 1 electronic copy should be submitted to the Faculty through the College Registrar's office for formative assessment. Enquiries about proposals and dissertations can be clarified by the Faculty Secretary and/or Chairmen of subspecialties.
The proposal must be accompanied by the approval of the institution's health and research ethics committee. The proposal is sent to two assessors for advice and suggestions and candidates may not proceed with the work until an approval has been received from the College.

7.3. FORMAT FOR THE DISSERTATION

Dissertations are for candidates going through a subspecialty tract to the fellowship in the faculty. The size of the book should be A4 and the content should be arranged as follows:

Table 1. Designated pages and status

	Designated pages	Status
1.	Title page	Required
2.	Declaration	Required
3.	Certification page	Required
4.	Attestation page	Required
5.	Dedication page	Optional
6.	Acknowledgement page	Required
7.	Copyright notice	Optional
8.	Table of contents	Required
9.	List of tables	If ›5
10.	List of figures	If › 5
11.	List of abbreviations/acronyms	Required
12.	Abstract	Required
13.	Introduction	Required
14.	Aims and objectives	Required
15.	Literature review	Required
16.	Subjects, materials and methods	Required
17.	Results	Required
18.	Discussion	Required
19.	Conclusions and recommendations	Required
20.	References	Required
21.	Appendices	Required
22.	Index	Optional

7.4. Title page

This should contain:

a. Approved title of the dissertation
b. A statement on submission to the college
c. Name of candidate with qualifications including awarding institution and year of award
d. Month and year of proposed examination

Although not numbered, the title page is page I in the preliminary pages of the thesis. Note that beginning with the first page of the table of contents, numbered ii, small Roman numerals are used for all preliminary pages.

- This should contain a statement that reads thus:
  "A dissertation submitted to the National Postgraduate Medical college of Nigeria in partial fulfillment of the award of the Fellowship of the College in Internal Medicine (in the subspecialty of ----------)". If appearing for General Internal Medicine, the words in parenthesis should be omitted.
  The name of the candidate, degree(s), awarding institution and year of award should follow.

7.5. Declaration page
This should contain the following declaration:
"It is hereby declared that this work is original unless otherwise acknowledged. The work has neither been presented to any other college for an award nor has it been submitted elsewhere for publication".
This declaration must be signed and dated by candidate.

7.6. Certification page
The supervisor(s) must sign the following statement:
"The study reported in this dissertation was carried out by the candidate, ----------, under my/our supervision. i/we have also supervised the writing of the dissertation to my/our satisfaction and authorized the submission of the work for the fellowship examination in the faculty if internal medicine"
Principal supervisor
Signature.....
Name of supervisor.....
Status of supervisor.....
Year of fellowship in the faculty.....
Date.....
Co-supervisor
Signature.....
Name of supervisor.....
Status of supervisor.....
Year of fellowship in the faculty.....
Date.....

7.7. Attestation by Head of Department
The Head of department at which the research was performed must also attest as follows:
"I certify that the work in this dissertation was carried out by ..... In the department of ..... And under the supervision of .....
Address.....
Name .....
Signature.....
Designation.....
Date.....

7.8. Table of contents page
List chapter headings and corresponding page numbers. Extended or a more comprehensive table of content may be added. Preliminary pages are numbered in lowercase roman numerals. The first page of CONTENTS is numbered ii (iii if a copyright notice is included), centered in the bottom margin and subsequent pages are similarly numbered to end of CONTENTS. All numbering and lettering and titles of parts and sections of the thesis in the table of contents should be identical with the same items in the body of the thesis itself.

7.9. Dedication
A short statement of dedication may be added.

7.10. Acknowledgements
All assistance received should be duly acknowledged. Where copyright permissions have been obtained, these should be acknowledged here. Consent of those being acknowledged should be obtained by the candidate.

7.11. Abstract
The abstract should give an outline of the overall aims, investigations and findings of the research project. It should be structured giving a succinct account of the thesis under the following sections: background (a statement of the problem); objectives; subjects; and/or materials and methods; results and conclusions. The summary should not contain any information not in the body of the work. For page numbering, use lowercase roman numerals, numbering consecutively from the preceding page. The abstract is limited to 350 words or a maximum of 2,450 characters.

7.12. Listings of Tables and Figures
For this list, continue lowercase Roman numeral page numbering consecutively from the last numbered page of contents. All numbering, lettering and captions in the list of tables or figures must be identical with those in the individual tables or figures throughout the thesis. Separate listing of tables or figures may be omitted if they are less than five in number. Captions for tables are placed at the top of the table while those for figures are placed below the figures.
For page numbering, continue to use lowercase roman numerals consecutively from the preceding page.

7.13. Introduction
The section on introduction should be relatively brief and should outline the background of the study and give a panoramic view of the area and results of previous works done in the area. Locate the general field of study in its clinical context. Briefly recount the major developments both historically and recently which can guide the reader to understand the importance of the field of knowledge under focus. Outline some of the outstanding contemporary problems which dominate the research area, in order to contextualize the specific research topic.
This section is the beginning of the main body of the thesis. It begins the Arabic page numbering, 1,2,3, etc., through to the last page of the thesis, including the separate tables and figures inserted at the appropriate points in the text and any appendices at the end.
NB: subheadings are advised throughout the body of the report.
Having defined the general topic and explained the importance of area of study, the problem to be addressed should be clearly stated. References to citations should be few at this stage; leaving detailed references to the chapter on literature review. The chapter on introduction should end with a section on the aims and annotated objectives of the work.

7.14. Review of Literature
Candidates should be made to comment critically on rather than simply cite, existing literature. Only full works actually available to you should be cited. Effort should be made to achieve a historical sequence in the review write-up.

7.15. Subjects, materials and Methods
The candidate should give in adequate details, description of the materials or subjects and methods used, with a clear statement of the jurisdiction or limitation of the sample selection,

method of observation or manipulation of materials. The statistical method of analysis of the results should be stated.

7.16. Results

These should be described in words in addition to illustrate tables, diagrams, graphs, histograms or photographs. Tables and figures must be mentioned in the text and should appear near the first mention but not necessarily directly after it. When short tables or figures are included on the same page as text, leave a single spaced blank line before and after the figure or table. Do not include a table on the same page as test unless the table is short enough to be complete on that page. Avoid tables that span more than a page. Single spacing may be used for long tables, block quotations, subheadings and chapter titles, figures, legends, footnotes or notes, appendix material and all bibliographic entries.

7.17. Discussion

This section should present a critical appraisal of the implications of the results in the general context of the aims and objectives of the study, relating these to findings from other reports. The literary style of the report should be of a very high standard and syntax. The discussion should attempt to interpret not merely restate results. Comparisons with previous work and references should lead to conclusions and recommendations.

7.18. Conclusions and Recommendations

These should state relevant conclusions arrived at from the study and recommendations for future studies or implementation. Conclusions and recommendations should derive from the results of the study.

7.19. References

The Vancouver style should be used. In the text, references should be numbered consecutively in the order in which they are first mentioned using Arabic numerals. The references should be brought together at the end of the book and be listed in the same consecutive order in which they appear in the text. The full title of the article or book should be given as well as the full page numbers of the particular paper or chapter. For details of Vancouver style of referencing, see a ********* copy of BMJ on the NEJM.

Electronic referencing

These may be referenced in a variety of ways but should be consistently done. Candidates are advised to follow appropriate guidelines e.g. from CD ROM database, a standard reference should contain: Author/Editor, year, title, medium, place of publication and publisher.

For example, "Okoro AE. Prevalence of ischemic heart disease among people with diabetes mellitus. Nig. J Int. Med. 2004, 6(2), 153-160. Full-text [online]. OGBAL, Hawa Technologies Ltd. [Accessed 11th Oct. 2004]

Some database producer may advise on the citation format, this should be followed and indicated in the list of references.

Internet resources

A standard reference to an internet resource should include the author, the date the information was published or updated (either year or full date) the title of the work, the internet access protocol if necessary (for example, *ftp:// telnet:// http://*), the URL and the accessed date. Additional listings may be made of sources consulted but not cited.

7.20. Appendices
These include ethical approval, details of laboratory techniques, unsummarised research data, instruments and questionnaires used etc. Reference should be made to each appendix in the body of the report.

7.21. Submission
Four loosely bound copies and 1 electronic copy of the dissertation shall be submitted at least 3 months before the Part II Examination, in response to the advertisement for examination applications. After the acceptance of the dissertation, following a successful defense at the Part II examination, five corrected copies and 1 electronic copy shall be submitted to the Faculty Secretary, with the appropriate fees.

NATIONAL POSTGRADUATE MEDICAL COLLEG OF NIGERIA

FACULTY OF INTERNAL MEDICINE

PART II (SENIOR RESIDENCY) TRAINING CURRICULUM

CARDIOLOGY SUB-SPECIALTY

Table of Contents

CURRICULUM AND COURSE CONTENT

FOR

THE SUB-SPECIALTY TRAINING PROGRAMME

IN

CARDIOLOGY

8.0 ROTATION SCHEDULE (36 months)

S/N	Duration	Rotation
1	12 months	**General Medicine** This is made up of 3 months each in the following subspecialties: 1. Respiratory 2. Neurology 3. Nephrology 4. Endocrinology
2	24 months	**Cardiology** This should include: 1. Three (3) months in cardiac radiology (Imaging) 2. One (1) month in a cardiac catheterization laboratory

8.1 CLINICAL CARDIOLOGY SUBSPECIALTY COURSE CONTENT

Title/Theme/Domain	Specific Topics (knowledge, skills & attitude)	% Course coverage	Lesson Objectives	Total Credit(s)	Mode of Delivery Code	Mode of assessment
Basic concepts in cardiology	1. Anatomy (K) a. Applied embryology of the heart and great vessels. b. Effects of drugs and infective agents on the embryological process. c. Advanced anatomy of the heart, great vessels, common vessels – pericardium, myocardium, endocardium, coronary circulation, venous drainage, conduction system, d. Anatomy of the lungs and other related systems. 2. Physiology (K) a. The heart as a pump: - Systolic function - Diastolic function b. Neuro-humoral influences on the heart and the cardiovascular system. c. Cardiac impulse initiation and propagation. d. Determinants of blood pressure, cardiac output and peripheral resistance e. Physiology of blood flow in regional vascular fields (coronary, pulmonary, visceral, liver, kidney, brain, skeletal muscles, and skin). 3. Pathophysiology (K) a. Pathophysiology of heart failure. b. Abnormal function in the presence of anatomical defects. c. Conduction system abnormalities. d. Effect of infective and inflammatory agents on the cardiovascular system Effect of infective and inflammatory agents on the cardiovascular system. e. Tumours in the Cardiovascular system (intracardiac and extracardiac). f. Dissecting Aneurysm of the great vessels. 4. Pathology (KSA) a. Anatomical pathology of the heart and great vessels. b. Biopsy and histopathology of the heart and great vessels.	10%	L3	14	1,2,3,5,6	MCQ SAQ

	5. Pharmacology (KSA) a. In depth knowledge of cardiovascular drugs. b. Drug monitoring					
Evaluation of cardiovascular structure and function	1. Clinical assessment of the cardiovascular system. (KSA) 2. Non-invasive cardiovascular evaluation: a. Bedside evaluation:(KSA) - pulse oximetry - Hand held Doppler for ankle- brachial blood pressure index. - bedside monitor. b. Electrocardiography -resting, ambulatory, stress(KSA) c. Ambulatory BP monitoring(KSA) d. Chest radiography(KSA) e. Echocardiography – resting, stress, transthoracic, transoesophageal (KSA) f. Cardiac CT – (KS) g. Chest CT - (KS) h. Radionuclide imaging: (K) - SPECT - Myocardial perfusion imaging (MPI) - Radionuclide ventriculography i. Magnetic resonance imaging(KS) j. Magnetic resonance angiography(KS) k. Electrophysiological studies(KS) 3. Cardiac catheterisation – investigative and therapeutic (KS) 4. Others: a. Echocardiogram guided pericardiocentesis. (KSA) b. Central venous access (KSA) -CVP insertion and monitoring c. fluid management - acid-base balance - electrolyte imbalance - oxygen transportation	25%	L3 L3 L3 L2 L2 L2 L2 L2 L2 L2 L2 L2 L3 L3 L3	36	1,2,3,4,5,6,7	MCQ SAQ OSCE Mini CEX
Clinical modules	(KSA) 1. Hypertension and target organ damage including hypertensive heart disease 2. Risk factors for cardiovascular diseases 3. Heart failure 4. Valvular heart disease 5. Heart muscle disease 6. Congenital heart disease	25%	L3	36	1,2,3,4,5,6,7	MCQ SAQ Mini CEX Clinical presentation

	7. Ischemic heart disease 8. Pericardial disorders 9. Pulmonary heart disease 10.Infective endocarditis 11. Rhythm and conduction abnormalities and pacing 12. Peripheral vascular disorders 13. Cardiac tumours 14. Diseases of great vessels 15.Thromboembolic disorders 16. Preventive cardiology 17. Cardiac rehabilitation 18. Heart and pregnancy 19. Perioperative cardiology					
Surgical management of cardiovascular disease	1. Heart Failure (a)Device therapy (KS) (b)Cardiac transplantation(K) i)Indications including non-heart failure indications ii) Patient assessment iii) Team approach to transplantation iv) Contra-indications v) Post – transplantation care vi) Complications 2.Surgical management of Pericardial Disease (K) 3.Surgical alternative to intra-venous pace-maker insertion (K) 4.Team action in open – Heart Surgery (pre-, intra-, and post-surgery management of patients) -KS 5.Surgical management of Arterial diseases (K) 6.Indications for surgical management of Thrombo-embolic disease (including pulmonary embolism). 7.The Concept of Cardio – Thoracic Unit (KS)	10%	L2	15	1,2,3,4,4,5,6,7	MCQ SAQ OSCE Mini CEX
Cardiovascular pharmacology and therapeutics	(KSA) Diuretics, anti-arrhythmic drugs, antihypertensive drugs, sympathomimetics and antagonists, cardiac glycosides, angiotensin – converting enzyme inhibitors and angiotensin receptor antagonists, coronary vasodilators, anticoagulants, anti-platelets, lipid lowering agents	10%		15	1,2,3,5	OSCE MCQ SAQ
Cardiovascular	1. Cardio-pulmonary	20%	L3	30		

emergencies	resuscitation/ advanced life support. 2. Shock – cardiogenic shock and circulatory collapse 3. Acute pulmonary oedema 4. Cardiac tamponade 5. Malignant arrhythmias 6. Hypertensive emergencies 7. Dissecting aneurysms 8. Acute coronary syndromes – coronary care 9. Pulmonary embolism 10. Oxygen therapy					

Definitions for Mode of delivery 1 – 9

- 1 = Lectures
- 2 = Tutorials
- 3 = Seminars
- 4 = Clinicals/Practicals
- 5 = Self-directed learning
- 6 = Assignments
- 7 = Conferences

Definition for Level of difficulty I, II, III

- Level I = Knowledge and Comprehension
- Level II = Analysis and Application
- Level III = Synthesis and Evaluation

9.0 ASSESSMENT OF SENIOR TRAINEES

Assessment of trainees consists of the following components:

1. Continuous assessment/Pre-requisites
    a. Compliance with final examination eligibility requirements
    b. Evaluation of procedures (scoring)
    c. Casebook in subspecialty (scoring)
2. Final examinations consisting of the following sections:
    a. SECTION ONE
        i. Theory paper I: MCQs on generic curriculum in Internal Medicine
        ii. Viva Voce in general medicine and generic curriculum using modified OSCE, in the objective practical assessment of generic competencies (OSPAGC): 2 hours.
    b. SECTION TWO
        i. Theory paper II. MCQ in general medicine for general internal medicine track only. OR
        ii. **Theory paper III. MCQs in relevant subspecialty (200 stems for 3 hours) for** subspecialty track
        iii. Viva voce and/or practical's in subspecialty (1 hour)
    c. SECTION THREE
        i. Defense of dissertation (1 hour) OR/AND
        ii. Viva voce on casebook (for general medicine candidates only) (1 hour)
    d. SECTION FOUR (rated as pass or fail)
        i. Clinical examinations (Dermatology and Genitourinary medicine only)
    e. SECTION FIVE: CASEBOOK IN SUBSPECIALTY (20 MARKS)
        i. For subspecialty candidates only. This is assessed as an in-course assignment and submitted with the dissertation.

    NOTE:

    1. All candidate will take Theory paper I and OSPAGC
    2. General medicine candidates: (a) Theory paper I and II (b) OSPAGC (c) and viva on casebook.
    3. All subspecialty candidates: (a) Theory papers I and III ,(b) OSPAGC , (c) viva voce in subspecialty , (d) presentation of a casebook and (e) Defense of dissertation.
    4. Candidates in Dermatology and Genitourinary medicine will in addition have clinical examination limited to the subspecialty.
       Candidates should consult subspecialty handbooks for details of the requirements for each particular subspecialty.

Conditions for a pass

A pass score of more than 50% in ALL sections (general medicine, dissertation and subspecialty). A pass in one or more sections only places the candidate as a "referred" candidate.

10.0 CREDIT UNIT SUB-SPECIALTY TRAINING INTERNAL MEDICINE

Contact Hours and Credit Unit for Part 2 FMCP

Postings	Duration (Months)	Contact Academic Hrs/Wk	Contact Clinical Hrs/Wk	Total Contact Hrs/Wk	Credit Units
Core Specialty	24	12	24	36	144
General Medicine	12	12	24	36	72
Dissertation					12
Total	36	24	48	72	228

BASIS FOR CALCULATION OF PART 2 CREDIT UNITS

Contact academic hrs:

- Routine academic work = 4 hours/wk
- Research = 4 hours/wk
- Management = 2 hours/wk
- Journal club = 2 hours/wk

12 hrs/week Every 3 month = 12 Credit Units Every 3Months = 48 Credit Unit/year = 144 Credit Units in 3years
1 Month = 4 Credit Units
3 Month Posting = 12 Credit Units

Clinical contact hrs:
4HRS/Day X 6 DAYS = 24HRS/WK/4 = 6 Credit Unit Every 3 Months = 24Credit Units/year x 3years = 72 Credit Unit in 3years
1 Month Posting =2 Credit Unit
3 Months Posting = 6 Credit Unit

Dissertation:
12 Credit Units

Credit Unit/Month = 4 (Academic) + 3 (Clinical) = 7

Total Credit Units over 3years = 144 (Academic Contact) + 72 (Clinical Contact) + 12 units (Dissertation) = 228

FACULTY OF INTERNAL MEDICINE

NATIONAL POSTGRADUATE MEDICAL COLLEG OF NIGERIA

PART II (SENIOR RESIDENCY) TRAINING CURRICULUM

CLINICAL HAEMATOLOGY SUB-SPECIALTY

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THE SUB-SPECIALTY TRAINING PROGRAMME

IN

CLINICAL HAEMATOLOGY

8.0 CLINICAL HAEMATOLOGY SUBSPECIALTY CURRICULUM

Domains	Specific topics, knowledge, attitude and skills	Mode of delivery	% of course coverage	Learning objectives *(Levels using taxonomy)*	Total credit units	Assessment methods
GENERAL HAEMATOLOGY	Should be able to describe the formation and life cycle of the blood cells. Should be able to prepare stain and examine a blood film and recognizes the different blood cells and any obvious abnormalities involving them. To know the genetic control of haemoglobin production. Should be able to list in fair order of priority, the common haematological disorders in Nigerians. Should be able to list the normal haematological values in Nigerians and to recognize any differences from normal ranges in other racial groups. To know the clinical approach to patients with; anaemia, polycythaemia, neutropaenia, leucocytosis, bleeding, thromboembolism, lymphadenopathy, splenomegaly.	1-6	15%	I,II,III	15	MCQs, VIVA, PRACTICALS
RED CELL DISORDERS	To identify, describe and interpret the peripheral blood film in anaemias. Should be able to describe the various anaemias that are secondary to systematic diseases. To describe the aetiology,	1-7	15%	I,II,III	15	MCQS, VIVA, PRACTICALS

	pathophysiology, natural history and management of haemolytic syndromes. To participate in the management of common haemolytic anaemias in Nigeria. To describe the pathophysiology, presentation and management of red cell enzymopathies. To identify, investigate and manage nutritional anaemias (microcytic, and macrocytic) and also recognize their importance. To describe the pathophysiology, presentation and management of aplastic anaemias and iron overload.					
WHITE BLOOD CELL DISORDERS	To identify, describe and interpret the peripheral blood film in WBC disorders. Should be able to describe the various causes and clinical significance of neutrophilia, neutropaenia, lymphocytosis, lymphopaenia, eosinophilia, basophilia, basopaenia, monocytosis, monocytopaenia and mononucleosis syndromes.	1-7	5%	I,II,III	10	MCQS, VIVA, PRACTICALS
LEUKAEMIAS	Should be able to state indications for bone marrow aspiration and for trephine bone biopsy. Should be able to perform an iliac/sternal bone marrow aspiration and to prepare, stain, read and make reasonable use of this technique in diagnosis and management of haematological and oncological disorders. Should be able to describe the aetiological factors, classifications, presentation and treatment of acute and chronic	1-7	10%	I,II,III	14	MCQS, VIVA, PRACTICALS

	Leukaemias and also the prognostic implications of the clinical/histological grading. To identify and participate in the diagnosis and management of patients with leukaemias.					
LYMPHOMAS	Should be able to describe the aetiological factors, classifications, presentation and treatment of malignant lymphomas and also the prognostic implications of the clinical/histological grading. To identify and participate in the diagnosis and management of patients with lymphomas.	1-7	5%	I,II,III	10	MCQS, VIVA, PRACTICALS
MYELODYSPLASTIC SYNDROMES (MDS)	Should be able to define and describe the classification, clinical features, diagnostic criteria, prognostic factors, clinical variants and the management including the response criteria of myelodysplastic syndromes. Participate in diagnosis and management of MDS and MDS/MPN.	1-7	5%	I,II,IIII	10	MCQS, VIVA, PRACTICALS
MYELOPROLIFERATIVE NEOPLASMS (MPN)	To describe the pathogenesis, clinical presentation (natural history) and management of polycythaemia vera, essential thrombocythaemia and primary myelofibrosis. To understand the basis for classifying chronic neutrophilic leukaemia, chronic eosinophilic leukaemia and idiopathic hypereosinophilic syndromes under MPN.	1-7	5%	I,II,III	10	MCQS, VIVA, PRACTICALS
PARAPROTEINAEMIAS	To describe the pathogenesis, clinical presentation (natural history) and participate in the	1-7	5%	I,II,III	10	MCQS, VIVA, PRACTIC

	management of multiple myeloma. To describe the categorization and the management of other paraproteinaemias.					ALS
HAEMOSTASIS AND THROMBOSIS	Should comprehend the basic principles of haemostasis and its disorders. To identify, describe and interpret the various investigations in assessing haemostasis. On encountering a patient with a bleeding disorder is able, from history and physical examination, to reach a reasonable diagnosis and outline the correct line of management. To describe the basis, clinical presentation and management of inherited and acquired bleeding disorders. To describe the aetiological factors, pathogenesis, clinical presentation and management of inherited and acquired thrombophilias including risk assessment and thromboprophylaxis. Participate in the use of anticoagulants in the management of various medical conditions.	1-7	10%	I,II,III	15	MCQS, VIVA, PRACTICALS
HAEMAPOIETIC STEM CELL TRANSPLANTATION	Should be conversant with the principles and indications of bone marrow and stem cell transplant, conditioning regimens, autologous, allogeneic and syngeneic transplants and procedures of marrow harvesting	1-7	5%	I,II,III	10	MCQS, VIVA, PRACTICALS

	and blood product support. Describe the clinical presentation and management of acute and chronic complications post transplant. To know post transplant vaccination programmes and participate in the follow up of patient post bone marrow transplant.					
HAEMATOLOGICAL EMERGENCIES	To describe the causes pathophysiology, presentation and management where applicable of : Blood transfusion reactions Massive blood transfusion Neutropaenic fever Hyperviscosity syndrome Superior vena cava syndrome	1-7	5%	I,II,III	10	MCQS, VIVA
LABORATORY HAEMATOLOGY	Should comprehend the basic principles of blood group serology and blood transfusion including the use of blood components and products in the management of patients. Should understand the principle of genetic counselling and have good knowledge of genetics and genetic methods used in the diagnosis of haematological diseases. Should have knowledge of internal and external quality assurance and safety in the haematology laboratory. Should be conversant with "instrumentation in haematology" – principles of automated cell counting instruments, fundamentals of laser technology, principles of	1-7	15%	I,II,III	15	MCQS, VIVA, PRACTICALS

	flow cytometry and its application and platelet function studies.					
	TOTAL				**144**	

LI – Knowledge-recall of information
LII- Comprehension and application understanding and being able to interpret data
LIII – problem-solving- use of knowledge and understanding in new circumstances

8.1 ROTATIONS IN CLINICAL HAEMATOLOGY

1. General Internal Medicine 1 Year
2. General haematology 1 Year
3. Haemostasis/coagulation 2 months
4. Blood Transfusion 2 months
5. Laboratory (general) 2 months
6. Special Laboratory 4 weeks (desirable)
7. Genetic counseling 2 weeks
8. Genetics – karyotypic analysis 2 weeks
9. Radionuclide, radiological aspects of haematology (investigation and treatment) (Desirable) 4 weeks
10. Histopathology posting (bone marrow histology, immunohistochemistry, flow cytometry) (Desirable) 4 weeks
11. Automation – coulter, spectrophotometer, POC machines (INR, D- dimer, fibrinogen etc) 4weeks
12. Therapeutic aphaeresis(Desirable) 4 weeks

The posting in general medicine shall be made up of 2 months each of respiratory, cardiology, nephrology, gastroenterology and infectious disease postings and one month each in neurology and rheumatology.

The research programme will run concurrently with the duration of training which is 3 years.

9.0 ASSESSMENT OF SENIOR TRAINEES

Assessment of trainees consists of the following components:

1. Continuous assessment/Pre-requisites
   a. Compliance with final examination eligibility requirements
   b. Evaluation of procedures (scoring)
   c. Casebook in subspecialty (scoring)
2. Final examinations consisting of the following sections:

   SECTION ONE

   1. Theory paper I: MCQs on generic curriculum in Internal Medicine
   2. Viva Voce in general medicine and generic curriculum using modified OSCE, in the objective practical assessment of generic competencies (OSPAGC): 2 hours.

   SECTION TWO

   3. Theory paper II. MCQ in general medicine for general internal medicine track only.
      OR
   4. **Theory paper III. MCQs in relevant subspecialty (200 stems for 2 hours) for** subspecialty track
   5. AND
   6. Viva voce and/or practical's in subspecialty (1 hour)
      SECTION THREE
   7. Defense of dissertation (1 hour) OR/AND
   8. Viva voce on casebook (for general medicine candidates only) (1 hour)
      SECTION FOUR (rated as pass or fail)
   9. Clinical examinations (Dermatology and Genitourinary medicine only)
      SECTION FIVE: CASEBOOK IN SUBSPECIALTY (20 MARKS)

   10. For subspecialty candidates only. This is assessed as an in-course assignment and submitted with the dissertation.

   NOTE:

   1. All candidate will take Theory paper I and OSPAGC
   2. General medicine candidates: (a) Theory paper I and II (b) OSPAGC (c) and viva on casebook.
   3. All subspecialty candidates: (a) Theory papers I and III ,(b) OSPAGC , (c) viva voce in subspecialty , (d) presentation of a casebook and (e) Defense of dissertation.
   4. Candidates in Dermatology and Genitourinary medicine will in addition have clinical examination limited to the subspecialty.

   Candidates should consult subspecialty handbooks for details of the requirements for each particular subspecialty.

Conditions for a pass

A pass score of more than 50% in ALL sections, (General medicine, Dissertation and Subspecialty). A pass in one or more sections only places the candidate as a "referred" candidate.

10.0. APPENDIX 1
10.1 CREDIT UNIT SUB-SPECIALTY TRAINING INTERNAL MEDICINE

Contact Hours and Credit Unit for Part 2 FMCP

Postings	Duration (Months)	Contact Academic Hrs/Wk	Contact Clinical Hrs/Wk	Total Contact Hrs/Wk	Credit Units
Core Specialty	24	12	24	36	144
General Medicine	12	12	24	36	72
Dissertation					12
Total	36	24	48	72	228

10.2 BASIS FOR CALCULATION OF PART 2 CREDIT UNITS

Contact academic hrs:

- Routine academic work = 4 hours/wk
- Research = 4 hours/wk
- Management = 2 hours/wk
- Journal club = 2 hours/wk

12 hrs/week Every 3 month = 12 Credit Units Every 3Months = 48 Credit Unit/year = 144 Credit Units in 3years
1 Month = 4 Credit Units
3 Month Posting = 12 Credit Units

Clinical contact hrs:

4HRS/Day X 6 DAYS = 24HRS/WK/4 = 6 Credit Unit Every 3 Months = 24Credit Units/year x 3years = 72 Credit Unit in 3years
1 Month Posting =2 Credit Unit
3 Months Posting = 6 Credit Unit

Dissertation:

12 Credit Units

Credit Unit/Month = 4 (Academic) + 3 (Clinical) = 7

Total Credit Units over 3years = 144 (Academic Contact) + 72 (Clinical Contact) + 12 units (Dissertation) = 228

NATIONAL POSTGRADUATE MEDICAL COLLEG OF NIGERIA

FACULTY OF INTERNAL MEDICINE

PART II (SENIOR RESIDENCY) TRAINING CURRICULUM

CLINICAL PHARMACOLOGY AND THERAPEUTICS SUB-SPECIALTY

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CURRICULUM AND COURSE CONTENT

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THE SUB-SPECIALTY TRAINING PROGRAMME

IN

CLINICAL PHARMACOLOGY AND THERAPEUTICS

8.0 Clinical Pharmacology and Therapeutics subspecialty curriculum and course content

8.1 Rotation in Clinical Pharmacology and Therapeutics

8.2 Clinical Pharmacology and Therapeutics subspecialty course content

Domain	**Specific topics, knowledge, attitudes skills**	**% of course coverage**	**Learning objectives (using taxonomy)**	**Mode of delivery**	**Total credit units**	**Method of assessment**
Applied Basic Pharmacology	Understand basics of pharmacotherapy, pharmacokinetics and pharmacodynamics (PK/PD) of of drugs Including Drug-Receptor Interactions, transfer across biologic membranes, biotransformation (K) Pharmacogenomics&pharmacotherapeutic outcomes (K)Neurotransmission and &Neurotransmitters including application of knowledge of biosynthesis, release and fate of neurotransmitters in the management of diseases(K)	10	Level 1, 2	1, 2, 5		1, 2
Drug evaluation	Demonstrate ability to: Evaluate drugs at various stages of development; Design & Conduct clinical trials and support preclinical drug development/ testing (S, A & B) Develop study Protocols for the conduct of clinical trial including informed consent, ethics of clinical research, Good Clinical, Practice, Good laboratory, Practices (K, S)	15	Levels 1,2,3	1,2,3,4,5,6,7		1,2,3
Pharmaco- Epidemiology &Pharmacovigilance	Understand: The scope and role of pharmacoepidemiology in all aspects of healthcare including policy, delivery and pharmaceutical industry (K, S, A & B). Role of pharmacovigilance, Adverse Drug Reactions, including,	20	Levels 1, 2, 3	1,2,3,4,5,6,7		1,2,3

	epidemiology, diagnosis & management Monitoring schemes, causality assessment ,database management (K,S,A&B) Drug quality including, substandard/counterfeit medicines, polypharmacy, rational drug use, medication errors, errors in prescribing; herbal medicines (K,S, A & B).					
Drug policy & management	Financing and pricing of medicines, revolving fund for medicines (including Bamako Initiative) (S), National Health Insurance Scheme (K) Computers in Medicine: including simple statistical calculations, database management and graphics. Storage and retrieval of information and publications. (S) Report writing: Scientific papers and reports, clinical trials (S)	10				1,2
Rational prescribing & prescription writing	Prescribing for the elderly patients: special problems including altered pathophysiology, altered pharmacodynamics, special problems with polypharmacy. (K,S, A&B) Prescribing for special populations such as pregnant women; extremes of age, nephropathy etc including rationale and challenges (K,S)	15	Levels 1,2,3	1,2,3,4,5,6 ,7		1,2,3
Toxicology, Drug overdose, substance abuse	Effectively manage drug and other chemical intoxication/overdose including the use of appropriate antidotes: Toxicokinetics, general approach to the treatment of the poisoned patient (resuscitation, decontamination, prevention of absorption and enhanced elimination), (K,S) Management of drug overdose, for example, salicylates, paracetamol). K, S, A&B) Envenomations – Snakebites, scorpion and bee stings etc. Poisonous plants (K) Understand the pharmacological basis of substance abuse, pharmacokinetics of commonly abused psychoactive agents and management (K)	10	Levels 1,2,3	1,2,3,4,5,6 ,7		1,2,3

Chemotherapy	Comprehend: the basic principle of selective toxicity in the use of chemotherapy Classes of antimicrobials including antibacterial, antiviral, antiprotozoal, antifungal etc, class mechanisms of actions and, the clinical pharmacology of specific examples, provide appropriate advice (K, S, A, B) Resistance to antimicrobials Classes and mechanisms of actions of different anticancer drugs including: cell-cycle specific and non-cell-cycle specific agents	10	1,2,3	1,2,3,4,5,5,6,7		1,2,3
Organ-system pharmacology**	Drugs acting on the Organ – System: Cardiovascular Renal (K) Central Nervous System (K) Endocrine (K) Gastrointestinal (K) Hematopoietic (haematinics, antiplatelets growth factors, anti coagulantsetc) (K) Musculo-skeletal (Anti-inflammatory drugs – non-steroidal, disease –modifying anti-rheumatic drugs, uricosurics and other drugs for treatment of gout, Analgesics) (K, S) Dermatologicals (K) Immunopharmaco-therapy (Biologicals; Immunomodulators (K)	10	Levels 1,2	1,2,3,5,6		1,2

Definition of Learning Objectives:

- Level I = Knowledge and Comprehension
- Level II = Analysis and Application
- Level III = Synthesis and Evaluation

Definitions for Mode of delivery: 1 – 7

- 1 = Lectures
- 2 = Tutorials
- 3 = Seminars
- 4 = Clinicals/Practicals
- 5 = Self-directed learning
- 6 = Assignments
- 7 = Conferences

Definitions for Mode of Assessment: 1 – 3

- 1 =
- 2 =
- 3 =

9.0 ASSESSMENT OF SENIOR TRAINEES

Assessment of trainees consists of the following components:

1. Continuous assessment/Pre-requisites
    a. Compliance with final examination eligibility requirements
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    a. SECTION ONE
        i. Theory paper I: MCQs on generic curriculum in Internal Medicine
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    b. SECTION TWO
        i. Theory paper II. MCQ in general medicine for general internal medicine track only. OR
        ii. **Theory paper III. MCQs in relevant subspecialty (200 stems for 3 hours) for** subspecialty track
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    NOTE:

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    2. General medicine candidates: (a) Theory paper I and II (b) OSPAGC (c) and viva on casebook.
    3. All subspecialty candidates: (a) Theory papers I and III ,(b) OSPAGC , (c) viva voce in subspecialty , (d) presentation of a casebook and (e) Defense of dissertation.
    4. Candidates in Dermatology and Genitourinary medicine will in addition have clinical examination limited to the subspecialty.
       Candidates should consult subspecialty handbooks for details of the requirements for each particular subspecialty.

Conditions for a pass

A pass score of more than 50% in ALL sections (general medicine, dissertation and subspecialty). A pass in one or more sections only places the candidate as a "referred" candidate.

10.0 CREDIT UNIT SUB-SPECIALTY TRAINING INTERNAL MEDICINE

Contact Hours and Credit Unit for Part 2 FMCP

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NATIONAL POSTGRADUATE MEDICAL COLLEG OF NIGERIA

FACULTY OF INTERNAL MEDICINE

PART II (SENIOR RESIDENCY) TRAINING CURRICULUM

DERMATOLOGY SUB-SPECIALTY

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IN

DERMATOLOGY

8.0 GENERAL STRUCTURE OF SUB- SUBSPECIALTY TRAINING DERMATOLOGY

8.1 SENOIR RESIDENTS ROTATIONS

	Posting	**Duration**
1	Clinical dermatology 1	12 months
2	Plastic surgery	1 month
3	Histopathology	1 month
4	Medical Microbiology & Parasitology	1 month
5	Rheumatology	1 month
6	Sexually Transmitted diseases including HIV/AIDS	2 months
7	Internal Medicine (Endocrinology, Neurology & Nephrology)	6 months
8	Clinical dermatology 2	12 months

The duration of residency training in Dermatology and Genitourinary Medicine shall be for a minimum of three years (36 months) in a dermatology department or unit in Nigeria.

Note ;The posting in internal medicine shall be made up of 2 months each of endocrinology, neurology and nephrology and one month in rheumatology.

The research programme will run concurrently with the duration of training which is 3 years.

8.2 DERMATOLOGY CURRICULUM CONTENT

DOMAIN	SPECIFIC TOPICS - KNOWLEDGE ATTITUDES AND SKILLS	% OF COURSE CONTENT	LEARNING OBJECTIVES	MODE OF DELIVERY	TOTAL CREDIT UNITS	METHOD
Dermatology						
Introductory Dermatology	Describe the anatomy, physiology, embryology, organization and functions of the skin **(K)** Apply the correct dermatological terminology in describing skin lesions **(S)** Apply the knowledge of skin biology in history taking and examination of the skin. **(S)** Recognize the importance of skin biology in the diagnosis and treatment of dermatological disorders. **(B/A)**	**Year 1**	**Level 1 - 3**	1,2,3,4,5,6	3	MCQ Theory questions Practical OSCE
Dermatological Therapy and Procedures	Select and offer the appropriate therapy (for both adults and children) based on knowledge of principles of therapy, skin biology and disease condition **(S)** Outline adverse drug reactions to commonly used topical and systemic drugs **(K)** Communicate therapeutic options available and inherent risks and benefits of each one **(S)** Recognize the value of and participate in the reportage of adverse drug events **(B/A)** Perform the following procedures on the skin effectively **(S)**: • Identification of the scabies mite • Identification of fungi in scrapings/clippings • Intralesional injections • Wood's light examination • Prick test • Patch test • Slit skin smear • Skin snip • Phototherapy, photo chemotherapy, Photodynamic therapy • Cryotherapy • Shave Excision	**Year 1**	**Level 1 - 3**	1,2,3,4,5,6	6	MCQ Theory questions Log Book Practicals OSCE

	• Nail Avulsion • Punch Skin Biopsy • Skin Excision and closure • Curettage and cautery • Curettage, Electro cautery/coagulation • Lumpectomy for nodules • Simple skin grafting • Dermabrasion • Desensitization techniques • Tzank smear • Radiotherapy • Hyperbaric surgery Demonstrate the ability to interpret and apply results from these procedures appropriately and ensure quality control and verification of externally provided results, where necessary**(S)** Demonstrate the ability to appropriately manage wounds healing with either primary or secondary intention **(S)** Recognize when there is a need to refer or multidisciplinary management is required **(B/A)** Show willingness to keep abreast with and recognize the importance of advances in dermatological therapy.**(B/A)**					

Infectious diseases and Infestations of the skin	Define and classify the infections and infestations of the skin**(K)**
	Describe the pathophysiology, clinical features and prevention of Infections and infestations of the skin **(K)**
	Demonstrate the ability to diagnose and manage these Infections and infestations of the skin effectively: **(S)**
	• Bacterial
	• Fungal
	• Viral
	• Non-venereal spriochetal infections
	• Rickettsial
	• Parasitic
	• Mycobacterial infections - special emphasis on:
	  o Leprosy
	  o Tuberculosis
	• Superficial and deep mycoses
		Year 1	**Level 1 - 3**	1,2,3,4,5,6	12	MCQ
						Theory questions
						Log Book
						Practicals
						OSCE

	• Dermatoses caused by parasites, arthropods and hazardous animals State the clinical features of skin infections in those with lowered immunity **(K)**					
Papulosquamous skin diseases	Define and classify Papulosquamous skin diseases **(K)** Discuss the pathophysiology, clinical features, diagnosis and management of these Papulosquamous disorders**(S)** • Psoriasis • PityriasisRubraPilaris • Lichen Planus/Lichenoid disorders • PityriasisLichenoides • Parapsoriasis Recognize the impact of these diseases on patients' quality of life**(B/A)**	**Year 1**	**Level 1-3**	1,2,3,4,5,6	6	MCQ Theory questions Practicals, Log Book, OSCE
Disorders of Pigmentation	Define and classify the disorders of pigment of the skin**(K)** Describe the pathophysiology and clinical features of these disorders **(K)** Demonstrate the ability to diagnose and manage these disorders of skin pigmentation effectively: **(S)** • Genetic Disorders of Pigmentation o Albinism o Hemansky-Pudlak syndrome o Hypomelanosis of Ito o Mongolian spots o BeckersMelanosis • Acquired disorders of pigmentation o Vitiligo o Melasma o Lentigo o Lentigines o Pityriasis alba o Post inflammatory pigmentation o Drug induced pigmentation Demonstrate sensitivity towards and recognize the socio – cultural concerns	**Year 1**	**Level 1 - 3**	1,2,3,4,5,6	6	MCQ Theory questions Log Book Practicals OSCE

	of patients with disorders of pigmentation **(B/A)**					
Eczemas	Discuss the classification, pathophysiology, clinical features, diagnosis and management of**(S)**: • Atopic Eczema • Dyshidrotic eczema • Asteatotic eczema • Seborrhoeic eczema • Contact Dermatitis (Allergic/irritant) • Occupational skin diseases Demonstrate the ability to perform simple clinical procedures such as patch testing and skin scrapings for KOH/mycological cultures in the management of these patients.**(S)** • Comprehend the basis of different therapeutic modalities especially steroid and emollient therapy in atopic eczema**(K)** • Keep abreast of recent advances in the management of eczemas**(K)** • Communicates effectively to patients the aims of treatment and possible risks associated with steroid therapy in atopic eczema**(B/A)**	**Year 1**	**Level 1 - 3**	1,2,3,4,5,6	6	MCQ Theory questions Log Book Practicals OSCE

Urticaria	Define and classify Urticarial**(K)**
	Categorize acute and chronic urticarias**(K)**
	Discuss the pathogenesis, clinical features, diagnosis and management of the following **(S)**:
	• Physical urticaria
	  • Dermographism
	  • Cold urticaria
	  • Cholinergic urticaria
	  • Contact urticaria
	  • Delayed pressure urticaria
	  • Solar urticaria
	• Heat urticaria
	• Vibratory urticaria
	• Aquagenicurticaria
	Recognize the concerns of patients
		Year 1	**Level 1-3**	1,2,3,4,5,6	6	MCQ
						Theory questions
						Practicals,
						Log Book,
						OSCE

	with chronic urticaria and strive, with the help of the patient, to identify possible triggers of the disease**(B/A)**					
Pychoder matology and Psychocut aneous Disease	Demonstrate the ability to diagnose, investigate and manage skin diseases presenting with associated psychiatric or psychosocial morbidity and vice versa **(S)** Demonstrate the ability to perform a mental status examination and perform a suicide risk evaluation **(S)** Define the use of antidepressants, anxiolytics and antipsychotics in psych dermatology **(K)** Describe the impact of stress on the skin and skin disorders **(K)** Discuss the aetiology,diagnosis and treatment of Pruritus**(S)** Define the following and outline their clinical features and management:**(S)** • Prurigonodularis • Lichen simplex • Mucocutaneous pain syndromes • Neurological conditions affecting the skin	**Year 1**	**Level 1 - 3**	1,2,3,4,5,6	3	MCQ Theory questions OSCE
Genetics	Apply the knowledge of skin anatomy, physiology and embryology in defining genetic skin diseases **(S)** • Discuss the clinical features, diagnosis and management of **(S)**: o Cornification Disorders ▪ Icthyosis and various syndromes o Inherited Acantholytic Disorders o Ectodermal Dysplasias o Genetic Defects of the Hair and Hair Growth o Genetic Defects of the Nails and Nail Growth o Genetic Blistering Diseases o Genetic Disorders of Collagen, Elastin and Matrix Correctly diagnose and treat genetic skin diseases**(S)** Recognize the importance of genetic counseling in patients with genetic	**Year 1**	**Level 1 - 3**	1,2,3,4,5,6	6	MCQ Theory questions OSCE

	disease(B/A) Demonstrate sensitivity in informing patients about the disease and prognosis(A/B) Encourage questioning and ensure comprehension (B/A) Recognize the potential impact of genetic skin diseases on the patient, family and friends (B/A) Promote and encourage involvement of patients in appropriate support networks, both to receive support and to give support to others (B/A)					
Disorders of the adnexeal skin structures	Discuss the epidemiology, pathophysiology, clinical features, diagnosis and management of the following disorders: (S) • Pilosebaceous o Acne o Acne keloidalisnuchae o Rosacea o Trichofolliculoma o Trichoepithelioma o Sebaceous gland disorders o Perioral dermatitis • Apocrine o Hiradenitissuppurativa o Fox –Fordyce disease o Chromhidrosis o Bromhidrosis • Eccrine glands o Hyperhidrosis o Hpohidrosis o Sweat retention syndrome Correctly diagnose patients presenting with disorder of adnexal skin structures and institute appropriate management(S) Recognize cosmetic and social problems associated with these disorders(B/A)	**Year 1**	**Level 1 - 3**	1,2,3,4,5,6	12	MCQ Theory questions OSCE
Paediatric dermatology	Demonstrate the ability to diagnose, investigate and treat dermatological disorders commoner or specific to children and adolescents(S) Recognize when to maintain child confidentiality and when to take history from parents/caregivers (B/A)	**Year 1**	**Level 1 - 3**	1,2,3,4,5,6	6	MCQ Theory questions Log Book Practicals

	Discuss the epidemiology, pathophysiology, clinical features, diagnosis and management of the following: **(S)**
	• Congenital naevi
	• Haemangiomas
	• Atopic dermatitis
	• Infections
	  o Bacterial
	  o Viral
	  o Fungal
	  o Parasitic
	• Miliaria
						OSCE

Aesthetic Dermatology	Describe the pathology and clinical signs and symptoms associated with skin ageing and photo ageing **(K)** Demonstrate the ability to advise patients considering cosmetic treatment, diagnose and manage the side effects and complications of cosmetic therapy **(S)** Perform the following techniques for cosmetic procedures: **(S)** • Cosmetic camouflage **- 5** • Botulinum toxin injections **- 10** • Chemical peels **- 10** • Injection of fillers **- 10** • Hair transplantation **- 3** Discuss the use of lasers in dermatology**(S)** Recognize the limitations of cosmetic surgery **(B/A)**	**Year 2**	**Level 1 - 3**	1,2,3,4,5,6	6	MCQ Theory questions Practicals OSCE
Tumours	Describe the common clinical, dermoscopic and histopathological features of skin cancer and current methods of molecular analysis (K) Define and compare current staging systems for melanoma, non-melanoma skin cancers and skin lymphomas**(K)** Explain the principles for the following modalities of therapy for skin cancers: **(K)** • Chemotherapy • Surgical therapy	**Year 2**	**Level 1 - 3**	1,2,3,4,5,6	6	MCQ Theory questions Log Book Practicals OSCE

	• Radiotherapy • Cryotherapy • Photodynamic therapy • Immunotherapy Demonstrate the ability to take an accurate history, competently examine and diagnose benign and malignant skin lesions **(S)** Demonstrate the ability to competently perform the following in the management of benign and malignant skin lesions: **(S)** • Use of the dermoscope • Excision of skin lesions for diagnosis • Integration of clinical and pathological findings to ensure diagnosis and distinction between benign and malignant skin lesions/metastases • Develop a treatment plan for diagnosed benign or malignant skin lesions and ensure a multidisciplinary team approach where necessary Outline the importance of palliative care in the management of patients**(K)** Recognize the importance of and show the ability to obtain informed consent prior to surgical procedures and other modalities of treatment **(B/A)** Show a willingness to stay abreast of recent clinical advances and current skin cancer trials **(B/A)** Ensure a concise understanding of the management of the following tumors: **(S)** • Benign Tumours o Cysts o Acanthomas o Histiocytosis o Fibro adenomas o Melanocytic neoplasms o KeloidsHypertrophic scars • Malignant Tumours o Squamous cell carcinomas o Lymphatic Tumours o Melanomas					

	○ Naevi					
Dermatological Conditions Specific to Anatomical Sites	Describe the significance of the site of the skin lesions in relation to the diagnosis **(K)** Discuss the classification, pathophysiology, clinical features, diagnosis and management of the following: **(S)** • Dermatoses of scalp and hair ○ Alopecia etc. • Dermatoses of facial structures • Dermatoses of Genitalia and perineum • Disorders of the nail and paronychium • Disorders of the corium and subcutaneous tissue • Disorders of skin and mucous membranes ○ Oro-cutaneous disorders ○ Oculo-cutaneous disorders • Vascular Dermatoses • Cutaneous vasculitis • Purpura and Bruising • Disorders of Arteries, Veins and Lymphatic Vessels • Peripheral vascular disease • Necrotizing vasculitis Recognize the need to examine each patient thoroughly **(B/A)** Recognize the need for a multi-disciplinary approach to the management **(B/A).**	**Year 2**	**Levels 1-3**	1,2,3,4,5,6	12	MCQ Theory questions Log Book Practicals OSCE
The Genitourinary System and Sexually Transmitted Diseases	Discuss the anatomy and physiology of the genitourinary system. Demonstrate the ability to take an appropriate sexual history, perform a concise physical examination and discuss the appropriate differential diagnoses of specific Sexually Transmitted Diseases. **(S)** Explain the clinical features, investigation, diagnosis and	**Year 2**	**Level 1 - 3**	1,2,3,4,5,6	12	MCQ Theory questions Practicals OSCE

	management (syndromic/lab based)of the following sexually transmitted infections: **(S)**
	• Genital HPV
	• Genital Ulcers
	  o Syphilis
	  o Chancroid
	  o LGV
	• Chlamydia
	• Gonorrhoea
	• Non Specific Urethritis
	• Herpes
	• Candidiasis
	• **HIVAIDS**
	Recognize the biological and epidemiological synergies of HIV and STD infections **(B/A)**
	Recognize the importance of and requirements for counseling, contact tracking, safe sexual practices and patient confidentiality. **(B/A)**
	Demonstrate the ability to stay abreast of recent advances in the management of STIs **(B/A)**
	Define Sexual dysfunction **(K)**
	Discuss the pathophysiology, symptoms and signs, risk factors, diagnosis and management of sexual dysfunction.**(S)**
	Perform a Sexual abuse evaluation**(S)**
	•					

Disorders of immunity, hypersensitivity and inflammation	Outline the cutaneous manifestations of immunodeficiency**(K)** Demonstrate a working knowledge of the immune system in health and disease**(S)** Discuss the function of cells in inflammatory disease**(S)** Recognize the importance of the complement system in health and cutaneous disease**(B/A)** Define and outline the clinical features, diagnosis and management of Graft-Versus-Host Reaction**(K)** Describe cellular interactions in granuloma formation and regression **(K)**. Discuss the classification, pathophysiology, clinical features, diagnosis and management of	**Year 2**	**Level 1-3**	1,2,3,4,5,6	3	MCQ Theory questions Practicals OSCE

	Anaphylactic syndromes(S)					
Connective tissue diseases	Define and classify connective tissue diseases(K) Discuss the pathogenesis, clinical features, diagnosis and management of(S) : • Auto inflammatory Skin Syndromes • Urticarial Vasculitis • Behcets Disease • Lupus erythematosus • Antiphospholipid Syndrome • Dermatomyositis • Overlap Syndromes • Systemic Sclerosis, Morphea and Lichen Sclerosus • Rheumatoid arthritis • Dermatomyositis • Sarcoidosis Demonstrate the ability to order appropriate tests relevant for diagnosis (S) Correctly interpret diagnostic test results and institute appropriate therapy(S) Recognize the importance of multidisciplinary approach in management of Connective tissue diseases(B/A)	**Year 2**	**Level 1-3**	1,2,3,4,5,6	6	MCQ Theory questions Practicals, OSCE
Metabolic and Nutritional Disorders	Categorize Metabolic and Nutritional Disorders based on aetiopathogenesis(K) Discuss the clinical features, diagnosis and management of(S): • Cutaneous Amyloidosis • Mucinosis • Cutaneous Porphyries' • Xanthomas • Calcinosis • Phenylketonuria • Alkaptonuria and ochronosis • Hartnup disease • Anderson's Fabry Disease • Hurler's Syndrome	**Year 2**	**Level 1-3**	1,2,3,4,5,6	3	MCQ Theory questions, Practicals, OSCE

	Discuss the skin manifestations of Diabetes Mellitus and institute appropriate therapeutic regimen(S)					
Photosensitivity, photo diagnosis and phototherapy	Define electromagnetic spectrum, including UVB, UVA, visible light **(K)** Define "photosensitivity" and classify photosensitivity disorders **(K)** Explain the mechanisms underlying photosensitivity disorders and state common exogenous photosensitisers – topical, drug and dietary **(K)** Define safety procedures for use of ultraviolet radiation sources**(K)** Detect patients with photosensitivity disorder and perform appropriate history and examination **(S)** Recognise patterns of clinical features occurring in different photosensitivity conditions and how they assist diagnosis **(S)** Correctly manage photosensitivity disorders, including instituting appropriate photo protective measures, local and systemic treatments (S) Outline indications and contraindications for phototherapy and photo chemotherapy **(K)** Select appropriate phototherapeutic treatment options for individual patients**(S)** Diagnose and manage adverse events precipitated by phototherapy**(S)** Discuss new developments in phototherapy including photodynamic therapy(S)	**Year 2**	**Level 1-3**	1,2,3,4,5,6	3	MCQ Theory questions, OSCE
Reactions to Physical Agents	Discuss the pathophysiological basis, clinical features, diagnosis and management of: • Thermoregulation • Cold injuries • Thermal injuries • Radiobiology and Radiation effects • Corns and calluses	**Year 2**	**Level 1-3**	1,2,3,4,5,6	3	MCQ Theory questions, Practicals, OSCE

	• Decubitus (Pressure)Ulcers Undesrtand the importance of multidisciplinary approach in management (K) Discuss with patients possible lifestyle modifications that may be necessary in managing these conditions, where necessary(B/A)					
Adverse cutaneous drug reactions	Define and classify adverse cutaneous drug reactions(K) List causes of adverse cutaneous drug eruptions(K) Keep abreast of new and emerging trends in adverse cutaneous drug eruptions(K) Discuss the epidemiology, pathophysiology, diagnosis and management of(S) : • Fixed drug eruptions • Erythema multiforme – major/minor • Steven Johnsons syndrome • Scalded skin syndrome • Toxic epidermal necrolysis • Hypersensitivity vasculitis • Erythroderma • Lichenoid drug eruptions Participate in multidisciplinary care of patients with adverse cutaneous drug eruptions(B/A)	**Year 2**	**Level 1-3**	1,2,3,4,5,6	6	MCQ Theory questions Practicals OSCE
Bullous Disorders	Classify bullous skin diseases (K). Discuss the pathogenesis, epidemiology, clinical features, diagnosis and management of(S): • Immunobullous diseases o Bullous pemphigoid o Cicatricialpemphigoid o Pemphigoidgestationis o Dermatitis herpetiformis o Linear IgA dermatosis o Epidermolysisbullosaacquisita o Pemphigus vulgaris o Pemphigus foliaceus o Paraneoplastic pemphigus • Bullous Geno dermatoses	**Year 2**	**Level 1-3**	1,2,3,4,5,6	6	MCQ Theory questions, OSCE

	○ Epidermolysisbullosa ○ Mastocytosis ○ Hailey-Hailey(familial Pemphigus) ○ Porphyria cutaneatarda Outline causes of acute (infectious and non-infectious) blistering skin disease **(K)**. Correctly interpret laboratory and histopathological results in patients**(S)**. Formulate appropriate treatment strategies in patients with bullous disorders**(S)**. Recognize the impact of bullous disorders on patient's quality of life**(B/A)** Keep abreast of recent advances in diagnosis and management of bullous diseases**(B/A)** Show willingness to incorporate multidisciplinary approach in management of patients**(B/A)**					
Cutaneous manifestations of: • **systemic disorders** • **Internal malignancies**	Describe the relationship between systemic diseases and skin lesions **(K)** Discuss the epidemiology, clinical features, diagnosis and management of the following systemic disorders with cutaneous manifestations: **(S)** **Systemic Disorders** • Diabetes mellitus • Thyroid disorders • Chronic liver disease • Chronic renal failure • Tuberculosis **Connective Tissue Disorders** • SLE • Systemic sclerosis • Mixed connective tissue disease • Rheumatoid arthritis • Sarcoidosis • Dermatomyositis **Internal malignancies** • Carcinomas of the breast, liver, lungs • Hodgkins lymphoma Exhibit the ability to take a detailed history and perform a thorough	**Year 2**	**Level 1-3**	1,2,3,4,5,6	6	MCQ Theory questions OSCE

	physical examination in these patients(S) Order appropriate investigations to help diagnosis(S) Interpret the results of investigations (S) Demonstrate the ability to competently perform dermoscopy in patients (S) Recognize the importance of a multi-disciplinary approach in management(B/A)					
GENERAL MEDICINE POSTING						
Histopathology /Dermatopathology	Develop familiarity with the normal histology of the skin**(K)** Develop an understanding of common conditions involving the skin(K) Comprehend necessary components of the histopathology report(K) Comprehend principles of quality control (detection of errors in slide or specimen labeling, poor staining, inadequate controls, lost specimens etc.)**(K)** Recognize the importance of pathology in dermatology(K) Develop ability to section biopsy specimens for histological examination(S) Recognize and diagnose common inflammatory and neoplastic conditions involving the skin(S) Develop familiarity with common microscopic stains, cell markers, and other techniques used in Dermatopathology(S)	**Year 3 (2months)**	**Level 1-3**	1,2,3,4,5,6	12	MCQ Theory questions OSCE
Plastic Surgery	Describe cutaneous anatomy from the skin surface down to muscle fascia, and the surface anatomy of the head and neck**(K)** Identify in detail named blood vessels and nerves of the head, neck, and other body sites, where these lie between the skin, and muscle or muscle fascia**(K)** Describe safe and effective local anaesthesia for skin surgery including regional anaesthesia**(K)** Identify the surgical options for treating individual skin lesions at all body sites,	**Year 3 (2 months)**	**Level 1-3**	1,2,3,4,5,6	12	MCQ Theory questions OSCE

	including surgical margin required **(K)** Identify complications of skin surgery, including medico-legal aspects **(K)** Evaluate surgical options for individual lesions**(S)** Perform the following surgical procedures safely and effectively**(S)**: o Cryotherapy o Ellipse and punch skin biopsy o Curettage with and without cautery o Shave excision o Full thickness skin excision and direct closure using sub-cuticular sutures and skin sutures o Dog ear repair o Nail avulsion Demonstrate correct aseptic technique with regard to scrubbing, gowning, gloving and site preparation **(S)** Demonstrate full and appropriate documentation of surgical procedures**(S)** Demonstrate appropriate management of secondary intention healing wounds**(S)** Demonstrate appropriate management of wound healing complications such as infection, dehiscence, overgranulation **(S)** Administer effective local anaesthesia **(S)** Demonstrate effective haemostasis and use of cautery and electrosurgery **(S)** Recognize limits of own skill **(B/A)**					
*STI/HIV	Demonstrate the ability to take an appropriate sexual history, perform a concise physical examination and discuss the appropriate differential diagnoses of specific STDs. **(S)** Explain the clinical features, investigation, diagnosis and management (syndromic/lab based)of the following sexually transmitted infections: **(S)** • Genital HPV • Genital Ulcers o Syphilis	**Year 3**	**Level 1-3**	1,2,3,4,5,6	12	MCQ Theory questions OSCE

	○ Chancroid ○ LGV • Chlamydia • Gonorrhoea • Non Specific Urethritis • Herpes • Candidosis • HIVAIDS Recognize the importance of and requirements for counseling, contact tracking, safe sexual practices and patient confidentiality. **(B/A)** Strive to stay abreast of recent advances in the management of STIs					
Cardiology	Comprehend the anatomy and physiology of the heart (K) Apply the knowledge of cardiac anatomy and physiology in history taking and examination of the patient with cardiac disease**(S)** Demonstrate ability to interpret Chest radiograph and ECG tests(S). Discuss clinically relevant dermatological manifestations encountered in patients with cardiac disease**(S)** Elicit symptoms and signs of skin affectation secondary to cardiac disease**(S)** Order relevant investigations that will help arrive at a diagnosis in patients with cardiac disease associated with skin involvement**(S)** Discuss the skin manifestations, diagnosis and management of patients with**(S)**: Cyanotic heart disease Rheumatic heart disease/Infective endocarditis Xanthomas/xanthelasma Marfan's syndrome Cardio-Facio-Cutaneous syndrome Vascular diseases • Arteritis and vasculitides • Buerger disease • Giant cell arteritis and Kawasaki disease • Varicose vein • Peripheral vascular disease • Deep venous thrombosis Outline skin manifestations due to cardiac therapeutics**(K)**	**Year 3**	**Level 1-3**	1,2,3,4,5,6	12	MCQ Theory questions OSCE

Endocrinology	Interpret basic endocrine testing through application of basic scientific knowledge of the Endocrine system(S) Discuss cutaneous manifestations of and institute appropriate diagnostic investigations/ treatment in:(S) • Thyroid disease • Addison's disease • Cushing's syndrome • Diabetes mellitus • Gout Classify and describe management of endocrine emergencies(K)	**Year 3**	**Level 1-3**	1,2,3,4,5,6	12	MCQ Theory questions OSCE
**Rheumatology	Discuss the structure and function of the musculoskeletal system(S) Classify rheumatological diseases (K) Order and interpret diagnostic tests in rheumatology(S) Discuss the clinical features, diagnosis and management of(S): • Connective tissue diseases • Autoimmune diseases • Arthritis • Back pain • Osteoporosis Discuss the indications and side effects of(S): • NSAID use • Disease modifying ant rheumatic drugs(DMARD) • Biologics Keep abreast of recent advances in management of rheumatological diseases(B/A) Recognize the importance of multidisciplinary approach in management(B/A)	**Year 3**	**Level 1-3**	1,2,3,4,5,6	12	MCQ Theory questions OSCE
**Gastroenterology	Discuss the anatomy and physiology of the gastrointestinal system(S) Outline the approach to diagnosis in GI disorders(K) Understand the principles of endoscopy in GI disease(K)	**Year 3**	**Level 1-3**	1,2,3,4,5,6	12	MCQ Theory question

	Discuss the aetiology, pathogenesis, clinical features, diagnosis and management of: • Upper and lower GI bleeding • Acute and chronic diarrhoes • Peptic ulcer disease, dyspepsia and reflux oesophagitis • Acute and chronic liver diseases Discuss the skin manifestations of liver disease.					s OSCE
Nephrology	Discuss the aetiology, pathophysiology, natural history and management of primary and secondary renal diseases(S) Discuss the effects of drugs on renal function and the use of drugs in renal failure(S) Understand the principles of GFR estimation(K) Discuss the indications and complications of the various renal replacement therapeutic options(S) Classify dermatological manifestations of renal disease(K) • Dermatological manifestations of diseases associated with end-stage renal disease • Dermatological manifestations of uraemia • Dermatological disorders associated with renal transplantation Recommend appropriate therapy for managing skin manifestation of renal disease(S) Demonstrate sensitivity in dealing with patients with renal disease(B/A)	**Year 3**	**Level 1-3**	1,2,3,4,5,6	12	MCQ Theory questions OSCE
Neurology	**Demonstrate a knowledge of neuropsychology (S)** **Demonstrate ability to take a proper neurological history and perform a complete neurological examination(S)** **Outline neurological disorders that may present with skin manifestations(K)** **Discuss the aetiology, epidemiology, pathophysiology, clinical features, diagnosis and management of cerebrovascular diseases (S)** **Keep abreast of current trends in management of peripheral neuropathy(B/A)**	**Year 3**	**Level 1-3**	1,2,3,4,5,6	12	MCQ Theory questions OSCE

Pulmonology	Discuss the anatomy and physiology of the respiratory system(S) Exhibit the ability order and interpret relevant basic investigations in pulmonology (S) Outline the indications and complications of oxygen therapy(K) Comprehend the concept of mechanical ventilation, indications and complication(K) Demonstrate a knowledge of current concepts in managing acute and chronic airway diseases(B/A) Discuss the clinical features, diagnosis, treatment and complications of(S): • Occupational lung disease • Suppurative lung diseases • Interstitial lung diseases • Pulmonary TB • Lung neoplasms Recognize diseases that may manifest in the lungs and the skin(S): • Sarcoidosis • Kaposi sarcoma • Systemic vasculitis • Pulmonary arteriovenous malformations	**Year 3**	**Level 1-3**	1,2,3,4,5,6	12	MCQ Theory questions OSCE

9.0 ASSESSMENT OF SENIOR TRAINEES

Assessment of trainees consists of the following components:

1. Continuous assessment/Pre-requisites
    a. Compliance with final examination eligibility requirements
    b. Evaluation of procedures (scoring)
    c. Casebook in subspecialty (scoring)
2. Final examinations consisting of the following sections:
    a. SECTION ONE
        i. Theory paper I: MCQs on generic curriculum in Internal Medicine
        ii. Viva Voce in general medicine and generic curriculum using modified OSCE, in the objective practical assessment of generic competencies (OSPAGC): 2 hours.
    b. SECTION TWO
        i. Theory paper II. MCQ in general medicine for general internal medicine track only. OR
        ii. **Theory paper III. MCQs in relevant subspecialty (200 stems for 3 hours) for** subspecialty track
        iii. Viva voce and/or practical's in subspecialty (1 hour)
    c. SECTION THREE
        i. Defense of dissertation (1 hour) OR/AND
        ii. Viva voce on casebook (for general medicine candidates only) (1 hour)
    d. SECTION FOUR (rated as pass or fail)
        i. Clinical examinations (Dermatology and Genitourinary medicine only)
    e. SECTION FIVE: CASEBOOK IN SUBSPECIALTY (20 MARKS)
        i. For subspecialty candidates only. This is assessed as an in-course assignment and submitted with the dissertation.

    NOTE:

    1. All candidate will take Theory paper I and OSPAGC
    2. General medicine candidates: (a) Theory paper I and II (b) OSPAGC (c) and viva on casebook.
    3. All subspecialty candidates: (a) Theory papers I and III ,(b) OSPAGC , (c) viva voce in subspecialty , (d) presentation of a casebook and (e) Defense of dissertation.
    4. Candidates in Dermatology and Genitourinary medicine will in addition have clinical examination limited to the subspecialty.
       Candidates should consult subspecialty handbooks for details of the requirements for each particular subspecialty.

Conditions for a pass

A pass score of more than 50% in ALL sections (general medicine, dissertation and subspecialty). A pass in one or more sections only places the candidate as a "referred" candidate.

10.0 CREDIT UNIT SUB-SPECIALTY TRAINING INTERNAL MEDICINE

Contact Hours and Credit Unit for Part 2 FMCP

Postings	Duration (Months)	Contact Academic Hrs/Wk	Contact Clinical Hrs/Wk	Total Contact Hrs/Wk	Credit Units
Core Specialty	24	12	24	36	144
General Medicine	12	12	24	36	72
Dissertation					12
Total	36	24	48	72	228

BASIS FOR CALCULATION OF PART 2 CREDIT UNITS

Contact academic hrs:

- Routine academic work = 4 hours/wk
- Research = 4 hours/wk
- Management = 2 hours/wk
- Journal club = 2 hours/wk

12 hrs/week Every 3 month = 12 Credit Units Every 3Months = 48 Credit Unit/year = 144 Credit Units in 3years
1 Month = 4 Credit Units
3 Month Posting = 12 Credit Units

Clinical contact hrs:
4HRS/Day X 6 DAYS = 24HRS/WK/4 = 6 Credit Unit Every 3 Months = 24Credit Units/year x 3years = 72 Credit Unit in 3years
1 Month Posting =2 Credit Unit
3 Months Posting = 6 Credit Unit

Dissertation:
12 Credit Units

Credit Unit/Month = 4 (Academic) + 3 (Clinical) = 7

Total Credit Units over 3years = 144 (Academic Contact) + 72 (Clinical Contact) + 12 units (Dissertation) = 228

NATIONAL POSTGRADUATE MEDICAL COLLEG OF NIGERIA

FACULTY OF INTERNAL MEDICINE

PART II (SENIOR RESIDENCY) TRAINING CURRICULUM

ENDOCRINOLOGY AND METABOLISM SUB-SPECIALTY

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CURRICULUM AND COURSE CONTENT

FOR

THE SUB-SPECIALTY TRAINING PROGRAMME

IN

CARDIOLOGY

8.0 ROTATION SCHEDULE (36 months)

8.1 ENDOCRINOLOGY AND METABOLISM SUBSPECIALTY COURSE CONTENT

Domain	Spec Specific Topics (knowledge, skills & attitude)	% Course Coverage	Learning Objectives	Total Credit Units	Mode of Delivery	Method of Assessment
2. Diabetes						
2.1 Diagnosis and General Management of Diabetes Mellitus	**Demonstrate Knowledge of:** The diagnostic criteria for diabetes mellitus and identify the different types The diagnostic criteria for pre-diabetes and identify the different types The underlying basis of metabolic disturbances and principles of management The principles of lifestyle management including some knowledge of nutrition (including carbohydrate counting and healthy living) The characteristics of the range of oral hypoglycaemic drugs available and identify appropriate use in the clinical setting The characteristics of the range of insulins available and define their use in intensive insulin management The systems used to monitor blood glucose including continuous glucose monitoring systems The use of technology in diabetes such as diabetes databases and the use of meter / pump downloads The principles of structured education in the management of diabetes (such as DAFNE / DESMOND) Appropriate strategies for the prevention and detection of diabetes Mellitus Appropriate preventive strategies / treatments for micro and macrovascular complications of diabetes	**45%**	1,2 1,2 1,2 1,2	**65 units**	Lectures, Tutorials, Seminars, Self-directed learning; bedside teaching	CbD, mini-CEX, SCE CbD, SCE CbD, SCE CbD, mini-CEX, SCE
	Demonstration of Skills Be able to elucidate an appropriate history and interpret tests done to differentiate different types of		1,2,3,4 1,2,3,4,		Lectures, Tutorials, Seminars, Self-directed learning;	MCEX, OSCE, OPAGC

	diabetes. Be able to contribute to and support a programme or strategy designed to prevent or delay the onset of diabetes mellitus Educate patients in the use of insulin delivery devices including syringes, pens and pumps Educate people in the use of home blood glucose monitoring systems Give advice on the indications for insulin therapy in type 2 diabetes Make appropriate insulin dose adjustments including different regimens for intermittent insulin therapy and insulin pump therapy Give appropriate advice about dose adjustment in response to blood Glucose levels, exercise, alcohol etc. Identify complications of diabetes and perform annual screening for complications Identify patients appropriate for psychological intervention				bedside teaching	
	Behaviours/ Attitudes: Ability to understand the implications and concerns arising from a diagnosis of diabetes and provide advice in a non - judgmental manner Recognise the central role of the patient in the management of their diabetes Understand the cultural and educational barriers to good glucose control Recognise the impact of diagnosis of diabetes on carers and their role in the management of diabetes Ability to understand and personalize treatments and targets to the individual patient's circumstances		1,2,3,4		Lectures, Tutorials, Seminars, Self-directed learning; bedside teaching	
2.2. Management of Delivery of Diabetes Care Management of Delivery of	**Demonstrate Knowledge of:** The different settings in which diabetes care can be delivered and the different models of diabetes care delivery (i.e. primary care,		1,2,3		Lectures, Tutorials, Seminars, Self-directed learning; bedside	CbD, SCE

Diabetes Care with regard to patients and carers, other health care Professionals and relevant organisations	intermediate care and secondary care) The factors which influence commissioning diabetes care Which aspects of diabetes care can be appropriately delivered in different clinical settings The role of information technology in integrating care across different providers The role of diabetes networks and advisory groups in the organisation of care				teaching	mini-CEX
	Demonstrate Skills: Identify appropriately patients who can be managed in different settings such as primary care, intermediate care and multidisciplinary (sub-specialty) specialist care Interact with different providers of care to develop cohesive local pathways for delivery of care		1,2,3		Lectures, Tutorials, Seminars, Self-directed learning; bedside teaching	CbD, SCE mini-CEX
	Attitudes Recognise the importance of multidisciplinary team working		1,2,3,4		Lectures, Tutorials, Seminars, Self-directed learning; bedside teaching	CbD, SCE mini-CEX
2.3. Diabetic Emergencies: Manage hyperglycaemic metabolic emergencies and severe hypoglycaemia and advice about future prevention.	**Demonstrate Knowledge of:** Diagnosing and distinguishing between the types of diabetic hyperglycaemic metabolic emergency The underlying basis of metabolic disturbances and principles of management Diagnosing and managing severe hypoglycaemia and advice about future prevention Identifying patients with hypoglycaemia unawareness and advising them appropriately		1,2 1,2 1,2,3,4		Lectures, Tutorials, Seminars, Self-directed learning; bedside teaching	CbD, mini-CEX, SCE CbD, SCE CbD, mini-CEX, SCE
	Demonstrate Skills: Identify and differentiate between different hyperglycaemic emergencies Formulate appropriate plan for investigation and management, including identifying appropriate patients for escalation of treatment to critical care Identify factors that may have		1,2 1,2,3,4 1,2,3,4		Lectures, Tutorials, Seminars, Self-directed learning; bedside teaching	CbD, SCE, mini-CEX,

	contributed to hyper or hypoglycaemic Emergencies Give advice about future prevention of hyper and hypoglycaemic emergencies					
	Attitudes: Recognise and judge the urgency and severity of the emergency Communicate with other health care professionals and convey management plans. Recognise the impact of hypoglycaemia unawareness on the lifestyle of patients, their families and their carers		1,2,3,4 1,2,3,4		Lectures, Tutorials, Seminars, Self-directed learning; bedside teaching	mini-CEX
2.4. Management of Patients with Diabetes during Acute Illness or Surgery Management of Patients with Diabetes during Acute Illness or Surgery	**Demonstrate Knowledge of:** The impact of acute illness on glycaemia and its effects / implications on current management The impact of other treatments such as steroids / parenteral nutrition on glycaemia The metabolic requirements of patients with diabetes during surgery The implications of glucose control during other illnesses such as cardio- and cerebrovascular illnesses		1,2		Lectures, Tutorials, Seminars, Self-directed learning; bedside teaching	
	Skills: Adjust therapy in the short term to manage glucose control during acute illness Manage diabetes appropriately in patients on steroids or parenteral nutrition Manage diabetes appropriately in peri-operative patients Be able to supervise and advise other health care professionals in the management of patients with diabetes who are under their care		1,2,3,4		Lectures, Tutorials, Seminars, Self-directed learning; bedside teaching	
	Attitudes: Recognise the importance of multidisciplinary team working Recognise the need for specialist diabetes care in different clinical environments Awareness of the importance of glucose control in patients who are acutely unwell		1,2,3,4		Lectures, Tutorials, Seminars, Self-directed learning; bedside teaching	
2.5 Conception and Pregnancy	**Demonstrate Knowledge of:** Discuss the importance of		1,2		Lectures, Tutorials,	mini-CEX, SCE

in Diabetes Manage pre-conception, conception and pregnancy in the diabetic woman in order to optimize Outcome	glucose control in pre-conception and during pregnancy and the need for family planning in fertile women of all ages The effect of diabetes on the pregnant woman and her foetus, and strategies for their amelioration The effect of pregnancy on diabetes management and glycaemia The risk factors for gestational diabetes and current diagnostic criteria appropriate screening strategies Describe the different available methods of contraception				Seminars, Self-directed learning; bedside teaching	
	Demonstrate Skills: Discuss the importance of diabetes in pregnancy and the need for family planning in fertile women of all ages Advise women about the importance of pre -conception care and potential risks of diabetic pregnancy , including progression of complications Advise women with diabetes regarding contraception Optimise glycaemic and blood pressure control prior to and throughout pregnancy Manage other aspects of pregnancy such as folate supplements and rubella vaccination Diagnose and manage gestational diabetes Deliver antenatal care in the setting of a joint obstetric clinic Manage glycaemia during labour and delivery		1,2,3,4		Lectures, Tutorials, Seminars, Self-directed learning; bedside teaching	
	Attitudes Exhibit a non-judgmental attitude to women who have difficulty in achieving glycaemic targets prior to conception or during pregnancy and support their efforts to do so.		1,2,3,4		Lectures, Tutorials, Seminars, Self-directed learning; bedside teaching	
2.6 Age-related Conditions and Diabetes 2.6.1 Young People Ability to	**Demonstrate Knowledge of:** The effects of diabetes on normal growth and development in children The physiological, psychological and social factors affecting		1,2		Lectures, Tutorials, Seminars, Self-directed learning; bedside	CbD, SCE, mini-CEX CbD, mini-CEX, MSF

provide care to young people with diabetes in transition to adult services	glycaemic control in adolescence Awareness of ways in which individual behaviour can impact on young people Awareness of the rights of children and young people				teaching	
	Demonstrate Skills Provide care to young persons with diabetes in transition to the adult service Recognise common risk-taking behaviour in young persons and its effects on diabetes Recognise the potentially negative effects of adolescent behaviour on diabetes and the impact it may have on family and personal relationships		1,2,3,4		Lectures, Tutorials, Seminars, Self-directed learning; bedside teaching	mini-CEX, CbD CbD, mini-CEX, MSF
	Attitudes: Exhibit a non-judgmental attitude in addressing the problems of a young patient with diabetes and demonstrate preparedness to change behaviour in response to feedback and reflection Respond to the physiological, psychological and social problems of maintaining glycaemic control in adolescence and the concerns and anxieties of parents / carers Adopt a patient focused approach that acknowledges values that may not be shared by the trainee		1,2,3,4		Lectures, Tutorials, Seminars, Self-directed learning; bedside teaching	mini-CEX, MSF, PS mini-CEX, MSF, PS
2.6.2 Elderly People Provide care for and manage elderly patients with diabetes	**Demonstrate Knowledge of:** The potential effects of co-morbidities associated with ageing on diabetes treatments and control The effects of aging including associated disability on access to Healthcare The diversity of agencies and healthcare workers that can support elderly patients living in the community		1,2 1,2,3,4 1,2,3,4		Lectures, Tutorials, Seminars, Self-directed learning; bedside teaching	CbD, mini-CEX, SCE
	Demonstrate Skills: Adapt therapeutic targets and diabetes treatment regimens to the individual patient taking account of co-morbidities		1,2,3,4		Lectures, Tutorials, Seminars, Self-directed learning; bedside teaching	CbD, mini-CEX CbD, mini-CEX

	Manage the specific social and medical needs of elderly patients with diabetes in the community Advise about the care of older people in residential and nursing care taking into account appropriate utilization of health service resources Assess and advise so as to minimize risk especially for elderly vulnerable patients					CbD, mini-CEX
	Attitude: Adopt a patient centred approach recognising that diabetes management and therapeutic targets may need adjustment in elderly patients with disability, social isolation and co-morbidity Adopt a team approach in coordinating, in some cases leading but always acknowledging, the efforts of agencies and individuals managing older patients with diabetes		1,2,3,4 1,2,3,4		Lectures, Tutorials, Seminars, Self-directed learning; bedside teaching	CbD, mini-CEX, PS CbD, mini-CEX, MSF
2.7 Complications of Diabetes 2.7.1 Screening for the Complications of Diabetes Understand the principles and practice of screening for diabetic complications Demonstrate Knowledge of: The principles and practice of screening Practice effective strategies in the implementation of a screening program for diabetes	**Demonstrate Knowledge of:** The importance of hyperglycaemia as a risk factor for macroangiopathy Other risk factors for macroangiopathy including elements of the so-called metabolic syndrome The presenting features of cerebrovascular, cardiovascular and peripheral vascular disease The available treatments for non glycaemic risk factors for macroangiopathy		1,2		Lectures, Tutorials, Seminars, Self-directed learning; bedside teaching	SEC
	Skills: Identify and manage glycaemia and other modifiable risk factors for macroangiopathy Diagnose and manage heart failure in diabetes Investigate and manage diabetic patients with established macrovascular disease Manage diabetic patients		1,2		Lectures, Tutorials, Seminars, Self-directed learning; bedside teaching	mini-CEX

complications Recognise the criteria for urgent referral to appropriate services when diabetic complications are identified 2.7.2 Macrovascular Disease Identify, investigate, treat and make appropriate referrals for patients with macrovascular disease	suffering acute myocardial infarction and stroke					
	Attitude: Recognise when to refer patients for specialist investigation and treatment (e.g. Cardiology, Vascular surgery)		1,2,3,4		Lectures, Tutorials, Seminars, Self-directed learning; bedside teaching	CbD, mini-CEX
2.7.3 Eye Disease in Diabetes Identify and prevent diabetic eye disease	**Demonstrate Knowledge of:** How diabetes can affect different parts of the eye The pathogenesis and different stages of diabetic retinopathy The importance of visual acuity testing and retinal screening The available treatments for eye complications The implications of eye complications on driving / employment The structure of a retinal screening programme		1,2		Lectures, Tutorials, Seminars, Self-directed learning; bedside teaching	CbD, mini-CEX, SCE
	Demonstrate Skills: Diagnose cataract, and all grades of severity of retinopathy using direct ophthalmoscopy Interpret retinal photographs Identify other ocular disorders associated with diabetes Perform and interpret visual acuity testing Discuss the importance of glycaemic control and blood pressure management in diabetic eye disease Recognise the types of diabetic eye complications which need urgent ophthalmology referral		1,2		Lectures, Tutorials, Seminars, Self-directed learning; bedside teaching	mini-CEX
	Attitude Practice primary prevention of diabetic eye disease Refer the appropriate patients for specialist ophthalmic assessment		1,2		Lectures, Tutorials, Seminars, Self-directed learning; bedside	CbD, mini-CEX, MSF

	Communicate to patients and advise accordingly about the treatments available for eye complications and the implications of eye complications on driving / employment Recognise the importance of retinal screening and contribute to local diabetic retinopathy screening programmes Recognise the impact of diabetes eye complications on patients lifestyle				teaching	
2.7.4 Renal Disease and Hypertension in Diabetes Prevent, identify and manage renal disease and hypertension in people with diabetes	Demonstrate Knowledge of: How diabetes can affect different parts of the kidney The pathogenesis and different stages of diabetic nephropathy The effect of hypertension on diabetic nephropathy The significance of proteinuria in the increased incidence of Macroangiopathy The treatment thresholds of blood pressure in patients with diabetes and nephropathy Describe the available tests for diagnosing nephropathy and explain the importance of screening for early nephropathy Describe the treatments available for diabetic nephropathy and hypertension		1		Lectures, Tutorials, Seminars, Self-directed learning; bedside teaching	CbD, SCE
	Demonstrate Skill: Manage hypertension according to current guidelines Manage glycaemia in patients with renal impairment Diagnose nephropathy and distinguish between its different stages (early / late) Evaluate other macrovascular risk factors in patients with diabetic nephropathy Advise/counsel patients about the significance of nephropathy		1		Lectures, Tutorials, Seminars, Self-directed learning; bedside teaching	CbD, mini-CEX
	Attitudes: Communicate to patients the importance of blood pressure and glycaemic management in the prevention and slowing of progression of nephropathy Communicate the significance of a diagnosis of nephropathy to patients Communicate with colleagues in specialist nephrology services		1,2		Lectures, Tutorials, Seminars, Self-directed learning; bedside teaching	CbD, MSF

	and refer patients appropriately Recognise the implications of a diagnosis of diabetic nephropathy on patients, their carers and families.					
2.7.5 Neuropathy and Erectile Dysfunction in Diabetes To understand principles of management of diabetic neuropathy and erectile dysfunction	**Demonstrate Knowledge of:** How diabetes can affect different parts of the nervous system The pathogenesis and different manifestations of diabetic neuropathy		1,2,4		Lectures, Tutorials, Seminars, Self-directed learning; bedside teaching	CbD, mini-CEX, SCE
	Demonstrate Skills: Diagnose the different patterns of autonomic and somatic poly- and mononeuropathies, including performance of appropriate examination Manage the neuropathies, including neurogenic pain and the manifestations of autonomic neuropathy Evaluate and manage erectile dysfunction in diabetic men		1,2		Lectures, Tutorials, Seminars, Self-directed learning; bedside teaching	CbD, mini-CEX, SCE
	Attitudes Select appropriate treatment particularly for neurogenic pain and manifestations of autonomic neuropathy Exhibit appropriate behaviour when discussing erectile dysfunction and communicating range of treatment options		1,2,3,4		Lectures, Tutorials, Seminars, Self-directed learning; bedside teaching	mini-CEX, SCE
2.7.6 Foot Disease To understand principles of management of diabetes related foot disease	**Demonstrate Knowledge of:** The pathogenesis of diabetic foot ulceration The range of specialist investigations available to detect vascular insufficiency and neuropathy The principles of infection control Appropriate antibiotic regimens including local and national guidelines The risks of antibiotic therapy and importance of prescribing policies Other conditions affecting feet such as tinea infection, skin cancer and causes of pain (e.g. simple fracture, tendonitis)		1 1 1,2		Lectures, Tutorials, Seminars, Self-directed learning; bedside teaching	CbD, mini-CEX, SCE
	Demonstrate Skills Identify patients at risk of foot problems and advise on prevention recognising the importance of patient education. ,		1,2 2,3		Lectures, Tutorials, Seminars, Self-directed learning; bedside	CbD, mini-CEX CbD, mini-CEX

	Use of specialist footwear and off -loading techniques Recognise the features of Charcot's neuroarthropathy Assess vascular supply and neurological status of the lower limb Use of appropriate imaging techniques in detection and management of bone infection in the diabetic foot Manage established diabetic foot problems including use of appropriate antibiotic treatment liaising appropriately with microbiological service Exercise judgment in the need for, and timing of, surgical referral Counsel patients on matters of infection risk , transmission and control Recognise potential for cross - infection in clinical settings		1,2		teaching	
	Attitude Demonstrate effective management of established diabetic foot problems including communication of advice on prevention of foot ulceration Recognise the importance of the multidisciplinary team , including vascular and orthopaedic surgeons, in the prevention and management of diabetic foot problems Recognise when to refer patients for specialist foot care and use of orthotic appliances Engage in local infection control procedures and practice aseptic technique whenever relevant Encourage all staff, patients and relatives to observe infection control principles Recognise the impact of amputation on patients and their carers and the importance of effective rehabilitation		1,2 1,3 3,4		Lectures, Tutorials, Seminars, Self-directed learning; bedside teaching	CbD, mini-CEX CbD, MSF
2.7.7 Lipid Disease To be able to diagnose and manage disorders of lipid metabolism	**Demonstrate Knowledge of:** The pattern of lipid abnormalities seen in patients Range of treatments available for managing lipid abnormalities		1,2		Lectures, Tutorials, Seminars, Self-directed learning; bedside teaching	mini-CEX
	Demonstrate Skill Select appropriate patients to		1,2		Lectures, Tutorials,	mini-CEX mini-CEX,CbD

	screen for dyslipidaemia Assess cardiovascular risk in relation to the patient's lipid profile Diagnose and manage patients with primary and secondary lipid disorders Communicate the cardiovascular risk of hyperlipidaemia to patients		1,2,4		Seminars, Self-directed learning; bedside teaching	
	Attitude Select appropriate treatment for individual patients Explain the importance of screening for lipid abnormalities in diabetes Recognise the need to refer patients with atypical or severe dyslipidaemia to specialist services		1,2 1,2,4		Lectures, Tutorials, Seminars, Self-directed learning; bedside teaching	CbD, mini-CEX, PS
3. Endocrinology						
3.1 Disorders of the Hypothalamus and Pituitary To diagnose, manage and provide care for patients with disorders of the hypothalamus and / or the pituitary gland	**Demonstrate Knowledge of:** The causes, investigations and treatments for disorders of the hypothalamus and pituitary	**45%**	1,2	**65 units**	Lectures, Tutorials, Seminars, Self-directed learning; bedside teaching	CbD, mini-CEX
	Demonstrate Skills: Perform and interpret basal and dynamic tests of pituitary function Demonstrate an ability to diagnose and provide first line management of functioning and non-functioning pituitary tumours Demonstrate an ability to diagnose and monitor optic nerve compression Provide immediate and long term care to patients with mass effects from pituitary enlargement Demonstrate ability to diagnose and manage hypopituitarism, , Demonstrate ability to diagnose and manage diabetes insipidus Demonstrate ability to manage patients during and after surgery for pituitary tumours Demonstrate ability to diagnose and manage patients with SIADH, thirst dysregulation and other disorders of water balance.		1,2,3 1,2,3 1,2,3,4		Lectures, Tutorials, Seminars, Self-directed learning; bedside teaching	CbD, mini-CEX, SCE
	Attitudes Recognise the need for		1,2,3		Lectures, Tutorials,	CbD, mini-CEX

	appropriate referrals for pituitary surgery and radiotherapy Recognise the role of the multidisciplinary team in the management of pituitary tumour Recognise the need for urgent referral of patients presenting with symptoms of optic nerve compression Recognise the impact of hypothalamic / pituitary disorders on patients and carers				Seminars, Self-directed learning; bedside teaching	
3.2 Disorders of Growth and Development To assess normal growth and development by the use of growth charts and assessment of pubertal stage, and to diagnose and treat growth disorders	**Demonstrate Knowledge of:** Methods of assessment of normal growth a and development by the use of growth charts and assessment of pubertal stage Describe the diagnosis and management of endocrine growth		1,2		Lectures, Tutorials, Seminars, Self-directed learning; bedside teaching	CbD, mini-CEX, SCE
	Skills Demonstrate ability to diagnose and manage disorders of growth and maturation, particularly constitutional delay in growth in puberty		1,2,3		Lectures, Tutorials, Seminars, Self-directed learning; bedside teaching	CbD, mini-CEX
	Attitude Recognise the impact of growth and pubertal disorders on the patient and his / her family		1,2,3,4		Lectures, Tutorials, Seminars, Self-directed learning; bedside teaching	CbD, mini-CEX, MSF, PS
3.3 Disorders of the Thyroid Gland To understand the physiology and biochemistry of thyroid hormone, and to be competent to diagnose, manage and provide care for patients with thyroid disease, including thyroid eye disease and thyroid disorders during pregnancy	**Demonstrate Knowledge of:** Explain disease states in terms of disorders of physiology and biochemistry of thyroid hormones and TSH The Causes of thyroid dysfunction and goitre , their diagnosis and their management The regulations applicable to the use of radioactive iodine for benign thyroid disease Methods of diagnosis and treatment of thyroid eye disease The Influence of pregnancy on tests of thyroid function and their Interpretation Describe the implications of pregnancy for the management		1,2 1,2 1,2		Lectures, Tutorials, Seminars, Self-directed learning; bedside teaching	CbD, mini-CEX, SCE CbD, mini-CEX, SCE

	of thyroid Disease					
	Demonstrate Skills Interpret thyroid function test results to diagnose and exclude thyroid disease and to recognise assay interferences Demonstrate ability to diagnose and manage simple non-toxic goitre and solitary thyroid nodules Perform and/or refer appropriately for fine needle aspiration cytology of the thyroid Use and/or refer for the use of radioisotopes to diagnose thyroid disorders. Use and/or refer for the use of radioisotopes in the treatment of hyperthyroidism and goitre, Demonstrate the ability to diagnose and manage primary and secondary hypothyroidism Demonstrate the ability to manage thyroid emergencies including thyroid patients in critical care Provide perioperative care for patients undergoing thyroid surgery (particularly preoperative preparation) Demonstrate the ability to investigate and manage patients with thyroid eye disease Demonstrate the ability to manage thyroid disorders during and after pregnancy		1,2,3 1,2,3 1,2,3 1,2,3,4 1,2,3,4		Lectures, Tutorials, Seminars, Self-directed learning; bedside teaching	CbD, mini-CEX, SCE CbD, mini-CEX CbD, mini-CEX CbD, mini-CEX, MSF CbD, mini-CEX, MSF
	Attitude Refer appropriate patients with hyperthyroidism or benign goitre for treatment with radio-iodine or surgery Understand the role of multidisciplinary care in the management of patients with thyroid cancer Understand the need to refer selected patients for ophthalmological Review		1,2,3,4 1,2,3		Lectures, Tutorials, Seminars, Self-directed learning; bedside teaching	CbD, mini-CEX CbD, mini-CEX
3.4. Disorders of the Adrenal Glands To be	**Demonstrate Knowledge of:** The causes, investigations and treatments for disorders of the adrenal glands				Lectures, Tutorials, Seminars, Self-directed	CbD, mini-CEX, SCE

competent to diagnose, manage and provide care for patients with adrenal disease					learning; bedside teaching	
	Demonstrate Skills Perform and interpret tests of adrenal function Demonstrate ability to investigate and provide first line management of Cushing's Syndrome Demonstrate ability to investigate suspected endocrine hypertension and provide first line management for phaeochromocytoma and adrenocortical hypertension Demonstrate the ability to diagnose and manage non classical congenital adrenal hyperplasia and provide first line management for classical CAH in adolescents and adulthood Demonstrate ability to investigate and manage patients with suspected adrenal tumours Provide perioperative care for patients with suspected or proven adrenal insufficiency Explain importance of steroid replacement during intercurrent illness -		1,2		Lectures, Tutorials, Seminars, Self-directed learning; bedside teaching	CbD, mini
	Attitude Recognise the urgency of managing adrenal insufficiency Recognise complex management issues in congenital adrenal hyperplasia especially in females and adolescents Recognise the role of referral to appropriate specialists of those with adrenal diseases Recognise the role of patient and carer education in the long term management of adrenal insufficiency		1,2,3 1,2,3,4 1,2,3,4 1,2,3,4		Lectures, Tutorials, Seminars, Self-directed learning; bedside teaching	CbD, mini-CEX, MSF
3.5 Disorders of the Gonads Diagnose, manage and provide care for patients with gonadal disorders	**Demonstrate Knowledge of:** The causes of primary and secondary gonadal failure and menstrual irregularity State treatment strategies for gonadal failure, hirsutism , virilism , gynaecomastia, polycystic ovarian syndrome and infertility		1,2		Lectures, Tutorials, Seminars, Self-directed learning; bedside teaching	CbD, SCE
	Demonstrate Skills:		1,2,3		Lectures,	CbD, mini-CEX,

	Perform and interpret test of the hypothalamopituitary-gonadal axis Ability to investigate and manage primary and secondary gonadal failure Prescribe appropriately sex hormone replacement therapy to men and women Assess, investigate and manage women with hirsutism / virilism Assess, investigate and manage women with menstrual disturbance Manage polycystic ovarian syndrome Ability to investigate and manage men with gynaecomastia Ability to provide first line assessment and management to an infertile couple Ability to investigate and manage common chromosomal disorders such as Turner's and Klinefelter's syndromes				Tutorials, Seminars, Self-directed learning; bedside teaching	SCE
	Attitude Recognise the role of MDTs and other services including genetic services in disorders of fertility and chromosome disorders Recognise the impact of infertility on the patient and their family Adopt non-judgmental approach to patients with gender dysphoria		1,2,3,4		Lectures, Tutorials, Seminars, Self-directed learning; bedside teaching	CbD, mini-CEX, MSF
3.6 Disorders of Parathyroid Glands, Calcium Disorders and Bone Diagnose, manage and provide care for patients with disorders of the parathyroid glands, Calcium metabolism and bone	**Demonstrate Knowledge of:** Causes of hypercalcaemia and hypocalcaemia and their treatments Screening and treatment strategies for osteoporosis The endocrine and metabolic causes of renal stones		1,2 1,2,3 1		Lectures, Tutorials, Seminars, Self-directed learning; bedside teaching	CbD, SCE
	Demonstrate Skills Ability to diagnose and manage hypercalcaemia including emergency presentations Ability to diagnose and manage hyperparathyroidism Provide peri operative care for patient undergoing parathyroid surgery Ability to investigate and manage hypocalcaemia Risk factors for vitamin D deficiency including dietary		1,2,3		Lectures, Tutorials, Seminars, Self-directed learning; bedside teaching	CbD, mini-CEX MSF, SCE

	factors and ethnicity Ability to diagnose and manage vitamin D deficient states Risk factors for osteoporosis Provide preventive care against osteoporosis Assess and manage established osteoporosis Assess and manage Paget's Disease of bone Select appropriate patients for bone biopsy					
	Attitude Make appropriate referrals for bone densitometry and understand its value and imitations Recognise which patients with hyperparathyroidism require referral for parathyroid surgery		1,2,3,4 1,2,3,4		Lectures, Tutorials, Seminars, Self-directed learning; bedside teaching	CbD, m ini-CEX, MSF
3.7 Disorders of Appetite and Weight Diagnose, manage and provide care for patients with disorders of appetite and weight	**Demonstrate Knowledge of:** Endocrine and other secondary causes of obesity The endocrine consequences of anorexia nervosa, bulimia and obesity Medical and surgical treatment options for obesity		1,2		Lectures, Tutorials, Seminars, Self-directed learning; bedside teaching	CbD, SCE
	Demonstrate Skills Diagnose, manage and provide care for patients with disorders of appetite and weight Demonstrate the ability to investigate the obese patient in order to exclude endocrine causes Demonstrate the ability to initiate management of the obese patient		1,2,3 1,2,3,4		Lectures, Tutorials, Seminars, Self-directed learning; bedside teaching	CbD, mini-CEX, SCE
	Attitudes Recognise which patients require consideration for referral for surgery for management of obesity Recognise the importance of multidisciplinary team management of patients with eating disorders Exhibit non-judgmental attitudes to patients with obesity and eating disorders		1,2,3,4		Lectures, Tutorials, Seminars, Self-directed learning; bedside teaching	mini-CEX, MSF, CbD, PS
3.8 Miscellaneous Endocrine and Metabolic Disorders Diagnose and	**Demonstrate Knowledge of:** Causes of and investigations of possible hypoglycaemia Causes of and investigations of neuroendocrine tumours and ectopic hormone production		1,2		Lectures, Tutorials, Seminars, Self-directed learning; bedside	CbD, SCE

provide first line care for patients with rarer endocrine conditions such as hypoglycaemia, neuroendocrine tumours and ectopic hormone production	Causes and investigations of electrolyte disturbances Features of multiple endocrine neoplasia syndromes Possible long term endocrine consequences of treatments for cancer				teaching	
	Demonstrate Skills: The ability to investigate patients with suspected hypoglycaemia The ability to diagnose and provide first line care for neuropeptide secreting tumours Ability to investigate and manage hypo and hypernatraemia Ability to investigate and manage disorders of potassium homeostasis Ability to investigate and manage disorders of magnesium homeostasis Ability to diagnose and manage syndromes of ectopic hormone production (e.g. PTHrP, ACTH, ADH) Ability to diagnose and manage syndromes of multiple endocrine neoplasia (MEN 1, 2a, 2b) - including an understanding of genetic testing and strategies for long term monitoring Ability to investigate and manage the 'late endocrine effects' of treatment for cancer Recognise, investigate and manage disorders of insulin resistance		1,2,3 1,2,3		Lectures, Tutorials, Seminars, Self-directed learning; bedside teaching	CbD, mini-CEX CbD, mini-CEX
	Attitude Recognise the need to refer to specialist services for complex endocrine disorders Recognise the role for genetic services in the management of potentially inherited endocrine disorders Recognise the role of MDTs in managing complex endocrine disorders e.g. ectopic hormone production and neuroendocrine tumours		1,2,3,4		Lectures, Tutorials, Seminars, Self-directed learning; bedside teaching	CbD, MSF

3.9 Imaging Techniques in Endocrinology (5%) [7%] Demonstrate understanding of the role and interpretation of imaging techniques in the diagnosis and management of endocrine disease.	**Demonstrate Knowledge of:** The role imaging in the investigation and management of a wide spectrum of endocrine disorders		1,2		Lectures, Tutorials, Seminars, Self-directed learning; bedside teaching	CbD, SCE
	Demonstrate Skills Make appropriate referrals for CT and MR scans of pituitary, adrenals orbits and other organs , Make appropriate referrals for ultrasonography of the ovaries, parathyroid and thyroid Make appropriate referrals for radionuclide scans of the adrenals, parathyroid and thyroid Make appropriate referrals for angiography with selective catheterization and sampling from endocrine glands		1,2,3		Lectures, Tutorials, Seminars, Self-directed learning; bedside teaching	CbD
	Attitude Consult colleagues about the interpretation of radiological investigations Act appropriately upon receipt of radiological results		1,2,3,4		Lectures, Tutorials, Seminars, Self-directed learning; bedside teaching	CbD, MSF, mini-CEX

Definition of Methods of assessment:

CbD =
Mini- CEX =
SCE =
OSCE =
OPAGC =

9.0 ASSESSMENT OF SENIOR TRAINEES

Assessment of trainees consists of the following components:

1. Continuous assessment/Pre-requisites
    a. Compliance with final examination eligibility requirements
    b. Evaluation of procedures (scoring)
    c. Casebook in subspecialty (scoring)
2. Final examinations consisting of the following sections:
    a. SECTION ONE
        i. Theory paper I: MCQs on generic curriculum in Internal Medicine
        ii. Viva Voce in general medicine and generic curriculum using modified OSCE, in the objective practical assessment of generic competencies (OSPAGC): 2 hours.
    b. SECTION TWO
        i. Theory paper II. MCQ in general medicine for general internal medicine track only. OR
        ii. **Theory paper III. MCQs in relevant subspecialty (200 stems for 3 hours) for** subspecialty track
        iii. Viva voce and/or practical's in subspecialty (1 hour)
    c. SECTION THREE
        i. Defense of dissertation (1 hour) OR/AND
        ii. Viva voce on casebook (for general medicine candidates only) (1 hour)
    d. SECTION FOUR (rated as pass or fail)
        i. Clinical examinations (Dermatology and Genitourinary medicine only)
    e. SECTION FIVE: CASEBOOK IN SUBSPECIALTY (20 MARKS)
        i. For subspecialty candidates only. This is assessed as an in-course assignment and submitted with the dissertation.

    NOTE:

    1. All candidate will take Theory paper I and OSPAGC
    2. General medicine candidates: (a) Theory paper I and II (b) OSPAGC (c) and viva on casebook.
    3. All subspecialty candidates: (a) Theory papers I and III ,(b) OSPAGC , (c) viva voce in subspecialty , (d) presentation of a casebook and (e) Defense of dissertation.
    4. Candidates in Dermatology and Genitourinary medicine will in addition have clinical examination limited to the subspecialty.
       Candidates should consult subspecialty handbooks for details of the requirements for each particular subspecialty.

Conditions for a pass

A pass score of more than 50% in ALL sections (general medicine, dissertation and subspecialty). A pass in one or more sections only places the candidate as a "referred" candidate.

10.0 CREDIT UNIT SUB-SPECIALTY TRAINING INTERNAL MEDICINE

Contact Hours and Credit Unit for Part 2 FMCP

Postings	Duration (Months)	Contact Academic Hrs/Wk	Contact Clinical Hrs/Wk	Total Contact Hrs/Wk	Credit Units
Core Specialty	24	12	24	36	144
General Medicine	12	12	24	36	72
Dissertation					12
Total	36	24	48	72	228

BASIS FOR CALCULATION OF PART 2 CREDIT UNITS

Contact academic hrs:

- Routine academic work = 4 hours/wk
- Research = 4 hours/wk
- Management = 2 hours/wk
- Journal club = 2 hours/wk

12 hrs/week Every 3 month = 12 Credit Units Every 3Months = 48 Credit Unit/year = 144 Credit Units in 3years
1 Month = 4 Credit Units
3 Month Posting = 12 Credit Units

Clinical contact hrs:
4HRS/Day X 6 DAYS = 24HRS/WK/4 = 6 Credit Unit Every 3 Months = 24Credit Units/year x 3years = 72 Credit Unit in 3years
1 Month Posting =2 Credit Unit
3 Months Posting = 6 Credit Unit

Dissertation:
12 Credit Units

Credit Unit/Month = 4 (Academic) + 3 (Clinical) = 7

Total Credit Units over 3years = 144 (Academic Contact) + 72 (Clinical Contact) + 12 units (Dissertation) = 228

NATIONAL POSTGRADUATE MEDICAL COLLEG OF NIGERIA

FACULTY OF INTERNAL MEDICINE

PART II (SENIOR RESIDENCY) TRAINING CURRICULUM

EMERGENCY MEDICINE AND CRITICAL CARE SUB-SPECIALTY

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CURRICULUM AND COURSE CONTENT

FOR

THE SUB-SPECIALTY TRAINING PROGRAMME

IN

EMERGENCY MEDICINE AND CRITICAL CARE

8.0 ROTATION SCHEDULE (36 months)

Summary of Rotations/Postings:

	Posting	Duration
1.	**Core Emergency Medicine/Critical Care** - Emergency Medicine - Critical Care	**18months** - 9 months - 9 months
2.	**Other Specialized Acute Care Units** - Coronary Care Unit - Stroke Unit	**6 months** - 3 months - 3 months
3.	**General Medicine and Ancillary Specialties** - Pulmonology - Nephrology - ENT (Otorhinolaryngology) - Trauma Unit - Cardiothoracic Surgery - Radiology	**12 months** - 3 months - 3 months - 2 months - 6 weeks - 6 weeks - 1 month

Detailed Breakdown of Rotations/Postings:

	Post-Part 1 Year	Duration of Posting
1.	**Year 1** - Emergency Medicine - Critical Care - Pulmonology - Nephrology	 - 3 months - 3 months - 3 months - 3 months
2.	**Year 2** - Coronary Care Unit - Stroke Unit - ENT - Trauma - Cardiothoracic Unit - Radiology	 - 3 months - 3 months - 2 months - 6 weeks - 6 weeks - 1 month
3.	**Year 3** - Emergency Medicine - Critical Care	**Duration** - 6 months - 6 months

8.1 EMERGENCY MEDICINE AND CRITICAL CARE SUBSPECIALTY COURSE CONTENT

Title	Specific Topics, Knowledge, Attitudes	% of Course Coverage.	Learning Objectives	Total Credit Units	Mode of Delivery	Methods of Assessment
Administration	Learn basic principles of leadership and administration.[K] Develop an understanding of quality improvement and risk management programs and their application to the operation of an emergency department.[K,S,A] Develop an understanding of the function of emergency medicine within the institution and its relationship with other departments.[K,S] Develop an understanding of the function of accrediting agencies and their relationship with emergency medicine.[K,S] Discuss hospital and Emergency Department administrative organization.[K,S]Demonstrate knowledge of cost containment, resource allocation, quality of care and access to care issues as relates to Emergency Medicine.[K,S] Discuss requirements relating to staffing, equipment and supplies, facility, quality assurance and patient transfer regulations.[K,S] Describe basic principles of medical malpractice.[K,S]	10%	I – VI		1 – 7.	MCQ CBD VV
Basic Organisation of Emergency Services	Understand common organizational structures of emergency medical services (EMS). [K,S] Learn the educational requirements and skill levels of various EMS providers. [K] Demonstrate clear understanding of the principles of EMS system operations. [K,S] Describe local, state and national components of EMS. [K,S] Demonstrate ability to use all elements of the EMS communication system. [K,S] Demonstrate ability to provide initial and continuing education to all levels of EMS personnel.[K,S,A} Discuss development of EMS pre-hospital care protocols.[K,S,A] Demonstrate understanding of appropriate utilization practices for ground and air medical services.[K,S] Participate as an observer or team member in ground and air medical transport systems.[K,S]	5%	III – VI		1 – 6.	MCQ CBD VV

	Discuss the process of disaster management notification, response, and medical care on a local, state and national level.[K,S] Learn basic principles of EMS research.[K] Learn medico-legal principles relating to EMS.[K]					
Emergency Admission and Triage	Demonstrate clear understanding principles of pre-hospital triage and emergency medical care delivery. [K,S] Discuss EMS pre-hospital care protocols.[K,S] Describe common environmental, toxicologic, and biological hazards encountered in the pre-hospital care setting as well as injury prevention techniques.[K,S] Demonstrate clear understanding of the principles of in-hospital triage and emergency medical care delivery in resource limited settings.[K,S] Demonstrate clear understanding of the basic principles of disaster management.[K,S] Demonstrate clear understanding of the concepts of mass casualties.[K,S] Demonstrate clear understanding of the concepts of disaster management.[K,S] Demonstrate clear understanding of the clinical presentation of reportable diseases as well as the processes involved in reporting such diseases to the appropriate authorities.[K,S,A]	10%	III – VI		1 – 7.	MCQ CBD VV
Acute Medical Presentations	Demonstrate clear understanding of the pathophysiology, presentation, and management of acute conditions in the following specialties of Internal Medicine:[K,S] i. Cardiology ii. Dermatology iii. Endocrinology iv. Gastroenterology v. Haematology vi. Infectious Diseases vii. Neurology viii. Nephrology ix. Pulmonology x. Rheumatology Assimilate general concepts of history taking and physical examination skills as it relates to acutely ill medical patients.[K,S] Demonstrate ability to systematically evaluate patients presenting to the emergency department.[K,S] Demonstrate ability to draw up a	15%	III – VI		1,2,3,4,5,6, 7	MCQ, CBD VV OSPAG

	detailed management plan for the acutely ill patient.[K,S]					
Management of the Critically Ill Patient.	Demonstrate clear understanding of the pathophysiology of trauma, toxins, shock, sepsis, cardiac failure, and respiratory failure that affect critically ill patients.[K,S] Demonstrate the ability to rapidly identify and evaluate critically ill patients. [K,S] Demonstrate clear understanding of the general principles in the management of critically ill patients. [K,S] Demonstrate an understanding of the appropriate use of consultants in critically ill patients.[K,S,A] Learn the principles of medical instrumentation and hemodynamic monitoring and be able to utilize them in the care of critically ill patients.[K,S,A] Demonstrate ability to use standard monitoring techniques.[K,S] Learn the rational use of laboratory, radiographic and other diagnostic tests in the management of critically ill patients.[K,S,A]	15%	III – VI.		1 – 7	MCQ CBD VV OSPAG
Cardio-pulmonary Resuscitation	Understand the etiologies and pathophysiology of cardiac arrest.[K,S] Learn to recognize the dysrhythmias associated with cardiac arrest and their treatment.[K,S] Demonstrate clear understanding of the American Heart Association recommendations and develop skill in the performance of standard resuscitative procedures.[K,S] Demonstrate ability to safely perform internal and external defibrillation.[K,S] Learn the principles of pharmacotherapy and the routes and dosages of drugs recommended during cardiac arrest and following resuscitation.[K] Discuss the dosages, indications and contraindications for pharmacologic therapy during cardiac arrest and following resuscitation.[K] Demonstrate knowledge of the techniques for drug administration including peripheral and central venous, endotracheal, intraosseous and administration.[K,S] Learn the indications for withholding and terminating resuscitation.[K]	10%	III – VI		1 – 7.	MCQ, CBD VV
	Demonstrate knowledge of the					

Airway Management	anatomy of the upper airway.[K] Demonstrate basic familiarity with nasotracheal and endotracheal intubation as well as the indications and complications.[K,S] Demonstrate correct use of the bag-valve-mask device.[K,S] Recognize and manage an obstructed airway.[K] Demonstrate appropriate judgment regarding the need for airway intervention.[K,S,A] Demonstrate ability to obtain a surgical airway.[K,S] Demonstrate the ability to manage a patient on a ventilator.[K,S]	10%	I – VI.		1 – 7.	MCQ CBD VV Log Book
Basic Procedures in Emergency Medicine and Critical Care	Demonstrate ability to perform common procedural skills including:[K,S] i. Gastric intubation, ii. Placement of central venous lines, iii. Wound closure iv. Abscess incision and drainage. v. Tube thoracotomy vi. Tracheostomy tube placement vii. Ultrasound-guided pericardiocenthesis viii. Swan-Ganz catheter placement, ix. Transvenous cardiac pacing, x. Arterial line placement, xi. Arterial blood gasses.	15%	III - VI		4	MCQ CBD VV Log Book
Ethics in Emergency Medicine and Critical Care	Demonstrate clear understanding of the ethical principles relevant to emergency medicine and critical care.[K,A] Apply ethical principles to specific patient encounters to assist in decision making.[K,S,A] Learn basic legal principles relevant to emergency medicine and critical care.[K] Understand the similarities and differences between legal and ethical principles relating to emergency medicine and critical care.[K] Demonstrate understanding of "Do not resuscitate" orders, advance directives, living wills and brain death criteria.[K]	10%	III –VI		1 – 7.	MCQ CBD VV

Definitions for Mode of delivery 1 – 9

- 1 = Lectures
- 2 = Tutorials
- 3 = Seminars
- 4 = Clinicals/Practicals
- 5 = Self-directed learning
- 6 = Assignments
- 7 = Conferences

Definition for Level of difficulty I, II, III

- Level I = Knowledge and Comprehension
- Level II = Analysis and Application
- Level III = Synthesis and Evaluation

9.0 ASSESSMENT OF SENIOR TRAINEES

Assessment of trainees consists of the following components:

1. Continuous assessment/Pre-requisites
    a. Compliance with final examination eligibility requirements
    b. Evaluation of procedures (scoring)
    c. Casebook in subspecialty (scoring)
2. Final examinations consisting of the following sections:
    a. SECTION ONE
        i. Theory paper I: MCQs on generic curriculum in Internal Medicine
        ii. Viva Voce in general medicine and generic curriculum using modified OSCE, in the objective practical assessment of generic competencies (OSPAGC): 2 hours.
    b. SECTION TWO
        i. Theory paper II. MCQ in general medicine for general internal medicine track only. OR
        ii. **Theory paper III. MCQs in relevant subspecialty (200 stems for 3 hours) for** subspecialty track
        iii. Viva voce and/or practical's in subspecialty (1 hour)
    c. SECTION THREE
        i. Defense of dissertation (1 hour) OR/AND
        ii. Viva voce on casebook (for general medicine candidates only) (1 hour)
    d. SECTION FOUR (rated as pass or fail)
        i. Clinical examinations (Dermatology and Genitourinary medicine only)
    e. SECTION FIVE: CASEBOOK IN SUBSPECIALTY (20 MARKS)
        i. For subspecialty candidates only. This is assessed as an in-course assignment and submitted with the dissertation.

    NOTE:

    1. All candidate will take Theory paper I and OSPAGC
    2. General medicine candidates: (a) Theory paper I and II (b) OSPAGC (c) and viva on casebook.
    3. All subspecialty candidates: (a) Theory papers I and III ,(b) OSPAGC , (c) viva voce in subspecialty , (d) presentation of a casebook and (e) Defense of dissertation.
    4. Candidates in Dermatology and Genitourinary medicine will in addition have clinical examination limited to the subspecialty.
       Candidates should consult subspecialty handbooks for details of the requirements for each particular subspecialty.

Conditions for a pass

A pass score of more than 50% in ALL sections (general medicine, dissertation and subspecialty). A pass in one or more sections only places the candidate as a "referred" candidate.

10.0 CREDIT UNIT SUB-SPECIALTY TRAINING INTERNAL MEDICINE

Contact Hours and Credit Unit for Part 2 FMCP

Postings	Duration (Months)	Contact Academic Hrs/Wk	Contact Clinical Hrs/Wk	Total Contact Hrs/Wk	Credit Units
Core Specialty	24	12	24	36	144
General Medicine	12	12	24	36	72
Dissertation					12
Total	36	24	48	72	228

BASIS FOR CALCULATION OF PART 2 CREDIT UNITS

Contact academic hrs:

- Routine academic work = 4 hours/wk
- Research = 4 hours/wk
- Management = 2 hours/wk
- Journal club = 2 hours/wk

12 hrs/week Every 3 month = 12 Credit Units Every 3Months = 48 Credit Unit/year = 144 Credit Units in 3years
1 Month = 4 Credit Units
3 Month Posting = 12 Credit Units

Clinical contact hrs:
4HRS/Day X 6 DAYS = 24HRS/WK/4 = 6 Credit Unit Every 3 Months = 24Credit Units/year x 3years = 72 Credit Unit in 3years
1 Month Posting =2 Credit Unit
3 Months Posting = 6 Credit Unit

Dissertation:
12 Credit Units

Credit Unit/Month = 4 (Academic) + 3 (Clinical) = 7

Total Credit Units over 3years = 144 (Academic Contact) + 72 (Clinical Contact) + 12 units (Dissertation) = 228

NATIONAL POSTGRADUATE MEDICAL COLLEG OF NIGERIA

FACULTY OF INTERNAL MEDICINE

PART II (SENIOR RESIDENCY) TRAINING CURRICULUM

GASTROENTEROLOGY SUB-SPECIALTY

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CURRICULUM AND COURSE CONTENT

FOR

THE SUB-SPECIALTY TRAINING PROGRAMME

IN

GASTROENTEROLOGY

8.0 ROTATION SCHEDULE (36 months)

Theme/ Domain	Expected duration	Percentage of course	Additional comments
General Hepatology	8 months	22%	A total of 24 integrated months for core training
General Gastroenterology	7 months	22%	
Gastrointestinal Endoscopy training	6 months	20%	
GI and liver Histopathology	1 month	2%	
GI radiology	1 month	2%	
Gastrointestinal/General Surgery	1 month	2%	
General Medicine (including I month lab rotation)	9 months	20%	A total of 12 months for General and Emergency Medicine
Emergency /ICU Medicine	3months	10%	

8.1 GASTROENTEROLOGY SUBSPECIALTY COURSE CONTENT

Domain	Specific topics, knowledge, attitude, skills	mode of delivery	% of course coverage	learning objectives	total credit units	Method of assessments
	General Hepatology 22%					
Basic hepatology tests	**Basic knowledge**: knowledge and application of basic anatomy, physiology and biochemistry of the liver, hepatic vasculature, and biliary system to hepato- biliary disease causation, their investigation and treatment. To recognize the roles of the following in disease causation and management. bilirubin and bile salts metabolism, albumen and clotting factors synthesis, liver immunology and hepatic structure repair, hepatic vascular pressure (k, a)	1-7	2%	1,ii, iii		MCQ, essays, viva
Liver Parenchyma	**C**	1-7	3%	1, ii, iii		
	Viral hepatitis: can define and describe their natural history and prognosis. Understands the clinical presentation of HBV and HCV infections, role of genotype and viral load. Able to identify and implement supportive measures to manage side effects and treatment failure. Can treat and describe a programme of appropriate surveillance. **k, a/b**	1-7	5%	1, ii, iii		MCQ, essays, viva
	Acute liver failure: understands the causes and pathophysiology. Can evaluate and plan appropriate investigation and construct a detailed management plan. Utilizes the range of medical interventions necessary to support critically ill patients. Demonstrates ability to identify patients at high risk of MOF. Recognizes indications for liver transplant in such patients and exhibits timely referral and co management of such cases with other health teams	1-7	2%	1,ii, iii		MCQ, essays, viva

Vascular diseases of liver	**Vascular liver disease.** Recognizes and shows understanding of VLD including Budd-Chiari syndrome, veno-occlusive disease and Porto-mesenteric venous thrombosis. understands the role of anticoagulation and indications for further intervention including tips, surgery or transplantation	1-7	2%	1, ii, iii		MCQ, essays, viva
Cholestatic diseases of the liver	**Complication of cholestatic liver disease**; recognizes the potential complications of cholestasis including pruritus, osteoporosis, fatigue and fat malabsorption. Knows the therapeutic options and potential complications of treatment) **Gallstone disease and cholodocholithiasis:** knows the risk factors, clinical syndromes, investigations and management, including relationship to sickle cell disease and other chronic haemolysis syndromes	1-5	2%	1, ii, iii		MCQ, e(k,a/b essays, viva
Liver disease in pregnancy	**Pregnancy associated liver diseases** knows the various manifestations including obstetric cholestasis and is aware of the urgency of such situations. Knows how to manage the more severe pregnancy-associated liver diseases including eclampsia and acute fatty liver of pregnancy. Aware of importance of close liaison with obstetric colleagues over the timing of delivery. (k, a/b)	1-7	1%	1,ii, iii		MCQ, essays, viva
Liver tumours	**Liver tumors**; knows the epidemiology, pathology, clinical presentation and natural history of tumours of the liver. (Benign, hepatocellular, cholangiocarcinoma). Can define a programme of investigation and characterize benign and malignant lesions. In-depth knowledge of surveillance and treatment options including trans-arterial chemoembolization (TACE), radiofrequency ablation (RFA), local	1-5	2%	1, ii, iii		MCQ, essays, clinical & viva
Liver transplantation	**Liver transplantation (LT)**: Appreciates the role of LT in the management of both chronic and	1-4,9	1%	1, ii, iii		MCQ, essays, clinical &

	acute liver diseases. Knows the indications and appropriate timing for referral. Conversant with patient selection, pre-transplant procedures and post-transplant follow up. Understands management & complications of immunosuppression. Understands the role of the hepatologist and the importance of communication and interdisciplinary team work (k, a/b).					viva
Liver biopsy, fibro scan & other liver imaging tests	**Liver biopsy, abdominal ultrasound scan, fibro scan, CT, ERCP. MRI/MRCP .**Understand the scientific basis of the procedures, their indications and contraindications. Appreciate timely alleviation of patient apprehension related to the procedures through communication and discussion. Demonstrate familiarity or capability to perform procedures as the case may be (see level specified level of competency in log book)	1-4,9	2%	1, ii, iii		MCQ, essays, viva, clinicals . (k,a,s). ..(k,a/b, s).

Domain: General Hepatology

Domain	**Specific topics, knowledge, attitude, skills**	**mode of delivery**	**% of course coverage**	**learning objectives (**using taxonomy)	**total credit units**	**Method of assessments**
	General Gastroenterology -22%					
Gastrointestinal investigations	**Basic knowledge**: knowledge and application of basic anatomy, and pathology of the bowel and adnexia in causation, investigation and treatment of GI diseases **Clinical investigation**: conversant with clinical, radiological and laboratory tests of GI function. Can describe p testing and manometry. Knowledge of tests of gastric secretion, malabsorption (e.g. feacal elastase), tests for inflammation, radiological and histopathological evaluation of the GIT.	1-7	3%	I, II, III		MCQ, essays, viva

Nutrition	**Nutritional assessment**; Understands and appraise appropriate use of various forms of parenteral and enteral feeding; nasogastric and jejunal administration, peg and j-peg administration. Can describe the re-feeding syndrome and attendant risks. Identifies the ethics and indications; describes the risks of obesity and describe the definitions and evaluate measurement tools	1-7	2%	I, II, III		MCQ, essays, clinical & viva
Disorders of esophagus, stomach and duodenum	**Dysphagia**; defines the physiology of swallowing, benign and malignant cause and presentation of dysphagia and its management. Investigates appropriately and can outline endoscopic, radiological and surgical treatment strategies.	1-5	1%	I, II, III		MCQ, essays, clinical & viva
	Acid peptic disorders and non-cardiac chest pain: defines the pathophysiology of swallowing; defines the physiology of gastric acid secretion and the physiology of motor disorders of the upper GIT. Able to make differential diagnosis of dyspepsia including (but not limited to) GERD, PUD. Comprehends role of helicobacter pylori and NSAID and social habits such as smoking in acid peptic disorders. Recognizes various complications including gastric outlet obstruction.	1-7	4%	I, II, III		MCQ, essays, clinical & viva
	Upper GI bleeding: can evaluate and manage patients with bleeding. Describe the anatomy and physiology of gastro esophageal varices, risk factors for bleeding and diagnostic evaluation and treatment. Is able to recommend and prioritize appropriate use of endoscopic therapies and plan prophylactic treatments	1-5	2%	I, II, III		MCQ, essays, clinical & viva
Disorders of small bowel and colon diseases	**Chronic abdominal pain**. Describes the pathophysiological mechanisms, organ specific causes such as hollow viscus obstruction, pancreatitis and non GIT causes. Can categorize and prioritize investigative and treatment modalities.	1-7	1%	I, II, III		MCQ, essays, clinical & viva

	Malabsorption syndrome and chronic diarrheal diseases Can discuss the physiology and pathophysiology of absorption and malabsorption. Can describe coeliac disease, bacterial overgrowth syndrome, small intestinal crohn's disease, small bowel diverticular disease, chronic bacterial and parasitic infections/infestation of the bowel, chronic pancreatitis and neoplasia. Identifies infective diarrhea (viral, bacterial and protozoal) from secretory and osmotic diarrhoea as seen in inflammatory bowel disease, intestinal ischemia, neoplastic and infiltrative disorders Comprehends fluid and electrolyte balance and its maintenance. Identifies malnutrition and micronutrient deficiency, and the underlying disease process	1-5	3%	I, II, III		MCQ, essays, clinical & viva
	Constipation & change in bowel habit. Comprehends the role of dietary fibre in influencing colonic function & motility. Understand mechanisms of the physiology of defecation. Demonstrates the ability to investigate when necessary and advice on use of diet, laxatives and biofeedback as necessary.	1-5	1%	I, II, III		MCQ, essays, clinical & viva
	Rectal bleeding. Assess the causes; haemorrhoids, neoplasia of anus and colon; colitis and Crohn's disease and in some instances. Interpret the history, examine patients and uses the relevant investigative techniques i.e. endoscopy (rigid sigmoidoscopy, flexisig, colonoscopy), Interprets the results and undertakes appropriate action	1-5,7	2%	1,ii,iii		MCQ, essays, clinical & viva
Diseases of GI Adnexia, Pancreas & biliary system and vascular diseases	Can perform clinical evaluation and interpret appropriate investigations and manage patients. Appreciates the role of team work and surgical referral in conditions like with acute and Chronic pancreatitis, pancreatic Neoplasms, biliary disease including gall stone disease, Vascular Disorder of GIT and Peritoneal Diseases	1-5,9	4%	1,ii		MCQ, essays, clinical & viva

Domain: Gastrointestinal Endoscopy

Domain	Specific topics, knowledge, attitude, skills	mode of delivery	% of course coverage	learning objectives (using taxonomy)	total credit units	Method of assessments
	Gastrointestinal Endoscopy (see log book for scope of expectations) -20%	1-5,9		I,II,III		
Basic Gastrointestinal endoscopy	**Basic Concepts**: Describe and the structure and function of an endoscope, the light source, processor and accessories including diathermy and thermal methods for coagulation e.g. Heater probe. Identifies the sedative and analgesic drugs used and their additive effects. Describes monitoring including oxygen saturation. Recalls the medical and legal issues concerning consent and provision of information. Is familiar with the latest guidelines on consent. (K, A,)	1-5	2%	III		MCQ, essays, clinical & viva DOPS
	UGI endoscopy; Defines and evaluates the indications, contraindications, preparation and appropriate documentation. Describes patient pre and post preparation. Demonstrates willingness and ability to practice safe endoscopy and to obtain help when needed. Performs complete OGD, take biopsies, including D2 (second part of duodenum) biopsies for diagnosis (including jejunal biopsy for coeliac disease). Interpret findings and take necessary action to appropriate level. Perform a minimum of 50 procedures (see log book) K, A/B S	1-5	5%	III		MCQ, essays, clinical & viva DOPS
	LGI endoscopy: Define and evaluate the indications, contraindications, complications and their management. Outline patient bowel and other preparation. Perform a minimum of 20 procedures and documentation. Performs the procedure and reach caecum in at least 90% of cases Where indicated take biopsies, perform polypectomy and take other necessary action as required Demonstrate ability to intubate the terminal ileum. K, S	1-5	5%	III		MCQ, essays, clinical & viva DOPS

Advanced upper and lower GI endoscopy	Understand the management of GI bleeding, evaluate and describe the techniques of haemostasis and perform variceal band ligation (P) and inject bleeding ulcers (P) Know and understand the indications, contraindications, complications of dilation of oesophageal structure (O), foreign bodies in UGI (retrieval) (O/P) Percutaneous enteral gastroscopy, PEG placement. (O/P), polypectomy (O/P)K, S	1-5	6%	I,II		MCQ, essays, clinical & viva DOPS
Other Endoscopic procedures in GI	Knows and understand the indications, contraindications, complications of other GI endoscopic procedure and there clinical utility. (ERCP) Endoscopic retrograde cholangiopancreatography (O/I) Endoscopic ultrasound, EUS (O/I) Oesophageal and rectal manometry(O/I) 24hr Ambulatory PH monitoring (O/I) Small bowel Capsule endoscopy (O/I) Double balloon enteroscopy (O/I) (see details in log book)	1-5	2%	I,II		MCQ, essays, clinical & viva

Domain: Ancillary posting in Gastroenterology

Domain	**Specific topics, knowledge, attitude, skills**	**mode of delivery**	**% of course coverage**	**learning objectives (**using taxonomy)	**total credit units**	**Method of assessments**
	Ancillary Postings-					
Radiology (I month)- 2%	Conversant with the knowledge and application and interpretation and observation of Barium studies, Abdominal and pelvic USS, Abdominal CT scan and MRI (MRCP). Should be able to discuss hepatic angiography and TIPPS (K,A/B) Should be able to interpret and perform basic liver ultrasound scan and recognize spleen, pancreas and GI adnexial structures and categorizes focal and diffuse liver lesions. Should perform procedures like drainage of liver abscess and USS guided liver biopsy. (K, A, S)(see details in log book)	1-5,9	2%	I,II		MCQ, , & viva
Mo**rbid anatomy/**	Conversant with the knowledge and basic interpretation and observation of	1-5	2%	I,II		MCQ, & viva

Pathology: (1month)-2%	processing and assessment of GIT and liver specimen-histopathology and cytology. Including features of hepatic and bowel inflammation, cirrhosis, benign and malignant masses of the liver and gut.					
GI/General surgery-2%	Able to recognize and appreciate areas of team work and need for interaction and referral. (K, A). Observe procedure like bowel resection, hepatobiliary & pancreatobiliary surgery, surgical management of pancreatic complications like biliary abscess and pseudocyst, stent insertions, surgical approached to GI bleeding etc.	1-5	2%	I,II		MCQ, & viva
General Medicine-20%	As in General medicine part I for neurology, nephrology, infectious disease and endocrinology as well as laboratory postings in medical microbiology, chemical pathology and haematology	1-7	20%	I,II		MCQ, essays, & viva
Emergency/ ICU Medicine-10%	As in General Medicine for part I	1-9	10%	I.II.III		MCQ, essays, & viva

Definitions for Mode of delivery 1 – 9

- 1 = Lectures
- 2 = Tutorials
- 3 = Seminars
- 4 = Clinicals/Practicals
- 5 = Self-directed learning
- 6 = Assignments
- 7 = Conferences
- 8 =
- 9 =

Definition for Level of difficulty I, II, III

- Level I = Knowledge and Comprehension
- Level II = Analysis and Application
- Level III = Synthesis and Evaluation

9.0 ASSESSMENT OF SENIOR TRAINEES

Assessment of trainees consists of the following components:

1. Continuous assessment/Pre-requisites
    a. Compliance with final examination eligibility requirements
    b. Evaluation of procedures (scoring)
    c. Casebook in subspecialty (scoring)
2. Final examinations consisting of the following sections:
    a. SECTION ONE
        i. Theory paper I: MCQs on generic curriculum in Internal Medicine
        ii. Viva Voce in general medicine and generic curriculum using modified OSCE, in the objective practical assessment of generic competencies (OSPAGC): 2 hours.
    b. SECTION TWO
        i. Theory paper II. MCQ in general medicine for general internal medicine track only. OR
        ii. **Theory paper III. MCQs in relevant subspecialty (200 stems for 3 hours) for** subspecialty track
        iii. Viva voce and/or practical's in subspecialty (1 hour)
    c. SECTION THREE
        i. Defense of dissertation (1 hour) OR/AND
        ii. Viva voce on casebook (for general medicine candidates only) (1 hour)
    d. SECTION FOUR (rated as pass or fail)
        i. Clinical examinations (Dermatology and Genitourinary medicine only)
    e. SECTION FIVE: CASEBOOK IN SUBSPECIALTY (20 MARKS)
        i. For subspecialty candidates only. This is assessed as an in-course assignment and submitted with the dissertation.

    NOTE:

    1. All candidate will take Theory paper I and OSPAGC
    2. General medicine candidates: (a) Theory paper I and II (b) OSPAGC (c) and viva on casebook.
    3. All subspecialty candidates: (a) Theory papers I and III ,(b) OSPAGC , (c) viva voce in subspecialty , (d) presentation of a casebook and (e) Defense of dissertation.
    4. Candidates in Dermatology and Genitourinary medicine will in addition have clinical examination limited to the subspecialty.
       Candidates should consult subspecialty handbooks for details of the requirements for each particular subspecialty.

Conditions for a pass

A pass score of more than 50% in ALL sections (general medicine, dissertation and subspecialty). A pass in one or more sections only places the candidate as a "referred" candidate.

10.0 CREDIT UNIT SUB-SPECIALTY TRAINING INTERNAL MEDICINE

Contact Hours and Credit Unit for Part 2 FMCP

Postings	Duration (Months)	Contact Academic Hrs/Wk	Contact Clinical Hrs/Wk	Total Contact Hrs/Wk	Credit Units
Core Specialty	24	12	24	36	144
General Medicine	12	12	24	36	72
Dissertation					12
Total	36	24	48	72	228

BASIS FOR CALCULATION OF PART 2 CREDIT UNITS

Contact academic hrs:

- Routine academic work = 4 hours/wk
- Research = 4 hours/wk
- Management = 2 hours/wk
- Journal club = 2 hours/wk

12 hrs/week Every 3 month = 12 Credit Units Every 3Months = 48 Credit Unit/year = 144 Credit Units in 3years
1 Month = 4 Credit Units
3 Month Posting = 12 Credit Units

Clinical contact hrs:
4HRS/Day X 6 DAYS = 24HRS/WK/4 = 6 Credit Unit Every 3 Months = 24Credit Units/year x 3years = 72 Credit Unit in 3years
1 Month Posting =2 Credit Unit
3 Months Posting = 6 Credit Unit

Dissertation:
12 Credit Units

Credit Unit/Month = 4 (Academic) + 3 (Clinical) = 7

Total Credit Units over 3years = 144 (Academic Contact) + 72 (Clinical Contact) + 12 units (Dissertation) = 228

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PART II (SENIOR RESIDENCY) TRAINING CURRICULUM

GERIATRICS SUB-SPECIALTY

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GERIATRIC MEDICINE

8.0. GERIATRICS SUBSPECIALTY CURRICULUM AND COURSE CONTENT

8.1 ROTATION SCHEDULE FOR GERIATRIC MEDICINE

Month	1	2	3	4	5	6	7	8	9	10	11	12
Year 1	Geriatrics Unit			Emergency Room			Non-medical electives	Rheumatology		Clinical Pharmacology & Therapeutics	Psychiatry	Rehabilitation
Year 2	Neurology			Geriatrics Unit						Cardiology	Pulmonology	Nephrology
Year 3	End of Life/ Palliative Care	Home-based Care/	Nursing Facility	Dermatology	Endocrinology	Gastroenterology	Geriatrics Unit					

8.2 GERIATRICS SUBSPECIALTY COURSE CONTENTS

Domain	Specify topics, knowledge, attitudes & skills	% of course coverage	Learning objectives (using taxonomy)	Total Credit Units	Mode of delivery	Assessment Method
Medical Knowledge/Practice	**Evidence-based practice** - Recognize the importance of **evidence-based decision making** (A/B) - Demonstrate ability to **critically review medical literature** for studies that are relevant and applicable in the care of older adults (S)	5%	Levels 2; 3	7	Assignments, lectures, seminars, tutorials, journal clubs, self-directed learning	DOPS, MCQs, Mini-CEX
	Health promotion and disease prevention - Be familiar with local, national and international **guidelines for health promotion** and **disease prevention** in older adults (K) - Formulate appropriate health promotive and disease preventive interventions to suit patients' needs and preferences (S) Document reasons for any **deviations from guidelines** (A/B)	5%	Levels 1-3	7	Assignments, clinicals, lectures, seminars, tutorials, self-directed learning	DOPS, MCQs, Mini-CEX, SAQs
Ageing	**Anatomical, biochemical and physiological changes with ageing** - Explain/describe **normal ageing processes** with their effects on the form, structure and function of older adults, for example, on laboratory findings (K)	3%	Level 1	4	Assignments, self-directed learning	MCQs, Mini-CEX, OSCE
	Gerontology - Explain **theories of ageing** and epidemiology of ageing in the local and global contexts (K) - Explain, keep abreast of, and demonstrate scientific knowledge of **ageing and longevity** (K, S) - Explain **life expectancy, disability and disability adjusted life years (DALYs) and active (successful) ageing** (K) - Describe **stressors and coping strategies** as it	3%	Levels 1-3	4	Assignments, lectures, seminars, tutorials, self-directed learning	Mini-CEX, clinical

	affects older adults (K) - Recognize the value of **social networks and social involvements** in the wellbeing of older adults in health and disease (A/B)					
	Ageism - Explain & discuss **ageism** (K, S) - Recognize concerns associated with ageism and the need for **strategies to counteract ageism**(A/B) - Show willingness to be change agents in counteracting ageist tendencies (A/B)	3%	Levels 1-3	4	Assignments, lectures, seminars, tutorials, self-directed learning	MCQs, Mini-CEX, SAQs
Patient Care	**Geriatric Consultation** - Provide geriatric consultation in all settings (S) - Explain the Comprehensive Geriatric Assessment – CGA (K) - Recognize the need for, and undertake CGAs (A/B, S)	3%	Levels 1-3	4	Assignments, clinicals, lectures, seminars, tutorials, self-directed learning	DOPS, MCQs, Mini-CEX, OSCE
	Disease Management - Diagnose and manage medical disorders in older adults (S) - Recognize patients', family/caregiver needs and limitations (A/B) - Explain caregiver stress/burden (K) - Incorporate family/caregiver needs into care plans for older adults	3%	Levels 1-3	4	Assignments, clinicals, seminars, tutorials, self-directed learning	MCQs, Mini-CEX, OSCE, SAQs
	Frailty & Complex Illness in Older Adults - Explain frailty (K) - Identify patients who are frail and recognize concerns associated with frailty with respect to risk for death, dependency &/or institutionalization (A/B, K) - Explain and sensitively discuss goals of care with patients, family members and other care providers (K, S) - Efficiently manage multi-morbid older adults by integrating scientific evidence, functional & disease trajectories and patients' goals of care into decision making (S) - Recognize and demonstrate ability to manage psychosocial aspects of care of older adults, e.g. family relationships, inter-personal relationships, living situations, anxiety, bereavement, etc. (A/B, S) - Recognize patients who might benefit from palliative and/or hospice care, not limited to those with cancer diagnoses – e.g. congestive cardiac failure, chronic kidney disease, chronic obstructive pulmonary disease, dementia, etc. (A/B) - Regularly reassess goals of care (S)	3%	Levels 1-3	4	Assignments, clinicals, lectures, seminars, tutorials, self-directed learning	MCQs, Mini-CEX, OSCE, SAQs, DOPS
	Geriatric Syndromes - Recognize abnormal **gaits** and the associated conditions (K) - Perform and interpret **gait and balance** assessments (S) - Evaluate patients who **fall** or are at **risk of**	3%	Levels 1-3	4	Assignments, clinicals, lectures, seminars, tutorials, self-directed	DOPS, Essays, MCQs, Mini-CEX, OSCE,

	falling (S) - Implement strategies to reduce **falls** or **fear of falling** and attendant complications (S) - Efficiently evaluate patients with **dizziness** or **lightheadedness**and refer as/when appropriate (A/B, S) - Distinguish between normal ageing and the clinical presentations of **mild cognitive impairment**, **dementia**, **delirium** and **depression** (S) - Discuss the strengths and limitations of tools commonly used in the assessment of **cognition** and **mood** in older adults (S) - Efficiently employ **cognitive** and **mood assessment tools** in the management of older adults (S) - Recognize the need for referral for **psychiatric** management, **psychological counselling**, or other assessment (A/B) - Integrate multi-disciplinary care into patient's overall care plan (S) - Diagnose and manage potentially reversible causes of **affective** and **cognitive disorders** in older adults (S) - Diagnose and manage **depression** (S) - Explain causes of **dementia**, diagnose and manage **dementia** (K, S) - Provide compassionate, anticipatory care for patients throughout the spectrum of **dementia** (from mild to severe), in line with patient's goals of care (S) - Provide appropriate behavioural and pharmacological management for **cognitive**, **functional** and other manifestations of **dementia** (S) - Recognize risk factors for development of **pressure ulcers** (A/B) - Work with an **inter-disciplinary team** to develop pressure ulcer prevention plan in **high risk patients** (S) - Describe and appropriately characterize **pressure ulcers** (K) - Develop a treatment plan for **pressure ulcers** with an inter-disciplinary team (S) - Recognize the indications for surgical and non-surgical interventions - Assess older adults with sleep disorders (S) - Recognize indications for referral to a sleep therapist and refer as appropriate (A/B, S) - Recognize **opthalmological conditions** associated with normal ageing (A/B) - Refer for specialist care as appropriate for **eye diseases** (S) - Demonstrate ability to screen for **hearing loss** and refer for specialist care as indicated (S) - Efficiently evaluate and manage common forms of **urinary incontinence**, using non-				learning	SAQs

	pharmacological means when possible (S) - Recognize the need for **urologic or gynaecologic evaluation** and appropriately refer (A/B,S) - Evaluate and manage **urinary retention** and **incomplete bladder emptying** (S) - Identify, evaluate and appropriately manage **involuntary weight loss** (S) - Discuss risks and benefits of **appetite stimulants**, **nutritional supplementation**, **enteral tube feeding** and **parenteral nutrition** (S) - Evaluate and appropriately manage **constipation** and **faecal impaction** (S) - Evaluate and provide initial management for faecal incontinence (S)					
	Hospital Care - Explain **iatrogenesis** (K) - Strive to reduce **iatrogenic events** (A/B) - Recognize **delirium**, even in subtle forms and manage appropriately (A/B, S) - Perform **pre-operative assessments** of older patients (S) - Make recommendations to improve patient care and safety in the **peri-operative period** (S)	3%	Levels 1-3	4	Assignments, clinicals, lectures, seminars, tutorials, self-directed learning	DOPS, Essays, MCQs, Mini-CEX, OSCE, SAQs
	Home Care - Undertake **home visits** (S) - Undertake **physical examinations** modified to suit the home setting (S) - Assess the **safety of the physical environment** (S)	3%	Level 3	4	Assignments, clinicals, seminars, tutorials, self-directed learning	MCQs, Mini-CEX, OSCE, SAQs
	Nursing Home/Long term Care - Demonstrate understanding of the indications for **long term** and **nursing home care** (A/B) - Explain the indications for **transfer to acute care facilities** (K) - Demonstrate ability to manage acute problems for patients in long term care and nursing home via **telephone calls** (A/B, S)	3%	Levels 1-3	4	Assignments, clinicals, seminars, tutorials, self-directed learning	MCQs, Mini-CEX, OSCE, SAQs
	Palliative & End of Life Care - Explain the range of **available options for palliative and end of life care** (K) - Sensitively counsel patients, families and caregivers about the **available options for care** (S) - Anticipate, identify and manage **symptoms associated with chronic illness and end of life** (A/B, S)	3%	Levels 1-3	4	Assignments, clinicals, seminars, tutorials, self-directed learning	MCQs, Mini-CEX, OSCE, SAQs
	Medication Management Demonstrate proficiency in - Adjusting **medication regimens** based on age-related pharmacokinetics and pharmacodynamics (S) - Supporting and ensuring **medication adherence** (A/B, S)	3%	Levels 1-3	4	Assignments, clinicals, seminars, tutorials, self-directed learning	DOPS, Mini-CEX, OSCE, SAQs

	Demonstrate - Familiarity with common **medicines to be avoided** in prescribing medicines for older adults (K, S) - **Caution in prescribing medicines** – especially newly released ones – being aware that older adults are multi-morbid and largely under-represented in clinical trials (A/B, S) - Ability to assess and appropriately investigate any **contribution of medicines to illness** in older adults presenting with new symptoms or with geriatric syndromes (S)					
	Managepain effectively by - Individualizing therapy, using the most effective pharmacological and non-pharmacological interventions (S) - Anticipating and instituting measures to **prevent complications of pain therapy** (S)					
	Rehabilitation - Recognize indications for **referral to rehabilitative services** – occupational, physical & speech therapy – and undertake such referrals (K, S) - Identify **contraindications to referral** for rehabilitative services (K) - Recognize **patients at high risk of poor outcomes**, e.g. deconditioning, dysphagia, hip fracture, stroke (A/B)	3%	Levels 1-3	4	Assignments, clinicals, seminars, self-directed learning	MCQs, Mini-CEX, SAQs
Practice-based Learning & Improvement	**Evidence-based decision making** - Explain **evidence-based decision making in Medicine** and hierarchies of evidence (K) - Discuss the strengths and limitations of **generalizing research** findings to local contexts (S) - Participate in **reviewing evidence for clinical decision making** (A/B, S) - Show willingness and commitment to **life-long learning** (A/B)	5%	Levels 1-3	7	Assignments, journal clubs, seminars, tutorials, self-directed learning	DOPS, MCQs, SAQs
	Research Methodology & Biostatistics - Describe **research designs** (K) - Perform **statistical analyses** using appropriate software (S) - Recognize the need for, and show willingness to contribute to the body of scientific evidence by undertaking **rigorous research** (A/B, S) - Recognize the strengths and limitations of **major research paradigms** (K, A/B)	5%	Levels 1-3	7	Assignments, **case reports**, **dissertation**, journal clubs, seminars, tutorials, self-directed learning	Case reports, dissertation, other scientific writing
Communication, Collaboration and Inter-personal Skills	**Patients, relatives & healthcare team** - **Communicate sensitively and effectively** with patients, their families/other caregivers and members of the inter-disciplinary team (A/B, S) - Incorporate **appropriate communication skills** into decision making for older adults, bearing in mind their academic, social, spiritual and other peculiarities, e.g. desired level of participation (S)	10%	Levels 2-3	14	Assignments, clinicals, seminars, tutorials, self-directed learning	DOPS, OSCE

	- Demonstrate ability to work effectively as **member &/or leader** in **inter-disciplinary healthteams** (S) - Demonstrate ability to skillfully discuss and document **goals of care** and **advance care plans** with older adults, their families and other caregivers across the continuum of health and disease (S) - Demonstrate **compassionate care**, while establishing and maintaining **professional boundaries** (A/B) - Undertake and effectively manage **family/caregiver meetings** (S)					
	Public - Demonstrate ability to provide accurate information to the public e.g. via mass media (S) - Respect patient confidentiality in all communications (A/B)	5%	Levels 2-3	7	Assignments, clinicals, seminars, tutorials, self-directed learning	DOPS, OSCE
Professionalism	Residents should - Complete, in a timely manner, all required **documentation** in care provision e.g. admission notes, assessments, discharge summaries, documentation of medication regimens and follow-up plans (A/B, S) - Demonstrate understanding that **older adults are heterogeneous** with respect to health/disease status, functional status, belief systems, ethnic backgrounds, values, personal preferences and expectations (S) - Provide **continuing care** for older adults with chronic diseases and/or life-limiting illnesses, working with them and their families to achieve **patient-centredgoals of care** that limit suffering and maximize **quality of life** (S)	15%	Levels 2-3	22	Assignments, clinicals	DOPS, Mini-CEX
Systems-based Practice	Residents should - Demonstrate commitment to **limiting hospitalization** of older adults through collaborations with other care givers across the continuum of care (A/B) - Provide **care coordination** in and out of hospital settings, with early discharge planning in the latter (S) - Understand and work efficiently within **available economic resources** and be able to explain such resources and their limitations to patients and their caregivers (S) - Demonstrate commitment to **reducing iatrogenic events** in older adults in all settings, especially with respect to system-wide strategies to prevent delirium, deep vein thrombosis, depression, falls, functional decline immobility, incontinence, malnutrition, nosocomial infections, pressure ulcers, use of indwelling catheters, use of restraints, (A/B)	10%	Levels 1-3	14	Assignments, clinicals, self-directed learning, seminars	DOPS, Mini-CEX

	- Work with an inter-disciplinary team to identify the most appropriate **care setting** for a patient, e.g. independent living, assisted living, long-term care, acute or subacute rehabilitation, home care, primary care, adult day care, hospice care (S) - Incorporate individual patients' and family/caregiver needs as well as available resources into decisions regarding **care settings** (S) - Describe **geriatric quality indicators** (K) - Describe the National **Health Insurance Scheme (NHIS)**, opportunities for, and discuss challenges with access to the Scheme, for older adults in Nigeria (K, S) - Explain the importance of **community resources** in the care of older adults, refer patient and family/caregivers to appropriate community resources (K, S) - Recognize **complexities** associated with providing care for older adults and demonstrate efficiently ability to **prioritize care** (A/B, S) - Identify/recognize **negative healthcare system-related impacts** on the care of older adults (A/B) - Identify/formulate/implement interventions to mitigate **negative healthcare system-related impacts** on older adult care (A/B, S) - Serve/work as an **advocate for older adults** and their caregivers in all settings (A/B, S) - Demonstrate ability and willingness to **teach** patients, families, other caregivers about ageing and related healthcare issues (A/B, S) - Describe **models of care** with evidence of positive outcomes for older adults and discuss their relevance for their use in care provision e.g. ACE, PACE, delirium prevention, falls prevention interventions (K, S)					
EMERGENCY MEDICINE *Year 1: Three (3) uninterrupted months **with a focus on Geriatrics***						
Patient Care	**Triage** - Explain the principles of **triage** in all healthcare settings (K) **Primary assessment and stabilization** - Demonstrate ability to employ the **ABCDE approach** for all patients, especially older adults: **A**irway, **B**reathing, **C**irculation, **D**isability, **E**xposure (S) **Focused medical history** - Demonstrate ability to obtain a **focused**, **initial history** with a view to identifying conditions that require immediate care, especially in older adults (S) **Secondary assessment** - Demonstrate proficiency in performing **further assessments** of patients to identify	2%	Levels 1-3	4	Assignments, clinicals, self-directed learning, seminars	DOPS, MCQs, Mini-CEX, SAQs, OSCE

	conditions requiring care, including physical, mental, social and other concerns (S) **Clinical decision making** - Demonstrate willingness and ability to **re-triage**, plan for **admission**, **discharge** or other **care transitions** (A/B, S)					
System-based competencies	**Cardiovascular Emergencies** - Demonstrate ability to diagnose and institute immediate management for common cardiovascular emergencies, including but not limited to, **arrhythmias**, **congestive heart failure**, **acute pulmonary oedema**, **cardiac tamponade**, **valvular emergencies**; **inflammatory & infective cardiac disorders**; **acute coronary syndromes**, **angina**; **deep vein thrombosis**, **hypertensive emergencies**, **aortic dissection/aneurysm rupture**, **pulmonary embolism**, etc. (S) - Be willing to, and promptly refer patients requiring specialist care (A/B) **Dermatological Emergencies** - Describe the skin manifestations of systemic, immunological and toxic disorders in older adults (K) - Describe inflammatory and infectious skin disorders in older adults (K) - Recognize indications for, and promptly refer patients requiring specialist care (A/B) **Endocrine & Metabolic Emergencies** - Describe and demonstrate ability to diagnose and manage the following emergencies in older adults: hyperosmolar hyperglycaemic state, **hypoglycaemia**, **ketoacidosis**; **adrenal insufficiency**&**adrenal crisis**; **hyperthyroidism**, **hypothyroidism**, **myxoedema coma**, **thyroid storm** (K, S) - Recognize indications for, and promptly refer patients requiring specialist care (A/B) **Fluid & Electrolyte Disturbances** - Discuss **common electrolyte derangements** in older adults (S) - Demonstrate ability to provide **individualized management of electrolyte derangements** (S) - Recognize complications associated with electrolyte derangements and appropriately refer **Haematology & Oncology Emergencies** - Describe **anaemias**, their causes and complications in older adults (K) - Initiate appropriate management for anaemia and refer for specialist management as appropriate (A/B, S) - Recongnize complications associated with **lymphomas and leukaemias** and appropriately refer for specialist	2%	Levels 1-3	4	Assignments, clinicals, self-directed learning, seminars	DOPS, MCQs, Mini-CEX, SAQs

	management (A/B, S) - Describe **transfusion reactions** and demonstrate ability to recognize them and initiate management (K, A/B, S) **Immunological Emergencies** - Recognize and efficiently manage allergies and anaphylactic reactions (S) - Refer for specialist care as appropriate (A/B) **Infectious Diseases & Sepsis** - Demonstrate ability to make prompt diagnosis and initiate management for **infectious diseases**, including (but not limited to) bacterial and viral infections, HIV & AIDS, malaria, sepsis and septic shock, tetanus, etc. (S) - Describe **decontamination** procedures (K) - Recognize indications for **patient isolation** (K, A/B) - Demonstrate adherence to **universal safety precautions** at all times and in all settings (A/B) **Musculo-Skeletal Emergencies** - Recognize, initiate initial therapy and appropriate referral for older adults presenting with **arthritis**, **cellulitis**& other **soft tissue infections**, **osteomyelitis** (K, A/B, S) - Recognize, initiate initial therapy and appropriate referral for older adults presenting with **osteoporosis** and **other metabolic disorders affecting the musculo-skeletal system** (K, A/B, S) **Neurological Emergencies** - Diagnose, institute management for and appropriately refer older adults presenting with infectious or inflammatory disorders e.g**brain abscess**, **encephalitis**, **meningitis**, **Bell's palsy**, **temporal arteritis**, etc. (A/B, S) - Describe and recognize common presentations of **neurological and metastatic tumours** (A/B, S) - Diagnose, institute initial management for, and appropriately refer older adults presenting with **carotid artery dissection**, **stroke**, **subarachnoid haemorrhage**, **subdural and extradural haematomata**, **transient ischaemic attack**, **venous sinus thrombosis** (A/B, S) - Describe, discuss and demonstrate ability to recognize and institute initial management for **acute complications of chronic neurological conditions** e.g. myasthenic crisis (K, A/B, S) - Diagnose and efficiently manage **seizures** and **status epilepticus**, referring for specialist care as appropriate (A/B, S) **Pulmonary Emergencies** - Diagnose and efficiently manage older adults					

	presenting to the emergency room with (but not limited to) the following: **acute respiratory distress syndrome, asthma**, **bronchitis**, **pneumonia**, **empyema**, **exacerbation of chronic obstructive pulmonary disease**, **lung abscess**, **pleuraleffusion**, **pulmonary tuberculosis**, **tension pneumothorax**, **pulmonary embolism**, etc. (S) - Recognize indications for referral for specialist management and appropriately refer (A/B) **Psychiatric Emergencies** - Recognize and institute initial management for older adults presenting with acute psychosis, anxiety & panic attacks, depression, alcohol & substance abuse (A/B, S) - Recognize indications for referral for specialist psychiatric care and appropriately refer (A/B) **Renal & Urological Emergencies** - Diagnose, institute initial management for and appropriately refer older adults presenting with **glomerulonephritis**, **pyelonephritis**, **prostatitis**, **sexually transmitted infections**, **urinary tract infections** (S) **Trauma** - Recognize peculiar challenges associated with providing **trauma care** for older adults (A/B) - Work in **inter-disciplinary care teams** providing trauma care for older adults (S)					
Common Presenting Symptoms	**Common symptoms with their peculiarities in older adults** - Discuss and formulate differential diagnoses for o Acute abdominal pain o Altered behaviour & agitation o Back pain o Bleeding (non-traumatic) o Cardiac arrest o Chest pain o Diarrhoea o Dyspnea o Fever o Headache o Jaundice o Pain in the limbs o Palpitations o Seizures o Shock o Skin manifestations of disease o Syncope o Urinary symptoms o Vertigo & dizziness o Vomiting	1%	Levels 1 & 3	2	Assignments, clinicals, self-directed learning, seminars	MCQs, Mini-CEX, OSCE, SAQs

	(K, S)					
Specific Aspects of Emergency Medicine	**Problems peculiar to the elderly** Describe, recognize the importance of the following, and demonstrate ability to make prompt diagnosis and institute management for - Abuse/neglect & other forms of elder mistreatment - Atypical presentations (e.g. abdominal pain, infections, myocardial infarction, etc.) - Delirium - Dementia - Falls - Immobility - Multi-morbidity - Polypharmacy - Trauma (A/B, K, S)	1%	Levels 1-3	2	Assignments, clinicals, self-directed learning, seminars	MCQs, Mini-CEX, OSCE, SAQs
Core Clinical Procedures	**Analgesia** - Demonstrate ability to **assess pain**, commence **appropriate management for pain** and monitor vital signs and **complications in patients on pain management** (S) **Breathing & ventilation management** - Explain the indications/ contraindications for **oxygen therapy**in older adults (K) - Demonstrate ability to **tailor oxygen therapy to individual patients' needs** (S) **Cardio-pulmonary resuscitation skills** - Basic and advanced life support skills, instituted in a timely and effective manner (S) **Demonstrate proficiency in the following**: - Evaluation of consciousness, including the Glasgow Coma Scale - Fundoscopy - Insertion of indwelling catheter - Lumbar puncture (S)	1%	Levels 1 & 3	2	Assignments, clinicals, self-directed learning, seminars	MCQs, Mini-CEX, DOPS, OSCE, SAQs
Circulatory Support	**Fluids, blood & blood substitutes** - Discuss indications, contraindications&**rational use of fluids**, **including blood and blood substitutes** (S) - Demonstrate ability to **tailor fluid/blood therapy to individual patients' needs** (S)	1%	Levels 1 & 3	**2**	Assignments, clinicals, self-directed learning, seminars	DOPS, MCQs, Mini-CEX, SAQs
Diagnostic Procedures & Skills	**Demonstrate proficiency** in: - **ECG** interpretation (S) - Rational use of **laboratory services** and interpretation of results, including respiratory function testing and biological biomarkers as appropriate (S) Rational use and interpretation of **imaging studies** e.g. x-rays, ultrasound, CT/MRI (S)	1%	Level 3	**2**	Assignments, clinicals, self-directed learning, seminars	DOPS, MCQs, Mini-CEX, SAQ
NON-MEDICAL ELECTIVES *Year 1: One (1) month*						
OPHTHAMOLOGY *1 week*						

Geriatric Ophthalmology	Residents should - Describe & discuss **common eye disorders** in older adults (K, S) - Recognize indications for expert care and refer appropriately (A/B) - Recognize the challenges that older adults seeking specialist ophthalmologic care might face (A/B)	1%	Levels 1-3	**2**	Assignments, clinicals, self-directed learning, seminars	Case report, Mini-CEX
ORTHOPAEDICS *1 week*						
Orthogeriatrics	Residents should - Describe & discuss **common orthopaedic disorders** in older adults (K, S) - Recognize indications for expert care and refer appropriately (A/B) - Recognize the challenges that older adults seeking specialist orthopaedic care might face (A/B)	1%	Levels 1-3	**2**	Assignments, clinicals, self-directed learning, seminars	Case report, Mini-CEX
BURNS & PLASTIC SURGERY *1 week*						
Plastic and Reconstructive Surgery in the Elderly	Residents should - Explain & discuss the **role of Plastic & Reconstructive Surgery** in the care of older adults (K, S) - Discuss indications for referral for Plastic & Reconstructive Surgery specialist care (S) - Recognize the challenges that older adults seeking specialist care might face (A/B)	1%	Levels 1-3	**2**	Assignments, clinicals, self-directed learning, seminars	Case report, Mini-CEX
ORTHORHINOLARINGOLOY *1week*						
Geriatric Orthorhinolaringology	Residents should - Describe & discuss **common disorders of the ear, nose & throat** in older adults (K, S) - Recognize indications for expert orthorhinolaringology care and refer appropriately (A/B) - Recognize the challenges that older adults seeking specialist care might face (A/B)		Levels 1-3		Assignments, clinicals, self-directed learning, seminars	Case report, Mini-CEX
PSYCHIATRY *Year 1: 1 month*						
Geropsychiatry	Residents should - Describe **age-related changes** in sensory functioning; functional incapacity; adjustments to life changes such as bereavement, retirement, disease & dependency (K) - Describe **peculiar issues** in the clinical presentation and management of the following in the elderly: mood disorders, delirium, dementia, psychosis (K) - Discuss **legal and ethical issues**, including (but not limited to) decision making capacity and advance directives (S) - Recognize need for referral for specialist psychiatric care and appropriately refer (A/B)	12%	Levels 1-3	17	Assignments, clinicals, self-directed learning, seminars	Case report, MCQs, Mini-CEX
REHABILITATION *Year I: 1 month*						

Physical and Occupational Therapy in Geriatrics	Residents should - Recognize the **importance of Physical Therapy & Occupational Therapy** in the management of common geriatric conditions, including (but not limited to): o Arthritis o Balance & coordination disorders o Falls & fear of falling o Frailty o Osteoporosis o Pain o Parkinsonism o Swallowing difficulties o Vision disorders o Walking difficulties	12%	Levels 2	17	Assignments, clinicals, self-directed learning	Case report, Mini-CEX
MEDICAL SPECIALTIES Year 1: Rheumatology (2 months); Clinical Pharmacology & Therapeutics (1 month)= 3 months Year 2: Neurology (3 months); Cardiology (1 month), Pulmonology (1 month); Nephrology (1 month) = 6 months Year 3: Dermatology (1 month); Endocrinology (1 month); Gastroenterology (1 month) = 3 months **Total: 12 months** **(Total Credit Units 72)**						
RHEUMATOLOGY *Year 1: 2 months*						
Geriatric Rheumatology	Residents should - Describe **common rheumatologic disorders** in older adults (K) - Recognize **atypical presentations** of common rheumatological disorders in older adults (K, A/B, S) - Discuss **pharmacological interventions for common rheumatologic disorders** in older adults (S) - Describe **physiological changes** that predispose older adults to **adverse effects of pharmacological therapies** (K) - Discuss **non-pharmacological interventions** for common rheumatologic disorders in older adults (S) - Recognize the impacts of rheumatologic disorders on older adults' **quality of life** (A/B) - Formulate interventions to optimize **functional status** and **quality of life** in older adults with rheumatologic disorders (S)	17%	Levels 1-3	12	Assignments, clinicals, self-directed learning, seminars	Case report, MCQs, Mini-CEX, SAQs
CLINICAL PHARMACOLOGY &THERAPEUTICS *Year I: 1 month*						
Geriatric Clinical Pharmacology	Residents should - Explain pharmacodynamics, pharmacokinetics and changes in older persons (K) - Explain individual variations in pharmacokinetics & pharmacodynamics; pharmacogenetics (K) - Explain adherence, compliance & concordance (K) - Discuss the following (S): o Adverse drug reactions o Antimicrobial use and antibiotic	8%	Levels 1-3	6	Assignments, clinicals, self-directed learning, seminars	Case report, MCQs, Mini-CEX, SAQs

	resistance o Complementary & Alternative Medicine o Drug interactions o Medication errors o Medication management o Rational prescribing - Recognize need for balanced approaches to prescribing new medicines (A/B) - Recognize need for risk-benefit analysis (A/B) - Recognize personal limitations in knowledge (A/B)					
NEUROLOGY *Year II: 3 months*						
Geriatric Neurology	Residents should - Describe **common neurologic disorders** in older adults (K) - Recognize **atypical presentations** of common neurologic disorders in older adults (K, A/B, S) - Diagnose and manage **common neurologic disorders** in older adults, including (but not limited to): o Parkinsonism o Stroke o Dementia o Delirium o Peripheral neuropathy o Neck/back pain o Sleep disorders o Temporal arteritis o Cranial nerve disorders - Recognize indications for specialist care and appropriately refer (A/B)	25%	Levels 1-3	18	Assignments, clinicals, self-directed learning, seminars	Case report, MCQs, Mini-CEX, SAQs
CARDIOLOGY *Year 2: 1 month*						
Geriatric Cardiology	Residents should - Describe **common cardiac and vascular disorders** in older adults (K) - Recognize **atypical presentations** of common cardiac disorders in older adults (K, A/B, S) - Describe **physiological changes** of the cardiovascular system associated with ageing (K) - Discuss **non-pharmacological interventions** for common cardiac and vascular disorders in older adults (S) - Recognize the impacts of cardiovascular disorders on older adults' **quality of life** (A/B) Formulate interventions to optimize **functional status** and **quality of life** in older adults with rheumatologic disorders (S) - Recognize indications for **palliative care** in older adults with cardiovascular disease (A/B)	8%	Levels 1-3	6	Assignments, clinicals, self-directed learning, seminars	Case report, MCQs, Mini-CEX, SAQs

	- Demonstrate ability to work in inter-disciplinary teams to manage **end-of-life and palliative care decision making** with patients, family members and other caregivers					
PULMONOLOGY *Year 2: 1 month*						
Geriatric Pulmonology	Residents should - Describe **common disorders of the respiratory system** in older adults (K) - Recognize **atypical presentations** of common respiratory disorders in older adults (K, A/B, S) - Describe **physiological changes** of the respiratory system associated with ageing (K) - Discuss **non-pharmacological interventions** for common respiratory disorders in older adults (S) - Recognize the impacts of respiratory disorders on older adults' **quality of life** (A/B) Formulate interventions to optimize **functional status** and **quality of life** in older adults with respiratory disorders (S) - Discuss **common malignant diseases** of the respiratory system in older adults (S) - Discuss **therapies for malignant diseases of the respiratory system** in older adults (S) - Discuss **sleep disorders** in older adults and **evidence-based recommendations** for assessment and management (S) - Recognize indications for **palliative care** in older adults with cardiovascular disease (A/B) Demonstrate ability to work in inter-disciplinary teams to manage **end-of-life and palliative care decision making** with patients, family members and other caregivers	8%	Levels 1-3	6	Assignments, clinicals, self-directed learning, seminars	Case report, MCQs, Mini-CEX, SAQs
NEPHROLOGY *Year 2: 1 month*						
Geriatric Nephrology	Residents should Describe **common disorders of the renal system** in older adults (K) - Recognize **atypical presentations** of common renal disorders in older adults (K, A/B, S) - Describe **physiological changes** of the renal system associated with ageing (K) - Describe **fluid and electrolyte balance disorders** in the elderly - Demonstrate ability to formulate individualized interventions to manage **fluid and electrolyte balance disorders** in older adults, including appropriate referral as required (A/B, S) - **Discuss limitations of formulae and other**					

	methods of assessing glomerular function in older adults (S) - Discuss **dosing of medicines** and **renal toxicity** in older adults (S) - Discuss **non-pharmacological interventions** for common renal disorders in older adults (S) - Recognize the impacts of renal disorders on older adults' **quality of life** especially (but not limited to) **chronic kidney disease** (A/B) Formulate interventions to optimize **functional status** and **quality of life** in older adults with renal disorders (S) - Discuss **rehabilitation services** for older adults on dialysis (S) - Demonstrate ability to participate in **inter-disciplinary teams** providing care for older adults with **end-stage kidney disease** (S) - Recognize indications for **palliative care** in older adults with cardiovascular disease (A/B) - Demonstrate ability to work in inter-disciplinary teams to manage **end-of-life and palliative care decision making** with patients, family members and other caregivers					
DERMATOLOGY *Year 3: 1 month*						
Geriatric Dermatology	Residents should - Describe **common dermatological disorders** seen in the elderly (K) - Describe **treatment options** for common dermatological disorders in the elderly (K) - Recognize the need for referral for specialist care and appropriately refer (A/B)	8%	Levels 1-2	6	Assignments, clinicals, self-directed learning, seminars	Case report, MCQs, Mini-CEX
ENDOCRINOLOGY *Year 3: 1 month*						
Geriatric Endocrinology	Residents should - Describe the **epidemiology of diseases of the endocrine system** in the elderly (K) - Describe **changes in the endocrine system that occur with ageing** (K) - Discuss **common disorders of theendocrine system** in the elderly, including (but not limited to): o Adrenal insufficiency o Diabetes mellitus o Dyslipoproteinaemias o Thyroid diseases - Recognize need for specialist care and appropriately refer (A/B)	8%	Levels 1-3	6	Assignments, clinicals, self-directed learning, seminars	Case report, MCQs, Mini-CEX, SAQs
GASTROENTEROLOGY *Year 3: 1 month*						
Geriatric Gastroenterology	Residents should - Describe the **epidemiology of gastrointestinal diseases** in the elderly (K) - Describe **changes in the gastrointestinal system** that occur with ageing (K)	8%	Levels 1-3	6	Assignments, clinicals, self-directed learning, seminars	Case report, MCQs, Mini-CEX,

	- Discuss **common disorders of the gastrointestinal system** in the elderly, including (but not limited to): o Constipation o Gastrointestinal haemorrhage – occult & overt o Peptic ulcer disease o Neoplasms o Nutrition					SAQs

Definitions for Mode of delivery 1-7

- 1 = Lectures
- 2 = Tutorials
- 3 = Seminars
- 4 = Clinicals/Practicals
- 5 = Self-directed learning
- 6 = Assignments
- 7 = Conferences

Definition for Level of difficulty I, II, III

- Level I = Knowledge and Comprehension
- Level II = Analysis and Application

Level III = Synthesis and Evaluation

9.0 ASSESSMENT OF SENIOR TRAINEES

Assessment of trainees consists of the following components:

1. Continuous assessment/Pre-requisites
    a. Compliance with final examination eligibility requirements
    b. Evaluation of procedures (scoring)
    c. Casebook in subspecialty (scoring)
2. Final examinations consisting of the following sections:
    a. SECTION ONE
        i. Theory paper I: MCQs on generic curriculum in Internal Medicine
        ii. Viva Voce in general medicine and generic curriculum using modified OSCE, in the objective practical assessment of generic competencies (OSPAGC): 2 hours.
    b. SECTION TWO
        i. Theory paper II. MCQ in general medicine for general internal medicine track only. OR
        ii. **Theory paper III. MCQs in relevant subspecialty (200 stems for 3 hours) for** subspecialty track
        iii. Viva voce and/or practical's in subspecialty (1 hour)
    c. SECTION THREE
        i. Defense of dissertation (1 hour) OR/AND
        ii. Viva voce on casebook (for general medicine candidates only) (1 hour)
    d. SECTION FOUR (rated as pass or fail)
        i. Clinical examinations (Dermatology and Genitourinary medicine only)
    e. SECTION FIVE: CASEBOOK IN SUBSPECIALTY (20 MARKS)
        i. For subspecialty candidates only. This is assessed as an in-course assignment and submitted with the dissertation.

    NOTE:

    1. All candidate will take Theory paper I and OSPAGC
    2. General medicine candidates: (a) Theory paper I and II (b) OSPAGC (c) and viva on casebook.
    3. All subspecialty candidates: (a) Theory papers I and III ,(b) OSPAGC , (c) viva voce in subspecialty , (d) presentation of a casebook and (e) Defense of dissertation.
    4. Candidates in Dermatology and Genitourinary medicine will in addition have clinical examination limited to the subspecialty.
       Candidates should consult subspecialty handbooks for details of the requirements for each particular subspecialty.

Conditions for a pass

A pass score of more than 50% in ALL sections (general medicine, dissertation and subspecialty). A pass in one or more sections only places the candidate as a "referred" candidate.

10.0 CREDIT UNIT SUB-SPECIALTY TRAINING INTERNAL MEDICINE

Contact Hours and Credit Unit for Part 2 FMCP

Postings	Duration (Months)	Contact Academic Hrs/Wk	Contact Clinical Hrs/Wk	Total Contact Hrs/Wk	Credit Units
Core Specialty	24	12	24	36	144
General Medicine	12	12	24	36	72
Dissertation					12
Total	36	24	48	72	228

BASIS FOR CALCULATION OF PART 2 CREDIT UNITS

Contact academic hrs:

- Routine academic work = 4 hours/wk
- Research = 4 hours/wk
- Management = 2 hours/wk
- Journal club = 2 hours/wk

12 hrs/week Every 3 month = 12 Credit Units Every 3Months = 48 Credit Unit/year = 144 Credit Units in 3years
1 Month = 4 Credit Units
3 Month Posting = 12 Credit Units

Clinical contact hrs:
4HRS/Day X 6 DAYS = 24HRS/WK/4 = 6 Credit Unit Every 3 Months = 24Credit Units/year x 3years = 72 Credit Unit in 3years
1 Month Posting =2 Credit Unit
3 Months Posting = 6 Credit Unit

Dissertation:
12 Credit Units

Credit Unit/Month = 4 (Academic) + 3 (Clinical) = 7

Total Credit Units over 3years = 144 (Academic Contact) + 72 (Clinical Contact) + 12 units (Dissertation) = 228

NATIONAL POSTGRADUATE MEDICAL COLLEG OF NIGERIA

FACULTY OF INTERNAL MEDICINE

PART II (SENIOR RESIDENCY) TRAINING CURRICULUM

INFECTIOUS DISEASE SUB-SPECIALTY

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INFECTIOUS DISEASE

8.0. INFECTIOUS DISEASE SUBSPECIALTY CURRICULUM AND COURSE CONTENT

8.1 Rotation in Infectious Disease

8.2 Infectious Disease subspecialty course content

Domain	Specific topics, knowledge, attitude, skills	mode of delivery	% of course coverage	learning objectives	total credit units	Method of assessments
	Core infectious diseases 55%					
Infectious diseases epidemiology	To know and understand the following aspects of infectious diseases epidemiology: • What constitutes infectious or communicable disease? Koch's postulates and its modifications; •Basic concepts: transmissibility, host-parasite interactions •Outbreak investigations (especially in hospital settings) •Control and prevention: Interventions and vaccine efficacy; control of meningococcal outbreak with village vaccinations. •Clinical studies and analytic epidemiology: concepts, design, analyses, write up	1-7	2%	1, ii, iii		MCQ, Viva
Conditions of infectious or unknown origin and those mimicking infections	To describe the epidemiology, explain the pathophysiology and clinical presentation of the Following: • Non communicable diseases with infectious associations: PUD (H pylori); Atherosclerosis (?Chlamydia spp); KS (HHV 8); Lymphoma (EBV); Colon disease/Ca and Clostridium septicum and Strep bovis; (HTLV1) • Lyme disease (with neuritis), chronic fatigue syndrome, silico-tuberculosis • What simulates infections: malignant neuroleptic syndrome and its assessment, drug fever, acalculous cholecystitis in ventilated patients, sarcoidosis, marantic/libmann-sacks endocarditis,	1-7	1%	1, ii, iii		MCQ, viva

Immunology of Infectious diseases	**Immunity and infections**: To describe and comprehend the biology and clinical bases of immunity and infections. To describe and comprehend; Primary immune deficiency states, Acquired (non-HIV) immune deficiency related infections, e.g. cytokine deficiencies, MBP def., etc., Immunologic responses to common infections (and hypersensitivity reactions), e.g. rheumatic fever, AGN and Biologic bases of vaccination with examples	1-7	8%	1, ii, iii		MCQ, viva
	Immunological changes in healthy individuals living in the tropics: To describe and comprehend; Changes in plasma proteins, Autoantibodies Heterophille and Wasserman antibodies, Immune complexes, Lymphocyte populations, Reticuloendothelial system, Immune responsiveness in healthy individuals living in the tropics. To know and understand the clinical significance of immunological changes found in normal tropical populations.	1-7		1,ii, iii		MCQ, viva
	Immune response to infections: To describe and comprehend; Non-specific defense mechanisms, specific protective immune mechanisms and defects in the immune response to infection. To know and understand genetic factors in relation to immune response to infection.	1-7		1, ii, iii		MCQ & viva
	Evasion of immune response to infections: To know and understand the different immune evasion mechanisms as utilized by microorganisms e.g. • Sequestration • Impedins and aggrresins • Blocking antibodies and immune complexes • Immunosuppression • Antigenic variation • Antigenic disguise and antigenic mimicry	1-7		1, ii, iii		MCQ, & viva

	Immunology of tropical infections: To explain and comprehend classes of immunological responses to tropical infections: Classified allergic reactions and Unclassified allergic reaction.	1-7		1, ii, iii		MCQ, viva,
	Immunodiagnosis of infections: To know and understand immunodiagnostic techniques of infectious agents; e.g. Antigenic detection, Detection of non-specific immunological changes induced by infections, Detection of specific immune responses to infections	1-7		1, ii, iii		MCQ, viva,
	Nutrition, infections and immunity: To describe and comprehend the effects of infection on nutrition, the effects of malnutrition on immunity and Prevention and treatment of infection in malnutrition. To know the various effects of protein-energy malnutrition on specific and non-specific immune mechanisms.	1-7		1, ii, iii		MCQ, viva,
	Immunization, immunotherapy and passive immunoprophylaxis: To know and understand the following immunological interventions: • Infant immunization schemes • Vaccines in routine use in the tropics • Serum and gamma globulin • Leucocytes and their products • Immunostimulation • Immunodepression	1-7		1, ii, iii		MCQ, viva,
Common organisms and infections	To know the epidemiology, pathophysiology, aetiologic agent, clinical presentation, complications, diagnosis, management and prevention of the following common infections: • Enteric fever • Leprosy • Tetanus • Pneumococcal infections, Staphylococcal infections, Enterococcal infections, other cosmopolitan infections,	1-7	3%	1, ii, iii		MCQ, viva,

	• Escherichia coli, Klebsiella spp, Brucella spp, Vibrio spp, Clostridium spp; etc • Atypical pathogens: rickettsiosis, legionella, leptospirosis, listeriosis, norcardiosis;					
Infectious diseases clinical syndromes	To know the epidemiology, pathophysiology, aetiologic agents, clinical presentation, complications, diagnosis, management and prevention of the following infectious diseases clinical syndromes: • Sepsis and septicemia (and ICU management) • Respiratory system (pneumonia, chronic suppurative lung diseases, allergic fungal infections, etc.) • Gastro intestinal system, e.g. hepato-biliary sepsis, SBP, food poisoning, infective diarrhea, hepatitis and viruses, H pylori, food poisoning syndromes, etc. • Endovascular infections, e.g. endocarditis (+Duke's criteria), vascular (mycotic) aneurismal infections, • Central nervous system, e.g. acute bacterial meningitis, brain ascèses, VP shunt infection • Skin and soft tissue infections, e.g. cellulites, necrotizing fascitis, • Others: Urosepsis (and UTI); Syndromes of sexually Tranmitted Diseases(STI); PUO; Diabetic foot infection (± Surgical debridement)	1-7	8%	1, ii, iii		MCQ, viva,
Hospital acquired infections	To recognize and understand the concept of hospital acquired infections including; Nosocomial (ventilator) pneumonia; blood stream infection; catheter related UTI; soft tissue infections and Clostridium difficile diarrhea To know and understand the basics of Infection control and hospital epidemiology To know and comprehend different Isolation techniques Recognize and manage infections in health care workers, e.g. chickenpox (and rationale for off duty), To know and understand different methods of implementing antibiotic control / restriction policies	1-7	3%	1, ii, iii		MCQ, viva,
Current and new antimicrobial	To acquire and apply the knowledge of rational use of anti-microbial To understand and comprehend the	1-7	6%	1, ii, iii		MCQ, viva,

agents	knowledge of pharmacokinetics, pharmacodynamics, drug toxicity and clinical use of Antibacterials (all, including anti-mycobacterium), Antivirals, Antifungal agents: azoles (flu-, itra, vori-, peas-, etc; echinocandins; flucytosine) To describe and comprehend the following: • Biologicals in infectious disease: drotrecogin in sepsis, • Antimicrobial delivery modes (and accessories): ommaya use; inhalational antimicrobial use; hyperbaric oxygen use in ID, • Antimicrobial drug allergies, hypersensitivities and alternatives To know and understand the concept of antimicrobial drug resistance: global and local significance i.Penicillin resistant pneumococci ii.Extended spectrum beta-lactamase (ESBL) producing Gram negative bacterial infections; ESBL classifications; iii.MRSAs, VISAs, VREs, etc. iv.Azoles and resistant fungi v.H5N1 oseltamivir resistant viruses To know and understand the concept of Antimicrobial safety, categorization and use in pregnancy To describe and comprehend antimicrobial drug-drug interactions.					
Prosthetics and foreign body infections	Recognize and show understanding of prosthetics and foreign body infections as it relates to Catheter associated UTI, Prosthetic valve endocarditis; pacemaker infections; Infections on TKR, VP shunt, Hickman catheter, Other: organisms necessitating foreign body removal: stenotrophomonas maltophilia; drug resistant bacteria, etc.	1-7	2%	1, ii, iii		MCQ, viva,
Emerging and re-emerging infections	To know the epidemiology, pathophysiology, aetiologic agent, clinical presentation, complications, diagnosis, management and prevention of the following emerging and re-emerging infections. • Zoonotic infections: rabies, west nile, rift valley fever, etc • Lassa, Avian influenza, SARS, Ebola, Zika, Polio (and vaccine derived polio), • Slow viruses – mad cow disease, kuru, etc • Bacteria – emergence of N meningitides W135, Cholera O139, E coli H157, Strep suit, Strep iniae, Vibrio vulificus,	1-7	5%	1, ii, iii		MCQ, viva,

	• Emerging fungi – non albicans Candida spp; Trichosporon spp; non fumigatus Aspergilla; Scedosporium spp; penicillium marneffii; • Others: dengue, chikungunya, etc.					
Emergencies in infectious disease	To know the epidemiology, pathophysiology, aetiologic agent, clinical presentation, complications, diagnosis and management of the following infectious diseases emergencies: • Acute bacterial meningitis • Overwhelming post splenectomy infection (OPSI) [and in Sickle cell disease] • Severe or cerebral falciparum malaria (especially in the non-immune) • Group A streptococcal necrotizing fascitis • Gas gangrene • Meningococcal meningococcaemia • Pneumonic and septicemic melioidosis • Life threatening pressure (and infectious compartment) syndromes e.g. Ludwig's angina, spinal cord compressions • Others	1-7	3%	1, ii, iii		MCQ, viva,
Other specific viral diseases	To know the various manifestations, diagnosis and management: Measles, Mumps, Rubella, Herpes Simplex virus, Herpes Zoster Virus, Cytomegalovirus, Ebstein Barr Virus, Rabies, HTLV & II, Yellow Fever, Hepatitis A-F viruses.	1-7	1%	1, ii, iii		MCQ, viva,
Endemic diseases (Tuberculosis, Malaria, HIV)	Tuberculosis: MDR, XDR, TB-HIV; To describe and comprehend the epidemiology, systemic presentations, investigations and treatment. Malaria (all): To know and comprehend the epidemiology, pathophysiology, pathology, clinical presentation, complications, management, prevention and control including chemoprophylaxis and vaccine development. HIV/AIDS infection: [To know and understand the Biology,	1-7	12%	1, ii, iii		MCQ, viva,

	pathogenesis, clinical features, systemic complications, laboratory features, management (ARV-1st line, 2nd line and salvage regimen, other), and prevention].					
Policy, prevention and control of common and serious infections (facility and community)	To know and understand the concept of Advocacy, law, policy, practice, etc.; as it applies to Infectious, communicable and notifiable diseases; WHO-IHR/IDSR To know and comprehend the basic application of Health economics – cost effectiveness analyses in infectious diseases with specific examples	1-7	1%	1, ii, iii		MCQ, viva,

Domain: Ancillary posting in Infectious Diseases

Domain	**Specific topics, knowledge, attitude, skills**	**mode of delivery**	**% of course coverage**	**learning objectives (**using taxonomy)	**total credit units**	**Method of assessments**
	Ancillary Postings-					
Microbiology	This should be for a period of Six (6) weeks and the Resident is expected to acquire knowledge on the following: Introduction to diagnostic Microbiology • Approach to the patient with infectious disease • Systematic diagnostic microbiology Principles of antimicrobial chemotherapy • Classes of antimicrobial agents • Mode of action of antimicrobial agents • General principles of the use of antimicrobial agents • The role of laboratory in antimicrobial chemotherapy • Reasons for the failure of antimicrobial therapy Safety, categorization and use of antimicrobials in pregnancy Drug interactions General guidelines on sterilization and disinfections Microscopy, culture and sensitivity Approach to virology • Viral diseases	1-6	8%	1, ii, iii		MCQ, ,& viva

	• Identification of viruses Approach to Mycology • Superficial, subcutaneous and deep nor systemic mycosis • Laboratory diagnosis of fungal pathogens Approach to parasitology • Protozoal infection (e.g. Malaria, Leishmaniasis, Filariasis, Trypanosomiasis, Babesiosis, Toxoplasmosis, Pneumocystis carinii, Trichomonas's, Naegleria, and Acanthamoeba) and their management. • Helminthology including management Arthropods of medical importance Normal body flora and factors that influence it Laboratory safety.					
Immunology	This should be for a ix (6) week's duration and the resident is expected to acquire knowledge on: i) Introduction to Immunology • Innate and adaptive immunity • Nature and synthesis of immunoglobulin • Active and passive immunity ii) Immunologic techniques • General overview of antigen/antibody interactions • Agglutination tests • Precipitation tests • Haemagglutination tests • Complement fixation test • Polymerase chain reaction • Electron microscopy iii) Immunodeficiency states iv) Hypersensitivity reactions v) Immunity to infections vi) Immunization and vaccine development	1-6	7%	1, ii, iii		MCQ, & viva
General Medicine- 20%	As in General medicine part I for pulmonology, gastroenterology and neurology, as well as laboratory postings in medical microbiology, chemical pathology and haematology	1-7	20%	I,II		MCQ, & viva
Emergency/ ICU Medicine-10%	As in General Medicine for part I	1-9	10%	I.II.III		MCQ, & viva

Definitions for Mode of delivery 1-7

- 1 = Lectures

- 2 = Tutorials
- 3 = Seminars
- 4 = Clinicals/Practicals
- 5 = Self-directed learning
- 6 = Assignments
- 7 = Conferences
- 8 =
- 9 =

Definition for Level of difficulty I, II, III

- Level I = Knowledge and Comprehension
- Level II = Analysis and Application
- Level III = Synthesis and Evaluation

9.0 ASSESSMENT OF SENIOR TRAINEES

Assessment of trainees consists of the following components:

1. Continuous assessment/Pre-requisites
    a. Compliance with final examination eligibility requirements
    b. Evaluation of procedures (scoring)
    c. Casebook in subspecialty (scoring)
2. Final examinations consisting of the following sections:
    a. SECTION ONE
        i. Theory paper I: MCQs on generic curriculum in Internal Medicine
        ii. Viva Voce in general medicine and generic curriculum using modified OSCE, in the objective practical assessment of generic competencies (OSPAGC): 2 hours.
    b. SECTION TWO
        i. Theory paper II. MCQ in general medicine for general internal medicine track only. OR
        ii. **Theory paper III. MCQs in relevant subspecialty (200 stems for 3 hours) for** subspecialty track
        iii. Viva voce and/or practical's in subspecialty (1 hour)
    c. SECTION THREE
        i. Defense of dissertation (1 hour) OR/AND
        ii. Viva voce on casebook (for general medicine candidates only) (1 hour)
    d. SECTION FOUR (rated as pass or fail)
        i. Clinical examinations (Dermatology and Genitourinary medicine only)
    e. SECTION FIVE: CASEBOOK IN SUBSPECIALTY (20 MARKS)
        i. For subspecialty candidates only. This is assessed as an in-course assignment and submitted with the dissertation.

    NOTE:

    1. All candidate will take Theory paper I and OSPAGC
    2. General medicine candidates: (a) Theory paper I and II (b) OSPAGC (c) and viva on casebook.
    3. All subspecialty candidates: (a) Theory papers I and III ,(b) OSPAGC , (c) viva voce in subspecialty , (d) presentation of a casebook and (e) Defense of dissertation.
    4. Candidates in Dermatology and Genitourinary medicine will in addition have clinical examination limited to the subspecialty.
       Candidates should consult subspecialty handbooks for details of the requirements for each particular subspecialty.

Conditions for a pass

A pass score of more than 50% in ALL sections (general medicine, dissertation and subspecialty). A pass in one or more sections only places the candidate as a "referred" candidate.

10.0 CREDIT UNIT SUB-SPECIALTY TRAINING INTERNAL MEDICINE

Contact Hours and Credit Unit for Part 2 FMCP

Postings	Duration (Months)	Contact Academic Hrs/Wk	Contact Clinical Hrs/Wk	Total Contact Hrs/Wk	Credit Units
Core Specialty	24	12	24	36	144
General Medicine	12	12	24	36	72
Dissertation					12
Total	36	24	48	72	228

BASIS FOR CALCULATION OF PART 2 CREDIT UNITS

Contact academic hrs:

- Routine academic work = 4 hours/wk
- Research = 4 hours/wk
- Management = 2 hours/wk
- Journal club = 2 hours/wk

12 hrs/week Every 3 month = 12 Credit Units Every 3Months = 48 Credit Unit/year = 144 Credit Units in 3years
1 Month = 4 Credit Units
3 Month Posting = 12 Credit Units

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4HRS/Day X 6 DAYS = 24HRS/WK/4 = 6 Credit Unit Every 3 Months = 24Credit Units/year x 3years = 72 Credit Unit in 3years
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3 Months Posting = 6 Credit Unit

Dissertation:
12 Credit Units

Credit Unit/Month = 4 (Academic) + 3 (Clinical) = 7

Total Credit Units over 3years = 144 (Academic Contact) + 72 (Clinical Contact) + 12 units (Dissertation) = 228

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PART II (SENIOR RESIDENCY) TRAINING CURRICULUM

NEPHROLOGY SUB-SPECIALTY

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NEPHROLOGY

8.0 GENERAL STRUCTURE OF SUB- SUBSPECIALTY TRAINING
8.1 SENOIR RESIDENTS ROTATIONS

SUB-SPECIALTY: NEPHROLOGY

1	General Nephrology.	12 months
2	Dialysis	3 months
3	Transplantation	3 months
4	Nephrology in Special Groups	3 months
5	Clinical Chemistry/Histopathology/Radiology	3 months
6	General Medicine (at Senior Registrar's level)	12 months

Note; The posting in general medicine shall be made up of 3 months of cardiology posting and at least 2 months in any of 4 other major subspecialties of Internal Medicine.

The research programme will run concurrently with the duration of training, which is 3 years.

8.2. **NEPHROLOGY SUBSPECIALTY COURSE CONTENTS**

Domains	**Specific topics, knowledge, attitude and skills**	**Mode of delivery**	**% of course coverage**	**Learning objectives *(Levels using taxonomy)***	**Total credit units**	**Assessment methods**
General Nephrology	To describe the aetiology, pathophysiology / pathology, natural history and management of primary renal disease.	1-7	20%	I,II,III	3	MCQs, VIVA
	To describe the aetiology, pathophysiology, pathology, natural history and management of secondary renal disease.	1-7		I,II,III	3	MCQS, ESSAYS,VIVA
	To identify, interpret and recognize the importance of disorders of electrolyte and acid-base regulation .	1-7		I,II,III	6	MCQS , ESSAYS , VIVA
	Renal pharmacology; To identify and employ the use of drugs in renal failure; and the effects of drugs in renal function.	1-7		I,II,III	3	MCQS , ESSAYS,VIVA
	Hypertension: To describe the pathophysiology, complications and management.	1-7		I,II,III	6	MCQS, ESSAYS, VIVA

	To identify and participate in the management of hypertensive disorders in pregnancy.					
	To comprehend the Immunogenetics and immunopathobiological mechanism involved in renal disorders :To demonstrateknowledge and keep abreast of practice of simple laboratory methods in immunology and parasitology	1-7		I,II,IIII	6	MCQS , ESSAYS,VIVA
	To identify, recognise the importance of nephro-urology disorders.	1-7		I,II,III	6	MCQS , ESSAYS , VIVA
	To categorize and participate in the management of congenital and hereditary kidney diseases.	1-7		I,II,III	3	MCQS, ESSAYS, VIVA
	Renal transplantation- to describe and demonstrate a comprehensive knowledge of immunogenetics. To participate in the evaluation and management of RT, also identify problems of renal transplantation; rejection, immunology, donor and recipient counseling and evaluations. To keep abreast of immunosuppressive therapy, complications and their management.	1-7		I,II,III	12	MCQS, ESSAYS, VIVA
Tropical Nephrology	To describe the ecology of tropical environment and kidney disease process and recognising their importance	1-7	20%	I,II,III	6	MCQS,ESSAYS, VIVA
	To categorize and recognize the importance of parasitic nephropathies.	1-7		I,II,III	6	
	To describe cultural, attitude and beliefs impacts on renal disease in the tropics.	1-7		I,II,III	6	MCQS, ESSAYS
	To recognize the challenges in treatment of kidney disease in the tropics.	1-7		I,II,III	6	MCQS,ESSAYS, VIVA
Nephrology in special	Recognize the importance of geriatric Nephrology.	1-7	20%	I,II,III	6	MCQS,ESSAYS,

groups						VIVA
	To demonstrate , recognize the need ,importance and keep abreast of developments in Interventional nephrology.	1-7		I,II,III	6	MCQS,ESSAYS, VIVA
	Ability to explain, communicate and recognize concerns in Community nephrology	1-,7		I,II,III	12	MCQS,ESSAYS, VIVA
Renal replacement Therapy	Dialysis; principles, physical dynamics, physiology of dialysis, technical acquisition of dialysis skills and challenge of dialysis and complications. Forms of dialysis (Peritoneal dialysis and heamodialysis. Clinical experience will include supervised involvement in decision making for patients undergoing dialysis treatment which consists of: a) Evaluation, preparation, and selection of patients for acute haemodialysis or peritoneal dialysis, and those for prolonged dialysis and other forms of extra corporeal therapies. b) Assessment of end-stage renal disease patients for various forms of therapy and their instruction regarding treatment options. c) Recognize the importance of drug dosage and modification during dialysis d) Identify and recognize importance of management of medical complications and emergencies in patients during and in-between dialysis, including dialysis access problems, and an understanding of their pathogenesis and prevention. e) Long term follow-up of patients undergoing chronic dialysis including their	1-7	30%	I,II,III	48	MCQS,ESSAYS, VIVA

	dialysis prescription and modification and assessment of adequate of dialysis. f) An understanding of the principles and practice of peritoneal dialysis including the establishment of peritoneal access, peritoneal catheters and the choice of appropriate catheters. g) An understanding of the technology of peritoneal dialysis including the use of automated cyclers. h) An understanding of how to write a peritoneal dialysis prescription and how to access peritoneal dialysis adequacy. i) An understanding of the complication of peritoneal dialysis including peritonitis, and their treatment. Kidney Transplantation: Basic Transplantation Immunobiology; Histocompatibility testing and Crossmatching; Immunosuppressive Medications and Protocols for Kidney Transplantation; Advantages of Kidney Transplantation over long term dialysis; Challenges and Complications of Kidney Transplantation; Ethical issue in transplantation; Peculiarities of Kidney Transplantation in resource-limited environments. Types of Kidney Transplantation (Living Donor and Deceased Donor Transplantation). Clinical experience will include supervised involvement in: a) Evaluation of the potential kidney recipient. b) Evaluation of the potential kidney donor. c) Peri-transplant care of the					

	kidney recipient. d) Short- and long-term follow-up of kidney recipients and donors. e) Managing complications of kidney transplantation such as: i. Acute rejection and other causes of allograft dysfunction ii. Infections in the kidney recipient. iii. New Onset Diabetes after Transplantation. iv. Transplant Renal Artery Stenosis. v. Post-transplant erythrocytosis. f) Special considerations in kidney recipients: i. Biopsy of the transplant kidney ii. Pregnancy iii. Malignancies iv. Psychiatric issues					
	TOTAL				**144**	

Definitions for Mode of delivery 1-7

- 1 = Lectures
- 2 = Tutorials
- 3 = Seminars
- 4 = Clinicals/Practicals
- 5 = Self-directed learning
- 6 = Assignments
- 7 = Conferences

Definition for Level of difficulty I, II, III

- Level I = Knowledge and Comprehension
- Level II = Analysis and Application
- Level III = Synthesis and Evaluation

9.0 ASSESSMENT OF SENIOR TRAINEES

Assessment of trainees consists of the following components:

1. Continuous assessment/Pre-requisites
   a. Compliance with final examination eligibility requirements
   b. Evaluation of procedures (scoring)
   c. Casebook in subspecialty (scoring)
2. Final examinations consisting of the following sections:
   a. SECTION ONE
      i. Theory paper I: MCQs on generic curriculum in Internal Medicine
      ii. Viva Voce in general medicine and generic curriculum using modified OSCE, in the objective practical assessment of generic competencies (OSPAGC): 2 hours.
   b. SECTION TWO
      i. Theory paper II. MCQ in general medicine for general internal medicine track only. OR
      ii. **Theory paper III. MCQs in relevant subspecialty (200 stems for 3 hours) for** subspecialty track
      iii. Viva voce and/or practical's in subspecialty (1 hour)
   c. SECTION THREE
      i. Defense of dissertation (1 hour) OR/AND
      ii. Viva voce on casebook (for general medicine candidates only) (1 hour)
   d. SECTION FOUR (rated as pass or fail)
      i. Clinical examinations (Dermatology and Genitourinary medicine only)
   e. SECTION FIVE: CASEBOOK IN SUBSPECIALTY (20 MARKS)
      i. For subspecialty candidates only. This is assessed as an in-course assignment and submitted with the dissertation.

   NOTE:

   1. All candidate will take Theory paper I and OSPAGC
   2. General medicine candidates: (a) Theory paper I and II (b) OSPAGC (c) and viva on casebook.
   3. All subspecialty candidates: (a) Theory papers I and III ,(b) OSPAGC , (c) viva voce in subspecialty , (d) presentation of a casebook and (e) Defense of dissertation.
   4. Candidates in Dermatology and Genitourinary medicine will in addition have clinical examination limited to the subspecialty.
      Candidates should consult subspecialty handbooks for details of the requirements for each particular subspecialty.

Conditions for a pass

A pass score of more than 50% in ALL sections (general medicine, dissertation and subspecialty). A pass in one or more sections only places the candidate as a "referred" candidate.

10.0 CREDIT UNIT SUB-SPECIALTY TRAINING INTERNAL MEDICINE

Contact Hours and Credit Unit for Part 2 FMCP

Postings	Duration (Months)	Contact Academic Hrs/Wk	Contact Clinical Hrs/Wk	Total Contact Hrs/Wk	Credit Units
Core Specialty	24	12	24	36	144
General Medicine	12	12	24	36	72
Dissertation					12
Total	36	24	48	72	228

BASIS FOR CALCULATION OF PART 2 CREDIT UNITS

Contact academic hrs:

- Routine academic work = 4 hours/wk
- Research = 4 hours/wk
- Management = 2 hours/wk
- Journal club = 2 hours/wk

12 hrs/week Every 3 month = 12 Credit Units Every 3Months = 48 Credit Unit/year = 144 Credit Units in 3years
1 Month = 4 Credit Units
3 Month Posting = 12 Credit Units

Clinical contact hrs:
4HRS/Day X 6 DAYS = 24HRS/WK/4 = 6 Credit Unit Every 3 Months = 24Credit Units/year x 3years = 72 Credit Unit in 3years
1 Month Posting =2 Credit Unit
3 Months Posting = 6 Credit Unit

Dissertation:
12 Credit Units

Credit Unit/Month = 4 (Academic) + 3 (Clinical) = 7

Total Credit Units over 3years = 144 (Academic Contact) + 72 (Clinical Contact) + 12 units (Dissertation) = 228

NATIONAL POSTGRADUATE MEDICAL COLLEG OF NIGERIA

FACULTY OF INTERNAL MEDICINE

PART II (SENIOR RESIDENCY) TRAINING CURRICULUM

NEUROLOGY SUB-SPECIALTY

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CURRICULUM AND COURSE CONTENT

FOR

THE SUB-SPECIALTY TRAINING PROGRAMME

IN

NEUROLOGY

8.1 ROTATIONS IN NEUROLOGY

	Posting	Duration
1	Clinical neurology	Minimum 18 months
2	Emergency Medicine	3 months
3	Critical Care /Intensive care	1 month
4	Psychiatry	2 months
5	Neurosurgery	2 months
6	Neuroradiology	1 month
7	EEG/Clinical neurophysiology	3 months
8	Neuropathology	1 month
9	ENT (Otorhinolaryngology)	1 month
10	Ophthalmology	1 month
11	Internal Medicine subspecialty rotations	3 months

- The first 12 months and the final 6 months of the neurology residency program will be spent in the Clinical Neurology rotation. All subsequent rotations will be organized within the remaining 18 months of the training period.
- The rotation periods for neuroradiology, neurophysiology and neuropathology will be conducted as part-time postings during which the resident will continue to take calls in Neurology and attend scheduled weekly training activities in the Neurology Unit such as journal clubs, didactic lectures, and grand rounds.
- In situations where EEG/Clinical Neurophysiology are undertaken at another training institution as a distinct rotation, the duration shall be 3 months. Otherwise, the posting shall be undertaken within the period of Clinical Neurology rotation, allowing reserved time for EEG/Clinical Neurophysiology exposure on specified days.
- Internal medicine subspecialty rotations will be in blocks of 1 month postings covering at least 3 specialties including cardiology and endocrinology, and any one of the subspecialties in the faculty including the following: hematology/oncology, hepatology/ gastroenterology, nephrology, pulmonology, and rheumatology.

8.2 Neurology

Title	Specific topics (Knowledge, Attitudes and Skills)	% of course coverage	Learning Objectives	Total Credit Units	Mode of delivery	Mode of assessment
BASIC NEUROSCIENCE	**Neuroembryology, Neuroanatomy,**	10%	III-VI	108		MCQ, VV, CbD
	Understand basic developmental stages of the nervous system (K);					
	Neurophysiology, Neurochemistry					
	Understand the basic function of the central and peripheral nervous system (K); comprehend neurochemicals including neurotransmitters and neuropeptides and how they influence neuronal function (K)					
	Neurogenetics					
	Comprehend basic principles of genetics including inheritance patterns (mendelian and non-mendelian), understand basic molecular genetic concepts (including types of mutations) common diagnostic methods (K); recognition of common dysmorphic syndromes with neurological outcomes – Down's, Turner's (K); genetic contribution to multifactorial neurologic disease – stroke, epilepsy, multiple sclerosis (K) Clinical features of common genetic conditions (Huntington's disease, hereditary neuropathies, hereditary ataxias, neurocutaneous syndromes) (K); Demonstrates ability to counsel and consent patients and families considering undergoing genetic testing (S)					
	Neuropsychology					
	Comprehend the neuroscience basis of attention, memory, language and perception (K); understand the value and					

	limitations of neuropsychological interventions (K); understand the mini-mental state examination and basic neuropsychological tests e.g.) WAIS (K); demonstrate ability to use basic tests of cognitive function (S); understands the role of, and the need and indications for referral to the clinical psychologist (S); demonstrates ability to interpret neuropsychological reports (S) **Neuroendocrinology** *Comprehends the principles of the nervous system in endocrine function and neurologic features of endocrine disease especially pituitary disease (K, S); understands clinical features and investigations in endocrine disease and relationship with neurologic disorders (K); exhibits the ability to interface with endocrinologists (S); exhaustively discuss steroid therapy and its complications (K)* **Neuropharmacology** *Understand the basic principles of neuro-pharmacokinetics and pharmacodynamics.*					
CLINICAL NEUROLOGICAL EVALUATION	**Neurologic history taking** *Comprehensively describe the process of obtaining a medical and neurological history (K). Convincingly obtain and effectively and accurately communicate an appropriate, focussed and comprehensive medical and neurological history (S). Demonstrates an ability to communicate effectively with a wide variety and complexity of patients including recognizing language, cultural, and*	10%	III - VI		1 – 7	MiniCEX, Log book, Case series, Portfolios, OSCE, VV

	personality differences and adapting to same to ensure adequate care delivery (A)					
	Complete neurologic examination and Targeted (abridged) neurologic examination					
	Exhibit a thorough working knowledge and application of neuroanatomy (K). Recognize the place of and appropriately deploy abridged neurological examinations in the evaluation of patients (K). Demonstrate an ability to undertake an appropriate, focussed and comprehensive neurological examination and communicate same effectively and accurately using appropriate media (S). Demonstrate sensitivity in conducting the physical examination (including communicating the process, using chaperones and explaining findings to patients) (A).					
	Localization in clinical neurology					
	Describe the localization of lesions at all levels of the neuraxis and correlate this with the clinical history and neurologic examination in formulating a functional/anatomical diagnosis (K,S). Recognize the importance of appropriate localization prior to proceeding to commit resources to laboratory investigations (B)					
	Differential diagnosis of neurological complaints					
	Demonstrate advancement in content knowledge and analytical thinking in order to develop well-formulated differential diagnosis for					

	patients with common and less common neurologic disorders alone or occurring with concomitant medical disorders (K). Understand the role and appropriate use/usefulness of ancillary investigations in the neurological diagnostic evaluation (K). Demonstrate an ability to formulate an appropriately ordered differential diagnosis and prioritized investigations, with reference to information obtained in the neurologic evaluation, and relative to epidemiological and demographic conditions (S). **Assessment of acuteness and prognosis of diseases** *Demonstrate an understanding of disease prognosis, natural history and is able to distinguish emergencies requiring urgent intervention (K). Appropriately incorporates this knowledge in prioritizing patient care (S)* **Formulation of rational plan for investigations and management** *Demonstrate the ability to formulate a rational plan for diagnostic evaluation and treatment (including due consideration for social and economic circumstances) (K,S,B)*					
NEUROLOGICAL DISORDERS	**(Topics as outlined in course content section B2):** **Epilepsy** *Comprehend the knowledge of the differential diagnosis of transient and paroxysmal neurologic events, use of anti-epileptic drugs, role of surgery in epilepsy (K); Demonstrate awareness of the issues relating to women, pregnancy, driving,*	30%	III - VI		1 - 7	MCQ, VV, CbD, Mini-CEX, logbook,

	sudden death and epilepsy (K), Demonstrate knowledge, recognition and management of functional (non-epileptic) seizures (K,S); Demonstrates ability to evaluate and manage people with epilepsy (K, S).					
	Cerebrovascular disease					
	Exhibit a thorough working knowledge of the cerebral circulation and its determinants (K), pathophysiology of the cerebral infarction, cerebral haemorrhage , subarachnoid haemorrhage, cerebral venous thrombosis (K); Demonstrate an understanding of the epidemiology, risk factors and their management and the features of stroke (K, S); demonstrate an understanding of the investigation and management of acute stroke including thrombolysis (K, S); Comprehend and demonstrate understanding of the role and limitations of neuroimaging (K, S); Demonstrate the ability to manage stroke in an on-call setting (S); demonstrate the ability to evaluate and manage people with stroke (S)					
	Disorders of consciousness					
	Comprehend a knowledge of anatomy and physiology of consciousness (K) and the pathophysiology of disorders of consciousness (K); Demonstrate an understanding of the definitions, causes, pathophysiology, clinical features and prognosis of coma, permanent vegetative state, minimally conscious state, coma, brain death (K, S); Exhibit an understanding of coma mimics					

	especially locked-in syndrome (K, S); Demonstrate the ability to assess an unresponsive patient and formulate a plan of investigation and management (S); exhibit development of interpersonal skills relating to management of family of patients with disorders of consciousness (S)					
	Disorders of sleep					
	Comprehend the neurobiology/neurophysiology of sleep (K); knowledge of the effects of neurological conditions on sleep (K), demonstrate an understanding of effects of sleep on the EEG (K); comprehend narcolepsy, parasomnias, daytime somnolence, obstructive sleep apnea, (K); Demonstrate the ability to evaluate and manage people with sleep disorders (K, S)					
	Disorders of higher cognitive function					
	Exhibit a thorough working knowledge of memory, language, visuo-spatial function and behaviour (K); comprehend definition and epidemiology of dementia, the pathology and clinical features of the individual dementias, apt investigations, genetic aspects, specific treatments and role of neuropsychological evaluation (K); Demonstrate the ability to evaluate and manage people with disorders of higher cognitive function (K, S)					
	Headache					
	Comprehend the clinical features, differential diagnosis and specific pharmacologic and general treatment of the causes of headache and facial pain (K),					

	Demonstrate an understanding of the role of relevant investigations (K, S); demonstrate the ability to evaluate and manage people with headache and facial pain (S)					
	Movement disorders					
	Working knowledge of the clinical features and differential diagnosis of parkinsonism, tremor, chorea, dystonia and the role of investigations in diagnosis (K); knowledge of the treatment of and complications of treatment of movement disorders and role of neurosurgical interventions (K); Demonstrate the ability to evaluate and manage people with parkinsonism and other movement disorders (S)					
	Disorders of Peripheral Nerve					
	Exhibit a thorough working knowledge of the anatomy and pathology of peripheral nerves (K), clinical features of genetic and acquired forms of neuropathies (K), management of Gullain-Barre syndrome (K) and have a working knowledge of general management of acute neuromuscular paralysis (K); Demonstrate the ability to evaluate and manage people with peripheral nerve disorders (S)					
	Pain management					
	Comprehend theories of pain generation (K); pain patterns in neurologic and systemic disease (K); understand effective and rationale use of pharmacologic and other measures for pain relief (K; comprehend psychological and social effects of chronic pain (K); ability to evaluate and manage people with					

	neurologic disorders causing pain (S)					
	Demyelinating disorders					
	Demonstrate a comprehensive understanding of the neurobiology of demyelination (K), clinical features and classification of neuromyelitisoptica and multiple sclerosis (K), role of disease modifying drugs and symptomatic treatments (K). Exhibit the ability to evaluate and manage demyelinating disorders including understanding the limitations in resource challenged settings(S).					
	Infections of the nervous system					
	Comprehend principles of neurologic infectious disease, epidemiology, risk factors, clinical manifestations, and aetiopathogenesis of NS infections – meningitis, encephalitis, TB, neurosyphilis, HIV (K). Demonstrate an understanding of the diagnostic techniques utilized in NS disorders, and their appropriate use, basis of antimicrobial therapies including application of relevant guidelines or standards of care (K, S). Comprehend the importance of liaison with infectious disease specialists, clinical microbiologists and public health physicians in respect of neurological infectious disease (K, S); Demonstrate an understanding of epidemiology, pathogenesis and diagnostic features of prion disorders (K). Demonstrate the appropriate history taking and communication skills – travel					

	and sexual history, need for HIV testing (S); Exhibit ability to evaluate and manage patients with infections of the NS (S)] **Myelopathies** *Understands the functional anatomy of the spine, spinal cord, roots (K); clinical features of spinal cord and cauda equina syndromes (K, S); indications for urgent investigation (K), limitations of different neuroimaging modalities (K, S); exhibit ability to evaluate and manage patients with spinal cord disorders, and the ability to differentiate and appropriately manage the acute and chronic consequences of spinal cord dysfunction (S).* **Neurorehabilitation** *Comprehend the concept of impairment and understand the social perspective and availability of care in the community (K); demonstrate the ability to evaluate the requirement for rehabilitation e.g.) in stroke, demyelinating disorders, spinal cord injury in the context of a multidisciplinary team and make appropriate referrals (S); exhibit the ability to perform and use a functional assessment (S).*					
CLINICAL NEUROPHYSIOLOGY	**Electroencephalography** *Comprehend and demonstrate the techniques of electroencehalography recording (K, S), demonstrate knowledge of and ability to recognise normal and abnormal range of EEG findings (K, S); understand the capabilities and limitations of EEG in the evaluation of*	10%	III – VI	22	1 – 7	MiniCEX, MCQ, Log book, CbD, VV

	neurologic disorders (K); demonstrate the ability to interpret an EEG (S) **Electromyography** *Comprehend the principles of EMG techniques (K); recognise the abnormalities in peripheral neuropathies, common nerve entrapments, motor neuron disease, muscle disease and diseases of the neuromuscular junction (K); comprehend and demonstrate the role of electromyography in disorders of the nervous system (S); demonstrate the ability to interpret an electromyography report (S);* **Nerve conduction Studies** *Comprehend the principles of NCS techniques (K); recognise the abnormalities in peripheral neuropathies, common nerve entrapments, motor neuron disease, muscle disease and diseases of the neuromuscular junction (K); comprehend and demonstrate the role of electromyography in disorders of the nervous system (S); demonstrate the ability to interpret a nerve conduction study report (S)* **Evoked Potentials** *Understand the basis for and role of examining evoked potentials in neurological diseases (particularly in demyelinating diseases) (K)*					
GENERAL MEDICINE	***(As specified in the generic and subspecialty curriculum)***	7.5%	III – VI	16	1 – 7	MiniCEX, OSPAGC, Log book, CbD, VV
EMERGENCY MEDICINE	***(As specified in the generic and subspecialty curriculum)***	7.5%	III – VI	16	1 – 7	MiniCEX, OSPAGC, Log book, CbD, VV

ALLIED POSTINGS	***Intensive Care***	25%	III - VI	54	1 - 7	MinCEX, MCQ, CbD, Log book, VV
	ICU neurologic complications of sepsis, systemic disorders an drugs (K); principles of cardiorespiratory support (K), indications for and modalities of artificial nutrition (K), failure to regain consciousness and failure to recover from paralysis (K); clinical, medico-legal and ethical issues in coma, vegetative state and brain death (K); ability to evaluate and manage as part of a multidisciplinary team, patients in the ICU (S); ability to communicate with patients, relatives and ICU staff (S).					
	Neurosurgery					
	Comprehend the role of neurosurgery in the management of raised intracranial pressure, intracranial haemorrhage, ischemic stroke, aneurysms, vascular malformations and tumours (K); comprehend the concept of surgical risk (general and specific risk) and complications of neurosurgical procedures (K), comprehend the role of biopsy procedures including the indications, limitations, process and complications (K); Demonstrate the ability to evaluate requirement for neurosurgical intervention in people with neurologic disorders (S) and demonstrate the ability to liaise effectively with the neurosurgeon (S; A)					
	Neuropsychiatry					
	Exhibit working knowledge of the common psychiatric disorders, learning disability,					

	neurologic features which may have psychiatric causes including somatisation, conversion disorder (K); Demonstrate the ability to evaluate and interpret psychiatric symptoms in and as part of neurologic disorders (S) and also evaluate neurologic features in patients with psychiatric disorders (S); Demonstrate ability to evaluate and manage acute organic brain syndromes (S); Demonstrate ability to liaise effectively with psychiatrists (A; S).					
	Neuroradiology					
	Exhibit a working knowledge of requesting, interpreting and utilising neuro-radiological investigations appropriately (K, S); Demonstrate the ability to explain the nature, risks and benefits of neuro-radiological investigations (K, S); Demonstrate the ability to request and evaluate neuro-radiological investigations and reports (S); Demonstrate the ability to liaise effectively with the neuroradiologist (S);					
	Neuro-otology					
	Comprehend the applied anatomy and physiology of hearing and balance (K), comprehend history and examination techniques specific to disorders of hearing and balance including vestibular manoeuvres (K); exhibit a working knowledge of conditions affecting the vestibulocochlear system (K); Demonstrate the ability to evaluate the hearing impaired patient and interpret audiograms (S); Demonstrate the ability to evaluate the dizzy					

	patient (S); Demonstrate the ability to perform diagnostic and therapeutic vestibular manoeuvres (S); Demonstrate the ability to liaise with ENT colleagues.					
	Neuro-ophthalmology					
	Comprehend common neuro-ophthalmic conditions such as visual loss, diplopia, cranial nerve palsies, optic neuropathies (K); Demonstrate proficiency in directed history taking, visual field interpretation, pupillary examination and fundoscopy (K, S); Working knowledge of interpretation of basic CT and MRI scans for neuroophthalmic diseases with emphasis on disease localization along the visual and oculomotor pathways (K, S)					
	Neuropathology					
	Comprehend the pathological basis of neurologic disorders; anatomy of brain sections, brain preparation; role of and consent process for post-mortem examination; role of a coroner (K) *Understand the importance of clinic-pathological conferences (S); Demonstrate the ability to appropriately request pathological investigations and interpret pathology reports (S)*					

9.0 ASSESSMENT OF SENIOR TRAINEES

Assessment of trainees consists of the following components:

1. Continuous assessment/Pre-requisites
   a. Compliance with final examination eligibility requirements
   b. Evaluation of procedures (scoring)
   c. Casebook in subspecialty (scoring)
2. Final examinations consisting of the following sections:
   a. SECTION ONE
      i. Theory paper I: MCQs on generic curriculum in Internal Medicine
      ii. Viva Voce in general medicine and generic curriculum using modified OSCE, in the objective practical assessment of generic competencies (OSPAGC): 2 hours.
   b. SECTION TWO
      i. Theory paper II. MCQ in general medicine for general internal medicine track only. OR
      ii. **Theory paper III. MCQs in relevant subspecialty (200 stems for 3 hours) for** subspecialty track
      iii. Viva voce and/or practical's in subspecialty (1 hour)
   c. SECTION THREE
      i. Defense of dissertation (1 hour) OR/AND
      ii. Viva voce on casebook (for general medicine candidates only) (1 hour)
   d. SECTION FOUR (rated as pass or fail)
      i. Clinical examinations (Dermatology and Genitourinary medicine only)
   e. SECTION FIVE: CASEBOOK IN SUBSPECIALTY (20 MARKS)
      i. For subspecialty candidates only. This is assessed as an in-course assignment and submitted with the dissertation.

   NOTE:

   1. All candidate will take Theory paper I and OSPAGC
   2. General medicine candidates: (a) Theory paper I and II (b) OSPAGC (c) and viva on casebook.
   3. All subspecialty candidates: (a) Theory papers I and III ,(b) OSPAGC , (c) viva voce in subspecialty , (d) presentation of a casebook and (e) Defense of dissertation.
   4. Candidates in Dermatology and Genitourinary medicine will in addition have clinical examination limited to the subspecialty.
      Candidates should consult subspecialty handbooks for details of the requirements for each particular subspecialty.

Conditions for a pass

A pass score of more than 50% in ALL sections (general medicine, dissertation and subspecialty). A pass in one or more sections only places the candidate as a "referred" candidate.

10.0 CREDIT UNIT SUB-SPECIALTY TRAINING INTERNAL MEDICINE

Contact Hours and Credit Unit for Part 2 FMCP

Postings	Duration (Months)	Contact Academic Hrs/Wk	Contact Clinical Hrs/Wk	Total Contact Hrs/Wk	Credit Units
Core Specialty	24	12	24	36	144
General Medicine	12	12	24	36	72
Dissertation					12
Total	36	24	48	72	228

BASIS FOR CALCULATION OF PART 2 CREDIT UNITS

Contact academic hrs:

- Routine academic work = 4 hours/wk
- Research = 4 hours/wk
- Management = 2 hours/wk
- Journal club = 2 hours/wk

12 hrs/week Every 3 month = 12 Credit Units Every 3Months = 48 Credit Unit/year = 144 Credit Units in 3years
1 Month = 4 Credit Units
3 Month Posting = 12 Credit Units

Clinical contact hrs:
4HRS/Day X 6 DAYS = 24HRS/WK/4 = 6 Credit Unit Every 3 Months = 24Credit Units/year x 3years = 72 Credit Unit in 3years
1 Month Posting =2 Credit Unit
3 Months Posting = 6 Credit Unit

Dissertation:
12 Credit Units

Credit Unit/Month = 4 (Academic) + 3 (Clinical) = 7

Total Credit Units over 3years = 144 (Academic Contact) + 72 (Clinical Contact) + 12 units (Dissertation) = 228

NATIONAL POSTGRADUATE MEDICAL COLLEG OF NIGERIA

FACULTY OF INTERNAL MEDICINE

PART II (SENIOR RESIDENCY) TRAINING CURRICULUM

RESPIRATORY MEDICINE SUB-SPECIALTY

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THE SUB-SPECIALTY TRAINING PROGRAMME

IN

RESPIRATORY MEDICNE

8.0. Respiratory Medicine subspecialty curriculum and course content

8.1 Rotation in Respiratory Medicine

Total Duration - 36 months
Core Pulmonology - 12 months (first year)
Cardiothoracic unit - 1 month
ENT Surgery Unit - 1 month
Cardiology - 2 months
Immunology - 1 month
Pathology (Histopath, Chem Path, Microbiol) 3 months
Radiology - 3 months
3 weeks each in Nephrology, Endocrinology, Gastroenterology and Neurology.
Core Pulmonology - 12 months (3rd year)

8.2 Respiratory Medicine subspecialty course content

Theme	Specific topic, Knowledge, Attitude, Skills	% Course Coverage	Learning Objectives (Using taxonomy)	Mode of delivery	Total Credit unit	Method of Assessment
SCIENTIFIC PRINCIPLES IN PULMONOLOGY	**Trainees should have a sound understanding of respiratory anatomy and physiology/pathophysiology, pathology and microbiology as related to Respiratory Medicine. They should also be competent in the use of drugs employed in the treatment of respiratory disease.**	**2**				**MCQ**
	Anatomy and development of respiratory tract. (K) Anatomy of the lungs Lung growth and development. Mendelian genetics, disease modifying or associated genes & epigenetic of lung disease.		**Level 1 Level 2 Level 3**	**2, 5, 6**	**1**	**MCQ**
	Respiratory physiology & pharmacology (K) Ventilation, blood flow gas exchange. Respiratory system mechanism and energetics. Pulmonary circulation and regulation of fluid balance. Acid – Base balance. Pharmacologic Principles and impact of lung on the lungs.		**Level 1 Level 2 Level 3**	**2, 5, 6**	**1**	
	Defense mechanism and immunology (K) Pulmonary surfactant Alveolar & distal airway epithelial fluid transport Airway epithelial mucins and mucous		**Level 1 Level 2 Level 3**	**2, 5, 6**	**1**	**MCQ**

	hypersecretion. Aerosol deposition& clearance. Innate immunity in the lungs Adaptive immunity.					
	Respiratory pathology and inflammation. (K) General features of non – neoplastic respiratory Injury and repair of the lung		**Level 1** **Level 2** **Level 3**	**2, 5, 6**	**1**	**MCQ**
Evaluation of respiratory diseases	**History and physical examination (K, A, S)** Comprehends the anatomical and physiological basis for clinical sign and relevance of positive and negative signs. (K) Be able to elicit relevant focused history from patients with increasingly complex issues and increasingly challenging circumstances. Be able to establish a problem list increasingly based on pattern recognition and including differential diagnosis. Formulate a management plan that takes into account likely clinical evolution. (A, S)	**2**	**Level 1** **Level 2** **Level 3**	**4, 5**	**4**	**MINI CEX, OSCE**
Microbiology Investigations	**Microbiologic diagnosis of lower respiratory tract infection** Order and interpret microbiological tests such as sputum MCS, AFB, culture etc and to apply them in diagnosis and disease management. **(S)**	**2**	**Level 1** **Level 2** **Level 3**	**4, 5**	**2**	**MCQ, SAQ, MINI CEX, OSCE**
Tests of pulmonary function	**Lung function testing** Practical training and laboratory experience in the measurement and interpretation of lung function tests. Trainees should be involved, with appropriate supervision initially in issuing reports on these tests. Experience should be gained in measurement of peak flow, spirometry, body plethysmography and diffusing capacity for carbon monoxide. Acquire competence in assessment of airway hyper-responsiveness, hypoxic challenge and exercise testing. Develop the skills for managing pulmonary function laboratory including the knowledge of the principles of service organization. Must practice standard quality control, infection control and health and safety at work as they apply to the Lung Function Laboratory. **(K) (A) (S)**	**8**	**Level 1** **Level 2** **Level 3**	**2, 3, 4, 5, 6**	**6**	**MINI CEX, OSCE, LOG BOOK**
Radiological and imaging techniques and interpretation	**Radiological and imaging techniques** Trainees should develop the skills to independently interpret chest x-rays, anatomical and high resolution computerized tomography, CT	**5**	**Level 1** **Level 2** **Level 3**	**2, 3, 4, 5, 6**	**5**	**MINI CEX, OSCE, LOG BOOK**

	pulmonary angiography and ventilation/perfusion lung scans. (S) Trainees should have understanding of the use of Positron Emission Tomography (PET)-CT in the assessment of patients with lung cancer. **(K) (S)**					
	Ultrasonography Competent in performing thoracic ultrasound and use as a guide in aspiration and biopsy of the pleura and peripheral lung masses. To observe a minimum of 20 and perform a minimum of 20. **(K) (S)**	**5**	**Level 1** **Level 2** **Level 3**	**2, 3, 4, 5, 6**	**5**	**MINI CEX, LOG BOOK**
Bronchoscopy: Procedure, bronchial aspiration and biopsy	**Flexible bronchoscopy (K) (S)** Describe bronchoscopy procedures to the patient in appropriate terms and obtain informed consent. Administer appropriate sedation to the patient. Main adequate airway and adequate oxygenation at all times. Introduce a flexible bronchoscope via the nose, mouth, tracheostomy and endotracheal tube. Complete a flexible bronchoscopic examination of the entire bronchial tree, naming all the main segmental bronchi, and direction the tip of the bronchoscope into any given segment of the bronchial tree. Carry out the following diagnostic procedures: bronchial brushing, bronchial lavage, endobronchial biopsy and transbronchial biopsy Manage the complications of hemorrhage, tenacious secretions, hypoxemia and pneumothorax if necessary. To observe a minimum of 20 and perform a minimum of 20. (K) (A), (S) It is desirable that the trainee bronchoscopist should have the opportunity to see the following procedures: rigid broncoscopy, endotracheal tumour ablation with laser diathermy, and stent insertion.	**5**	**Level 1** **Level 2** **Level 3**	**2, 3, 4, 5, 6**	**5**	**MINI CEX, LOG BOOK**
	Pleuroscopy and medical thoracoscopy. This skill may be learnt if the facilities are available and in the trainee has specific interest in thoracic oncology.	**1**	**Level 1** **Level 2**		**1**	
CLINICAL RESPIRATORY MEDICINE						
	Symptoms of respiratory disease and their management: Competency to carry out specialist assessment of					

	severity of cough, dyspnoea, wheeze and chest pain and form a structured differential diagnosis leading to appropriate investigation and management. (K) (A) (S)					
Respiratory infections/infestations	**Infectious diseases of the lungs:** Be competent to undertake specialist assessment and management of patients with pulmonary infections including the common cold, influenza, bronchitis and pneumonias-bacterial, fungal, viral and parasitic; Demonstrate ability to use guidelines in severity scoring and treatment.	**5**	**Level 1 Level 2 Level 3**	**2, 3, 4, 5, 6, 7**	**5**	**MINI CEX, OSCE,**
	Tuberculosis and non-tuberculosis mycobacterial (NTM) infection. Have knowledge of the Global Impact of TB and the impact of co-infection with HIV. Be competent to undertake specialist assessment and management of patients with tuberculosis and NTM including resistant tuberculosis.	**5**	**Level 1 Level 2 Level 3**	**1, 2, 3, 4, 5, 6, 7**	**12**	**SAQ, MINI CEX, OSCE**
Obstructive Lung disorders	**Obstructive lung diseases:** Ability to perform skin testing, lung function testing and administration of inhaled therapy. Keep abreast of the guidelines and apply them to practice. Asthma Chronic obstructive pulmonary disease Cystic fibrosis Bronchiectasis Disorders of intrathoracic airways eg bronchiolitis **(K) (S)**	**5**	**Level 1 Level 2 Level 3**	**1, 2, 3, 4, 5, 6, 7**	**12**	**MCQ, SAQ, MINI CEX, OSCE**
Pulmonary neoplasia	**Neoplasm of the lungs: Competence in identifying the clinical features for lung cancer and applying appropriate investigations to make a diagnosis. Seeking multidisciplinary approach to management. Development of the right attitude in breaking bad news and skills in palliative care (K), (A), (S)** Comprehend the following aspects of lung cancer: Biology of lung cancer Epidemiology of lung cancer Clinical presentation, investigations and staging of lung cancer Lymphoma, lymphphoproliferative diseases and other primary malignant tumours Metastatic malignant tumours. Benign lung tumours	**5**	**Level 1 Level 2 Level 3**	**1, 2, 3, 4, 5, 6, 7**	**5**	**MCQ, SAQ, MINI CEX, OSCE**
Disorders of pulmonary circulation and lung interstitium	**Disorders of pulmonary circulation.** To evaluate a patient for the risk factors, presentation and investigations for pulmonary thromboembolism, pulmonary hypertension, pulmonary	**5**	**Level 1 Level 2 Level 3**	**1, 2, 3, 4, 5, 6, 7**	**5**	**MCQ, SAQ, MINI CEX, OSCE**

	vasculitis, pulmonary A-V malformation and other vascular abnormalities Evaluating pulmonary oedema and employ appropriate investigations to define acute lung injury. Undertake proper evaluation of patients with corpulmonale and commence appropriate management.					
	Formulate a logical evaluation of a patient with infiltrative and interstitial pneumonias and perform a critical appraisal of the clinical features and investigations results to arrive at a definitive diagnosis and undertake appropriate management. These conditions include but are not limited to the following: The lungs and connective tissue diseases. Sarcoidosis. Idiopathic pulmonary fibrosis. Diffuse alveolar haemorrhage and rare infiltrative disorders of the lungs. Eosinophilic lung diseases. Lymphangioleiomamatosis.Pulmonary alveolar proteinosis syndrome.	**5**	**Level 1 Level 2 Level 3**	**1, 2, 3, 4, 5, 6, 7**	**5**	**MCQ, SAQ, MINI CEX, OSCE**
	Environmental and occupational lung disorders5: Asthma in the workplace and occupational asthma. Pneumoconiosis and other mineral dust-related diseases. Hypersensitivity pneumonitis Indoor and outdoor air pollution. Acute pulmonary responses to toxic exposures. Bioterrorism. High altitude and diving medicine. Drug-induced pulmonary disease. Chemical and physical lung injury. **Smoking hazards and cessation:** Comprehend the Effects of smoking and keep abreast with the pharmacologic and non-pharmacological treatment options. Be conversant with guidelines and use them in clinical practice. Be able to formulate and implement a smoking cessation programme. To use a non-judgmental approach in evaluating smokers. (B)	**5**	**Level 1 Level 2 Level 3**	**1, 2, 3, 4, 5, 6, 7**	**10**	**MCQ, SAQ, MINI CEX, OSCE**
Diseases of the pleura	**Disorder of the pleura:** Categorize the causes of pleural effusion, Perform pleural aspiration, pleural ultrasound, insertion of the “seldinger” drains and closed pleural biopsies. Perform medical thoracoscopy if facilities are available.	**4**	**Level 1 Level 2 Level 3**	**1, 2, 3, 4, 5, 6, 7**	**4**	**MCQ, SAQ, MINI CEX**

	Also competent in the evaluation and management of pneumothorax and tumours of the pleura. **(K) (S)**					
	Disorders of the mediastinum Categorize the tumors and cysts of the mediastinum. Evaluate pneumomediastinum and mediastinitis.	**2**	**Level 1** **Level 2** **Level 3**	**3, 4, 5, 6**	**2**	**MCQ, SAQ, MINI CEX**
	Disorders in the control of breathing: Competence in the specialist assessment and management of sleep disordered breathing. Knowledge of other causes of excessive daytime sleepiness that are not related to sleep disordered breathing such as Hypoventilation syndromes and hyperventilation syndromes. Assessment of disease severity and interpretation of sleep studies. Treatment and management of patients with sleep disordered breathing including "sleep hygiene", CPAP, oral devise and keeping abreast with guidelines on disease management. Construct a pattern for service organization and recognize the need for patient confidentiality.	**5**	**Level 1** **Level 2** **Level 3**	**1, 2, 3, 4, 5, 6, 7**	**5**	**MCQ, SAQ, MINI CEX, OSCE, LOG BOOK**
Pulmonary manifestation of extra pulmonary diseases	**Assess patients adequately for the respiratory manifestation of extra pulmonary disorders such as:** Pulmonary manifestations of rheumatologic disorders. Pulmonary complications of HIV infection. Pulmonary complications of stem cell and solid organ transplantation. Pulmonary complications of primary immunodeficiency. Pulmonary complications of abdominal disease. Pulmonary complications of hematologic disease. Pulmonary complications of endocrine disease. The lungs in obstetric &Gynaecologic disease. Respiratory system & neuromuscular disease. The lungs and chest wall diseases.	**5**	**Level 1** **Level 2** **Level 3**	**1, 2, 3, 4, 5, 6, 7**	**10**	**MCQ, SAQ, MINI CEX, OSCE**
Respiratory failure	**Management of respiratory failure:** Able to identify the causes, pathogenesis and differential diagnosis of respiratory failure. Undertakes appropriate investigation and provides treatment. (K), (S) Principles of mechanical ventilation (Non-invasive and invasive)	**5**	**Level 1** **Level 2** **Level 3**	**1, 2, 3, 4, 5, 6, 7**	**10**	**MCQ, SAQ, MINI CEX, OSCE, LOG BOOK**

	Acute respiratory distress syndrome. Hypoxemic respiratory failure. Acute respiratory failure. Use of domiciliary oxygen. Performance and interpretation of arterial blood gas. Care at the end of life for patients with respiratory failure.					
Pulmonary rehabilitation medicine	**Pulmonary rehabilitation:** Evidence base supporting pulmonary rehabilitation and participation in delivery in pulmonary rehabilitation service. Ability to work with a multidisciplinary team and undertake a cost/benefit analysis to make a business case. (K) (A) (S)	**2**	**Level 1** **Level 2** **Level 3**	**2, 3, 4, 5, 6**	**2**	**MCQ, MINI CEX**
	Lung transplantation: Knowledge of the patients that benefit from lung transplantation. Competence in performing the initial assessment to determine a referral for lung transplantation. Competence to initiate treatment in a post-transplant patient before referral to a transplant specialist. (K) (A)	**2**	**Level 1** **Level 2** **Level 3**	**2, 3, 4, 5, 6**	**1**	**MCQ, SAQ, MINI, CEX**
	Critical care: Familiarities with the workings of an ICU/HDU. Possession of ALS and airway management skills. Competence in all forms of ventilatory support including non-invasive ventilation as well as ICU Bronchoscopy. (K) (S) Ability to function competently and responsibly in a team comprising of Physician, Anaesthetists, Surgeons, Nurses, Technicians, Pathologist, Physiotherapists.(A)	**5**	**Level 1** **Level 2** **Level 3**	**1, 2, 3, 4, 5, 6, 7**	**12**	**MCQ, SAQ, MINI CEX, OSCE. LOG BOOK**

Definitions for Mode of delivery 1-7

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Assessment of trainees consists of the following components:

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    b. Evaluation of procedures (scoring)
    c. Casebook in subspecialty (scoring)
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    a. SECTION ONE
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    b. SECTION TWO
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        ii. **Theory paper III. MCQs in relevant subspecialty (200 stems for 3 hours) for** subspecialty track
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    e. SECTION FIVE: CASEBOOK IN SUBSPECIALTY (20 MARKS)
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    NOTE:

    1. All candidate will take Theory paper I and OSPAGC
    2. General medicine candidates: (a) Theory paper I and II (b) OSPAGC (c) and viva on casebook.
    3. All subspecialty candidates: (a) Theory papers I and III ,(b) OSPAGC , (c) viva voce in subspecialty , (d) presentation of a casebook and (e) Defense of dissertation.
    4. Candidates in Dermatology and Genitourinary medicine will in addition have clinical examination limited to the subspecialty.
       Candidates should consult subspecialty handbooks for details of the requirements for each particular subspecialty.

Conditions for a pass

A pass score of more than 50% in ALL sections (general medicine, dissertation and subspecialty). A pass in one or more sections only places the candidate as a "referred" candidate.

10.0 CREDIT UNIT SUB-SPECIALTY TRAINING INTERNAL MEDICINE

Contact Hours and Credit Unit for Part 2 FMCP

Postings	Duration (Months)	Contact Academic Hrs/Wk	Contact Clinical Hrs/Wk	Total Contact Hrs/Wk	Credit Units
Core Specialty	24	12	24	36	144
General Medicine	12	12	24	36	72
Dissertation					12
Total	36	24	48	72	228

BASIS FOR CALCULATION OF PART 2 CREDIT UNITS

Contact academic hrs:

- Routine academic work = 4 hours/wk
- Research = 4 hours/wk
- Management = 2 hours/wk
- Journal club = 2 hours/wk

12 hrs/week Every 3 month = 12 Credit Units Every 3Months = 48 Credit Unit/year = 144 Credit Units in 3years
1 Month = 4 Credit Units
3 Month Posting = 12 Credit Units

Clinical contact hrs:
4HRS/Day X 6 DAYS = 24HRS/WK/4 = 6 Credit Unit Every 3 Months = 24Credit Units/year x 3years = 72 Credit Unit in 3years
1 Month Posting =2 Credit Unit
3 Months Posting = 6 Credit Unit

Dissertation:
12 Credit Units

Credit Unit/Month = 4 (Academic) + 3 (Clinical) = 7

Total Credit Units over 3years = 144 (Academic Contact) + 72 (Clinical Contact) + 12 units (Dissertation) = 228

NATIONAL POSTGRADUATE MEDICAL COLLEG OF NIGERIA

FACULTY OF INTERNAL MEDICINE

PART II (SENIOR RESIDENCY) TRAINING CURRICULUM

RHEUMATOLOGY SUB-SPECIALTY

Table of Contents

CURRICULUM AND COURSE CONTENT

FOR

THE SUB-SPECIALTY TRAINING PROGRAMME

IN

RHEUMATOLOGY

8.0 ROTATION SCHEDULE (36 months)

S/N	Rotations	Duration
1	Core rheumatology posting	18 months
2	Immunology/Serology laboratory posting	1 month
3	Radiology	3 months
4	Paediatrics	1 month
5	Orthopaedic surgery	2 months
6	Physiotherapy and Rehabilitation	1 month
7	General Medicine - Dermatology - Nephrology - Cardiology	

8.1 RHEUMATOLOGY SUBSPECIALTY COURSE CONTENT

DOMAIN	SPECIFIC TOPICS, KNOWEDGE,ATTITUDE, AND SKILLS	MODE OF DELIVERY	% Of COURSE COVERAGE	LEARNING OBJECTIVE	TOTAL CREDIT UNIT	MODE OF ASSESSMENT
1.INFLAMMATORY ARTHRITIS	a. Pathogenesis and management of rheumatoid arthritis b. Pathogenesis and management of spondyloarthropathy Knowledge: Comprehend the pathogenesis of RA and the classification of spondyloarthropathy Skills: Discuss the current classification criteria for RA and current treatment guidelines Attitude: Be able to participate in multidisciplinary care	1,2,3,5,7	5	1,2,3		MCQ, VIVA VOCE
2. CONNECTIVE TISSUE DISEASE	a. Epidemiology of connective tissue disease b. Pathogenesis and management of systemic lupus erythematosus(lupus nephritis and neuropsychiatric lupus) c. Pathogenesis of inflammatory myositis (dermatomyositis, polymyositis, inclusion body myositis) d. Antiphospholipid antibody syndrome e. Pathogenesis and management of systemic sclerosis Knowledge :Explain the various classification criteria for the above conditions Skill: Elicit symptoms and signs of these conditions Attitude: Be able to participate in multidisciplinary care	1,2,3,5,7	7.5	1,2,3		MCQ, VIVA VOCE
3.DERMATOLOGICAL MANIFESTATIONS OF CONNECTIVE TISSUE DISEASES (CTD)	a. Systemic lupus erythematosus b. Systemic sclerosis c. Psoriatic arthritis Knowledge: Identify the dermatological manifestations of systemic lupus, systemic sclerosis and psoriasis Skills: Demonstrate skin changes in Attitude: Be able to participate in multidisciplinary care.	1,2,3,5,7	5	1,2,3		MCQ, VIVA VOCE

4. HEMATOLOGICAL MANIFESTATIONS OF RHEUMATIC DISEASES	a. Anemia in Rheumatoid arthritis b. Blood picture in systemic lupus erythematosus Knowledge: Outline the hematological manifestations of rheumatic disease with special emphasis on RA and SLE Knowledge: Identify hematological manifestations of rheumatic diseases Skills: Interpret laboratory results of patients with rheumatic diseases Attitude: Be able to participate in multidisciplinary care	1,2,3,5,7	2.5	1,2,3		MCQ, VIVA VOCE
5. SJOGREN SYNDROME	a. Classification of Sjogren's syndrome b. Pathogenesis and management of Sjogren's syndrome Knowledge: Define sjogren's syndrome Skill: Assess a patient with sjogren's syndrome Attitude: Be able to participate in multidisciplinary care	1,2,3,5,7	2.5	1,2.3		MCQ, VIVA VOCE
6. GENETICS AND RHEUMATIC DISEASES	a. The role of genetics in rheumatic diseases Knowledge: Comprehend the contribution of genetics in rheumatic disorders Skill: Counsel patients and relatives on the role of genetics with respect to familial clustering Attitude: Be able to participate in multidisciplinary care	1,2,3,5,7	2.5	1,2,3		MCQ, VIVA VOCE
7. MEASURES OF DISEASE OUTCOMES	a. The necessity of outcome measures in inflammatory arthritis and connective tissue diseases b. The use of SF 36, DAS 28, CDAI, SDAI, HAQ, SLEDAI, BILAG, BASDAI, BASFI, BASMI Knowledge: Outline and comprehend the various outcome measures Skills: Interpret the results of outcome measures Attitude: Recognize the importance of these outcome	1,2,3,5,7	5	1,2,3		MCQ, VIVA VOCE

	measures					
8. BONE DISORDERS	a.. Epidemiology and pathogenesis of osteoporosis b. Risk factors, management and prevention of osteoporosis c. Clinical manifestation and management of osteomalacia Knowledge: Identify risk factors of osteoporosis, osteomalacia Skills: Elicit signs and symptoms of bone disorders as well as interpret DEXA results Attitude: Discuss with patient, environmental changes to avoid fractures	1,2,3,5,7	5	1,2,3		MCQ, VIVA VOCE
9. THE ROLE OF BIOLOGICS	a. Classification of biologics b. Indications for biologic DMARDs c. Adverse drug reactions of biologics c. Biosimilars in the biologic age knowledge: comprehend the basis of biologic DMARD's in the management of rheumatic diseases Skills: Discuss the mechanism of action of biologics Attitude: Discuss with patients the role of biologics in the management of rheumatic diseases	1,2,3,5,7	5	1,2,3		MCQ, VIVA VOCE
10.COMMUNITY STUDIES OF RHEUMATOLOGICAL DISORDERS	a. The role of community based studies in rheumatological practice Knowledge: Describe the importance of community based studies Skill: Formulate research based topics Attitude: Be able to participate in multidisciplinary care	1,2,3,5,7	5	1,2,3		MCQ, VIVA VOCE
11. JUVENILE IDIOPATHIC ARTHRITIS (JIA)	a. Classification of JIA b. Clinical presentation and management of JIA Knowledge: Recall the classification of JIA Skills: Elicit signs and symptoms of JIA Attitude: Be able to participate in multidisciplinary care	1,2,3,5,7	5	1,2,3		MCQ, VIVA VOCE
12. ADULT ONSET	a. Management of Adult Onset	1,2,3,5,7	2.5	1,2,3		MCQ, VIVA VOCE

STILL'S DISEASE	Still's disease Knowledge: Describe the features of Adult onset Still's disease Skills: Elicit symptoms and signs as well as interpret laboratory results Attitude: Be able to participate in multidisciplinary care					
13. SOFT TISSUE RHEUMATISM	a. Entrapment neuropathies b. Pathophysiology and management of fibromyalgia c. Soft tissue rheumatism in diabetes mellitus Knowledge: Define soft tissue rheumatism Skills: Elicit symptoms and signs of soft tissue rheumatism Attitude: Be able to participate in multidisciplinary care	1,2,3,5,7	5	1,2,3		MCQ, VIVA VOCE
14. ORPHAN DISEASES	a. Definition of orphan diseases b. Epidemiology of orphan diseases and management Knowledge: List orphan diseases Skills: Elicit signs and symptoms of orphan diseases Attitude: Be able to participate in multidisciplinary care	1,2,3,5,7	5	1,2,3		MCQ, VIVA VOCE
15. CRYSTAL ARTHRITIS	a. Classification of crystal arthritis b. Management of gout b Management of pseudogout knowledge: comprehend the risk factors, clinico-radiological and laboratory features of crystal arthritis Skills: Discuss the drugs used for treatment of crystal arthritis Attitude: Participate in multidisciplinary care	1,2,3,5	5	1,2,3		MCQ, VIVA VOCE
16. SYSTEMIC VASCULITIS	a. Classification of vasculitis b. Classification criteria for various types of vasculitis c. Causes of secondary vasculitis d. Principles of management of vasculitis Knowledge: Describe the various types of vasculitis Skill: Elicit signs and symptoms of patients with vasculitis Attitude: Be able to participate in multidisciplinary care	1,2,3,5	5	1,2,3		MCQ, VIVA VOCE
17. INFECTIONS AND	a. Rheumatological	1,2,3,5	5	1,2,3		MCQ, VIVA VOCE

RHEUMATIC DISEASES	manifestations of HIV b. The role of hepatitis B and C in rheumatic disorders c. Aetiology and management of septic arthritis Knowledge: List rheumatic diseases associated with infections Skills: Assess patients with infection related rheumatic diseases Attitude: Be able to participate in multidisciplinary care					
18. AUTO IMMUNE DISEASE OF THE EYE	a. Basic anatomy of the eye b. Eye manifestations of rheumatic diseases Knowledge: List rheumatic diseases with eye manifestations Skills: Elicit symptoms and signs of eye manifestations of rheumatic diseases Attitude: Be able to participate in multidisciplinary care	1,2,3,5	2.5	1,2,3		MCQ, VIVA VOCE
19. REACTIVE ARTHRITIS	a. Aetiopathogenesis, classification criteria and management of reactive arthritis Knowledge: Describe the presentation of reactive arthritis Skills: Examine for the signs of reactive arthritis Attitude:	1,2,3,5	2.5	1,2,3		MCQ, VIVA VOCE
20. DEGENERATIVE ARTHRITIS	a. Aetiopathogenesis of osteoarthritis b. Management of cervical spondylosis c. Management of lumbar spondylosis d. Diffuse Idiopathic Skeletal Hyperostosis (DISH) Knowledge: Define degenerative arthritis and its aetiopathogenesis Skills: Elicit signs and symptoms of osteoarthritis as well as discuss the pharmacologic and non pharmacologic management of degenerative arthritis Attitude: Participate in multidisciplinary care	1,2,3,5	2.5	1,2,3		MCQ, VIVA VOCE
21. BACK PAIN/RADICULOPATHY	a. Acute and chronic back pain b. The nature of non specific back	1,2,3,5	2.5	1,2,3		MCQ, VIVA VOCE

	pain c. Radiculopathy associated with low back pain d. Lumbar stenosis Knowledge: Identify risk factors, yellow and red flag signs of back pain Skills: Elicit signs and symptoms of low back pain Attitude: Participate in multidisciplinary care					
22. MALIGNANCIES WITH BONE AND JOINT AFFECTATION	a. Multiple myeloma b. Leukemia c. Paraneoplasticphenemenon Knowledge: List malignancies with rheumatic manifestations Skills: Elicit symptoms and signs of common tumours with rheumatic presentation Attitude: participate in multidisciplinary care	1,2,3,5	2.5	1,2,3		MCQ,VIVA VOCE
23. PROCEDURES	a. Arthrocentesis (P) b. *Intra articular injections (P) c. Arthroscopy (P) d. Synovial biopsy (P) e. Serological tests (O) f. Kidney biopsy (P) g. Skin biopsy (P) h. Electromyography, Nerve conduction studies (O) I. Interpretation of Joint/ spine MRI, CT scans (O) J. Polarized microscopy (O) K. Echocardiography (P) L. Abdominal Ultrasound (P) Knowledge: Describe how to carry out the procedures Skills: Undertake and interpret results from such procedures Attitude: Be able to participate in multidisciplinary care	1,2,3,5,7	10	1,2,3		MCQ, VIVA VOCE

Definitions:
P – Perform;
O – Observe

Number of Arthrocentesis/Intra-articular injections:
KNEES 70;
SHOULDERS 30;
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