

**PROGRAM OF MS UROLOGY
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.

We are seeing a rise in the uptake of places on postgraduate courses in medical education, more frequent issues of medical education journals and the further development of e-journals and other new online resources. There is therefore a need to provide active support in *Post Graduate Medical Education* for a larger, national group of colleagues in all specialties and at all stages of their personal professional development. If we were to formulate a statement of intent to explain the purpose of this curriculum we might simply say that our aim is to help clinical colleagues to teach and to help students to learn in a better and advanced way. This book is a state of the art book with representation of all activities of the MD Internal Medicine program at RMU. Curriculum is incorporated in the book for convenience of supervisors and residents. MD curriculum is based on six Core Competencies of ACGME (**Accreditation Council for Graduate Medical Education**) including **Patient Care, Medical Knowledge, System Based Practice, Practice Based Learning, Professionalism, Interpersonal and Communication Skills**. 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 provided in this book.

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CONTRIBUTIONS




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SECTION – I

MISSION STATEMENT

The mission of Urology Residency Program of Rawalpindi Medical University is:

1. To provide exemplary medical care, treating all patients who come before us with uncompromising dedication and skill.
2. To passionately teach our junior colleagues and students as we have been taught by those who preceded us.
3. To treat our colleagues and hospital staff with kindness, respect, generosity of spirit, and patience.
4. To foster the excellence and well-being of our residency program by generously offering our time, talent, and energy on its behalf.
5. To support and contribute to the research mission of our medical center, nation, and the world by pursuing new knowledge, whether at the bench or bedside.
6. To promote the translation of the latest scientific knowledge to the bedside to improve our understanding of disease pathogenesis and ensure that all patients receive the most scientifically appropriate and up to date care.
7. To promote responsible stewardship of medical resources by wisely selecting diagnostic tests and treatments, recognizing that our individual decisions impact not just our own patients, but patients everywhere.
8. To promote social justice by advocating for equitable health care, without regard to race, gender, sexual orientation, social status, or ability to pay.
9. To extend our talents outside the walls of our hospitals and clinics, to promote the health and well-being of communities, locally, nationally, and internationally.

STATUTES

Nomenclature of the Proposed Course

The name of degree programme shall be MS Urology. This name is well recognized and established for the last many decades worldwide.

Course Title:

MS Urology

Training Center

Departments of Urology Benazir Bhutto Hospital, Rawalpindi Medical UNiversity

Duration of Course

The duration of MS Urology course shall be five (5) years with structured training in a recognized department under the guidance of an approved supervisor.

After admission in MS Urology Programme the resident will spend first 6 Months in the relevant Department of Urology as **Induction period** during which resident will get orientation about the chosen discipline and will also participate in the **mandatory workshops** (Appendix E). The research project shall be designed and the **synopsis** be prepared during this period

On completion of Induction period the resident will start training to learn Basic Principles of General Surgery for 18 Months. During this period the Research Synopsis shall be got approved

by the AS&RB of the university. At the end of 2nd Calender year the candidate shall take up Intermediate Examination.

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

- 1) Clinical Training in Urology.
- 2) Research and Thesis writing

The candidate will undergo clinical training in the discipline to achieve the educational objectives (knowledge & Skills) alongwith rotation in the relevant fields during the 4th & 5th years of the programme. The clinical training shall be competency based. There shall generic and specialty specific competencies and shall be assessed by continuous Internal Assessment.

The Research & thesis Component shall be completed over the five years duration of the course. The Candidate will spend total time equivalent to one calendar on research during the training. Research can be done as one block or it can be done as regular periodic rotation over five years as long as total research time is equivalent to one calendar year.

Admission Criteria

Applications for admission to MS Training Programs will be invited through advertisement in print and electronic media mentioning closing date of applications and date of Entry Examination.

Eligibility: The applicant on the last date of submission of applications for admission must possess the:

- i) Basic Medical Qualification of MBBS or equivalent medical qualification recognized by Pakistan Medical & Dental Council.
- ii) Certificate of one year's House Job experience in institutions recognized by Pakistan Medical & Dental Council Is essential at the time of interview. The applicant is required to submit House Certificate from the concerned Medical Superintendent that the House Job shall be completed before the Interview.
- iii) Valid certificate of permanent or provisional registration with Pakistan Medical & Dental Council.

Registration and Enrollment

- As per policy of Pakistan Medical & Dental Council the number of PG Trainees/ Students per supervisor shall be maximum 05 per annum for all PG programmes including minor programmes (if any).
- Beds to trainee ratio at the approved teaching site shall be at least 5 beds per trainee.
- The University will approve supervisors for MS courses.
- Candidates selected for the courses after their enrollment at the relevant institutions shall be registered with UHS as per prescribed Registration Regulation.

Accreditation Related Issues of the Institution

A) Faculty

Properly qualified teaching staff in accordance with the requirements of Pakistan Medical and Dental Council (PMDC)

B) Adequate Space

Including class-rooms (with audiovisual aids), demonstration rooms, computer lab and clinical pathology lab etc.

C) Library

Departmental library should have latest editions of recommended books, reference books and latest journals (National and International).

- Accreditation of Urology training program can be suspended on temporary or permanent basis by the University, if the program does not comply with requirements for residents training as laid out in this curriculum.

- Program should be presented to the University along with a plan for implementation of curriculum for training of residents.
- To ensure a uniform and standardized quality of training and availability of the training facilities, the University reserves the right to make surprise visits of the training program for monitoring purposes and may take appropriate action if deemed necessary.

AIMS AND OBJECTIVES OF THE COURSE

AIM

The aim of five years MS programme in Urology is to train residents to acquire the competency of a specialist in the field so that they can become good teachers, researchers and clinicians in their specialty after completion of their training.

GENERAL OBJECTIVES

MS Urology training should enable a student to:

1. Access and apply relevant knowledge to clinical practice:
 - Maintain currency of knowledge
 - Apply scientific knowledge in practice
 - Appropriate to patient need and context
 - Critically evaluate new technology
2. Safely and effectively performs appropriate surgical procedures:
 - Consistently demonstrate sound surgical skills

- Demonstrate procedural knowledge and technical skill at a level appropriate to the level of training
- Demonstrate manual dexterity required to carry out procedures
- Adapt their skills in the context of each patient and procedure
- Maintain and acquire new skills
- Approach and carries out procedures with due attention to safety of patient, self and others
- Critically analyze their own clinical performance for continuous improvement

3. Design and implement effective management plans:

- Recognize the clinical features, accurately diagnose and manage urological problems
- Formulate a well-reasoned provisional diagnosis and management plan based on a thorough history and examination
- Formulate a differential diagnosis based on investigative findings

- Manage patients in ways that demonstrate sensitivity to their physical, social, cultural and psychological needs
- Recognize disorders of the urological system and differentiate those amenable to surgical treatment
- Effectively manage the care of patients with urological trauma including multiple system trauma
- Effectively recognize and manage complications

- Indicate alternatives in the process of interpreting investigations and in decision-making
 - Manage complexity and uncertainty
 - Consider all issues relevant to the patient
 - Identify risk
 - Assess and implement a risk management plan
 - Critically evaluate and integrate new technologies and techniques.
4. Organize diagnostic testing, imaging and consultation as needed:
- Select medically appropriate investigative tools and monitoring techniques in a cost-effective and useful manner
 - Appraise and interpret appropriate diagnostic imaging and investigations according to patients' needs
 - Critically evaluates the advantages and disadvantages of different investigative modalities
5. Communicate effectively:
- Communicate appropriate information to patients (and their family) about procedures, potentialities and risks associated with surgery in ways that encourage their participation in informed decision making
 - Communicate with the patient (and their family) the treatment options including benefits and risks of each
 - Communicate with and co-ordinate health management teams to achieve an optimal surgical environment
 - Initiate the resolution of misunderstandings or disputes

- Modify communication to accommodate cultural and linguistic sensitivities of the patient

6. Recognize the value of knowledge and research and its application to clinical practice:

- Assume responsibility for self-directed learning
- Critically appraise new trends in Urology
- Facilitate the learning of others.

7. Appreciate ethical issues associated with Urology:

- Consistently apply ethical principles
- Identify ethical expectations that impact on medico-legal issues
- Recognize the current legal aspects of informed consent and confidentiality
- Be accountable for the management of their patients.

8. Professionalism by:

- Employing a critically reflective approach to Urology
- Adhering with current regulations concerning workplace harassment
- Regularly carrying out self and peer reviewed audit
- Acknowledging and have insight into their own limitations
- Acknowledging and learning from mistakes

9. Work in collaboration with members of an interdisciplinary team where appropriate:

- Collaborate with other professionals in the selection and use of various types of treatments assessing and weighing the indications and contraindications associated with each type

- Develop a care plan for a patient in collaboration with members of an interdisciplinary team
- Employ a consultative approach with colleagues and other professionals
- Recognize the need to refer patients to other professionals.

10. Management and Leadership

- Effective use of resources to balance patient care and system resources
- Identify and differentiate between system resources and patient needs
- Prioritize needs and demands dealing with limited system resources.
- Manage and lead clinical teams
- Recognize the importance of different types of expertise which contribute to the effective functioning of clinical team.
- Maintain clinically relevant and accurate contemporaneous records

11. Health advocacy:

- Promote health maintenance of patients
- Advocate for appropriate health resource allocation
- Promote health maintenance of colleagues and self scholar and teacher

SPECIFIC LEARNING OUTCOMES

On completion of the training programme, Urology trainees pursuing an academic pathway will be expected to have demonstrated competence in all aspects of the published syllabus. The specific training component would be targeted for establishing clearly defined standards of knowledge and skills required to practice Urology at secondary and tertiary care level with proficiency in the basic and applied clinical sciences, intensive care and emergency (A&E) medicine related to Urology and complementary surgical disciplines

Cognitive knowledge: Describe embryology, applied anatomy, physiology, pathology, clinical features, diagnostic procedures and the therapeutics including preventive methods, (medical/surgical) pertaining to Urology.

Clinical Decision Making & Management Expertise for the patient with:

- Stone disease
- Acute or chronic abdominal pain referable to the urinary tract
- Upper and lower urinary tract urinary tract obstruction
- Acute or chronic urinary retention
- Hematuria
- Urethral stricture
- Benign & malignant lesions of male genitalia skin.
- Scrotal swelling
- Urinary incontinence.
- Prostate cancer
- Bladder cancer
- Renal cancer
- Infertility, ejaculatory disorders etc
- Erectile dysfunction
- Penile deformity, priapism, penile fracture etc
- The common urological conditions of childhood

- Renal failure
- Multiple injuries.
- Trauma of the renal tract according to accepted protocols.

Cognitive Skills:

- Evaluation and principles of management of a patient with hematuria (microscopic and gross)
- Evaluation of a patient with acute renal, bladder or urethral injury and principles of management
- Diagnosis and treatment of a patient with urinary infection including: acute cystitis and pyelonephritis, recurrent cystitis, persistent urinary tract infection, prostatitis (acute and chronic) and epididymo-orchitis
- Diagnosis and management of a patient with a common urological malignancy including the treatment options for the various stages of carcinoma prostate, bladder, testis and kidney with an understanding of the multidisciplinary approaches to these disease processes including the palliative care of a patient with advanced stage metastatic carcinoma
- Diagnosis and management of a patient with urinary obstruction (prostatic, bladder neck or ureteric)
- Diagnosis and management options for a patient with urolithiasis (including acute renal colic and chronic renal calculi)
- Evaluation and diagnosis of the common paediatric urological problems including hydrocele, cryptorchidism, ureteropelvic junction obstruction and vesicoureteric reflux
- Evaluation and diagnosis of various forms of urinary incontinence
- Diagnosis and management of various scrotal masses including hydrocele, epididymal cysts, orchitis, testis tumor, varicocele, torsion testis or appendages
- Principles and practice of renal transplantation - including organ harvesting including multi-organ harvesting, organ preservation, implantation and immunosuppression
- Psychological and emotional aspects of urological diseases including the emotional implications of a diagnosis of malignant disease, anaesthetic hazards in the elderly and in the management of acute confusional states in the elderly, medical/legal and ethical issues arising in urological patients with respect to transplantation, infertility and impotence evaluation, and the awareness of

the concept of body image in surgical patients.

Principles of Preoperative Assessment of the Surgical Patient

- Routine preoperative assessment of surgical patient with particular reference to patients with renal disease
- Assessment of patients with various co-morbidities (cardiac, pulmonary, renal and metabolic)
- Examination and management of a patient in shock (septic due to urinary infection vs. Hypovolemic, neurogenic, cardiogenic shock)

Emergency Urological Care:

- Management of the patient with an acute ureteric colic
- Management of the patient with acute urinary infection including a patient with urosepsis
- Management of a child with an acute scrotum
- Principles of management of a patient with urological trauma

- Suprapubic catheterization

Renal Transplantation:

- Immunosuppression (including principles of management of rejection)
- Recipient selection
- Relevant transplantation immunology

Congenital and Developmental Abnormalities

- Cystic diseases of the kidney
- Horseshoe kidney and other renal anomalies
- Strotal and external genital anomalies
- Vesicoureteral reflux
- Epispadias and extrophy
- Hypospadias and chordee
- External genital anomalies
- Intersex

- Undescended testis
- Scrotal and external genital anomalies
- Other anomalies

Obstructive Disease of the Upper Urinary Tract

- Obstructive uropathy, hydronephrosis and obstructive renal failure
- Ureteropelvic junction obstruction

Obstructive Disease of the Lower Urinary Tract

- Bladder outflow obstruction
- Benign prostatic hypertrophy
- Lower urinary tract symptoms ("luts")
- Renal and ureteral calculi
- Bladder calculi
- Posterior urethral valves
- Functional obstruction secondary to neurological disorders

Trauma

(Including the management and evaluation of a patient with multisystem trauma involving the GU Tract and the role of the urologist in multidisciplinary approach to multisystem trauma)

- Renal trauma
- Ureteral trauma

- Vesical trauma
- Urethral trauma
- External genital trauma

Urological Oncology

- For tumors (benign and malignant) of the genito-urinary tract, etiology, prevention, nutritional and environmental aspects of urologic malignant disease, including the natural history, histology and pathology.
- Cancer of the kidney
- Cancer of the prostate
- Cancer of the testis

Voiding Disorders including Relevant Neuro-urology

- Urinary incontinence (including stress urinary incontinence, urgency incontinence, total incontinence)
- Voiding dysfunction due to neurological disease
- Enuresis

Urinary and Genital Infections and Sexually Transmitted Disease

- Bacterial (complicated and uncomplicated) and non-bacterial cystitis and urethritis
- Pyelonephritis and other renal infections
- Prostatitis including prostatodynia
- Genito-urinary tuberculosis
- Fungal/yeast urinary tract infections
- Other granulomatous infections (including xanthogranulomatous disease)
- Other genital infections (including Fournier's gangrene)

Systemic Diseases and Other Processes Affecting the Urinary Tract

- Urological manifestations of systemic diseases (including e.g. diabetes mellitus, sepsis, AIDS, immunocompromised or immunoincompetent patients)
- The urinary tract in pregnancy (including normal physiologic and anatomic changes and management of urinary tract problems in the pregnant patient)

Renovascular Hypertension

- Surgically correctable hypertension

Andrology

- Male sexual function and dysfunction
- Fertility and male factor infertility

Adrenal Diseases

- Adrenal cysts, hyperplasia
- Adrenal hyperfunction and hypofunction and associated syndromes

Male Sexual Function and Dysfunction

Fertility and male factor infertility

Miscellaneous

External genital problems (including hydrocele, varicocele, spermatocele, cysts)

Torsion of testis, cord and appendages

Dermatological lesions of the male external genitalia (including benign, pre-malignant and malignant lesions)

Interstitial cystitis

Male sexual dysfunction

Technical Skills & Procedures Technical Skills:

Catheterization including urinary catheter care.

Urethral manipulation and dilatation using filiforms and followers

Cystoscopy

Installation of intravesical therapeutic agents

Wound closure

Vasectomy (if resident is so interested)

Introduction to therapeutic technologies including electrosurgery, Extracorporeal Shock Wave Lithotripsy, lasers in urology (carbon dioxide, Nd/YAG, Holmium-YAG).

Diagnostic Skills:

Urinalysis, including routine urinalysis, urine culture techniques, urinary collections for metabolic studies and urine cytologic studies

Renal function tests

Adrenal function tests

Tumor markers – e.g. alpha-feto protein, b-HCG, PSA, etc.

Radiological Studies Including intravenous excretory urography voiding cystourethrography

Ultrasonography – including Doppler studies

- Radioisotope Studies
- CT scanning and MRI Scanning of the urinary tract
- Intravenous excretory urography
- Voiding cystourethrography

Endoscopic Procedures:

- Cystoscopy and urethroscopy, ureteric catheterization including ureteric stent insertion and removal, retrograde pyelography
- Urethral dilatation and visual internal urethrotomy
- Transurethral biopsy of bladder and urethra
- Transurethral resection of prostate
- Urethral dilatation and visual internal urethrotomy
- Transurethral biopsy of bladder and urethra
- Transurethral resection of prostate
- Transurethral resection of bladder tumors
- Ureteroscopy and lithotripsy of ureteric calculi
- Transurethral resection/ incision of ureterocele
- Ureteroscopy and lithotripsy of ureteric calculi
- Percutaneous renal surgery including nephrolithotomy with ultrasound / electrohydraulic / laser lithotripsy

Open Surgical Procedures:

- Circumcision
- Suprapubic catheterization
- Filiguration of venereal warts, biopsy of penile lesions
- Cavemosal shunting procedures for priapism
- Testis biopsy
- Vasovasostomy

- Vasectomy
- Scrotal surgery - hydrocele, epididymal cyst, epididymectomy, simple orchidectomy
- Inguinal surgery - varicocele, herniotomy, orchidopexy

- Radical orchidectomy
- Repair of testis torsion
- Orchidopexy for undescended testis

- Insertion testis prosthesis
- Vesical neck suspension and procedures for stress urinary incontinence
- Pelvic lymphadenectomy
- Simple retropubic prostatectomy

Therapeutic Technologies

- The resident will be able to describe the basic physics and technological application of the following therapeutic modalities. He/she will be able to describe the indications, contraindications, peri-operative and post-operative complications specific for each modality:
 - Electrosurgery
 - Extracorporeal Shock Wave Lithotripsy
 - Lasers in urology - carbon dioxide, Nd/YAG, Holmium-YAG, etc.
 - Transurethral prostatic hyperthermia/thermotherapy and other alternative modalities used in the
 - Transurethral prostatic hyperthermia/thermotherapy and other alternative modalities used in the
 - Management of patients with benign prostatic hyperplasia

Imaging Studies

- Radiological studies - intravenous excretory urography angiography of the kidneys and pelvic vessels
- Venography (including vena cavography)
- Loop-o-graphy
- Voiding cystourethrography
- Ultrasonography -
- Radioisotope studies -
 - The indications, application to clinical urology, principles, pharmacokinetics and application of radiopharmaceuticals used in:
 - Renal imaging (including function studies)
 - Voiding cystograms
 - Bone scans for staging of malignant disease
 - For adrenal localization
- CT scanning and MRI scanning of the urinary tract
- Urodynamic studies

- Cystometrogram
- Uroflowmetry
- Voiding pressure studies
- Pelvic floor electromyography
- Videourodynamic studies
- Intravenous excretory urography
- Retrograde urethrography, cystography and antegrade pyelography
- Doppler studies of renal, gonadal and penile vessel

METHODS OF INSTRUCTION/COURSE CONDUCTION

As a policy, active participation of students at all levels will be encouraged. Following teaching modalities will be employed:

1. Lectures
2. Seminar Presentation and Journal Club Presentations
3. Group Discussions
4. Grand Rounds
5. Clinico-pathological Conferences
6. SEQ as assignments on the content areas
7. Skill teaching in ICU, Operation theatres, emergency and ward settings
8. Attend genetic clinics and rounds for at least one month.
9. Self study, assignments and use of internet
10. Bedside teaching rounds in ward
11. OPD & Follow up clinics
12. Long and short case presentations

In addition to the conventional teaching methodologies interactive strategies like conferences will also be introduced to improve both communication and clinical skills in the upcoming consultants. Conferences must be conducted regularly as scheduled and attended by all available faculty and residents. Residents must actively request autopsies and participate in formal review of gross and microscopic pathological material from patients who have been under their care. It is essential that residents participate in planning and in conducting conferences.

1. Clinical Case Conference

Each resident will be responsible for at least one clinical case conference each month. The cases discussed may be those seen on either the consultation or clinic service or during rotations in specialty areas. The resident, with the advice of the Attending Surgeon on the Consultation Service, will prepare and present the case(s) and review the relevant literature.

2. Monthly Student Meetings

Each affiliated medical college approved to conduct training for MS Urology will provide a room for student meetings/discussions such as:

- a.** Journal Club Meeting
- b.** Core Curriculum Meetings
- c.** Skill Development

a. Journal Club Meeting

A resident will be assigned to present, in depth, a research article or topic of his/her choice of actual or potential broad interest and/or application. Two hours per month should be allocated to discussion of any current articles or topics introduced by any participant. Faculty or outside researchers will be invited to present outlines or results of current research activities. The article should be critically evaluated and its applicable results should be highlighted, which can be incorporated in clinical practice. Record of all such articles should be maintained in the relevant department.

a. Core Curriculum Meetings

All the core topics of Urology should be thoroughly discussed during these sessions. The duration of each session should be at least two hours once a month. It should be chaired by the chief resident (elected by the residents of the relevant discipline). Each resident should be given an opportunity to brainstorm all topics included in the course and to generate new ideas regarding the improvement of the course structure

b. Skill Development

Two hours twice a month should be assigned for learning and practicing clinical skills.

List of skills to be learnt during these sessions is as follows:

1. Residents must develop a comprehensive understanding of the indications, contraindications, limitations, complications, techniques, and interpretation of results of those technical procedures integral to the discipline
2. Residents must acquire knowledge of and skill in educating patients about the technique, rationale and ramifications of procedures and in obtaining procedure-specific informed consent. Faculty supervision of residents in their performance is required, and each resident's experience in such procedures must be documented by the program director.
3. Residents must have instruction in the evaluation of medical literature, clinical epidemiology, clinical study design, relative and absolute risks of disease, medical statistics and medical decision-making.
4. Training must include cultural, social, family, behavioral and economic issues, such as confidentiality of information, indications for life support systems, and allocation of limited resources.
5. Residents must be taught the social and economic impact of their decisions on patients, the primary care physician and society. This can be achieved by attending the bioethics lectures
6. Residents should have instruction and experience with patient counseling skills and community education.
7. This training should emphasize effective communication techniques for diverse populations, as well as organizational resources useful for patient and community education.
8. Residents should have experience in the performance of Urology related clinical laboratory and radionuclide studies and basic laboratory techniques, including quality control, quality assurance and proficiency standards
9. Each resident will manage at least the following essential Urological cases and observe and participate in each of the following procedures, preferably done on patients under supervision initially and then independently. (pg. 36-37)

3. Annual Grand Meeting

Once a year all residents enrolled for MS Urology should be invited to the annual meeting at UHS Lahore.

One full day will be allocated to this event. All the chief residents from affiliated institutes will present their annual reports. Issues and concerns related to their relevant courses will be discussed. Feedback should be collected and suggestions should be sought in order to involve residents in decision making.

The research work done by residents and their literary work may be displayed.

In the evening an informal gathering and dinner can be arranged. This will help in creating a sense of belonging and ownership among students and the faculty.

SECTION - II

COURSE CONTENT

FIRST YEAR CURRICULUM – BASIC SCIENCES

Basic Sciences:

Student is expected to acquire comprehensive knowledge of Anatomy, Physiology, Pathology (Microbiology) and Pharmacology relevant to surgical practice appropriate for Urology

1. Anatomy

- *Clinical and functional anatomy with pathological and operative relevance*
- *Surgical approaches to the renal and urinary structures*
- *Histology and embryology related to Urology*

- Cell Biology: Cytoplasm – Cytoplasmic matrix, cell membrane, cell organelles, cytoskeleton, cell inclusions, cilia and flagella.
- Nucleus – nuclear envelope, nuclear matrix, DNA and other components of chromatin, protein synthesis, nucleolus, nuclear changes indicating cell death.
- Cell cycle, mitosis, meiosis, cell renewal.

- Cellular differentiation and proliferation.
- Tissues of Body: Light and electron microscopic details and structural basis of function, regeneration and degeneration. Confocal microscopy.
- The systems/organs of body – Cellular organization, light and electron microscopic features, structure function correlations, and cellular organization.

Embryology

- General Features of Human Development
- Features of mitotic and meiotic modes of cell division. Genetic consequences of meiotic division.
- Abnormal mitotic and meiotic divisions of clinical importance. Early Embryonic Development:
 - Cleavage, morula and blastocyst formation and implantation.
 - Formation of the three primary germ layers.
 - List of the derivatives of the respective germ layers. Period of the Growing Fetus:
 - Various stages and salient features of the fetus development Extraembryonic Membranes:
 - Development, functions and anomalies of yolk sac, amnion, chorion, allantois, umbilical cord and placenta.
 - Development of kidney
 - Urogenital sinus & its transformation
 - Origin of Mullerian system
 - Development/ Descent of Testis
 - Endocrinological influences on male & female genitalia
 - Development of adrenals
 - Embryology of extrophy, hypo / epispadias
- Teratogenesis:
 - Factors known to be involved in the development of congenital anomalies especially related to the urological system.

- Concept of critical periods.

Histology:

Structural and Functional Organization of the Tissues of Body

- Classification of tissues and identification of various tissues particularly those related to the urological system, in routine histological preparations under the light microscope. The Epithelial Tissue
- General structure, functions and classification of epithelia
- Their location in the body
- The Connective Tissue
- Histology of the kidney

Anatomy:

- Anterior abdominal wall and loin with reference to surgical incisions & herniae.
- Anatomy & relations of kidneys & ureters and suprarenal glands.
- Anatomy of pelvic fascia & diaphragm.
- Anatomy of perineum including perineal pouches.
- Urinary bladder ----- ligaments & blood supply.
- Prostate --- zones ,lobes & fascial sheaths.
- Lymphatic drainage of pelvis and posterior abdominal wall.
- Anatomy of urethra, penis, scrotum, testes, epididymis, vas deferens & seminal vesicles.
- Anatomy and relation of female reproductive and genital tract.
- Neuro anatomy/ nerves with reference to bladder, erectile and ejaculatory function.

2. Physiology

- Functional anatomy of kidney, nephron-structure, parts, function, types.
- Juxtaglomerular apparatus: autoregulation, peculiarities, measurements.

- Renal circulation: Auto regulation, peculiarities, and measurement
- Glomerular filtration: filtration barrier, forces governing filtration, measurement.
- Tubular functions: re-absorption, secretion, Tm values
- Regulation of ECF-volume, osmolality and electrolytes
- Micturition
- Renal function tests, renal clearance, abnormal constituents of urine
- Excretory functions of skin
- Control of water balance & fluid compartments
- Acid base balance
- Oedema & lymphatic function in renal disease
- Calcium metabolism
- Testicular function ----- Spermatogenesis & Endocrine
- Renal & Suprarenal Endocrines
- Physiology of Bladder-innervation
- Micturition reflex
- Clinical and applied physiology
- Membrane biochemistry and signal transduction
- Gene expression and the synthesis of proteins
- Bioenergetics; fuel oxidation and the generation of ATP
- Carbohydrate metabolism
- Lipid metabolism
- Nitrogen metabolism
- Enzymes and biologic catalysis
- Tissue metabolism
- Biotechnology and concepts of molecular biology with special emphasis on use of recombinant DNA techniques in medicine and the molecular biology of cancer
- General principles of biochemical investigations
- Basic techniques in molecular biology
- Cloning and gene analysis

- Immunochemical techniques
- Protein chemistry and enzymology
- Cloning & PCR
- Protein chemistry and quantification
- Electrophoretic techniques; PAGE
- Immunoblotting
- Raising and purifying antibodies
- ELISA
- Composition of intracellular and extracellular compartment fluids.
- Water and sodium balance. Role of kidney in its maintenance.
- Renal mechanism for pH regulation.

3. Pharmacology

- The evolution of medical drugs
- British pharmacopeia
- Introduction to pharmacology
- Receptors
- Mechanisms of drug action
- Pharmacokinetics
- Pharmacokinetic process
 - Absorption
 - Distribution
 - Metabolism
 - Desired plasma concentration
 - Volume of distribution
 - Elimination
 - Elimination rate constant and half life
 - Creatinine clearance
- Drug effect
 - Beneficial responses

- Harmful responses
- Allergic responses
- Drug dependence, addiction, abuse and tolerance
- Applied aspects related to pharmacokinetics
- Drug therapies of renal failure (including drug interactions)
- Commonly used drugs (antihypertensive, antidiabetic drugs, diuretics etc.)
- Principles and use of anti microbial therapy
- Antiseptics
- Drug interactions
- Dialysis
- Drug use in pregnancy and in children
- Renal toxicity and medication

4. Pathology

Pathological alterations at cellular and structural level in infection, inflammation, ischaemia, neoplasia and trauma affecting the ear, nose and upper respiratory tract

Cell Injury and adaptation

- Reversible and Irreversible Injury
- Fatty change, Pathologic calcification
- Necrosis and Gangrene
- Cellular adaptation
- Atrophy, Hypertrophy,
- Hyperplasia, Metaplasia, Aplasia Inflammation
- Acute inflammation
- Cellular components and chemical mediators of acute inflammation
- Exudates and transudate
- Sequelae of acute inflammation

- Chronic inflammation
- Etiological factors and pathogenesis
- Distinction between acute and chronic (duration) inflammation
- Histologic hallmarks
- Types and causes of chronic inflammation, non-granulomatous & granulomatous, Haemodynamic disorders
- Etiology, pathogenesis, classification and morphological and clinical manifestations of Edema, Haemorrhage, Thrombosis, Embolism, Infarction & Hyperaemia
- Shock; classification etiology, and pathogenesis, manifestations.
- Compensatory mechanisms involved in shock
- Pathogenesis and possible consequences of thrombosis
- Difference between arterial and venous emboli

Neoplasia

- Dysplasia and Neoplasia
- Benign and malignant neoplasms
- Etiological factors for neoplasia
- Different modes of metastasis
- Tumor staging system and tumor grade

Hypersensitivity

- Immunity
- Immune response
- Diagnostic procedures in a clinical Immunology laboratory
- Protective immunity to microbial diseases
- Tumour immunology
- Immunological tolerance, autoimmunity and autoimmune diseases.
- Transplantation immunology
- Hypersensitivity
- Immunodeficiency disorders
- Immunoprophylaxis & Immunotherapy

Related Microbiology

- Role of microbes in various urological disorders
- Infection source
- Nosocomial infections
- Bacterial growth and death
- Pathogenic bacteria
- Vegetative organisms
- Spores
- Important viruses
- Important parasites
- Surgically important microorganisms
- Sources of infection
- Asepsis and antisepsis
- Sterilization and disinfection
- Infection prevention
- Immunization
- Personnel protection from communicable diseases
- Use of investigation and procedures in laboratory
- Basics in allergy and immunology

Special Pathology

Kidney and ureter

- Congenital lesions
- Obstruction
- Calculus
- Infection
- Tumors
- Cystic diseases
- Medical nephropathies
- Vascular
- Renal transplantation

- Trauma

Bladder

- Congenital lesions
- Obstruction
- Inflammatory
- Tumors
- Trauma
- Incontinence & functional disorders
- Urinary diversion Urethra
- Congenital lesions
- Strictures
- Diverticula
- Trauma

Prostate & Seminal Vesicles

- Congenital lesions
- Benign prostatic hypertrophy
- Inflammatory
- Tumors

Testis & scrotum

- Congenital lesions
- Inflammatory
- Torsion
- Tumors Adrenal
- Masses

FIRST YEAR CURRICULUM – CLINICAL COMPONENT

Basic Principles of Surgery

- History of surgery
- Preparing a patient for surgery
- Principles of operative surgery: asepsis, sterilization and antiseptics
- Surgical infections and antibiotics
- Basic principles of anaesthesia and pain management
- Acute life support and critical care:
 - Pathophysiology and management of shock
 - Fluids and electrolyte balance/ acid base metabolism
 - Haemostasis, blood transfusion
- Trauma: assessment of polytrauma, triage, basic and advanced trauma
- Accident and emergency surgery
- Wound healing and wound management
- Nutrition and metabolism
- Principles of burn management
- Principles of surgical oncology
- Principles of laparoscopy and endoscopy
- Organ transplantation
- Informed consent and medicolegal issues
- Molecular biology and genetics
- Operative procedures for common surgical manifestations e.g cysts, sinuses, fistula, abscess, nodules, basic plastic and reconstructive surgery

Common Surgical Skills Incision of skin and

subcutaneous tissue:

- Langer's lines
- Healing mechanism
- Choice of instrument
- Safe practice

Closure of skin and subcutaneous tissue:

- Options for closure
- Suture and needle choice
- Safe practice

Knot tying:

- Choice of material
- Single handed
- Double handed
- Superficial
- Deep

Tissue retraction:

- Choice of instruments
- Placement of wound retractors
- Tissue forceps

Use of drains:

- Indications
- Types
- Insertion
- Fixation
- Management/removal

Incision of skin and subcutaneous tissue:

- Ability to use scalpel, diathermy and scissors

Closure of skin and subcutaneous tissue:

- Accurate and tension free apposition of wound edges

Haemostasis:

- Control of bleeding vessel (superficial)
- Diathermy
- Suture ligation
- Tie ligation
- Clip application
- Plan investigations
- Clinical decision making
- Case work up and evaluation; risk management

Pre-operative assessment and management:

- Cardiorespiratory physiology
- Diabetes mellitus
- Renal failure
- Pathophysiology of sepsis
- Principles of day surgery
- Pathophysiology of blood loss
- Risk factors for surgery
- Management of comorbidity

Intraoperative care:

- Safety in theatre
- Sharps safety
- Infection risks
- Tourniquets
- Principles of local, regional and general anaesthesia
- Diathermy, laser use
- Radiation use and risks

Post-operative care:

- Monitoring of postoperative patient
- Postoperative analgesia
- Fluid and electrolyte management
- Detection of impending organ failure
- Initial management of organ failure
- Complications specific to particular operation
- Critical care

Blood products:

- Components of blood
- Alternatives to use of blood products
- Management of the complications of blood product transfusion including children

Antibiotics:

- Common pathogens in surgical patients
- Antibiotic sensitivities
- Antibiotic side-effects
- Principles of prophylaxis and treatment

Safely assess the multiply injured patient:

- History and examination
- Investigation
- Resuscitation and early management
- Referral to appropriate surgical subspecialties

Technical Skills

- Central venous line insertion
- Chest drain insertion
- Diagnostic peritoneal lavage

- Bleeding diathesis & corrective measures, e.g. warming, packing
- Clotting mechanism; Effect of surgery and trauma on coagulation
- Tests for thrombophilia and other disorders of coagulation
- Methods of investigation for suspected thromboembolic disease
- Anticoagulation, heparin and warfarin
- Role of V/Q scanning, CT angiography and thrombolysis
- Place of pulmonary embolectomy
- Awareness of symptoms and signs associated with pulmonary embolism and DVT
- Role of duplex scanning, venography and d-dimer measurement
- Initiate and monitor treatment

Diagnosis and Management of Common Paediatric Surgical Conditions:

- Child with abdominal pain
- Vomiting child
- Trauma
- Groin conditions
 - Hernia
 - Hydrocoele
 - Penile inflammatory conditions
 - Undescended testis
 - Acute scrotum
- Abdominal wall pathologies
- Urological conditions
- Abscess

In terms of general experience it is expected that trainees would have gained exposure to the following procedures and to be able to perform those marked (*) under direct supervision.

- Elective Procedures
 - Inguinal hernia
- (not neo-natal)
 - Orchidopexy
 - Circumcision
 - Lymph node biopsy
 - Abdominal wall herniae
 - Insertion of CV lines
- Emergency Procedures

- Incision and drainage of abscess
- Operation for testicular torsion
- Insertion of suprapubic catheter

CURRICULUM FOR CLINICAL

TRAINING

2nd , 3rd , 4th and 5th YEARS

Students should be familiar with typical clinical presentation, key physical findings, radiological findings and differential diagnosis, initial treatment, and referral indications for common urological diseases

1. GENERAL UROLOGY

- Anatomy and embryology of genitourinary system
- Urologic laboratory examination including renal function tests..
- Radiology & radio nuclide imaging of urinary tract.
- Vascular interventional radiology.
- Urodynamics.
- Principles of chemo-, radio- & immunotherapy as applied to urologic practice.
- Genetics as applied to genitourinary surgical conditions.
- Management of oliguria & acute renal failure.
- Ch. Renal failure & dialysis, angioaccess
- Immunology, immune suppression, immune response
- Pathophysiology of rejection., tissue typing & lymphocyte cross match
- Congenital anomalies of kidney, ureter, bladder, urethra and genitalia, ambiguous genitalia
- Infections of urinary tract, sexually transmitted diseases, specific urologic infections)
- Disorders of kidneys, ureters, bladder, prostate, seminal vesicles and urethra
- Pathophysiology of obstruction, stasis & reflux
- Pathophysiology of neurogenic bladder.
- Pathophysiology of incontinence (neuromuscular dysfunction)
- Disorder of scrotum, testis, and spermatic cord
- Skin disease of external genitalia
- Urolithiasis
- Extracorporeal shockwave lithotripsy
- Hypertension with reference to kidney & adrenals, secondary hypertension, malignant hypertension.

- Principles of endourology, laparoscopic urology, lasers as applied to urology.

2. SPECIAL UROLOGY

Operative Urology

- Urethral catheterization/ urethral dilatation
- Suprapubic cystostomy
- Tumors of renal parenchyma
- Prostatectomy
for benign and malignant disease, principles of radical surgery
- Principles of retroperitoneal surgery
- Radical cystectomy
- Urethroplasty, principles of hypospadias surgery, anastomosis & substitution
- Techniques in urethral stricture disease
- Urinary diversion, ureterosigmoidostomy, orthotopic pouches & continent
- Urinary diversion , resume of current technique in vogue
- Principles of surgery in hydrocele, epididymal cysts & spermatoceles.
- Surgery for vesico vaginal/ uterine fistulae
- Pediatric urology: principles of orchidopexy, pyeloplasty , anti-reflux
- Procedures & scrotal swellings
- Kidney transplantation
- Endourology, retrograde catheterization, cystourethroscopy, ureterorenoscopy.
- Endoscopic management of urethral, prostatic, bladder, ureteral & renal pathologies, retrograde instrumentation of ureter, laparoscopic urological surgery, percutaneous renal surgery.

Uro-Oncology

- Diagnosis, management of renal tumors, bladder malignancies, other neoplasms of urothelium and prostatic carcinoma; testicular tumors; adrenal masses.
- Carcinoma penis, metastatic tumors involving genitourinary tract

Genitourinary Trauma

- Mode/ mechanics of renal, ureteric, bladder, urethral & scrotal injuries, clinical presentation, management & complications

Incontinence

- Classification; indication of surgical intervention, artificial sphincters and bladder substitution
- Neurogenic bladder, immediate as well as long term management

Female Urology

- Urethral stenosis
- Etiology, diagnosis and management of stress, urge, true incontinence and genitourinary fistulae

Paediatric Urology

- Antenatal diagnosis, PUJ, vesicoureteric reflux, posterior urethral valves
- Childhood tumors & disorders of penis and male urethra

Andrology

- Male Infertility
- Etiology, pathophysiology of erectile dysfunction
- Clinical presentation, diagnosis and therapeutic modalities including drugs & prosthesis;
- Management of priapism; Peyronie's disease

8) **Kidney Transplantation:**

- Selection & preparation of donor & recipient for kidney transplantation
- Immunosuppression, donor nephrectomy, transplantation, post op management and complications

(i) Schedule

Year	Category	Level I	Level II	Level III	Level IV	Level V
I	Minor	-	50	10	10	05
	Medium	25	10	05	-	-

	Major	25	10	-	-	-
	Extraordinary	10	05	-	-	-
I	Minor	-	-	50	25	10
	Medium	-	25	15	10	-
	Major	-	25	10	05	-
	Extraordinary	10	10	05	-	-
III	Minor	-	--	-	25	25
	Medium	-	-	50	25	15
	Major	-	-	25	25	10
	Extraordinary	-	10	10	-	-

Level I : Observed and knowledge of instruments Level II : assistant

Level III : 1st assistant

Level IV : Performed under supervision Level V : Performed independently

2nd

Operative procedures

MINOR

- Arterial Blood Sampling.
- Central Venous Cannulation.
- Lumbar Puncture.
- E.T. intubation.
- Pleural aspiration.
- Peritoneal aspiration

- Insertion of peritoneal catheter. (APD) (CAPD)
- Aspiration of scrotal cysts.
- Urethral catheterization.
- Suprapubic cystostomy.
- Circumcision.
- Retrograde cystourethrogram., MCU, Anti/Retrograde Pyelography.
- Prostatic Biopsy
- Cystoscopy

MEDIUM

- Retrograde catheterization (ureteric).
- PCN.
- Orchiectomy.
- Vesicolithotomy.
- Litholapaxy.
- Ureterolithotomy.
- Varicocelectomy.
- Testicular Biopsy/ orchiectomy
- Urethroscopy / D.J. removal / internal urethrotomy
- Check cystoscopy.
- A.V. Fistula

MAJOR

- Open Prostatectomy
- Exposure of kidney / Pyelolithotomy.
- Recipient bed.
- TURP.
- TURBT.
- Colposuspension.
- Exposure of urethra in urethroplasty.
- Pyeloplasty.
- Hypospadias surgery.
- Ureteroscopy / Intracorporeal Lithotripsy

- Orchidopexy.
- PCNL
- Laparoscopic Urological Surgery

Extraordinary

- Radical prostatectomy
- Radical cystectomy
- Radical nephrectomy
- RPLND
- Donor Nephrectomy.
- Kidney Transplant.

SECTION – III

RESEARCH & THESIS WRITING

Total of one year will be allocated for work on a research project with thesis writing. Project must be completed and thesis be submitted before the end of training. Research can be done as one block in 4th year of training or it can be stretched over four years of training in the form of regular periodic rotations during the course as long as total research time is equivalent to one calendar year.

Research Experience

The active research component program must ensure meaningful, supervised research experience with appropriate protected time for each resident while maintaining the essential clinical experience. Recent productivity by the program faculty and by the residents will be required, including publications in peer-reviewed journals. Residents must learn the design and interpretation of research studies, responsible use of informed consent, and research methodology and interpretation of data. The program must provide instruction in the critical assessment of new therapies and of the medical literature. Residents should be advised and supervised by qualified staff members in the conduct of research

Clinical Research

Each resident will participate in at least one clinical research study to become familiar with

1. Research design
2. Research involving human subjects including informed consent and operations of the Institutional Review Board and ethics of human experimentation
3. Data collection and data analysis
4. Research ethics and honesty
5. Peer review process

This usually is done during the consultation and outpatient clinic rotations

Case Studies or Literature Reviews

Each resident will write, and submit for publication in a peer-reviewed journal, a case study or literature review on a topic of his/her choice

Laboratory Research

1. **Bench Research** Participation in laboratory research is at the option of the resident and may be arranged through any faculty member of the Division. When appropriate, the research may be done at other institutions
2. **Research involving animals**

Each resident participating in research involving animals is required to:

1. Become familiar with the pertinent Rules and Regulations of the Rawalpindi Medical University i.e. those relating to "Health and Medical Surveillance Program for Laboratory Animal Care Personnel" and "Care and Use of Vertebrate Animals as Subjects in Research and Teaching".
2. Read the "Guide for the Care and Use of Laboratory Animals".
3. View the videotape of the symposium on Humane Animal Care

3. **Research involving Radioactivity**

Each resident participating in research involving radioactive materials is required to:

1. Attend a Radiation Review session
2. Work with an Authorized User and receive appropriate instruction from him/h

SECTION – IV DETAILS OF RESEARCH CURRICULUM & MANDATORY WORKSHOPS

INTRODUCTION

With advent of Evidence Based Practice over last two to three decades in medical science, merging the best research **evidence** with good clinical expertise and patient values is inevitable in decision making process for patient care. Therefore apart from receiving per excellence knowledge of the essential principles of medicine and necessary skills of clinical procedures, the trainees should also be well versed and skillful in research methodologies. So the training in research being imperative is integrated longitudinally in all four year's training tenure of the trainees.

The purpose of the research training is to provide optimal knowledge and skills regarding research methods and critical appraisal. The expected outcome of this training is to make trainees dexterous and proficient to practically conduct quality research through amalgamation of their knowledge, skills and practice in research methodologies.

ORIENTATION SESSION FOR POST GRADUATE TRAINEES:

- I. At the beginning of the research course, an orientation session or an introductory session of one hour duration will be held, organized by Director, Deputy Directors of ORIC (Office of Research Commercialization and Innovation) of RMU to make trainees acquainted to the research courses during four years post graduate training, the schedule of all scholarly and academic activities related to research and the assessment procedures.

- II. Trainees will also be introduced to all the facilitators of the course, organizational structure of ORIC (Annexure 1) and the terms of references of corresponding authorities (Annexure 2) for any further information and facilitation.
- III. All the curriculum details and materials for assistance and guidance will be provided to trainees during the orientation session.
- IV. The research model of RMU as given in Figure 1 and will be introduced to the newly inducted trainees of RMU.

The research training component for Post Graduate Trainees comprises of four years and the Distribution and curriculum for each year is mentioned as follows:

RESEARCH COURSE OF FIRST POST GRAUDATION TRAINING YEAR R-Y1

PURPOSE OF R-Y1 RESEARCH COURSE:

The RESEARCH YEAR 1 or R-Y1 research course of the post graduate trainees intends to provide ample knowledge to trainees regarding the importance of research, its necessity and types. This course will provide them clarity of concepts that what are the priority problems that require research, how to sort them out and select topics for research. It will also teach them the best techniques for exploring existent and previous evidences in research through well organized literature search and also how to critically appraise them. The course will not only provide them comprehensive knowledge but will also impart optimum skills on how to practically and logically plan and design a research project by educating and coaching them about various research methodologies. The trainees will get familiarized to research ethics, concepts of protection of human study subjects, practice-based learning, evidence based practice in addition to the standard ethical and institutional appraisal procedures of Rawalpindi medical University by Board of Advanced Studies and Research and Institutional and Ethics Research Forum of RMU.

LEARNING OUTCOMES OF R-Y1 RESEARCH COURSE

After completion of R-Y1 course the trainees should be efficiently able to:

1. Discuss the value of research in health service in helping to solve priority problems in a local context.
2. Identify, analyse and describe a research problem
3. Review relevant literature and other available information
4. Formulate research question, aim, purpose and objectives
5. Identify study variables and types
6. Develop an appropriate research methodology
7. Identify appropriate setting and site for a study
8. Calculate minimally required sample size for a study.
9. Identify sampling technique, inclusion and exclusion criteria
10. Formulate appropriate data collection tools according to techniques
11. Formulate data collection procedure according to techniques
12. Pre-test data collection tools
13. Identify appropriate plan for data analysis
14. Prepare of a project plan for the study through work plans and Gantt charts
15. Identify resources required for research and means of resources
16. Prepare a realistic study budget in accordance with the work plan.
17. Critically appraise a research paper of any national or international journal.
18. Present research papers published in various national and international journals at journal club.
19. Prepare a research proposal independently.
20. Develop a strategy for dissemination and utilisation of research results.
21. Familiarization with application Performa for submission of a research proposal to BASR or IREF.
22. Familiarization with format of presentations and procedure of presentation and defence of a research proposal to BASR or IREF.

23. Familiarization with the supervisor, nominated by the Dean and to develop a harmonious rapport with supervisor.

RESEARCH COURSE OF FIRST TRAINING YEAR

Following academic and scholarly activities will be carried out during year 1 ie R-Y1 of Research course catering the post graduate trainees

A. TEACHING SESSIONS:

Research will be taught to the trainees through following methods in various sessions. Each session will comprise of all or either one or two or all five of the following techniques;

1. Didactic lectures through power-point presentations.
2. On spot individual exercises.
3. On spot group exercises.
4. Take home individual assignment
5. Take home group assignment.

The facilitators of these sessions will be staff members (that are director, deputy directors (managers), research associates, statistician and publication in charge) of Office of Research Innovation and commercialization (ORIC) of RMC. While visitor lecturers including renowned national and international public health consultants, researchers, epidemiologists and biostatisticians will also be invited, according to their availability, for some modules of these course

Format of teaching sessions:

- i. During year 1 i.e. R-Y1, 23 teaching sessions in total will be taken, with an average of three sessions per month. Each session will comprise of a didactic lecture delivered initially, to attain the mentioned learning outcomes.
- ii. Each didactic lecture will be of 30 minutes' duration using the power-point medium that will be followed by a 30 minutes on spot individual or group exercises of trainees during the same session.
- iii. By the end of each session, a take home individual task/assignment will be given to trainees, either individually or in groups, that will be duly evaluated and marked each month.

Course content of teaching sessions:

- i. The course materials will be based on an updated modified version of course titled as “Designing Health Services Research (Basic)” that was developed in collaboration of Rawalpindi Medical College & Nuffield Institute for Health, University of Leeds, UK based adapted from “Designing and Conducting Health Systems Research Projects” by CM. Varkevisser KIT Publishers, Amsterdam (International Development Research Centre) in association with WHO Regional Office for Africa.
- ii. The trainees will be provided hard copies as well as soft copies of the course content in a folder at the initiation of the course.
- iii. In addition to it they will be provided various soft copies and links of updated and good resource materials regarding research by the course facilitators.

Curriculum of teaching sessions:

The details of the 22 teaching sessions of the trainees during year one R-Y1 along with the tentative time frame work, teaching strategies, content of curriculum and objectives/Learning outcomes of each sessions are displayed in table 1

TABLE 1. TEACHING SESSIONS OF RESEARCH CURRICULUM OF YEAR 1 OF TRAINEES OF POST GRADUATE TRAINEES OF RMU

SESSIONS & TIMINGS	TEACHING STRATEGY	TOPIC OF SESSION	SESSION OBJECTIVES <i>i.e. BY THE END OF SESSION THE TRAINEES SHOULD BE ABLE TO;</i>
SESSION 1 WEEK 1 Month 1	Lecture through power point presentation followed by both individual exercise & Group exercise	A. Introduction to health systems research B. Identifying and Prioritizing Research Problems	<ul style="list-style-type: none">• Describe the purpose, scope and characteristics of health systems research• Identify criteria for selecting health-related problems to be given priority in research
SESSION 2	Lecture through power	Analysis and statement	<ul style="list-style-type: none">• Analyze a selected problem and the factors

WEEK 2 Month 1	point presentation followed by Individual exercise	of problem & Introduction to Literature review	influencing it and understand how to prepare the statement of the problem for research. <ul style="list-style-type: none"> • Describe the reasons for reviewing available literature and other information for preparation of a research. • Identify the resources that are available for carrying out such a review.
SESSION 3 WEEK 3 Month 1	Lecture through power point presentation followed by Individual exercise & Take home assignment	Literature review Referencing systems; Vancouver & Harvard referencing systems	<ul style="list-style-type: none"> • Describe the methods for reviewing available literature and other information for preparation of a research. • Should be familiar with referencing systems and its importance. • Use Vancouver and Harvard referencing systems and should be able to differentiate between them.
SESSIONS & TIMINGS	TEACHING STRATEGY	TOPIC OF SESSION	SESSION OBJECTIVES <i>i.e. BY THE END OF SESSION THE TRAINEES SHOULD BE ABLE TO;</i>
SESSION 4 WEEK 1 Month 2	Lecture through power point presentation followed by Individual	Literature review Referencing managing systems	<ul style="list-style-type: none"> • Describe the methods for reviewing available literature and other information for preparation of a research.

	<p>exercise & Take home assignment</p>		<ul style="list-style-type: none"> • Should be familiar with use and importance of reference managing systems; Endnote & Mendeley. • Use the literature review and other information pertaining to a research topic that will adequately describe the context of study and strengthen the statement of the problem.
<p>SESSION 5 WEEK 2 Month 2</p>	<p>Lecture through power point presentation followed by Individual exercise & Take home assignment</p>	<p>Plagiarism</p>	<ul style="list-style-type: none"> • Describe the significance and necessity of plagiarism detection • Use online plagiarism detection tools and turn-it-in for detecting plagiarism through assessment of originality scores/similarity index for plagiarism
<p>SESSION 6 WEEK 3 Month 2</p>	<p>Lecture through power point presentation followed by Individual exercise</p>	<p>Formulation of research objectives</p>	<ul style="list-style-type: none"> • State the reasons for writing objectives for a research project. • Define and describe the difference between general and specific objectives. • Define the characteristics of research objectives. • Prepare research objectives in an appropriate format. • Develop further research questions, and research hypotheses, if appropriate for study.

SESSIONS & TIMINGS	TEACHING STRATEGY	TOPIC OF SESSION	SESSION OBJECTIVES <i>i.e. BY THE END OF SESSION THE TRAINEES SHOULD BE ABLE TO;</i>
SESSION 7 WEEK 4 Month 2	Lecture through power point presentation followed by Individual Assignment	Formulation of Hypothesis for a research	<ul style="list-style-type: none"> • State the reasons and scenario for formulating research hypothesis. • Define and describe the types difference between one sided and two sided hypothesis. • Formulate Null hypothesis and Alternate hypothesis in an appropriate format. • Identify importance of hypothesis testing and to identify type I & type II errors.
SESSION 8 WEEK 1 Month 3	Lecture through power point presentation followed by a group exercise.	Research methodology; Variables and Indicators	<ul style="list-style-type: none"> • Define what study variables are and describe why their selection is important in research. • State the difference between numerical and categorical variables and define the types of scales of measurement. • Discuss the difference between dependent and independent variables and how they are used in research designs. • Identify the variables that will be measured in a research project and development of operational

			definitions with indicators for those variables that cannot be measured directly.
SESSIONS & TIMINGS	TEACHING STRATEGY	TOPIC OF SESSION	SESSION OBJECTIVES <i>i.e. BY THE END OF SESSION THE TRAINEES SHOULD BE ABLE TO;</i>
SESSION 9 WEEK 2 Month 3	Lecture through power point presentation followed by a group exercise.	Research methodology; Study types	<ul style="list-style-type: none"> • Describe the study types mostly used in HSR. • Define the uses and limitations of each study type. • Describe how the study design can influence the validity and reliability of the study results. • Identify the most appropriate study design for a study.
SESSION 10 WEEK 1 Month 4	Lecture through power point presentation	Data collection techniques	<ul style="list-style-type: none"> • Describe various data collection techniques and state their uses and limitations. • Advantageously use a combination of different data collection techniques. • Identify various sources of bias in data collection and ways of preventing bias. • Identify ethical issues involved in the implementation of research and ways of ensuring that informants or subjects are not harmed.

			<ul style="list-style-type: none"> • Identify appropriate data-collection techniques.
SESSION 11 WEEK 2 Month 4	Lecture through power point presentation	Data collection tools	<ul style="list-style-type: none"> • Prepare data-collection tools that cover all important variables.
SESSIONS & TIMINGS	TEACHING STRATEGY	TOPIC OF SESSION	SESSION OBJECTIVES <i>i.e. BY THE END OF SESSION THE TRAINEES SHOULD BE ABLE TO;</i>
SESSION 12 WEEK 1 Month 5	Lecture through power point presentation	Sampling	<ul style="list-style-type: none"> • Identify and define the population(s) to be studied • Describe common methods of sampling. • Decide on the sampling method(s) most appropriate for a research design.
SESSION 13 WEEK 2 Month 5	Lecture through power point presentation Group exercises	Sampling	<ul style="list-style-type: none"> • List the issues to consider when deciding on sample size. • Calculate minimally required sample size according to study designs • Use WHO's (World Health Organization's) sample size calculator.

			<ul style="list-style-type: none"> • Decide on the sample size(s) most appropriate for a research design.
<p>SESSION 14 WEEK 3 Month 5</p>	Lecture through power point presentation	Plan for Data Entry , storage and Statistical Analysis	<ul style="list-style-type: none"> • Identify and discuss the most important points to be considered when starting to plan for data collection. • Determine what resources are available and needed to carry out data collection for study. • Have knowledge of resources, available for data recording, storage and to carry out data analysis of a study? • Describe typical problems that may arise during data collection and how they may be solved. • Identify important issues related to sorting, quality control, and processing of data.
SESSIONS & TIMINGS	TEACHING STRATEGY	TOPIC OF SESSION	SESSION OBJECTIVES <i>i.e. BY THE END OF SESSION THE TRAINEES SHOULD BE ABLE TO;</i>

			<ul style="list-style-type: none"> • Describe how data can best be analyzed and interpreted based on the objectives and variables of the study • Prepare a plan for the processing and analysis of data (including data master sheets and dummy tables) for the research proposal being developed.
SESSION 15 WEEK 1 Month 6	Lecture through power point presentation and individual exercises	Introduction to Statistical Package of Social Sciences (SPSS)	<ul style="list-style-type: none"> • Introduction to Statistical Package of Social Sciences. • Entry of various types of variables in SPSS.
SESSION 16 WEEK 2 Month 6	Lecture through power point presentation and individual exercises	Pilot and project planning	<ul style="list-style-type: none"> • Describe the components of a pre-test or pilot study that will allow to test and, if necessary, revise a proposed research methodology before starting the actual data collection. • Plan and carry out pre-tests of research components for the proposal being developed. • Describe the characteristics and purposes of various project planning and scheduling techniques such as work scheduling & GANTT charting. • Determine the various tasks and the staff needed for a research project and justify any additional staff (research assistants, supervisors) apart from the research team, their recruitment procedure,

SESSIONS & TIMINGS	TEACHING STRATEGY	TOPIC OF SESSION	SESSION OBJECTIVES <i>i.e. BY THE END OF SESSION THE TRAINEES SHOULD BE ABLE TO;</i>
			training and supervision. <ul style="list-style-type: none"> • Prepare a work schedule, GANTT chart and staffing plan for the project proposal.
SESSION 17 WEEK 3 Month 6	Lecture through power point presentation and individual exercises	Budgeting for a study	<ul style="list-style-type: none"> • Identify major categories for a budget. • Make reasonable estimates of the expenses in various budget categories. • List various ways a budget can be reduced, if necessary, without substantially damaging a project. • Prepare a realistic and appropriate budget for the project proposal
SESSION 18 WEEK 1 Month 7	Lecture through power point presentation.	<ul style="list-style-type: none"> • Project administration • Plan for dissemination • Research ethics & concepts of protection of human study subjects 	<ul style="list-style-type: none"> • List the responsibilities of the team leader and project administrator related to the administration and monitoring of a research project. • Prepare a brief plan for administration and monitoring of a project. • Identify the ethical considerations mandatory during execution of a research project and their

			<p>importance.</p> <ul style="list-style-type: none"> • Prepare a plan for actively disseminating and fostering the utilization of results for a research the project proposal.
SESSION 19 WEEK 2 Month 7	Lecture through power point presentation	Differences between original articles, short communications, case reports, systematic reviews and meta-analysis	<ul style="list-style-type: none"> • Differentiate between original articles, short communications, case reports, systematic reviews and meta-analysis
SESSIONS & TIMINGS	TEACHING STRATEGY	TOPIC OF SESSION	SESSION OBJECTIVES <i>i.e. BY THE END OF SESSION THE TRAINEES SHOULD BE ABLE TO;</i>
SESSION 20 WEEK 3 Month 7	Lecture through power point presentation and group exercises	Writing a Case report	<ul style="list-style-type: none"> • Identify important components of a good case report. • Formulate a quality case report of any rare case presented in the clinical unit during the training period
SESSION 21 WEEK 1 Month 8	Lecture through power point presentation and group exercises	Undertaking a clinical audit.	<ul style="list-style-type: none"> • Identify Clinical audit as an essential and integral part of clinical governance. • Differentiate between research and clinical audit.

			<ul style="list-style-type: none"> • Identify types of Clinical Audit • Understand steps of process of Clinical Audit
SESSION 22 WEEK 2 Month 8	Lecture through power point presentation and group project	Critical Appraisal of a research paper	<ul style="list-style-type: none"> • Identify the importance and purpose of critical appraisal of research papers or articles. • Have ample knowledge of important steps of critical appraisal • Can effectively critically appraise a research paper published in any national or international journal.
SESSION 23 WEEK 3 Month 8	Lecture through power point presentation and individual exercises	<ul style="list-style-type: none"> • Making effective power-point presentations • Making effective poster presentations • Presenting a research paper 	<ul style="list-style-type: none"> • Determine various tips for making effective power-point presentations. • Determine various tips for making effective poster and its presentations. • Identify important components of research paper that essentially should be communicated in a presentation. • Can effectively and confidently make a power-point presentation of a research paper published in any national or international
SESSIONS &	TEACHING STRATEGY	TOPIC OF SESSION	SESSION OBJECTIVES <i>i.e. BY THE END OF SESSION THE TRAINEES</i>

TIMINGS			SHOULD BE ABLE TO;
			journal. <ul style="list-style-type: none"> • Can formulate a poster of a research paper published in any national or international journal.

Minimal Attendance of teaching sessions:

The attendance of the trainees in the Research training sessions must be 80% or above during year 1, and it will be duly recorded in each session and will be monitored all the year round.

Assessment of Trainees for teaching sessions:

- i. *For didactic lectures*, the learning and knowledge of the trainees will be assessed during the end of year examination or Annual Research Paper.
- ii. One examination paper of Research of R-Y1 will be taken that will comprise of 75 marks in total and will consist of two sections. Section one will be of 50 marks in total and will comprise of 25 MCQ's (multiple choice questions) while section two will comprise of 5 SAQ's (Short answer questions) and Problems/Conceptual questions.
- iii. Total duration of the paper will be 90 minutes.
- iv. The papers will be checked by the research associates and Deputy Directors of ORIC.

Assessment of individual and group exercises:

- i. The quality, correctness and completeness of the individual as well as group exercises will be assessed during the teaching sessions, when they will be presented by the end of each session by trainees either individually or in groups respectively.
- ii. The mode of presentations will be oral using media of charts, flip charts & white boards.

- iii. There will be no scores or marks specified for the individual or group exercises but the feedback of evaluation by the facilitators will be on spot by end of presentations.

Assessment of individual or group; take home tasks/assignments:

- i. The correctness, quality and completeness of the individual or group exercises will be determined once these will be submitted after completion to the facilitators after period specified for each task. Assignments should be submitted in electronic version and no manually written assignment will be accepted.
- ii. Each assignment will be checked for plagiarism through turn-it-in soft ware. Any assignment that will have originality score less than 90% or similarity index more than 10% will be returned back to trainees for rephrasing and resubmission.
- iii. Assignments will be assessed and checked during the sessions and will be scored by the facilitators who had taken the session.
- iv. A total of 50 marks in total will be assigned for evaluation of all of these take home tasks/assignments.

B. PARTICIPATION IN JOURNAL CLUB SESSIONS

- i. The journal club of every department will comprise of an academic meeting of the head of department, faculty members, trainees and interneers at departmental level.
- ii. The purpose of journal club will be to collectively attempt to seek new knowledge through awareness of current and recent research findings and also to explore best current clinical research and means of its implementation and utilization.
- iii. Apart from the teaching sessions of the trainees should attend the journal club sessions of the departments and should attempt to actively participate in them too.
- iv. One journal club meeting must be organized in the department in every two months of the year and its attendance by the trainees will be mandatory.
- v. The journal club meeting will be chaired by the Dean of specialty.

- vi. The purpose of participation of the trainees in journal club will be to enhance their scientific literacy and to have optimal insight of the relationship between clinical practice and evidenced-based medicine to continually improve patient care.

Format of Journal Club Meetings:

- i. In a journal club meeting, one or two research paper/s published in an indexed national or international journal, selected by the Dean of the department will be presented by year 2 trainees; R-Y2 trainees.
- ii. The research paper will be presented through power-point and the critical appraisal of the paper will follow it.
- iii. The topic will also be discussed in comparison to other evidences available according to the latest research.
- iv. The year one trainee i.e. R-Y1 trainee will only participate in the journal club and will not present during first year of training. He/she will be informed regarding the selected paper one and a half month prior to the meeting and should do extensive literature search on the topic and also of the research paper that will be presented in meeting.
- v. The trainees should actively participate in question & answer session of the journal club meeting that will be carried out following the presentation of the critical appraisal of the research paper. It will be compulsion for each R1 trainee to ask at least one question or make at least one comment relevant to the topic and/or the research paper, during the journal club meeting.

Minimal Attendance of Journal Club meetings by R-Y1 trainee:

The R-Y1 trainees should attend at least 5 out of 6 journal club meetings during their first year of training.

Assessment of Trainees for Journal Club sessions:

There will be no formal quantitative or qualitative assessment of the trainee during year one for their participation in the journal club.

C. OBSERVATION OF MONTHLY MEETING OF INSTITUTIONAL RESEARCH ETHICS COMMITTEE (IREF) OF RMU

- i. In order to provide exposure to R-Y1 trainees regarding standard operational procedures and protocols of the research activities of Rawalpindi Medical University, each R-Y1 trainee should attend at least two monthly meetings of the Institutional Research Ethics

Committee of RMU and should observe the proceedings of the meeting.

- ii. He/she will be informed by the research associates of ORIC about the standard procedures of application to IREF step wise including guidance regarding how an applicant should access the RMU website and download the application Performa and then how to electronically fill it in for final submission. They will also be provided format of presentation for their future presentations at IREF meetings.

Minimal Attendance of IREF meetings by R-Y1 trainee:

The R-Y1 trainees should attend at least at least two (out of 12) monthly meetings of IREF during their first year of training.

Assessment of Trainees for participation in the IREF meetings:

There will be no formal quantitative or qualitative assessment of the trainee during year one for their participation in the IREF meetings.

D. NOMINATION OF THE SUPERVISOR OF THE TRAINEE FOR THE DISSERTATION PROJECT

- i. During the first year of training, the supervisor of each trainee must be nominated within first six months. The Dean of the specialty will decide the nomination of the supervisor for the post graduate trainee as well as MD scholars.
- ii. A meeting will be held in the middle of the year, in June preferably, that will be attended by all heads of the departments and the Dean. The list of all the first year trainees and the available supervisors in each department will be presented by respective heads of each department in meeting. All of the eligible trainees and supervisors will also be around for brief interviews during the meeting.
- iii. The head of departments, prior to interviews of the trainees and supervisors, will inform the Dean in the meeting, their own personal observation of the level of performance, talent personality and temperament of both the trainees and the supervisors. Based on their consideration of the compatibility of both eligible trainees and the supervisors, Head of departments (HOD's) will recommend or propose most suitable supervisors for each trainee after eloquent discussions and justifications.

- iv. The Dean will then call each trainee individually to inform him/her the suggested Supervisor for him/her and will also give right and time for objection or reservation in nomination, if any. The Dean will seek the trainee's final consent and then after asking the trainee to leave the meeting room, will call the supervisor for final consent.
- v. If the supervisor will also be willing to happily supervise the trainee, then the Dean will finally approve the nomination.
- vi. A tentative list will be issued by the office of the Dean, within three days of the meeting, copied to the HOD's and the trainees and supervisors.
- vii. Both the trainees and the supervisors will be given two weeks to challenge the nominations, in case either of the two have any qualms or objections regarding the nominations. They will also be given right to personally approach the Dean for any request for change. In case of any objection, the Dean will make changes in consultation with the HOD's, after final consent and satisfaction of both trainee and supervisor
- viii. The final revised list of nominations will be then issued by the office of Dean and will be sent to the Board of Advanced studies and Research of RMU (BASR).
- ix. The Board of Advanced studies and Research of RMU will issue final approval of the list and the Vice chancellor will endorse the nominations as final authority.
- x. During the last few months of the first year of training, the trainees and supervisors will be advised by the Dean, to get familiar with each other and try to identify their abilities to efficiently and successfully work together as a team, especially during the project of Clinical Audit, mentioned in next section.
- xi. In case of any issues, either of both will have right to request any change in nomination to the Dean, till last week of first year of training. The Dean will then consider the case and will seek modification in nomination from the BASR.
- xii. After completion of first year of training, no substitution in nomination will be allowed. In case of any serious incompatibility between the trainee and the supervisor, the issue will be brought to the Vice chancellor directly by the Dean as a special case, who will make the final decision accordingly, as the final authority.

- xiii. As regards the MD scholars, the external supervisors will also be nominated and those nominations will be made by Vice chancellor of RMU in consultation with the Dean of specialty. The consent of the trainees and supervisors will follow the same protocol as specified above and the final list of nominations will then be submitted to BASR for final approval.
- xiv. After finalization of nominations a letter of agreement of supervision will be submitted by the trainee to the office of Dean, including consent and endorsement of both trainee and the internal and/or external supervisor, with copies to HOD, ORIC and BASR.
- xv. The supervisor and the trainee will be bound to meet on weekly basis exclusively for research activity with documented record of the activity done during the meeting in the log book.

E. UNDERTAKING A CLINICAL AUDIT PROJECT

- i. During ninth month of training year 1; R-Y1 the head of department will form groups of trainees, either two or three trainees in one group (along with each supervisor of each trainee), depending on the total number of trainees available in that respective first year.
- ii. These groups will undertake clinical audits on various aspects of the department as a project assignment, on one topic assigned to each group by the Dean and Heads of Departments.
- iii. If the group will compromise of two trainees and their supervisors' then there will be four group members in that group and if three trainees in one group, then there will be six members of that group after inclusion of their supervisors.
- iv. The trainees during session 21 conducted in first week of eighth month of training R-Y1, will already have been taught how to undertake a clinical audit and this task of undertaking a clinical audit will be assigned to them as its group project. This project will also provide the trainees and the supervisors an opportunity to work closely and will help them understand and foresee their group dynamics for future dissertations.
- v. The clinical audits completed in groups will be published as Annual Audit Reports of the departments by the Dean and HOD's and each member of the group will be acknowledged as author in the Annual Audit reports or if also published in any research journal.

- vi. The clinical audit will also be presented in weekly Clinico-pathological conferences (CPC) of the University, if approved by the Dean. The presentation will be supervised by HOD.
- vii. The contribution of the post graduate trainees'/ MD trainees in audits will be qualitatively assessed by the supervisors and the head of departments.

F. MONITORING OF RESEARCH COURSE OF YEAR 1

- i. All the concerned faculty members, at department, research units of specialties (including supervisors, senior faculty members and Head of Department) and the Deputy Directors and Director at the Office of Research Innovation & Commercialization of RMU will keep vigilant and continuous monitoring of all the academic activities of each trainee.
- ii. There will be a separate section of research in Structured Log books of trainees and also section of Research in portfolio record of the trainees specific to research component of the training that will be regularly observed, monitored and endorsed by all the concerned faculty members, supervisor and facilitators. The Log and portfolio for the research curriculum of each training year will be entered separately.
- iii. The Structured Research section in Log books specific to research curriculum of training year 1 will include the record of attendance of all the teaching sessions of the trainee that will be monthly updated and endorsed by the Department of Medical Education (DME) of RMU.
- iv. There will also be submission record and scores attained for the individual and group assignments of the trainees, endorsed by the facilitators of ORIC including Deputy Directors and Research Associates.
- v. The log books will also include the attendance of the trainees in the Journal club sessions of the department and with qualitative assessment of the trainee regarding any active participation of the trainee during the journal club. It will specifically mention whether any question or comment was raised by the trainee during each journal club session. This information will be endorsed by the supervisor of the trainee and the Head of Department.

- vi. The attendance record of the trainees in the monthly meetings of the Institutional Research Ethics Forum (IREF) of RMU will also be part of the Log Book that will be endorsed by the convener of the IREF by the end of each attended meeting.
- vii. The HOD will monitor the weekly meetings through observation of the documented record of meetings in log books by the end of every month.
- viii. The result of the annual research paper of R-Y1 will be entered in the Log books and will be endorsed by Deputy Directors and Research Associates of ORIC.
- ix. The research portfolio of the trainee R-Y1 will be qualitative and quantitative self assessment of the trainee in narrative form. It will also include the individual assessment of the objectives and aims defined by the trainee during the year and elaboration of the extent of attainment of these. The trainee will be able to specify his/her achievements or knowledge gained in any aspect of research that was not even formally part of the research curriculum. It will include reporting of any research courses, online or physically attended by the trainee, contribution in any research paper or publication, any participation and/or presentation in any research conference, competition etc during year R-Y1.
- x. The research portfolio will assist the trainees to reinforce the importance of strategic thinking as a way to understand their context and look to the future. By having a recorded insight of the individual achievements, weaknesses and strengths, the trainee will be able to maximize his/her talent and potential of all the activities and projects of research with an aim of further progression in career development.

G. OVERALL ASSESSMENT OF PERFORMANCE OF TRAINEES FOR YEAR 1

- i. Quantitative assessment of the performance and accomplishment of trainees will be done in an unbiased, impartial and equitable manner by the supervisor, ORIC department and the senior faculty members at the department.

- ii. The assessment of trainees will not only serve as an effective tool for evaluation of the extent and quality of knowledge gained and skills learnt by trainees but it will also effectively provide an evidence of the level of standards of teaching and training by the facilitators, supervisor and the faculty members.
- iii. For annual assessment of every trainee 75 marks of Annual Research Paper of R-Y1 will be included, while 25 marks will be included from the home tasks assignments. The 50 marks of the home task assignments will be converted to 25 marks, to get an aggregate of 100 total marks. Out of these 100 total marks, 40% will be passing marks of this Research course and in case of failure in it, second attempt will be allowed to the trainees and if any one fails in second attempt too then he/she should appear next year with next batch's first attempt.

H. EVALUATION/ FEEDBACK OF RESEARCH COURSE OF YEAR 1

Success of any academic or training activities greatly rely on the honest and constructive evaluation that opens pavements of improved and more effective performances and programs. The research course of the trainees will not only be evaluated by the trainees themselves but also by the deputy directors of ORIC, supervisors and HOD's through end of sessions forms and then collectively through end of course feedback forms.

- i. ***The feedback of trainees*** will include structured evaluation of each teaching session through structured and anonymous feedback forms/questionnaire that will be regularly distributed amongst the trainees. Anonymity will ensure an honest and unbiased response. They will be requested to provide their feedback regarding various aspects of teaching sessions eg content, medium used, facilitators performance and knowledge, extent of objectives attained etc through Likert scale. They will mark, through their personal choice without any pressure or peer consultation, one particular category amongst five scales specified ranging from 1-5, 1 representing the poorest quality while 5 representing excellence. Apart from this structured assessment, open ended questions will also include an in depth perspective and insight. Similarly, an overall feedback questionnaire will also be rotated amongst trainees.

- ii. **The feedback of trainers** will include structured evaluation of each teaching session by the facilitators, supervisors and senior faculty members involved in the Research training course. They will provide their feedback through structured and anonymous feedback forms/questionnaire, including closed and partially closed questions that will be regularly provided by them. They will provide their inputs and opinions regarding effectiveness of the course contents, curriculum, teaching methodologies, teaching aids and technologies, content and usefulness of the exercises and assessments etc.
- iii. **Three focus group discussions;** one of the R-Y1 trainees, second of the facilitators and third of the supervisors will also be organized by the ORIC to evaluate the research course, its benefits and weaknesses and scope for improvement.
- iv. **The research portfolio** will be checked and endorsed by the supervisor and the Director of ORIC.
- v. **A final evaluation report of the Research Course R-Y1** will be formulated and compiled by the ORIC of RMU. The report will be presented all concerned stake holders, since the course evaluations will play a significant role in curriculum modification and planning.

I. QUALITY ASSURANCE OF RESEARCH COURSE OF YEAR 1

- i. The final quality evaluation report along with all the feedback material, randomly selected log books, research portfolios, submitted individual & groups assessments and randomly selected annual research course examination papers will be observed by an evaluation team of Research course. The quality evaluation team of research course will include the Head of departments, Deans, selected representatives of BASR, IREF, Director DME (Department of Medical Education), Director of ORIC, Director of Quality enhancement cell (QEC) and Vice chancellor of RMU, individually. The selection of representatives of the concerned departments will be made by the Vice chancellor of RMU.
- ii. All the materials will be observed and evaluated by the above mentioned once during the course and finally by the end of course year.
- iii. The evaluation during the year will be done at any random occasion by members of evaluation teams individually or in teams and will be done without any prior information to the trainees and trainers.

- iv. The evaluation will include not only physical observation of the materials but the evaluators may also make a visit to observe any proceedings or activities of the research course e.g. a lecture, a group exercise, a journal club session and/or an IREF meeting.
- v. ORIC will be responsible for submission of the evaluation content to all including a copy to the Quality Enhancement Cell (QEC) of RMU for internal evaluation.
- vi. The QEC will organize an external evaluation too through involvement of a third party that may include members of Quality assurance department of Higher Education Department based on their availability.
- vii. An annual meeting of the quality assessment and enhancement will also be organized by the Quality Enhancement Cell of RMU, including representatives of supervisors, Head of Departments, Dean, representative members of BASR, ORIC, DME, QEC & IREF and will be chaired by Vice chancellor. During the meeting all participants will review and discuss all the evaluation material. The quality evaluation team will also share their experiences of their evaluation visits and observations to validate the existing materials.
- viii. In perspective of the quality assessment, the Vice Chancellor and the Board of Advanced study and Research will finalize any modifications or enhancement in the next Research course.

The activities related to research training of post graduate trainees is also displayed in figure 1. Successful completion of above mentioned requirements of research course is one component of the all clinical and scholarly requirements for mandatory advancement to the next Post Graduate Year level i.e. year 2 training year or R-Y2.

RESEARCH COURSE OF SECOND POST GRADUATION TRAINING YEAR R-Y2

PURPOSE OF R-Y2 RESEARCH COURSE:

The YEAR 2-R2 research course of the post graduate trainees will provide optimum skills to trainees to actually formulate their individual research proposal of the research project/dissertation, prerequisite to their degrees, in perspective of the knowledge acquired during year one of the training i.e. R-Y1. This course will provide them clarity of basic epidemiological and biostatistics concepts that they essentially require to transform their data into substantial evidences, to answer their research questions for their individual research project/dissertation. The course will also make them proficient to follow the standard ethical and institutional appraisal procedures of Rawalpindi medical University by Board of Advanced Studies and Research and Institutional and Ethics Research Forum of RMU. It will also impart them expertise to explore evidences in research through well organized literature search and also how to critically appraise them.

LEARNING OUTCOMES OF R-Y2 RESEARCH COURSE

After completion of R-Y2 course the trainees should be efficiently able to:

1. Identify and define the basic concepts of Epidemiological measures and biostatistics.
2. Formulate and pretest to finalize all the data collection tools for the research projects
3. Identify and execute proficiently all procedures required for data analysis and interpretation.
4. Analyze and interpret the data collected for a research project and draw conclusions related to the objectives of study.
5. Write a clear and concise research report (paper for a peer reviewed journal/dissertation) and a summary of the major findings and recommendations for each of the different parties interested in the results.
6. Present the major findings and the recommendations of a study to policy-makers managers and other stakeholders to finalize the recommendations.
7. Prepare a plan of action for the dissemination, communication and utilization of the findings and (if required) make recommendations for additional future research.
8. Critically appraise a research paper of any national or international journal.

9. Present research papers published in various national and international journals at journal club.
10. Prepare final draft of the research proposal of the Dissertation project, requisite to the post graduation degree of trainee, under the guidance of the nominated supervisor.
11. Fill in an application Performa for submission of Dissertation's research proposal to BASR or IREF.
12. Present and defend a research proposal to BASR or IREF.

RESEARCH COURSE OF SECOND TRAINING YEAR

Following academic and scholarly activities will be carried out during year 2 i.e. R-Y2 of Research course catering the post graduate trainees

A. TEACHING SESSIONS:

- i. Basic and advanced Biostatistics and Epidemiological concepts will be taught to the trainees through following methods in various sessions. Each session will comprise of all or either one or two or all four of the following techniques;
 1. Didactic lectures through power-point presentations.
 2. On spot individual exercises.
 3. Take home individual assignment
 4. Take home group assignment.
- ii. The facilitators of these sessions will be staff members of Office of Research Innovation and commercialization (ORIC) of RMC including Director, Deputy Directors, Research Associates, Statistician and Publication In charge. While visitor lecturers including renowned national and international public health consultants, researchers, epidemiologists and biostatisticians will also be invited, according to their availability, for some modules of these courses.

Format of teaching sessions:

- i. During year 2 i.e. R-Y2, 16 teaching sessions in total will be conducted, with an average of three sessions per month.

- ii. Each session will comprise of a didactic lecture delivered initially, to attain the mentioned learning outcomes. Each didactic lecture will be of 30 minutes duration using the power-point medium that will be followed by a 30 minutes on spot individual exercises of trainees during the same session.
- iii. Since most of the curriculum will comprise of quantitative calculations so trainees will be encouraged to work individually on exercises assigned both manually as well on Statistical Package of Social Sciences, instead of group exercises. These exercises will require calculations and numerical solving too.
- iv. By the end of each session, a take home individual task/assignment will be given to trainees, that too preferably individually rather than in groups, that will be duly evaluated and marked each month.

Course content of teaching sessions:

- i. The course materials will be based on an updated modified version of course titled as “Designing Health Services Research (Advanced)” that was developed in collaboration of Rawalpindi Medical College & Nuffield Institute for Health, University of Leeds, UK based adapted from “Designing and Conducting Health Systems Research Projects” by CM. Varkevisser KIT Publishers, Amsterdam (International Development Research Centre) in association with WHO Regional Office for Africa.
- ii. The trainees will be provided hard copies as well as soft copies of the course content in a folder at the initiation of the course.
- iii. In addition to it they will be provided various soft copies of various data sets for practicing data analysis in addition to links of updated and good resource materials regarding research by the course facilitators.

Curriculum of teaching sessions:

The details of the 16 teaching sessions of the trainees during year two R-Y2 along with the tentative time frame work, teaching strategies, content of curriculum and objectives/Learning outcomes of each sessions are displayed in table 2.

**TABLE 2. TEACHING SESSIONS OF RESEARCH CURRICULUM OF YEAR 2 OF TRAINEES OF POST GRADUATE
TRAINEES OF RMU**

SESSIONS & TIMINGS	TEACHING STRATEGY	TOPIC OF SESSION	SESSION OBJECTIVES <i>i.e. BY THE END OF SESSION THE TRAINEES SHOULD BE ABLE TO;</i>
SESSION 1 WEEK 1 Month 1	Lecture through power point presentation followed by individual exercises and Take home individual assignments	<ul style="list-style-type: none"> • Introduction to Biostatistics • Description of Variables • Numerical methods of Data summarization (Manual as well as through Statistical Package of Social Sciences) 	<ul style="list-style-type: none"> • Describe the purpose, scope and importance of Biostatistics in Health systems research • Identify basic four steps of Biostatistics. • Describe data in terms of frequency distributions, percentages, and proportions. • Explain the difference between mean, median and mode. • Calculate the frequencies, percentages, proportions, ratios, rates, means, medians, and modes for the major variables of a study manually as well as through Statistical Package of Social Sciences (SPSS).
SESSION 2 WEEK 2 Month 1	Lecture through power point presentation followed by	Graphical presentation of data	<ul style="list-style-type: none"> • Identify various types of graphs • Identify the graphical presentations appropriate for each type of variables • Describe data in terms of figures

	individual exercises &Take home individual assignments.		<ul style="list-style-type: none"> • Use of Microsoft Excel and SPSS in formulation of graphs.
SESSIONS & TIMINGS	TEACHING STRATEGY	TOPIC OF SESSION	SESSION OBJECTIVES • <i>i.e. BY THE END OF SESSION THE TRAINEES SHOULD BE ABLE TO;</i>
SESSION 3 WEEK 3 Month 1	Lecture through power point presentation followed by Individual exercise & Take home assignment	Cross-tabulation of quantitative data	<ul style="list-style-type: none"> • Describe the difference between descriptive and analytical cross-tabulations. • Construct all important cross-tabulations which will help meet the research objectives manually as well as through SPSS. • Interpret the cross-tabulations in relation to study objectives and study questions.

SESSION 4 WEEK 1 Month 2	Lecture through power point presentation followed by Individual exercise & Take home assignment	Measures of Association based on risk	<ul style="list-style-type: none"> • Define incidence, risk, relative risk and odds ratio. • Calculate relative risk for appropriate study designs (cross-sectional comparative studies, cohort studies, case-control studies and experimental studies) • Calculate measures of association manually and also through SPSS and medical calculator.
SESSION 5 WEEK 2 Month 2	Lecture through power point presentation followed by Individual exercise & Take home assignment	Confounding and methods to control confounding	<ul style="list-style-type: none"> • Identify what is confounding and what are confounder variables • Explain different ways of dealing with confounding at the design and analysis stage of a study. • Evaluate whether an association between two variables may be influenced by another confounding variable/risk factor. • Calculate association in a way that takes into consideration the effect of potential confounding by another variable/risk factor.
SESSIONS	TEACHING	TOPIC OF	SESSION OBJECTIVES

& TIMINGS	STRATEGY	SESSION	<i>i.e. BY THE END OF SESSION THE TRAINEES SHOULD BE ABLE TO;</i>
SESSION 6 WEEK 3 Month 2	Lecture through power point presentation followed by Individual exercise & Take home individual assignments	Basic statistical concepts; Measure of dispersion and confidence Intervals	<ul style="list-style-type: none"> • Explain what is meant by a range, a percentile, a standard deviation, a normal distribution, a standard error and a 95% confidence interval. • Calculate ranges, standard deviations, standard errors and 95% confidence intervals for data, manually as well as through SPSS.
SESSION 7 WEEK 1 Month 3	Lecture through power point presentation	Hypothesis testing for a research	<ul style="list-style-type: none"> • State the concept of hypothesis testing. • Define and describe the types difference between one sided and two sided hypothesis. • Formulate Null hypothesis and Alternate hypothesis in an appropriate format. • Identify importance of hypothesis testing and to identify type I & type II errors.
SESSION 8 WEEK 2 Month 3	Lecture through power point presentation	Tests of Significance	<ul style="list-style-type: none"> • Explain what a significance test is and what its purpose is. • Explain what is probability value or p-

	followed by a Take home individual assignment.		value <ul style="list-style-type: none"> • Identifying various tests of significances • Identifying appropriate test of significance for a specific research design.
SESSIONS & TIMINGS	TEACHING STRATEGY	TOPIC OF SESSION	SESSION OBJECTIVES <i>i.e. BY THE END OF SESSION THE TRAINEES SHOULD BE ABLE TO;</i>
SESSION 9 WEEK 1 Month 4	Lecture through power point presentation followed by an individual exercise & a Take home individual assignment.	Determining difference between two groups- categorical data Paired & unpaired observations	<ul style="list-style-type: none"> • Decide when to apply the chi-square test. • Calculate chi-square values. • Use the chi-square tables to assess whether calculated chi-square values are significant. • Decide when to apply the McNemars test and calculate its values. • Make a decision concerning whether these tests can be used on give data and, if so, what test should be used on which data. • Perform these tests on data manually as well as through SPSS.

<p>SESSION 10 WEEK 2 Month 4</p>	<p>Lecture through power point presentation followed by an individual exercise & Take home individual assignment.</p>	<p>Determining difference between two groups- numerical data Paired & unpaired observations</p>	<ul style="list-style-type: none"> • Decide when to apply the independent and dependent t-test. • Calculate paired and unpaired t- values. • Use the t tables to assess whether calculated t values are significant. <p>Decide when to apply the independent and dependent t test and calculate its values.</p> <ul style="list-style-type: none"> • Make a decision concerning whether these tests can be used on give data and, if so, what test should be used on which data. • Perform these tests on data manually as well as through SPSS.
<p>SESSIONS & TIMINGS</p>	<p>TEACHING STRATEGY</p>	<p>TOPIC OF SESSION</p>	<p>SESSION OBJECTIVES <i>i.e. BY THE END OF SESSION THE TRAINEES SHOULD BE ABLE TO;</i></p>

<p>SESSION 11</p> <p>WEEK 1</p> <p>Month 5</p>	<p>Lecture through power point presentation followed by an individual exercise & Take home individual assignment.</p>	<p>Determining difference between more than two groups- numerical data</p> <p>ANOVA (Analysis of Variance)</p>	<ul style="list-style-type: none"> • Decide when to apply the ANOVA test. • Calculate F- values. • Use the F tables to assess whether calculated t values are significant. • Make a decision concerning whether this tests can be used on give data and, if so, what test should be used on which data. • Perform ANOVA tests on data through SPSS.
<p>SESSION 12</p> <p>WEEK 2</p> <p>Month 5</p>	<p>Lecture through power point presentation followed by an individual exercise</p>	<p>Determining Correlation between variables</p>	<ul style="list-style-type: none"> • Decide when to apply the Pearson's and Spearman's correlation tests. • Calculate Pearson's correlation coefficient and Spearman's Pearson's correlation coefficient. • Use the p-values to assess whether calculated coefficients are significant. • Perform correlation tests on data through SPSS.

SESSION 13 WEEK 3 Month 5	Lecture through power point presentation followed by an individual exercise	Regression Analysis	<ul style="list-style-type: none"> • Explain what is a regression analysis • Differentiate between simple linear and multiple logistic regression analysis. • Decide when to apply the regression analysis and how to interpret. • Make a decision concerning whether these tests can be used on give data and, if so, what test should be used on which data. • Perform these tests on data through SPSS.
SESSIONS & TIMINGS	TEACHING STRATEGY	TOPIC OF SESSION	SESSION OBJECTIVES <i>i.e. BY THE END OF SESSION THE TRAINEES SHOULD BE ABLE TO;</i>
SESSION 14 WEEK 1 Month 6	Lecture through power point presentation and individual exercises	Diagnostic Accuracy of a test	<ul style="list-style-type: none"> • Identify what is a diagnostic accuracy of a test compared to gold standard tests. • Identify what are true positives, true negatives, false positive and false negatives in a diagnostic testing. • Calculate Sensitivity, specificity, Positive and negative predictive values of a diagnostic test using standard formulae.

SESSION 15 WEEK 2 Month 6	Lecture through power point presentation and individual exercises	Writing a research paper	<ul style="list-style-type: none"> • List the main components of a research paper. • Make an outline of a research paper. • Write drafts of report in stages. • Check the final draft for completeness, possible overlaps for clarity and smoothness of style. • Draft recommendations for action based on research findings.
SESSION 16 WEEK 3 Month 6	Lecture and individual exercises	Writing a dissertation	<ul style="list-style-type: none"> • List the main components of a dissertation • Explain how a research paper differs from a dissertation • Make an outline of a dissertation.

Minimal Attendance of teaching sessions:

The attendance of the trainees in the Research training sessions must be 80% or above during year 2 and it will be duly recorded in each session and will be monitored all the year round.

Assessment of Trainees for teaching sessions:

- i. For didactic lectures, the learning and knowledge of the trainees will be assessed during the end of year examination.

- ii.* One examination paper of Research of R-Y2 will be taken that will comprise of 75 marks in total and will consist of two sections. Section one will be of 50 marks in total and will comprise of 25 MCQ's (multiple choice questions) while section two will comprise of 5 Numerical Problems/Conceptual questions.
- iii.* Total duration of the paper will be 120 minutes.
- iv.* The papers will be checked by the research associates and Bio-statisticians of ORIC.

Assessment of individual exercises:

- i.* The quality, correctness and completeness of the individual exercises will be evaluated during the teaching sessions, when they will be presented by the end of each session by trainees.
- ii.* The mode of presentations will be oral, electronic or written accordingly and if needed using media of charts, flip charts & white boards.
- iii.* Most of the individual exercises will be observed and evaluated by the facilitators directly on computers since it mostly will involve skills of data analysis through Statistical Package of Social Sciences.
- iv.* There will be no scores or marks specified for the individual exercises but the feedback of evaluation by the facilitators will be on spot.

Assessment of individual; take home tasks/assignments:

- i.* The take home assignments of the trainees will be checked once these will be submitted after completion to the facilitators after period specified for each task.
- ii.* Most of the take home assignments will be related to numerical problem solving, calculations or tasks of analysis in SPSS.
- iii.* Assignments should be submitted in electronic version and no manually written assignment will be accepted.
- iv.* Each assignment will be checked for plagiarism through turn-it-in soft ware. Any assignment that will have originality score less than 90% or similarity index more than 10% will be returned back to trainees for rephrasing and resubmission.
- v.* They will be assessed and checked within one week of the session and will be scored by the facilitators.

- vi. A total of 50 marks in total will be assigned for evaluation of all of these take home tasks/assignments.

B. PRESENTATION IN JOURNAL CLUB SESSIONS

- i. During year 2 of training, the trainees should actively participate in the journal club sessions of the department regular basis.
- ii. One journal club meeting must be organized in the department within every two months of a year and apart from mandatory more than 80% yearly attendance, the trainees must present two research paper in year 2 of training individually.
- iii. The purpose of presentation of the second year trainees in journal club is teach them how to form a bridge between research and practice, how to confidently appraise recent research and then how to practically apply best research findings into their clinical setting as their first steps evidenced-based medicine.

Format of Journal Club Meetings:

- i. In a journal club meeting, two research papers, published in an indexed national or international journal, selected by the Dean of the department must be presented by second year trainee during R-Y2 training year, in two different meetings.
- ii. Trainee will be given the selected paper one and a half month prior to the meeting by the Dean of the department.
- iii. After thoroughly going through the research a paper, trainee should do extensive literature search on the topic also and must be familiar with all the recent and current research done on the similar topic by other researchers.
- iv. An approximately 30 minutes long oral presentation will be made by the trainee, in monthly journal club session on the selected research paper. The research paper will be presented through power-point and the critical appraisal of the paper will follow it.
- v. The topic will also be discussed in comparison to other evidences available according to the latest research.
- vi. The other second year trainees should actively participate in question & answer session of the journal club meeting that will be carried out following the presentation of the critical appraisal of the research paper. It will be compulsion for each R-Y2 trainee to ask at least one question or make at least one comment relevant to the topic and/or the research paper, during the journal club meeting.

Minimal Attendance of Journal Club meetings by R-Y2 trainee:

The R-Y2 trainees should attend at least 5 out of 6 journal club meetings during their second year of training. Out of these 6 journal clubs, he/she must make presentation in any two sessions as a compulsion.

Assessment of presentation of the trainee at Journal Club:

- i. During the presentation, the head of department and two other senior faculty members will evaluate, trainee's ability to make effective presentation of the research paper and also his/her skills to critically appraise a research paper.
- ii. The scoring will not be done for the first paper presentation by the trainee, since that will be the first ever presentation by the trainee. During the first presentation the evaluators will generally qualitatively evaluate the skills of presenter without any quantitative assessment. They will inform the presenter by the end of first paper presentation, his/her mistakes, weaknesses and scope for improvement. The strengths and competences, on the other hand, will also be appreciated for encouragement.
- iii. A structured checklist for scoring the skills and abilities of trainee will be used by the above mentioned senior faculty members. The average of the three total scores will be calculated, out of total attainable score of 25 that will then be used in overall assessment of the trainee.
- iv. The evaluation will include aspects like the presenter's aptitude to identify the strengths and weaknesses of a research article, apart from assessment of the usefulness and validity of research findings. He/she should be able to determine the appropriateness of the study methodology and design for the research question, apart from suitability of the statistical methods used, their appropriate presentation, interpretation and discussion. He/she should also be able to identify and justify relevance of the research to one's own practice.

C. FORMULATION OF RESEARCH PROPOSAL/S OF DISSERTATION/RESEARCH PAPERS AS REQUISITE TO POST GRADUATE DEGREE/MD DEGREE

- i. At the beginning of year 2, the trainee will start sorting out various research questions for his/her research project as dissertation requisite for the post graduation degree.
- ii. Trainee must submit and seek approval of the research proposal/s from the concerned institutions till end of year 2 i.e. R-Y2.
- iii. Since post graduate trainees seeking Fellowship from the College of Physicians and surgeons of Pakistan (CPSP) have either of the two following options, as per guidelines of CPSP:

OPTION A: Submission of one dissertation in specialty field as requisite to FCPS degree OR

OPTION B: Publication of two original research articles in any CPSP recognized journals, being first author, as requisite to FCPS degree

They will have to submit one research proposal for the dissertation till end of second year of training, if following option A and two research proposals of the original articles, if following option B accordingly.

- iv. The MD scholars will also have to submit one research dissertation, in specialty field, to Rawalpindi Medical University, so they will also submit one research proposal for the dissertation till end of second year of training.
- v. Whatever is the post graduation academic scenario; the trainee must decide the research question/s under the guidance of the supervisor till third month of R-Y2 and hence decide the final title of the research project/s.
- vi. During these first three months of R-Y2, the trainee under guidance of the supervisor and ORIC will do extensive review of the literature, relevant to topic. He/she will do online as well physical search of printed, Journal articles, reports, books, conference papers, dissertations, Research and program reports- published/ unpublished. He/she will also access the libraries of Rawalpindi medical University, repositories of various institutions.
- vii. The trainee will also consult the research Associates and Deputy Directors at the ORIC for the feasibility of the research question and any modification. The trainees will be encouraged to preferably select research questions that will be better answered through cross sectional comparative, analytic and experimental study designs instead of simple descriptive cross sectional or case

series design. Descriptive cross sectional, exploratory or case series design will be allowed only in special cases when the research question will deal with an exceedingly significant and priority issue, not addressed previously even though published work either locally/nationally or internationally.

- viii. Once the research question and topic is finalized with mutual understanding of the supervisor, trainee will submit the selected topic to the Head of Department and Dean of specialty.
- ix. The Dean of the specialty will give approval of the topic after scrutiny and will confirm that there is no duplication of the topic in the department, after consultation with HOD's.
- x. Then the Dean will finalize the list of the topics of research proposals of all trainees during fourth month of R-Y2 and will submit the list to BASR.
- xi. BASR will give the final approval of all topics within same month.
- xii. For the post graduate trainees following aforementioned option B (Publication of two original research articles in any CPSP recognized journals, being first author, as requisite to FCPS degree) must submit their topics (already approved from BASR) to CPSP for its approval. Once the topics are approved by CPSP, they will initiate research proposal development for these research projects that they will publish as original articles.
- xiii. Once the trainee gets the approval of the topic/s from all concerned authorities, the formal write up of proposal/s must be initiated within fifth month of R-Y2 in consultation with supervisor and the research associates of ORIC for guidance in methodology.
- xiv. The research proposal/s will be brief outline of trainees' future research project/s (approx of 1000-1500 words) and must comprise of the following topics:
 1. Title of research project.
 2. Introduction and rationale (with Vancouver in text citations)
 3. Research aim, purpose and objectives

4. Hypothesis, if required according to the study design.
5. Operational Definitions
6. Research Methodology:
 - a) Setting
 - b) Study Population
 - c) Study Duration
 - d) Study Design
 - e) Sampling: *Sample size with statistical justifications, sampling technique, inclusion criteria & exclusion criteria.*
 - f) Data Collection technique/s
 - g) Data Collection tool/s
 - h) Data Collection procedure
 - i) Plan for Data entry & Analysis
7. Ethical Considerations
8. Work plan/Gantt chart
9. Budget with justifications
10. Reference list according to the Vancouver referencing style
11. Annexure (*including data collection tool or performa, consent form, official letters, scales, scoring systems and/or any other relevant material*)
- xv. The research proposal should be completed in eighth month of R-Y2 and should also be reviewed and finalized by the Supervisor of the trainees.

- xvi. The finalized research proposal will be reviewed by publication in charge of ORIC for plagiarism through turn-it-in soft ware. Any proposal that will have originality score less than 90% or similarity index more than 10% will be returned back to trainees for rephrasing and resubmission. Only when the eligible scores will be reached, then the proposal will be further processed.
- xvii. The statistician at data analysis centre of ORIC will facilitate the trainees in sample size calculation through sample size calculators according their study designs.
- xviii. The trainees should formulate all the data collection tools under guidance of supervisor and research associates of ORIC and should also pretest to finalize all the data collection tools for their research projects.
- xix. These research proposals along with the tools will be submitted to all concerned authorities for appraisal.
- xx. The supervisors and research associates of ORIC will also ensure that the duration of research project should be adequate and realistic so that trainees will be able to complete their project/s during third year of training leaving enough time for its write up during year 4 of training. For the post graduate trainees following option of Publication of two original research articles as requisite to FCPS degree, the study duration will be even briefer.

D. PRESENTATION OF RESEARCH PROPOSAL/S TO INSTITUTIONAL RESEARCH ETHICS COMMITTEE (IREF) OF RMU

- i. The R-Y2 trainees will already be aware of the standard operational procedures and protocols of the Institutional Research Ethics Committee of RMU as they had, as a mandatory activity, participated and observed the proceedings of the meeting during R-Y1. However, he/she will be informed about any modifications or updates regarding the standard procedures of application to IREF if will have occurred during last one year.
- ii. Trainees will be individually provided an updated step wise guidance by the research associates of ORIC, regarding how an applicant should access the RMU website and download the application Performa and then how to electronically fill it in for final submission. They will also be provided updated format of presentation for their Research Proposal presentations at IREF meetings.

- iii. The trainees must submit ten sets of hard copies of all the documentation including the research proposal with all annexes, plagiarism detection report and application performa to ORIC, at least ten days prior to the monthly meeting. ORIC will provide them date and month of the IREF meeting for presentation and the trainee must present in the meeting along with his/her supervisor.
- iv. The trainee must make a five to ten minutes' presentation through power-point at Institutional Research Ethics Forum during 9-10 months of R-Y2. By the end of presentation, he/she will respond to all the queries of the forum and the supervisor will facilitate in defense of the proposal.
- v. The IREF will appraise and scrutinize every aspect of the proposal/s and if found acceptable then will provide on spot verbal approval of the project followed by written approval letter within next two weeks to the trainees.
- vi. If members of IREF will find any modifications required in the proposal/s they will recommend them to trainee and supervisor. The trainee must incorporate those changes and will resubmit the corrected version of proposal/s within next one week's period.
- vii. The written approval letter of IREF will be issued within next two weeks of meeting, to the trainee.
- viii. In case the trainee will be working on option B of CPSP i.e. publication of two research papers, instead of writing dissertation, then he/she will present both research proposals to IREF for the two topics already approved by CPSP.

E. ASSURANCE OF FEASIBILITY & AVAILIBILITY OF RESOURCES FOR RESEARCH PROJECTS

- i. The trainee will ensure that for his/her research project/s ample resources in terms of monetary, human or physical will be available to complete the project. He will also provide documented proof and justification to avoid any unforeseen problems that may lead to incompleteness of research project/s.
- ii. No individual funding will be provided to the trainees for their research projects requisite to their post graduation degrees by Rawalpindi Medical University. The trainee may be bearing all the expenses on individual basis or may be applying to any of national or international funding agencies for research project/s.

- iii. In case the trainee will be applying for any external source of funding from any national or international funding agency, the funding application and approval process must be completed by the end of year 2 of training.
- iv. The trainee may also be pursuing the degree, through any scholarship that also will include the research project expenses.
- v. In either of the above mentioned circumstances, the trainee must provide and submit the budget details and documented evidences of the funding or availability of monetary resources to the supervisor and Dean who will ensure the feasibility of the resources available to the trainees.
- vi. Moreover, if any tools, kits, equipment or physical materials will be required for research project, the trainee will provide documented evidence of its availability.
- vii. If the data collection will require hiring of additional human resources, then the trainee will provide documented evidence like consent of staff members contributing to his/her research or details of training expenses or honorarium details if any to the supervisor.
- viii. The supervisor will also consult the Dean and HOD's in ensuring the feasibility and availability of resources of a trainee during second year of training.

F. SUBMISSION OF RESEARCH PROPOSAL/S TO CPSP/BASR OF RMU

- i. Post graduate trainees applying for their CPSP fellowship using aforementioned option A (Submission of one dissertation in specialty field as requisite to FCPS degree) after receiving appraisal of IREF of RMU, must submit their proposal to CPSP during last quarter of second year of training. The approval process from CPSP takes approximately 3 months on an average but in case any corrections are suggested the resubmission and acceptance procedure may take 6 months on an average. These trainees will initiate data collection as soon as they receive the acceptance by CPSP authorities.
- ii. However, the post graduate trainees who will opt to publish two original research articles in any CPSP recognized journals, as requisite to FCPS degree, will not require any submission of their proposals to CPSP. They will directly initiate the data collection as

soon as they will receive the IREF acceptance letter. Hence their data collection phase of both research projects will begin in last quarter of R-Y2.

- iii. The MD scholars of RMU will submit their research proposals to the Board of Advanced Studies and Research (BASR) of RMU for appraisal. BASR will issue an acceptance letter of the research proposal endorsed by the Vice chancellor of RMU copied to the concerned stake holders and authorities including office of Dean and ORIC. If members of BASR will find any modifications required in the proposal they will recommend them to trainee and supervisor. The trainee must incorporate those changes and will resubmit the corrected version of proposal to BASR within next one-week period. The written approval letter of BASR will then be issued within next two weeks to the trainee. The trainees will thus receive formal permission to initiate data collection phase through this acceptance of BASR.
- iv. All trainees who will require data collection from any RMU or its teaching hospitals that are Benazir Bhutto Hospital, District Headquarters Hospital and Holy Family Hospital, will not require any permission from the administration of these hospitals. The appraisal letters of IREF and BASR will be considered as acceptance by all authorities of the RMU.
- v. If any trainee will need to collect data from any institution other than RMU or its teaching hospital, they must seek that institution's approval too according to their standard protocols parallel to the period when they will have submitted proposals to CPSP/BASR to save their time.
- vi. All the post graduate trainees will follow the guidelines regarding the format and content of the research proposals provided by the authorities to whom they will be presenting their research proposals that are Board of Advanced Studies and Research (BASR) for MD scholars or College of Physicians and surgeons of Pakistan (CPSP).

G. MONITORING OF RESEARCH COURSE OF YEAR 2

- i. An alert and continuous monitoring of all the scholarly activities of each trainee will be carried out by all the concerned faculty i.e. research units of specialties, supervisor, Head of Department and the deputy Directors and research fellows at the Office of Research Innovation & Commercialization of RMU.
- ii. The structured Research component of Log books and Research portfolio of the trainees specific to research component of the training of year 2; R-Y2 will also be regularly observed, monitored and endorsed by all the concerned faculty members, supervisor and facilitators.
- iii. The Log books section R-Y2 specific to research curriculum of training year 2 will include the record of attendance of all the teaching sessions of the trainee that will be monthly updated and endorsed by the department of Medical Education (DME) of RMU.
- iv. It will also comprise of all the submission record and scores attained for the individual and group assignments of the trainees, endorsed by the supervisor and the research associates and Deputy Directors of ORIC.
- v. The log books will also include the attendance and presentation scores of the trainees in the Journal club sessions of the department. It will also include observation notes catering to qualitative evaluation for active participation by the trainee during each journal club session. This information will be endorsed by the supervisor of the trainee and HOD.
- vi. The record of the trainees regarding timely completion and quality of each activity related to completion of research proposals and its presentation in the monthly meeting of the Institutional Research Ethics Forum (IREF) of RMU will also be part of the Log Book that will be endorsed by the supervisor, research associates of ORIC and conveners of the IREF and BASR.
- vii. The result of the annual research paper of R-Y2 will also be entered in the Log books by Research Associates and will be endorsed by the Deputy Directors of ORIC.
- viii. The research portfolio of the trainee R-Y2 will again include qualitative and quantitative self assessment of the trainee in narrative form. It will include the individual assessment of the objectives and aims defined by the trainee during the second year of training

and extent of their successful attainment. The trainee will also mention individual achievements or knowledge and skills acquired in any aspect of research that was either formally part of the research curriculum or even not. It will also include reporting of any research courses, online or physically attended by the trainee, contribution in any research paper or publication, any participation and/or presentation in any research conference, competition etc during year R-Y2.

H. OVERALL ASSESSMENT OF PERFORMANCE OF TRAINEES FOR YEAR 2

- i. The overall assessment of performance of trainee for R-Y2 will rely on marks attained out of total 100 obtainable marks. These total 100 marks will include 50 marks for the Annual Research Paper of R2 (where the 75 marks of paper will be converted to 50 marks), while 25 marks will be included from the home tasks assignments (by conversion of 50 marks of the home task assignments into 25 marks) and actual 25 marks of presentation of journal club will be included in assessment (without any conversion), to get an aggregate of 100 total marks.
- ii. Out of the total attainable 100 total marks, 40% will be passing marks of this Research course and in case of failure in it, second attempt will be allowed to the trainees and if any one fails in second attempt too then he/she should appear next year with next batch's first attempt.

I. EVALUATION/ FEEDBACK OF RESEARCH COURSE OF YEAR 2

Like evaluation of year one of research course R-Y1, the second year of training R-Y2 will also be evaluated not only by the trainees themselves but also by the Deputy Directors, supervisors and senior faculty through end of sessions forms and then collectively through end of course feedback forms.

- i. ***The feedback of trainees*** will include structured evaluation of each teaching session of R-Y2 through structured and anonymous feedback forms/questionnaire that will be regularly distributed amongst the trainees. The forms will include questions phrased as Likert scales (1-5 categories) inquiring their responses regarding various aspects of teaching sessions. Category 1 will represent the poorest quality increasing till category 5 representing excellence and the trainees will choose either of 5 based on their honest and

unbiased personal choice. The open ended questions in form will indicate qualitative evaluation of the trainees. There will also an overall feedback questionnaire for entire second year of training course administered to trainees.

- ii. **The feedback of trainers*** will be obtained through structured and anonymous feedback forms/questionnaire, including closed and partially closed questions that will be regularly provided by them. They will provide their inputs and opinions regarding effectiveness of the R-Y2 course contents, curriculum, teaching methodologies, teaching aids and technologies, content and usefulness of the exercises and assessments etc.
- iii. **Three focus group discussions;*** one of the R-Y2 trainees, second of the facilitators and third of the supervisors will also be organized by the ORIC to evaluate the research course, its benefits and weaknesses and scope for improvement.
- iv. **A final evaluation report of the Research Course R-Y2*** will be formulated and compiled by the ORIC of RMU. The report will be presented all concerned stake holders.

J. QUALITY ASSURANCE OF RESEARCH COURSE OF YEAR 2

- i. The evaluation of research course of R-Y2 will follow exactly the same pattern of R-Y1, but all the feedback material will pertain to R-Y2 course (including feedback forms of R-Y2, randomly selected log books, research portfolios, individual & group assessment record and randomly selected annual research course examination papers).
- ii. The evaluation team that will observe all these R-Y2 course evidences will be same team that will evaluate R-Y1 course. The team of R-Y2 will include the Head of departments, Deans, selected representatives of BASR, IREF, Director of ORIC, Director DME, Director of Quality enhancement cell (QEC) and Vice chancellor of RMU, individually.
- iii. The random visit for physical observation of the materials and also of all the academic activities through uninformed visits will also follow same protocol as mentioned in quality assurance procedure of R-Y1.
- iv. ORIC will be responsible for submission of the evaluation content of R-Y2 to all including a copy to the Quality Enhancement Cell (QEC) of RMU for internal evaluation.

- v. The QEC will organize an external evaluation too through involvement of a third party that may include members of Quality assurance department of Higher Education Department based on their availability.
- vi. An annual meeting of the quality assessment and enhancement, by end of year 2, will also be organized by the Quality Enhancement Cell of RMU, including representatives of supervisors, Head of Departments, Dean, representative members of BASR, ORIC, DME, QEC & IREF, who will be then collectively, review all the evaluation material of R-Y2. The evaluation team will also share their experiences of their evaluation visits and observations to validate the existing materials.
- vii. The quality of R-Y2 course will be determined with recommendations for further enhancement and modifications.

Successful completion of above mentioned requirements of research course will be mandatory requirement for advancement to the next Post Graduate Year level i.e. year 3 training year or R-Y3.

RESEARCH COURSE OF THIRD POST GRAUDATION TRAINING YEAR R-Y3

PURPOSE OF R-Y3 RESEARCH COURSE:

Utilizing all the knowledge and skills in research, accrued during first two years, the post graduate trainees of RMU, will be dexterous enough to actually execute a research project and implement efficiently and proficiently all the activities of the research project that they will have planned during period of R-Y1 to R-Y2. During the third year of training post graduate trainees will collect all the information and data and to explore answer to their research questions formulated for their individual research project/dissertation, prerequisite to their degrees. This course will provide them an opportunity to revitalize and update their concepts, knowledge and skills in research methodologies.

LEARNING OUTCOMES OF R-Y3 RESEARCH COURSE

After completion of R-Y3 course the trainees should be efficiently able to:

1. Revise and rejuvenate all the basic concepts of Epidemiological measures and biostatistics.
2. Collate the information gathered through an extensive literature review relevant to study topics finalized and formulate an extensive write up of literature for research project.
3. Collect and store high quality information for their research project in an honest and unambiguous way.
4. Utilize skills to enter, analyze and interpret the data collected for a research project
5. Write a clear and concise research report (research paper for a peer reviewed journal/dissertation) and a summary of the major findings and recommendations for each of the different parties interested in the results.

RESEARCH COURSE OF THIRD TRAINING YEAR

During the third year of training, revision and refreshing up of previously secured knowledge and concepts related to research will enhance the productivity and efficiency of the post graduate trainees.

A. ELECTIVE REFRESHER SHORT COURSES/WORKSHOPS:

The elective refresher short courses of one day to three days duration will be held to rejuvenate concepts Basic and advanced Biostatistics and Epidemiological concepts that will be taught to the trainees during initial first two years of training. The short courses will comprise of one to three days workshops. These workshops will provide the trainees hands on training of all the components of research methodologies, basic and advanced biostatistics and epidemiological calculations. Each workshop will comprise of following teaching methodologies

- Power-point presentations of basic theoretical concepts during workshops.
- On spot individual/group exercises.

These short courses will be conducted by the staff members of Office of Research Innovation and commercialization (ORIC) of RMC including the Statistician, Deputy Directors and Director while they will be facilitated by the Research Associates. Visitor lecturers; including renowned national and international public health consultants, researchers, epidemiologists and biostatisticians will also be invited, according to their availability, for some workshops.

Format of short courses:

- i. A total of 10 short courses will be offered and the post graduate trainee must attend a minimum of 5 of these short courses during R-Y3, according to their needs, choice and preferences.
- ii. Each workshop will comprise of 8-12 modules in total.

- iii. For each module, power-point presentations will be delivered initially, to restore the memories of the trainees regarding the previous knowledge attained by them in R-Y1 and R-Y2. These presentations will be on an average 15-20 minutes of duration for each module and will teach the basic and advanced concepts.
- iv. Following the presentations, on an average 30-60 minutes of individual and group exercises will be supervised by the facilitators to provide the trainees hands on experience. Depending on the type and content of courses, trainees will mostly work through computer soft-wares. These exercises will require calculations and numerical solving too.
- v. By the end of each day of workshop, brief take home individual or group task/assignments will be given to trainees that will be duly evaluated by facilitators within three days of the short course and will provide their feed back to each trainee individually.

Content of short courses:

- i. The course materials for these workshops will be formulated by the Deputy Directors and Director of ORIC, specific to the needs and requirement of the post graduate trainees, using various national and international resource materials.
- ii. The trainees will be provided hard copies as well as soft copies of the course content in a folder at the initiation of the course. This take away resource material will also include handouts of presentations of all the modules taught during the workshops.

Following ten short courses will be offered to the post graduate trainees during year three; R-Y3 along with the tentative time frame work and title of workshops in table 3. However the details of modules, duration and objectives/Learning outcomes of each workshop are not specified right now as these will be formulated based on the needs and requirements of the trainees and also the will depend on the visitor facilitators choice, that will be decided and confirmed at least one month prior to conducting each workshop.

TABLE 3.TEN ELECTIVE SHORT COURSES TO BE OFFERED DURING TRAINING YEAR 3.

<i>TIME FRAME WORK DURING THIRD YEAR R-Y3</i>	<i>TOPICS OF SHORT REFRESHER COURSES</i>
MONTH 1	End note referencing manager
MONTH 2	Mendeley referencing manager
MONTH 3	Effective write up of Literature review
MONTH 4	Data entry in Statistical Package of Social Sciences
MONTH 5	Graphical presentation of data in Microsoft Excel
MONTH 6	Univariate, Bivariate and Multivariate analysis in Statistical Package of Social Sciences
MONTH7	Effectively writing up of a dissertation.
MONTH 8	Research article write up
MONTH9	Critical appraisal of research
MONTH 10	How to Present Research through power-point or posters

Assessment of Trainees for short courses:

No formal assessment through any examination paper will be carried out during year three since they will be already involved in data collection and entry of their research projects. So they will not be strained with any formal examinations.

Assessment of individual and group exercises:

- i. The quality, correctness and completeness of the individual as well as group exercises will be assessed during the workshops by the facilitators.
- ii. The exercises will be presented during each module of workshops by trainees either individually or in groups accordingly.
- iii. The mode of presentations will be oral using media of charts, flip charts & white boards or through power-point presentations depending on the nature of the tasks.
- iv. There will be no scores or marks specified for the individual or group exercises but the feedback of evaluation by the facilitators will be on spot by end of presentations.

Assessment of individual or group; take home tasks/assignments:

- i. The correctness, quality and completeness of the individual or group exercises that will be given during the short courses/workshops will also be determined.
- ii. These will be submitted after completion to the facilitators within three days of the workshop. No Assignments will be acceptable after three days.
- iii. The assignments will be assessed and checked by facilitator within one week of submission along with extensive feedback of these assignments.
- iv. No formal quantitative assessment or scoring of any of these take home tasks/assignments of R-Y3 will be done.

B. PRESENTATION IN JOURNAL CLUB

- i. During third year of training, the trainees should continue to actively participate in the journal club sessions of the department on regular basis.

- ii. The R-Y3 trainees must present at least one research paper in journal club. The format of presentation and procedure for year 3 trainee will exactly be same as it will be for R-Y1 and R-Y2 trainees as mentioned before.
- iii. After oral presentation in monthly journal club session on the selected research paper and the critical appraisal of the paper R-Y3 trainee should actively participate in question & answer session of the journal club too. It will be compulsion for each R-Y3 trainee to ask at least one question or make at least one comment relevant to the topic and/or the research paper, during the journal club meeting.

Minimal Attendance of Journal Club meetings for R-Y3 trainee:

The R-Y3 trainees must attend at least 5 out of 6 journal club meetings during their third year of training and should make at least one presentation as a compulsion.

Assessment of presentation of the trainee at Journal Club:

- i. During the presentation of R-Y3 trainee in journal club, even though the head of department and two other senior faculty members will evaluate trainee's ability to make effective presentation of the research paper and also his/her skills to critically appraise a research paper, but no formal scoring will be done
- ii. The assessment will be qualitative rather than a quantitative assessment. Even though not scored in numbers, but by the end of paper presentation, evaluators will inform the strengths, mistakes, weaknesses and scope for improvement to each trainee.
- iii. The evaluators will assess that how far the presenter was successful to identify the strengths and weaknesses of a research article, to determine the appropriateness of the study methodology and design for the research question and to assess suitability of the statistical methods used. The appropriateness of presentation, interpretation and discussion will also be considered.

C. DATA COLLECTION, ENTRY AND ANALYSIS OF RESEARCH PROJECT/S OF DISSERTATION/RESEARCH PAPERS

- i. By the beginning of year 3, the trainees will have received the approval from the IREF, BASR and respective examination authorities for their research proposals of dissertations or research papers. Moreover, till then all the data collection tools for their research projects will also have been ready after pretesting.
- ii. During first quarter of year 3, it will be mandatory for the trainees to initiate the data collection phase of their project/s. If the trainee will be collecting the data individually for his/her research project, it will be started under continuous guidance of their supervisors and continuous facilitation by the research centers of specialties, the data analysis center and Research Associates of ORIC of RMU.
- iii. In case the data collection will require more human resources, other than trainee himself/herself, either as honorary or hired data collection staff, they should be properly trained for data collection by the trainee. The supervisor will also ensure that the additional data collection staff will be adequate in number within data within the time framework and should also make sure that they will be proficient enough to collect high quality and authentic data.
- iv. The data storage will also be finalized by trainee under the guidance of Supervisor and research center of specialty.
- v. The trainee will initiate data collection phase and will seek assistance of statisticians at Data analysis centre of ORIC for compilation of data sheets in SPSS/or any other statistical software for data coding and entry. The trainees will be encouraged by statisticians to collect the data and enter it simultaneously after cleaning into the soft ware to save time.
- vi. By the end of R-Y3, the data collection and entry of data must be completed.
- vii. In case the trainee will be working on option B of CPSP i.e. publication of two research papers, keeping in consideration, the lengthy period required for submission and then acceptance of papers by journals, he/she should be vigilant in data collection and must do it at faster pace as compared to those writing dissertation. So such trainees should complete data collection of both papers within first half of year 3 of training simultaneously. Otherwise they can also collect data for first paper within first three

months of year 3 of training and then will initiate data collection of second paper from sixth to ninth month of year 3 of training. Whatever is the option followed by the trainee, the data collection phase should not extend beyond ninth month of R-Y3, in order to complete both papers for submission till end of R-Y3.

viii. The trainees and MD scholars writing dissertation must also complete data collection and analysis till last month of R-Y3.

D. COMPLETION AND SUBMISSION OF TWO RESEARCH PAPERS AS REQUISITE TO CPSP FELLOWSHIP DEGREE

This section D implies only for the trainees who will be following option B of CPSP i.e. publication of two research papers, as requisite to fellowship of CPSP, instead of submitting a dissertation.

- i. The trainees opting for publication of two research papers should complete and submit manuscripts of both research papers by the end of third year of training. Keeping in consideration, the lengthy period required for submission and then acceptance of papers by journals (that varies from journal to journal and may range from 3 months to even one year) he/she should be vigilant in data collection and paper completion at faster pace as compared to those writing dissertation.
- ii. These trainees will be provided the following options and they will choose either of it based on their will and their supervisor's advise:

OPTION 1: The trainees should complete data collection of both papers within first 6 months of year 3 of training simultaneously. Then after analyzing data and completing write up of original article in next 5-6 months must submit both papers during last month of R-Y3 to journals of choice.

OPTION 2: The trainees should complete data collection of first paper within first three months of year 3 of training and then submit first paper after completion of manuscript till sixth month of R-Y3 to journal of choice. Then the trainee will initiate data collection of second paper till ninth month of year 3 of training and then submit second manuscript after completion till last month of R-Y3 to journal of choice.

- iii. Whatever is the option followed by the trainee, both of his/her paper should be submitted to journals of choice before initiation of year 4 of trainee, keeping adequate time secured in advance, in case any paper will not be accepted and will have to be sent to another journal accordingly.
- iv. During the data collection and entry phase, trainees will receive continuous assistance from the Research Associates and Data analysis unit of ORIC of RMU.
- v. When the data entry will be completed in the statistical software, the trainee will be provided full assistance in data analysis, interpretation and write up of results by the statisticians of ORIC.
- vi. The supervisors and publication in charge of ORIC will also guide the trainee to write the section "Discussion" based on the comparison of the findings of their study with the previously available research nationally as well as internationally.
- vii. They should also be able to identify strengths and weaknesses of their studies and should make recommendations with statement of final conclusion.
- viii. The trainees will identify the target journals for publication and after formatting their write up according to the specific format required by both journals.
- ix. The research papers will be reviewed by publication in charge of ORIC for plagiarism through turn-it-in soft ware. Any article that will have originality score less than 90% or similarity index more than 10% will be returned back to trainees for rephrasing and resubmission. Only when the eligible scores will be reached, then the trainee will be allowed to proceed further and to submit their research in the form of original articles under continuous assistance of Publication unit of ORIC.
- x. The trainee should also submit copies of submitted papers to the Dean, Director of ORIC and Chairperson of BASR that will be kept with them as confidential documents.
- xi. In case the research paper/s is/are sent back with recommended corrections or modifications, the supervisor and associated staff at ORIC will assist the trainee on urgent basis to get it rectified and resubmitted within next 10 days' time.

- xii. In case any of the paper is refused publication by a journal even then the supervisor and publication unit at ORIC will assist the trainee on urgent basis, to get it rectified and resubmitted to another target journal of choice within next 10 days' time and not delaying it all.

Since the trainees who will be submitting dissertation in specialty field as requisite to FCPS degree or as a requisite to their MD degree will not comply with this section D, they will continue with data collection and entry and will also initiate write up of literature review for their dissertations during this last half of R-Y3.

E. MONITORING OF RESEARCH ACTIVITIES OF YEAR 3

- i. Continuous monitoring of all the research activities of each trainee will be carried out by research centers of specialties, supervisors, Head of Departments and the research fellows & Deputy Directors at the Office of Research Innovation & Commercialization of RMU.
- ii. The structured Log books specific to research component of the training of year 3; R-Y3 and Research portfolio of the trainees will also be regularly observed, monitored and endorsed by all the concerned faculty, supervisor and facilitators.
- iii. The section of research training in Structured Log books of R-Y3 will be specific to short refresher courses of research conducted during training year 3. It will also include the record of attendance of all the short course/workshops attended by the trainee endorsed by the facilitators of each course and Office of Research Innovation & Commercialization (ORIC) in addition to the Department of Medical Education of RMU.
- iv. It will also comprise of all the submission record of the individual and group assignments of the trainees, endorsed by the facilitators of ORIC along with their comments.
- v. The log books will also include the attendance and presentation details of the trainees in the Journal club sessions of the department. The observation notes catering to qualitative evaluation for active participation by the trainee during each journal club session will also be inclusive. This information will be endorsed by the supervisor of the trainee and HOD.

- vi. The record of the trainees regarding timely completion and quality of each research activity related to completion of data collection and entry phase will also be part of the Log Book that will be endorsed by the supervisor, research associates and relevant facilitators of ORIC.
- vii. The research portfolio of the trainee R-Y3 will again include qualitative and quantitative self assessment of the trainee in narrative form. It will include the individual assessment of the objectives and aims defined by the trainee during the third year of training and extent of their successful attainment. The trainee will also mention individual achievements or knowledge and skills acquired in any aspect of research that was either formally part of the research curriculum or even not. It will also include reporting of any research courses, online or physically attended by the trainee, contribution in any research paper or publication, any participation and/or presentation in any research conference, competition etc. during year R-Y3.

F. OVERALL ASSESSMENT OF PERFORMANCE OF TRAINEES DURING R-Y3

- i. The overall assessment of performance of trainee will be more qualitative in R-Y3, so it will not rely on any scores or marks attained by trainees hence there will not be any examination paper of research or scoring for the home tasks assignments or presentation of journal club.
- ii. The Heads of department and the director of ORIC will observe the log books for assessments of facilitators of short courses, their comments regarding the home tasks/assignments, comments of evaluators of presentation at journal club and the remarks of supervisor regarding his/her opinion regarding the trainee's overall performance during third year of training.
- iii. The Heads of department and the director of ORIC will also observe the research portfolio of the trainees. Based on their observations, they will evaluate the completeness and quality of performance of each trainee.
- iv. In case of any deficiencies or weaknesses they will personally call the trainee and supervisor and will guide them how to correct or improve accordingly.

G. EVALUATION/ FEEDBACK OF RESEARCH COURSE OF YEAR 3

The research course and activities of third year of training will be evaluated by the trainees, facilitators of ORIC and supervisors.

- i. The feedback of trainees* will include structured evaluation of short courses/workshops of R-Y3 through structured and anonymous feedback forms/questionnaire that will be administered by the end of each short course/workshop. The forms will include questions phrased as Likert scales (1-5 categories) inquiring their responses regarding various aspects of workshops. Category 1 will represent the poorest quality while category 5 will represent excellence and the trainees will choose either of 5 based on their honest and unbiased personal choice. The open ended questions in form will indicate qualitative evaluation. There will also an overall feedback questionnaire for entire third year of research training.
- ii. The feedback of trainers* will be obtained through structured and anonymous feedback forms/questionnaire to provide their inputs and opinions regarding effectiveness of the R-Y3 short course contents, curriculum, teaching methodologies, teaching aids and technologies, content and usefulness of the exercises and assessments etc.
- iii. Three focus group discussions;* one of the R-Y3 trainees, second of the facilitators and third of the supervisors will also be organized by the ORIC to evaluate the research course, its benefits and weaknesses and scope for improvement.
- iv. A final evaluation report of the Research Course R-Y3* will be formulated and compiled by the ORIC of RMU. The report will be presented to all concerned stake holders.

H. QUALITY ASSURANCE OF RESEARCH COURSE OF YEAR 3

- i.* The quality assessment of research course of R-Y3 will involve meticulous review of materials of R-Y3 course (including randomly selected data sheets and completed data collection tools, feedback forms of R-Y3 short course/workshops, log books, research portfolios, individual & group assessment records).
- ii.* The quality evaluation team of R-Y3 will include the Head of departments, Deans, selected representatives of BASR, IREF, Director of ORIC, Director DME (Department of Medical Education), Director of Quality enhancement cell (QEC) and Vice chancellor of

RMU. The random visits for physical observation of the materials and also of all the short courses proceedings through uninformed visits will also follow same protocol as mentioned in quality assurance procedure of R-Y1 and R-Y2.

- iii. The research papers submitted by post graduate trainees following option of publication of two original articles to CPSP accredited journals will be observed as confidential evidences by Director of ORIC, Dean and chairperson of BASR for quality assessment. No other person will have access to these manuscripts in order to avoid any risk of potential plagiarism.
- iv. ORIC will submit evaluation content of R-Y3 to all stake holders including a copy to the Quality Enhancement Cell (QEC) of RMU for internal evaluation.
- v. The QEC will organize an external evaluation too through involvement of a third party that may include members of Quality assurance department of Higher Education Department based on their availability.
- vi. Since the R-Y3 will primarily comprise of the data collection phase of research projects of trainees, therefore, Quality Enhancement Cell (QEC) in liaison with the research centers of the specialty, will ensure the originality, transparency and unambiguity of data, during entire data collection.
- vii. An annual meeting of Quality assurance, by end of year 3, will be organized by the Quality Enhancement Cell of RMU, including representatives of supervisors, Head of Departments, Dean, representative members of BASR, ORIC, DME, QEC & IREF, who will be then collectively, review all the evaluation material of R-Y3. The meeting will be chaired by the Vice Chancellor of RMU. The evaluation team will also share their experiences of their evaluation visits and observations to validate the existing materials.
- viii. The quality of R-Y3 course will be stringently determined with recommendations for further quality enhancement.

RESEARCH COURSE OF FOURTH POST GRADUATION TRAINING YEAR R-Y4

PURPOSE OF R-Y4 RESEARCH COURSE:

During the fourth year of training the post graduate trainees will receive extensive practical hands on experience of conducting individual research project and then transformation of this project's report into a dissertation or original articles, in perspective of the knowledge and skills they will acquire during year initial three years of post graduate training. This course will make them proficient to conduct extensive literature search and using available information delve into existent findings and evidences of research, critically appraise them and then explore how to transform them into clinical practice. The fourth year of training will be purely practical where no formal didactic lectures or sessions will be held.

LEARNING OUTCOMES OF R-Y4 RESEARCH COURSE

After completion of R-Y4 course the trainees should be efficiently able to:

1. Identify and execute proficiently all procedures required for data analysis and interpretation.
2. Analyze and interpret the data collected for a research project and draw conclusions related to the objectives of study.
3. Write a clear and concise research report (paper for a peer reviewed journal/dissertation) and a summary of the major findings and recommendations for each of the different parties interested in the results.
4. Present the major findings and the recommendations of a study to policy-makers, managers and other stakeholders to finalize the recommendations.
5. Prepare a plan of action for the dissemination, communication and utilization of the findings and (if required) make recommendations for additional future research.
6. Critically appraise a research paper of any national or international journal.
7. Present research papers published in various national and international journals at journal club.

8. Prepare and complete final research Dissertation/ original articles, requisite to the post graduation degree of trainee, under the guidance of the nominated supervisor.
9. Present and defend a research final research Dissertation/ original article project to concerned authorities.

RESEARCH COURSE OF FOURTH TRAINING YEAR

The fourth year of post graduate of training will be purely practical where no lectures, courses or workshops will be held and the trainee will be directly involved under the supervisor's and staff members (of ORIC) guidance in actual implementation of research. The following activities related to research will be carried out by the trainee during the last and final year of research course.

A. COMPLETION OF RESEARCH PROJECT AND ITS WRITE UP AS A DISSERTATION

This section A implies only for the trainees who will be either MD scholars or those post graduate trainees following option A of CPSP i.e. writing dissertation, as requisite to fellowship of CPSP.

- i. The trainees writing dissertations should have completed their data collection and entry by the end of third year of training and will have also initiated write up literature view for the dissertation.
- ii. As soon as the year four of training commences, these trainees should complete the introduction and literature review sections of their dissertations along with proper referencing during first three months of R-Y4. They will be continuously guided in this task by their supervisors, research associates and the publication in charge at the ORIC.
- iii. The trainees, In the meanwhile, will also seek continuous assistance of statisticians of Data analysis unit of ORIC for data analysis in statistical soft ware. Trainees will be guided how to interpret the results, how to determine the statistical significances and how to write these results in textual, tabulated and graphical forms. They will have to complete their data analysis and write up of results till fourth month of year 4.

- iv. The supervisor and publication in charge at ORIC will also guide the trainee to write the section of “discussion” for their dissertations based on the comparison of the findings of their study with the previously available research nationally as well as internationally.
- v. The trainees will also identify strengths and weaknesses of their study and should make recommendations with statement of final conclusion.
- vi. According to the required referencing systems the reference lists and in text citation will also be completed correctly.
- vii. After writing the abstract and cover pages and annexure of the dissertation, the trainee will submit his/her dissertation’s final draft to publication in charge ORIC for plagiarism detection through turn-it-in soft ware. Any dissertation that will have originality score less than 90% or similarity index more than 10% will be returned back to trainees for rephrasing till the eligible scores will be reached.
- viii. Then the trainee should submit final draft of dissertation to the supervisor and head of department till end of fifth month of year for final modifications. Since the supervisor will be incessantly involved in every aspect of the project since the beginning and will be persistently guiding the procedure, so he/she should not take more than 10 days to give final review to dissertation of the trainee with written feedback that will be entered in a structured performa with recommendations for improvement or corrections. The Head of Department will also provide his feedback within 10-15 days.
- ix. Based on the feed back of the reviews, the trainee will make final editing and will get the dissertation printed and submitted to the degree awarding authority accordingly (BASR for MD trainees and CPSP for post graduate trainees of fellowship) for review for acceptance before third week of sixth month of year 4.
- x. The trainee will also submit a copy of dissertation to head of department, the Dean, Director of ORIC and Chair person of BASR that will be dealt as a confidential document in order to avoid potential risk of plagiarism.
- xi. While the dissertations will be under review by the degree awarding authority for acceptance, the trainees will be continuously guided by the supervisor and the research associates at ORIC regarding defense of their dissertation. They will be guided how to

make effective presentations according to the format provided by the examination authorities and also how to successfully and confidently respond to the queries of examiners.

- xii. In case the dissertation is sent back with recommended corrections or modifications, the supervisor and research associates at ORIC will assist the trainee on urgent basis to get it rectified and resubmitted within at least 10 days' time and not more than it.

B. RESUBMISSION OF RESEARCH PAPER/S IN CASE MODIFICATIONS ADVISED OR REJECTED FOR PUBLICATION BY A JOURNAL

This section B implies only for the post graduate trainees who will be opt for two research paper submission as requisite to fellowship of CPSP and provided one or both of their research paper/s is/are sent back for modifications or rejected publication.

- i. In case the research paper/s is/are sent back with recommended corrections or modifications, the supervisor, publication in charge and concerned facilitators at ORIC will assist the trainee on urgent basis to get it rectified and resubmitted within next 10 days' time.
- ii. In case any of the paper is refused publication by a journal even then the supervisor and publication unit at ORIC will assist the trainee on urgent basis, to get it rectified and resubmitted to another target journal of choice within next 10 days' time without any delay.

C. SUBMISSION OF ACCEPTANCE LETTERS OF APPROVED RESEARCH PAPER/PAERS AND SUBMISSION OF HARD AND SOFT COPIES OF PUBLISHED RESEARCH PAPER/S TO CPSP

This section C implies only for the post graduate trainees who will be opt for two research paper submission as requisite to fellowship of CPSP and provided their research paper/s is/are approved by journals and are published.

- i. In case the research paper/s is/are approved by the target journals, the trainee will submit the letter of acceptance/s to CPSP in addition to copies to supervisor, HOD, Dean and Publication in charge of ORIC.

- ii. When the original article will be published in journal/s, then the trainee will submit hard and soft copies of the original journal with his/her published articles to CPSP in addition to copies to supervisor, HOD, Dean and Publication in charge of ORIC and BASR.

D. PARTICIPATION IN JOURNAL CLUB SESSIONS

- i. Since the journal club is one of the best sources to provide awareness of best current clinical research, its implementation and utilization so its importance cannot be overlooked. In spite of a demanding and eventful fourth year of training, the participation of trainee in the journal club will still be mandatory.
- ii. The participation of trainees in journal club during R-Y4 will complement their knowledge and skills that will be beneficent in write up as well as defense of dissertation but also enhance their evidence based clinical skills.
- iii. However, to decrease the trainees' workload during final year of training, only participation in journal club will be mandatory and he/she will be exempted from making a presentation during R-Y4.
- iv. The R-Y4 trainee will still be expected to actively participate in discussion and also in question & answer session of the journal club meeting. It will be compulsion for each R-Y4 trainee to ask at least one question or make at least one comment relevant to the topic and/or the research paper, during the journal club meeting.

Minimal Attendance of Journal Club meetings by R-Y4 trainee:

The R-Y4 trainees should attend at least 5 out of 6 journal club meetings during their last year of training.

Assessment of Trainees for Journal Club sessions:

There will be no formal quantitative or qualitative assessment of the trainee and they will also not make any formal presentation in the journal club during R-Y4.

E. MONITORING OF RESEARCH ACTIVITIES OF YEAR 4

- i. During the last year of training of post graduate trainees, they will be scrutinized for each and every activity of dissertation completion by research centers of specialties, supervisors, Head of Departments and the research associates and Deputy Directors at the Office of Research Innovation & Commercialization of RMU.
- ii. The structured component of research in Log books of fourth training year will pertain to various components of their research projects including timing and completeness of data analysis, result write up, introduction, literature review's write up, methodology, discussion, recommendations, conclusions and cover pages.
- iii. The log books will also include the attendance details of the trainees in the Journal club sessions of the department during R-Y4. This information will be endorsed by the supervisor of the trainee and the HOD.
- iv. The Log Books of the trainees in addition to the Research portfolio during fourth year will be endorsed by the supervisor and Deputy Directors of ORIC. The research portfolio of the R-Y4 will again include self assessment regarding research activities of the trainee in narrative form. In addition to individual assessment of the objectives and aims formulated for fourth year of training and their successful attainment, it will also include participation in any research course/s, conference/s and/or competition/s etc. during year R-Y4.

F. OVERALL ASSESSMENT OF PERFORMANCE OF TRAINEES DURING R4

- i. The overall assessment of performance of trainee will not rely on any scores or marks attained by trainees since there will not be any examination Paper or scoring for the home tasks assignments or presentation of journal club.
- ii. The Heads of department and the director of ORIC will observe research portfolio of trainees in addition to the log books for attendance record and the remarks of supervisor regarding his/her opinion regarding the trainee's overall performance during fourth year of training. Based on their observations, they will evaluate the completeness and quality of performance of each activity of trainee during fourth year.

- iii. In case of any deficiencies or weaknesses, the trainee and supervisor will be called by the Heads of department and the director of ORIC who will direct them on how to improve accordingly.

G. EVALUATION/ FEEDBACK OF RESEARCH COURSE OF YEAR 4

The research course and activities of third year of training will be evaluated by the trainees, facilitators ORIC and supervisors.

- i. ***The end of year R-Y4 and end of four years' research training feedback of trainees*** will include structured evaluation through feedback questionnaire not only for fourth year but also for entire four year of research training. It will be anonymous and apart from questions phrased in Likert scale, open ended questions will also be included for the opinions of trainees.
- ii. ***The end of year R4 and end of four years' research training feedback of trainers*** will also reflect the anonymous feedback for the opinions of all supervisors and facilitators regarding benefits, drawbacks or weaknesses of R-Y4 course as well as of entire four year's research training course.
- iii. ***Three focus group discussions;*** one of the R-Y4 trainees, second of the concerned facilitators and third of the supervisors will also be organized by the ORIC to evaluate the entire four year's research course, its benefits and weaknesses and scope for improvement.
- iv. ***A final evaluation report of the Research Course R-Y4 and entire 4 years' research training Course*** will be formulated and compiled by the ORIC of RMU. The report will be presented to all concerned stake holders.

H. QUALITY ASSURANCE OF RESEARCH COURSE OF YEAR 4

- i. The quality assessment of research course of R-Y4 as well as the entire four years' research course will be carried out through review of materials and observations of proceedings by the evaluation team of RMU.
- ii. The research dissertations submitted by post graduate trainees will be observed as confidential evidences by Director of ORIC, Dean and chairperson of BASR for quality assessment. No other person will have access to these manuscripts in order to avoid any risk of potential plagiarism.

- iii. ORIC will submit evaluation content of R-Y4 to all stake holders including a copy to the Quality Enhancement Cell (QEC) of RMU for internal as well as external evaluation.
- iv. An annual meeting of the trainers by end of year 4, will be organized by the Quality Enhancement Cell of RMU, including representatives of supervisors, Head of Departments, Dean, representative members of BASR, ORIC, QEC, DME & IREF, to review and discuss all the evaluation materials of R-Y4, its quality and any recommendations for quality enhancement, under the chairman ship of Vice chancellor of RMU.

The activities of trainees of RMU are displayed in figure 5(A) and 5 (B), according to their concerned options. Successful completion of above mentioned requirements of research course will be mandatory requirement for completion of Post Graduate training final year as well as for MD scholar's training at RMU.

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)	<ul style="list-style-type: none"> • To understand the basics of Bio-Statistics • To critique why research is important? • To discuss the importance of Selecting a Field for Research • To prepare oneself for Participation in National and International Research • To prepare oneself for Participation in Pharmaceutical Company Research • To interpret the importance of research ideas & Criteria for a good research topic • To discuss Ethics in Health Research • To learn to write a Scientific Paper • To learn to make a Scientific Presentation • To learn to make a purposeful literature search 	<ol style="list-style-type: none"> 1. Introduction to Bio-Statistics 2. Introduction to Bio- Medical Research Why research is important? 3. What research to do? <ol style="list-style-type: none"> i. Selecting a Field for Research ii. Drivers for Health Research iii. Participation in National and International Research iv. Participation in Pharmaceutical Company Research v. Where do research ideas come from vi. Criteria for a good research topic 4. Writing a Scientific Paper 5. Making a Scientific Presentation & Searching the Literature
2.	Introduction to computer/Information	By the end of this workshop student should be able to:	<ol style="list-style-type: none"> 1. Hardware and Software <ul style="list-style-type: none"> • Understand the main components of a computer,

	<p>Technology & Software (5 days)</p>	<ul style="list-style-type: none"> • Appropriately start up and shut down your computer. • Navigate the operating system and start applications. • Perform basic functions of file management. • Perform basic functions in a word processor and spreadsheet. • Manage print settings and print documents. • Receive and send email. • Use a web browser to navigate the Internet. • work with windows, toolbars, and command menus • perform basic word processing and graphic tasks • make a Power Point presentation • explore Web browsing basics • back up files • save, copy, and organize your work • to enter data accurately in software of Statistical Package for Social Sciences 	<ul style="list-style-type: none"> including input and output devices. • Understand the function of communication devices such as smartphones and tablets. • Understand the role of Operating Systems, programs and apps. <p>2.Windows</p> <ul style="list-style-type: none"> • Turning on the computer and logging on. • The Windows screen. • Running programs from the Start Menu. • Minimising, maximising, moving, resizing and closing windows. • Logging off and shutting down your computer. <p>3.Working with Programs</p> <ul style="list-style-type: none"> • Running multiple programs. • Desktop icons and creating a desktop shortcut. • Managing programs from the taskbar. • Closing programs. <p>4.File Management</p> <ul style="list-style-type: none"> • Managing Windows Explorer. • Creating, moving, renaming and deleting folders and files. • Understandings file extensions. • Viewing storage devices and network connections. • Managing USB flash drives. <p>5.Word Processing</p> <ul style="list-style-type: none"> • Creating documents in Microsoft Word. • Typing text, numbers and dates into a document. • Easy formatting. • Checking the spelling in your document. • Making and saving changes to your document. • <p>6.Power Point Making Power Point presentation</p> <p>7.Spreadsheets</p> <ul style="list-style-type: none"> • Understanding spreadsheet functionality.
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			<ul style="list-style-type: none"> • Creating spreadsheets in Microsoft Excel. • Typing text numbers and dates into a worksheet. • Easy formulas. • Easy formatting. • Charting your data. • Making and saving changes to your workbook. • Printing a worksheet. <p>8.Printing</p> <ul style="list-style-type: none"> • Print preview. • Print settings. • Managing the print queue. <p>9.Using Email</p> <ul style="list-style-type: none"> • The Outlook mail screen elements. • Composing and sending an email message. • Managing the Inbox. <p>10.Accessing the Internet</p> <ul style="list-style-type: none"> • Going to a specific website and bookmarking. • Understanding how to search/Google effectively. • Copy and paste Internet content into your documents and emails. • Stopping and refreshing pages. • Demystifying the Cloud. • Understanding social media platforms such as Facebook and Twitter. • Computer security best practices. <p>11.Statistical Package for Social Sciences</p> <ul style="list-style-type: none"> • general understanding for data entry •
3.	communication skills (3 days)	<ul style="list-style-type: none"> • To learn to use Non-medicinal Interventions in Communication Skills of Clinical Practice • To discuss the importance of counseling • To role play as a counselor • To learn to manage a conflict 	<ol style="list-style-type: none"> 1. Use of Non-medicinal Interventions in Clinical Practice Communication Skills 2. Counseling 3. Informational Skills 4. Crisis Intervention/Disaster 5. Management Conflict Resolution 6. Breaking Bad News

		<p>resolution</p> <ul style="list-style-type: none"> • To learn to break a bad news • To discuss the importance of Medical Ethics, Professionalism and Doctor-Patient Relationship Hippocratic Oath • To learn to take an informed consent • To illustrate the importance of confidentiality • To summarize Ethical Dilemmas in a Doctor's Life 	<ol style="list-style-type: none"> 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
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ROTATIONS DURING MS UROLOGY

After 6 months initial rotation in urology department, candidates must go on mandatory rotation in general surgery for 12 months followed by 2 monthly rotations in the following departments :

1. Plastic surgery
2. Paediatric surgery
3. Radiology

SECTION – V

Charting the Road to Competence: Developmental Milestones for MS Urology Program at Rawalpindi Medical University

Urology Milestones

The Milestones are designed only for use in evaluation of residents in the context of their participation in MS Urology residency programs. The Milestones provide a framework for the assessment of the development of the resident in key dimensions of the elements of physician competence in a specialty or subspecialty. They neither represent the entirety of the dimensions of the six domains of physician competency, nor are they designed to be relevant in any other context.

Understanding Milestone Levels and Reporting

Milestones are arranged into levels. Tracking from Level 1 to Level 5 is synonymous with moving from novice to expert resident in the specialty or subspecialty. For each reporting period, the Clinical Competency Committee will review the completed evaluations to select the milestone levels that best describe each learner's current performance, abilities, and attributes for each subcompetency.

These levels *do not* correspond with post-graduate year of education. Depending on previous experience, a junior resident may achieve higher levels early in his/her educational program just as a senior resident may be at a lower level later in his/her educational program. There is no predetermined timing for a resident to attain any particular level. Residents may also regress in achievement of their milestones. This may happen for many reasons, such as over scoring in a previous review, a disjointed experience in a particular procedure, or a significant act by the resident.

The diagram below presents an example set of milestones for one sub-competency . For each reporting period, a resident’s performance on the milestones for each sub-competency will be indicated by selecting the level of milestones that best describes that resident’s performance in relation to those milestones.

Systems-based Practice 1: Patient Safety and Quality Improvement				
Level 1	Level 2	Level 3	Level 4	Level 5
Demonstrates knowledge of common patient safety events	Identifies system factors that lead to patient safety events	Participates in analysis of patient safety events (simulated or actual)	Conducts analysis of patient safety events and offers error prevention strategies (simulated or actual)	Actively engages teams and processes to modify systems to prevent patient safety events
Demonstrates knowledge of how to report patient safety events	Reports patient safety events through institutional reporting systems (simulated or actual)	Participates in disclosure of patient safety events to patients and families (simulated or actual)	Discloses patient safety events to patients and families (simulated or actual)	Role models or mentors others in the disclosure of patient safety events
Demonstrates knowledge of basic quality improvement methodologies and metrics	Describes local quality improvement initiatives (e.g., community vaccination rate, infection rate, smoking cessation)	Participates in local quality improvement initiatives	Demonstrates skills required to identify, develop, implement, and analyze a quality improvement project	Designs,, implements, and assesses quality improvement initiatives at the institutional or community level
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments: <div style="float: right;">Not Yet Completed Level 1 <input type="checkbox"/></div>				

Selecting a response box in the middle of a level implies that milestones in that level and in lower levels have been substantially demonstrated.

Selecting a response box on the line in between levels indicates that milestones in lower levels have been substantially demonstrated as well as **some** milestones in the higher level(s).

Patient Care 1: Patient Evaluation				
Level 1	Level 2	Level 3	Level 4	Level 5
Obtains history and physical exam to form a patient assessment	Evaluates patients; orders and interprets diagnostic testing	Develops a plan to manage patients with straightforward conditions	Develops a plan to manage patients with complex conditions and adapts plan for changing clinical situation	Develops a clinical pathway for the management of patients with complex conditions or identifies clinical trials for patients
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments: <div style="text-align: right;"> Not Yet Completed Level 1 <input type="checkbox"/> Not Yet Assessable <input type="checkbox"/> </div>				

Patient Care 2: Peri-Procedural Care				
Level 1	Level 2	Level 3	Level 4	Level 5
Identifies alterations in normal physiology	Accurately and reliably gathers and reports clinical information pertaining to common peri-procedural alterations and complications	Independently identifies and prioritizes tasks necessary for management of common peri-procedural alterations and complications	Independently identifies and prioritizes tasks necessary for management of complex and/or less common peri-procedural alterations and complications	Proactively recognizes potential risk factors for complications, and implements measures to prevent or mitigate them, applying effective team management skills to manage multiple scenarios simultaneously
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments: <div style="text-align: right;"> Not Yet Completed Level 1 <input type="checkbox"/> Not Yet Assessable <input type="checkbox"/> </div>				

Patient Care 3: Endoscopic Procedures				
Level 1	Level 2	Level 3	Level 4	Level 5
Prepares patient and equipment for endoscopic procedures (e.g., lithotomy positioning, assemble endoscope)	Independently performs bedside endoscopic procedures (e.g., cystoscopy with catheter placement over a wire)	Independently performs simple endoscopic procedures (e.g., simple transurethral resection of a bladder tumor (TURBT), simple ureteroscopy (URS), small transurethral resection of the prostate (TURP))	Independently performs complex endoscopic procedures (e.g., percutaneous nephrolithotomy (PCNL), complex URS, complex TURBT, large TURP)	Independently performs complex endoscopic procedures in altered anatomy (e.g., horseshoe kidney, urinary diversion, spinal malformation)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:				Not Yet Completed Level 1 <input type="checkbox"/>
				Not Yet Assessable <input type="checkbox"/>

Patient Care 4: Open Procedures				
Level 1	Level 2	Level 3	Level 4	Level 5
Demonstrates basic skills (e.g., positioning, knot tying, suturing)	Independently performs bedside open procedures (e.g., incision and drainage, priapism aspiration and irrigation, circumcision, removal of genital wart)	Independently performs simple open procedures (e.g., scrotal procedures, vasectomy, cystorrhaphy, mid-urethral sling)	Independently performs complex open procedures (e.g., partial nephrectomy, prosthetic replacement, cystectomy and ileal conduit, ureteral reconstruction)	Independently performs uncommon complex open procedures (e.g., retroperitoneal lymph node dissection (RPLND), nephrectomy with caval thrombus, reconstructive genital surgery)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments:

Not Yet Completed Level 1
Not Yet Assessable

Patient Care 5: Minimally Invasive Procedures (Laparoscopic and Robotic)

Level 1	Level 2	Level 3	Level 4	Level 5
Demonstrates basic skills (e.g., positioning, draping, docking and undocking)	Assists during minimally invasive procedures (e.g., port placement, bedside assistant)	Independently performs simple portions of the procedure (e.g., bladder takedown, colon reflection, pelvic lymph node dissection)	Independently performs critical (complex) portions of the procedure (e.g., hilar dissection, renorrhaphy, anastomosis)	Independently performs advanced minimally invasive procedures (e.g., cystectomy, complex partial nephrectomy, complex reconstruction)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments:

Not Yet Completed Level 1
Not Yet Assessable

Patient Care 6: Office-Based Procedures				
Level 1	Level 2	Level 3	Level 4	Level 5
Demonstrates basic skills in office procedures (e.g., Foley catheter placement, drain removal)	Performs simple office-based procedures, with direct supervision (e.g., prostate biopsy, urodynamics interpretation, vasectomy, urethral stricture dilation)	Independently performs simple office-based procedures, including percutaneous suprapubic tube placement	Independently performs complex office-based procedures (e.g., renal ultrasound, bladder biopsy, Botox injection)	Independently performs advanced office-based procedures (e.g., stage 1 neuromodulation, minimally invasive benign prostatic hyperplasia (BPH) procedure, penile ultrasound)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments: <div style="float: right;"> Not Yet Completed Level 1 <input type="checkbox"/> Not Yet Assessable <input type="checkbox"/> </div>				

Medical Knowledge 1: Clinical Medical Knowledge				
Level 1	Level 2	Level 3	Level 4	Level 5
Demonstrates knowledge of anatomy and physiology as it pertains to surgical conditions	Demonstrates knowledge of pathophysiology and treatments of simple urologic conditions	Demonstrates knowledge of pathophysiology and treatments of complex urologic conditions considering patient factors (e.g., comorbidity, social context)	Demonstrates comprehensive knowledge, including guidelines, of the full spectrum of urologic diseases, treatments, and populations	Creates a curriculum for clinical medical knowledge
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments:

Not Yet Completed Level 1
Not Yet Assessable

Medical Knowledge 2: Clinical Reasoning

Level 1	Level 2	Level 3	Level 4	Level 5
Integrates patient-specific information to generate an appropriate working diagnosis	Provides a prioritized differential diagnosis using supporting rationale	Independently synthesizes clinical information to inform diagnosis and therapy in simple cases and adapts based on a patient's clinical course and additional data	Independently synthesizes clinical information to inform diagnosis and therapy in complex cases, recognizing sources of error	Teaches others to recognize sources of diagnostic error
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments:

Not Yet Completed Level 1
Not Yet Assessable

Systems-Based Practice 1: Patient Safety and Quality Improvement

Level 1	Level 2	Level 3	Level 4	Level 5
<p>Demonstrates knowledge of common patient safety events and institutional reporting system</p> <p>Demonstrates knowledge of basic quality improvement methodologies and metrics</p>	<p>Identifies and reports patient safety events</p> <p>Describes local quality improvement initiatives (e.g., multimodal analgesics, antibiotic stewardship, smoking cessation, hospital acquired infection)</p>	<p>Participates in analysis of patient safety events (simulated or actual)</p> <p>Participates in local quality improvement initiatives</p>	<p>Offers strategies (simulated or actual) to prevent patient safety events</p> <p>Demonstrates the skills required to identify, develop, implement, and analyze a quality improvement project</p>	<p>Actively engages and leads teams and processes to prevent patient safety events</p> <p>Creates, implements, and assesses quality improvement initiatives at the institutional or community level</p>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

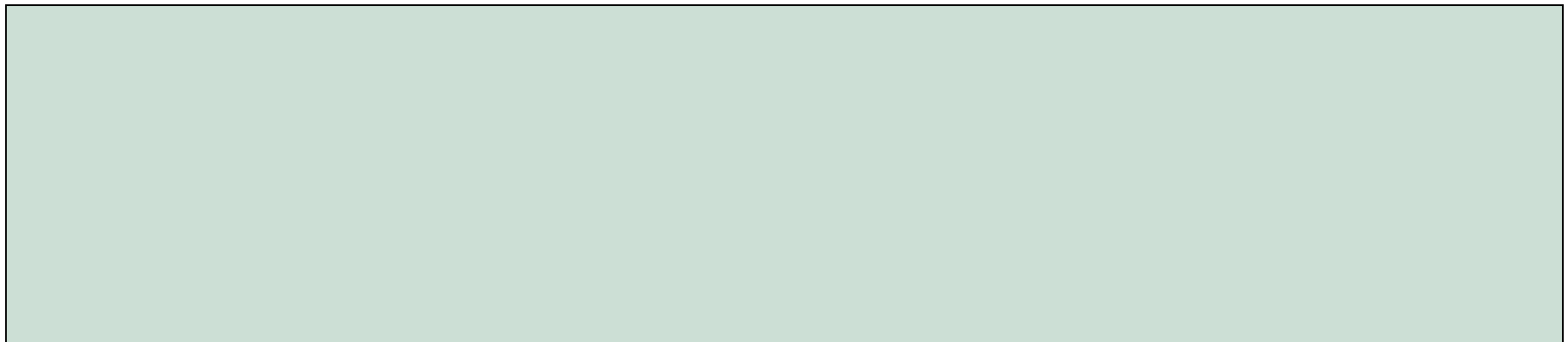
Comments: Not Yet Completed Level 1

Systems-Based Practice 2: System Navigation for Patient-Centered Care

Level 1	Level 2	Level 3	Level 4	Level 5
Demonstrates knowledge of care coordination and community health needs	Coordinates multidisciplinary care of patients in routine clinical situations, considering inequities and disparities for their local population (e.g., cultural barriers)	Coordinates multidisciplinary care of patients in complex clinical situation and incorporates local resources into the plan (e.g., home parenteral nutrition, postoperative intravenous feeding, intensive care unit)	Leads care coordination of patients with barriers or other disparities in care (e.g., trauma patient with no access to care)	Designs innovative care coordination strategies for populations with health care inequities
Performs safe and effective transitions of care/hand-offs in routine clinical situations	Performs safe and effective transitions of care/hand-offs in complex clinical situations	Supervises safe and effective transitions of care/hand-offs of junior residents	Resolves conflicts in transitions of care between teams	Leads in the design and implementation of improvements to transitions of care
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments:

Not Yet Completed Level 1



Systems-Based Practice 3: Physician Role in Health Care Systems

Level 1	Level 2	Level 3	Level 4	Level 5
<p>Identifies basic needs for effective transition to practice (e.g., information technology, legal, billing and coding, financial, personnel)</p> <p>Describes basic health payment systems (e.g., government, private, public, uninsured care) and practice models</p>	<p>Demonstrates use of information technology required for medical practice (e.g., electronic health record, documentation required for billing and coding)</p> <p>Describes how components of a complex health care system are interrelated and how this impacts patient care</p>	<p>Describes core administrative knowledge needed for transition to independent practice (e.g., contract negotiations, malpractice insurance, government regulation, compliance)</p> <p>Discusses how individual practice affects the broader system performance (e.g., length of stay, readmission rates, clinical efficiency)</p>	<p>Analyzes individual practice patterns and professional requirements in preparation for practice</p> <p>Manages various components of the complex health care system to provide efficient and effective patient care (e.g., patient payment models, insurance)</p>	<p>Educates others to prepare them for transition to practice</p> <p>Advocates for or leads systems change that enhances high-value, efficient, and effective patient care</p>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments: Not Yet Completed Level 1

Practice-Based Learning and Improvement 1: Evidence-Based and Informed Practice

Level 1	Level 2	Level 3	Level 4	Level 5
Demonstrates how to access available evidence	Articulates clinical questions to guide evidence-based care	Integrates best available evidence with patient preferences to guide care	Tailors patient care in the setting of conflicting or absent evidence	Coaches others to critically appraise and apply evidence for patients with complex conditions
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p>Comments:</p> <p style="text-align: right;">Not Yet Completed Level 1 <input type="checkbox"/></p>				

Practice-Based Learning and Improvement 2: Reflective Practice and Commitment to Personal Growth

Level 1	Level 2	Level 3	Level 4	Level 5
<p>Identifies gap(s) between expectations and actual performance</p> <p>Establishes goals for personal and professional development</p>	<p>Analyzes and reflects on the factors which contribute to gap(s) between expectations and actual performance</p> <p>Identifies opportunities for performance improvement; designs a learning plan</p>	<p>Institutes behavioral change(s) to narrow the gap(s) between expectations and actual performance</p> <p>Integrates practice data and feedback with humility to implement a learning plan</p>	<p>Continuously reflects on remaining gaps and institutes behavioral adjustments to narrow them</p> <p>Uses performance data to measure the effectiveness of the learning plan and adapts when necessary</p>	<p>Coaches others on reflective practice</p> <p>Coaches others in the design and implementation of learning plans</p>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p>Comments:</p> <p style="text-align: right;">Not Yet Completed Level 1 <input type="checkbox"/></p>				

Professionalism 1: Professional Behavior and Ethical Principles				
Level 1	Level 2	Level 3	Level 4	Level 5
<p>Demonstrates professional behavior in routine situations and knows how to report professionalism lapses</p> <p>Demonstrates knowledge of ethical principles underlying shared decision making and patient confidentiality</p>	<p>Demonstrates insight into personal triggers for professionalism lapses, develops mitigation strategies</p> <p>Analyzes straightforward situations using ethical principles</p>	<p>Demonstrates professional behavior in complex or stressful situations</p> <p>Seeks help in managing and resolving complex ethical situations</p>	<p>Recognizes and intervenes in situations to prevent professionalism lapses in self and others</p> <p>Recognizes and uses appropriate resources for managing and resolving ethical dilemmas (e.g., ethics consultations, literature review)</p>	<p>Coaches others when their behavior fails to meet professional expectations</p> <p>Identifies and seeks to address system-level factors that induce or exacerbate ethical problems or impede their resolution</p>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p>Comments:</p> <p style="text-align: right;">Not Yet Completed Level 1 <input type="checkbox"/></p>				

Professionalism 2: Administrative Tasks				
Level 1	Level 2	Level 3	Level 4	Level 5
Takes responsibility for failure to complete tasks and responsibilities, identifies potential contributing factors, and describes strategies for ensuring timely task completion in the future	Performs tasks and responsibilities in a timely manner with appropriate attention to detail in routine situations	Performs tasks and responsibilities in a timely manner with appropriate attention to detail in complex or stressful situations	Recognizes situations that may impact others' ability to complete tasks and responsibilities in a timely manner and proposes solutions	Develops systems to enhance other's ability to efficiently complete administrative tasks and responsibilities
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments: <div style="text-align: right;">Not Yet Completed Level 1 <input type="checkbox"/></div>				

Professionalism 3: Well-Being and Awareness				
Level 1	Level 2	Level 3	Level 4	Level 5
Recognizes status of personal and professional well-being, with assistance	Independently recognizes status of personal and professional well-being	With assistance, proposes a plan to optimize personal and professional well-being	Independently develops a plan to optimize personal and professional well-being	Coaches others when emotional responses do not meet professional expectations
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments: <div style="text-align: right;">Not Yet Completed Level 1 <input type="checkbox"/></div>				

This subcompetency is not intended to evaluate a resident's well-being. Rather the intent is to ensure that each resident has the fundamental knowledge of factors that affect well-being, the mechanisms by which those factors affect well-being, and available resources and tools to improve well-being.

Interpersonal and Communication Skills 1: Patient- and Family-Centered Communication				
Level 1	Level 2	Level 3	Level 4	Level 5
<p>Demonstrates respect and establishes rapport with patient and family (e.g., situational awareness of language, disability, health literacy level, cultural)</p> <p>Communicates with patients and their families in an understandable and respectful manner</p>	<p>Establishes a therapeutic relationship in straightforward encounters</p> <p>Identifies barriers to effective communication (e.g., health literacy, cultural)</p>	<p>Establishes a therapeutic relationship in challenging encounters (e.g., shared decision making)</p> <p>When prompted, reflects on personal biases while attempting to minimize communication barriers</p>	<p>Facilitates difficult discussions specific to patient and family conferences, (e.g., end-of-life, explaining complications, therapeutic uncertainty)</p> <p>Independently recognizes personal biases while attempting to proactively minimize communication barriers</p>	<p>Mentors others in situational awareness and critical self-reflection</p> <p>Coaches others in the facilitation of crucial conversations</p>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p>Comments:</p> <p style="text-align: right;">Not Yet Completed Level 1 <input type="checkbox"/></p>				

Interpersonal and Communication Skills 2: Patient Counseling and Shared Decision Making

Level 1	Level 2	Level 3	Level 4	Level 5
Demonstrates basic understanding of informed consent process	Answers questions about treatment plan and seeks guidance when appropriate	Counsels patient through decision-making process, including questions, for simple clinical problems	Counsels patient through decision-making process, including questions, for complex clinical problems	Counsels patient through decision-making process, including questions, for uncommon clinical problems
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments: Not Yet Completed Level 1

Interpersonal and Communication Skills 3: Interprofessional and Team Communication

Level 1	Level 2	Level 3	Level 4	Level 5
Respectfully interacts and actively communicates with all members of health care team (e.g., politely accepts and requests consults)	Communicates in an approachable and productive manner to facilitate team work (e.g., active listening updates in timely fashion duality)	Actively recognizes and mitigates communication barriers and biases with members of the health care team	Leads and coordinates recommendations from multidisciplinary members of the health care team (e.g., facilitates conflict resolution)	Exemplar of flexible communication strategies
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p>Comments:</p> <p style="text-align: right;">Not Yet Completed Level 1 <input type="checkbox"/></p>				

Interpersonal and Communication Skills 4: Communication within Health Care Systems

Level 1	Level 2	Level 3	Level 4	Level 5
Accurately records information in the patient record in a timely manner while safeguarding patient personal health information	Documents diagnostic and therapeutic reasoning in the patient record with appropriate use of documentation shortcuts	Concisely reports diagnostic and therapeutic reasoning	Efficiently communicates in an organized fashion that includes contingency plans	Facilitates improved written and verbal communication of others
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p>Comments:</p> <p style="text-align: right;">Not Yet Completed Level 1 <input type="checkbox"/></p>				

SECTION –VI

UNIVERSITY RESIDENCY PROGRAM OF RAWALPINDI MEDICAL UNIVERSITY: THE ASSESSMENT AND EVALUATION STRATEGIES

The vision:

To improve health care and population health by assessing and advancing the quality of resident physician's education through accreditation.

The Mission:

We imagine a world characterized by:

- A structured approach to evaluating the competency of all residents and fellows
- Motivated physician role Models leading all program of the university.
- High quality, supervised, humanistic clinical educational experience, with customized formative feedback.
- Clinical learning environments characterized by excellence in clinical care, safety of patients, doctors and paramedics and professionalism.
- Residents and fellows achieving specific proficiency prior to graduation.
- Residents and fellows are prepared to be Virtuous Physicians who place the needs and well-being of patients first

The values:

- Honesty and Integrity
- Excellence and Innovation
- Accountability and Transparency
- Fairness and Equity
- Stewardship and Service
- Engagement of Stakeholders
- Leadership and Collaboration

Back Ground/ Rationale:

- Need for Modernization of the Post Graduate Medical Training in the country.

- Need for structuration of all the components of Post Graduate Medical training in Pakistan.
- Need for better Monitoring of the System for better out comes.

Aims:

- To fulfill the need of Modernization of the Assessment strategies.
- To structure the Assessment strategies.
- To shift the paradigm from an Examination Oriented System towards a Training Oriented System.

The Characteristics of the document on Assessment Strategies:

Following aspects are tried to be accomplished while synthesis of this document on assessment strategies for MD Internal Medicine University Residency Program:

- Should be Technically Sound
- Should be acceptable by all the stakeholders
- Should be feasible for implementation
- Should be concise
- Should be according to the need of our educational system
- Should be reproducible / can be nationalized
- Should be sustainable
- Should be able to assesses all required competencies accurately

Few definitions before we proceed further made to be clear:

1. What Is Competency?

The ability to do something successfully or efficiently.

2. What Is Competence?

Competency is described what an individual is enable to do while performance should describe what an individual actually does in clinical practice. The terms “performance” and “competency” are often used interchangeably.

3. What is performance based assessment of curriculum?

Performance based assessment measures students’ ability to apply the skills & knowledge learned from a unit of study.

4. What is work place based assessment of curriculum?

The apprenticeship model of medical training has existed for thousands of years: the apprentice learns from watching the master and the master in turn observe the apprentice's performance & helps them improve. Performance assessment not therefore a new concept higher work in modern healthcare environment with its discourse of accountability, performance assessment increasing role In ensuring that professionals develop and maintain the knowledge and skills required for practice. However now it will be done in a structured manner.

5. **What is a Formative Assessment?**

- Such an Assessment which creates learning itself, from one's deficiencies.
- It is non-threatening for the students because it does not decide pass or fail.
- Provision of Feed back to the students is essential component of Formative Assessment

6. **What is a Summative Assessment?**

- Criteria Based High Stake Examinations
- Provision of Feedback to the students is not essential for Summative Examinations

7. **What is continuous Internal Assessment?**

A collection of Formative Assessments is called Continuous Internal Assessment

Model of examination for MD Internal Medicine Rawalpindi Medical University:

Distribution of weightage (if we consider total marks as 100) among various desired competencies of RMU Internal Medicine MD curriculum:

1. Medical knowledge	40% both
2. Patient care	
3. Interpersonal & communication skills	40% both
4. Professionalism	
5. Practice based learning	10% both
6. System based learning	
7. Research	10%

Continuous Internal Assessment:

Competencies included CIA	Phases of CIA	Time Line for end of various phases of CIA	Weightage 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% of the total marks of all formative assessments/ 360° Evaluations	<ul style="list-style-type: none"> • Multi source feedback/360 degree evaluation • MCQs for knowledge • Mini-CEX • Case based discussion • CPC presentations • TOACS/OSCE • Charts stimulated recall • Teaching rounds • Directly observed procedures • Research activities
	Phase -2 ➤ CIA Year 3 ➤ CIA Year 4 ➤ CIA Year 5 for five year training program	till end of Year 4 Or Year 5 for 5 year training program	Equal to or more than 75% of the total marks of all formative assessments/ 360° Evaluations	

Details about various competencies required for MS Urology along with brief details of Teaching Strategies, Type of Assessment, weightage given to the competency & Tools of Assessment:

Sr. No	Competency to be assessed	Teaching & learning strategies	Type of Assessment for the competency to be assessed	% weightage of the competency	Tools of Assessment
1.	Medical knowledge	Case based discussion & problem based learning, large group interactive session, self-directed learning, teaching rounds, and literature search.	Formative Assessment leading to continue internal assessment and also summative assessment in high stake exams	40% for both Medical Knowledge and Patient Care both	MCQs, SEQs, Directly observe procedure, mini clinical examinations, charts, OSCE, teaching ward rounds, case discussion, seminars, topic presentation
2.	Patient care	Case based discussion, teaching rounds, morbidity & mortality meetings, 360 ⁰ feedback evaluation, DOPS, long case/ short case discussions OPDs, emergency indoor workshops, hands on trainings.	Formative assessment leading to continue internal assessment and also summative assessment in high stake exams		Teaching rounds, case base discussion, presentations, CPC participations, clinical management, problem base learning, peer assisted learning, dealing with paramedics & patient attendants
3.	Professionalism	Teaching rounds, known conferences, workshops, hands on training, CPC, morbidity & mortality meetings, journal club	Formative assessment leading to continue internal assessment	40% for both professionalism & interpersonal communication skills both	Working in OPDs, wards, emergency DOPs, clinical case discussion, dealing with paramedics, meeting with supervisor & mentors, mini clinical examination
4.	Interpersonal & communication skills	Teaching rounds, hands on training, workshops related to research methodology, SPSS, data entry, LGIS, session with supervisor & mentors, session with research units, SDL,	Formative assessment leading to continuous internal assessment		Multi source & 360 degree evaluation.
5.	Practice based learning	Case based discussion, teaching rounds, known conferences, morbidity & mortality meetings, OPDs, emergency indoor workshops, hands on trainings.	Formative assessment leading to continuous internal assessment Multi source & 360 degree evaluation (Logbook & portfolio)	10% both Practice Based Learning & System Based Learning both	Working in OPDs, wards, emergency DOPs, clinical case discussion, dealing with paramedics, meeting with supervisor & mentors, mini clinical examination
6.	System based learning	Working in wards, OPDs, Emergency	Formative assessment leading to continuous internal assessment Multi source & 360 degree evaluation (Logbook & portfolio)		Working in OPDs, wards, emergency DOPs, clinical case discussion, dealing with paramedics, meeting with supervisor & mentors, mini clinical examination
7.	Research	Large group Interactive sessions on Research, hands on training & workshops, practical work of research including literature search, finding research question, synopsis writing, data collection, data analysis, thesis writing	Formative leading to continuous internal assessment Multi source & 360 degree evaluation (Logbook & portfolio)&also Summative assessment	10%	Approval of research topic and synopsis & thesis from URTMC, Board of Advanced studies and Research and ethical review board, Requirement of Completion certificate of research workshops as eligibility criteria for examinations, Defense of Thesis examination

Summary of all Assessments in Four & Five year training program of MS Urology:

S.NO.	Year of Examination	Name of Examination & type of Assessment	Competencies to be Assessed with weightage	Eligibility criteria	Pass Marks required	Total No. of Examinations
1	During training of Year -1	End of Rotation Formative Assessment /Evaluations (Formative Assessment)	<ol style="list-style-type: none"> 1. Medical knowledge 2. Patient care (40% both) 3. Interpersonal & communication skills 	75% or above of CIA the total marks will be considered as eligible	Not applicable as it is a Formative Assessment	04 evaluations in one year (total evaluations in four years =16 & in five years =20)
2	At the End of Year 1	In Training -Assessment year1 (Summative Assessment)	<ol style="list-style-type: none"> 4. Professionalism (40% both) 5. Practice based learning 6. System based learning (10% both) 7. Research (10%) 	<ol style="list-style-type: none"> 1. Submission of certificates of completion of the Following Mandatory workshops: Communication skills -----3 days Computer & IT skills----- 3 days Synopsis writing ----- 3 days Basic Life Support----- 2 days 2. Submission of certificate of approval of Research Topic/Affidavit that if certificate of approval of Research Topic will not be provided within 30 days of submission of Application for in training examination no.1, the candidate will not be allowed to take examination. 3. Publication of one article in Resident Research Journal (for five year training program only) 4. OR Statistical report of one disease (for five year training program only) 5. Completed and Duly signed Log Book for year one 6. Completed and duly signed Portfolio for year one 7. Submission of certificate of Continuous Internal Assessment for year one: Equal to or More than 75% (a cumulative score of the year one) 8. Certificate of completion of First year Training duly signed by the Supervisor 	Details Described at the end 50% pass marks	02 Examination in four years training program & 03 Examinations in Five years training program

				<p>9. Submission of evidence of payment of examination Fee for year-1 examination</p> <p>10. Submission of no dues certificate from all relevant departments including Library, Hostel, Cashier etc. for year one of training</p>		
3	During training of Year -2	End of Rotation Formative Assessment /Evaluations (Formative Assessment)		75% or above of CIA the total marks will be considered as eligible	Not applicable as it is a Formative Assessment	04 evaluations in one year (total evaluations in four years =16 & in five years =20)
4	At the end of Year-2	Mid Training Assessment Equivalent to Intermediate Module Examination (Summative Assessment)		<p>1. Submission of Pass Result of Examination of Year-1</p> <p>2. Submission of certificates of completion of the Following Mandatory workshops:Research methodology & Biostatistics-----3 days Professionalism -----2 days SPSS (Statistical Package for Social Sciences)----- 2 days</p> <p>3. Submission of certificate of approval of Research Protocol/Synopsis or undertaking /Affidavit that if approved synopsis will not be provided within 30 days of submission of Application for Intermediate Module Examination, the candidate will not be allowed to take examination.</p> <p>4. Publication of one article in Resident Research Journal (for five year training program only)</p> <p>5. OR Statistical report of one disease (for five year training program only)</p> <p>6. Completed and Duly signed Log Book for year one and two</p> <p>7. Completed and duly signed Portfolio for year one and two</p> <p>8. Submission of certificate of Continuous Internal Assessment for year one: Equal to or More than 75% (a cumulative score of</p>	Details Described at the end 60% pass marks	01

				<p>the year one and two both)</p> <p>9. Certificate of completion of second year of Training duly signed by the Supervisor</p> <p>10. Submission of evidence of payment of examination Fee for intermediate Module Examination: Examination Fee once deposited cannot be refunded/carried over the next examination under any circumstances</p> <p>11. Submission of no dues certificate from all relevant departments including Library, Hostel, Cashier etc. for year two of training</p>		
5	During training of Year -3	End of Rotation Formative Assessment /Evaluations (FormativeAssessment)		75% or above of CIA the total marks will be considered as eligible	Not applicable as it is a Formative Assessment	04 evaluations in one year (total evaluations in four years =16 & in five years =20
6	At the end of Year - 3	In Training -Assessment year 3 (Summative Assessment)		<ol style="list-style-type: none"> 1. Submission of Pass result Mid Training Examination 2. Submission of certificates of completion of the Following Mandatory workshops :Reference Manager (Endnote)--- 1 day Mandalay____1 day 3. Submission of certificate of verification of Data Collection or undertaking /Affidavit that if the certificate of verification of Data Collection will not be provided within 30 days of submission of Application for in training examination no.2, the candidate will not be allowed to take examination. 4. Publication of one article in Resident Research Journal (for five year training program only) 5. OR Statistical report of one disease (for five year training program only) 6. Completed and Duly signed Log Book for year three 	Details Described at the end 50% Pass marks	02 Examination in four years training program & 03 Examinations in Five years training program

				<ul style="list-style-type: none"> 7. Completed and duly signed Portfolio for year three 8. Submission of certificate of Continuous Internal Assessment for year three: Equal to or More than 75% (a cumulative score of the year three) 9. Certificate of completion of third year of Training duly signed by the Supervisor 10. Submission of evidence of payment of examination Fee for in training examination no.2: Examination Fee once deposited cannot be refunded/carried over the next examination under any circumstances 11. Submission of no dues certificate from all relevant departments including Library, Hostel, Cashier etc. For year three 		
7	During training of Year -4	End of Rotation Formative Assessment /Evaluations (FormativeAssessment)		75% or above of CIA the total marks will be considered as eligible	Not applicable as it is a Formative Assessment	04 evaluations in one year (total evaluations in four years =16 & in five years =20)
8	At the end of year-4	Final Assessment for four year program (Summative Assessment)		<ul style="list-style-type: none"> 1. Submission of Pass result of In Examination year-3 2. Submission of certificates of completion of the workshops: 3. Can attend any required workshop optionally if He or She wants and can submit the certificate 4. Submission of certificate of approval of Thesis or undertaking /Affidavit that if approved synopsis within 30 days of submission of Application for Final Examination, the candidate will not be allowed to take examination. 5. Publication of one article in Resident Research Journal (for five year training program only) OR Statistical report of one disease (for five year training 	Details Described at the end 60% Pass marks	01

				program only) 6. Completed and Duly signed Log Book for year three and four 7. Completed and duly signed Portfolio for year three and four 8. Submission of certificate of Continuous Internal Assessment for year three and four: Equal to or More than 75% (a cumulative score of the year three and four) 9. Certificate of completion of Fourth year of Training duly signed by the Supervisor 10. Submission of evidence of payment of examination Fee for Final Examination: Examination Fee once deposited cannot be refunded/carried over the next examination under any circumstances 11. Submission of no dues certificate from all relevant departments including Library, Hostel, Cashier etc. For year four only		
Grand total of All Assessments for Four Year Training Program						04 Summative Assessments in four years
Grand total of All Assessments for Five Year Training Program One Additional Assessment at the End of Year 4 with same pattern as end of year 1 & 3 Assessments						05 Summative Assessments in five years

Scheme of the Course

A summary of five years course in MS Urology is presented as under:

Course Structure	Components	Examination
<p>At the End of 2nd year MS Urology Programme</p>	<p><input type="checkbox"/> Principles of General Surgery <input type="checkbox"/> Relevant Basic Science (Anatomy, Physiology, Pharmacology & Pathology)</p>	<p><u>Intermediate Examination</u> at the end of 2nd Year of M.S. Urology Programme</p> <p>Written MCQs = 300 Marks Clinical, TOACS/OSCE & ORAL= 200 Marks</p> <p style="text-align: right;">Total = 500 Marks</p>
<p>At the end of 5th year MS Urology Programme</p>	<p style="text-align: center;"><u>Clinical component</u></p> <p>Training in Urology with rotations in the relevant fields.</p> <p style="text-align: center;"><u>Research component</u></p> <p>Research work / Thesis writing must be completed and thesis be submitted at least 6 months before the end of final year of the programme..</p>	<p><u>Final Examination</u> at the end of 5th year of M.S. Urology Programme.</p> <p>Written = 500 Marks Clinical, TOACS/OSCE & ORAL = 500 Marks Contribution of CIS = 100 Marks Thesis Evaluation = 400 Marks</p> <p style="text-align: right;">Total = 1500 Marks</p> <p>Thesis evaluation and defense at the end of 5th year of the programme.</p>

Intermediate Examinations M. S. Urology

All candidates admitted in M.S. Urology course shall appear in Intermediate examination at the end of 2nd calendar year.

Eligibility Criteria:

The candidates appearing in Intermediate Examination of the M.S. Urology Programme are required:

- a) To have submitted certificate of completion of mandatory workshops.
- b) To have submitted certificate / certificates of completion of first two years of training from the supervisor / supervisors during rotation.
- c) To have submitted CIS assessment proforma from his/her own supervisor on 03 monthly basis and also from his/her supervisors during rotation, achieving a cumulative score of 75%.
- d) To have submitted certificate of approval of synopsis or undertaking / affidavit that if synopsis not approved with 30 days of submission of application for the Intermediate Examination, the candidate will not be allowed to take the examinations and shall be removed from the training programme.
- e) To have submitted evidence of payment of examination fee.

Intermediate Examinations M. S. Urology

At the end of 2nd year Calendar of the programme

Written Examination = 300 Marks

Clinical, TOACS/OSCE & ORAL = 200 Marks

Written:

MCQs 100 (2 marks each MCQ)

SEQs 10 (10 Marks each SEQ)

Total = 300 Marks

Principles of General Surgery = 70 MCQs 7 SEQs

Specialty specific = 10 MCQs 1 SEQs

Basic Sciences	= 20 MCQs	2 SEQs
<input type="checkbox"/> Anatomy	= 6 MCQs	1 SEQs
<input type="checkbox"/> Pharmacology	= 2 MCQs	-----
<input type="checkbox"/> Pathology	= 6 MCQs	1 SEQ
<input type="checkbox"/> Physiology	= 2 MCQs	-----

The clinical examination will evaluate patient care competencies in detail,

A panel of four examiners will be appointed by the Vice Chancellor of the University and of these two will be from within the university whilst two will be the external examiners. In case of difficulty in finding an internal examiner in a given subject the Vice Chancellor would, in consultation with the concerned Deans will appoint any relevant person inside/ outside the University as an examiner.

Clinical and Oral Examination	=	Total Marks 200
a) 4 short Course	=	100 marks
b) Long course	=	50 marks
c) Clinical, TOACS/OSCE & ORAL	=	50 marks

Each short case will be of 07 minutes duration, 05 minutes will be for examining the patient and 02 minutes for discussion.

The long case and oral examination will each be of 15 minutes duration.

The candidates scoring 50 % marks in each component of the Clinical & Oral Examination will

pass this part of the Intermediate Examination.

Declaration of Result

The Candidate will have to score 50% marks in written, clinical, Toacs/ OSCE & Oral and practical components and a cumulative score of 60% to be declared successful in the Intermediate Examination.

A maximum of four consecutive attempts (availed or unavailed) will be allowed in the Intermediate Examination during which the candidate will be allowed to continue his training program. If the candidate fails to pass his Intermediate Examination within the above mentioned limit of four attempts, the candidate shall be removed from the training program, and the seat would fall vacant, stipend/ scholarship if any would be stopped.

Final Examination

M.S. Urology

At the end of 5th Calendar year of the Programme

Eligibility Criteria:

To appear in the Final Examination the candidate shall be required:

- i) To have submitted the result of passing Intermediate Examination.

- ii) To have submitted the certificate of completion of training, issued by the Supervisor which will be mandatory.
- iii) To have achieved a cumulative score of 75% in Continuous Internal assessments of all training years.
- iv) To have got the thesis accepted and will then be eligible to appear in Final Examination.
- v) To have submitted no dues certificate from all relevant departments including library, hostel, cashier etc.
- vi) To have submitted evidence of submission of examination fee.

Final Examination Schedule and Fee

- a) Final examination will be held twice a year.
- b) The candidates have to satisfy eligibility criteria before permission is granted to take the examination.
- c) Examination fee will be determined and varied at periodic intervals by the University.
- d) The examination fee once deposited cannot be refunded / carried over to the next examination under any circumstances.
- e) The Controller of Examinations will issue an Admittance Card with a photograph of the candidate on receipt of prescribed application form, documents satisfying eligibility criteria

and evidence of payment of examination fee. This card will also show the Roll Number, date / time and venue of examination.

Components of Final Examination

Written Part of Final Examination	Total marks 500
Clinical, TOACS/OSCE & ORAL	Total marks 500 Contribution of CIS to the Final Examination
Total marks 100	Thesis Evaluation
marks 400	Total

Total

= 1500 Marks

Written Papers:

Paper 1	= 100 MCQs	5 SEQs
Paper 2	= 100 MCQs	5 SEQs

Clinical, TOACS/OSCE & ORAL

Short Cases	= 200 Marks
Long Case	= 100 Marks
Toacs/ OSCE & Oral	= 200 Marks
Total	= 500 Marks

Final Examination MS Urology Total Marks:
1500

All candidates admitted in MS Urology course shall appear in Final examination at the end of structured training programme (end of 5th calendar year) and after clearing Intermediate examination.

There shall be two written papers of 250 marks each, Clinical, TOACS/OSCE & ORAL examination of 500 marks, Internal assessment of 100 marks and thesis examination of 400 marks.

Topics included in paper 1

General Urology

Topics included in paper 2

Special Urology

Components of Final Examination Theory

Paper I

5 SEQs
100 MCQs

250 Marks

3 Hours

50 Marks
200 Marks

Paper II

5 SEQs
100 MCQs

250 Marks

3 Hours

50 Marks
200 Marks

Only those candidates who pass in theory papers, will be eligible to appear in the Clinical, TOACS/OSCE & ORAL.

Oral

80 Marks

Clinical, TOACS/OSCE & ORAL

500 Total Marks

Four short cases

200 Marks

One long case:

100 Marks

Clinical, TOACS/OSCE & ORAL

200 Marks

Continuous Internal Assessment

100 Marks

Final MS Urology Thesis Examination

Total Marks: 400

All candidates admitted in MS Urology course shall appear in thesis examination at the end of 5th year of the MS programme. The examination shall include thesis evaluation with defense.

RECOMMENDED BOOKS

- 1.** General Pathology by J.B Walter & M.S. Israel published by Churchill Living stone.
- 2.** Physiology - Board Review series by Linda S. Costanza
- 3.** Anatomy: Regional and Applied by R.J. Last
- 4.** Langman's Medical Embryology T.W. Sadler
- 5.** Short Practice of Surgery by Bailey & Love Published by Chapman and Hall.

- 6.** Essential Surgical Practice Vol: 1 by Cuschieri published by Butterworth Heimann
- 7.** Smith's General Urology
- 8.** Camp bell's Urology
- 9.** Scientific Foundations of Urology
- 10.** Scheward's Surgery
- 11.** Fathalla M. F. and Fathalla M. M. F. A Practical Guide
- 12.** for Health Researcher. Cairo: World Health Organization; 2004.
- 13.** Rana M. H., Ali S. Mustafa M. A Handnook of Behavioural Sciences for Medical and Dental Students. Lahore: University of Health Science; 2007.

Declaration of Result

For the declaration of result

- I. The candidate must get his/her Thesis accepted.
- II. The candidate must have passed the final written examination with 50% marks and the clinical & oral examination securing 50% marks. The cumulative passing score from the written and clinical/ oral examination shall be 60%. Cumulative score of 60% marks to be calculated by adding up secured marks of each component of the Examination i.e written and clinical/ oral and then calculating its percentage.
- III. The MS degree shall be awarded after acceptance of thesis and success in the final examination.

SECTION – VII

LOG BOOK UROLOGY (Templates)



MS UROLOGY

RAWALPINDI MEDICAL UNIVERSITY

RAWALPINDI



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 _____

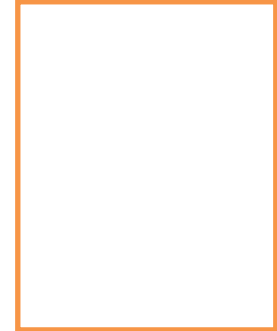
Name of Supervisor _____

Designation of Supervisor _____

Qualification of Supervisor _____

Title of department / Unit _____

Name of Training Institute / Hospital _____



INTRODUCTION OF LOGBOOK:

A structured book in which certain types of educational activities and patient related information is recorded, usually by hand. Logbooks are used all over the world from undergraduate to postgraduate training, in human, veterinary and dental medicine, nursing schools and pharmacy, either in paper or electronic format .

Logbooks provide a clear setting of learning objectives and give trainees and clinical teachers a quick overview of the requirements of training and an idea of the learning progress. Logbooks are especially useful if different sites are involved in the training to set a (minimum) standard of training. Logbooks assist supervisors and trainees to see at one glance which learning objectives have not yet been accomplished and to set a learning plan. The analysis of logbooks can reveal weak points of training and can evaluate whether trainees have fulfilled the minimum requirements of training.

Logbooks facilitate communication between the trainee and clinical teacher. Logbooks help to structure and standardize learning in clinical settings. In contrast to portfolios, which focus on students' documentation and self- reflection of their learning activities, logbooks set clear learning objectives and help to structure the learning process in clinical settings and to ease communication between trainee and clinical teacher. To implement logbooks in clinical training successfully, logbooks have to be an integrated part of the curriculum and the daily routine on the ward.

Continuous measures of quality management are necessary.

Reference

Brauns KS, Narciss E, Schneyinck C, Böhme K, Brüstle P, Holzmann UM, et al. Twelve tips for successfully implementing logbooks in clinical training. Med Teach. 2016 Jun 2; 38(6): 564–569.

INDEX:LOG OF

- 1. MORNING REPORT PRESENTATION/CASE PRESENTATION (LONG AND SHORT CASES)**
- 2. TOPIC PRESENTATION/SEMINAR**
- 3. DIDACTIC LECTURES/INTERACTIVE LECTURES**
- 4. JOURNAL CLUB**
- 5. PROBLEM CASE DISCUSSION**
- 6. EMERGENCY CASES**
- 7. INDOOR PATIENTS**
- 8. OPD AND CLINICS**
- 9. PROCEDURES (OBSERVED, ASSISTED,PERFORMED UNDER SUPERVISION & PERFORMED INDEPENDENTLY)**
- 10. MULTIDISCIPLINARY MEETINGS**
- 11. CLINICOPATHOLOGICAL CONFERENCE**
- 12. MORBIDITY/MORTALITY MEETINGS**
- 13. HANDS ON TRAINING/WORKSHOPS**
- 14. PUBLICATIONS**
- 15. MAJOR RESEARCH PROJECT DURING MD TRAINING/ANY OTHER MAJOR RESEARCH PROJECT**
- 16. WRITTEN ASSESMENT RECORD**
- 17. CLINICAL ASSESMENT RECORD**
- 18. EVALUATION RECORD**

SECTION-1

MORNING REPORT PRESENTATION/ CASE PRESENTATION
SHORT CASES)

(LONG AND

SR#	DATE	REG# OF PATIENT	DIAGNOSIS & BRIEF DESCRIPTION	SIGNATURES OF THE SUPERVISOR

SECTION-2**TOPIC PRESENTATION/SEMINAR**

SR#	DATE	NAME OF THE TOPIC & BRIEF DETAILS OF THE ASPECTS COVERED	SIGNATURES OF THE SUPERVISOR

SECTION-3

JOURNAL CLUB

SR#	DATE	TITLE OF THE ARTICLE	NAME OF JOURNAL	DATE OF PUBLICATION	SIGNATURES OF THE SUPERVISOR

SECTION-4**PROBLEM CASE DISCUSSION**

SR #	DATE	REG.# OF THE PATIENT DISCUSSED	DIAGNOSIS	BRIEF DESCRIPTION OF THE CASE	SIGNATURES OF THE SUPERVISOR

SECTION-5**DIDACTIC LECTURE/INTERACTIVE LECTURES**

SR #	DATE	TOPIC & BRIEF DESCRIPTION	NAME OF THE TEACHER	SIGNATURES OF THE SUPERVISOR

SECTION-6

RECORD OF TOTAL EMERGENCY CASES SEEN ON EMERGENCY CALL DAYS

SR.#	DATE	TOTAL NUMBER OF CASES ATTENDED	SIGNATURES OF THE SUPERVISOR
1			
2			
3			
4			
5			
6			
7			
9			
10			
11			
12			
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27			

SECTION-6

EMERGENCY CASES(repetition of cases should be avoided)

SR#	DATE	REG # OF THE PATIENT	DIAGNOSIS	MANAGEMENT	PROCEDURES PERFORMED	SIGNATURES OF THE SUPERVISOR

SECTION-7**RECORD OF TOTAL INDOOR CASES SEEN ON CALL DAYS IN THE WARD**

SR.#	DATE	TOTAL NUMBER OF CASES ATTENDED	SIGNATURES OF THE SUPERVISOR
1			
2			
3			
4			
5			
6			
7			
9			
10			
11			
12			
13			
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24			
25			
26			
27			
28			

SECTION-8**RECORD OF TOTAL OPD/CLINIC CASES SEEN ON OPD CALL DAYS**

SR.#	DATE	TOTAL NUMBER OF CASES ATTENDED	SIGNATURES OF THE SUPERVISOR
1			
2			
3			
4			
5			
6			
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SECTION-10

MULTI DICIPINARY MEETINGS

SR#	DATE	BRIEF DESCRIPTION	SIGNATURES OF THE SUPERVISOR

SECTION-**CLINICOPATHOLOGICAL CONFERENCE (CPC)**

SR#	DATE	BRIEF DESCRIPTION OF THE TOPIC/CASE DISCUSSED	SIGNATURES OF THE SUPERVISOR

SECTION-13**HANDS ON TRAINING/WORKSHOPS**

SR#	DATE	TITLE	VENUE	FACILITATOR	SIGNATURES OF THE SUPERVISOR

SECTION-15**MAJOR RESEARCH PROJECT DURING MD TRAINING/ANY OTHER
MAJOR RESEARCH PROJECT**

SNO.	RESEARCH TOPIC	PLACE OF RESEARCH	NAME AND DESIGNATION OF SUPERVISOR OTHER THAN MD SUPERVISOR UNDER WHOM RESEARCH WAS CONDUCTED	BRIEF DETAILS	SIGNATURES OF THE SUPERVISOR

SECTION-18

EVALUATION RECORDS

(Photocopy of consolidated evaluation record at the end of each block should be pasted here)

Log book of Research (Templates)



LOG BOOK OF RESEARCH

RAWALPINDI MEDICAL UNIVERSITY

RAWALPINDI



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 _____

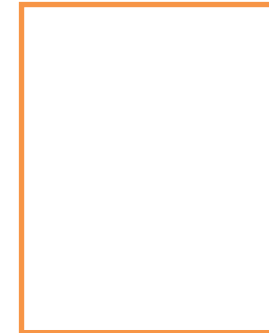
Date of Completion of Training _____

Name of Supervisor _____

Designation of Supervisor _____

Qualification of Supervisor _____

Title of department / Unit _____



MOTO OF RAWALPINDI MEDICAL UNIVERSITY

Truth Wisdom & Service

MISSION STATEMENT

- 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**.
- Highly recognized and accredited centre of excellence in **Medical** Education, using evidence-based training techniques for development of highly competent health professionals.

LOG OF RESEARCH ELECTIVE

(RESEARCH ELECTIVE WOULD BE TAUGHT 08:00 AM TO 02:00 PM & RESIDENT WOULD PERFORM THE DUTY OF EVENING CALLS AS PER ROTA.)If required

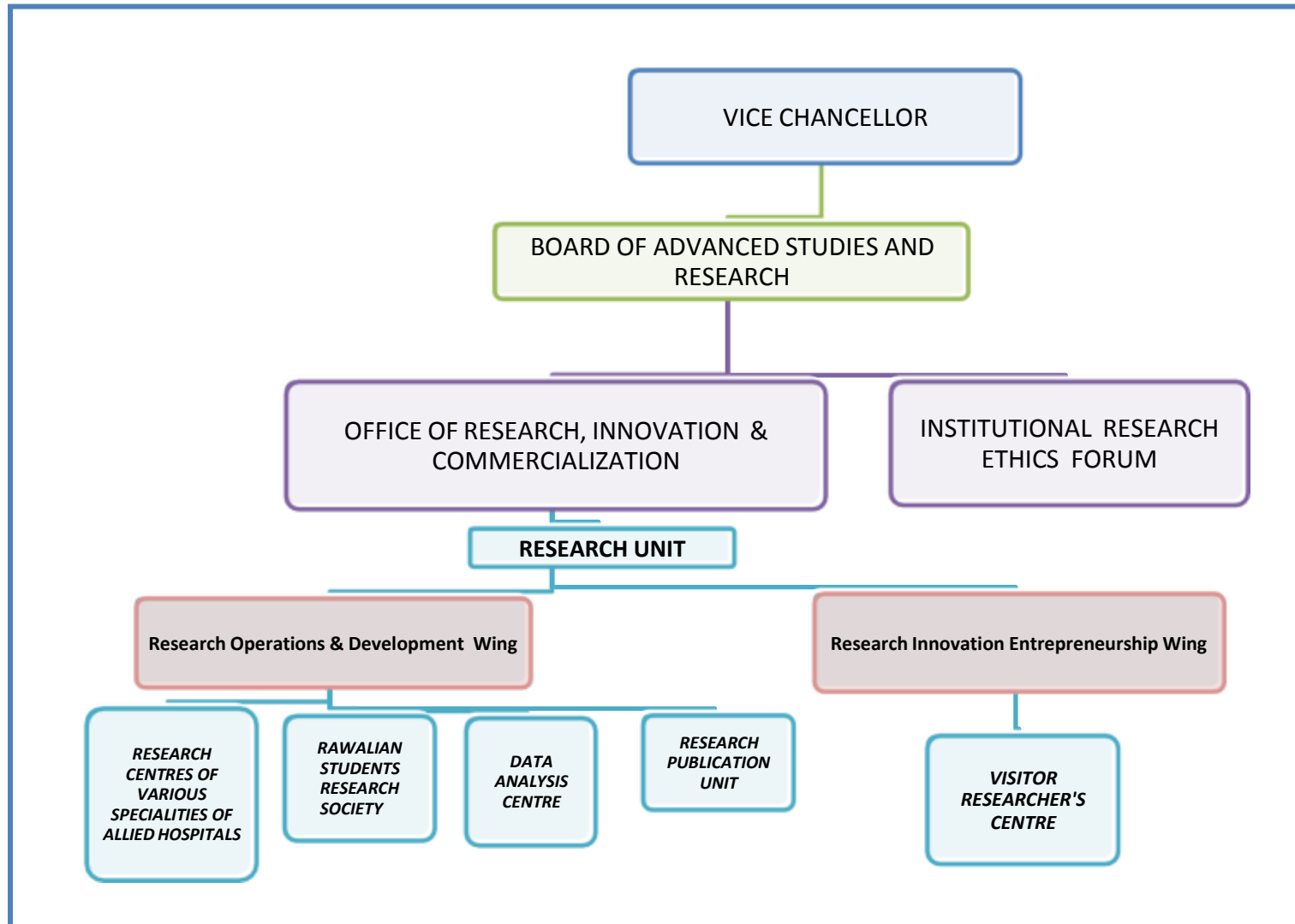
Internal medicine residents' outlook in research can be significantly improved using a research curriculum offered through a structured and dedicated research rotation. This is exemplified by the improvement noted in resident satisfaction, their participation in scholarly activities and resident research outcomes since the inception of the research rotation in our internal medicine training program. Residents' research lead to better clinical care, correlates with the pursuit of academic careers, increases numbers of clinician investigators, and is an asset to those applying for fellowships. We report our success in designing and implementing a "Structured Research Curriculum" incorporating basic principles within a research rotation to enhance participation and outcomes of our residents in scholarly activities within a busy residency training program setting.

REFERENCE:

<https://bmcmmededuc.biomedcentral.com/articles/10.1186/1472-6920-6-52>

ROTATION CURRICULUM FOR RESEARCH

ORGANIZATIONAL STRUCTURE OF RESEARCH AT RAWALPINDI MEDICAL UNIVERSITY



**BASELINE PERFORMA TO BE FILLED IN BY RESIDENTS
BEFORE ORIENTATION SESSION:
RAWALPINDI MEDICAL UNIVERSITY**

1. Name of Trainee: _____
2. Gender: Male: _____ Female:
3. Specialty: _____
4. Unit/Department: _____
5. Hospital: _____
6. Date Of Commencement of Training: _____
7. Anticipated year of Training: _____
8. Registration No: _____
9. Name of Supervisor: _____
10. A. Have you ever attended any research methodology workshop/course/training: YES: NO:

10. B If yes, please enter the details of the course/workshop (mention the last 5 workshops/courses in case of exceeding 5, starting from the latest as SR # 1

SR #	Date/Month and year of training course/workshop	Title of training course/workshop	Organizing institution/company.	Duration of course in days	What was the main content/learning outcome of the research course?
1.					
2.					
3.					
4.					
5.					

11. A. Have you ever attended any workshop or course regarding synopsis development or research proposal development:

YES: NO:

11. B. If yes please mention details of the course/workshop (mention the last 3 workshops/courses in case of exceeding 3, starting from the latest as SR # 01):

SR #	Date/Month and year of training course/workshop	Title of training course/workshop	Organizing institution/company.	Duration of course in days	What was the main content/learning outcome of the research course?
1.					
2.					
3.					

12. Do you consider yourself proficient/skilled enough to write a research proposal independently with appropriate methodology:

13. YES: NO:

UNCERTAIN:

14. A. Have you ever formulated a research proposal previously? YES: NO:

13. B. If yes please mention the details of the synopsis/proposals developed by you (mention the last 3 synopsis/proposals in case of exceeding 3, starting from the latest as SR # 01):

SR #	Date/Month and year of formulating proposal	Title of Proposal	Did you formulate as a pre-requisite to any degree or funding? Please mention its purpose and	Was the proposal submitted anywhere for approval/acceptance? If yes, where? And was it approved or modified or accepted?	Did you pursue that synopsis and completed the research? Yes /No. Please mention reason for not completing the research after development of synopsis if answer is no.
1.					
2.					
3.					

A. Have you ever written a research paper/manuscript previously: YES: NO:

14. B. If yes please mention the last five manuscripts in case of exceeding 5, starting from the latest as Sr # 1):

Sr #	Date/Month and year of formulating the manuscript/paper	Title of Paper	Was it an original article/short communication/case study/systematic review/meta analysis/editorial/any other academic writing in a journal? Please specify	Was the manuscript ever submitted any publication? Yes or No. If No give reason please. If yes to which journal/s and was it approved for publication or rejected?	If published please specify title of journal and edition and year of publication.
1.					
2.					
3.					
4.					
5.					

15. Have you ever been involved in any of the following research activities during last 2 years? (Please tick in the appropriate boxes):

a) Review of Medical literature

- b) Write up of literature review
- c) Vancouver/Harvard referencing
- d) Used any Plagiarism detection tool
- e) Formulated research methodology of a research project/synopsis
- f) Formulated any data collection tool/Performa /checklist/questionnaire for research project
- g) Collected data through Performa's/interviews/observations/scales/Focus Group Discussions etc.
- h) Entered data in any computer based software e.g. SPSS, Epi-info, Microsoft Excel etc.
If yes mention name of soft ware: _____
- i) Analyzed quantitative or qualitative data in any computer based software
- j) Write up of results of study with formulation of tables or graphs
- k) Write up of discussion of a paper
- l) Ever submitted a manuscript to any journal

16. Title of research assigned to you by your supervisor you're your MD/MS programme: _____

17. Please mention which of the following activities you already have performed regarding your research project/THESIS as requisite to MD/MS programme: (Please tick in the appropriate boxes):

- a) Topic selection
- b) Review of literature
- c) Write up of literature review
- a) Vancouver/Harvard referencing
- b) Checked Plagiarism through detection tool
- c) Formulated research methodology of a research project/synopsis
- d) Formulated any data collection tool/Performa /checklist/questionnaire for your research
- e) Collected data through data collection tools/scales
- f) Entered data in any computer based software (e.g. SPSS, Epi info, Microsoft Excel etc.)

- g) Analyzed data in any computer based software
 - h) Have formulated results of study with tables or graphs
 - i) Formulated discussion of THESIS
 - j) Written conclusion and abstract of your THESIS

 - k) Submitted your THESIS to your supervisor
-

18. What are your expectations from this research course/module of MS/MD programme and any specific areas of training you want to be paid special emphasis by the trainers:?

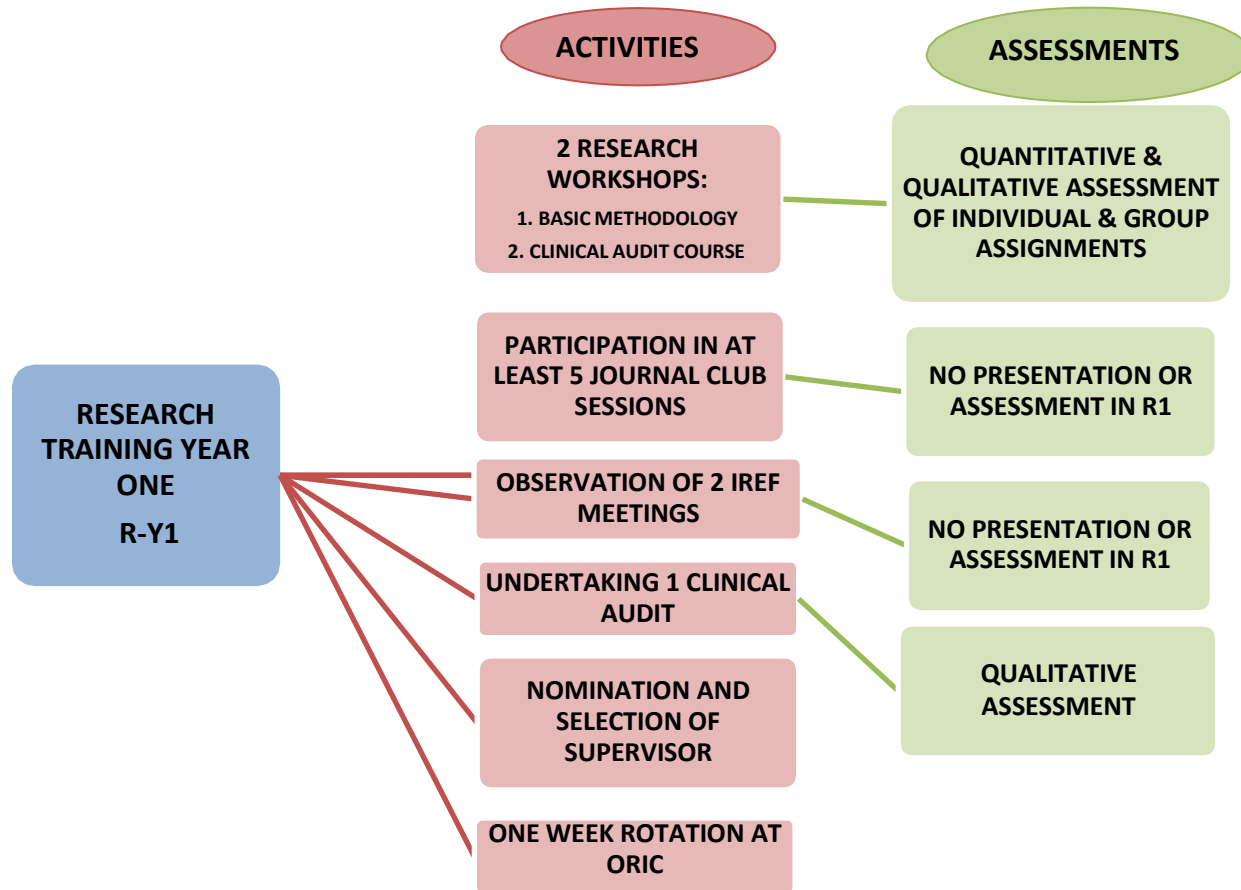
Thank you

Date of filling the Performa: _____

Signatures of the resident: _____

Signatures of the Director of ORIC, RMU: _____.

RESEARCH COURSE OF FIRST TRAINING YEAR-Y1



SECTION- 1**3 DAYS -BASIC RESEARCH METHODOLOGY WORKSHOP
DAY 1 OF WORKSHOP:**

Date & Venue: _____

Modules of Day 1 of Workshop	TITLE OF MODULES OF DAY 1	NAMES AND SIGNATURES OF FACILITATORS OF EACH MODULE	FACILITATOR'S FEEDBACK REGARDING COMPLETION AND PERFORMANCE OF RESIDENT IN ON SPOT INDIVIDUAL OR GROUP ASSIGNMENTS OF THE COURSE MODULE	SIGNATURE OF DIRECTOR OF ORIC (NAME/STAMP)
Module 1	Introduction to health systems research Identifying and Prioritizing Research Problems			
Module 2	Analysis and statement of problem & Introduction to Literature review			
Module 3	Literature review Referencing systems; Vancouver & Harvard referencing systems			
Module 4	Literature review Referencing managing systems			
Module 5	Plagiarism			
Module 6	Formulation of research objectives			
Module 7	Formulation of Hypothesis for a research			
Module 8	Research methodology; Variables and Indicators			

DAY 2 OF BASIC RESEARCH METHODOLOGY WORKSHOP:

Date & Venue: _____

Modules of Day 2 of Workshop	TITLE OF MODULES OF DAY 2	NAMES AND SIGNATURES OF FACILITATORS OF EACH MODULE	FACILITATOR'S FEEDBACK REGARDING COMPLETION AND PERFORMANCE OF RESIDENT IN ON SPOT INDIVIDUAL OR GROUP ASSIGNMENTS OF THE COURSE MODULE	SIGNATURE OF DIRECTOR OF ORIC (NAME/STAMP)
Module 1	Research methodology; Study types			
Module 2	Data collection techniques			
Module 3	Data collection tools			
Module 4	Sampling			
Module 5	Plan for Data Entry , storage and Statistical Analysis			

DAY 3 OF BASIC RESEARCH METHODOLOGY WORKSHOP:

Date & Venue: _____

Modules of Day 3 of Workshop	TITLE OF MODULES OF DAY 3	NAMES AND SIGNATURES OF FACILITATORS OF EACH MODULE	FACILITATOR'S FEEDBACK REGARDING COMPLETION AND PERFORMANCE OF RESIDENT IN ON SPOT INDIVIDUAL OR GROUP ASSIGNMENTS OF THE COURSE MODULE	SIGNATURE OF DIRECTOR OF ORIC (NAME/STAMP)
Module 1	Pilot and project planning			
Module 2	Budgeting for a study			
Module 3	Project administration			
Module 4	Plan for dissemination			
Module 5	Research ethics & concepts of protection of human study subjects			
Module 6	Differences between original articles, short communication, case reports, systematic reviews and meta-analysis			
Module 7	Writing a Case report			
Module 8	Critical Appraisal of a research paper			
Module 9	<ul style="list-style-type: none"> • Making effective power-point presentations of a Research Project 			
Module 10	<ul style="list-style-type: none"> • Making effective poster presentations 			

SECTION- 2

**INDIVIDUAL AND GROUP (HOME TASK) ASSIGNMENTS OF THE RESIDENTS
REGARDING BASIC RESEARCH METHODOLOGY WORKSHOP**

ASSIGNMENT'S NUMBER	TITLE	DATE OF SUBMISSION:	ORIGINALITY SCORE OF ASSIGNMENT IN TURN-IT-IN PLAGIARISM DETECTION SOFTWARE	FACILITATOR'S REFLECTION ON CORRECTNESS, COMPLETION AND QUALITY OF INDIVIDUAL OR GROUP ASSIGNMENTS OF THE WORKSHOP	SCORES ATTAINED OUT OF TOTAL ATTAINABLE SCORE	SIGNATURE OF FACILITATORS	SIGNATURE OF DIRECTOR OF ORIC (NAME/STAMP)

SECTION- 3**ONE DAY – WORKSHOP ON UNDERTAKING CLINICAL AUDIT**

Date & Venue: _____

Modules of Day 1 of Workshop	TITLE OF MODULES OF DAY 1	NAMES AND SIGNATURES OF FACILITATORS OF EACH MODULE	FACILITATOR'S FEEDBACK REGARDING COMPLETION AND PERFORMANCE OF RESIDENT IN ON SPOT INDIVIDUAL OR GROUP ASSIGNMENTS OF THE COURSE MODULE	SIGNATURE OF DIRECTOR OF ORIC (NAME/STAMP)
Module 1	Introduction to a clinical audit and its importance			
Module 2	Types of Clinical Audit			
Module 3	Process and steps of Clinical Audit			
Module 4	Methodology of Clinical Audit			
Module 5	Data Analysis of a Clinical Audit			
Module 6	Clinical Audit Report Writing			
Module 7	Dissemination of the report			

SECTION- 4

JOURNAL CLUB MEETINGS ATTENDED BY RESIDENT AS AN OBSERVER DURING YR 1

JOURNAL CLUB MEETING #	DATE	TITLES OF THE ARTICLES PRESENTED IN THE JOURNAL CLUB MEETING	TITLE OF JOURNAL/ YEAR OF PUBLICATION	ANY QUESTION OR COMMENT MADE ON THE PRESENTATION BY THE OBSERVER	SUPERVISOR'S SIGNATURE	HEAD OF DEPARTMENT'S SIGNATURE (NAME/STAMP)
1.		A. B. C.	A. B. C.	A. B. C.		
2.		A. B. C.	A. B. C.	A. B. C.		
3.		A. B. C.	A. B. C.	A. B. C.		
4.		A. B. C.	A. B. C.	A. B. C.		
5.		A. B. C.	A. B. C.	A. B. C.		

SECTION- 5**INSTITUTIONAL RESEARCH & ETHICS FORUM MEETINGS ATTENDED BY RESIDENT AS AN OBSERVER DURING YR 1**

IREF MEETING #	DATE/VENUE	TITLES OF THE RESEARCH PROPOSALS PRESENTED IN THE IREF MEETING	ANY QUESTION OR COMMENT MADE ON THE PRESENTATIONS BY THE OBSERVER	SIGNATURE OF THE CONVENER OF THE MEETING (NAME/STAMP)
1.				
2.				
3.				
4.				
5				

SECTION- 6**UNDERTAKING A CLINICAL AUDITS UNDERTAKEN AS A GROUP MEMBER DURING YEAR 1**

TITLE OF THE CLINICAL AUDIT	UNIT/DEPARTMENT WHERE THE AUDIT WAS CONDUCTED/NAME OF SUPERVISOR	PERSON WHO CONDUCTED THE AUDIT AND CONTENT OF CONTRIBUTION IN THE CLINICAL AUDIT	DISSEMINATION OF REPORT OF AUDIT: (A. WAS CLINICAL AUDIT REPORT PUBLISHED AS ANNUAL AUDIT REPORT/IN A RESEARCH JOURNAL? IF YES, DATE AND YEAR OF PUBLICATION AND NAME OF JOURNAL B. WAS CLINICAL AUDIT PRESENTED IN CPC OF RMU? IF YES DATE AND VENUE)	SIGNATURE OF THE DEAN (NAME/STAMP)
1.				
2.				
3.				
4.				
5				

SECTION- 7**RECORD OF FORTNIGHTLY MEETINGS OF THE RESIDENT WITH THE SUPERVISOR**

Sr #	DATE/VENUE /DURATION OF MEETING	AGENDA AND OUTLINE OF THE MEETING (IN TERMS OF CONTENT, DISCUSSION POINTS)	ACTION POINTS AND SUPERVISOR'S REFLECTIONS	SUPERVISOR'S SIGNATURE (NAME/STAMP)	HEAD OF DEPARTMENT'S SIGNATURE (NAME/STAMP)
1					
2					
3					
4					
5					
6					
7					

SECTION- 8**RECORD OF RESIDENT'S ONE WEEK'S ROTATION AT ORIC**

DAY #	DATE	ACTIVITY CARRIED OUT AT ORIC AND THE RESEARCH ASSOCIATE/ DEPUTY DIRECTOR WHO SUPERVISED THE ACTIVITY	ORIC STAFF MEMBER'S REFLECTIONS ON THE PERFORMANCE OF THE ACTIVITY	THE RESEARCH ASSOCIATE/ DEPUTY DIRECTOR SIGNATURE (NAME/STAMP)	DIRECTOR ORIC'S SIGNATURE (NAME/STAMP)
1					
2					
3					
4					
5					
6					
7					
8					

SECTION- 10

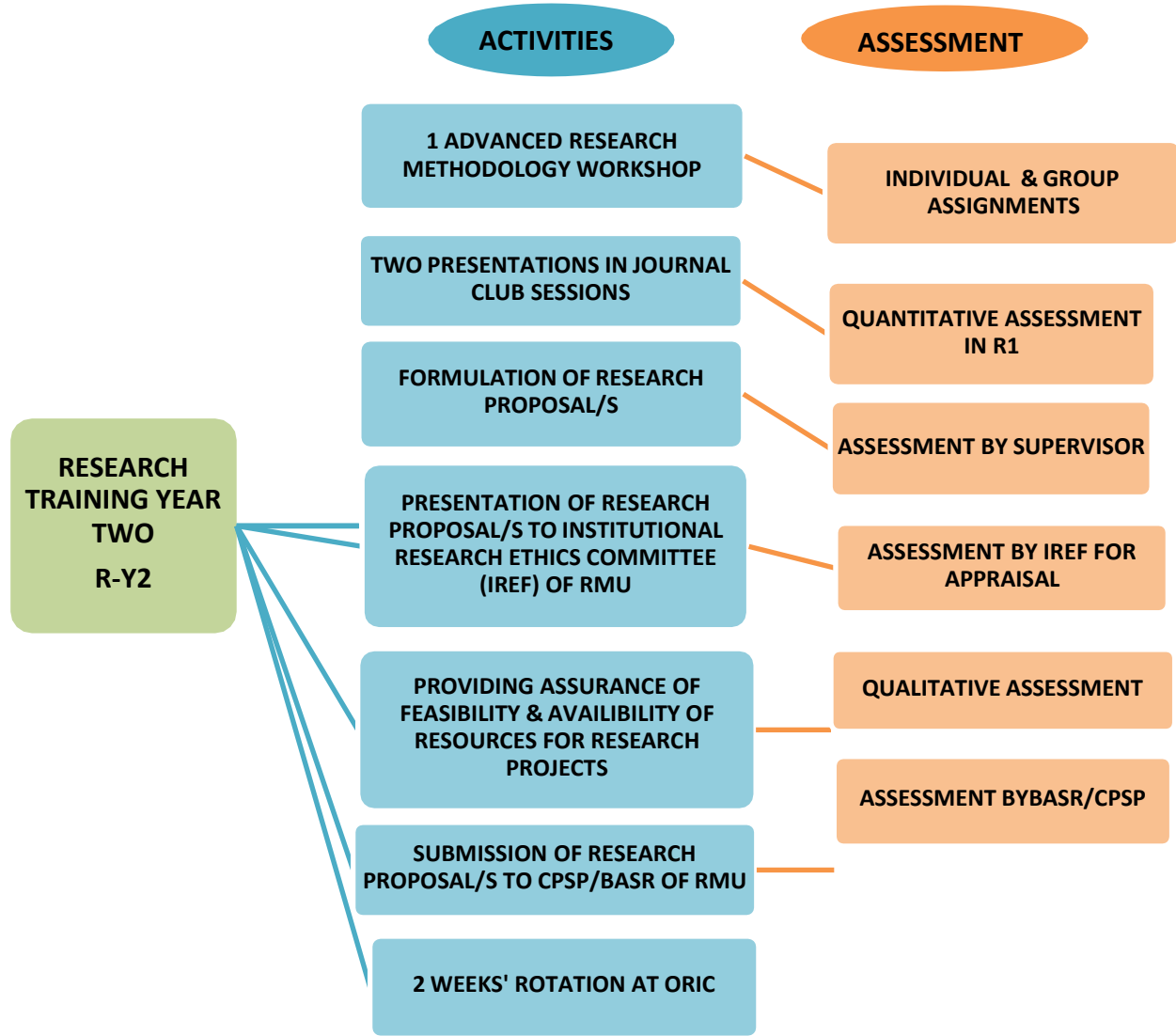
RECORD OF LITERATURE REVIEW CONDUCTED BY THE RESIDENT IN YEAR 1

SR #	TITLE OF THE LITERATURE REVIEWED	DATE/MONTH AND YEAR OF PUBLICATION	TITLE OF THE JOURNAL/BOOK	WAS IT AN ORIGINAL ARTICLE/SHORT COMMUNICATION/CASE STUDY/SYSTEMATIC REVIEW/META ANALYSIS/EDITORIAL/ANY OTHER ACADEMIC WRITING (e.g. reports, books, conference papers, THESISs, Research and program reports- published/unpublished)?PLEASE SPECIFY
1				
2				
3				
4				

SECTION-11**RECORD OF ANY MANUSCRIPT/RESEARCH PAPER FORMULATED BY THE RESIDENT IN YEAR 1**

SL #	TITLE OF THE MANUSCRIPT	IF SUBMITTED FOR PUBLICATION, DATE/MONTH AND YEAR OF PUBLICATION, IF PUBLISHED	TITLE OF THE JOURNAL	WAS IT REVIEWED, MODIFIED, ACCEPTED OR REJECTED. PLEASE SPECIFY	DIRECTOR ORIC'S SIGNATURE (NAME/STAMP)

RESEARCH COURSE OF SECOND RESEARCH TRAINING YEAR (R-Y2)



SECTION- 1**3 DAYS –ADVANCED RESEARCH METHODOLOGY WORKSHOP
DAY 1 OF WORKSHOP:**

Date & Venue: _____

Modules of Day 1 of Workshop	TITLE OF MODULES OF DAY 1	NAMES AND SIGNATURES OF FACILITATORS OF EACH MODULE	FACILITATOR'S FEEDBACK REGARDING COMPLETION AND PERFORMANCE OF RESIDENT IN ON SPOT INDIVIDUAL OR GROUP ASSIGNMENTS OF THE COURSE MODULE	SIGNATURE OF DIRECTOR OF ORIC (NAME/STAMP)
Module 1	<ul style="list-style-type: none">• Introduction to Biostatistics• Description of VariablesNumerical methods of Data summarization (Manual as well as through Statistical Package of Social Sciences)			
Module 2	Graphical presentation of data			
Module 3	<ul style="list-style-type: none">• Cross-tabulation of quantitative data			
Module 4	Measures of Association based on risk			
Module 5	Confounding and methods to control confounding			
Module 6	Basic statistical concepts; Measure of dispersion and confidence Intervals			

DAY 2 OF ADVANCED RESEARCH METHODOLOGY WORKSHOP:
Date & Venue: _____

Modules of Day 2 of Workshop	TITLE OF MODULES OF DAY 2	NAMES AND SIGNATURES OF FACILITATORS OF EACH MODULE	FACILITATOR'S FEEDBACK REGARDING COMPLETION AND PERFORMANCE OF RESIDENT IN ON SPOT INDIVIDUAL OR GROUP ASSIGNMENTS OF THE COURSE MODULE	SIGNATURE OF DIRECTOR OF ORIC (NAME/STAMP)
Module 1	Hypothesis testing for a research			
Module 2	Tests of Significance			
Module 3	Determining difference between two groups- categorical data Paired & unpaired observations			
Module 4	Determining difference between two groups- numerical data Paired & unpaired observations			
Module 5	Determining difference between more than two groups- numerical data ANOVA (Analysis of Variance)			

DAY 3 OF ADVANCED RESEARCH METHODOLOGY WORKSHOP:

Date & Venue: _____

Modules of Day 3 of Workshop	TITLE OF MODULES OF DAY 3	NAMES AND SIGNATURES OF FACILITATORS OF EACH MODULE	FACILITATOR'S FEEDBACK REGARDING COMPLETION AND PERFORMANCE OF RESIDENT IN ON SPOT INDIVIDUAL OR GROUP ASSIGNMENTS OF THE COURSE MODULE	SIGNATURE OF DIRECTOR OF ORIC (NAME/STAMP)
Module 1	Determining Correlation between variables			
Module 2	Regression Analysis			
Module 3	Diagnostic Accuracy of a test			
Module 4	Writing a research paper			
Module 5	Writing a THESIS			

SECTION- 2**INDIVIDUAL AND GROUP (HOME TASK) ASSIGNMENTS OF THE RESIDENTS
3 REGARDING ADVANCED RESEARCH METHODOLOGY WORKSHOP**

ASSIGNMENT'S NUMBER	TITLE	DATE OF SUBMISSION:	ORIGINALITY SCORE OF ASSIGNMENT IN TURN-IT-IN PLAGIARISM DETECTION SOFTWARE	FACILITATOR'S REFLECTION ON CORRECTNESS, COMPLETION AND QUALITY OF INDIVIDUAL OR GROUP ASSIGNMENTS OF THE WORKSHOP	SCORES ATTAINED OUT OF TOTAL ATTAINABLE SCORE	SIGNATURE OF FACILITATORS	SIGNATURE OF DIRECTOR OF ORIC (NAME/STAMP)

SECTION- 3

4 JOURNAL CLUB MEETINGS ATTENDED BY RESIDENT AS AN OBSERVER DURING YR 2

JOURNAL CLUB MEETING #	DATE	TITLES OF THE ARTICLES PRESENTED IN THE JOURNAL CLUB MEETING	TITLE OF JOURNAL/ YEAR OF PUBLICATION	ANY QUESTION OR COMMENT MADE ON THE PRESENTATION BY THE OBSERVER	SUPERVISOR'S SIGNATURE	HEAD OF DEPARTMENT'S SIGNATURE (NAME/STAMP)
1.		A. B. C.	A. B. C.	A. B. C.		
2.		A. B. C.	A. B. C.	A. B. C.		
3.		A. B. C.	A. B. C.	A. B. C.		
4.		A. B. C.	A. B. C.	A. B. C.		
5		A. B. C.	A. B. C.	A. B. C.		

SECTION- 4**2 JOURNAL CLUB MEETINGS ATTENDED BY RESIDENT AS A PRESENTER DURING YR 2**

Journal Club Meeting #	Date	Title Of The Article Presented By Resident In The Journal Club Meeting	Title Of Journal/ Year Of Publication	Reflection Of Two Senior Faculty Members On The Presentation	Senior Faculty Members Signature	Reflection Of The HOD On The Presentation And Scores Given Out Of Attainable Total Score Of 25	Head Of Department's Signature (Name/Stamp)
1.							
2.							

SIGNATURE OF THE DEAN OF SPECIALITY: _____**SIGNATURE (NAME/STAMP):** _____

APPROVAL OF TOPIC OF RESEARCH PROPOSAL/SYNOPSIS FOR THESIS FORMULATED BY RESIDENT DURING YR 2:

TOPIC OF THE RESEARCH PROPOSAL/SYNOPSIS FOR THESIS

APPROVAL OF THE TOPIC: _____

NAME OF THE PERSON APPROVING THE TOPIC OF SYNOPSIS	DESIGNATION OF THE PERSON APPROVING THE TOPIC OF SYNOPSIS	SIGNATURES	STAMP/DATE
	<i>SUPERVISOR</i>		
	<i>HEAD OF DEPARTMENT</i>		
	<i>DEAN OF SPECILAITY</i>		
	<i>DIRECTOR ORIC</i>		
	<i>CO- CHAIRPERSON OF THE BOARD OF ADVANCED STUDIES & RESEARCH OF RMU</i>		

SECTION- 6

COMPLETION OF RESEARCH PROPOSAL/SYNOPSIS FOR THESIS FORMULATED BY RESIDENT DURING YR 2 (TILL MONTH 8 OF YR 2):

TOPIC OF THE RESEARCH PROPOSAL/SYNOPSIS FOR THESIS: _____

SR #	DATE	ASPECTS OF THE SYNOPSIS/RESEARCH PROPOSAL REVIEWED	REFLECTION OF RESEARCH ASSOCIATES/DEPUTY DIRECTOR ORIC ON THE CONTENT & QUALITY OF THE PROPOSAL	RESEARCH ASSOCIATES/DEPUTY DIRECTOR'S SIGNATURE	REFLECTION OF THE SUPERVISOR ON THE CONTENT & QUALITY OF THE PROPOSAL	SUPERVISOR'S SIGNATURE (NAME/STAMP)
1.		Introduction and rationale (with Vancouver/Harvard in text citations)				
2.		Research aim, purpose and objectives				
3		Hypothesis, if required according to the study design.				
4		Operational Definitions				

5A		<i>Research Methodology:</i> Setting				
5B		<i>Research Methodology:</i> Study Population				
5C		<i>Research Methodology:</i> Study Duration				
5D		<i>Research Methodology:</i> Study Design				

5E		<i>Research Methodology:</i> j) Sampling: (Sample size with statistical justifications, sampling technique, inclusion criteria & exclusion criteria)				
5F		<i>Research Methodology:</i> Data Collection technique/s				
5G		<i>Research Methodology:</i> Data Collection tool/s				
5H		<i>Research Methodology:</i> Data Collection procedure				

6		Plan for Data entry & Analysis				
7		Ethical Considerations				
8		Work plan/Gantt chart				
9		Budget with justifications				
10		Reference list according to the Vancouver referencing style				

11		<i>Annexure (including data collection tool or Performa, consent form, official letters, scales, scoring systems and/or any other relevant material)</i>				

SECTION- 7**APPROVAL OF RESEARCH PROPOSAL/SYNOPSIS FOR THESIS FORMULATED BY RESIDENT DURING YR 2:****TOPIC OF THE RESEARCH PROPOSAL/SYNOPSIS FOR THESIS:**

APPROVAL OF THE SYNOPSIS/PROPOSAL: _____

DATE ON WHICH PROPOSAL WAS PRESENTED	NAME OF THE PERSON APPROVING THE SYNOPSIS	DESIGNATION OF THE PERSON APPROVING THE SYNOPSIS	SIGNATURES	STAMP
		<i>SUPERVISOR</i>		
		<i>HEAD OF DEPARTMENT</i>		
		<i>DEAN OF SPECILAITY</i>		
		<i>DIRECTOR ORIC</i>		
		<i>CHAIRPERSON OF THE INSTITUTIONAL RESEARCH AND ETHICS FORUM OF RMU</i>		
		<i>CO- CHAIRPERSON OF THE BOARD OF ADVANCED STUDIES & RESEARCH OF RMU</i>		

SECTION- 8**RECORD OF FORTNIGHTLY MEETINGS OF THE RESIDENT WITH THE SUPERVISOR IN YEAR 2**

SR #	DATE/VENUE /DURATION OF MEETING	AGENDA AND OUTLINE OF THE MEETING (IN TERMS OF CONTENT, DISCUSSION POINTS)	ACTION POINTS AND SUPERVISOR'S REFLECTIONS	SUPERVISOR'S SIGNATURE (NAME/STAMP)	HEAD OF DEPARTMENT'S SIGNATURE (NAME/STAMP)
1					
2					
3					
4					
5					
6					

SECTION- 9**RECORD OF RESIDENT'S TWO WEEK'S ROTATION AT ORIC DURING YR 2**

DAY #	DATE	ACTIVITY CARRIED OUT AT ORIC AND THE RESEARCH ASSOCIATE/ DEPUTY DIRECTOR WHO SUPERVISED THE ACTIVITY	ORIC STAFF MEMBER'S REFLECTIONS ON THE PERFORMANCE OF THE ACTIVITY	THE RESEARCH ASSOCIATE/ DEPUTY DIRECTOR SIGNATURE (NAME/STAMP)	DIRECTOR ORIC'S SIGNATURE (NAME/STAMP)
1					
2					
3					
4					
5					
6					
7					
8					

SECTION- 10**ANY RESEARCH COURSE/WORKSHOP ATTENDED (ON OWN) BY THE RESIDENT DURING YEAR 2**

SR #	DATE/MONTH AND YEAR OF TRAINING COURSE/WORKSHOP	TITLE OF TRAINING COURSE/WORKSHOP	ORGANIZING INSTITUTION/COMPANY	DURATION OF COURSE IN DAYS/MODE OF COURSE (online or physically attended)	THE OBJECTIVES OR LEARNING OUTCOMES OF THE RESEARCH COURSE.
1.					
2.					
3.					
4.					
5.					
6					

SECTION- 11

RECORD OF LITERATURE REVIEW CONDUCTED BY THE RESIDENT IN YEAR 2

SL #	TITLE OF THE LITERATURE REVIEWED	DATE/MONTH AND YEAR OF PUBLICATION	TITLE OF THE JOURNAL/BOOK	WAS IT AN ORIGINAL ARTICLE/SHORT COMMUNICATION/CASE STUDY/SYSTEMATIC REVIEW/META ANALYSIS/EDITORIAL/ANY OTHER ACADEMIC (e.g. reports, books, conference papers, THESISs, Research and program reports- published/unpublished)? PLEASE SPECIFY
1.				
2.				
3.				
4.				
5.				
6.				
7.				

SECTION- 12**RECORD OF ANY MANUSCRIPT/RESEARCH PAPER FORMULATED BY THE RESIDENT IN YEAR 2**

SL #	TITLE OF THE MANUSCRIPT	IF SUBMITTED FOR PUBLICATION, DATE/MONTH AND YEAR OF PUBLICATION, IF PUBLISHED	TITLE OF THE JOURNAL	WAS IT REVIEWED, MODIFIED, ACCEPTED OR REJECTED. PLEASE SPECIFY	DIRECTOR ORIC'S SIGNATURE (NAME/STAMP)
1					
2					
3					
4					
5					
6					

SECTION- 13

OVERALL EVALUATION OF RESEARCH THESIS PROGRAM BY SUPERVISOR

SECTION- 13

OVERALL EVALUATION OF RESEARCH THESIS PROGRAM BY *BASR* (BOARD OF ADVANCED STUDIES AND RESEARCH)

SECTION- 13

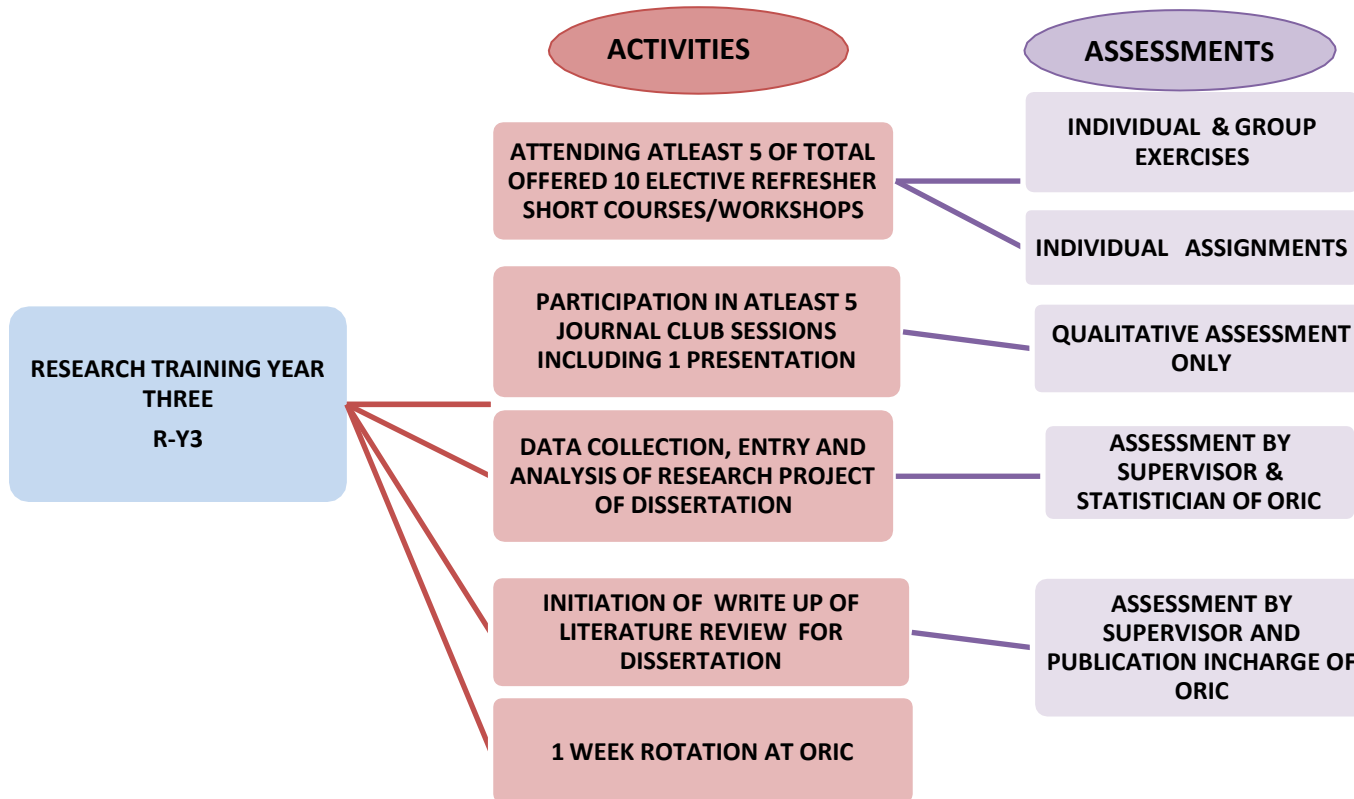
OVERALL EVALUATION OF RESEARCH THESIS PROGRAM BY ORIC (OFFICE OF RESEARCH INNOVATION AND COMMERCIALIZATION)

SECTION- 13

OVERALL EVALUATION OF RESEARCH THESIS PROGRAM BY DEPARTMENT OF MEDICAL EDUCATION (DME)

RESEARCH COURSE OF THIRD RESEARCH TRAINING YEAR

R-Y3



SECTION- 1**10 ELECTIVE RESEARCH WORKSHOPS TO BE OFFERED DURING YEAR 3**

DATE & VENUE & DURATION OF WORKSHOP	TITLE OF ELECTIVE WORKSHOPS ATTENDED	NAMES AND SIGNATURES OF FACILITATORS OF EACH WORKSHOP	FACILITATOR'S FEEDBACK REGARDING COMPLETION AND PERFORMANCE OF RESIDENT IN ON SPOT INDIVIDUAL OR GROUP ASSIGNMENTS OF THE COURSE MODULE	SIGNATURE OF DIRECTOR OF ORIC (NAME/STAMP)
	End note referencing manager			
	Mendeley referencing manager			
	Effective write up of Literature review			
	Data entry in Statistical Package of Social Sciences			
	Graphical presentation of data in Microsoft Excel			

	Univariate, Bivariate and Multivariate analysis in Statistical Package of Social Sciences			
	Effectively writing up of a THESIS.			
	Research article write up			
	Critical appraisal of research			
	How to Present Research through power-point or posters			

SECTION- 2**INDIVIDUAL AND GROUP (HOME TASK) ASSIGNMENTS OF THE RESIDENTS
3 REGARDING ADVANCED RESEARCH METHODOLOGY WORKSHOP**

ASSIGNMENT'S NUMBER	TITLE OF WORKSHOP	DATE OF SUBMISSION:	ORIGINALITY SCORE OF ASSIGNMENT IN TURN-IT-IN PLAGIARISM DETECTION SOFTWARE	FACILITATOR'S REFLECTION ON CORRECTNESS, COMPLETION AND QUALITY OF INDIVIDUAL OR GROUP ASSIGNMENTS OF THE WORKSHOP	SIGNATURE OF FACILITATORS	SIGNATURE OF DIRECTOR OF ORIC (NAME/STAMP)

SECTION- 3

5 JOURNAL CLUB MEETINGS ATTENDED BY RESIDENT AS AN OBSERVER DURING YR 3

JOURNAL CLUB MEETING #	DATE	TITLES OF THE ARTICLES PRESENTED IN THE JOURNAL CLUB MEETING	TITLE OF JOURNAL/ YEAR OF PUBLICATION	ANY QUESTION OR COMMENT MADE ON THE PRESENTATION BY THE OBSERVER	SUPERVISOR'S SIGNATURE	HEAD OF DEPARTMENT'S SIGNATURE (NAME/STAMP)
1.		A. B. C.	A. B. C.	A. B. C.		
2.		A. B. C.	A. B. C.	A. B. C.		
3.		A. B. C.	A. B. C.	A. B. C.		
4.		A. B. C.	A. B. C.	A. B. C.		
5.		A. B. C.	A. B. C.	A. B. C.		

SECTION- 4**1 JOURNAL CLUB MEETING ATTENDED BY RESIDENT AS AN PRESENTER DURING YR 3**

JOURNAL CLUB MEETING #	DATE	TITLE OF THE ARTICLE PRESENTED BY RESIDENT IN THE JOURNAL CLUB MEETING	TITLE OF JOURNAL/ YEAR OF PUBLICATION	REFLECTION OF TWO SENIOR FACULTY MEMBERS ON THE PRESENTATION	SENIOR FACULTY MEMBERS SIGNATURE	REFLECTION OF THE HOD ON THE PRESENTATION AND SCORES GIVEN OUT OF ATTAINABLE TOTAL SCORE OF 25	HEAD OF DEPARTMENT'S SIGNATURE (NAME/STAMP)
1.							

SIGNATURE OF THE DEAN OF SPECIALITY: _____

(NAME/STAMP): _____

SECTION- 5

CONFIRMATION OF COMPLETENESS OF DATA COLLECTION OF THE OF RESEARCH PROJECT FOR THESIS BY RESIDENT DURING YR 3:

TOPIC OF THE RESEARCH PROPOSAL/SYNOPSIS FOR THESIS:

CONFIRMATION OF COMPLETENESS OF DATA COLLECTION: _____

NAME OF THE PERSON CONFIRMING	DESIGNATION OF THE PERSON CONFIRMING	SIGNATURES	STAMP/DATE
	<i>SUPERVISOR</i>		
	<i>HEAD OF DEPARTMENT</i>		
	<i>STATISTICIAN AT ORIC</i>		
	<i>DIRECTOR ORIC</i>		

SECTION- 6**RECORD OF FORTNIGHTLY MEETINGS OF THE RESIDENT WITH THE SUPERVISOR IN YEAR 3**

SR #	DATE/VENUE /DURATION OF MEETING	AGENDA AND OUTLINE OF THE MEETING (IN TERMS OF CONTENT, DISCUSSION POINTS)	ACTION POINTS AND SUPERVISOR'S REFLECTIONS	SUPERVISOR'S SIGNATURE (NAME/STAMP)	HEAD OF DEPARTMENT'S SIGNATURE (NAME/STAMP)
1.					
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6.					
7.					
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SECTION- 7**RECORD OF RESIDENT'S ONE WEEK'S ROTATION AT ORIC DURING YR 3**

DAY #	DATE	ACTIVITY CARRIED OUT AT ORIC AND THE RESEARCH ASSOCIATE/ STATISTICIAN/DEPUTY DIRECTOR WHO SUPERVISED THE ACTIVITY	ORIC STAFF MEMBER'S REFLECTIONS ON THE PERFORMANCE OF THE ACTIVITY	THE RESEARCH ASSOCIATE/ DEPUTY DIRECTOR SIGNATURE (NAME/STAMP)	DIRECTOR ORIC'S SIGNATURE (NAME/STAMP)
1					
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4					
5					
6					
7					

SECTION- 8**ANY RESEARCH COURSE COURSE/WORKSHOP ATTENDED (ON OWN) BY THE RESIDENT DURING YEAR 3**

SL #	DATE/MONTH AND YEAR OF TRAINING COURSE/WORKSHOP	TITLE OF TRAINING COURSE/WORKSHOP	ORGANIZING INSTITUTION/COMPANY	DURATION OF COURSE IN DAYS/MODE OF COURSE (online or physically attended)	THE OBJECTIVES OR LEARNING OUTCOMES OF THE RESEARCH COURSE.
1.					
2.					
3.					
4.					
5					

SECTION- 9**RECORD OF LITERATURE REVIEW CONDUCTED BY THE RESIDENT IN YEAR 3**

SR #	TITLE OF THE LITERATURE REVIEWED	DATE/MONTH AND YEAR OF PUBLICATION	TITLE OF THE JOURNAL/BOOK	WAS IT AN ORIGINAL ARTICLE/SHORT COMMUNICATION/CASE STUDY/SYSTEMATIC REVIEW/META ANALYSIS/EDITORIAL/ANY OTHER ACADEMIC (e.g. reports, books, conference papers, THESISs, Research and program reports- published/ unpublished)? PLEASE SPECIFY
1.				
2.				
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5.				
6.				

SECTION- 10**RECORD OF ANY MANUSCRIPT/RESEARCH PAPER FORMULATED BY THE RESIDENT IN YEAR 3**

SR #	TITLE OF THE MANUSCRIPT	IF SUBMITTED FOR PUBLICATION, DATE/MONTH AND YEAR OF PUBLICATION, IF PUBLISHED	TITLE OF THE JOURNAL	WAS IT REVIEWED, MODIFIED, ACCEPTED OR REJECTED. PLEASE SPECIFY	DIRECTOR ORIC'S SIGNATURE (NAME/STAMP)
1					
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6					

SECTION- 11

OVERALL EVALUATION OF RESEARCH THESIS PROGRAM BY SUPERVISOR

SECTION- 11

OVERALL EVALUATION OF RESEARCH THESIS PROGRAM BY *BASR* (BOARD OF ADVANCED STUDIES AND RESEARCH)

SECTION- 11

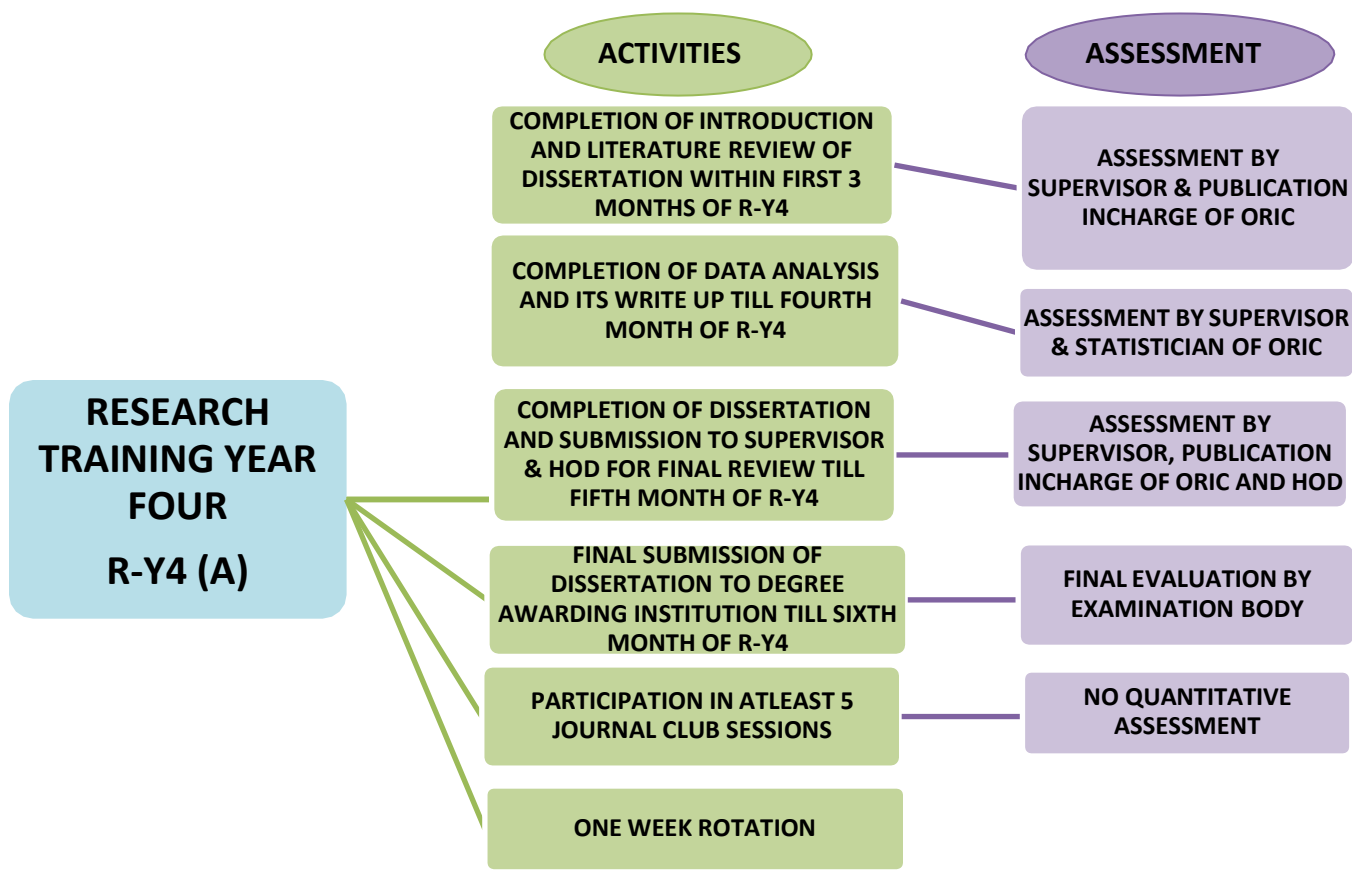
OVERALL EVALUATION OF RESEARCH THESIS PROGRAM BY ORIC (OFFICE OF RESEARCH INNOVATION AND COMMERCIALIZATION)

SECTION- 11

OVERALL EVALUATION OF RESEARCH THESIS PROGRAM BY DEPARTMENT OF MEDICAL EDUCATION (DME)

RESEARCH COURSE OF FOURTH RESEARCH TRAINING YEAR

R-Y4



SECTION- 1**5 JOURNAL CLUB MEETINGS ATTENDED BY RESIDENT AS AN OBSERVER DURING YR 4**

JOURNAL CLUB MEETING #	DATE	TITLES OF THE ARTICLES PRESENTED IN THE JOURNAL CLUB MEETING	TITLE OF JOURNAL/ YEAR OF PUBLICATION	ANY QUESTION OR COMMENT MADE ON THE PRESENTATION BY THE OBSERVER	SUPERVISOR'S SIGNATURE	HEAD OF DEPARTMENT'S SIGNATURE (NAME/STAMP)
1.		A. B. C.	A. B. C.	A. B. C.		
2.		A. B. C.	A. B. C.	A. B. C.		
3.		A. B. C.	A. B. C.	A. B. C.		
4.		A. B. C.	A. B. C.	A. B. C.		
5.		A. B. C.	A. B. C.	A. B. C.		

SECTION- 2

CONFIRMATION OF COMPLETENESS OF WRITE UP OF INTRODUCTION OF RESEARCH PROJECT FOR THESIS BY RESIDENT TILL

3RD MONTH OF YR 4:

TOPIC OF THE RESEARCH PROPOSAL/SYNOPSIS FOR THESIS:

CONFIRMATION OF COMPLETENESS OF INTRODUCTION OF RESEARCH PROJECT FOR THESIS BY RESIDENT TILL 3RD MONTH OF YR 4:

NAME OF THE PERSON CONFIRMING	DESIGNATION OF THE PERSON CONFIRMING	SIGNATURES	STAMP/DATE
	<i>SUPERVISOR</i>		
	<i>HEAD OF DEPARTMENT</i>		
	<i>RESEARCH ASSOCIATE/DEPUTY DIRECTOR AT ORIC</i>		
	<i>DIRECTOR ORIC</i>		

SECTION- 3

CONFIRMATION OF COMPLETENESS OF DATA ANALYSIS & WRITE UP OF RESULTS OF RESEARCH PROJECT FOR THESIS BY RESIDENT TILL 4TH MONTH OF YR 4:

TOPIC OF THE RESEARCH PROPOSAL/SYNOPSIS FOR THESIS:

CONFIRMATION OF COMPLETENESS OF DATA ANALYSIS & WRITE UP OF RESULTS OF RESEARCH PROJECT FOR THESIS BY RESIDENT TILL 4TH MONTH OF YR 4

NAME OF THE PERSON CONFIRMING	DESIGNATION OF THE PERSON CONFIRMING	SIGNATURES	STAMP/DATE
	<i>SUPERVISOR</i>		
	<i>HEAD OF DEPARTMENT</i>		
	<i>RESEARCH ASSOCIATE/DEPUTY DIRECTOR AT ORIC</i>		
	<i>STATISTICIAN AT ORIC</i>		
	<i>DIRECTOR ORIC</i>		

SECTION- 4

CONFIRMATIONS OF COMPLETENESS OF THESIS WRITE UP BY RESIDENT TILL 5TH MONTH OF YR 4:

TOPIC OF THE RESEARCH PROPOSAL/SYNOPSIS FOR THESIS:

NAME OF THE PERSON CONFIRMING	DESIGNATION OF THE PERSON CONFIRMING	SIGNATURES	STAMP/DATE
	<i>SUPERVISOR</i>		
	<i>HEAD OF DEPARTMENT</i>		
	<i>RESEARCH ASSOCIATE/DEPUTY DIRECTOR AT ORIC</i>		
	<i>STATISTICIAN AT ORIC</i>		
	<i>DIRECTOR ORIC</i>		

SECTION- 5

CONFIRMATION OF SUBMISSION OF COMPLETED THESIS BY RESIDENT TILL 6TH MONTH OF YR 4:

TOPIC OF THE RESEARCH PROPOSAL/SYNOPSIS FOR THESIS:

NAME OF THE PERSON CONFIRMING	DESIGNATION OF THE PERSON CONFIRMING	SIGNATURES	STAMP/DATE
	<i>SUPERVISOR</i>		
	<i>HEAD OF DEPARTMENT</i>		
	<i>RESEARCH ASSOCIATE/DEPUTY DIRECTOR AT ORIC</i>		
	<i>DIRECTOR ORIC</i>		
	<i>CHAIRPERSON OF BOARD OF ADVANCED STUDIES & RESEARCH (BASR)OF RMU</i>		

SECTION- 6**RECORD OF FORTNIGHTLY MEETINGS OF THE RESIDENT WITH THE SUPERVISOR IN YEAR 4**

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SECTION- 7

RECORD OF RESIDENT'S ONE WEEK'S ROTATION AT ORIC DURING YR 4

DAY #	DATE	ACTIVITY CARRIED OUT AT ORIC AND THE RESEARCH ASSOCIATE/ STATISTICIAN/DEPUTY DIRECTOR WHO SUPERVISED THE ACTIVITY	ORIC STAFF MEMBER'S REFLECTIONS ON THE PERFORMANCE OF THE ACTIVITY	THE RESEARCH ASSOCIATE/ DEPUTY DIRECTOR SIGNATURE (NAME/STAMP)	DIRECTOR ORIC'S SIGNATURE (NAME/STAMP)
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SECTION- 8**ANY RESEARCH COURSE COURSE/WORKSHOP ATTENDED (ON OWN) BY THE RESIDENT DURING YEAR 4**

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SECTION- 11

OVERALL EVALUATION OF RESEARCH THESIS PROGRAM BY SUPERVISOR

SECTION- 11

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SECTION- 11

OVERALL EVALUATION OF RESEARCH THESIS PROGRAM BY ORIC (OFFICE OF RESEARCH INNOVATION AND COMMERCIALIZATION)

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OVERALL EVALUATION OF RESEARCH THESIS PROGRAM BY DEPARTMENT OF MEDICAL EDUCATION (DME)

Portfolio (Templates)



RAWALPINDI MEDICAL UNIVERSITY MD/MS
RESIDENCY PROGRAMME



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 _____

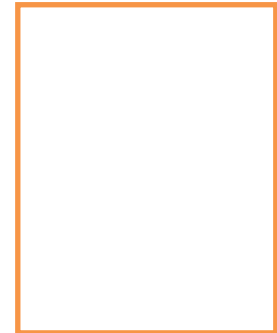
Name of Supervisor _____

Designation of Supervisor _____

Qualification of Supervisor _____

Title of department / Unit _____

Name of Training Institute / Hospital _____



How to write reflections

In the following sections 2-12 (case presentation, topic presentation, journal club, emergency, indoor, opd and clinics, procedural skills/directly observed procedures, multidisciplinary meetings, morbidity/mortality meetings, hands on training) reflect on the key activities that you have performed throughout the year in according to the 6 stages of Gibb's reflective cycle.



Gibb's Reflective Cycle:

Stage 1- Description

Here you set the scene. What happened? When it occurred? Who was there? What did they do? What was the outcome?

Stage 2- Feelings

Discuss your feelings and thoughts about the experience. Consider questions such as:

How did you feel at the time? What did you think at the time? What impact did your emotions, beliefs and values have? What do you think other people were feeling? What did you think about the incident afterwards?

Stage 3- Evaluation

How did things go? Focus on the positive and negative even if it was primarily one or the other. What was good and what was bad about the experience? What went well? What didn't? Were your contributions positive or negative. If you are writing about a difficult incident, did you feel that the situation was resolved afterwards?

Stage 4- Analysis

This is where you make sense of what happened, using the theory and wider context to develop understanding. Why did things go well? Badly? How can the theory explain what happened? How does my experience compare to the literature? What research/theories/models can help me make sense of this? Could I have responded in a different way? What might have helped or improved things?

Stage 5- Conclusion

What have you learnt? Generally, and specifically. What can I now do better? Could/should you have done anything differently? What skills would I need to handle this better?

Stage 6- Action plan

Action plans sum up anything you need to know and do to improve for next time.

How /where can I use my new knowledge and experience? How will I adapt my actions or improve my skills? If the same thing happened again, what would I do differently?

A Sample Reflection

This sample reflection is written from a Postgraduate medical student's perspective. It will help you write reflections in your portfolio.

Topic: Journal Club Presentation on "xx-xx-xx" at "Conference Room Medical Unit 1"

Description

This was my first journal club presentation on the research title " _____ " published in " _____ ". The paper was selected by my supervisor as it was a recent study and relevant to what we practice in our unit. It took me 3 days (9 hours) to prepare for this presentation. For guidance I asked my SR Dr. _____ for help.

Feelings

During the presentation I felt quite nervous. As the presentation progressed, my tone of voice and command over the presentation improved.

Evaluation

The strengths of my presentation were my good grip on the topic.

My weaknesses were that I could not explain the statistical aspects of the study and had to rush through the tables.

Analysis

The Introduction went well because in addition to the paper I also read the topic from the text book and took guidance from my SR.

The methodology and results presentation were weak because I could not understand them myself.

Conclusion

I need to work on my presentation anxiety and need to understand interpretation on methodology and results.

Action plan

I discussed with my supervisor and he informed me that I can self-learn these skills by reading up/attending courses online. However, I have come to know that DME department and Research Unit frequently conducts workshops on presentation skills and research methodology. I intent to register and attend them.

Introduction of portfolio

What is a portfolio?

A collection of a learner's various documents and assessments throughout residency that reflect their professional development over time. May include referral letters and procedure logs (Rider et al., 2007). Portfolios also frequently include self-assessments, learning plans, and reflective essays (Epstein, 2007).

What should be included in a portfolio?

resident may include the following components in his or her portfolio:

- Curriculum Vitae (CV)
- Personal Publications
- Research abstracts presented at professional conferences
- Presentations at teaching units/departmental meetings and teaching sessions
- Patient (case) presentations
- Log of clinical procedures
- Copies of written feedback received (direct observations, field notes, daily evaluations)
- Quality improvement project plan and report of results
- Summaries of ethical dilemmas (and how they were handled)
- Chart notes of particular interest
- Photographs and logs of medical procedures performed
- Consult/referral letters of particular interest
- Monthly faculty evaluations
- 360-degree evaluations
- Copies of written instructions for patients and families
- Case presentations, lectures, logs of medical students mentored
- Learning plans

- Writing assignments, or case-based exercises assigned by program director
- List of hospital/university committees served on
- Documentation of managerial skills (e.g., schedules or minutes completed by resident)
- Copies of billing sheets with explanations
- Copies of written exams taken with answer sheets
- In-training Evaluation Report (ITER) results
- Format can be as simple as material collected in a three-ringed binder or as sophisticated as information stored in a handheld Pocket PC (PPC).
- Patient confidentiality should be assured when any clinical material is included in the portfolio.
- Should be resident-driven and include a space for residents to reflect on their learning experiences.

Why portfolio is required?

Can be used as a:

- Formative learning tool: To help develop self-assessment and reflection skills.
- Summative evaluation tool: To determine if a competency has been achieved.
- Useful for evaluating competencies that are difficult to evaluate in more traditional ways such as:
 - Practice-based improvement
 - Use of scientific evidence in patient care
 - Professional behaviors (Rider et al., 2007)
- Purpose is to highlight for the resident the need for ongoing learning and reflection to achieve and maintain competencies.
- Enormous flexibility in using the portfolio as a learning tool: Portfolio may focus on one area (e.g., assessments pertaining to professionalism in a learner with attitudinal issues) without losing its effectiveness for the broader scope of competencies.
- Number and frequency of entries may vary. Expectations, including minimum standards, should be defined with the resident from the outset.
- Portfolios can be powerful tools for guided self-assessment and reflection (Holmboe & Carraccio, 2008).

Evidence:

- Evidence suggests that an assessment of skills is most valid when the tool used places the learner in an environment and/or situation that closely mimics that in which the learner will later practice the mastered skill (Wiggins et al., 1998). In that way, portfolios have the advantage of reflecting not just what residents can do in a controlled examination situation but what they actually do at work with real patients (Jackson et al., 2007).
- As an evaluation tool, the reliability and validity of a portfolio are dependent on the psychometric characteristics of the assessment and judging methods used in the portfolio process (Holmboe & Carracio, 2008).
- Research is still needed to determine whether portfolios can be a catalyst for self-directed, lifelong learning (O'Sullivan et al., 2002).

Practicality/Feasibility:

Portfolios can be time consuming for the resident to assemble and for the preceptor to assess.

References:

1. Burch, V. C., & Seggie, J. L. (2008). Use of a structured interview to assess portfolio-based learning. *Medical Education, 42*, 894-900.
2. Challis M. (1999). AMEE medical education guide no. 11 (revised): Portfolio-based learning and assessment in medical education. *Medical Teacher, 21*, 370-86.
3. Colbert, C.Y., Ownby, A.R., & Butler, P.M. (2008). A review of portfolio use in residency programs and considerations before implementation. *Teaching and Learning in Medicine, 20*(4), 340-345.
4. Danner, E.F., & Henson, L.C. (2007). The portfolio approach to competency-based assessment at the Cleveland Clinic Lerner College of Medicine. *Academic Medicine, 82*(5), 493-502.
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6. Davis, M.H., Ponnampereuma, G.G., & Ker, J.J. (2009). Student perceptions of a portfolio assessment process. *Medical Education*, 43(1), 89-98.
7. Dekker, H., Driessen, E., Ter Braak, E., Scheele, F., Slaets, J., Van Der Molen, T., & Cohen-Schotanus, J. (2009). Mentoring portfolio use in undergraduate and postgraduate medical education. *Medical Teacher*, 31(10), 903-909.
8. Driessen, E., van Tartwijk, J., van der Vleuten, C., & Wass, V. (2007). Portfolios in medical education: Why do they meet with mixed success? A systematic review. *Medical Education*, 41(12), 1224-1233.
9. Epstein, R.M. (2007). Assessment in medical education. *New England Journal of Medicine*, 356(4), 387-396.
10. Gans, R. (2009). Mentoring with a formative portfolio: A case for reflection as a separate competency role. *Medical Teacher*, 31(10), 883-884.
11. Gordon J. (2003). Assessing student' personal and professional development using portfolios and interviews. *Medical Education*, 37(4), 335-40.
12. Holmboe, E.S. & Carracio, C. (2008). Portfolios. In E.S. Holmboe & R.E. Hawkins (Eds.), *Practical Guide to the Evaluation of Clinical Competence* (pp 86-101). Philadelphia: Mosby Elsevier.
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14. Michels, N.R.M., Driessen, E.W., Muijtjens, A.M.M., Van Gaal, L.F., Bossaert, L.L., & De Winter, B.Y. (2009). Portfolio assessment during medical internships: How to obtain a reliable and feasible assessment procedure. *Education for Health*, 22(3), 313.
15. O'Sullivan, P.S., Cogbill, K.K., McClain, T., Reckase, M.D., & Clardy, J.A. (2002). Portfolios as a novel approach for residency evaluation. *Academic Psychiatry*, 26(3), 173-9.

16. Pitts J. (2007). *Portfolios, personal development and reflective practice*. Edinburgh: Association for the Study of Medical Education.
17. Rider, E., Nawotniak, R., & Smith, G. (2007). *A Practical Guide to Teaching and Assessing the ACGME Core Competencies*. Marblehead, MA: HCPro Inc.
18. Tochel, C., Haig, A., Hesketh, A., Cadzow, A., Beggs, K., Colthart, I., & Peacock, H. (2009). The effectiveness of portfolios for post-graduate assessment and education: BEME Guide No 12. *Medical Teacher*, 31(4), 299-318.
19. *Toolbox of Assessment Methods*, Version 1.1. (2000). Accreditation Council for Graduate Medical Education (ACGME), & American Board of Medical Specialties (ABMS). Available online: <http://www.acgme.org/Outcome/assess/Toolbox.pdf>
20. Van Tartwijk, J., & Driessen, E. (2009). Portfolios for assessment and learning: AMEE Guide no. 45. *Medical Teacher*, 31(9), 790-801.
21. Wiggins, G. (1998). *Educative Assessment: Designing Assessments to Inform and Improve Student Performance*. San Francisco: Jossey-Bass.

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- 2. CASE PRESENTATION**
- 3. TOPIC PRESENTATION**
- 4. JOURNAL CLUB**
- 5. EMERGENCY**
- 6. INDOOR**
- 7. OPD AND CLINICS**
- 8. PROCEDURAL SKILLS/DIRECTLY OBSERVED PROCEDURES**
- 9. MULTIDISCIPLINARY MEETINGS**
- 10. MORBIDITY/MORTALITY MEETINGS**
- 11. HANDS ON TRAINING**
- 12. RESEARCH PUBLICATIONS/MAJOR RESEARCH PROJECT/
ABSTRACT/SYNOPSIS/DISSERTATION/PAPER PRESENTATION**
- 13. ASSESSMENT RECORDS & EVALUATION PROFORMAS**
- 14. AWARDS/TESTIMONIALS/APPRECIATION LETTERS**
- 15. ANY OTHER SPECIFIC ACHIEVEMENTS**
- 16. FUTURE AIMS & OBJECTIVES**

SECTION-1

CURRICULUM VITAE (CV)

Brief curriculum vitae encompassing all academic achievements & work experiences should be written or pasted here

SECTION-2

CASE PRESENTATION

Interesting and unique case presentations should be written in this section with your own opinion and comments of the supervisor

Title:	Date & Time:
	Venue:
<u>Description</u>	<u>Supervisor's Comments:</u>
<u>Feelings</u>	
<u>Evaluation</u>	
<u>Analysis</u>	
<u>Conclusion</u>	
<u>Action plan</u>	

SECTION-3**TOPIC PRESENTATION**

Details of the topic presentations with the comments of the supervisor should be written here

Title:	Date & Time:
<u>Description</u>	<u>Supervisor's Comments:</u>
<u>Feelings</u>	
<u>Evaluation</u>	
<u>Analysis</u>	
<u>Conclusion</u>	
<u>Action plan</u>	

SECTION-4**JOURNAL CLUB**

Details of the selected critical appraisals of research articles discussed in journal club meetings should be written here

Title:	Date & Time:
<u>Description</u>	<u>Supervisor's Comments:</u>
<u>Feelings</u>	
<u>Evaluation</u>	
<u>Analysis</u>	
<u>Conclusion</u>	
<u>Action plan</u>	

SECTION-5

EMERGENCY

Details of complicated and interesting emergency cases along with comments of the supervisor should be written in this section

Title:	Date & Time:
<u>Description</u>	<u>Supervisor's Comments:</u>
<u>Feelings</u>	
<u>Evaluation</u>	
<u>Analysis</u>	
<u>Conclusion</u>	
<u>Action plan</u>	

SECTION-6

INDOOR

Memorable cases seen in and managed in the medical ward along with comments of the supervisor should be mentioned in this section

Title:	Date & Time:
<u>Description</u>	<u>Supervisor's Comments:</u>
<u>Feelings</u>	
<u>Evaluation</u>	
<u>Analysis</u>	
<u>Conclusion</u>	
<u>Action plan</u>	

SECTION-7

OPD AND CLINICS

Outpatient experiences along with supervisor's comments should be written here

Title:	Date & Time:
Description	Venue:
Feelings	Supervisor's Comments:
Evaluation	
Analysis	
Conclusion	
Action plan	

SECTION-8

Procedural skills/Directly observed procedures

Experiences during learning of procedures and details of directly observed procedures should be written here along with comments of the supervisor

Title:	Date & Time:
	Venue:
<u>Description</u>	<u>Supervisor's Comments:</u>
<u>Feelings</u>	
<u>Evaluation</u>	
<u>Analysis</u>	
<u>Conclusion</u>	
<u>Action plan</u>	

SECTION-9

MULTI DICIPINARY MEETINGS

Details of Multidisciplinary meetings attended should be written here with comments of the supervisor

Title:	Date & Time:
<u>Description</u>	<u>Supervisor's Comments:</u>
<u>Feelings</u>	
<u>Evaluation</u>	
<u>Analysis</u>	
<u>Conclusion</u>	
<u>Action plan</u>	

SECTION-10

Morbidity/mortality meetings

Details morbidity/mortality meetings attended should be written here with comments of the supervisor

Title:	Date & Time:
<u>Description</u>	<u>Venue:</u>
<u>Feelings</u>	<u>Supervisor's Comments:</u>
<u>Evaluation</u>	
<u>Analysis</u>	
<u>Conclusion</u>	
<u>Action plan</u>	

SECTION-11

HANDS ON TRAINING

Brief description of learning outcomes achieved by workshops attended should be written here along with the reason of need to have a specific workshop and also get endorsed the comments of the supervisor for each workshop separately

Title:	Date & Time:
Description	Venue:
Feelings	Supervisor's Comments:
Evaluation	
Analysis	
Conclusion	
Action plan	

SECTION-12

RESEARCH PUBLICATIONS/MAJOR RESEARCH PROJECT/ ABSTRACT/SYNOPSIS/DISSERTATION/PAPER PRESENTATION IN A CONFERENCE

All research experiences should be mentioned in this section along with comments of the supervisor

Title:	Date & Time:
Description	Venue:
Feelings	Supervisor's Comments:
Evaluation	
Analysis	
Conclusion	
Action plan	

SECTION-13

ASSESSMENT Records/evaluation proformas

Evidence of all available result cards and end of block (four months) evaluation record should mentioned in this section to have a reflection about resident's Medical knowledge, patient care, Interpersonal and Communication Skills, system based learning, practice based learning and professionalism.

SECTION-14

Awards/testimonials/ appreciation letters

Evidence of awards, testimonials and appreciation letters if any should be given in this section with comments of the supervisor

SECTION-15

ANY OTHER SPECIFIC ACHIEVEMENT

Evidence of any other specific achievement done under forceful circumstances as a compulsion or done by chance without any previous plan or done as a passion should be mentioned in this section along with comments of supervisor

SECTION-16

Future aims & objectives

Brief overview of the future aims and objectives should
mentioned in this section

SECTION –VIII

References

Teaching Methods

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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://el Paso.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_curriculum_acgme.pdf
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SECTION – IX

List of Appendices

1. Workplace Based Assessments-Multi source feedback profoma- 360° evaluation --- Appendix “ A”
2. Proforma for feedback by Nurse for core competencies of the resident -----“Appendix B”
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4. Workplace Based Assessments- guidelines for assessment of Generic & specialty specific Competencies ----- Appendix “ D”
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7. Evaluation of resident by the faculty ----- Appendix “ G”
8. Evaluation of faculty by the resident -----Appendix “ H”
9. Evaluation of program by the faculty----- Appendix “ I”
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Workplace Based Assessments-Multi Source Feedback profoma- 360° EvaluationAppendix “A”



Rawalpindi Medical University

Quality Enhancement Cell
360 Degree Evaluation Proforma (by Senior)
PGT, MO, HO Proforma

Reviewer

Evaluation for

Name:

Name:

Designation:

Designation:

Performance ratings

Assessment Date: _____

The following guidelines are to be used in selecting the appropriate rating:

- 1=Never 2= Rarely 3= Occasionally
4= Frequently 5= Always 6= Not Applicable

1. Patients Care

Implements the highest standards of practice in the effective and timely treatment of all patients regardless of gender, ethnicity, location, or socioeconomic status.

1 2 3 4 5 6

2. Medical Knowledge

Keeps current with research and medical knowledge in order to provide evidence-based care.

1 2 3 4 5 6

3. Interpersonal and Communication Skills

Works vigorously and efficiently with all involved parties as patient advocate and/or consultant.

1 2 3 4 5 6

4. Practice based Learning and Improvement

Assesses medical knowledge and new technology and implements best practices in clinical setting.

1 2 3 4 5 6

5. Professionalism

Displays personal characteristics consistent with high moral and ethical behaviour.

1 2 3 4 5 6

6. Systems Based Practice

Efficiently utilizes health-care resources and community systems of care in the treatment of patients.

1 2 3 4 5 6

Reference: Competencies identified by ACGME & ABMS
ACGME Accreditation Council for graduate medical education
ABMS American Board of Medical Specialties



Rawalpindi Medical University

Quality Enhancement Cell

360 Degree Evaluation Proforma (by Colleague)

PGT, MO, HO Proforma

Reviewer

Evaluation for

Name:

Name:

Designation:

Designation:

Performance ratings

Assessment Date: _____

The following guidelines are to be used in selecting the appropriate rating:

1=Never

2= Rarely

3= Occasionally

4= Frequently

5= Always

6= Not Applicable

1. He/she is often late to work?

2. He/she meets his deadlines oftenly?

3. He/she is willing to admit the mistakes?

4. He/she communicates well with others?

5. He/she adjusts quickly to changing Priorities?

6. He/she is hardworking?

1 2 3 4 5 6

7. He/she works well with the other colleague?

1 2 3 4 5 6

8. He/she co-worker behave professionally?

1 2 3 4 5 6

9. He/she co-worker treat you, respect fully?

1 2 3 4 5 6

10. He/she co-worker handles criticism of his work well?

1 2 3 4 5 6

11. He/she follow up the patient's condition quickly?

1 2 3 4 5 6

Reference: <http://www.surveymonkey.com/r/360-Degree-Employee-Evaluation-Template>



Rawalpindi Medical University

Quality Enhancement Cell

360 Degree Evaluation Proforma (Self-Assessment)

PGT, MO, HO Proforma

Reviewer

Evaluation for

Name:

Name:

Designation:

Designation:

Performance ratings

Assessment Date: _____

The following guidelines are to be used in selecting the appropriate rating:

1= Poor

2= Less than Satisfactory

3= Satisfactory

4= Good

5= Very Good

6= Don't know

1. Clinical knowledge

2. Diagnosis

3. Clinical decision making

4. Treatment (including practical procedures)

5. Prescribing

6. Medical record keeping

7. Recognizing and working within limitations

1 2 3 4 5 6

8. Keeping knowledge and skills up to date

1 2 3 4 5 6

9. Reviewing and reflecting on own performance

1 2 3 4 5 6

10. Teaching (student, trainees, others)

1 2 3 4 5 6

11. Supervising colleagues

1 2 3 4 5 6

12. Commitment to care and wellbeing of patients

1 2 3 4 5 6

13. Communication with patients and relatives

1 2 3 4 5 6

14. Working effectively with colleagues

1 2 3 4 5 6

15. Effective time management

1 2 3 4 5 6

Reference: www.gmc-uk.org



Rawalpindi Medical University

Quality Enhancement Cell

360 Degree Evaluation Proforma (by Paramedical Staff)

PGT, MO, HO Proforma

Reviewer

Evaluation for

Name:

Name:

Designation:

Designation:

Performance ratings

Assessment Date: _____

لاگو نہیں ہمیشہ اکثر کبھی کبھار کم سے کم کبھی نہیں

1- مریض کی تشخیص بالکل ٹھیک کرتا/ کرتی ہے۔

لاگو نہیں ہمیشہ اکثر کبھی کبھار کم سے کم کبھی نہیں

2- دستاویزات وقت پر تیار ہوتے ہے اور اس پر عمل کرنے میں آسانی ہوتی ہے۔

لاگو نہیں ہمیشہ اکثر کبھی کبھار کم سے کم کبھی نہیں

3- ٹیم ورک کو اہمیت دیتا/ دیتی ہے۔

لاگو نہیں ہمیشہ اکثر کبھی کبھار کم سے کم کبھی نہیں

4- موقع ملنے پر عملہ اور طالب علم کو تعلیم دیتا/ دیتی ہے۔

لاگو نہیں ہمیشہ اکثر کبھی کبھار کم سے کم کبھی نہیں

5- عملہ کی بات پر جلدی جواب دیتا/ دیتی ہے۔

لاگو نہیں ہمیشہ اکثر کبھی کبھار کم سے کم کبھی نہیں



Rawalpindi Medical University

Quality Enhancement Cell

360 Degree Evaluation Proforma (by Attendant)

PGT, MO, HO Proforma

Reviewer

Evaluation for

Name:

Name:

Designation:

Designation:

Performance ratings

Assessment Date: _____

کبھی نہیں کم سے کم کبھی کبھار اکثر ہمیشہ لاگو نہیں

1- ڈاکٹر نے مریض کی صورتحال تشخیص و تفصیل سے بتائی ہے۔

کبھی نہیں کم سے کم کبھی کبھار اکثر ہمیشہ لاگو نہیں

2- ڈاکٹر نے اپنی پریشانی بتانے کے لئے مجھے حوصلہ دیا۔

کبھی نہیں کم سے کم کبھی کبھار اکثر ہمیشہ لاگو نہیں

3- ڈاکٹر نے عزت سے میرا علاج کیا۔

کبھی نہیں کم سے کم کبھی کبھار اکثر ہمیشہ لاگو نہیں

4- ڈاکٹر نے مجھے جو تفصیلات بتائیں وہ آسانی سے سمجھ آ گئی۔

کبھی نہیں کم سے کم کبھی کبھار اکثر ہمیشہ لاگو نہیں

5- ڈاکٹر نے میرے احساسات کا خیال رکھا۔

کبھی نہیں کم سے کم کبھی کبھار اکثر ہمیشہ لاگو نہیں



Rawalpindi Medical University

Quality Enhancement Cell

360 Degree Evaluation Proforma (by Patient)

PGT, MO, HO Proforma

Reviewer

Evaluation for

Name:

Name:

Designation:

Designation:

Performance ratings

Assessment Date: _____

کبھی نہیں کم سے کم کبھی بھار اکثر ہمیشہ لاگو نہیں

1- ڈاکٹر نے آپ کا معائنہ عزت اور احترام سے کیا ہے۔

کبھی نہیں کم سے کم کبھی بھار اکثر ہمیشہ لاگو نہیں

2- ڈاکٹر نے آپ کی بیماری کے متعلق آپ کو روکے ٹوکے بغیر تسلی سے سنا۔

کبھی نہیں کم سے کم کبھی بھار اکثر ہمیشہ لاگو نہیں

3- ڈاکٹر نے آپ کی بات بہت توجہ سے سنی۔

کبھی نہیں کم سے کم کبھی بھار اکثر ہمیشہ لاگو نہیں

4- ڈاکٹر نے آپ کی زندگی کے متعلق تفصیل سے سوالات کیئے۔

کبھی نہیں کم سے کم کبھی بھار اکثر ہمیشہ لاگو نہیں

5- ڈاکٹر نے آپ کے حدیثات کو اچھی طرح سمجھا ہے۔

کبھی نہیں کم سے کم کبھی بھار اکثر ہمیشہ لاگو نہیں

6- ڈاکٹر نے مجھے بیماری سے متعلق تفصیل اور وضاحت سے آگاہ کیا ہے۔

کبھی نہیں کم سے کم کبھی بھار اکثر ہمیشہ لاگو نہیں

7- ڈاکٹر نے مجھے بیماری سے متعلق صحیح فیصلہ کرنے میں مدد کی۔

کبھی نہیں کم سے کم کبھی بھار اکثر ہمیشہ لاگو نہیں

8- ڈاکٹر نے بیماری کے علاج کا اچھا عمل بنانے میں مجھے شامل کیا۔

کبھی نہیں کم سے کم کبھی بھار اکثر ہمیشہ لاگو نہیں

Resident Evaluation by Nurse/ Staff for core competenciesAppendix “B”

Please take a few minutes to complete this evaluation form. All information is confidential and will be used constructively. You need not answer all the questions.

Name of Resident_____

Location of care or interaction_____

(For example OPD/Ward/Emergency/Endoscopy Department)

Your position (for example: nurse, ward servant, endoscopy attendant)_____

S #	Professionalism	Poor	Fair	Good	V.Good	Excellent	Insufficient Contact
1	Resident is Honest and trustworthy						
2	Resident treats patients and families with courtesy, compassion and respect						
3	Resident treats me and other member of the team with courtesy and respect						
4	Resident shows regard for my opinions						
5	Resident maintains a professional manner and appearance						
Interpersonal and communication skills							
6	Resident communicates well with patients, families, and members of the healthcare team						
7	Resident provides legible and timely documentation						
8	Resident respect differences in religion, culture, age, gender, sexual orientation and disability						

System based practice							
9	Resident works effectively with nurses and other professionals to improve patient care						
Patient Care							
10	Resident respects patient preferences						
11	Resident take care of patient comfort and dignity during procedures						
Practice based learning and improvement							
12	Resident facilitates the learning of students and other professionals						
Comments							
13	Please describe any praises or concerns or information about specific incidents						
Thanks you for your time and thoughtful input. You play a vital role in the education and training of the internal medicine resident							

Poor: 0, Fair: 1, Good:2, V.Good: 3, Excellent: 4

Total Score _____/52

Evaluation of Patient Medical Record/ Chart Evaluation Proforma *Appendix "C"*

Name of Resident _____

Location of Care or Interaction _____
 (OPD/Ward/Emergency/Endoscopy Department)

S#		Poor	Fair	Good	V. Good	Excellent
1.	Basic Data on Front Page Recorded	○	○	○	○	○
2.	Presenting Complaints written in chronological order	○	○	○	○	○
3.	Presenting Complaints Evaluation Done	○	○	○	○	○
4.	Systemic review Documented	○	○	○	○	○
5.	All Components of History Documented	○	○	○	○	○
6.	Complete General Physical Examination done	○	○	○	○	○
7.	Examination of all systems documented	○	○	○	○	○
8.	Differential Diagnosis framed	○	○	○	○	○
9.	Relevant and required investigations documented	○	○	○	○	○
10.	Management Plan framed	○	○	○	○	○
11.	Notes are properly written and eligible	○	○	○	○	○

12.	Progress notes written in organized manner	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13.	Daily progress is written	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14.	Chart is organized no loose paper	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15.	Investigations properly pasted	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16.	Abnormal findings in investigations encircled.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17.	Procedures done on patient documented properly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
18.	Medicine written in capital letter	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
19.	I/v fluids orders are proper with rate of infusion mentioned	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
20.	All columns of chart complete	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Poor: 0, Fair: 1, Good: 2, V.Good: 3, Excellent: 4

TOTAL SCORE _____/80

Workplace Based Assessments - Guidelines for Supervisors for Assessment of Generic & Specialty Specific Competency

The Candidates of all MD programs will be trained and assessed in the following five generic competencies and also specialty specific competencies.

A. Generic Competencies:

i. Patient Care.

- a. Patient Care competency will include skills of history taking, examination, diagnosis, counseling Plan care through ward teaching departmental conferences, morbidity and mortality meetings core curriculum lectures and training in procedures and operations.
- b. The candidate shall learn patient care through ward teaching departmental conferences, morbidity and mortality meetings, care curriculum lectures and training in procedures and operations.
- c. The Candidate will be assessed by the supervisor during presentation of cases on clinical ward rounds, scenario based discussions on patients management multisource feedback evaluation, Direct observation of Procedures (DOPS) and operating room assessments
- d. These methods of assessments will have equal weightage.

ii. Medical knowledge and Research

- a. The candidate will learn basic factual knowledge of illnesses relevant to the specialty through lectures/discussions on topics selected from the syllabus, small group tutorials and bed side rounds
- b. The medical knowledge/skill will be assessed by the teacher during
- c. The candidate will be trained in designing research project, data collection data analysis and presentation of results by the supervisor.
- d. The acquisition of research skill will be assessed as per regulations governing thesis evaluation and its acceptance.

iii. Practice and System Based Learning

- a. This competency will be learnt from journal clubs, review of literature policies and guidelines, audit projects medical error investigation, root cause analysis and awareness of health care facilities,.
- b. The assessment methods will include case studies, personation in morbidity and mortality review meetings and presentation of audit projects if any.
- c. These methods of assessment shall have equal weight-age

iv. **Communication Skills**

- a. These will be learn it from role models, supervisor and workshops.
- b. They will be assessed by direct observation of the candidate whilst interacting with the patients, relatives, colleagues and with multisource feedback evaluation.

v. **Professionalism as per Hippocratic oath**

- a. This competency is learnt from supervisor acting as a role model ethical case conferences and lectures on ethical issues such as confidentially informed consent end of life decisions, conflict of interest, harassment and use of human subjects in research.
- b. The assessment of residents will be through multisource feedback evaluation according to preforms of evaluation and its scoring method.

B. Specialty Specific Competences.

- i. The candidates will be trained in operative and procedural skills according to a quarterly based schedule.
- ii. The level of procedural Competency will be according to a competency table to be developed by each specialty
- iii. The following key will be used for assessing operative and procedural competencies:

a. **Level 1 Observer status**

- b. The candidate physically present and observing the supervisor and senior colleagues

c. **Level 2 Assistant status**

The candidate assisting procedures and operations

d. **Level 3 Performed under supervision**

procedure under direct supervision

The candidate operating or performing a

e. **Level 4 Performed independently**

procedure without any supervision

The candidate operating or performing a

vi. **Procedure Based Assessments (PBA)**

- a. Procedural competency will assess the skill of consent taking, preoperative preparation and planning, intraoperative general and specific tasks and postoperative management
- b. Procedure Based assessments will be carried out during teaching and training of each procedure.
- c. The assessors may be supervisors, consultant colleagues and senior residents.
- d. The standardized forms will be filled in by the assessor after direct observation.
- e. The resident's evaluation will be graded as satisfactory, deficient requiring further training and not assessed at all.
- f. Assessment report will be submitted
- g. A satisfactory score will be required to be eligible for taking final examination.

Supervisor’s Annual Review Report.

This report will consist of the following components: -

- I. Verification and validation of Log Book 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 relationship 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 on annual review.

Supervisor's Evaluation of the Resident (Continuous Internal Assessment) Appendix "F"

1	Unsatisfactory
2	Below Average
3	Average
4	Good
5	Superior

Resident's Name: _____

Evaluator's Name(s): _____

Hospital Name: _____

Date of Evaluation: _____

Please circle the appropriate number for each item using the scale above.

Patient Care	Scale				
1. Demonstrates sound clinical judgment	1	2	3	4	5
2. Presents patient information case concisely without significant omissions or digressions	1	2	3	4	5
3. Able to integrate the history and physical findings with the clinical data and identify all of the patient's major problems using a logical thought process	1	2	3	4	5
4. Develops a logical sequence in planning for diagnostic tests and procedures and Formulates an appropriate treatment plan to deal with the patient's major problems	1	2	3	4	5
5. Able to perform commonly used office procedures	1	2	3	4	5
6. Follows age appropriate preventative medicine guidelines in patient care	1	2	3	4	5
Medical Knowledge	Scale				
1. Uses current terminology	1	2	3	4	5

2. Understands the meaning of the patient's abnormal findings	1	2	3	4	5
3. Utilizes the appropriate techniques of physical examination	1	2	3	4	5
4. Develops a pertinent and appropriate differential diagnosis for each patient	1	2	3	4	5
5. Demonstrates a solid base of knowledge of ambulatory medicine	1	2	3	4	5
6. Can discuss and apply the applicable basic and clinically supportive sciences	1	2	3	4	5
Professionalism					Scale
1. Demonstrates consideration for the patient's comfort and modesty	1	2	3	4	5
2. Arrives to clinic on time and follows clinic policies and procedures	1	2	3	4	5
3. Works effectively with clinic staff and other health professionals	1	2	3	4	5
4. Able to gain the patient's cooperation and respect	1	2	3	4	5
5. Demonstrates compassion and empathy for the patient	1	2	3	4	5
6. Demonstrates sensitivity to patient's culture, age, gender, and disabilities	1	2	3	4	5
7. Discusses end-of-life issues (DPOA, advanced directives, etc.) when appropriate	1	2	3	4	5
Interpersonal and Communication Skills					Scale
1. Demonstrates appropriate patient/physician relationship	1	2	3	4	5
2. Uses appropriate and understandable layman's terminology in discussions with patients	1	2	3	4	5
3. Patient care documentation is complete, legible, and submitted in timely manner	1	2	3	4	5

4. Recognizes need for behavioral health services and understands resources available	1	2	3	4	5
Systems-based Practice					Scale
1. Spends appropriate time with patient for the complexity of the problem	1	2	3	4	5
2. Able to discuss the costs, risks and benefits of clinical data and therapy	1	2	3	4	5
3. Recognizes the personal, financial, and health system resources required to carry out the prescribed care plan	1	2	3	4	5
4. Demonstrates effective coordination of care with other health professionals	1	2	3	4	5
5. Recognizes the patient's barriers to compliance with treatment plan such as age, gender, ethnicity, socioeconomic status, intelligence, dementia, etc.	1	2	3	4	5
6. Demonstrates knowledge of risk management issues associated with patient's case	1	2	3	4	5
7. Works effectively with other residents in clinic as if a member of a group practice	1	2	3	4	5
Osteopathic Concepts					Scale
1. Demonstrates ability to utilize and document structural examination findings	1	2	3	4	5
2. Integrates findings of osteopathic examination in the diagnosis and treatment plan	1	2	3	4	5
3. Successfully uses osteopathic manipulation for treatment where appropriate	1	2	3	4	5
4. Practices Patient Centered Care with a "whole person" approach to medicine.	1	2	3	4	5
Practice-Based Learning and Improvement					Scale
1. Locates, appraises, and assimilates evidence from scientific studies	1	2	3	4	5
2. Apply knowledge of study designs and statistical methods to the appraisal of clinical studies to assess diagnostic and therapeutic effectiveness of treatment plan	1	2	3	4	5

3. Uses information technology to access information to support diagnosis and treatment	1	2	3	4	5
Comments					

Resident's Signature _____

Date _____

Supervisor's Signature _____

Date _____

FACULTY EVALUATION OF RESIDENT (INTERNAL MEDICINE)

Appendix “G”

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 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	8 <input type="checkbox"/>	9 <input type="checkbox"/>

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 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	8 <input type="checkbox"/>	9 <input type="checkbox"/>

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 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	8 <input type="checkbox"/>	9 <input type="checkbox"/>

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 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	8 <input type="checkbox"/>	9 <input type="checkbox"/>

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

No Interaction	Unsatisfactory	Failing	Less than Marginal	Below Average	Average	Above Average	Advanced	Outstanding	Superior
0	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	8 <input type="checkbox"/>	9 <input type="checkbox"/>

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

No Interaction	Unsatisfactory	Failing	Less than Marginal	Below Average	Average	Above Average	Advanced	Outstanding	Superior
0	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	8 <input type="checkbox"/>	9 <input type="checkbox"/>

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

No Interaction	Unsatisfactory	Failing	Less than Marginal	Below Average	Average	Above Average	Advanced	Outstanding	Superior
0	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	8 <input type="checkbox"/>	9 <input type="checkbox"/>

Patient Care

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

No Interaction	Unsatisfactory	Failing	Less than Marginal	Below Average	Average	Above Average	Advanced	Outstanding	Superior
0	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	8 <input type="checkbox"/>	9 <input type="checkbox"/>

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

No Interaction	Unsatisfactory	Failing	Less than Marginal	Below Average	Average	Above Average	Advanced	Outstanding	Superior
0	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	8 <input type="checkbox"/>	9 <input type="checkbox"/>

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

No Interaction	Unsatisfactory	Failing	Less than Marginal	Below Average	Average	Above Average	Advanced	Outstanding	Superior
0	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	8 <input type="checkbox"/>	9 <input type="checkbox"/>

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

No Interaction	Unsatisfactory	Failing	Less than Marginal	Below Average	Average	Above Average	Advanced	Outstanding	Superior
0	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	8 <input type="checkbox"/>	9 <input type="checkbox"/>

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

No Interaction	Unsatisfactory	Failing	Less than Marginal	Below Average	Average	Above Average	Advanced	Outstanding	Superior
0	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	8 <input type="checkbox"/>	9 <input type="checkbox"/>

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 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	8 <input type="checkbox"/>	9 <input type="checkbox"/>

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 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	8 <input type="checkbox"/>	9 <input type="checkbox"/>

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 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	8 <input type="checkbox"/>	9 <input type="checkbox"/>

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 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	8 <input type="checkbox"/>	9 <input type="checkbox"/>

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 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	8 <input type="checkbox"/>	9 <input type="checkbox"/>

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 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	8 <input type="checkbox"/>	9 <input type="checkbox"/>

System-Based Practices

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

No Interaction	Unsatisfactory	Failing	Less than Marginal	Below Average	Average	Above Average	Advanced	Outstanding	Superior
0	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	8 <input type="checkbox"/>	9 <input type="checkbox"/>

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 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	8 <input type="checkbox"/>	9 <input type="checkbox"/>

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 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	8 <input type="checkbox"/>	9 <input type="checkbox"/>

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 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	8 <input type="checkbox"/>	9 <input type="checkbox"/>

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 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	8 <input type="checkbox"/>	9 <input type="checkbox"/>

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 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	8 <input type="checkbox"/>	9 <input type="checkbox"/>

RESIDENT EVALUATION OF FACULTY TEACHING SKILLS

Appendix "H"

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

B. Role of 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 Situation as opportunities to demonstrate how he / she learn 1 2 3 4 N/A

Used Medical / scientific literature to support clinical decisions 1 2 3 4 N/A

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, patents right , humanism) into discussion of patient care 1 2 3 4 N/A

Provided guidance and specific “instructive feedback to help me correct mistakes and / or increase my knowledge base 1 2 3 4 N/A

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 read, research and review pertinent topics 1 2 3 4 N/A

Comments

E. Evaluation

Reviewed my overall clinical performance at the end of the rotation pointed out my strengths and areas for improvement 1 2 3 4 N/A

Demonstrated "fairness" by adhering to established criteria, explaining reasons for the scores and following me to respond 1 2 3 4 N/A

Comments

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

POOR FAIR VERY GOOD EXCELLENT

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

COMMENTS, COMMENDATIONS OR CONCERNS

RESIDENT EVALUATION OF FACULTY (FOR CORE COMPETENCIES)Appendix "I"

B. Interpersonal and Communication Skills

Interpersonal and Communication Skills (Question 1 of 22)

Asks question in a non-threatening manner

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

Interpersonal and Communication Skills (Question 2 of 22)

Emphasizes problem-solving (thought processes leading to decisions)

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

Interpersonal and Communication Skills (Question 4 of 22)

Effectively communicates knowledge

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

C. Medical Knowledge

Medical Knowledge (Question 5 of 22)

Knowledge of specialty

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

Medical Knowledge (Question 6 of 22)

Applies knowledge of specialty to patient problems

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

Patient Care (Question 7 of 22)

Applies comprehensive high quality care

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

D. Patient Care

Patient Care (Question 8 of 22)

Explains diagnostic decisions

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

Patient Care (Question 9 of 22)

Clinical Judgment

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

Patient Care (Question 10 of 22)

Clinical Skills

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

E. Practice-Based Learning and Improvement

Practice-Based Learning and Improvement (Question 11 of 22)

Encourages self-education

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

Practice-Based Learning and Improvement (Question 12 of 22)

Encourages evidence-based approaches to care

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

F. Professionalism

Professionalism (Question 13 of 22)

Sensitive caring respectful attitude towards patients

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

Professionalism (Question 14 of 22)

Uses time with patients and residents effectively

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

Professionalism (Question 15 of 22)

Sufficient resident teaching on rounds/clinics

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

Professionalism (Question 16 of 22)

Respects all members of the health care team

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

Professionalism (Question 17 of 22)

Demonstrates Integrity

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

Professionalism (Question 18 of 22)

Attains credibility and rapport with patients and their family

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

G. Systems- Based Practice

Systems- Based Practice (Question 19 of 22)

Provides useful feedback including constructive criticism to team members

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

System Base Practice (Question 20 of 22)

Discusses availability cost and utility of system resources in providing medical care.

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

Overall/Summary (Question 21 of 22)

Overall contributions to your training

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

Comments: (Question 22 of 22)

Faculty Evaluation of the Residency / Fellowship Program

Appendix “J

Please use this scale to answer question 1-10:

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

1. **PATIENT/CASE VOLUME:** There are a sufficient number and variety of patients/cases to facilitate high quality resident/fellow education.
2. **CURRICULUM:** The residency/fellowship program curriculum provides the appropriate education experiences for residents/fellows to analyze investigate and improve patient care practices.
3. **PROGRAM DIRECTOR:** The program director effectively communicates with program faculty members to understand their role in resident/fellow education and development.
4. **ADMINISTRATIVE SUPPORT:** There is adequate administrative support service to facilitate faculty participation in resident/fellow education.
5. **SUPERVISION:** The Program resident/fellow supervision policy has been clearly communicated to program faculty and is used by the program.

6. **TRANSITION OF CARE:** The program transition of care/hand-off policy and tools have been distributed to program faculty and they are used.
7. **EVALUATION:** Program faculty receives regular and timely feedback about their teaching and supervisors skills.
8. **FACULTY DEVELOPMENT:** There are beneficial resources available for program faculty to improve their teaching and supervision skills.
9. **SCHOLARLY ACTIVITY:** Program faculties have the adequate resources to participate in scholarly activates.
10. **FACULTY:** The program faculty provides the diversity of experience and expertise to accomplish the goals and objectives of the program.

RESIDENT EVALUATION OF RESIDENCY PROGRAM

Appendix “K

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 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>

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 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>

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 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>

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 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>

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 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>

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 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>

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 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>

E. 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 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>

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 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>

Facilities (Question 10 of 35)

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

Cannot Evaluate	Unsatisfactory (Comment Required)	Marginal (Comment Required)	Satisfactory	Very Good	Excellent
0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>

F. 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 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>

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 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>

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 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>

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 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>

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 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>

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 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>

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 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>

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 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>

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 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>

6. 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 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>

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 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>

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 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>

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 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>

Training (Question 24 of 35)

Rounds and staffing are conducted professionally.

Cannot Evaluate	Unsatisfactory (Comment Required)	Marginal (Comment Required)	Satisfactory	Very Good	Excellent
0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>

Training (Question 25 of 35)

Rounds and staffing are conducted efficiently.

Cannot Evaluate	Unsatisfactory (Comment Required)	Marginal (Comment Required)	Satisfactory	Very Good	Excellent
0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>

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 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>

Training (Question 27 of 35)

The program is responsive to safety concerns at training.

Cannot Evaluate	Unsatisfactory (Comment Required)	Marginal (Comment Required)	Satisfactory	Very Good	Excellent
0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>

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 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>

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 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>

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 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>

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 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>

Training (Question 32 of 35)

The morale of the faculty is good.

Cannot Evaluate	Unsatisfactory (Comment Required)	Marginal (Comment Required)	Satisfactory	Very Good	Excellent
0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>

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 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>

Recommendations (Question 34 of 35)

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

Additional Comments (Question 35 of 35)

Guidelines for program Evaluation Appendix “L”

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:

. **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 action plan

6. Prepare and submit a written plan of action to

a. **document initiatives to improve performance in one or more of the areas identified,**

b. **Define and describe 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 <ul style="list-style-type: none"> 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 		

<p>e. G&O contain delineation of resident responsibilities for patient care, progressive responsibility for patient management, and supervision of residents</p>		
<p>4. Evaluation System</p> <p>a. Resident formative evaluation meets or exceeds program requirement</p> <p>b. Resident summative evaluation meets or exceeds program requirement</p> <p>c. Faculty evaluation meets or exceeds program requirement</p> <p>d. program evaluation meets or exceeds program requirement.</p>		
<p>5. Didactic Curriculum</p> <p>a. includes recognizing the signs of fatigue and sleep deprivation</p> <p>b. the didactic curriculum meets program requirements</p> <p>c. the didactic curriculum meets residents needs</p>		
<p>6. Clinical Curriculum – the effectiveness of in-patient and ambulatory teaching experience (structure, case mix, meets resident’s needs)</p>		
<p>7. Volume and variety of patients and procedures (case log data) meets requirements and residents’ needs</p>		
<p>8. Summary of written program evaluations completed by both faculty and residents</p>		
<p>9. Resident supervision complies with Program Requirement</p>		
<p>10. Recruiting results</p>		
<p>11. Duty hour monitoring results</p>		
<p>12. Track all research and scholarly activities of faculty and residents/fellows</p>		
<p>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.</p>		

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)

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:



MENTOR / SUPERVISOR EVALUATION OF TRAINEE

Resident's Name: _____

Evaluator's Name(s): _____

Hospital Name: _____

Date of Evaluation: _____

Traditional Track (10% Clinic) Primary Care Track (20% Clinic)

1	Unsatisfactory
2	Below Average
3	Average
4	Good
5	Superior

Please circle the appropriate number for each item using the scale above.

Patient Care		Scale				
1. Demonstrates sound clinical judgment		1	2	3	4	5
2. Presents patient information case concisely without significant omissions or digressions		1	2	3	4	5
3. Able to integrate the history and physical findings with the clinical data and identify all of the patient's major problems using a logical thought process		1	2	3	4	5
4. Develops a logical sequence in planning for diagnostic tests and procedures and Formulates an appropriate treatment plan to deal with the patient's major problems		1	2	3	4	5
5. Able to perform commonly used office procedures		1	2	3	4	5
6. Follows age appropriate preventative medicine guidelines in patient care		1	2	3	4	5
Medical Knowledge		Scale				
1. Uses current terminology		1	2	3	4	5
2. Understands the meaning of the patient's abnormal findings		1	2	3	4	5
3. Utilizes the appropriate techniques of physical examination		1	2	3	4	5
4. Develops a pertinent and appropriate differential diagnosis for each patient		1	2	3	4	5
5. Demonstrates a solid base of knowledge of ambulatory medicine		1	2	3	4	5
6. Can discuss and apply the applicable basic and clinically supportive sciences		1	2	3	4	5
Professionalism		Scale				
1. Demonstrates consideration for the patient's comfort and modesty		1	2	3	4	5
2. Arrives to clinic on time and follows clinic policies and procedures		1	2	3	4	5
3. Works effectively with clinic staff and other health professionals		1	2	3	4	5
4. Able to gain the patient's cooperation and respect		1	2	3	4	5
5. Demonstrates compassion and empathy for the patient		1	2	3	4	5
6. Demonstrates sensitivity to patient's culture, age, gender, and disabilities		1	2	3	4	5
7. Discusses end-of-life issues (DPOA, advanced directives, etc.) when appropriate		1	2	3	4	5



Interpersonal and Communication Skills		Scale				
1. Demonstrates appropriate patient/physician relationship		1	2	3	4	5
2. Uses appropriate and understandable layman's terminology in discussions with patients		1	2	3	4	5
3. Patient care documentation is complete, legible, and submitted in timely manner		1	2	3	4	5
4. Recognizes need for behavioral health services and understands resources available		1	2	3	4	5
Systems-based Practice		Scale				
1. Spends appropriate time with patient for the complexity of the problem		1	2	3	4	5
2. Able to discuss the costs, risks and benefits of clinical data and therapy		1	2	3	4	5
3. Recognizes the personal, financial, and health system resources required to carry out the prescribed care plan		1	2	3	4	5
4. Demonstrates effective coordination of care with other health professionals		1	2	3	4	5
5. Recognizes the patient's barriers to compliance with treatment plan such as age, gender, ethnicity, socioeconomic status, intelligence, dementia, etc.		1	2	3	4	5
6. Demonstrates knowledge of risk management issues associated with patient's case		1	2	3	4	5
7. Works effectively with other residents in clinic as if a member of a group practice		1	2	3	4	5
Practice-Based Learning and Improvement		Scale				
1. Locates, appraises, and assimilates evidence from scientific studies		1	2	3	4	5
2. Apply knowledge of study designs and statistical methods to the appraisal of clinical studies to assess diagnostic and therapeutic effectiveness of treatment plan		1	2	3	4	5
3. Uses information technology to access information to support diagnosis and treatment		1	2	3	4	5
Comments						

Total Score _____/165

 Resident's Signature Date Evaluator's Signature Date

**Patient Medical Record / Chart Evaluation Proforma**

Name of Resident

Location of Care or Interaction
(OPD/Ward/Emergency/Endoscopy Department)

S#		Poor	Fair	Good	V. Good	Excellent
1.	Basic Data on Front Page Recorded	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2.	Presenting Complaints written in chronological order	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3.	Presenting Complaints Evaluation Done	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4.	Systemic review Documented	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5.	All Components of History Documented	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6.	Complete General Physical Examination done	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7.	Examination of all systems documented	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8.	Differential Diagnosis framed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9.	Relevant and required investigations documented	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10.	Management Plan framed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11.	Notes are properly written and eligible	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12.	Progress notes written in organized manner	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13.	Daily progress is written	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14.	Chart is organized no loose paper	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15.	Investigations properly pasted	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16.	Abnormal findings in investigations encircled.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17.	Procedures done on patient documented properly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
18.	Medicine written in capital letter	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
19.	I/v fluids orders are proper with rate of infusion mentioned	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
20.	All columns of chart complete	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Poor: 0, Fair: 1, Good: 2, V.Good: 3, Excellent: 4



Preview Form

RESIDENT EVALUATION BY NURSE / STAFF

Please take a few minutes to complete this evaluation form. All information is confidential and will be used constructively. You need not answer all the questions

Name of Resident*

Location of care or interaction: (OPD/Ward/Emergency/Endoscopy Department)

Your position (Nurse, Ward Servant, Endoscopy Attendant)

S#	PROFESSIONALISM	Poor	Fair	Good	V Good	Excellent	Insufficient Contact
1.	Resident is Honest and Trustworthy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2.	Resident treats patients and families with courtesy, compassion and respect	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3.	Resident treats me and other member of the team with courtesy and respect	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4.	Resident shows regard for my opinions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5.	Resident maintains a professional manner and appearance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
INTERPERSONAL AND COMMUNICATIONS SKILLS							
6.	Resident communicates well with patients, families, and members of the healthcare team	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7.	Resident provides legible and timely documentation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8.	Resident respect differences in religion, culture age, gender sexual orientation and disability	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
SYSTEMS BASED PRACTICE							
9.	Resident works effectively with nurses and other professionals to improve patient care.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
PATIENT CARE							
10.	Resident respects patient preferences	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11.	Resident is reasonable accessible to patients	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12.	Resident take care of patient comfort and dignity during procedures.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
PRACTICE BASED LEARNING AND IMPROVEMENT							
13.	Resident facilitates the learning of students and other professionals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
COMMENTS							
14.	Please describe any praises or concerns or information about specific incidents	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

THANK YOU for your time and thoughtful input. You play a vital role in the education and training of the internal medicine residents.

Poor: 0, Fair: 1, Good: 2, V. Good: 3, Excellent: 4

Total Score _____/56



Patient Evaluation of Trainee

Trainee Name: _____
Date of Evaluation: _____

1	Strongly Disagree
2	Disagree
3	Neutral
4	Agree
5	Strongly Agree

Please circle the appropriate number for each item using this scale. Please provide any relevant comments on the back of this form.

	This Trainee:	Scale				
1.	Introduces him/herself and greets me in a way that makes me feel comfortable. ڈاکٹر صاحب نے خود کو متعارف کرایا اور خوش اسلوبی سے پیش آئے	1	2	3	4	5
2.	Manages his/her time well and is respectful of my time. ڈاکٹر صاحب نے میرے اور اپنے وقت کا خیال رکھا۔	1	2	3	4	5
3.	Is truthful, upfront, and does not keep things from me that I believe I should know. ڈاکٹر صاحب نے میرے مرض کی صورتحال پوری سچائی سے بیان کیا۔	1	2	3	4	5
4.	Talks to me in a way that I can understand, while also being respectful. ڈاکٹر صاحب نے میرے احساسات کا خیال رکھا اور عزت سے میرا علاج کیا۔	1	2	3	4	5
5.	Understands how my health affects me, based on his/her understanding of the details of my life. ڈاکٹر صاحب نے میرے علاج میں میری صحت پر ذاتی زندگی کو مد نظر رکھا۔	1	2	3	4	5
6.	Takes time to explain my treatment options, including benefits and risks. ڈاکٹر صاحب نے میرے مرض کے علاج کے فوائد اور نقصانات کو تفصیلاً بیان کیا۔	1	2	3	4	5

Total Score _____/30



Resident/Fellow Evaluation of Faculty Teaching

Evaluator: _____

Evaluation of: _____

Date: _____

Evaluation information entered here will be anonymous and made available only in aggregated form.

S#		Strongly Disagree	Disagree Moderately	Disagree Slightly	Agree Slightly	Agree Moderately	Strongly Agree
PATIENT CARE							
1.	Teaches current scientific evidence for daily patient management*						
2.	Explains rationale behind clinical judgements/decisions*						
3.	Teaches clear diagnostic algorithms*						
4.	Teaches clear treatment algorithms*						
PATIENT CARE - OPERATIVE AND PROCEDURAL SKILLS							
5.	Teaches operative/procedural skills during cases*						
6.	Allows learners to perform operative/procedural skills when appropriate*						
MEDICAL KNOWLEDGE							
7.	Teaches relevant pathophysiology needed to evaluate patient medical conditions*						
8.	Teaches how/when to use-order-perform procedures/tests*						
9.	Teaching content adds significantly to my medical knowledge						
10.	Teaches the use of literature / evidence based medicine to support clinical decisions/teaching points*						



PRACTICE-BASED LEARNING & IMPROVEMENT/TEACHING							
11.	Asks questions about differential diagnosis*						
12.	Teaches trainees when to consider referrals/consults with other specialists*						
13.	Actively teaches trainees in clinical settings/labs*						
INTERPERSONAL & COMMUNICATION SKILLS							
14.	Motivates learners to expand medical knowledge*						
15.	Stimulates critical thinking*						
16.	Encourages questions*						
17.	Teaches at the appropriate level for the trainee*						
18.	Provides feedback specific enough to be helpful*						
PROFESSIONALISM							
19.	Demonstrates respect for trainees of all levels*						
20.	Does not belittle/ publicly humiliate learners*						
21.	Teaches professional behavior with respect to patient care.*						
22.	Exhibits professional behavior with respect to patient care*						
23.	Role models professional behavior*						
SYSTEMS-BASED PRACTICE							
24.	Teaches cost/benefit decision making*						
25.	Teaches how to call on resources in the system to provide optimal health care*						
26.	Role models the necessity of working in inter-professional teams to enhance patient safety/outcomes.*						

Strongly Disagree: 0, Disagree Moderately: 1, Disagree Slightly: 2,
 Agree Slightly: 3, Agree Moderately: 4, Strongly Agree: 5

Total Score _____ / 130



FINAL Evaluation Scoring Sheet

Name of Resident	Name of Supervisor	Year of Training

Date _____

Faculty #1 (165)	Faculty #2 (165)	Faculty #3 (165)	Average Score
---------------------	---------------------	---------------------	------------------

Duration of Assessment _____
Specialty _____
Hospital _____
Unit _____

Medical Patient Care (30)				___/30
Medical Knowledge (30)				___/30
Professionalism (35)				___/35
Interpersonal and Communication Skills (20)				___/20
System Based Practice (35)				___/35
Practice Based Learning and Improvement (15)				___/15

Patient # 1 (30)	Patient # 2 (30)	Patient # 3 (30)	Medical Record Performa #1 (80)	Medical Record Performa #2 (80)	Medical Record Performa #3 (80)	Staff # 1 (56)	Staff # 2 (56)	Staff # 3 (56)
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Overall Rating								
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Average:	___/165	___/30	___/80	___/56
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	Grand Total
	___/331



RAWALPINDI MEDICAL UNIVERSITY

Logbook complete incomplete

Portfolio complete incomplete

Leave /absentees: _____

Comments

Supervisor Name (1) _____ Supervisor Name (2) _____ Head of Unit _____

Sign & Stamp _____ Sign & Stamp _____ Sign & Stamp _____



RESIDENT SELF-ASSESSMENT PROFORMA

Resident Name _____ Date _____

Year of Training _____ Hospital Name _____ Unit _____

<input type="checkbox"/> NA	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
Not Applicable	I rarely demonstrates (<25% of the time)	I do this Sometimes (25-50% of the time)	I do this most of the time (50-75% of the time)	I do this all the time (>75% of the time)

1.	I am able to acquire accurate and relevant histories from my patients in an efficient, prioritized and hypothesis driven fashion.	<input type="checkbox"/> NA	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
2.	I am able to seek and obtain appropriate, verified, and prioritized data from secondary sources (e.g. family, records and pharmacy)	<input type="checkbox"/> NA	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
3.	I am able to perform accurate physical examinations that are appropriately targeted to the patient's complaints.	<input type="checkbox"/> NA	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
4.	I am able to synthesize all available data, including interview, physical exam, and preliminary lab data to define each patient's central clinical problem.	<input type="checkbox"/> NA	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
5.	I am able to develop prioritized differential diagnoses, evidence based diagnostic and therapeutic plans for common conditions in Internal Medicine patients.	<input type="checkbox"/> NA	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
6.	I am able to recognize situations with a need for urgent or emergent medical care, including life threatening conditions.	<input type="checkbox"/> NA	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
7.	I am able to recognize when to seek additional guidance.	<input type="checkbox"/> NA	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
8.	I am able to provide appropriate preventive care.	<input type="checkbox"/> NA	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
9.	I am able to manage patients with common clinical disorders in the practice of outpatient internal medicine with minimal supervision.	<input type="checkbox"/> NA	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
10.	I have performed several invasive procedures and documented them in my New Innovations log.	<input type="checkbox"/> NA	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
11.	I demonstrate sufficient knowledge to diagnose and treat common conditions that require hospitalization.	<input type="checkbox"/> NA	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
12.	I understand the indications for and the basic interpretation of common diagnostic tests.	<input type="checkbox"/> NA	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
13.	I have reviewed my in service exam scores and believe my medical knowledge is where it should be for my level of training.	<input type="checkbox"/> NA	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
14.	I am able to identify clinical questions as they emerge	<input type="checkbox"/> NA	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4



	in patient care activities.					
15.	I am responsive to feedback from all members of the healthcare team including faculty, residents, students, nurses, allied health professionals, patients and their advocates.	<input type="checkbox"/> NA	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
16.	I am an active participant in teaching rounds and intern report.	<input type="checkbox"/> NA	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
17.	I effectively use verbal and non verbal skills to create rapport with patients and their advocates.	<input type="checkbox"/> NA	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
18.	I communicate effectively with other caregivers to ensure safe transitions in care.	<input type="checkbox"/> NA	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
19.	My patient presentations on rounds are organized, complete and succinct.	<input type="checkbox"/> NA	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
20.	I am able to communicate the plan of care to all the members of the healthcare team.	<input type="checkbox"/> NA	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
21.	My documentation in the medical record is accurate, complete and timely.	<input type="checkbox"/> NA	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
22.	I accept personal errors and honestly acknowledge them.	<input type="checkbox"/> NA	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
23.	I demonstrate compassion and respect to all patients.	<input type="checkbox"/> NA	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
24.	I complete my clinical, administrative and academic tasks promptly.	<input type="checkbox"/> NA	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
25.	I maintain patient confidentiality	<input type="checkbox"/> NA	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
26.	I log my duty hours regularly and make every effort not to violate the rules	<input type="checkbox"/> NA	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
27.	When I feel I am too fatigued to work safely, I understand that I can call the chief medical residents for back-up.	<input type="checkbox"/> NA	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
28.	I understand the unique roles and services provided by the workers in the local health delivery system (social workers, case managers, dept of public health etc...)	<input type="checkbox"/> NA	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
29.	I am able to identify, reflect on, and learn from critical incidents and preventable medical errors.	<input type="checkbox"/> NA	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
30.	I do my best to minimize unnecessary care including tests, procedures, therapies and consultations.	<input type="checkbox"/> NA	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4

Please identify three specific clinical skills that you have improved over the past six months:

[Empty text box for clinical skills]

Please set three specific goals for the next six months:

[Empty text box for goals]

Signature _____

Date _____



DIRECT OBSERVATION OF PROCEDURAL SKILLS (DOPS)

Please complete the questions using a cross Please use black ink and CAPITAL LETTERS

Doctor's Name: _____

PMDC Number: _____

Clinical setting:		<input type="checkbox"/> A&E	<input type="checkbox"/> OPD	<input type="checkbox"/> In-patient	<input type="checkbox"/> Acute Admission	<input type="checkbox"/> Other		
Procedure number:		<input type="checkbox"/> <input type="checkbox"/>						
Assessors position:		<input type="checkbox"/> Consultant	<input type="checkbox"/> SpSR	<input type="checkbox"/> SpR	<input type="checkbox"/> Specialty doctor	<input type="checkbox"/> Nurse	<input type="checkbox"/> Other	
Number of previous DOPS observed by assessor with any trainee		<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5-9	<input type="checkbox"/> >9
Number of times procedure performed by trainee:		<input type="checkbox"/> 0	<input type="checkbox"/> 1-4	<input type="checkbox"/> 5-9	<input type="checkbox"/> >10	Difficulty of procedure:		
					<input type="checkbox"/> Low	<input type="checkbox"/> Average	<input type="checkbox"/> High	
Please grade the following areas		Well below expectations	Below Expectations	Borderline	Meets Expectations	Above Expectations	Well above expectations	U/C*
		1	2	3	4	5	6	
1 Demonstrate understanding of indications, relevant anatomy, technique of procedure		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2 Obtains informed consent		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3 Demonstrates appropriate preparation pre-procedure		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4 Appropriate analgesia or preparation pre-procedure		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5 Technical ability safe sedation		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6 Aseptic technique		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7 Seeks help where appropriate		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8 Post procedure management		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9 Communication skills		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10 Consideration of Patient/professionalism		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11 Overall ability to perform procedure		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* U/C Please mark this if you have not observed the behaviour and therefore feel unable to comment.								
Please use this space to record areas of strength or any suggested development								
Anything especially good?				Suggestions for development:				
Have you had training in the use of this assessment tool? <input type="checkbox"/> Face to face <input type="checkbox"/> Have read guidelines <input type="checkbox"/> Web/ CD-Rom								
Assessors signature:						Time taken for observation: (in minutes) <input type="checkbox"/> <input type="checkbox"/>		
Date (mm/yy) <input type="checkbox"/> <input type="checkbox"/> / <input type="checkbox"/> <input type="checkbox"/>						Time taken for feedback <input type="checkbox"/> <input type="checkbox"/>		
Assessor's Name: _____								

*if appropriate

Please note failure of return of all completed forms to your administrator is a probity issue

Acknowledgement: Adopted with permission of the American Board of internal Medicine

SpSR - Specialty Senior Registrar

SpR - Specialty Registrar



CASE BASED CLINICAL EVALUATION OF TRAINEE

Resident's Name: _____

Evaluator's Name(s): _____

Hospital Name: _____

Date of Evaluation: _____

Traditional Track (10% Clinic) Primary Care Track (20% Clinic)

1	Unsatisfactory
2	Below Average
3	Average
4	Good
5	Superior

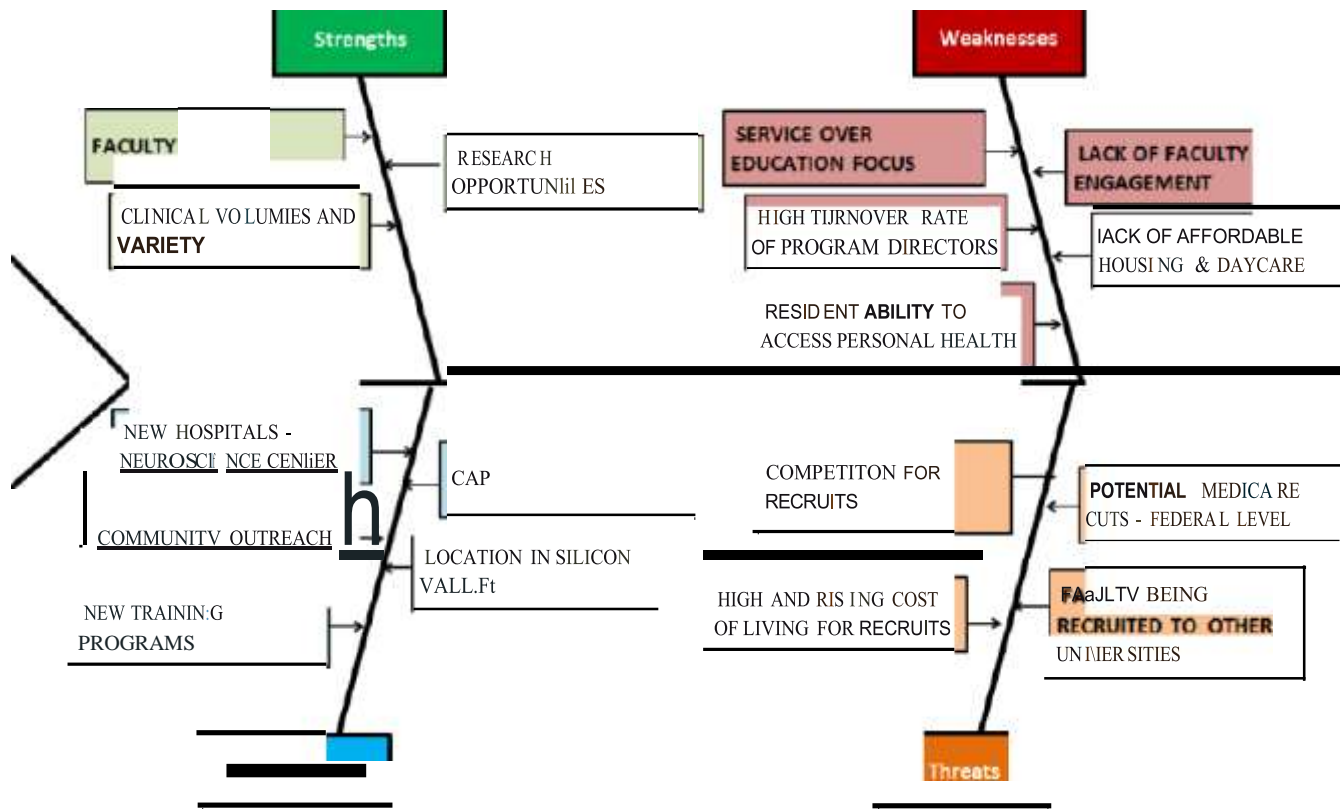
Please circle the appropriate number for each item using the scale above.

History	Scale				
1. Introduces himself and greet the patient.	1	2	3	4	5
2. Listen to the patient problems.	1	2	3	4	5
3. Shows politeness and empathy	1	2	3	4	5
4. Gathers proper information of present and past history	1	2	3	4	5
Physical Examination	Scale				
1. Physical examination done correctly	1	2	3	4	5
2. Pick physical signs correctly	1	2	3	4	5
3. Relevant examination done in detail	1	2	3	4	5
4. Interpret physical signs correctly	1	2	3	4	5
Assessment Plans	Scale				
1. Can list a logical differential diagnosis	1	2	3	4	5
2. Defend the diagnosis logically	1	2	3	4	5
3. Identifies patient active problems	1	2	3	4	5
Interpretation and Correlation of Laboratory and Imaging Data	Scale				
1. Can order logical and relevant investigations	1	2	3	4	5
2. Correctly interpret investigations (Laboratory and Imaging)	1	2	3	4	5
3. Formulate a logical management plan	1	2	3	4	5
4. Treatment plan is logical and relevant	1	2	3	4	5
5. Able to write a proper prescription	1	2	3	4	5

SWOT Analysis

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

SOWT Analysis (Fishbone – Ishikawa Diagram)



Pursuing the highest quality of patient care and graduate medical education

Action Plan

Item	Strategy	Resources	Timeline	Evaluation
PreservationGoals (Strengths)				
EliminationGoals (Weaknesses)				
AchievementGoals (Opportunities)				
AvoidanceGoals (Threats)				

