CURRICULUM

Rawalpindi Medical University

University Residency Program 2021

MD Nephrology

CURRICULUM & REGULATIONS
5 YEARS DEGREE PROGRAMME
IN NEPHROLOGY(2024)

RAWALPINDI MEDICAL UNIVERSITY

PREFACE

The horizons of Medical Education are widening & there has been a steady rise of global interest in Post Graduate Medical Education, an increased awareness of the necessity for experience in education skills for all healthcare professionals and the need for some formal recognition of postgraduate training in Internal Medicine.

The curriculum is aligned with the six core competencies defined by ACGME: Patient Care, Medical Knowledge, Practice-Based Learning and Improvement, Interpersonal and Communication Skills, Professionalism, and System-Based Practice.

Patient Care, Medical Knowledge, System Based Practice, Practice Based Learning, Professionalism, Interpersonal and Communication Skills. A perfect monitoring system of a training program including monitoring of teaching and learning strategies, assessment and Research Activities cannot be denied so we at RMU have incorporated evaluation by Quality Assurance Cell and its comments in the logbook in addition to evaluation by University Training Monitoring Cell (URTMC). Reflection of the supervisor in each and every section of the logbook has been made sure to ensure transparency in the training program. The mission of Rawalpindi Medical University is to improve the health of the communities and we serve through education, biomedical research and health care. As an integral part of this mission, importance of research culture and establishment of a comprehensive research structure and research curriculum for the residents has been formulated and a separate journal for research publications of residents is available.

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SECTION 1: PREAMBLE

1.1: Mission Statement of RMU:

To impart evidence-based research oriented medical education.

To provide best possible patient care

To inculcate the values of mutual respect and ethical practice of medicine

Mission statement of nephrology

"The MD Nephrology Residency Program at Rawalpindi Medical University is committed to train proficient, compassionate, and ethical physicians who deliver evidence-based, patient-centered care. We strive to create a dynamic learning environment that fosters clinical expertise, research acumen, and professional integrity. Through rigorous academic and clinical training, mentorship, and community engagement, we aim to produce physicians who are equipped to meet the healthcare needs of diverse populations with dedication and social accountability."

1.2: Statutes

Introduction

1.2.1: Definition and Scope of the Specialty

The program of MD Nephrology of Rawalpindi Medical University is conducted with a goal to develop nephrologist who can provide quality kidney care to meet the needs of patients both now and in the future, and who can contribute to the field of nephrology through participation in research. Residency Curriculum provides essential intellectual and clinical information (the scope covers cognition, skills and attitudes) that are necessary for a nephrologist.

1.2.2: General framework of MD Nephrology Program

Year	Departments	Duration	Exams	Research
1st Year	Nephrology	6 Months	In training assessment after 01 year	One Disease Statistical Review
	General Medicine	6 Months		
2nd Year	General Medicine	4 Months	MTA after completion of 02 years	One Disease Statistical Review
ROTATIONS	Cardiology	2 Months		
	Neurology	2 Months		
	Medical ICU	2 months		
	Pulmonology	2 Months		
3rd year	Nephrology	11 Months	In training assessment 3rd year	Synopsis Topic& Submission to IRF/ ERB - BASR Approval
	Medical ICU	01 Months		
4th Year	Nephrology	11 Months	In training assessment 4th year	Data Collection / Data Analysis / Thesis Writing
	Radiology	01 Months		
5th Year	Nephrology	10 Months	FTA	Thesis Submission
	Renal Transplant	02 Months		

Duration of Educational Program

The duration of MD Nephrology course shall be four (5) years consisting of structured training in a recognized department under the guidance of an approved supervisor. The course is structured in two phases:

Phase I

The duration of MD Nephrology course shall be five (5) years with structured training in a recognized department under the guidance of an approved supervisor.
After admission in MD Nephrology Program the resident will spend first 6 Months in the relevant Department of Nephrology as **Induction period** during which resident will get orientation about the chosen discipline and will also participate in the **mandatory workshops**. The research project will be designed and the topic of **synopsis** be prepared during this period.
On completion of Induction period the resident will start formal training in the Basic Principles of Internal Medicine for 10 months and allied rotations for 08 Months, during this period the resident must get the research synopsis approved by IRB. At end of first year trainee will appear in in-house first year training exam. At the end of 2 year, the candidate will take up Intermediate Examination.

Phase II

During the 3rd., 4th & 5th years, of the Program, there will be two components of the training;

- Clinical Training in Nephrology
- Research and Thesis writing

The candidate will undergo clinical training to achieve the educational objectives of M.D. Nephrology Program (knowledge & Skills) along with rotations in the relevant fields, during 4th & 5th year of the Program.

The clinical training shall be competency based. There shall be generic and specialty specific competencies and shall be assessed by continuous Internal Assessment.
The Research Component and thesis writing shall be complete over the five years duration of the Program. Candidates will spend total time equivalent one calendar year for research during the training. Research can be done as oneblock or in small periodic rotation as long as total research time is equivalent to one calendar year.

DISTRIBUTION OF TEACHING AND TRAINING HOURS:

In the MD Nephrology residency program at Rawalpindi Medical University (RMU), training is structured to provide comprehensive clinical and educational experience, aligned with the ACGME duty hour standards to promote resident well-being and maintain patient safety.

Weekly Training Hours

Maximum Hours: Residents are limited to a maximum of 80 duty hours per week, averaging over a four-week period, ensuring a balanced workload.

Clinical Duties: Most hours are dedicated to direct patient care in various settings, including inpatient wards, outpatient clinics, intensive care units, and emergency departments.

Educational Activities: Residents participate in didactic sessions, conferences, workshops, and other educational forums designed to enhance medical knowledge and skills.

Administrative Tasks: Time is also allocated for completing medical records, attending meetings, and other administrative responsibilities.

Training hours of five-year residency program

Weekly Working	Daily working	Call Duties	Total
	4 x 6 = 24 (Monday to Thursday) 1 x 4 =4 (Friday)	2 x 18 = 36 (2 calls per week) 1 x 24= 24 (1 Sunday per week)	Daily working + Call Duties
	28	60	88 hours

1.2.3: Sponsoring Institution

Rawalpindi Medical University

1.2.4: Participating Sites

Monthly case presentations, journal club meetings and academic tests will be held for all the residents at participating site.

Rawalpindi Medical University, Rawalpindi

1.2.5: Program Director

The program director is the head of nephrology department of Rawalpindi Medical University.

1.2.6: Faculty

The faculty involved in the teaching process of the nephrology residents comprises of:

1. Professor of nephrology
2. Associate Professor of nephrology
3. Assistant Professor of Nephrology
4. Senior Registrars

All the faculty members of the department are appointed as per the rules and regulations of PMC.

1.2.7: Other Program Personnel

The qualified members of allied vision sciences of the nephrology department:

1. Dialysis technicians
2. Dialysis nurses

Aid in the training of the residents in the relevant fields.

1.2.8: Resources:

Out-patient Department

The outpatient areas of hospitals have a well-equipped Ambulatory Learning Environment for residents who are supervised by senior registrars. The patients are examined in detail in a methodic manner and cases are explained to the residents. The treatment strategies outlined by the residents is supervised by the senior faculty members. The trainees are also provided with ample opportunities of clinical clerkship with senior consultants.

Diagnostic Nephrology.

The residents have access to all the available diagnostic equipment e.g., ultrasonography, renal biopsy.

Ambulatory learning

There is an adequate volume and variety of adult population representing the entire spectrum of renal diseases due to a large drainage area of the tertiary care hospitals, which help the residents to develop diagnostic, therapeutic, and manual skills and judge the appropriateness of treatment.

1.3: Admission criteria

1.3.1 Eligibility Criteria

For admission in MD Nephrology course, the candidate shall be required to have:

- MBBS degree
- Completed one year House Job
- One year experience in Nephrology/General medicine/Allied medicine discipline in the given order of preference
- Registration with PMDC
- Passed Entry Test conducted by the University & aptitude interview by the Institute concerned
- Merit will be adhered to strictly for induction as per RMU rules.

Exemptions: A candidate holding FCPS nephrology/Diplomat American Board shall be exempted from Entrance and Midterm Examinations and shall be directly admitted for Exit Examination, subject to fulfillment of requirements for the examination.

1.3.2 Number of Residents

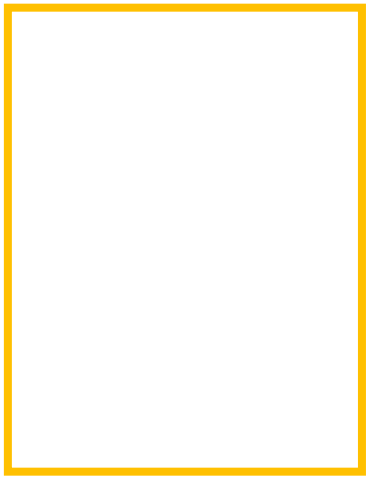
The minimum number of residents in an accredited five-year program is eight or two per year.

For a thorough understanding of the rules and regulations, please refer to the ''Policy and Procedure Manual (PPM) of the Post graduate residency of Level III Program provided by SHC & ME.(Assess the manual via the following link)

https://health.punjab.gov.pk/directory/notices/Revised%20Final%20Draft%20PPM.pdf

1.4: Registration and Enrolment

ENROLMENT DETAILS



Program of Admission _____
Session _____
Registration / Training Number _____
Name of Candidate _____
Father's Name _____
Date of Birth _____ / _____ / _____ CNIC No. _____
Present Address_____

_____

Permanent Address _____

_____

E-mail Address _____
Cell Phone _____
Date of Start of Training _____
Date of Completion of Training _____
Name of Supervisor _____
Designation of Supervisor _____
Qualification of Supervisor _____
Title of department / Unit _____

1.5: AIM AND OBJECTIVES OF THE COURSE

AIM

The aim of the five-year MD Nephrology program is to train residents to acquire the competency of a specialist in the field of Nephrology so that they can become proficient teachers, researchers, and clinicians in their specialty after completion of their training.

GENERAL OBJECTIVES

1. **Broad Experience**: Provide a comprehensive experience in Nephrology, highlighting its interrelationship with other medical disciplines.
2. **Medical Knowledge and Clinical Skills**: Enhance medical knowledge, clinical skills, and competence in diagnostic and therapeutic renal procedures.
3. **Professional Preparation**: Prepare residents for higher specialization in Nephrology, equipping them with the necessary professional requirements.
4. **Professional Attitude and Communication**: Cultivate the correct professional attitude and enhance communication skills towards patients, their families, and other healthcare professionals.
5. **Community Sensitivity**: Enhance sensitivity and responsiveness to community needs and the economics of healthcare delivery.
6. **Critical Thinking and Research**: Promote critical thinking, self-learning, and interest in research and development of patient services.
7. **Evidence-Based Practice**: Encourage the practice of evidence-based medicine and critical appraisal skills.
8. **Continuous Education**: Instill a commitment to continuous medical education and professional development.
9. **Holistic Training**: Provide broad training in medicine and in-depth training in Nephrology, enabling residents to acquire competence in the diagnosis, investigation, and treatment of renal conditions.
10. **Emergency Management**: Develop competence in managing acute renal emergencies and in identifying medical problem for timely referral to appropriate care.
11. **Patient Management**: Enhance skills in inpatient and outpatient management of renal diseases, including referrals to other specialties when necessary.

12. **Leadership and Teamwork**: Develop leadership skills to manage patient care in general medical units and work closely with healthcare team.
13. **Community Collaboration**: Encourage the development of communication and collaboration skills with the community for healthcare delivery.
14. **Critical Appraisal**: Foster skills in the critical appraisal of new methods of investigation and treatment.
15. **Self-Learning**: Promote self-learning and commitment to staying updated in all aspects of Nephrology.
16. **Innovation and Teaching**: Encourage contributions to the advancement of knowledge in Nephrology through research and teaching.
17. **Future Training**: Acquire professional competence in training future nephrology residents.

SPECIFIC OBJECTIVES

(A) **Medical Knowledge**

1. Develop a basic understanding of core Nephrology concepts.
2. Interpret etiology, pathophysiology, clinical manifestations, disease course, prognosis, investigation, and management of common renal diseases.
3. Stay updated on the scientific basis and recent advances in Nephrology.
4. Recognize the spectrum of clinical manifestations and interaction of multiple renal diseases in patients.
5. Interpret the psychological and social aspects of renal illnesses.
6. Effectively use and interpret investigations and special diagnostic procedures.
7. Critically analyze the efficacy, cost-effectiveness, and cost-utility of treatment modalities.
8. Ensure patient safety and risk management.
9. Conduct medical audits and quality assurance.
10. Apply ethical principles and address medico-legal issues related to renal illnesses.

11. Stay informed on evidence-based medicine and its implications for diagnosis and treatment.
12. Familiarize with different care approaches and healthcare facilities.
13. Appreciate patient safety and clinical risk management.
14. Be aware of the cost-effectiveness and risk-benefits of advanced treatment modalities.
15. Interpret administration and management concepts for a general medical unit.

(B) Skills

1. Take detailed patient histories and gather relevant data to develop diagnostic and management plans.
2. Record comprehensive initial histories, physical examinations, follow-up notes, and deliver oral presentations.
3. Elicit abnormal physical signs and interpret their significance.
4. Relate clinical abnormalities to pathophysiologic states and diagnose diseases.
5. Select relevant investigations and diagnostic and therapeutic procedures.
6. Interpret basic and advanced laboratory data related to renal disorders.
7. Understand routine laboratory and ancillary tests, including sensitivity, specificity, pre-test probability.
8. Formulate differential diagnoses using scientific evidence and clinical judgment.
9. Assess the risks, benefits, and costs of treatment options and involve patients in decision-making.
10. Perform essential renal procedures competently, including technical proficiency in informed consent, indications, contraindications, interpretations, and handling complications.
11. Learn additional procedural skills based on the training environment and practice expectations.
12. Perform basic, diagnostic, and therapeutic renal procedures.
13. Develop competence in managing acute and chronic renal problem.
14. Present clinical problem and literature reviews in grand rounds and seminars.
15. Build good communication skills and interpersonal relationships with patients, families, and healthcare professionals.
16. Mobilize appropriate resources for patient management at different stages of renal illnesses.
17. Diagnose and manage renal emergencies and complex cases with unusual presentations.
18. Implement strategies for preventive care and early detection of diseases in collaboration with primary and community care doctors.
19. Interpret medical statistics and critically appraise published work and clinical research.

20. Practice evidence-based learning with reference to research and scientific knowledge.
21. Recognize the cost-effectiveness of treatment modalities.
22. Identify key information resources and utilize medical literature to expand knowledge and search for answers to medical problem.

(C) Attitudes

1. Prioritize the well-being and restoration of patients' health.
2. Develop empathy and rapport with patients and their relatives.
3. Aspire to be a team leader in total patient care involving nursing and allied medical professionals.
4. Recognize the cost-effectiveness of investigations and treatments.
5. Respect patient privacy, confidentiality, and the sanctity of life.
6. Interpret informed consent, advanced directives, and the physician-patient relationship.
7. Appreciate the psychological and socio-economic effects of diseases on patients.
8. Stay updated with advances in Internal Medicine and other Specialties.
9. Refer patients to appropriate specialties timely.
10. Promote health through immunizations, periodic health screening, and risk factor assessment.
11. Acknowledge the importance of teaching and research for professional advancement.

SPECIFIC LEARNING OUTCOMES:

Following are the specific learning outcomes of five year residency program of MD Nephrology.

TOPICS TO BE TAUGHT	LEARNING OBJECTIVES Student should be able to know:	TEACHING METHOD	ASSESSMENT
1. HISTORY TAKING (Knowledge)	● To progressively develop the ability to obtain a relevant focused history from increasingly complex patients and challenging circumstances ● To record accurately and synthesize history with clinical examination and formulation of management plan according to likely clinical evolution ● Recognizes the importance of different elements of history ● Recognizes the importance of clinical (particularly cognitive impairment), psychological, social, cultural and nutritional factors particularly those relating to ethnicity, race, cultural or religious beliefs and preferences, sexual orientation, gender and disability ● Recognizes that patients do not present history in structured fashion and that the history may be influenced by the presence of acute and chronic medical conditions ● Knows likely causes and risk factors for conditions relevant to mode of presentation ● Recognizes that history should inform examination, investigation and management	● Bedside teaching in ◆ Wards ◆ Outpatient Department and Nephrology ER ● Case Presentation ● Hand on Workshops ● Case Based Discussion	● Mini-CEX ● OSCE ● MCQs ● SAQs

2.History Taking **(Skills)**	• Identify and overcome possible barriers (eg cognitive impairment) to effective communication • Manage time and draw consultation to a close appropriately • Supplement history with standardized instruments or questionnaires when relevant • Manage alternative and conflicting views from family, carers and friends • Assimilate history from the available information from patient and other sources • Recognize and interpret the use of non-verbal communication from patients and carers • Focus on relevant aspects of history	• Bedside teaching in ◆ Wards ◆ Outpatient Department and Nephrology ER • Case Presentation • Hand on Workshops • Case Based Discussion	• Mini-CEX • OSCE

1.History Taking **(Behaviour)**	● Show respect and behave in accordance with Good Medical Practice.	● Bedside teaching in ◆ Wards ◆ Outpatient Department and Nephrology ER ● Case Presentation ● Hand on Workshops ● Case Based Discussion.	● Mini-CEX ● OSCE

2.Clinical Examination (Knowledge)	● To progressively develop the ability to perform focused and accurate clinical examination in increasingly complex patients and challenging circumstances ● To relate physical findings to history in order to establish diagnosis and formulate a management plan ● Understand the need for a valid clinical examination ● Understand the basis for clinical signs and the relevance of positive and negative physical signs ● Recognize constraints to performing physical examination and strategies that may be used to overcome them ● Recognize the limitations of physical examination and the need for adjunctive forms of assessment to confirm diagnosis	● Bedside teaching in ◆ Wards ◆ Outpatient Department and Nephrology ER ● Case Presentation ● Hand on Workshops ● Case Based Discussion.	● Mini-CEX ● OSCE ● MCQs ● SAQ

2.Clinical Examinaion (Skills)	• Perform an examination relevent to the presentation and risk factors that is valid, targeted and time efficient • Recognize the possibility of deliberate harm in vulnerable patients and report to appropriate agencies • Interpret findings from the history, physical examination and mental state examination, appreciating the importance of clinical, psychological, religious, social and cultural factors • Actively elicit important clinical findings • Perform relevant adjunctive examinations including cognitive examination such as Mini Mental state Examination (MMSE) and Abbreviated Mental Test Score (AMTS)	• Bedside teaching in ◆ Wards ◆ Outpatient Department and Nephrology ER • Case Presentation • Hand on Workshops • Case Based Discussion.	• Mini-CEX • OSCE

2.Clinical Examination (Behaviour)	• Show respect and behave in accordance with Good Medical Practice.	• Bedside teaching in ◆ Wards ◆ Outpatient Department and Nephrology ER • Case Presentation • Hand on Workshops • Case Based Discussion.	• Mini-CEX • OSCE
3.Time Management and Decision making	• To become increasingly able to prioritize and organize clinical and clerical duties in order to optimize patient care. To become increasingly able to make appropriate clinical and clerical decisions in order to optimize the effectiveness of the clinical team resource.	• Bedside teaching in ◆ Wards ◆ Outpatient Department and Nephrology ER • Case Presentation • Hand on Workshops • Case Based Discussion.	• Mini-CEX • OSCE • MCQ • SAQs

4.Decision making and Clinical Reasoning	● To progressively develop the ability to formulate a diagnostic and therapeutic plan for a patient according to the clinical information available ● To progressively develop the ability to prioritize the diagnostic and therapeutic plan ● To be able to communicate the diagnostic and therapeutic plan appropriately	● Bedside teaching in ◆ Wards ◆ Outpatient Department and Nephrology ER ● Case Presentation ● Hand on Workshops ● Case Based Discussion.	● Mini-CEX ● OSCE ● MCQ ● SAQs

SECTION II: CORE CURRICULUM

i. First Two Years of Training

a. Frist 06 months of Training

General Nephrology

- Renal anatomy
- Renal physiology
- Serum electrolytes
- Acid base disorders
- Hypertension

b. 18 months of Medicine and Allied Training

- **Cardiovascular Medicine:**

- Arrhythmias
- Ischemic Heart Disease: acute coronary syndromes, stable angina,atherosclerosis
- Heart Failure
- Hypertension – including investigation and management of acceleratedhypertension
- Valvular Heart Disease
- Endocarditis
- Aortic dissection
- Syncope
- Dyslipidemia

Clinical Science:

- Physiological principles of cardiac cycle and cardiac conduction
- Pharmacology of major drug classes: beta blockers, alpha blockers, ACE inhibitors, Angiotensin receptor blockers (ARBs), anti-platelet agents, thrombolysis, inotropes, calcium channel antagonists, potassium channel

activators, diuretics, anti-arrhythmias, anticoagulants, lipid modifying drugs, nitrates, centrally acting anti-hypertensives

Dermatology:

Common and / or Important Problem:

- Cellulitis
- Cutaneous drug reactions
- Psoriasis and eczema
- Skin failure: e.g. erythroderma, toxic epidermal necrolysis
- Urticaria and angio-oedema
- Cutaneous vasculitis
- Herpes zoster and Herpes Simplex infections
- Skin tumors
- Skin infestations
- Dermatomyositis
- Scleroderma
- Lymphoedema

***Clinical Science**:*

- Pharmacology of major drug classes: topical steroids, immunosuppressants

Diabetes & Endocrine Medicine:

Common and / or Important Diabetes Problem:

- Diabetic ketoacidosis
- Non-acidotic hyperosmolar coma / severe hyperglycemia1
- Hypoglycemia
- Care of the acutely ill diabetic
- Peri-operative diabetes care

Common or Important Endocrine Problem:

- Hyper/Hypocalcemia
- Adrenocortical insufficiency
- Hyper/Hyponatremia
- Thyroid dysfunction
- Dyslipidemia
- Endocrine emergencies: myxedemic coma, thyrotoxic crisis, Addisoniancrisis, hypopituitary coma, phaeochromocytoma crisis

Clinical Science:

- Outline the function, receptors, action, secondary messengers and feedbackof hormones
- Pharmacology of major drug classes: insulin, oral anti-diabetics, thyroxine, anti-thyroid drugs, corticosteroids, sex hormones, drugs affecting bonemetabolism

Respiratory Medicine:

Common and / or Important Respiratory Problem:

- COPD
- Asthma
- Pneumonia
- Pleural disease: Pneumothorax, pleural effusion, mesothelioma
- Lung Cancer
- Respiratory failure and methods of respiratory support
- Pulmonary embolism and DVT
- Tuberculosis

- Interstitial lung disease
- Bronchiectasis
- Respiratory failure and cor-pulmonale
- Pulmonary hypertension

Clinical Science:

- Principles of lung function measurement

- Pharmacology of major drug classes: bronchodilators, inhaledcorticosteroids, leukotriene receptor antagonists, immunosuppressants

Allergy:

Common or Important Allergy Problem

- Anaphylaxis
- Recognition of common allergies; introducing occupation associated allergies
- Food, drug, latex, insect venom allergies
- Urticaria and angioedema

Clinical Science

- Mechanism of allergic sensitization: primary and secondary prophylaxis
- Natural history of allergic diseases
- Mechanism of action of anti-allergic drugs and immunotherapy
- Principles and limitations of allergen avoidance

Hematology:

Common and / or Important Problem:

- Bone marrow failure: causes and complications
- Bleeding disorders: DIC, hemophilia
- Thrombocytopenia
- Anticoagulation treatment: indications, monitoring, management of over-treatment
- Transfusion reactions
- Anemia: iron deficient, megaloblastic, hemolysis, sickle cell,

- Thrombophilia: classification; indications and implications of screening
- Hemolytic disease
- Myelodysplastic syndromes
- Leukemia
- Lymphoma
- Myeloma
- Myeloproliferative disease
- Inherited disorders of hemoglobin (sickle cell disease, thalassemia)
- Amyloid

Clinical Science:

- Structure and function of blood, reticuloendothelial system, erythropoietictissues

Immunology:

Common or Important Problem:

- Anaphylaxis (see also 'Allergy')

Clinical Science:

- Innate and adaptive immune responses
- Principles of Hypersensitivity and transplantation

Infectious Diseases:

Common and / or Important Problem:

- Fever of Unknown origin
- Complications of sepsis: shock, DIC, ARDS
- Common community acquired infection: LRTI, UTI, skin and soft tissueinfections, viral exanthema, gastroenteritis
- CNS infection: meningitis, encephalitis, brain abscess
- HIV and AIDS including ethical considerations of testing
- Infections in immuno-compromised host
- Tuberculosis
- Anti-microbial drug monitoring
- Endocarditis

- Common Genito-urinary conditions: non-gonococcal urethritis, gonorrhea, syphilis

Clinical Science:

- Principles of vaccination
- Pharmacology of major drug classes: penicillin, cephalosporins, tetracyclines, aminoglycosides, macrolides, sulphonamides, quinolones, metronidazole, anti-tuberculous drugs, anti-fungals, anti-malarials, anti-helminthics, anti-virals

Medicine in the Elderly:

Common or Important Problem:

- Deterioration in mobility
- Acute confusion
- Stroke and transient ischemic attack
- Falls
- Age related pharmacology
- Hypothermia
- Continence problem
- Dementia
- Movement disorders including Parkinson's disease
- Depression in the elderly
- Osteoporosis
- Malnutrition
- Osteoarthritis

Clinical Science:

- Effects of ageing on the major organ system
- Normal laboratory values in older people

Musculoskeletal System:

Common or Important Problem:

- Septic arthritis
- Rheumatoid arthritis

- Osteoarthritis
- Seronegative arthritis
- Crystal arthropathy
- Osteoporosis – risk factors, and primary and secondary prevention ofcomplications of osteoporosis
- Polymyalgia and temporal arteritis
- Acute connective tissue disease: systemic lupus erythematosus,scleroderma, poly- and dermatomyositis, Sjogren's syndrome, vasculitides

Clinical Science:

- Pharmacology of major drug classes: NSAIDS, corticosteroids, immunosuppressants, colchicine, allopurinol, bisphosphonates.

Neurology:

Common or Important Problem:

- Acute new headache
- Stroke and transient ischemic attack
- Subarachnoid hemorrhage
- Coma
- Central Nervous System infection: encephalitis, meningitis, brain abscess
- Raised intra-cranial pressure
- Sudden loss of consciousness including seizure disorders (see also abovesyncope etc)
- Acute paralysis: Gillian-Barré, myasthenia gravis, spinal cord lesion
- Multiple sclerosis
- Motor neuron disease

Clinical Science:

- Pathophysiology of pain, speech and language
- Pharmacology of major drug classes: anxiolytics, hypnotics inc. benzodiazepines, antiepileptics, anti-Parkinson's drugs (anti-muscarinic, dopaminergic)

Psychiatry:

Common and /or Important Problem:

- Suicide and parasuicide
- Acute psychosis
- Substance dependence
- Depression

***Clinical Science**:*

- Principles of substance addiction, and tolerance
- Pharmacology of major drug classes: anti-psychotics, lithium, tricyclicantidepressants, mono-amine oxidase inhibitors, SSRIs, venlafaxine,

donepezil, drugs used in treatment of addiction (bupropion, disulphiram,acamprosate, methadone)

Cancer and Palliative Care:

Common or Important Nephrology Problem:

- Hypercalcemia
- SVC obstruction
- Spinal cord compression
- Neutropenic sepsis
- Common cancers (presentation, diagnosis, staging, treatment principles):lung, bowel, breast, prostate, stomach, esophagus, bladder)

Common or Important Palliative Care Problem:

- Pain: appropriate use, analgesic ladder, side effects, role of radiotherapy
- Constipation
- Breathlessness
- Nausea and vomiting
- Anxiety and depressed mood

- **Clinical Science:**
- Principles of oncogenesis and metastatic spread
- Apoptosis

- Principles of staging
- Principles of screening
- Pharmacology of major drug classes in palliative care: anti-emetics, opioids,NSAIDS, agents for neuropathic pain, bisphosphonates, laxatives, anxiolytics

Investigation Competencies

.

Outline the Indications for, and Interpret the Following Investigations:

- Basic blood biochemistry: urea and electrolytes, liver function tests, bonebiochemistry, glucose, magnesium
- Inflammatory markers: CRP / ESR
- Arterial Blood Gas analysis
- Cortisol and short Synacthen test
- HbA1C
- Lipid profile
- Amylase
- Full blood count
- Coagulation studies
- Hemolysis studies
- D dimer
- Blood film report
- Blood / Stool / urine culture
- Fluid analysis: peritoneal, ascitic
- Abdominal and pelvic radiographMore Advanced Competencies;
- Viral hepatitis serology
- HIV testing
- Ultrasound
- Detailed imaging: Barium studies, CT, CT Gastroenterological angiography,high resolution CT, MRI
- Ambulatory blood pressure monitoring

Procedural Competencies

PROCEDURES	First Year								
	3Months		6Months		9Months		12Months		Total Cases 1st Year
	Level	Cases	Level	Cases	Level	Cases	Level	Cases	
Rotations to be incorporated as and when available with the consent of respected supervisor									
Pleural Aspiration	1,2	6	3	6	4	6	4	7	25
Peritoneal Aspiration	1,2	6	3	6	4	6	4	7	25
Lumbar puncture	1	4	2	4	3	4	4	3	15
Nasogastric Intubation	1,2	12	3	12	4	12	4	14	50
Uretheral catheterization	1,2	12	3	12	4	12	4	14	50
Recording and reporting ECG	1	25	2	25	3	25	4	25	100
Proctoscopy	-	-	1	1	1	1	1	1	3
Endotracheal Intubation	1	6	2	6	3	6	3	7	25
Cardio-Pulmonary Resuscitation(CPR)	1,2	4	3	4	3	4	3	3	15
Insertion of CVP lines	1	4	2	4	3	4	3	3	15
Arterial puncture	-	8	-	8	-	8	1	6	30
Urine Examination	3	1	3	1	3	1	3	1	4
Liver biopsy	1	1	2	1	2	1	2	1	4
Pleural biopsy	-	-	1	1	2	1	2	1	3
Joint aspiration	-	-	-	-	1	1	1	-	1
Bone marrow aspiration	-	-	1	1	1	1	1	1	3
Renal biopsy	-	-	-	-	1	1	1	1	2
Haemodialysis	-	-	1	1	1	1	2	1	3
Upper G.I. Endoscopy	-	-	-	-	1	1	1	1	2
Lower G.I. Endoscopy	-	-	-	-	-	-	1	1	1
Bronchoscopy	-	-	-	-	1	1	1	1	2
Abdominal Ultrasound	-	-	-	-	1	1	1	1	2
Exercise Tolerence Test	-	-	-	-	-	-	-	-	-
Echocardiography	-	-	-	-	1	1	1	1	2
CT Scan Head	-	-	1	1	1	1	1	1	3
EEG	-	-	-	-	-	-	-	-	-
EMG/NCS	-	-	-	-	-	-	-	-	-
Chest Intubation	-	-	-	-	-	-	-	-	-
Pericardiocentesis	-	-	-	-	-	-	-	-	-

PROCEDURES	Second Year				
	15 Months 18 Months				Total Cases
	Level	Cases	Level	Cases	6 Months
Rotations to be incorporated as and when available with the consent of respected supervisor					
Pleural Aspiration	4	12	4	13	25
Peritoneal Aspiration	4	1	4	1	25
Lumbar puncture	4	1	4	1	15
Nasogastric Intubation	4	1	4	1	50
Uretheral catheterization	4	1	4	1	50
Recording and reporting ECG	4	1	4	1	100
Proctoscopy	1	1	1	1	3
Endotracheal Intubation	3	1	3	1	25
Cardio-Pulmonary Resuscitation (CPR)	3	1	3	1	15
Insertion of CVP lines	3	1	3	1	15
Arterial puncture	2	1	2	1	30
Urine Examination	4	1	4	1	2
Liver biopsy	2	1	2	1	2
Pleural biopsy	2	1	2	1	2
Joint aspiration	1	-	1	1	1
Bone marrow aspiration	1	1	1	1	2
Renal biopsy	1	-	1	1	1
Haemodialysis	2	1	2	1	2
Upper G.I. Endoscopy	1	1	1	-	1
Lower G.I. Endoscopy	1	1	1	1	2
Bronchoscopy	1	1	1	-	1
Abdominal Ultrasound	1	1	1	1	2
Exercise Tolerence Test	1	1	1	1	2
Echocardiography	1	1	1	1	2
CT Scan Head	1	1	1	1	2
EEG	1	1	1	1	2
EMG/NCS	1	1	1	1	2
Chest Intubation	1	1	1	1	2
Pericardiocentesis	1	1	1	1	2

ii. Specialty training in Nephrology

Specific Program Content

1. Specialized training in Nephrology
2. Compulsory rotations
3. Research & thesis writing
4. Maintaining of Log-book

Specialized Training in Nephrology can be divided into the following:

A. General Nephrology

B. Dialysis and Extracorporeal Therapy

C. Renal Transplantation

D. Ambulatory Services (OPD)

E. Electives

F. Technical and Other Skills

G. Research opportunities

Sr. No	Topic	Domain	Learning Objective	Mode of Information Transfer (MIT)	Assessment
1	**General Nephrology** • Bone Mineral Disorders • Electrolyte Imbalance • Acid Base Disorders • Acute Renal Failure • Chronic Kidney Disease • End Stage Renal Disease • Hypertensive Disorders • Renal Disorders of Pregnancy • Hypertensive Disorders • Tubulointerstitial renal diseases • Glomerular and Vascular Diseases • Malignancy related to the Kidneys • Disorders of Drug Metabolism • Renal biopsy • Temporary catheter insertion	Knowledge /Psychomotor skills	• Understand the pathophysiology of bone mineral disorders • Interpret the findings and labs • Diagnose the basic acid base disorders and electrolyte imbalance • Manage the renal disorders along with hypertensive disorders • Evaluate pregnancy related renal issues and address them timely • Perform efficiently the desired procedures	Bed side learning PBL SGD	MCQS SEQS SAQS VIVA DOPS OSCE

2	**Dialysis and Extracorporeal Therapy** • Evaluation and Selection of Patients for Acute Hemodialysis • End-Stage Renal Disease patients • Drug dosage modification during Dialysis • medical complications • Long-term follow-up of patients undergoing chronic dialysis • principles and practice of peritoneal dialysis. • technology of peritoneal dialysis. • peritoneal dialysis efficiency. • dialysis prescription. • The pharmacology of commonly used medications. • complications of peritoneal dialysis. • An understanding of the special nutritional requirements of the Hemodialysis.	Knowledge /psychomotor	• Evaluate and select patients for acute hemodialysis • Manage the complication predialysis, intradialytic and post dialysis • Understanding principals ,management and adequacy of the peritoneal dialysis • Prescribing hemodialysis and peritoneal dialysis	Bed side teaching SGD PBL	MCQS SEQS SAQS DOPS OSCE
3	**Renal Transplantation:** ● Selection of Recipient and Donor. ● Pre Op Management ● Surgery ● Post Op Complication ● Post Op Infections. ● Acute and Chronic Rejection. ● Transplant Biopsy. ● Follow Up	● Knowledge ● Psycho Motor Skills ● Affective	● Evaluation and selection of transplant candidates. ● Preoperative evaluation and preparation of transplant recipients. ● Observation of at least 3 renal transplant surgeries. Immediate postoperative	Bed side teaching SGD PBL	MCQS SEQS SAQS DOPS OSCE

			management of transplant recipients including administration of immunosuppressive drugs. ● Clinical diagnosis and management of all form of acute and chronic rejection including laboratory, histopathologic and imaging techniques. ● Recognition and medical management of the surgical and non-surgical complications of transplantation. ● Long-term follow-up of transplant donors and recipients in the outpatient clinic.		

Ambulatory Renal Service:

The trainee will spend one-half day each week in the ambulatory practice setting, seeing the entire spectrum of out-patient nephrology. The trainee will evaluate the patients and formulate plans and will discuss the case with the consultant physician. The trainee is responsible for communicating with referral physicians and for longitudinal follow-up of these patients when appropriate. This rotation will expose trainee to:

1. Evaluation and management of patients with hematuria and proteinuria
2. Evaluation and management of the complicated hypertensive patients
3. Management of patients with chronic renal failure
4. Evaluation and management of patients with nephrolithiasis
5. Evaluation of patients for transplantation
6. Transplant donor evaluations
7. Management of patients following renal transplantation

CLINICAL COMPETENCIES FOR 1st, 2nd, 3rd, 4th & FINAL YEAR MD TRAINEES

CLINICAL COMPETENCIES\SKILL\PROCEDURE:

The clinical competencies, a specialist must have, are varied and complex. A complete list of the skills necessary for trainees and trainers is given below. The level of competency to be achieved each year is specified according to the key, as follows:

1. Observer status
2. Assistant status
3. Performed under supervision
4. Performed under indirect supervision
5. Performed Independently

Note: Levels 4 and 5 for practical purposes are almost synonymous

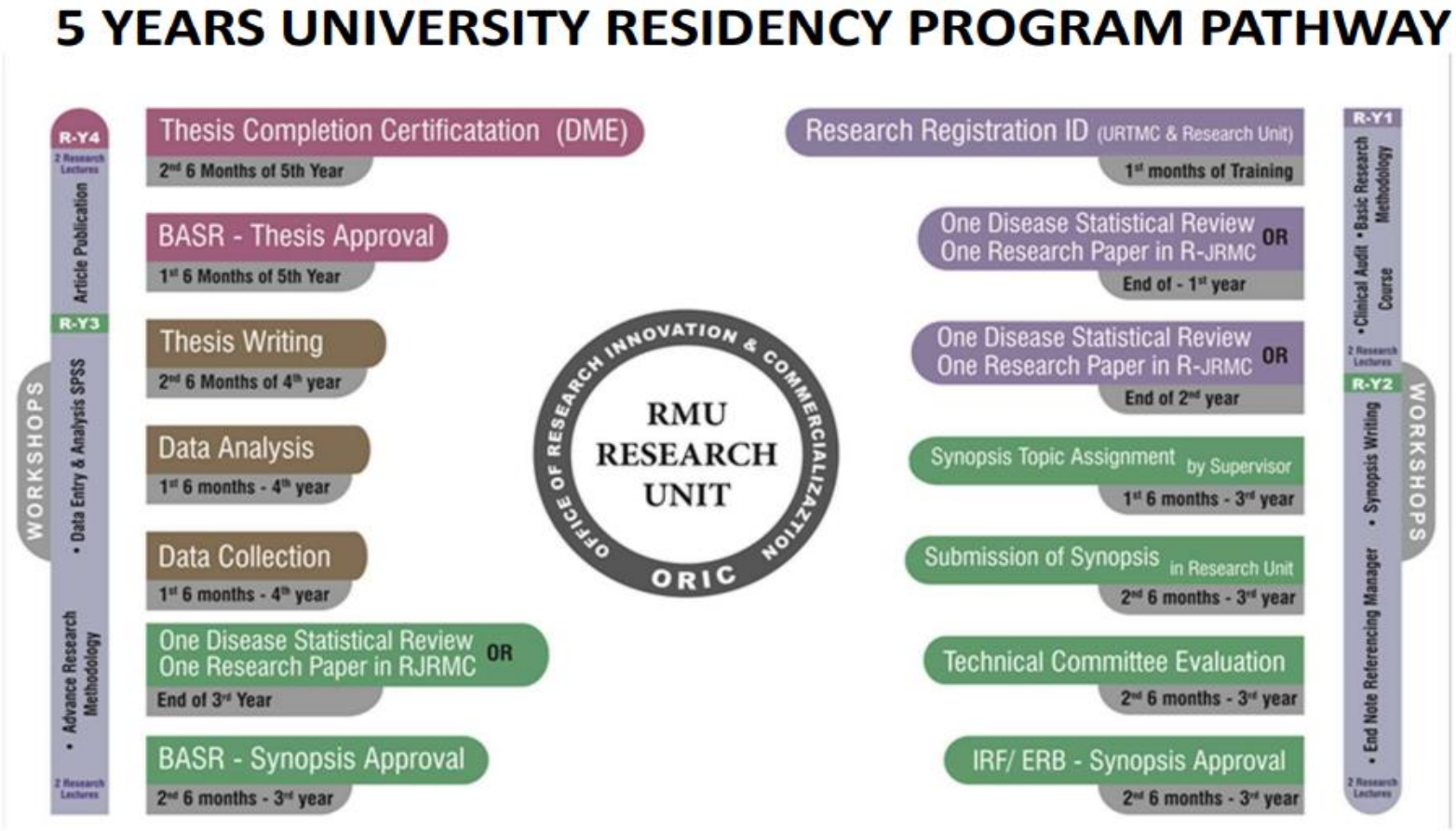
Year-wise Learning Outcome of Residents

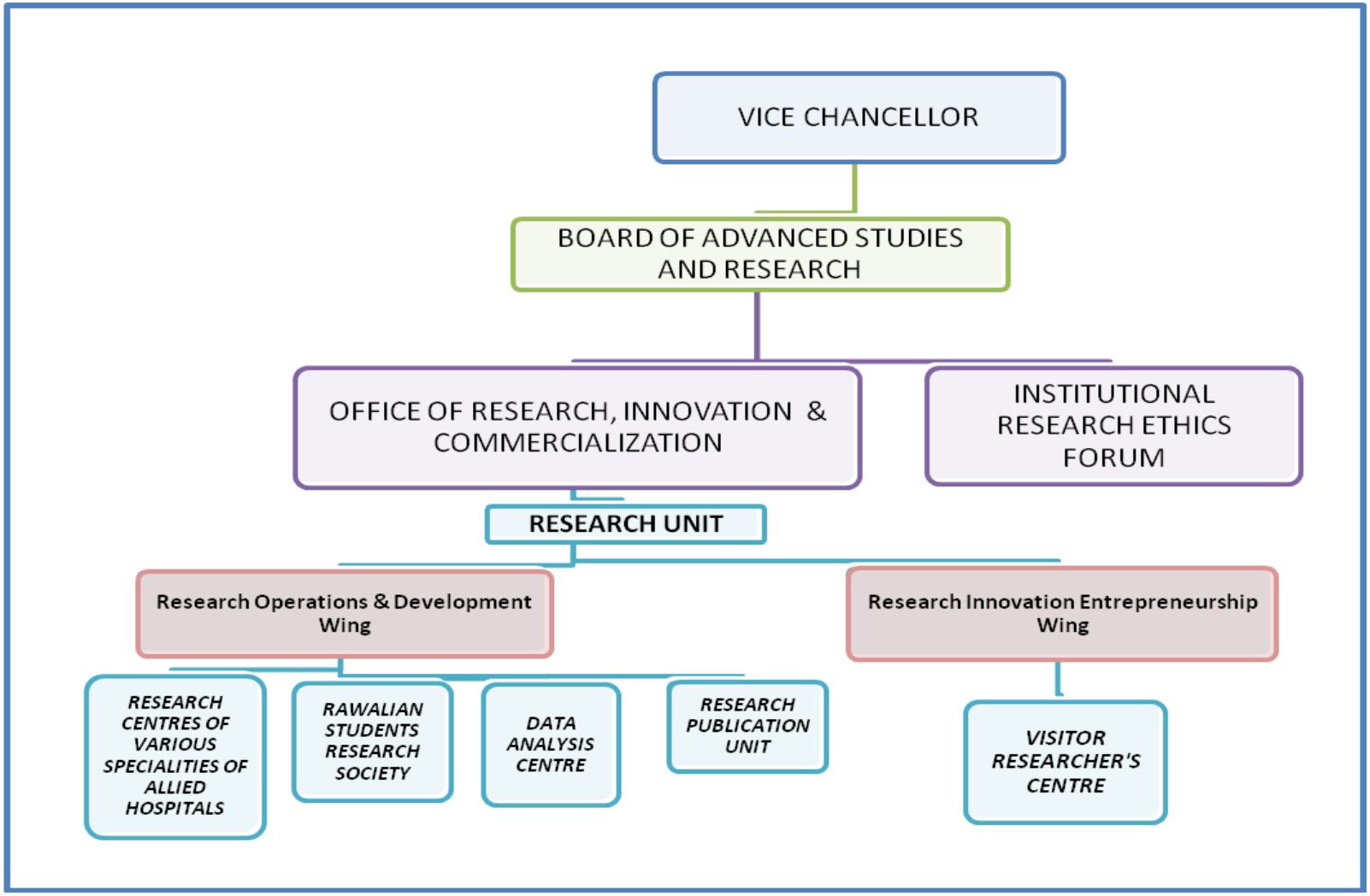
YEAR	LEARNING OUTCOMES	MODE OF TEACHING	ASSESSMENT
FIRST YEAR MD RESIDENT	• Act as primary physician for patients. • Perform detailed history and physical exams. • Contribute to patient plans under supervision. • Understand pathophysiology of disease processes. • Present patient cases during rounds. • Perform procedures under supervision. Attend outpatient clinics under supervision of senior resident.	Bedside teachings in emergency, inpatient, and outpatient department. Workshops, seminars and conferences. Formal teaching sessions with the supervisors. Mock courses	**Formative assessment** workplace-based assessments. (Mini-CXE. CBDs, DOPS, ACATs, MCQs and OSCE, 360-degree evaluation **Summative assessment** First year in training exam
SECOND YEAR MD RESIDENT	• Work alongside first-year resident as a role model. • Have increasing responsibilities on inpatient rotations. • Attend outpatient clinics. Demonstrate understanding of pathophysiology and lab/radiology findings. Come up with a reasonable differential diagnosis and management plan.	Bedside teachings in emergency, inpatient and outpatient department. Workshops, seminars and conferences. Formal teaching sessions with the supervisors Mock courses	**Formative assessment** workplace based assessments (Mini-CXE. CBDs, DOPS, ACATs, MCQs and OSCE, 360-degree evaluation **Summative assessment** MTA
THIRD YEAR MD RESIDENT	• Take on leadership and supervisory roles for first and second-year residents. • Demonstrate interpersonal and communication skills. • Understand literature on diagnosis, prognosis, and management of disease processes. • Teach junior residents. Articulate findings and plan systematically.	Bedside teachings in emergency, inpatient and outpatient department. Workshops, seminars and conferences. Formal teaching sessions with the supervisors	**Formative assessment** workplace-based assessments (Mini-CXE. CBDs, DOPS, ACATs, MCQs and OSCE, 360-degree evaluation **Summative**

	Conduct procedures with minimal supervision	Mock courses	**assessment** Third year in training exam
FOURTH YEAR MD RESIDENT	• Build on leadership, mentor, and supervisory role. • Be actively involved in teaching junior residents. • Have a solid knowledge base of disease processes and management. • Be actively involved in outpatient clinic. • Carry out most procedures independently and supervise junior residents. • Analyze articles skillfully and present thesis.	Bedside teachings in emergency, inpatient and outpatient department. Workshops, seminars and conferences. Formal teaching sessions with the supervisors Mock courses	**Formative assessment** workplace-based assessments (Mini-CXE. CBDs, DOPS, ACATs, MCQs and OSCE, 360-degree evaluation **Summative assessment** Fourth year in training exam
FINAL YEAR MD RESIDENT	• Build on excellence in leadership, mentor, and supervisory role. • Achieve excellence in teaching junior residents. • Have a comprehensive knowledge base of disease processes and management. • Be actively involved in outpatient clinic. • Carry out all procedures independently and supervise junior residents. • Analyze articles skillfully and present thesis.	• Bedside teachings in emergency, inpatient and outpatient department. • Workshops, seminars and conferences. Formal teaching sessions with the supervisors. • Mock courses.	**Formative assessment** workplace-based assessments (Mini-CXE. CBDs, DOPS, ACATs, MCQs and OSCE, 360-degree evaluation **Summative assessment** FTA exam

SECTION 3: RESEARCH AND THESIS WRITING

For residency program research work on synopsis and thesis writing starts from entry into university by getting registration ID number from the research unit. It has been structured in 06 monthly & annual time scale goals. Essential steps are included in eligibility criteria of yearly, midterm and final assessments. Compulsory workshops have been designed to train residents along the pathway of research conduction. The charts below show the structure and timeline description of the tasks required.





Model of Research at Rawalpindi Medical University

Outline of Research Curriculum

Clinical Audit /Disease Statistical Review	**Y1**
Basic Research Methodology	**Y1**
Research lectures	**Y1**
Clinical Audit /Disease Statistical Review	**Y2**
Research Lectures	**Y2**
Synopsis Writing	**Y3**
Referencing Manager	**Y3**
Research lectures	**Y3**
Advance Research Methodology	**Y4**
Data Entry & Analysis SPSS	**Y4**
Thesis writing workshop	**Y5**
Writing an Article / Publications	**Y5**
Research lectures	**Y5**

Research Work Assessment

Submission of Synopsis and Thesis

1. The candidates shall prepare their synopsis as per guidelines provided by the Advanced Studies & Research Board, available on RMU website.
2. Synopsis of research project should be submitted and approved by the end of the 1st year of MD program.
3. The minimum duration between approval of synopsis and submission of thesis shall be one year, but the thesis cannot be submitted later than 8 years of enrolment.
4. Thesis shall be submitted by the candidate duly recommended by the Supervisor.
5. The research thesis must be compiled and bound in accordance with the Thesis Format Guidelines approved by the University and available on website.
6. The research thesis will be submitted along with the fee prescribed by the University.

Thesis Assessment

1. All candidates admitted in MD course shall appear in thesis evaluation component of the FTA after completion of 5th years of their training course.
2. Only those candidates shall be eligible for thesis evaluation who have passed Midterm Examination and Oral & Practical/ Clinical component of Exit Examination.
3. The examination shall include thesis evaluation with defense.
4. The Vice Chancellor shall appoint three external examiners for thesis evaluation, preferably from other universities and from abroad, out of the panel of examiners approved by the Advanced Studies & Research Board. The examiners shall be appointed from respective specialty.
5. The thesis shall be sent to the external examiners for evaluation, well in time before the date of defense examination and should be approved by all the examiners.
6. After the approval of thesis by the evaluators, the thesis defense examination shall be held within the University on such date as may be notified by the Controller of Examinations. The Controller of Examinations shall make appropriate arrangements for the conduct of thesis defense examination in consultation with the supervisor, who will co-ordinate the defense examination.
7. The thesis defense examination shall be conducted by two External Examiners who shall submit a report on the suitability of the candidate for the award of degree. The supervisor shall act as coordinator.

8. ***Candidates and faculty interested in further details relating to research, please refer to the document on Research curriculum (also available on RMU website***)

SECTION 4: SPECIALITY ROTATIONAL PLACEMENTS and WORKSHOPS

Framework of Rotations

Training Program	**1st Year**	**2nd Year**	**3rd Year**	**4th Year**	**Final Year**
MD Nephrology	**First 6 months** in Nephrology **Last 6 months** in internal medicine	**First 4 months** in internal medicine **Last 8 months** 04 external rotations should be opted each of 02 months from the following: 1. Neurology 2. Radiology 3. Dermatology 4. Medical ICU 5. Pulmonology 6. Psychiatry 7.Gastroenterology 8. Rheumatology)	Medical ICU (01 month)	Radiology (01 month)	Renal Transplant (02 months)

CRITICAL CARE

At the end of rotation trainee should be able to:

COMPETENCIES	Level	Cases
INTERPRET ABGS OF MIXED ACID BASE DISORDER	4	50
MANAGE MODS (MULTIPLE ORGAN DYSFUNCTION SYNDROME)	2	3
UNDERSTAND PRINCIPLES OF ARRT (ACUTE RENAL REPLACEMENT THERAPY) INCLUDING PERITONEAL DIALYSIS, CRRT (CONTINOUS RENAL REPLACEMENT THERAPY), PLASMAPHERESIS	1	3 (EACH)
MANAGEMENT OF POISONING INVOLVING RENAL SYSTEM OR NEED FOR RRT	2	3
UNDERSTAND BASIC PRINCIPLES OF VENTILATORY SUPPORT CRITICALLY ILL AKI/CKD PATIENTS	2	10
PERFORM ECHOCARDIOGRAM OF A PATIENT TO ASSES LV FUNCTION IVC DIAMETER	2	10

ROTATIONAL COMPETENCIES

RADIOLOGY

At the end of rotation trainee should be able to:

COMPETENCIES	Level	Cases
INTERPRET CT KUB WITH AND WITHOUT CONTRAST	3	10
INTERPRET X-RAY/CT / MRI RELATED TO RENAL PROBLEMS INCLUDING:		
• X-RAY - CHEST, SKELETAL SYSTEM AND ABDOMEN	3	10 (EACH)
• CT SCAN - CHEST, SKELETAL SYSTEM, ABDOMEN AND BRAIN	3	5 (EACH)
• MRI - SKELETAL SYSTEM, ABDOMEN AND BRAIN	3	4 (EACH)
PERFORM ULTRASOUND KUB AND IDENTIFY NORMAL AND GROSS ABNORMALITIES OF URINARY SYSTEM AND LOCALISE LOWER POLE OF NATIVE KIDNEY FOR RENAL BIOPSY	4	20
IDENTIFY PLEURAL EFFUSION AND ASCITIS	4	20
INTERPRET NORMAL AND ABNORMAL RENAL ISOTOPIC STUDIES	3	10
INTERPRET VASCULAR ACCESS RELATED RADIOLOGY	3	5
IDENTIFY STEPS OF INSERTION OF TUNNELED CATHETER	1	2

RENAL TRANSPLANT

At the end of rotation trainee should be able to:

COMPETENCIES	Level	Cases
ASSES CASE OF ACUTE GRAFT DYSFUNCTION AND FIND OUT CAUSE AND MANAGE THE GRAFT DYSFUNCTION	2	5
ASSES PATIENT WITH WEGHT LOSS, FIND THE CAUSE AND MANAGE THE PATIENT	3	8
ASSES PATIENT WITH SLOW DETERIORATION OF GRAFT DYSFUNCTION, FIND OUT THE CAUSE AND MANAGE THE PATIENT	3	6
DIAGNOSE AND MANAGE THE CMV INFECTION AND BK NEPHROPATHY	2	2 (EACH)
PERFORM RENAL ALLOGRAFT BIOPSY	2	5

MANDATORY WORKSHOPS

WORKSHOPS (3 hours each for 2-5 days)

S.NO	NAME OF THE WORKSHOP	LEARNING OBJECTIVES	TOPICS TO BE COVERED
1.	**Biostatistics & Research Methodology (4 days)**	● To understand the basics of Bio-Statistics ● To critique why research isimportant? ● To discuss the importance ofSelecting a Field for Research ● To prepare oneself for Participationin National and International Research ● To prepare oneself for Participationin Pharmaceutical Company Research ● To interpret the importance of research ideas & Criteria for a goodresearch topic ● To discuss Ethics in Health Research ● To learn to write a Scientific Paper ● To learn to make a ScientificPresentation ● To learn to make a purposefulliterature search	● Introduction to Bio-Statistics ● Introduction to Bio- Medical Research Whyresearch is important? ● What research to do? ● Selecting a Field for Research ● Drivers for Health Research ● Participation in National and International Research. ● Participation in PharmaceuticalCompany Research. ● Where do research ideas comefrom ● Criteria for a good research topicEthics in Health Research ● Writing a Scientific Paper ● Making a Scientific Presentation & Searching the Literature

2.	**Introduction to computer/Information Technology & Software(5 days)**	● **By the end of this workshop student should be able to:** ● Appropriately start up and shutdown your computer. ● Navigate the operating system andstart applications. ● Perform basic functions of file management. ● Perform basic functions in a wordprocessor and spreadsheet. ● Manage print settings and printdocuments. ● Receive and send email. ● Use a web browser to navigate theInternet. ● work with windows, toolbars, andcommand menus ● Perform basic word processing andgraphic tasks ● Make a Power Point presentation ● Explore Web browsing basics ● Back up files ● Save, copy, and organize your work ● To enter data accurately in softwareof Statistical Package for Social Sciences	● Hardware and Software i. Understand the main components of a computer, including input and output devices. ii. Understand the function of communication devices such as smartphones and tablets. iii. Understand the role of Operating System, program and apps. ● Windows i. Turning on the computer and logging on. ii. The Windows screen. iii. Running program from the Start Menu. iv. Minimizing, maximizing, moving, resizing and closing windows. v. Logging off and shutting down your computer. ● Working with Program i. Running multiple program. ii. Desktop icons and creating a desktop shortcut. iii. Managing program from the taskbar. iv. Closing program. ● File Management i. Managing Windows Explorer. ii. Creating, moving, renaming and deleting foldersand files. iii. Understandings file extensions. iv. Viewing storage devices and network connections. v. Managing USB flash drives. ● Word i. Processing ii. Creating documents in Microsoft Word. iii. Typing text, numbers and dates into a document. iv. Easy formatting. v. Checking the spelling in your document. vi. Making and saving changes to your document. ● Power Point i. Making Power Point Presentation ● Spreadsheets

			i. Understanding spreadsheet functionality. ii. Creating spreadsheets in Microsoft Excel. iii. Typing text numbers and dates into a worksheet. iv. Easy formulas. v. Easy formatting. vi. Charting your data. vii. Making and saving changes to your workbook. viii. Printing workshop. ● .Printing i. Print preview. ii. Print settings. iii. Managing the print queue. ● Using Email i. The Outlook mail screen elements. ii. Composing and sending an email message. iii. Managing the Inbox ● **Accessing the Internet** i. Going to a specific website and bookmarking. ii. Understanding how to search/Google effectively. iii. Copy and paste Internet content into your documents and emails. iv. Stopping and refreshing pages. v. Demystifying the Cloud. vi. Understanding social media platform such as Facebook and Twitter. vii. Computer security best practices. ● **.Statistical Package for Social Sciences** i. general understanding for data entry

3.	**communication skills (3 days)**	• To learn to use Non-medicinal Interventions in CommunicationSkills of Clinical Practice • To discuss the importance ofcounseling • To role play as a counselor	1. Use of Non-medicinal Interventions in Clinical Practice Communication Skills 2. Counseling 3. Informational Skills 4. Crisis Intervention/Disaster 5. Management Conflict Resolution

	• To learn to manage a conflictresolution • To learn to break a bad news • To discuss the importance of Medical Ethics, Professionalism andDoctor-Patient Relationship Hippocratic Oath • To learn to take an informedconsent • To illustrate the importance of confidentiality • To summarize Ethical Dilemmas in a Doctor's Life	6. Breaking Bad News 7. Medical Ethics, Professionalism and Doctor-Patient Relationship Hippocratic Oath 8. Four Pillars of Medical Ethics (Autonomy, Beneficence, Non-maleficence and Justice) 9. Informed Consent and Confidentiality 10. Ethical Dilemmas in a Doctor's Life
Synopsis Writing	• **Introduction to Synopsis Writing and Research Question Development** • Understand the purpose and structure of a research synopsis. • Learn to develop a clear and concise research question. • **Literature Review and Methodology** • Master techniques for conducting a literature review. • Understand how to design a robust research methodology • **Writing the Synopsis and Managing References** • Learn to write each section of a research synopsis.	**Introduction to Synopsis Writing:** ○ Definition and importance of a research synopsis. ○ Key components of a synopsis: title, abstract, introduction, objectives, methodology, and timeline. ○ Differences between a synopsis, proposal, and full research paper. **Developing a Research Question:** ○ Characteristics of a good research question: clarity, specificity, and feasibility. ○ Techniques for formulating research questions: PICOT framework, FINER criteria. ○ Refining and narrowing down research questions. **Conducting a Literature Review:** ○ Purpose and scope of a literature review. ○ Strategies for searching academic databases and identifying relevant literature.

	• Understand the importance of proper citation and reference management. • **Peer Review and Finalizing the Synopsis** • Learn the peer-review process and its importance. • Finalize and polish the research synopsis.	○ Synthesizing information and identifying research gaps. ○ Referencing and citation management. **Designing the Research Methodology:** ○ Types of research designs: qualitative, quantitative, and mixed methods. ○ Selection of appropriate study design based on the research question. ○ Sampling techniques, data collection methods, and data analysis plans. ○ Ethical considerations in research design. **Writing the Synopsis:** ○ **Title and Abstract:** ▪ Crafting a clear and informative title. ▪ Writing a concise abstract that summarizes the research. ○ **Introduction:** ▪ Background and rationale for the study. ▪ Stating the research problem and objectives. ○ **Methodology:** ▪ Detailed description of the research design, data collection, and analysis. ○ **Timeline and Budget:** ▪ Creating a realistic timeline for the research. ▪ Estimating and justifying the research budget. ○ **References:** ▪ Citing sources accurately and compiling a reference list.

		Reference Management: ○ Tools for managing references (e.g., EndNote, Mendeley, Zotero). ○ Proper citation styles (e.g., APA, MLA, Vancouver). **Peer Review Process:** ○ Importance of peer review in research. ○ How to provide constructive feedback. ○ Reviewing and critiquing peer synopses. ○ Incorporating feedback to improve the synopsis. **Finalizing the Synopsis:** ○ Editing and proofreading techniques. ○ Ensuring clarity, coherence, and conciseness in writing. ○ Checking for completeness and adherence to guidelines. ○ Preparing the final document for submission.

Cardiac First Response	• **Introduction to Cardiac Emergencies and Basic Life Support (BLS)** • Understand the types and signs of cardiac emergencies. • Learn the fundamentals of Basic Life Support (BLS). • **Automated External Defibrillator (AED) Use and Advanced Life Support (ALS)** • Gain proficiency in the use of an Automated External Defibrillator (AED). • Understand the basics of Advanced Life Support (ALS). • **Scenario-Based Training and Team Dynamics** • Apply knowledge and skills in realistic, scenario-based training. • Understand the importance of effective team dynamics during a cardiac emergency. • **Advanced Skills and Final Assessment** • Learn advanced skills for managing cardiac emergencies. • Demonstrate competency through a final assessment.	1. **Introduction to Cardiac Emergencies:** o Overview of cardiac emergencies: heart attack, cardiac arrest, angina, and arrhythmias. o Recognizing symptom and risk factors. o The importance of timely intervention and the concept of the "golden hour." 2. **Basic Life Support (BLS):** o Principles of BLS: ensuring scene safety, assessing responsiveness, and calling for help. o Steps of BLS: airway, breathing, and circulation (ABC). o Hands-on practice: chest compressions, rescue breaths, and using a barrier device. 3. **Automated External Defibrillator (AED):** o Function and importance of an AED in cardiac emergencies. o Step-by-step instructions on how to use an AED. o Safety precautions and troubleshooting common issues. o Hands-on practice with AED simulators. 4. **Introduction to Advanced Life Support (ALS):** o Overview of ALS and its components. o The role of medications and advanced airway management. o Introduction to ECG interpretation for identifying cardiac rhythm. o Coordination and communication in a resuscitation team. 5. **Scenario-Based Training:** o Simulated cardiac emergencies with real-time response. o Role-playing various scenarios: out-of-hospital cardiac arrest, in-hospital cardiac arrest, and post-resuscitation care. o Debriefing and feedback sessions to identify strengths and areas for improvement. 6. **Team Dynamics in Cardiac Emergencies:**

		○ Importance of teamwork and clear communication. ○ Roles and responsibilities of team members during a resuscitation effort. ○ Strategies for effective leadership and coordination. ○ Hands-on practice with team drills and role assignments. 7. **Advanced Skills:** ○ Advanced airway management: intubation and supraglottic airway devices. ○ Intravenous (IV) access and medication administration. ○ Post-resuscitation care: monitoring and stabilizing the patient. ○ Review of ACLS algorithm and protocols. 8. **Final Assessment:** ○ Practical exam: simulated cardiac emergency scenarios to assess BLS, AED, and ALS skills. ○ Written exam: testing knowledge of cardiac emergency management, BLS, and ALS protocols. ○ Feedback and discussion on performance. ○ Certification for participants who meet competency standards.

SECTION 5: DEVELOPMENTAL MILESTONES

Clear developmental milestones are established for each competency, with expected achievements at specific intervals during residency training.

Remember to celebrate for the milestones as you prepare for the road ahead----Nelson Mandela.

High-quality assessment of resident performance is needed to guide individual residents' development and ensure their preparedness to provide patient care. To facilitate this aim, reporting milestones are now required across all Nephrology residency program. Milestones promote competency-based training in nephrology. Residency program directors may use them to track the progress of trainees in the 6 general competencies including ***patient care, Medical Knowledge, Practice-Based Learning and Improvement, Interpersonal and Communication Skills, Professionalism and System-Based Practice.*** Mile stones inform decisions regarding promotion and readiness for independent practice. In addition, the milestones may guide curriculum development, suggest specific assessment strategies, provide benchmarks for resident self-directed assessment-seeking, assist remediation by facilitating identification of specific deficits, and provide a degree of national standardization in evaluation. Finally, by explicitly enumerating the profession's expectations for graduates, they may improve public accountability for residency training.

Table-1	Developmental Milestones for Nephrology Training—Patient Care		
Competency	**Developmental Milestones Informing Competencies**	**Approximate Time Frame Trainee Should Achieve Stage (months)**	**General Evaluation StrategiesAssessment Methods/ Tools**
A. Clinical skills andreasoning	***Historical data gathering***		
• Manage patients using clinical skills of interviewing and physical examination • Demonstrate competence in the performance of procedures • Appropriately use laboratory and imaging techniques	1. Acquire accurate and relevant history from the patient in an efficiently customized, prioritized, and hypothesis driven fashion	8	• Standardized patient • Direct observation
	2. Seek and obtain appropriate, verified, and prioritized data from secondary sources (e.g., family, records, pharmacy)	12	
	3. Obtain relevant historical subtleties that inform and prioritize both differential diagnoses and diagnostic plans, including sensitive, complicated, and detailed information that may not often be volunteered by the patient	24	

	4. Role model gathering subtle and reliable information from the patient for junior members of the health care team	40	
	Performing a physical examination		
	1. Perform an accurate physical examination that is appropriately targeted to the patient's complaints and medical conditions. Identify pertinent abnormalities using common maneuvers	8	• Standardized patient direct observation • Simulation
	2. Accurately track important changes in the physical examination over time in the outpatient and inpatient settings	12	
	3. Demonstrate and teach how to elicit important physical findings for junior members of the health care team	24	
	4. Routinely identify subtle or unusual physical findings that may influence clinical	40	

	decision making, using advanced maneuvers where applicable		
	Clinical reasoning		
	1. Synthesize all available data, including interview, physical examination, and preliminary laboratory data, to define each patient's central clinical problem	16	• Chart-stimulated recall • Direct observation • Clinical vignettes
	2. Develop prioritized differential diagnoses, evidence- based diagnostic and therapeutic plan for common inpatient and ambulatory conditions	32	
	3. Modify differential diagnosis and care plan based on clinical course and data as appropriate	32	
	4.Recognize disease presentations that deviate from common patterns and that require complex decision making	48	
	Invasive procedures		
	1. Appropriately perform invasive procedures and provide post-procedure	24	• Simulation • Direct observation

	management for common procedures		
	Diagnostic tests		
B. Delivery of patient-centered clinical care • Manage patients with progressive responsibility • Manage patients across the spectrum of clinical diseases seen in the practice of nephrology • Manage patients in a variety of health care settings to include the inpatient ward, critical care units, the ambulatory setting, and the	1. Make appropriate clinical decisions based on the results of common diagnostic testing, including but not limited to routine blood chemistries, hematologic studies, coagulation tests, ECG, chest radiographs,	16	• Chart-stimulated recall • Standardized tests • Clinical vignettes
	2. Make appropriate clinical decision based on the results of more advanced diagnostic Tests	24	
	Patient management		
	1. Recognize situations with a need for urgent or emergent medical care and/or surgical care.	8	• Simulation • Chart-stimulated recall • Multisource feedback • Direct observation • Chart audit
	2. Recognize when to seek additional guidance	8	

emergency setting • Manage undifferentiated acutely and severely ill patients • Manage patients in the prevention, counseling, detection, diagnosis, and treatment of gender-specific diseases • Manage patients as a consultant to other physician	3. Provide appropriate preventive care and teach patient regarding self-care	`	
	4. With supervision, manage patients with common clinical disorders seen in the practice of inpatient department.	16	
	5. With minimal supervision, manage patients with common and complex clinical disorders seen in the practice.	16	
	6. Initiate management and stabilize patients with emergent conditions	16	
	7. Manage patients with conditions that require intensive care	48	
	8. Independently manage patients with a broad spectrum of clinical disorders seen in the practice of nephrology.	48	
	9. Manage complex or rare renal conditions	48	

	10. Customize care in the context of the patient's preferences and overall Health	48	
	Consultative care		
	1. Provide specific, responsive consultation to other services	32	• Simulation • Chart-stimulated recall • Multisource feedback • Direct observation • Chart audit
	2. Provide renal consultation for patients with more complex clinical problems requiring detailed risk assessment	48	

Table-2 Developmental Milestones for nephrology Training— Medical Knowledge			
Competency	**Developmental Milestones Informing Competencies**	**Approximate Time Frame Trainee Should Achieve Stage (months)**	**General Evaluation StrategiesAssessment Methods/ Tools**
A. Core knowledge of nephrology • Demonstrate a level of expertise in the knowledge of those areas appropriate for nephrology specialist • Demonstrate sufficient knowledge to treat renal conditions commonly managed by internists, provide basic preventive care, and recognize and provide initial management of emergency	***Knowledge of core content***		
	1. Understand the relevant pathophysiology and basic science for common conditions	8	• Direct observation • Chart audit • Chart-stimulated recall
	2. Demonstrate sufficient knowledge to diagnose and treat common conditions that require hospitalization	16	• Standardized tests
	3. Demonstrate sufficient knowledge to evaluate common conditions	24	
	4. Demonstrate sufficient knowledge to diagnose and treat undifferentiated and emergent conditions	24	
	5. Demonstrate sufficient knowledge to provide preventive care	24	
	6. Demonstrate sufficient knowledge to identify and treat conditions that require	32	

problems	intensive care		
	7. Demonstrate sufficient knowledge to evaluate complex or rare conditions and multiple coexistent conditions	48	
	8. Understand the relevant pathophysiology and basic science for uncommon or complex conditions	48	
	9. Demonstrate sufficient knowledge of socio-behavioral sciences including but not limited to health care economics, medical ethics, and medical education	48	
B. Common modalities used in the practice Demonstrate sufficient knowledge to interpret basic clinical tests and images,	***Diagnostic tests***		
	1. Understand indications for and basic interpretation of common diagnostic testing, including but not limited to routine blood chemistries, hematologic studies,	16	• Chart-stimulated recall • Standardized tests • Clinical vignettes

use common pharmacotherapy, and appropriately use and perform diagnostic and therapeutic procedures.			
	2. Understand indications for and has basic skills in interpreting more advanced diagnostic tests	24	
	3. Understand prior probability and test performance characteristics	24	

Table-3 Developmental Milestones for Nephrology Training— Practice-Based Learning and Improvement			
Competency	**Developmental Milestones Informing Competencies**	**Approximate Time FrameTrainee Should Achieve Stage (months)**	**General Evaluation Strategies Assessment Methods/ Tools**
A. Learning and improving via audit of performance & Systematically analyze practice using quality improvement methods, and implement changes with the goal of practice improvement	***Improve the quality of care for a panel of patients***		
	1. Appreciate the responsibility to assess and improve care collectively for a panel of patients	16	• Several elements of quality improvement project • Standardized tests
	2. Perform or review audit of a panel of patients using standardized, disease-specific, and evidence-based criteria	32	
	3. Reflect on audit compared with local or national benchmarks and explore possible explanations for deficiencies, including doctor- related, system-related, and patient related factors	32	
	4. Identify areas in resident's own practice and local system that can be changed to improve effect of the processes and outcomes of care	48	

	5. Engage in a quality improvement intervention	48	
B. Learning and improvement via answering clinical questions from patient scenarios • Locate, appraise, and assimilate evidence from scientific studies related to their patients' health problems; • Use information technology to optimize learning	• ***Ask answerable questions for emerging information needs***		
	1. Identify learning needs (clinical questions) as they emerge in patient care activities	16	• Evidence-based medicine • evaluation instruments EBM mini-CEX • Chart-stimulated recall
	2. Classify and precisely articulate clinical questions	32	
	3. Develop a system to track, pursue, and reflect on clinical questions	32	
	Acquires the best evidence		
	1. Access medical information resources to answer clinical questions and support decision making	16	• Evidence-based medicine • evaluation instruments • EBM, mini-CEX, Chart-stimulated recall
	2. Effectively and efficiently search NLM database for original clinical research articles	16	
	3. Effectively and efficiently search evidence- based summary medical information resources	32	
	4. Appraise the quality of medical information resources and select among them based on the characteristics of the clinical question	48	
	Appraises the evidence for validity and usefulness		
	1. With assistance, appraise study design, conduct, and statistical analysis in clinical research papers	16	• Evidence-based medicine • evaluation instruments EBM mini-CEX

	2. With assistance, appraise clinical guidelines	32	• Chart-stimulated recall
	3. Independently appraise study design, conduct, and statistical analysis in clinical research papers	48	
	4. Independently, appraise clinical guideline recommendations for bias and cost-benefit considerations	48	
	Applies the evidence to decision-making for individual patients		
	1. Determine if clinical evidence can be generalized to an individual patient	16	• Evidence-based medicine • evaluation instruments EBM mini-CEX • Chart-stimulated recall
	2. Customize clinical evidence for an individual patient	32	
	3. Communicate risks and benefits of alternatives to patients	48	
	4. Integrate clinical evidence, clinical context, and patient preferences into decision making	48	
C. Learning and improving via feedback and self-assessment • Identify strengths, deficiencies, and limits in	***Improves via feedback***		
	1. Respond welcomingly and productively to feedback from all members of the health care team including faculty, peer residents, students, nurses, allied health workers, patients, and their advocates	16	• Multisource feedback • Self-evaluation forms with action plans
	2. Actively seek feedback from all	24	

one's knowledge and expertise • Set learning and improvement goals • Identify and perform appropriate learning activities • Incorporate formative evaluation feedback into daily practice • Participate in the education of patients, families, students, residents, and other health professionals	members of the health care team		
	3. Calibrate self-assessment with feedback and other external data	32	
	4. Reflect on feedback in developing plans for improvement	32	
	Improves via self-assessment		
	1. Maintain awareness of the situation in the moment, and respond to meet situational needs	32	• Multisource feedback • Reflective practice surveys
	2. Reflect (in action) when surprised, applies new insights to future clinical scenarios, and reflects (on action) back on the process	48	
	Participates in the education of all members of the health care team		
	1. Actively participate in teaching conferences	16	• OSCE with standardized learners Direct observation • Peer evaluations
	2. Integrate teaching, feedback, and evaluation with supervision of interns' and students' patient care	32	
	3. Take a leadership role in the education of all members of the health care team.	48	

Table-4 Developmental Milestones for Nephrology Training— Interpersonal and Communication Skills

Competency	Developmental Milestones Informing Competencies	Approximate Time Frame Trainee Should Achieve	General Evaluation Strategies Assessment Methods/ Tools

		Stage (months)	
A. Communicate effectively: • Patients and family Communicate effectively with patients, families, and the public, as appropriate, across a broad range of socioeconomic and cultural backgrounds	***Communicate effectively***		
	1. Provide timely and comprehensive verbal and written communication to patients/advocates	16	• Multisource feedback • Patient surveys • Direct observation • Mentored self-reflection
	2. Effectively use verbal and nonverbal skills to create rapport with patients/families	16	
	3. Use communication skills to build a therapeutic relationship		
	4. Engage patients /advocates in shared decision making for uncomplicated diagnostic and therapeutic scenarios	32	
	5. Use patient-centered education strategies	32	
	6. Engage patients /advocates in shared decision making for difficult, ambiguous, or controversial scenarios	48	
	7. Appropriately counsel patients about the risks and benefits of tests and procedures, highlighting cost awareness and resource allocation	48	
	8. Role model effective communication skills in challenging situations	48	
	Intercultural sensitivity		

	1. Effectively use an interpreter to engage patients in the clinical setting, including patient education	8	• Multisource feedback • Direct observation • Mentored self-reflection
	2. Demonstrate sensitivity to differences in patients including but not limited to race, culture, gender, sexual orientation, socioeconomic status, literacy, and religious Beliefs	16	
	3. Actively seek to understand patient differences and views and reflects this in respectful communication and shared decision-making with the patient and the healthcare Team	40	
B. Physicians and other health care professionals • Communicate effectively with physicians, other health professionals, and health-related agencies Work effectively as a member or leader of a health care team or other professional	***Transitions of care***		
	1. Effectively communicate with other caregivers in order to maintain appropriate continuity during transitions of care	16	• Multisource feedback • Direct observation • Sign-out form ratings • Patient surveys
	2. Role model and teach effective communication with next caregivers during transitions of care	32	
	Interprofessional team		
group • Act in a consultative	1. Deliver appropriate, succinct, hypothesis-driven oral presentations	8	• Multisource feedback

role to other physicians and health professionals	2. Effectively communicate plan of care to all members of the health care team	16	
	3. Engage in collaborative communication with all members of the health care Team	40	
	Consultation		
	1. Request consultative services in an effective manner	8	• Multisource feedback • Chart audit
	2. Clearly communicate the role of consultant to the patient, in support of the primary care relationship	16	
	3. Communicate consultative recommendations to the referring team in an effective manner	48	
C. Medical records • Maintain comprehensive, timely, and legible medical records	***Health records***		
	1. Provide legible, accurate, complete, and timely written communication that is congruent with medical standards	8	• Chart audit
	2. Ensure succinct, relevant,and patient-specific written communication	32	

Table-5 Developmental Milestones for Nephrology Training— Professionalism			
Competency	**Developmental Milestones Informing Competencies**	**Approximate Time Frame Trainee Should Achieve Stage (months)**	**General Evaluation Strategies Assessment Methods/ Tools**
A. Physicianship Demonstrate compassion, integrity, and respect for others responsiveness to patient needs that supersedes self-interest Accountability to patients, society, and the profession	***Adhere to basic ethical principles***		
	1. Document and report clinical information truthfully	1.5	• Multisource feedback
	2. Follow formal policies	1.5	
	3. Accept personal errors and honestly acknowledge them	8	
	4. Uphold ethical expectations of research and scholarly activity	48	
	Demonstrate compassion and respect to patients		
	1. Demonstrate empathy and compassion to all patients	4	• Multisource feedback
	2. Demonstrate a commitment to relieve pain and suffering	4	
	3. Provide support (physical, psychological, social, and spiritual) for dying patients and their families	32	
	4. Provide leadership for a team that respects patient dignity and autonomy	32	
-	***Provide timely, constructive feedback***		

	to colleagues		
	1. Communicate constructive feedback to other members of the health care team	16	• Multisource feedback • Mentored self- reflection • Direct observation
	2. Recognize, respond to, and report impairment in colleagues or substandard care via peer review process	24	
	Maintain accessibility		
	1. Respond promptly and appropriately to clinical responsibilities including but not limited to calls and pages	1.5	• Multisource feedback
	2. Carry out timely interactions with colleagues, patients, and their designated caregivers	8	
	Recognize conflicts of interest		
	1. Recognize and manage obvious conflicts of interest, such as caring for family members and professional associates as patients	8	• Multisource feedback • Mentored self- reflection • Clinical vignettes
	2. Maintain ethical relationships with industry	40	
	3. Recognize and manage subtler conflicts of interest	40	
	Demonstrate personal accountability		

	1. Dress and behave appropriately	1.5	☐ Multisource feedback ☐ Direct observation
	2. Maintain appropriate professional relationships with patients, families, and staff	1.5	
	3. Ensure prompt completion of clinical, administrative, and curricular tasks	8	
	4. Recognize and address personal, psychological, and physical limitations that may affect professional performance	16	
	5. Recognize the scope of his/her abilities and ask for supervision and assistance appropriately	16	
	6. Serve as a professional role model for more junior colleagues (e.g., medical students, interns)	40	
	7. Recognize the need to assist colleagues in the provision of duties	40	
	Practice individual patient advocacy		
	1. Recognize when it is necessary to advocate for individual patient needs	8	☐ Multisource feedback ☐ Direct observation
	2. Effectively advocate for individual patient needs	40	
	Comply with public health policies		

	1. Recognize and take responsibility for situations where public health supersedes individual health (e.g., reportable infectious diseases)	32	• Multisource feedback
B. Patient-centeredness • Respect for patient privacy and autonomy Sensitivity and responsiveness to a diversepatient population, including but not limited to diversity in gender, age, culture, race, religion, disabilities, and sexual orientation	***Respect the dignity, culture, beliefs, values, and opinions of the patient***		
	1. Treat patients with dignity, civility and respect, regardlessof race, culture, gender, ethnicity, age, or socioeconomic status	1.5	☐ Multisource feedback ☐ Direct observation
	2. Recognize and manage conflict when patient values	40	
	differ from their own		
	Confidentiality		
	1. Maintain patient confidentiality	1.5	☐ Multisource feedback ☐ Chart audits
	2. Educate and hold others accountable for patient confidentiality	24	
	Recognize and address disparities in health care		
	1. Recognize that disparitiesexist in health care among populations and that they may impact care of the patient	16	☐ Multisource feedback ☐ Direct observation ☐ Mentored self- reflection

	2. Embrace physicians' role in assisting the public and policy makersin understanding and addressing causes of disparity in disease and suffering	40	
	3. Advocates for appropriate allocation of limited healthcare resources.	40	

Table-6 Developmental Milestones for Nephrology Training— Systems-Based Practice

Competency	Developmental Milestones Informing Competencies	Approximate Time FrameTrainee Should Achieve Stage (months)	General Evaluation StrategiesAssessment Methods/ Tools
A. Work effectively with other care providers andsettings • Work effectively in various health care delivery settings and systems relevantto their clinical practice • Coordinate patientcare within the health care system relevant to their	***Works effectively within multiple health delivery systems***		
	1. Understand unique roles and services provided by local health care delivery systems.	16	• Multisource feedback • Chart-stimulated recall • Direct observation
	2. Manage and coordinate care and care transitions across multiple delivery systems, including ambulatory, subacute, acute, rehabilitation, and skilled nursing.	32	
	3. Negotiate patient-centered care among multiple care providers.	48	
	Works effectively within an interprofessional team		

clinical specialty - Work in interprofessional teams to enhance patient safety and improve patient carequality - Work in teams andeffectively transmitnecessary clinical information to ensure safe and proper care of patients, including the transition of care between settings	1. Appreciate roles of a variety of health care providers, including but not limited to consultants, therapists, nurses, home care workers, pharmacists, and social workers.	8	• Multisource feedback • Chart-stimulated recall • Direct observation
	2. Work effectively as a member within the interprofessional team to ensure safe patient care.	8	
	3. Consider alternative solutions provided by other teammates	16	
	4. Demonstrate how to manage the team by using the skills and coordinating the activities of interprofessional team members.	48	
B. Improving health caredelivery • Advocate for quality patient careand optimal patient care systems • Participate in identifying systemerrors and implementing potential systems solutions • Recognize andfunction effectively in high-	***Recognizes system error and advocates for system improvement***		
	1. Recognize health system forcesthat increase the risk for error including barriers to optimal patient care	16	- Multisource feedback - Quality improvement project
	2. Identify, reflect on, and learnfrom critical incidents such as near misses and preventable medical errors	16	
	3. Dialogue with care team members to identify risk for and prevention of medical error	32	
	4. Understand mechanisms for analysis and correction of systems errors	32	

quality care system	5. Demonstrate ability to understand and engage in asystem-level quality improvement intervention.	48	
	6. Partner with other health care professionals to identify, propose improvement opportunities within the system.	48	
C. Cost-effective care for patients and populations & Incorporate considerations of cost awareness and risk-benefitanalysis in patient and/or population- based care asappropriate	***Identifies forces that impact the cost of health care and advocates for cost-effective care***		
	1. Reflect awareness of common socioeconomic barriers that impact patient care.	16	Standardized examinations Direct observation Chart-stimulated recall
	2. Understand how cost-benefit analysis is applied to patient care(i.e., via principles of screening tests and the development of clinical guidelines)	16	
	3. Identify the role of various health care stakeholders including providers, suppliers, financiers, purchasers, and consumers and their varied impact on the cost of and access to health care.	32	
	4. Understand coding and reimbursement principles.	32	
	Practices cost-effective care		
	1. Identify costs for common diagnostic or therapeutic tests.	8	• Chart-stimulated recall
	2. Minimize unnecessary careincluding tests, procedures, therapies, and ambulatory or	8	
	3. Demonstrate the incorporationof cost-	24	

	awareness principles into standard clinical judgments and		
	4. Demonstrate the incorporationof cost-awareness principles into complex clinical scenarios	48	

SECTION 6: ASSESSMENT

INTRODUCTION:

The assessment of MD Nephrology residents at Rawalpindi Medical University will comprehensively evaluate their knowledge, skills, and attitudes through a combination of formative, summative, and workplace-based assessments (WPBA). These assessments are structured in accordance with Miller's Pyramid of Clinical Competence, ensuring a progressive evaluation of residents' abilities from foundational knowledge to the application of clinical skills in real-world settings. A variety of methods will be employed to measure competence across all domains, aligning with the curriculum's objectives to produce clinically proficient, research-oriented, and professionally ethical physicians.

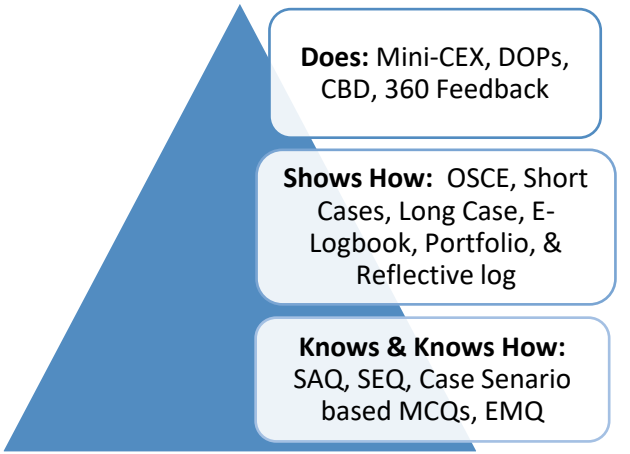


Figure: List of various assessment tools which are employed for both summative and formative evaluations throughout the five year MD Nephrology training program

GENERAL FRAMEWORK OF ASSESSMENT:

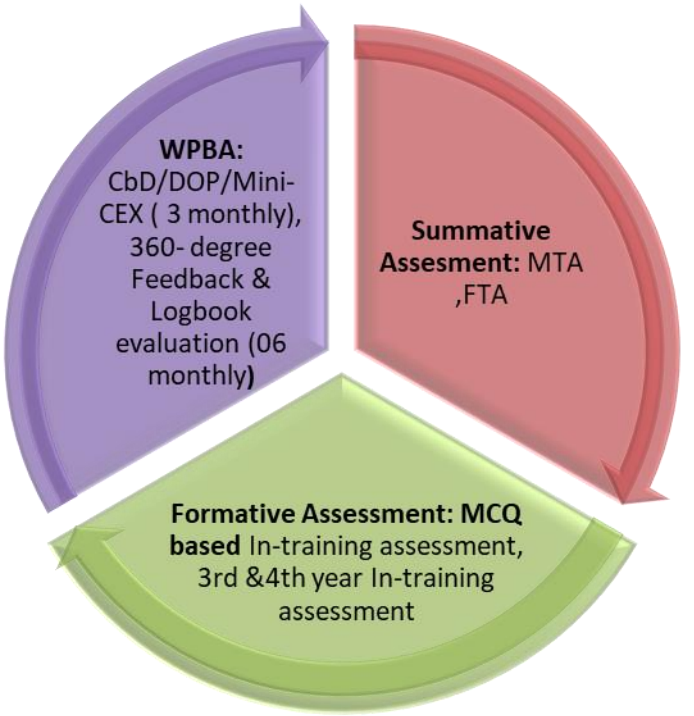


Figure: Assessment model of five-year MD Nephrology training program.

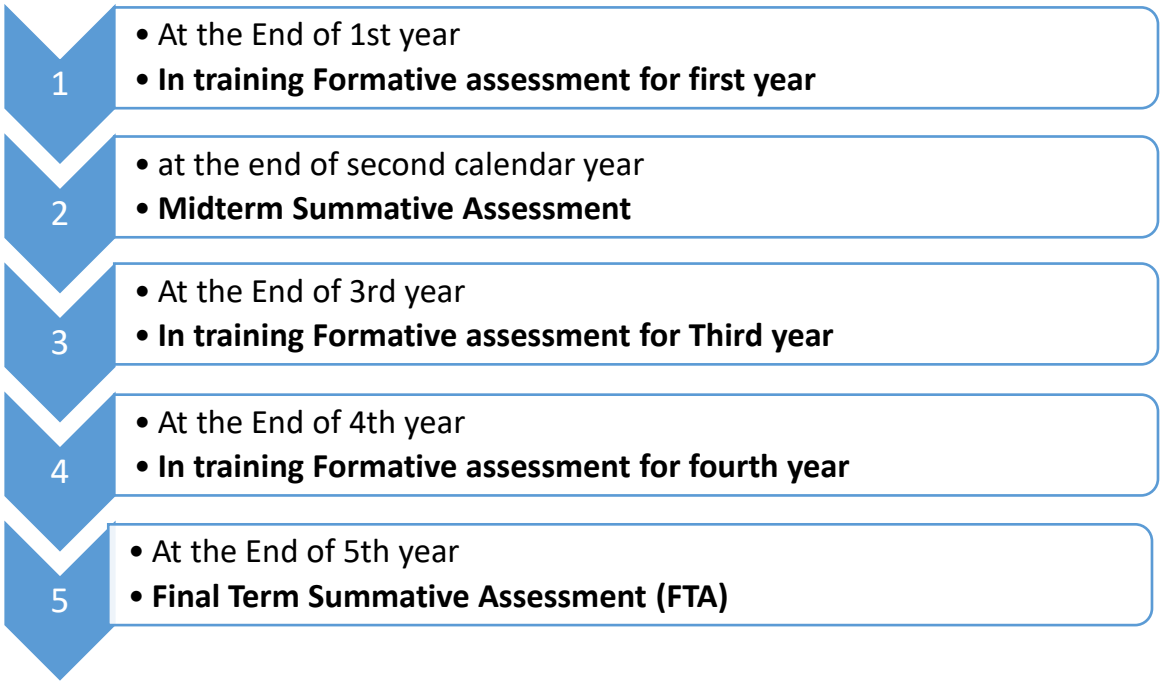
The assessment model at Rawalpindi Medical University integrates four core components to comprehensively evaluate resident progress.

1: Formative Assessment: Conducted throughout the residency to monitor progress, formative assessment provides residents with actionable feedback to help refine their clinical skills and knowledge.

2: Summative Assessment: Implemented at key milestones, summative assessment evaluates residents' cumulative knowledge, skills, and readiness to progress to the next training phase.

3: Workplace based Assessment (WPBA) refers to a group of assessment modalities which evaluates trainees' performance during the clinical settings. Hallmark of WPBA is the element of observation of the trainee's performance in real workplace environment along with relevant feedback, thus fostering reflective practice. WPBA consists of observation of clinical performance (mini- CEX, DOPS), discussion of clinical cases (CbD), and feedback from peers, coworkers, and patients (360- degree feedback).

4: Continuous Assessment: Continuous assessment is integrated throughout training to ensure consistent monitoring of residents' progress in core clinical competencies (Medical Knowledge, Patient Care, Professionalism, Interpersonal Communication Skills, System based Practice, & Practice based Learning).



Competencies to be assessed for CIA	Phases of CIA	Timeline for end of various phases of CIA	Eligibility Criteria of CIA	Tools for Assessment of CIA
1. Medical knowledge 2. Patient care **(40% both)** 3. Interpersonal & communication skills 4. Professionalism **(40% both)** 5. Practice based learning 6. System based learning **(10% both)** 7. Research **(10%)**	**Phase -1** ➢ CIA Year 1 ➢ CIA Year 2	till end of Year 2	Equal to or more than 75% (a cumulative score of all formative & Workplace based assessments)	**1: 360- Degree Feedback** (Biannually) **2: Logbook Appraisal** (Biannually) **3: WBPA** (CbD, Mini-CEX, DOPs: 3 monthly) **4: LMS based MCQs test** (Fortnightly)
	Phase -2 ➢ CIA Year 3 ➢ CIA Year 4 ➢ CIA Year 5	till end of Year 5		

Figure: Assessment schedule of 5 year MD Nephrology training

Continuous Internal Assessment: LMS based MCQ test (Fortnightly), WBPA (3monthly), 360-degree Feedback, Logbook, & Portfolio Appraisal (6 monthly)

Number of Assessments during MD Nephrology

SR NO.	Name of Assessments	Type of Assessment	Total Assessment time			Workplace based Assessment	Assessment Time
			Assessment Time	Formative Assessment Time	Summative Assessment Time		
1	**1st Year (In training Assessment)**	Formative	1 hours and 50 minutes	6 hours and 10 minutes	11 hours and 25 minutes	*In house assessment (5 days every 2 months per year)	5 x 6 = 30 hours per year
2	**2nd Year (Midterm Assessment)**	Summative	4 hours and 15 minutes			LMS based assessment (2 hours after every 2 weeks)	2 x 12 = 24 hours per year
3	**3rd Year (In training Assessment)**	Formative	2 hours and 10 minutes			Daily bedside assessment (1 hour per day)	1 x 223= 233 hours per year
5	**4th Year (In training Assessment)**	Formative	2 hours and 10 minutes			Daily bedside assessment (1 hour per day)	1 x 223= 233 hours per year
4	**FTA (Final Term Assessment)**	Summative	7 hours and 10 mins			Total assessment time in four years	287 x 5 = 1435

Total Assessment time of five-year MD Nephrology Residency Program

Training Year	Formative Assessment time	Summative Assessment time	Workplace based Assessment
1	1 hour 50 minutes		287
2		4 hours 15 minutes	287
3	2 hours 10 minutes		287
4	2 hour 10 minutes		287
5		7 hours 10 minutes	287
Total	6 hours 10 minutes	11 hours 25 minutes	1435 hours

Training hours vs Total Assessment hours:

Ratio of Training hours to assessment hours	Grand total Training hours 21, 120 hours	Grand Total Assessment hours 1452 hours & 35 minutes
	14.5: 1	

Resident Assessment Methods

Tools of Assessment

I. Formative Assessment/ Workplace-Based Assessments

1. Multi-Source Feedback
2. Direct Observation of Procedural Skills (DOPS)
3. Mini -cex

More information about these methods including guidance for trainees and assessors is available in the Portfolio. Workplace-based assessments will be entered in the trainee's e-portfolio. The workplace-based assessment methods include feedback opportunities as an integral part of the assessment process.

Schedule of Formative Assessment/ Workplace-Based Assessments

The formative assessment will be conducted biannually (internal and external evaluation), in the form of workplace based assessment through the following tools:

1. DOPS
2. Mini cex
3. multi-source feedback
4. Attendance record
5. Educational supervisor's report

Formative Assessment

In training assessment for 1st Year

1. All candidates admitted in MD nephrology course shall appear in an examination at the end of first calendar year.
2. The examination will be composed of MCQs and TOACS/OSCE.
3. The pass percentage will be 60%.

Midterm Assessment (IMM)

1. All candidates admitted in MD nephrology course shall appear in Midterm examination at the end of second calendar year.
2. The examination shall be held on biannual basis.
3. The candidate who fails to pass the examination in 3 consecutive attempts availed or un-availed, shall be dropped from the course.
4. The examination shall have two components:

- Paper-I MCQs 75 Marks
- Paper-II MCQs 75 Marks
- TOACS/OSCE 150 Marks (15 Interactive stations)

5. Subjects to be examined shall be Basic Medicine, Behavioral Sciences, and Biostatistics & Research Methodology.
6. Only those candidates, who pass in theory papers, will be eligible to appear in the TOACS.
7. The candidates, who have passed written examination but failed in TOACS, will re-appear only in TOACS.
8. The maximum number of attempts to re-appear in TOACS alone shall be three, after which the candidate shall have to appear in both written and TOACS as a whole.
9. To be eligible to appear in midterm assessment the candidate must submit;
    a. Duly filled, prescribed Admission Form to the Controller of Examinations duly recommended by the Principal/Head of the Institution in which he/she is enrolled.
    b. A certificate by the Principal/Head of the Institution, that the candidate has attended at least 75% of the lectures, seminars, practical/clinical demonstrations.
    c. Examination fee as prescribed by the University.
10. To be declared successful in midterm examination the candidate must secure 60% marks in each paper

In training assessment for 3rd Year

1. All candidates admitted in MD nephrology course shall appear in an examination at the end of third calendar year.
2. The examination will be composed of MCQs and clinical TOACS/OSCE.
3. The pass percentage will be 60%.

In training assessment for 4th Year

1. All candidates admitted in MD nephrology course shall appear in an examination at the end of third calendar year.
2. The examination will be composed of MCQs and clinical TOACS/OSCE.
3. The pass percentage will be 60%.

Final Term Assessment (FTA)

1. All candidates admitted in MD nephrology course shall appear in FTA at the end of structured training program.
2. The examination shall be held on biannual basis.
3. To be eligible to appear in FTA the candidate must submit;
    a. duly filled, prescribed Admission Form to the Controller of Examinations duly recommended by the Principal/Head of the Institution in which he/she is enrolled;
    b. a certificate by the Principal/Head of the Institution, that the candidate has attended at least 75% of the lectures, seminars, practical/clinical demonstrations;
    c. Original Log Book complete in all respect and duly signed by the Supervisor (for Oral & practical/clinical Examination);
    d. certificate of having passed the midterm examination;
    e. certificates of all the mandatory rotations;
    f. Examination fee as prescribed by the University.
4. The FTA shall have the following components:

- Written 200 marks
- Clinical:

TOACS/OSCE	150 marks
Long Case	100 marks
Short cases(04)	200 marks(50 marks each)

5. The written paper shall comprise of;

- Paper-I MCQs (single best) 100 Marks
- Paper-II MCQs (single best) 100 Marks

6. Clinical examination shall have 450 marks for:
    a. TOACS/OSCE 150 marks
        i. 15 stations of clinical nephrology
    b. 01 Long Case 100 marks
    c. 04 Short Cases 200 marks (50 marks each)
7. To be declared successful in FTA examination the candidate must secure 60% marks in each component.
8. Only those candidates, who pass in theory papers, will be eligible to appear in the Clinical Examination.
9. The candidates, who have passed written examination but failed in Clinical Examination, will re-appear only in three consecutive clinical examination after which the candidate shall have to appear in both written and clinical examinations as a whole.
10. The candidate with 80% or above marks shall be deemed to have passed with distinction.
11. Log Book/Assignments:
12. Throughout the length of the course, the work record of the candidate shall be entered on the Log Book.
13. The Supervisor shall certify every year that the Log Book is being maintained and signed regularly.
14. The performance of the candidate shall be evaluated on annual basis, e.g., 25 marks for each year in four years MD nephrology course. The internal assessment shall reflect the performance of the candidate on following parameters:
    a. Year wise record of the competence of skills.
    b. Year wise record of the assignments.
    c. Year wise record of the evaluation regarding attitude & behavior.
    d. Year wise record of journal club / lectures / presentations / clinico-pathologic conferences attended & / or made by the candidate.

CONTINUOUS INTERNAL ASSESSMENT:

The continuous internal Assessment is taken in the form of

1. Multi-Source Feedback (360 Degree Performa) : To be filled by Supervisor & other Senior faculty members 6 monthly.

2. Direct Observation of Procedural Skills (DOPS) : To be Observed by a Senior Faculty member 6 monthly.

3. Workplace Based Assessment : To be evaluated by both External & Internal Examiner 6 monthly.

TABLE OF SPECIFICATION FOR FTA MD NEPHROLOGY:

TOPICS	Impact (1-3)	Frequency (1-3)	Weight	Number of Items	Diagnosis	Investigation	Treatment	Basic Science
Renal anatomy and Physiology	2	2	0.078	7.8	1	2	1	3
Investigations of Renal Diseases	3	2	0.118	11.8	4	3	3	1
Fluid and Electrolyte Disorders	2	2	0.078	7.8	1	3	3	1
Glomerular Diseases	3	2	0.118	11.8	2	3	6	1
Diabetic Kidney Disease	3	3	0.176	17.6	3	5	8	2
Hypertension	2	3	0.118	11.8	2	5	3	2
Renovascular Disease	2	1	0.039	3.9	1	2	1	1
Pregnancy and Renal Disease	3	2	0.118	11.8	3	4	4	1
Hereditary and Congenital Diseases of the Kidney	2	2	0.078	7.8	1	3	3	1
Infectious Diseases and the Kidney	2	2	0.078	7.8	1	3	4	0
Total			1	100				

SECTION 7: EPA

Entrust able Professional Activities (EPAs)

Entrust able Professional Activities (EPAs) for a five year nephrology residency program are essential in defining the specific tasks residents should be able to perform independently by the end of their training. These EPAs are aligned with clinical core competencies and are designed to ensure that residents progressively develop their skills and knowledge throughout their residency.

Levels of EPA

1) Be present and observe or Assist

2) Direct pro-active Supervision: The supervisor is physically present with the resident and the patient.

3) Indirect re-active Supervision is broken down into two levels: Direct Supervision Immediately Available: The supervisor is physically within the hospital or other site of patient care and is immediately available to provide direct supervision. Direct Supervision not readily Available: The supervisor is not physically present within the hospital or other site of patient care, but is immediately available by means of telephonic and/or electronic modalities, and is available to provide direct supervision.

4) Can supervise other junior residents

Below is a structured outline of EPAs in each domain based on ACGME core competencies

1. **Conducting a Comprehensive Patient Evaluation and History Taking for Common Renal Presentations**

Key Features:

- Conduct comprehensive history taking.
- Identify and document chief complaints, HOPI, pertinent negatives and positives, medical history, and family history relevant to nephrology.

Assessment plan:

Case discussion after clinical encounter (At least 5 different presentations to 2 different assessors)

Milestones:

- Optimize the physical environment for patient comfort, dignity, and privacy
- Establish rapport and explain the purpose of the visit
- Gather a history relevant to the patient's presentation
- Conduct the interview in a patient-centered manner
- Apply an organized approach to history-gathering
- Identify other sources of information (e.g., family, medical record) that may assist in a patient's care

2. Performing Essential physical Examinations.

Key Features:

- This EPA focuses on performing a general examination for adult patients.

Assessment plan:

Direct observation by supervisor, mentor or clinical fellow (Collect 3 observations of achievement. - At least 2 different services - At least 3 different assessors)

Milestones:

- Maintain rapport and explain the steps and purpose of the examination
- Optimize the physical environment for patient comfort, dignity, and privacy
- Position the patient and/or equipment to optimize comfort and ergonomics
- Apply knowledge of the normal anatomy of renal system
- Demonstrate appropriate technique in the use of instruments for clinical assessment

- Perform a basic physical examination
- Apply an organized approach to the examination
- Identify and differentiate normal and abnormal findings
- Synthesize and organize information for clear and succinct presentation to a supervisor

3. **Recognizing Life- and organ-Threatening Findings in Basic Diagnostic Investigations**

Key Features:

- This EPA includes the following diagnostic tests:
- Interpret results from common baseline investigations and basic imaging.

Assessment plan:

Review of results of diagnostic testing with nephrologist (Collect 8 observations of achievement - At least 2 of each diagnostic test - At least 1 normal result for each diagnostic test - At least 1 faculty assessor)

Milestones:

- Apply knowledge of anatomy, physiology, and pathophysiology
- Identify normal structures and anatomic landmarks
- Recognize findings that signify a potential life-threatening condition
- Interpret findings in the context of the patient's presentation

4. **Developing an initial management plan for patients with an acute renal condition or presentation**

Key Features:

- This EPA focuses on synthesizing findings from a clinical assessment to develop a differential diagnosis, determine the acute renal failure and need of dialysis and the urgency of investigation and/or treatment, and initiate management to stabilize or life-threatening emergencies.
- Know when to escalate care to a senior resident or attending physician.

Assessment plan:

Direct observation and/or case review by supervisor, mentor or clinical fellow (Collect 3 observations of achievement. - At least 3 different conditions/presentations)

Milestones:

- Synthesize and interpret information from the clinical assessment
- Propose a differential diagnosis
- Determine the severity of the condition
- Respond appropriately to renal emergencies.
- Develop and implement a plan for initial management

5. **Performing basic nephrological Procedures**

Key Features:

This EPA includes determining which procedure is necessary and appropriate to the situation and performing the technical skills of the procedure as well as providing immediate post-procedural care.

Procedures include:

- Double lumen catheterization
- Renal biopsy
- Permanent tunneled catheterization
- Peritoneal dialysis catheter insertion
- Attachment of patients of the dialysis machines

Assessment plan:

Direct observation by supervisor or mentor or clinical fellow (Collect 4 observations of achievement).

Milestones:

- Knowledge of procedure: Understand steps, potential risks, and the means to overcome them
- Pre-operative plan: Assess clinical information to determine/confirm diagnosis and appropriateness of procedure
- Case preparation: Position patient correctly, understand approach and required instruments, be prepared to deal with probable complications
- Efficiency and flow: Demonstrate planned course of procedure, economy of movement and flow
- Technical performance: Perform steps of procedure efficiently, avoiding pitfalls and respecting tissues
- Post-procedure plan: Establish an appropriate and complete post-procedure plan
- Professional and effective communication/utilization of assistants
- Provide information about the procedure and/or operative findings to the patient and/or family in a clear, accurate and timely manner

6. **Effectively Communicating Clinical Findings and Management Plans to Patients**

Key Features:

- This EPA focuses on the application of communication skills and medical expertise to convey information about diagnosis and engage the patient and family in shared decision making regarding the management plan.
- Communicate effectively with patients and families, explaining diagnoses and treatment plans clearly.
- Demonstrate professionalism and empathy in patient interactions.

Assessment plan:

Direct observation by supervisor, which may include feedback collected from patient/family (Collect 3 observations of achievement).

Milestones:

- Establish rapport with the patient and family
- Tailor the approach to communication to the needs of the patient and/or family
- Engage the patient in the discussion as appropriate for their age and/or developmental stage Provide accurate information about the condition and/or the management plan
- Use plain language and avoid medical jargon
- Solicit and answer questions from the patient and/or family

- Verify understanding of the information conveyed
- Use communication skills and strategies that help the patient and/or family make an informed decision
- Communicate in a manner that is respectful, non-judgmental and culturally aware

PRACTICAL PROCEDURES

Technical Skills

It is essential that every trainee becomes competent in the techniques of:

a) Biopsy of both native and transplanted kidneys.
b) Temporary vascular access.Diagnostic

Techniques

Trainees should understand the indications for and interpretations of theresults from the following procedures:

a) Urinalysis
b) Serum biochemistry
c) Percutaneous biopsy of native and transplanted kidneys
d) Ultrasound of the urinary tract
e) Intravenous urography
f) Renal angiography
g) Radionuclide imaging and measurement of renal function
h) CT and MRI scanning

Additional training and experience will be required for trainees wishing to obtain a license from the Administration of Radioactive Substances Advisory Committee (ARSAC) to allow them to personally perform investigations using radioactive substances.

Therapeutic procedures

Trainees should be aware of the indications for and the contraindications andcomplications of the following techniques:

a) Peritoneal dialysis, acute and chronic
b) Hemodialysis, acute and chronic
c) Continuous hemofiltration and allied techniques
d) Plasmapheresis
e) Percutaneous nephrostomy

Medical Knowledge

Theoretical knowledge to be acquired during the training period includes:

a. Renal anatomy, physiology and pathology including examination of renal biopsies by light and electron microscopy and immunofluorescent or immunoperoxidase techniques.
b. Disorders of fluids and electrolytes and acid-base balance.
c. Normal mineral metabolism and its alteration in renal disease, metabolic bone disease and nephrolithiasis.
d. Pathogenesis, natural history and management of hereditary, congenital and acquired diseases of the kidney and urinary tract and renal diseases associated with pregnancy and systemic disorders such as diabetes and vasculitides.
e. The pathogenesis and management of urinary tract infections.
f. The pathogenesis and management of acute renal failure.
g. Clinical pharmacology, including drug metabolism and pharmacokinetics and the effects of drugs on renal structure and function.
h. Nutritional aspects of renal disorders.
i. Immunology, including:
    i. Basic principles
    ii. Immunological mechanisms of renal disease
    iii. Immunological tests relevant to renal disease
j. Normal and deranged blood pressure regulation.
k. Transplantation including:
    1. Biology of transplant rejection.
    2. Indications for and contraindications to renal transplantation.
    3. Principles of transplant recipient evaluation and selection.
    4. Principles of evaluation of transplant donors, both live and cadaveric,including histocompatibility

testing.

5. Principles of organ harvesting, preservation and storage.
6. Short and long-term complications of transplantation.
7. Mechanisms of action and usage of immunosuppressive drugs.
8. Histopathology of transplant rejection.
9. Psycho-social aspects of organ donation and transplantation.
10.

b) Dialysis and Extra-Corporeal Therapy including:

1. The kinetic principles of both hemodialysis and peritoneal dialysis.
2. The short-term and long-term complications of each mode of dialysis andtheir management.

An understanding of the principles of dialysis access, including indications, techniques and complications. This includes both acute and chronic vascular access and peritoneal access.

3. Prescription of and assessment of adequacy of dialysis, including an understanding of the use and limitations of urea kinetics and protein catabolicrate.
4. The influence of the various dialysis modes on drug metabolism.
5. The nutritional management of haemo and peritoneal dialysispatients.
6. An understanding of the artificial membranes used in hemodialysis andthe issue of biocompatibility.
7. The psycho-social and ethical issues of dialysis

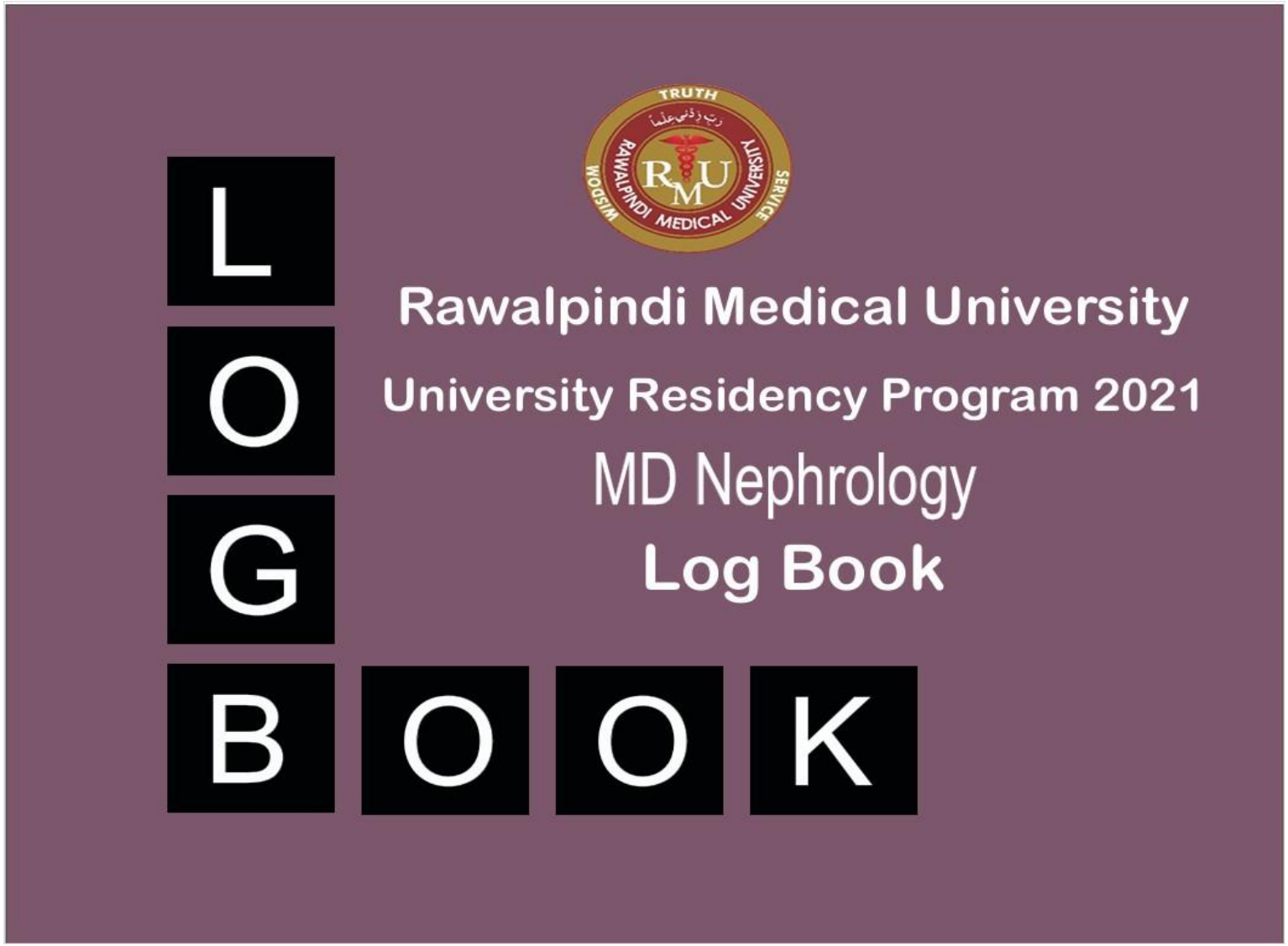
ENTRUSTABLE PROFESSIONAL ACTIVITIES (EPAs) OF NEPHROLOGY

Procedural competencies	**THIRD YEAR**		**FOURTH YEAR**		**FINAL YEAR**	
Competencies	EPA	No. of cases	EPA	No. of cases	EPA	No. of cases
History taking	2	20	3-4	20	4	20
Ability to perform the clinical examination and interpret	2	20	3-4	20	4	20
Ability of identify need of initiation renal replacement therapy	2	10	3	10	4	10
Leadership role and ability to manage the critical care nephrology patients	2	10	3	10	4	10

Clinical and pathological interpretation of renal transplant rejection timely	2	10	3	10	4	10
Temporary dual lumen catheter insertion	1	10	3	20	4	50
	2	40	4	30		
Acute peritoneal dialysis catheter insertion	1	5	3	5	4	10
	2	5	4	5		
Haemodialysis setup /initiate dialysis treatment	1	5	3	5	4	10
	2	5	4	5		
Assess patient and equipment during dialysis treatment	1	10	3	10	4	20
	2	10	4	10		
Management of patients with complications during and post dialysis	1	5	3	5	4	10
	2	5	4	5		

Native / transplanted kidney biopsy	1	5	3	5	4	10
	2	5	4	5		
Renal ultrasound	1	10	3	10	4	20
	2	10	4	10		
Permanent tunnelled catheter insertion	1	5	3	10	4	10
	2	5	4			
Over all management and collaboration with other speciality department in patient with chronic systemic disease	2	10	3	10	4	10

SECTION 8: LOG BOOKS



ROTATIONAL LOGBOOK

Rawalpindi Medical University

University Residency Program 2021

MD Nephrology

Rotation Log Book

RESEARCH ELECTIVE

Rawalpindi Medical University

University Residency Program 2021

MD Nephrology

Research Elective Logbook

SECTION 9: PORTFOLIO

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RMU
PORTFOLIO
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Rawalpindi Medical University
MD Nephrology
Portfolio- 2nd Year

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RMU
University Residency Program 2021
Rawalpindi Medical University
MD Nephrology
Portfolio-3rd Year
PORTFOLIO

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RMU
University Residency Program 2021
Rawalpindi Medical University
MD Nephrology
Portfolio-4th Year
PORTFOLIO

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PORTFOLIO
University Residency Program 2021
Rawalpindi Medical University
MD Nephrology
Portfolio-5th Year

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Supervisor's Annual Review Report.

This report will consist of the following components: -

I. Verification and validation of Logbook of operations & procedures according to the expected number of operations and procedures performed (as per levels of competence) determined by relevant board of studies.
II. A 90% attendance in academic activities is expected. The academic activities will include Lectures, Workshops other than mandatory workshops, journal Clubs Morbidity & Mortality Review Meetings and Other presentations.
III. Assessment report of presentations and lectures
IV. Compliance Report to meet timeline for completion of research project.
V. Compliance report on personal Development Plan.
VI. Multisource Feedback Report, on relationships with colleagues, patients.
VII. Supervisor will produce an annual report based on assessments as per proforma in appendix-G and submit it to the Examination Department.
VIII. 75% score will be required to pass the Continuous Internal Assessment in the annual review.

Appendix "C"

FACULTY EVALUATION OF RESIDENT

Abbreviations for six Core Competencies

- PC = Patient Care
- MK = Medical Knowledge
- ICS = Interpersonal / Communication Skills
- PBL = Practice-Based Learning and Improvement
- P = Professionalism
- SBP = Systems-Based Practice

Interpersonal and Communication Skills

Note content is appropriate and complete (ICS) (Question 1 of 24)

No Interaction	Unsatisfactory	Failing	Less than Marginal	Below Average	Average	Above Average	Advanced	Outstanding	Superior
0	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐	8 ☐	9 ☐

Interpersonal skills with patients, families and staff is appropriate and skilled (ICS) (Question 2 of 24)

No Interaction	Unsatisfactory	Failing	Less than Marginal	Below Average	Average	Above Average	Advanced	Outstanding	Superior
0	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐	8 ☐	9 ☐

Presents cases in clear, concise manner (ICS) (Question 3 of 24)

No Interaction	Unsatisfactory	Failing	Less than Marginal	Below Average	Average	Above Average	Advanced	Outstanding	Superior
0	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐	8 ☐	9 ☐

Medical Knowledge

Demonstrates understanding of clinical problems and their pathophysiology (MK) (Question 4 of 24)

No Interaction	Unsatisfactory	Failing	Less than Marginal	Below Average	Average	Above Average	Advanced	Outstanding	Superior
0	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐	8 ☐	9 ☐

Develops appropriate differential diagnosis (MK) (Question 5 of 24)

Evaluates scientific basis of diagnostic tests used (MK) (Question 6 of 24)

Reads service specific literature (MK) (Question 7 of 24)

Patient Care

Obtains accurate clinical history (PC) (Question 8 of 24)

Demonstrates appropriate physical exam (PC) (Question 9 of 24)

Identifies and reviews relevant existing patient data (PC) (Question 10 of 24)

Prioritizes problems and treatment plans appropriately (PC) (Question 11 of 24)

Effectively uses consultation services (PC) (Question 12 of 24)

Practice-based **learning and improvement**.

Identifies areas for improvement and applies it to practice PBL (Question 13 of 24)

No Interaction	Unsatisfactory	Failing	Less than Marginal	Below Average	Average	Above Average	Advanced	Outstanding	Superior
0 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5	6 ☐	7 ☐	8 ☐	9

No Interaction	Unsatisfactory	Failing	Less than Marginal	Below Average	Average	Above Average	Advanced	Outstanding	Superior
0 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5	6 ☐	7 ☐	8 ☐	9

No Interaction	Unsatisfactory	Failing	Less than Marginal	Below Average	Average	Above Average	Advanced	Outstanding	Superior
0 ☐	1	2 ☐	3	4 ☐	5 ☐	6 ☐	7 ☐	8 ☐	9

No Interaction	Unsatisfactory	Failing	Less than Marginal	Below Average	Average	Above Average	Advanced	Outstanding	Superior
0 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5	6 ☐	7 ☐	8 ☐	9

Applies lessons learned from medical errors into practice PBL (question 14 of 24)

No Interaction	Unsatisfactory	Failing	Less than Marginal	Below Average	Average	Above Average	Advanced	Outstanding	Superior
0 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5	6 ☐	7 ☐	8 ☐	9

Shows Interest in learning from complex care issues PBL (Question 15 of 24)

No Interaction	Unsatisfactory	Failing	Less than Marginal	Below Average	Average	Above Average	Advanced	Outstanding	Superior
0 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5	6 ☐	7 ☐	8 ☐	9

Professionalism

Displays a professional attitude and demeanor (P) (Question 16 of 24)

No Interaction	Unsatisfactory	Failing	Less than Marginal	Below Average	Average	Above Average	Advanced	Outstanding	Superior
0 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5	6 ☐	7 ☐	8 ☐	9

Attends rounds on time. Handles criticism of self in pro-active way (P) (Question 17 of 24)

No Interaction	Unsatisfactory	Failing	Less than Marginal	Below Average	Average	Above Average	Advanced	Outstanding	Superior
0 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5	6 ☐	7 ☐	8 ☐	9

Cross-covers colleagues when necessary (P) (Question 18 of 24)

No Interaction	Unsatisfactory	Failing	Less than Marginal	Below Average	Average	Above Average	Advanced	Outstanding	Superior
0 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5	6 ☐	7 ☐	8 ☐	9

System-Based Practices

Understands the different types of medical practice and delivery systems, and alternative methods of controlling health care costs and allocatingresources (SBP) (Question 19 of 24)

No Interaction	Unsatisfactory	Failing	Less than Marginal	Below Average	Average	Above Average	Advanced	Outstanding	Superior
0 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5	6 ☐	7 ☐	8 ☐	9

Effectively Utilizes ancillary services SBP (Questions 20 of 24)

No Interaction	Unsatisfactory	Failing	Less than Marginal	Below Average	Average	Above Average	Advanced	Outstanding	Superior
0 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5	6 ☐	7 ☐	8 ☐	9

Uses Patient care venues appropriately SBP (Questions 21 of 24)

No Interaction	Unsatisfactory	Failing	Less than Marginal	Below Average	Average	Above Average	Advanced	Outstanding	Superior
0 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5	6 ☐	7 ☐	8 ☐	9

Advocates for quality patient care and assists patients in dealing with system complexities SBP (Questions 22 of 24)

No Interaction	Unsatisfactory	Failing	Less than Marginal	Below Average	Average	Above Average	Advanced	Outstanding	Superior
0 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5	6 ☐	7 ☐	8 ☐	9

Overall/Summary

Did resident meet course objectives? (Questions 23 of 24)

No Interaction	Unsatisfactory	Failing	Less than Marginal	Below Average	Average	Above Average	Advanced	Outstanding	Superior
0 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5	6 ☐	7 ☐	8 ☐	9

Comments (Please provide Strengths, Weaknesses and Areas for Improvement) (Question 24 of 24

No Interaction	Unsatisfactory	Failing	Less than Marginal	Below Average	Average	Above Average	Advanced	Outstanding	Superior
0 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5	6 ☐	7 ☐	8 ☐	9

RESIDENT EVALUATION OF FACULTY TEACHING SKILLS **Appendix "D"**

Faculty Member_____ Department: _____

Period of Evaluation_____ Location_____

Direction: please take a moment to assess the clinical faculty members teaching skills using this scale

1= Poor **2=Fair** **3= Very Good** **4= Excellent**

A. Leadership

Discussed expectations, duties and assignments for each team member and reviewed learning objectives and evaluation process	1☐	2☐	3☐	4☐	N/A☐
Treated each tea, member in a cutout and peaceful manner	1☐	2☐	3☐	4☐	N/A☐
Was usually prompt for teaching assignments and was always Available and accessible as a supervisor	1☐	2☐	3☐	4☐	N/A☐
Showed respect for the physician in other specialties / Subspecialties as well as for other health care professionals	1☐	2☐	3☐	4☐	N/A☐

Comments

_____

_____

Role modeling

Demonstrated positive in interpersonal communication skills with patients, family members and staff	1 ☐	2 ☐	3 ☐	4 ☐	N/A ☐
Enthusiasm and interest in teaching residents	1 ☐	2 ☐	3 ☐	4 ☐	N/A ☐
Recognized own limitations and used these	1	2	3	4	N/A
Situation as opportunities to demonstrate how he / she learn	1	2	3	4	N/A
Used Medical / scientific literature to support clinical decisions					

Comments

C. Patient Care /Teaching and & Feedback

Demonstrate how to handle "difficult" patients encounters	1	2	3	4	N/A
Demonstrated how to perform special physical exam techniques and / or procedures and observed me during my initials attempt	1 ☐	2 ☐	3 ☐	4 ☐	N/A ☐
Asked thought provoking questions to help me develop my critical thinking skills and clinical judgment	1 ☐	2 ☐	3 ☐	4 ☐	N/A ☐
Share his/her own thought process when discussing patient workups and patients care decisions with the team	1 ☐	2 ☐	3 ☐	4 ☐	N/A ☐
Highlighted important aspects of a patient case and often generalized to boarder medical concepts and principles	1 ☐	2 ☐	3 ☐	4 ☐	N/A ☐
Integrated social / ethical aspects of medical cost containment, patient rights, humanism) into discussion of patient care	1 ☐	2 ☐	3 ☐	4 ☐	N/A ☐
Provided guidance and specific instructive feedback mistakes to increase my knowledge base					

Comments:

D. Didactic (Classroom) Instructions

Was usually prompt for teaching sessions, kept interruptions to minimum and kept discussion focused on case or topic	1	2	3	4	N/A
Gave lecture presentations that were well organized and "Interactive" () i.e., and review pertinent topics	1 ☐	2 ☐	3 ☐	4 ☐	N/A ☐
	☐	☐	☐	☐	☐
Provided references or other materials that stimulated me to road, research and review pertinent topics	1	2	3	4	N/A

Comments

_____

_____

E. Evaluation

	1	2	3	4	N/A
Reviewed my overall clinical performance at the end of the rotation pointed out my strengths and areas for improvement	☐	☐	☐	☐	☐
Demonstrated "fairness" by adhering to established criteria,	1 ☐	2 ☐	3 ☐	4 ☐	N/A ☐
1 explaining reasons for the scores and following me to respond					

Comments

_____

_____-

_____

Overall, I would rate this faculty member's clinical teaching skills as

POOR ☐ **FAIR** ☐ **VERY GOOD** ☐ **ECXELLENT** ☐

Would you recommend that faculty member continue to teach in this programm? Yes ☐ NO ☐

COMMENTS, COMMENDATIONS OR CONCERNS

_____

_____

_____

RESIDENT EVALUATION OF RESIDENCY PROGRAM **Appendix "C"**

A. Program Goals and Objectives (Question 1 of 35)

The goals and objectives for each rotation are clearly communicated to residents.

Cannot Evaluate	Unsatisfactory (Comment Required)	Marginal (Comment Required)	Satisfactory	Very Good	Excellent
0 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐

B. Evaluation (Question 2 of 35)

The evaluation process of the residents is constructive (computerized faculty evaluations of residents, daily clinical feedback to residents, yearly PRITE, and Director's semi-annual resident meeting with resident).

Cannot Evaluate	Unsatisfactory (Comment Required)	Marginal (Comment Required)	Satisfactory	Very Good	Excellent
0 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐

C. Research (Question 3 of 35)

Residents are provided ample opportunity to develop an interest an in research.

Cannot Evaluate	Unsatisfactory (Comment Required)	Marginal (Comment Required)	Satisfactory	Very Good	Excellent
0 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐

Research (Question 4 of 35)

Residents are encouraged to participate in research.

Cannot Evaluate	Unsatisfactory (Comment Required)	Marginal (Comment Required)	Satisfactory	Very Good	Excellent
0 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐

Research (Question 5 of 35)

Residents are provided the education to develop an understanding of research.

.

Cannot Evaluate	Unsatisfactory (Comment Required)	Marginal (Comment Required)	Satisfactory	Very Good	Excellent
0 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐

D. Faculty (Question 6 of 35)

The size, diversification and availability of faculty is adequate for the training program.

.

Cannot Evaluate	Unsatisfactory (Comment Required) ☐	Marginal (Comment Required) ☐	Satisfactory ☐	Very Good ☐	Excellent ☐
0 ☐	1	2	3	4	5

Cannot Evaluate	Unsatisfactory (Comment	Marginal (Comment	Satisfactory	Very Good	Excellent

E. Faculty (Question 7 of 35)

The Knowledge of the faculty is current and appropriate.

Cannot Evaluate	Unsatisfactory (Comment Required)	Marginal (Comment Required)	Satisfactory	Very Good	Excellent
0 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐

F. Facilities (Question 8 of 35)

The available resources necessary (library and computer) to obtain current medical information and scientific evidence are adequate and accessible.

.

Cannot Evaluate	Unsatisfactory (Comment Required)	Marginal (Comment Required)	Satisfactory	Very Good	Excellent
0 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐

G. Facilities (Question 9 of 35)

On-call rooms, when needed, are adequate to ensure rest, safety, convenience and privacy.

Cannot Evaluate	Unsatisfactory (Comment Required)	Marginal (Comment Required)	Satisfactory	Very Good	Excellent
0 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐

H. Facilities (Question 10 of 35)

Cannot Evaluate	Unsatisfactory (Comment	Marginal (Comment	Satisfactory	Very Good	Excellent

The facilities are adequate with regard to support services (nurses, clinic aides) and space for teaching and patient care

Cannot Evaluate	Unsatisfactory (Comment	Marginal (Comment	Satisfactory	Very Good	Excellent
	Required)	Required)			
0 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐

I. Leadership and Logistics (Question 11 of 35)

The Program Director communicates effectively with residents.

Cannot Evaluate	Unsatisfactory (Comment Required)	Marginal (Comment Required)	Satisfactory	Very Good	Excellent
0 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐

J. Leadership and Logistics (Question 12 of 35)

The Associate Program Director communicates effectively with residents.

Cannot Evaluate	Unsatisfactory (Comment Required)	Marginal (Comment Required)	Satisfactory	Very Good	Excellent

0 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐

K. Leadership and Logistics (Question 13 of 35)

The Chief Residents communicates effectively with residents.

Cannot Evaluate ☐	Unsatisfactory (Comment Required) ☐	Marginal (Comment Required) ☐	Satisfactory ☐	Very Good ☐	Excellent ☐
0	1	2	3	4	5

L. Leadership and Logistics (Question 14 of 35)

The Program Coordinator communicates effectively with residents.

Cannot Evaluate	Unsatisfactory (Comment Required)	Marginal (Comment Required)	Satisfactory	Very Good	Excellent
0	1	2	3	4	5

☐ ☐ ☐ ☐ ☐

M. Leadership and Logistics (Question 15 of 35)

The Program Director provides effective leadership of the residency.

Cannot Evaluate	Unsatisfactory (Comment Required)	Marginal (Comment Required)	Satisfactory	Very Good	Excellent
0 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐

N. Leadership and Logistics (Question 16 of 35)

There is adequate departmental support for residency education.

Cannot Evaluate	Unsatisfactory (Comment Required)	Marginal (Comment Required)	Satisfactory	Very Good	Excellent
0 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐

O. Leadership and Logistics (Question 17 of 35)

There is adequate departmental support for residency education.

Cannot Evaluate	Unsatisfactory (Comment Required)	Marginal (Comment Required)	Satisfactory	Very Good	Excellent
0 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐

P. Leadership and Logistics (Question 18 of 35)

The program is responsive regarding scheduling, course materials and other logistical concerns.

Cannot Evaluate	Unsatisfactory (Comment Required)	Marginal (Comment Required)	Satisfactory	Very Good	Excellent
0 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐

Q. Leadership and Logistics

(Question 19 of 35) The evaluation system (E-Value) is easy to use.

Cannot Evaluate	Unsatisfactory (Comment Required)	Marginal (Comment Required)	Satisfactory	Very Good	Excellent
0 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐

R. Training (Question 20 of 35)

Faculty adequately supervises residents' care of patients.

Cannot Evaluate	Unsatisfactory (Comment Required)	Marginal (Comment Required)	Satisfactory	Very Good	Excellent
0 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐

S. Training (Question 21 of 35)

Training sites present a wide range of psychiatric clinical problems.

Cannot Evaluate	Unsatisfactory (Comment Required)	Marginal (Comment Required)	Satisfactory	Very Good	Excellent
0	1	2	3	4	5

☐ ☐ ☐ ☐ ☐ ☐

T. Training (Question 22 of 35) ☐ ☐ ☐ ☐

Residents see an appropriate number of patients.

Cannot Evaluate	Unsatisfactory (Comment Required)	Marginal (Comment Required)	Satisfactory	Very Good	Excellent
0 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐

U. Training (Question 23 of 35)

Residents are given sufficient responsibility for decision-making and direct patient care.

Cannot Evaluate	Unsatisfactory (Comment Required)	Marginal (Comment Required)	Satisfactory	Very Good	Excellent
0	1	2	3	4	5

V. Training (Question 24 of 35)

Rounds and staffing are conducted professionally.

Cannot Evaluate	Unsatisfactory (Comment Required)	Marginal (Comment Required)	Satisfactory	Very Good	Excellent
0 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐

W. Training (Question 25 of 35)

Rounds and staffing are conducted efficiently.

Cannot Evaluate	Unsatisfactory (Comment Required)	Marginal (Comment Required)	Satisfactory	Very Good	Excellent
0 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐

X. Training (Question 26 of 35)

Faculty teaches and supervises in ways that facilitate learning.

Cannot Evaluate	Unsatisfactory (Comment Required)	Marginal (Comment Required)	Satisfactory	Very Good	Excellent
0 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐

Y. Training (Question 27 of 35)

The program is responsive to safety concems at training.

Cannot Evaluate	Unsatisfactory (Comment Required)	Marginal (Comment Required)	Satisfactory	Very Good	Excellent
0 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐

Z. Training (Question 28 of 35)

The program is responsive to feedback from residents.

Cannot Evaluate	Unsatisfactory (Comment Required)	Marginal (Comment Required)	Satisfactory	Very Good	Excellent
0 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐

AA. Training (Question 29 of 35)

Residents experience an appropriate balance of educational and clinical responsibilities.

Cannot Evaluate	Unsatisfactory (Comment Required)	Marginal (Comment Required)	Satisfactory	Very Good	Excellent
0 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐

BB. Training (Question 30 of 35)

The didactic sessions provide core knowledge of the field.

Cannot Evaluate	Unsatisfactory (Comment Required)	Marginal (Comment Required)	Satisfactory	Very Good	Excellent
0 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐

CC. Training (Question 31 of 35)

The morale of the residents is good.

Cannot Evaluate	Unsatisfactory (Comment Required)	Marginal (Comment Required)	Satisfactory	Very Good	Excellent
0 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐

DD. Training (Question 32 of 35)

The morale of the faculty is good.

Cannot Evaluate	Unsatisfactory (Comment Required)	Marginal (Comment Required)	Satisfactory	Very Good	Excellent

☐	☐	d) ☐	☐	☐	☐
0 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐

EE. Training (Question 33 of 35)

Overall, I am very satisfied with the training our program provides.

Cannot Evaluate	Unsatisfactory (Comment Required)	Marginal (Comment Required)	Satisfactory	Very Good	Excellent
0	1	2	3	4	5

FF. Recommendations (Question 34 of 35)

What changes in the training program would you suggest to better prepare residents for their careers?

GG. Additional Comments (Question 35 of 35)

Guidelines for program Evaluation Appendix "D"

Program Evaluation Committee (PEC)

Background:

The purpose of this committee is to conduct and document a formal, systematic evaluation of the program & curriculum on an annual basis.

Membership:

The chair and membership of the committee are appointed by the Program Director. The membership of the committee consists of at least two members of the program faculty, and at least one resident/subspecialty resident.

Meeting Frequency

The committee meets, at a minimum, annually.

Responsibilities of the PEC

The PEC actively participates in planning, developing, implementing and evaluating the educational activities of the program.
The PEC reviews and makes recommendations for revision of competency-based goals and objectives.
Addresses areas of non-compliance with the standards; and reviews the program annually using written evaluations of faculty, residents, and others.

Required Documentation of PEC Activities

The PEC provides the GMEC with a written Annual Program Evaluation (APE) in the format that is appended to this document. This document details a written plan of action to document initiatives to improve performance based on monitoring of activities described below.

The APE document provides evidence that the PEC is monitoring the following areas, at a minimum:

1. Resident performance
2. Faculty development
3. Graduate performance, including performance of program graduates on the certifying examination
4. Assessment of program quality through:

    a. **Annual confidential and formal feedback** from residents and faculty about the program quality.

    b. **Assessment of improvements needed based on program evaluation feedback** from faculty, residents, and others

5. **Continuation of progress made on prior year's actionplan**
6. **Prepare and submit a written plan of actionto**

    a. Document initiatives to improve performance in one of more of the areas identified,

    b. Delineate how they will be measured and monitored

    c. Document continuation of progress made on the prior year's action plan

Template for Documentation of Annual Program Evaluation and Improvement

Date of annual program evaluation meeting: _____

Attendees:

i. Program Director: _____
ii. Program Coordinator: _____
iii. Associate/Assistant PD: _____
iv. Faculty Members: _____
v. Residents: _____

	Reviewed √	Discussion, Follow up, Action Plan
1. Current Program Requirements & Institutional Requirements		
2. Most recent Internal Review Summary to ensure all recommendations are addressed		

3. Review Curriculum a. effective mechanism in place to distribute Goals & Objectives (G&O) to residents and faculty b. overall program educational goals c. up-to-date competency-based G&O for each assignment d. up-to-date competency-based G&O for each level of training e. G&O contain delineation of resident responsibilities for patient care, progressive responsibility for patient management, and supervision of residents		
4. Evaluation System		
a. Resident formative evaluation meets or exceeds program requirement b. Resident summative evaluation meets or exceeds program requirement c. Faculty evaluation meets or exceeds program requirement d. program evaluation meets or exceeds program requirement.		
5. Didactic Curriculum a. includes recognizing the signs of fatigue and sleep deprivation b. the didactic curriculum meets program requirements c. the didactic curriculum meets residents needs		

6. Clinical Curriculum – the effectiveness of in-patient and ambulatory teaching experience (structure, case mix, meets resident's needs)		
7. Volume and variety of patients and procedures (case log data) meets requirements and residents' needs		
8. Summary of written program evaluations completed by both faculty and residents		
9. Resident supervision complies with Program Requirement		
10. Recruiting results		
11. Duty hour monitoring results		
12. Track all research and scholarly activities of faculty and residents/fellows		
13. Educational outcomes: is the program achieving its educational objectives? What aggregate data (residents as a group) can be used to show the program is achieving its objectives? Board scores, in-service training exam scores, graduate surveys, employer surveys, etc.		
15. Clinical outcomes – specialty-specific metrics aligned with dept./division QI initiatives, disease outcomes, patient safety initiatives (describe resident involvement), QI projects (describe resident involvement)		

Note:

If deficiencies are found during this process, the program should prepare a written plan of action to document initiatives to improve performance in the areas that have been identified. The action plan should be reviewed and approved by the teaching faculty and documented in meeting minutes.

Annual Program Evaluation (APE) Appendix "E"

Minutes & Action Plan

Date of the APE meeting:

Date; Minutes & Action Plan were reviewed and Approved by teaching faculty:

Please attach the minutes of the meeting where the Minutes & Action Plan were reviewed and approved.

Academic Year reviewed:

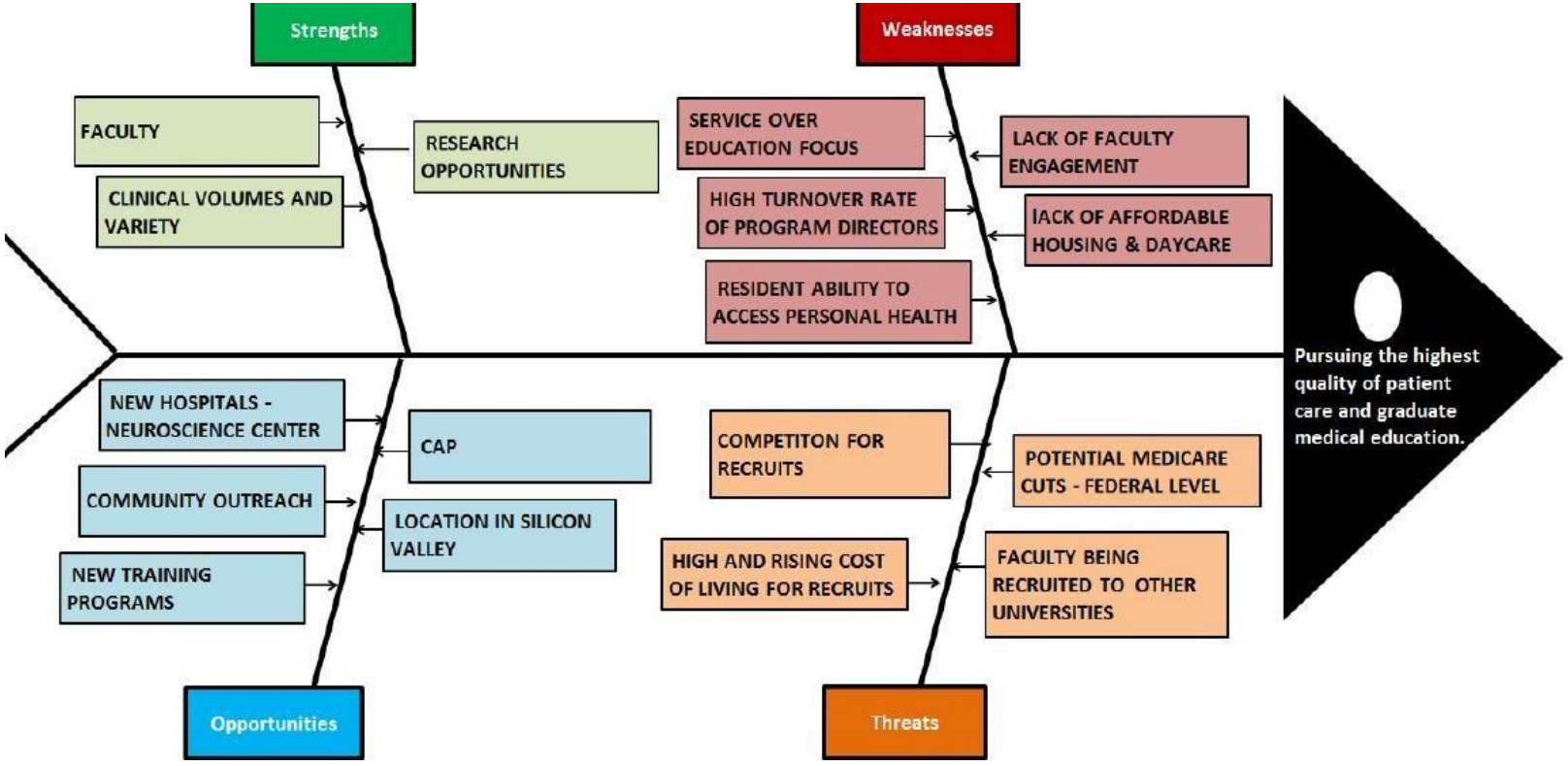
Faculty Members of the PEC in attendance Other Members of the PEC in attendance: Areas reviewed:

1. Resident performance
    - Supporting documents:
2. Faculty development
    - Supporting documents:
3. Graduate performance
    - Supporting documents:
4. Program quality
    - Supporting documents:
5. Policies, Protocols & Procedures
    - Supporting documents:

SWOT Analysis Appendix " F"

- **S**: Strengths
- **W**: Weaknesses
- **O**: Opportunities
- **T**: Threats

SOWT Analysis (Fishbone – Ishikawa Diagram)



Action Plan

Item	Strategy	Resources	Timeline	Evaluation
Preservation Goals (Strengths)				
Elimination Goals (Weaknesses)				
Achievement Goals (Opportunities)				

Avoidance Goals (Threats)				

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Links for Electives/Rotations

- https://gme.uchc.edu/programs/im/electiveselective.html
- http://medicine.buffalo.edu/departments/medicine/education/internal- medicine/program/electives.html
- http://www.umm.edu/professionals/gme/programs/im-residency/electives-and-research
- https://internalmedicine.osu.edu/education/welcome/educational-career-development-programs/electives/

LINKS for curriculum

- https://elpaso.ttuhsc.edu/som/internal/IM_Curriculum_8-26-13.pdf
- http://www.hkcp.org/docs/TrainingGuidelines/HKCP%20GuideBooklet%202011updated%2021.8.2013.pdf
- https://www.jrcptb.org.uk/sites/default/files/2009%20GIM%20%28amendment%202012%29.pdf
- https://med.uth.edu/internalmedicine/files/2015/10/internal_medicine_curriculumacgme.pdf
- http://www.uhs.edu.pk/downloads/MD%20Internal%20Medicine.pdf

Assessment methods

- Center for Creative Leadership, Greensboro, North Carolina (http://www.ccl.org).
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References of Milestones

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Section 10: Learning Resources

READING RESOURCES

1: Davidson's Principles And Practice Of Medicine 24th Ed Full Version.

2: Current Medical Diagnosis & Treatment 2025

3: Harrison’s Principles of Internal Medicine 21st edition

4: Marino’s The ICU Book by Paul L. Marino MD PhD FCCM (Author) 4th edition

5: CURRENT Diagnosis & Treatment Neurology, Third Edition (Current Diagnosis and Treatment, 3) 3rd Edition

6: Introduction to Clinical Infectious Diseases: A Problem-Based Approach 2019

7: Willam Textbook of Endocrinology 24th Edition

8: CHEST SEEK Pulmonary Medicine: 33rd Edition Editorial Board

9: Macleod's Clinical Examination, Edition 15

10: Oxford Handbook of Emergency Medicine

11.Comprehensive clinical nephrology edition 7th

12. handbook of clinical transplant