

**CURRICULUM/STATUTES & REGULATIONS
FOR
5 YEARS DEGREE PROGRAMME
IN
MD NEUROLOGY**



**Rawalpindi Medical University,
Rawalpindi**

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

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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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SECTION 1: General plan of course

Course Title:

MD NEUROLOGY

Training Centers

Departments of Neurology (accredited by RMU) in affiliated institute of
Rawalpindi Medical University,
Rawalpindi

Duration of Course

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

After admission in MD Neurology Programme the resident will spend first 6 Months in the relevant Department of Neurology 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 will be designed and the **synopsis** be prepared during this period.

On completion of Induction period the resident will start formal training in the Basic Principles of Internal Medicine and allied rotations for 18 Months, during this period the resident must get the research synopsis approved by AS&RB. At the end of 2 year, the candidate will take up Intermediate Examination.

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

- 1) Clinical Training in Neurology
- 2) Research and Thesis writing

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

The clinical training shall be competency based. There shall be generic and specialty specific competencies and shall be assessed by continuous Internal Assessment. (Appendix F&G).

The Research Component and thesis writing shall be complete over the four years duration of the Programme. Candidates will spend total time equivalent one calendar year for research during the training. Research can be done as one block or in small periodic rotation as long as total research time is equivalent to one calendar year.

Admission Criteria

Applications for admission to MD Training Programs of University 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 Hope 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 MD courses.
- Candidates selected for the courses after their enrollment at the relevant institutions shall be registered with UHS as per prescribed Registration Regulations.

Accreditation Related Issues of the Institution

1. Faculty

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

2. Adequate Space

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

3. Library

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

- Accreditation of Neurology 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.
 - Programs should have documentation of residents training activities and evaluation on monthly basis.
- 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 MD programme in Internal Medicine is to train residents to acquire the competency of a specialist in the field of Internal Medicine so that they can become good teachers, researchers and clinicians in their specialty after completion of their training.

GENERAL OBJECTIVES

1. To provide a broad experience in Neurology, including its interrelationship with other disciplines.
2. To enhance medical knowledge, clinical skills, and competence in bedside diagnostic and therapeutic procedures.
3. To achieve the professional requirements to prepare for Higher Physician Training in one or more specialty in Internal Medicine.
4. To cultivate the correct professional attitude and enhance communication skill towards patients, their families and other healthcare professionals.

5. To enhance sensitivity and responsiveness to community needs and the economics of health care delivery.
6. To enhance critical thinking, self-learning, and interest in research and development of patient service.
7. To cultivate the practice of evidence-based medicine and critical appraisal skills.
8. To inculcate a commitment to continuous medical education and professional development.

9. To provide a broad training and in-depth experience at a level for trainees to acquire competence and professionalism of a specialist in Internal Medicine especially in the diagnosis, investigation and treatment of medical problems towards the delivery of holistic patient care.
10. To acquire competence in managing acute medical and neurological emergencies and identifying medical problems in patients referred by primary care and other doctors, and in selecting patients for timely referral to appropriate tertiary care or the expertise of another specialty.
11. To develop competence in the inpatient and outpatient management of medical problems and in selecting patients for referral to tertiary care facilities and treatment modalities requiring high technology and/or the expertise of another specialty.
12. To manage patients in general medical units in regional/District hospitals; to be a leader in the health care delivery team and to work closely with networking units which provide convalescence, rehabilitation and long term care.
13. To encourage the development of skills in communication and collaboration with the community towards health care delivery.
14. To foster the development of skills in the critical appraisal of new methods of investigation and/or treatment. 15.To reinforce self-learning and commitment to continued updating in all aspects of Internal Medicine.
15. To encourage contributions aiming at advancement of knowledge and innovation in medicine through basic and/or clinical research and teaching of junior trainees and other health related professionals.

16. To acquire professional competence in training future trainees in neurology at Rawalpindi Medical University.

SPECIFIC OBJECTIVES

A. Medical Knowledge

- The development of a basic understanding of core Internal Medicine concepts.
- Etiology, clinical manifestation, disease course and prognosis, investigation and management of common medical diseases.
- Scientific basis and recent advances in pathophysiology, diagnosis and management of medical diseases.
- Spectrum of clinical manifestations and interaction of multiple medical diseases in the same patient.
- Psychological and social aspects of medical illnesses.
- Effective use and interpretation of investigation and special diagnostic procedures.
- Critical analysis of the efficacy, cost-effectiveness and cost-utility of treatment modalities.
- Patient safety and risk management
- Medical audit and quality assurance

- Ethical principles and medico legal issues related to medical illnesses.
- Updated knowledge on evidenced-based medicine and its implications for diagnosis and treatment of medical patients.
- Familiarity with different care approaches and types of health care facilities towards the patients care with medical illnesses, including convalescence, rehabilitation, palliation, long term care, and medical ethics.
- Knowledge on patient safety and clinical risk management.
- Awareness and concern for the cost-effectiveness and risk-benefits of various advanced treatment modalities.
- Familiarity with the concepts of administration and management and overall forward planning for a general medical unit.

B. Skills

- Ability to take a detailed history, gathers relevant data from patients, and assimilates the information to develop diagnostic and management plan.
- Students are expected to effectively record an initial history and physical examination and follow-up notes as well a deliver comprehensive oral presentations to their team members based on these written documents.
- Competence in eliciting abnormal physical signs and interpreting their significance.
- Ability to relate clinical abnormalities with pathophysiologic states and diagnosis of diseases.

- Ability to select appropriate investigation and diagnostic procedures for confirmation of diagnosis and patient management.
- Residents should be able to interpret basic as well as advanced laboratory data as related to the disorder/disease.
- Basic understanding of routine laboratory and ancillary tests including complete blood count, chemistry panels, ECG, chest x-rays, pulmonary function tests, and body fluid cell counts. In addition, students will properly understand the necessity of incorporating sensitivity, specificity, pre-test probability and Bayes laws/theorem in the ordering of individual tests in the context of evaluating patients' signs and symptoms.
- The formulation of a differential diagnosis with up-to—date scientific evidence and clinical judgment using history and physical examination data and the development of a prioritized problem list to select tests and make effective therapeutic decisions.
- Assessing the risks, benefits, and costs of varying, effective treatment options; involving the patient in decision- making via open discussion; selecting drugs from within classes; and the design of basic treatment programs and using critical pathways when appropriate.
- Residents must be able to perform competently all medical and invasive procedures essential for the practice of general internal medicine. This includes technical proficiency in taking informed consent, performing by using appropriate indications, contraindications, interpretations of findings and evaluating the results and handling the complications of the related procedures mentioned in the syllabus.
- Residents should be instructed in additional procedural skills that will be determined by the training environment, residents practice expectations, the availability of skilled teaching faculty, and privilege delineation.
- Skills in performing important bedside diagnostic and therapeutic procedures and understanding of their indications. Trainees should acquire competence through supervised performance of the required number of

- each of the following procedures during the 3-year training period and should record them in the Trainee's Log
- Book.

- Ability to present clinical problems and literature review in grand rounds and seminars.

- Good communication skills and interpersonal relationship with patients, families, medical colleagues, nursing and allied health professionals.

- Ability to mobilize appropriate resources for management of patients at different stages of medical illnesses, including critical care, consultation of medical specialties and other disciplines, ambulatory and rehabilitative services, and community resources.

- Competence in the diagnosis and management of emergency medical problems, in particular cardiorespiratory problems, stroke, organ failures, infection and shock, gastrointestinal bleeding, metabolic disorders and poisoning.

- Competence in the diagnosis and management of acute and chronic medical problems as secondary care in a regional/district hospital.

- Diagnostic skills to effectively manage complex cases with unusual presentations.
- Ability to implement strategies for preventive care and early detection of diseases in collaboration with primary and community care doctors.
- Ability to understand medical statistics and critically appraise published work and clinical research on disease presentations and treatment outcomes. Experience in basic and/or clinical research within the training programme should lead to publications and/or presentation in seminars or conferences.
- Practice evidence—based learning with reference to research and scientific knowledge pertaining to their discipline through comprehensive training in Research Methodology
- Ability to recognize and appreciate the importance of cost-effectiveness of treatment modalities.
- The identification of key information resources and the utilization of the medical literature to expand one’s knowledge base and to search for answer to medical problems. They will keep abreast of the current literature and be able to integrate it to clinical practice.

C. Attitudes

- The well-being and restoration of health of patients must be of paramount consideration.
- Empathy and good rapport with patient and relatives are essential attributes.
- An aspiration to be the team-leader in total patient care involving nursing and allied medical professionals should be

developed.

- The cost-effectiveness of various investigations and treatments in patient care should be recognized.
- The privacy and confidentiality of patients and the sanctity of life must be respected.
- The development of a functional understanding of informed consent, advanced directives, and the physician-patient relationship.
- Ability to appreciate the importance of the effect of disease on the psychological and socio-economic aspects of individual patients and to understand patients' psycho-social needs and rights, as well as the medical ethics involved in patient management.
- Willingness to keep up with advances in Internal Medicine and other Specialties.
- Willingness to refer patients to the appropriate specialty in a timely manner.
- Aspiration to be the team leader in total patient care involving nursing and allied medical professionals.
- The promotion of health via adult immunizations, periodic health screening, and risk factor assessment and modification.
- Recognition that teaching and research are important activities for the advancement of the profession.

D. Other required core competencies:

1. PATIENT CARE

- Residents are expected to provide patient care that is compassionate, appropriate and effective for the promotion of health,

prevention of illness, treatment of disease and at the end of life.

- Gather accurate, essential information from all sources, including medical interviews, physical examinations, medical records and diagnostic/therapeutic procedures.
- Make informed recommendations about preventive, diagnostic and therapeutic options and interventions based on clinical judgment, scientific evidence, and patient preference.
- Develop, negotiate and implement effective patient management plans and integration of patient care.
- Perform competently the diagnostic and therapeutic procedures considered essential to the practice of internal medicine.

2.INTERPERSONAL AND COMMUNICATION SKILLS

- Residents are expected to demonstrate interpersonal and communication skills that enable them to establish and maintain professional relationships with patients, families, and other members of health care teams.
- Provide effective and professional consultation to other physicians and health care professionals and sustain therapeutic and ethically sound professional relationships with patients, their families, and colleagues.
- Use effective listening, nonverbal, questioning, and narrative skills to communicate with patients and families.
- Interact with consultants in a respectful, appropriate manner.
- Maintain comprehensive, timely, and legible medical records.

3.PROFESSIONALISM

- Residents are expected to demonstrate behaviors that reflect a commitment to continuous professional developmental, ethical practice, an understanding and sensitivity to diversity and a responsible attitude toward their patients, their profession, and society.

- Demonstrate respect, compassion, integrity, and altruism in relationships with patients, families, and colleagues.
- Demonstrate sensitivity and responsiveness to the gender, age, culture, religion, sexual preference, socioeconomic status, beliefs, behavior and disabilities of patients and professional colleagues.
- Adhere to principles of confidentiality, scientific/academic integrity, and informed consent.
- Recognize and identify deficiencies in peer performance.

- Understand and demonstrate the skill and art of end of life care.

4.PRACTICE-BASED LEARNING AND IMPROVEMENT

- Residents are expected to be able to use scientific evidence and methods to investigate, evaluate, and improve patient care practices.
- Identify areas for improvement and implement strategies to enhance knowledge, skills, attitudes and processes of care.
- Analyze and evaluate practice experiences and implement strategies to continually improve the quality of patient practice.
- Develop and maintain a willingness to learn from errors and use errors to improve the system or processes of care.
- Use information of technology or other available methodologies to access and manage information, support patient care decisions and enhance both patient and physician education.

5.SYSTEMS-BASED PRACTICE

- Residents are expected to demonstrate both an understanding of the contexts and systems in which health care is provided, and the ability to apply this knowledge to improve and optimize health care.
- Understands accesses and utilizes the resources, providers and systems necessary to provide optimal care.
- Understand the limitations and opportunities inherent in various practice types and delivery systems, and develop strategies to optimize care for the individual patient.
- Apply evidence-based, cost-conscious strategies to prevention, diagnosis, and disease management.
- Collaborate with other members of the health care team to assist patients in dealing effectively with complex systems and to improve systematic processes of care.

Methods of Teaching & Learning during course conduction

Inpatient Services:

All residents will have rotations in intensive care, coronary care, emergency medicine, general medical wards, general medicine, ambulatory experiences etc. The required knowledge and skills pertaining to the ambulatory based training in following areas shall be demonstrated;

General Internal Medicine	Nephrology
Critical care & Emergency Medicine	Haematological Disorders
Coronary care unit	Psychiatry
Ambulatory Medicine	Inpatient Oncology 81 Palliative Care Services
General Medical consultation service	Neurology
Cardiology	Dermatology
Pulmonary Medicine	Geriatric Medicine
Endocrinology	Infectious Diseases
Rheumatology	Radiology
Gastroenterology & Hepatology	

Outpatient Experiences

Residents should demonstrate expertise in diagnosis and management of patients in acute care clinics and longitudinal clinic and gain experience in Dermatology, Geriatrics, Clinical immunology and allergy, Endocrinology, Gastroenterology, Hematology-Oncology, Neurology, Nephrology, Pulmonology, Rheumatology etc.

Emergency services:

Our residents take an early and active role in patient care and obtain decision-making roles quickly. Within the Emergency Department, residents direct the initial stabilization of all critical patients, manage airway interventions, and oversee all critical care.

Electives/ Specialty Rotations:

In addition, the resident will elect rotations in a variety of electives including nutrition, nuclear medicine or any of the medicine subspecialty consultative services or clinics. They may choose electives from each medicine subspecialty and from offerings of other departments. Residents may also select electives at other institutions if the parent department does not offer the experiences they want.

Interdisciplinary Medicine:

Adolescent Medicine, Dermatology, Emergency Medicine, General Surgery, Gynecology, Neurology, Occupational Medicine, Ophthalmology, Orthopedics and Sports Medicine, Otolaryngology, Physical Medicine and Rehabilitation, Urology.

Community Practice:

Residents experience the practice of medicine in a non-academic, non-teaching hospital setting. The rotation may be used to try out a practice that the resident later joins, to learn the needs of referring physicians or to decide on a future career path.

Mandatory Workshops:

Residents achieve hands on training while participating in mandatory workshops of Research Methodology, Advanced Life Support, Communication Skills, Computer & Internet and Clinical Audit. Specific objectives are given in detail in the relevant section of Mandatory Workshops.

Core Faculty Lectures (CFL):

The core faculty lecture's focus on monthly themes of the various specialty medicine topics for eleven months of the year, i.e., Cardiology, Gastroenterology, Hematology, etc. Lectures are still an efficient way of delivering information. Good lectures can introduce new material or synthesize concept

students have through text-, web-, or field-based activities. Buzz groups can be incorporated into the lectures in order to promote more active learning.

Introductory Lecture Series (ILS):

Various introductory topics are presented by subspecialty and general medicine faculty to introduce interns to basic and essential topics in internal medicine.

Long and short case presentations:-

Giving an oral presentation on ward rounds is an important skill for medical student to learn. It is medical reporting which is terse and rapidly moving. After collecting the data, you must then be able both to document it in a written format and transmit it clearly to other health care providers. In order to do this successfully, you need to understand the patient's medical illnesses, the psychosocial contributions to their History of Presenting Illness and their physical diagnosis findings. You then need to compress them into a concise, organized recitation of the most essential facts. The listener needs to be given all of the relevant information without the extraneous details and should be able to construct his/her own differential diagnosis as the story unfolds. Consider yourself an advocate who is attempting to persuade an informed, interested judge the merits of your argument, without distorting any of the facts. An oral case presentation is NOT a simple recitation of your write-up. It is a concise, edited presentation of the most essential information. Basic structure for oral case presentations includes Identifying information/chief complaint (ID/CC) , History of present illness (HPI) including relevant ROS (Review of systems) questions only ,Other active medical problems , Medications/allergies/substance use (note: e. The complete ROS should not be presented in oral presentations , Brief social history (current situation and major issues only) . Physical examination (pertinent findings only) , One line summary & Assessment and plan

Seminar Presentation:

Seminar is held in a noon conference format. Upper level residents present an in-depth review of a medical topic as well as their own research. Residents are formally critiqued by both the associate program director and their resident colleagues.

Journal Club Meeting (JC):

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

Small Group Discussions/ Problem based learning/ Case based learning:

Traditionally small groups consist of 8- 12 participants. Small groups can take on a variety of different tasks, including problem solving, role play, discussion, brainstorming, debate, workshops and presentations. Generally students prefer small group learning to other instructional methods. From the study of a problem students develop principles and rules and generalize their applicability to a variety of situations PBL is said to develop problem solving skills and an integrated body of knowledge. It is a student-centered approach to learning, in which students determine what and how they learn. Case studies help learners identify problems and solutions, compare options and decide how to handle a real situation.

Discussion/Debate:

There are several types of discussion tasks which would be used as learning method for residents including: guided discussion, in which the facilitator poses a discussion question to the group and

learners offer responses or questions to each other's contributions as a means of broadening the discussion's scope; inquiry-based discussion, in which learners are guided through a series of questions to discover some relationship or principle; exploratory discussion, in which learners examine their personal opinions, suppositions or assumptions and then visualize alternatives to these assumptions; and debate in which students argue opposing sides of a controversial topic. With thoughtful and well-designed discussion tasks, learners can practice critical inquiry and reflection, developing their individual thinking, considering alternatives and negotiating meaning with other discussants to arrive at a shared understanding of the issues at hand.

Case Conference (CC):

These sessions are held three days each week; the focus of the discussion is selected by the presenting resident. For example, some cases may be presented to discuss a differential diagnosis, while others are presented to discuss specific management issues.

Noon Conference (NC):

The noon conferences focus on monthly themes of the various specialty medicine topics for eleven months of the year, i.e., Cardiology, Gastroenterology, Hematology, etc.

Grand Rounds (GR):

The Department of Medicine hosts Grand Rounds on weekly basis. Speakers from local, regional and national medicine training programs are invited to present topics from the broad spectrum of internal medicine. All residents on inpatient floor teams, as well as those on ambulatory block rotations and electives are expected to attend.

Professionalism Curriculum (PC):

This is an organized series of recurring large and small group discussions focusing upon current issues and dilemmas in medical professionalism and ethics presented primarily by an associate program director. Lectures are usually presented in a noon conference format.

Evening Teaching Rounds:

During these sign-out rounds, the inpatient Chief Resident makes a brief educational presentation on a topic related to a patient currently on service, often related to the discussion from morning report. Serious cases are mainly focused during evening rounds.

Clinico-pathological Conferences:

The clinicopathological conference, popularly known as CPC primarily relies on case method of teaching medicine. It is a teaching tool that illustrates the logical, measured consideration of a differential diagnosis used to evaluate patients. The process involves case presentation, diagnostic data, discussion of differential diagnosis, logically narrowing the list to few selected probable diagnoses and eventually reaching a final diagnosis and its brief discussion. The idea was first practiced in Boston, back in 1900 by a Harvard internist, Dr. Richard C. Cabot who practiced this as an informal discussion session in his private office. Dr. Cabot incepted this from a resident, who in turn had received the idea from a roommate, primarily a law student.

Evidence Based Medicine (EBM):

Residents are presented a series of noon monthly lectures presented to allow residents to learn how to critically appraise journal articles, stay current on statistics, etc. The lectures are presented by the program director.

Clinical Audit based learning:

"Clinical audit is a quality improvement process that seeks to improve patient care and outcomes through systematic review of care against explicit criteria...Where indicated, changes are implemented...and further monitoring is used to confirm improvement in healthcare delivery." Principles for Best Practice in Clinical Audit (2002, NICE/CHI)

Peer Assisted Learning:

Any situation where people learn from, or with, others of a similar level of training, background or other shared characteristic. Provides opportunities to reinforce and revise their learning. Encourages responsibility and increased self-confidence. Develops teaching and verbalization skills. Enhances communication skills, and empathy. Develops appraisal skills (of self and others) including the ability to give and receive appropriate feedback. Enhance organizational and team-working skills.

Morbidity and Mortality Conference (MM):

The M&M Conference is held occasionally at noon throughout the year. A case, with an adverse outcome, though not necessarily resulting in death, is discussed and thoroughly reviewed. Faculty members from various disciplines are invited to attend, especially if they were involved in the care of the patient. The discussion focuses on how care could have been improved.

Clinical Case Conference:

Each resident, except when on vacation, 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 Physician on the Consultation Service, will prepare and present the case(s) and review the relevant literature

SEQ as assignments on the content areas:

_SEQs assignments are given to the residents on regular basis to enhance their performance during written examinations.

Skill teaching in ICU, emergency, ward settings& skill laboratory: 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:

- 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 (mentioned in the Course outlines)
- 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
- 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
- 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
- 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 and becoming familiar with Project Professionalism Manual such as that of the American Board of Internal Medicine
- Residents should have instruction and experience with patient counseling skills and community education
- This training should emphasize effective communication techniques for diverse populations, as well as organizational resources useful for patient and community education
- Residents may attend the series of lectures on Nuclear Medicine procedures (radionuclide scanning and localization tests and therapy) presented to the Radiology residents
- Residents should have experience in the performance of clinical laboratory and radionuclide studies and basic laboratory techniques including quality control, quality assurance and proficiency standards.

Beside teaching rounds in ward:

“To study the phenomenon of disease without books is to sail an uncharted sea whilst to study books without patients is not to go to sea at all” Sir William Osler

1849-1919. Bedside teaching is regularly included in the ward rounds. Learning activities include the physical exam, a discussion of particular medical diseases, psychosocial and ethical themes, and management issues

Directly Supervised Procedures - (DSP):

Residents learn procedures under the direct supervision of an attending or fellow during some rotations. For example, in the Medical Intensive Care Unit the Pulmonary /Critical Care attending or fellow, or the MICU attending, observe the placement of central venous and arterial lines. Specific procedures used in patient care vary by rotation.

Self-directed learning:

Self-directed learning residents have primary responsibility for planning, implementing, and evaluating their effort. It is an adult learning technique that assumes that the learner knows best what their educational needs are. The facilitator's role in self-directed learning is to support learners in identifying their needs and goals for the program, to contribute to clarifying the learners' directions and objectives and to provide timely feedback. Self-directed learning can be highly motivating, especially if the learner is focusing on problems of the immediate present, a potential positive outcome is anticipated and obtained and they are not threatened by taking responsibility for their own learning.

Follow up clinics:

The main aims of our clinic for patients and relatives include (a) Explanation of patient's stay in ICU or Ward settings: Many patients do not remember their ICU stay, and this lack of recall can lead to misconceptions, frustration and having unrealistic expectations of themselves during their recovery. It is therefore preferable for patients to be aware of how ill they have been and then they can understand why it is taking some time to recover. (b) Rehabilitation information and support: We discuss with patients and relatives their individualized recovery from critical illness. This includes expectations, realistic goals, change in family

dynamics and coming to terms with life style changes. (c) Identifying physical, psychological or social problems Some of our patients have problems either as a result of their critical illness or because of other underlying conditions. The follow-up team will refer patients to various specialties, if appropriate. (d) Promoting a quality service: By highlighting areas which require change in nursing and medical practice, we can improve the quality of patient and relatives care. Feedback from patients and relatives about their ICU & ward experience is invaluable. It has initiated various audits and changes in clinical practice, for the benefit of patients and relatives in the future.

Core curriculum meeting:

All the core topics of Medicine 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

Annual Grand Meeting:

Once a year all residents enrolled for MD Internal Medicine should be invited to the annual meeting at RMU. 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.

Learning through maintaining log book:

it is used to list the core clinical problems to be seen during the attachment and to document the student activity and learning achieved with each patient contact.

Learning through maintaining portfolio:

Personal Reflection is one of the most important adult educational tools available. Many theorists have argued that without reflection, knowledge translation and thus genuine “deep” learning cannot occur. One of the Individual reflection tools maintaining portfolios, Personal Reflection allows students to take inventory of their current knowledge skills and attitudes, to integrate concepts from various experiences, to transform current ideas and experiences into new knowledge and actions and to complete the experiential learning cycle.

Task-based-learning:

A list of tasks is given to the students: participate in consultation with the attending staff, interview and examine patients, review a number of new radiographs with the radiologist.

Teaching in the ambulatory care setting:

A wide range of clinical conditions may be seen. There are large numbers of new and return patients. Students have the opportunity to experience a multi-professional approach to patient care. Unlike ward teaching, increased numbers of students can be accommodated without exhausting the limited No. of suitable patients.

Community Based Medical Education:

CBME refers to medical education that is based outside a tertiary or large secondary level hospital. Learning in the fields of epidemiology, preventive health, public health principles, community development, and the social impact of illness and understanding how patients interact with the health care system. Also used for learning basic clinical skills, especially communication skills.

Audio visual laboratory:

Audio visual material for teaching skills to the residents is used specifically in teaching gastroenterology procedure details.

E-learning/web-based medical education/computer-assisted instruction:

Computer technologies, including the Internet, can support a wide range of learning activities from dissemination of lectures and materials, access to live or recorded presentations, real-time discussions, self-instruction modules and virtual patient simulations. distance-independence, flexible scheduling, the creation of reusable learning materials that are easily shared and updated, the ability to individualize instruction through adaptive instruction technologies and automated record keeping for assessment purposes.

Research based learning:

All residents in the categorical program are required to complete an academic outcomes-based research project during their training. This project can consist of original bench top laboratory research, clinical research or a combination of both. The research work shall be compiled in the form of a thesis which is to be submitted for evaluation by each resident before end of the training. The designated Faculty will organize and mentor the residents through the process, as well as journal clubs to teach critical appraisal of the literature.

Other teaching strategies specific for different specialties as mentioned in the relevant parts of the curriculum Some of the other teaching strategies which are specific for certain domains of internal medicine are given along with relevant modules.

A crisp detail about modern Tools of Assessment intended to be used for the course

360-DEGREE EVALUATION INSTRUMENT-MULTI-SOURCE FEEDBACK (MSF):

360-degree evaluations consist of measurement tools completed by multiple people in a person's sphere of influence. Evaluators completing rating forms in a 360-degree evaluation usually are superiors, peers, subordinates, and patients and families. Most 360-degree evaluation processes use a survey or questionnaire to gather information about an individual's performance on several topics (e.g., teamwork, communication, management skills & decision-making). Most 360-degree evaluations use rating scales to assess how frequently a behavior is performed (e.g., a scale of 1 to 5, with 5 meaning "all the time" and 1 meaning "never"). The ratings are summarized for all evaluators by topic and overall to provide feedback. Evaluators provide more accurate and less lenient ratings when the evaluation is intended to give formative feedback rather than summative evaluations.

A 360-degree evaluation can be used to assess interpersonal and communication skills, professional behaviors, and some aspects of patient care and systems-based practice.

CHART STIMULATED RECALL ORAL EXAMINATION (CSR)

In a chart stimulated recall (CSR) examination patient cases of the examinee (resident) are assessed in a standardized oral examination. A trained and experienced physician examiner questions the examinee about the care provided probing for reasons behind the work-up, diagnoses, interpretation of clinical findings, and treatment plans. The examiners rate the examinee using a well-established protocol and scoring procedure. In efficiently designed CSR oral exams each patient case (test item) takes 5 to 10 minutes. A typical CSR exam is two hours with one or two physicians as examiners per separate 30 or 60-minute session. These exams assess clinical decision-making and the application or use of medical knowledge with actual patients.

CHECKLIST EVALUATION

Checklists consist of essential or desired specific behaviors, activities, or steps that make up a more complex competency or competency component. Typical response options on these forms are a check () or “yes” to indicate that the behavior occurred or options to indicate the completeness (complete, partial, or absent) or correctness (total, partial, or incorrect) of the action. The forms provide information about behaviors but for the purpose of making a judgment about the adequacy of the overall performance, standards need to be set that indicate, for example, pass/fail or excellent, good, fair, or poor performance. Checklists are useful for evaluating any competency and competency component that can be broken down into specific behaviors or actions. Documented evidence for the usefulness of checklists exists for the evaluation of patient care skills (history and physical examination, procedural skills) and for interpersonal and communication skills. Checklists have also been used for self-assessment of practice-based learning skills (evidence-based medicine). Checklists are most useful to provide feedback on performance because checklists can be tailored to assess detailed actions in performing a task.

GLOBAL RATING OF LIVE OR RECORDED PERFORMANCE

Global rating forms are distinguished from other rating forms in that (a) a rater judges general categories of ability (e.g. patient care skills, medical knowledge, interpersonal and communication skills) instead of

Specific skills, tasks or behaviors; and (b) the ratings are completed retrospectively based on general impressions collected over a period of time (e.g., end of a clinical rotation) derived from multiple sources of information (e.g., direct observations or interactions; input from other faculty, residents, or patients; review of work products or written materials). All rating forms contain scales that the evaluator uses to judge knowledge, skills, and behaviors listed on the form. Typical rating scales consist of qualitative indicators and often include numeric values for each indicator, for example, (a) very good = 1, good = 2, fair = 3, poor = 4; or (b) superior = 1, satisfactory = 2, unsatisfactory = 3. Written comments are important to allow evaluators to explain the ratings. Global rating forms are most often used for making end of rotation and summary assessments about performance observed over days or weeks. Scoring rating forms entails combining numeric ratings with comments to obtain a useful judgment about performance based upon more than one rater.

OBJECTIVE STRUCTURED CLINICAL EXAMINATION (OSCE)

In an objective structured clinical examination (OSCE) one or more assessment tools are administered at 12 to 20 separate standardized patient encounter stations, each station lasting 10-15 minutes. Between stations candidates may complete patient notes or a brief written examination about the previous patient encounter. All candidates move from station to station in sequence on the same schedule. Standardized patients are the primary assessment tool used in OSCEs, but OSCEs have included other assessment tools such as data interpretation exercises using clinical cases and clinical scenarios with mannequins, to assess technical skills. OSCEs have been administered in most of the medical schools worldwide, many residency programs, and by the licensure board examinations. The OSCE format provides a standardized means to assess: physical examination and history taking skills; communication skills with patients and family members, breadth and depth of knowledge; ability to summarize and document findings; ability to make a differential diagnosis, or plan treatment; and clinical judgment based upon patient notes.

PROCEDURE, OPERATIVE, OR CASE LOGS

Procedure, operative, or case logs document each patient encounter by medical conditions seen, surgical operation or procedures

performed. The logs may or may not include counts of cases, operations, or procedures. Patient case logs currently in use involve recording of some number of consecutive cases in a designated time frame. Operative logs in current use vary; some entail comprehensive recording of operative data by CPT code while others require recording of operations or procedures for a small number of defined categories.

Logs of types of cases seen or procedures performed are useful for determining the scope of patient care experience. Regular review of logs can be used to help the resident track what cases or procedures must be sought out in order to meet residency requirements or specific learning objectives. Patient logs documenting clinical experience for the entire residency can serve as a summative report of that experience; as noted below, the numbers reported do not necessarily indicate competence.

PATIENT SURVEYS

Surveys of patients to assess satisfaction with hospital, clinic, or office visits typically include questions about the physician's care. The questions often assess satisfaction with general aspects of the physician's care, (e.g., amount of time spent with the patient, overall quality of care, physician competency (skills and knowledge), courtesy, and interest or empathy). More specific aspects of care can be assessed including: the physician's explanations, listening skills and provision of information about examination findings, treatment steps, and drug side effects. A typical patient survey asks patients to rate their satisfaction with care using rating categories (e.g., poor, fair, good, very good, excellent) or agreement with statements describing the care (e.g., "the doctor kept me waiting," --Yes, always; Yes, sometimes; or No, never or hardly ever). Each rating is given a value and a satisfaction score calculated by averaging across responses to generate a single score overall or separate scores for different clinical care activities or settings. Patient feedback accumulated from single encounter questionnaires can assess satisfaction with patient care competencies (aspects of data gathering, treatment, and management; counseling, and education; preventive care); interpersonal and communication skills; professional behavior; and aspects of systems-based practice (patient advocacy; coordination of care). If survey items about specific physician behaviors are included, the results can be used for formative evaluation and performance improvement. Patient survey results also can be used for summative evaluation, but this use is contingent on whether the measurement process meets standards of reliability and validity.

PORTFOLIOS

A portfolio is a collection of products prepared by the resident that provides evidence of learning and achievement related to a learning plan. A portfolio typically contains written documents but can include video- or audio-recordings, photographs, and other forms of information. Reflecting upon what has been learned is an important part of constructing a portfolio. In addition to products of learning, the portfolio can include statements about what has been learned, its application, remaining learning needs, and how they can be met. In graduate medical education, a portfolio might include a log of clinical procedures performed; a summary of the research literature reviewed when selecting a treatment option; a quality improvement project plan and report of results; ethical dilemmas faced and how they were handled; a computer program that tracks patient care outcomes; or a recording or transcript of counseling provided to patients. Portfolios can be used for both formative and summative evaluation of residents. Portfolios are most useful for evaluating mastery of competencies that are difficult to evaluate in other ways such as practice-based improvement, use of scientific evidence in patient care, professional behaviors, and patient advocacy. Teaching experiences, morning report, patient rounds, individualized study or research projects are examples of learning experiences that lend themselves to using portfolios to assess residents.

RECORD REVIEW

Trained staff in an institution's medical records department or clinical department perform a review of patients' paper or electronic records. The staff uses a protocol and coding form based upon predefined criteria to abstract information from the records, such as medications, tests ordered, procedures performed, and patient outcomes. The patient record findings are summarized and compared to accepted patient care standards. Standards of care are available for more than 1600 diseases on the Website of the Agency for HealthCare Research and Quality (<http://www.ahrq.gov/>). Record review can provide evidence about clinical decision-making, follow-through in patient management and preventive health services, and appropriate use of clinical facilities and resources (e.g., appropriate laboratory tests and consultations). Often residents will confer with other clinical team members before documenting patient decisions and therefore, the documented care may not be directly attributed to a single resident but to the clinical team.

SIMULATIONS AND MODELS

Simulations used for assessment of clinical performance closely resemble reality and attempt to imitate but not duplicate real clinical problems. Key attributes of simulations are that: they incorporate a wide array of options resembling reality, allow examinees to reason through a clinical problem with little or no cueing, permit examinees to make life-threatening errors without hurting a real patient, provide instant feedback so examinees can correct a mistaken action, and rate examinees' performance on clinical problems that are difficult or impossible to evaluate effectively in other circumstances. Simulation formats have been developed as paper-and-pencil branching problems (patient management problems or PMPs), computerized versions of PMPs called clinical case simulations (CCX[®]), role-playing situations (e.g., standardized patients (SPs), clinical team simulations), anatomical models or mannequins, and combinations of all three formats. Mannequins are imitations of body organs or anatomical body regions frequently using pathological findings to simulate patient disease. The models are constructed of vinyl or plastic sculpted to resemble human tissue with imbedded electronic circuitry to allow the mannequin to respond realistically to actions by the examinee. Virtual reality simulations or environments (VR) use computers sometimes combined with anatomical models to mimic as much as feasible realistic organ and surface images and the touch sensations (computer generated haptic responses) a physician would expect in a real patient. The VR environments allow assessment of procedural skills and other complex clinical tasks that are difficult to assess consistently by other assessment methods. Simulations using VR environments have been developed to train and assess surgeons performing arthroscopy of the knee and other large joints, anesthesiologists managing life-threatening critical incidents during surgery, surgeons performing wound debridement and minor surgery, and medical students and residents responding to cardio-pulmonary incidents on a full-size human mannequin. Written and computerized simulations have been used to assess clinical reasoning, diagnostic plans and treatment for a variety of clinical disciplines as part of licensure and certification examinations. Standardized patients as simulations are described elsewhere.

STANDARDIZED ORAL EXAMINATION

The standardized oral examination is a type of performance assessment using realistic patient cases with a trained physician examiner questioning the examinee. The examiner begins by presenting to the examinee a clinical problem in the form of a patient case scenario and asks the examinee to manage the case. Questions

probe the reasoning for requesting clinical findings, interpretation of findings, and treatment plans. In efficiently designed exams each case scenario takes three to five minutes. Exams last approximately 90 minutes to two and one-half hours with two to four separate 30 or 60-minute sessions. One or two physicians serve as examiners per session. An examinee can be tested on 18 to 60 different clinical cases. These exams assess clinical decision-making and the application or use of medical knowledge with realistic patients. Multiple-choice questions are better at assessing recall or understanding of medical knowledge.

STANDARDIZED PATIENT EXAMINATION (SP)

Standardized patients (SPs) are well persons trained to simulate a medical condition in a standardized way or actual patients who are trained to present their condition in a standardized way. A standardized patient exam consists of multiple SPs each presenting a different condition in a 10-12 minute patient encounter. The resident being evaluated examines the SP as if (s) he were a real patient, (i.e., the resident might perform a history and physical exam, order tests, provide a diagnosis, develop a treatment plan, or counsel the patient). Using a checklist or a rating form, a physician observer or the SPs evaluate the resident's performance on appropriateness, correctness, and completeness of specific patient care tasks and expected behaviors (See description of Checklist Evaluation...). Performance criteria are set in advance. Alternatively or in addition to evaluation using a multiple SP exam, individual SPs can be used to assess specific patient care skills. SPs are also included as stations in Objective Structured Clinical Examinations (See description of OSCE). SPs have been used to assess history-taking skills, physical examination skills, communication skills, differential diagnosis, laboratory utilization, and treatment. Reproducible scores are more readily obtained for history-taking, physical examination, and communication skills. Standardized patient exams are most frequently used as summative performance exams for clinical skills. A single SP can assess targeted skills and knowledge.

WRITTEN EXAMINATION (MCQ)

A written or computer-based MCQ examination is composed of multiple-choice questions (MCQ) selected to sample medical knowledge and understanding of a defined body of knowledge, not just factual or easily recalled information. Each question or test item contains an introductory statement followed by four or five options in outline format. The examinee selects one of the

options as the presumed correct answer by marking the option on a coded answer sheet. Only one option is keyed as the correct response. The introductory statement often presents a patient case, clinical findings, or displays data graphically. A separate booklet can be used to display pictures, and other relevant clinical information. In computer-based examinations the test items are displayed on a computer monitor one at a time with pictures and graphical images also displayed directly on the monitor. In a computer-adaptive test fewer test questions are needed because test items are selected based upon statistical rules programmed into the computer to quickly measure the examinee's ability. Medical knowledge and understanding can be measured by MCQ examinations. Comparing the test scores on in-training examinations with national statistics can serve to identify strengths and limitations of individual residents to help them improve. Comparing test results aggregated for residents in each year of a program can be helpful to identify residency training experiences that might be improved.

mini-Clinical Evaluation Exercise (mini-CEX)

This tool evaluates a clinical encounter with a patient to provide an indication of competence in skills essential for good clinical care such as history taking, examination and clinical reasoning. The trainee receives immediate feedback to aid learning. The can be used at any time and in any setting when there is a trainee and patient interaction and an assessor is available.

Direct Observation of Procedural Skills (DOPS)

A DOPS is an assessment tool designed to evaluate the performance of a trainee in undertaking a practical procedure, against a structured checklist. The trainee receives immediate feedback to identify strengths and areas for development.

Case-based Discussion (CbD)

The CbD assesses the performance of a trainee in their management of a patient to provide an indication of competence in areas such as clinical reasoning, decision-making and application of medical knowledge in relation to patient care. It also serves as a method to document conversations about, and presentations of, cases by trainees. The CbD should focus on a written record (such as written case notes, out-patient letter, and discharge summary). A typical encounter might be when presenting newly referred patients in the out- patient department.

Acute Care Assessment Tool (ACAT)

The ACAT is designed to assess and facilitate feedback on a doctor's performance during their practice on the Acute Medical Take. Any doctor who has been responsible for the supervision of the Acute Medical Take can be the assessor for an ACAT.

Audit Assessment (AA)

The Audit Assessment tool is designed to assess a trainee's competence in completing an audit. The Audit Assessment can be based on review of audit documentation OR on a presentation of the audit at a meeting. If possible the trainee should be assessed on the same audit by more than one assessor.

Teaching Observation (TO)

The Teaching Observation form is designed to provide structured, formative feedback to trainees on their competence at teaching. The Teaching Observation can be based on any instance of formalized teaching by the trainee who has been observed by the assessor. The process should be trainee-led (identifying appropriate teaching sessions and assessors).

Decisions on progress (ARCP)

The Annual Review of Competence Progression (ARCP) is the formal method by which a trainee's progression through her/his training programme is monitored and recorded. ARCP is not an assessment – it is the review of evidence of training and assessment. The ARCP process is described in A Reference Guide for Postgraduate Specialty Training in the UK (the "Gold Guide" – available from www.mmc.nhs.uk). Deaneries are responsible for organising and conducting ARCPs. The evidence to be reviewed by ARCP panels should be collected in the trainee's ePortfolio.

REGULATIONS

Scheme of the Course

A summary of five years course in MD Neurology is presented as under:

Course Structure	Components	Examination
<p>At the End of 2nd year of MD Neurological Programme</p>	<ul style="list-style-type: none"> • Basic Principles of Internal Medicine 	<p><u>Intermediate Examination</u> at the end of 2nd Year of M.D. Neurology Programme</p>
<p>At the end of 5th year of MD Neurology Programme</p>	<p style="text-align: center;"><u>Clinical component</u></p> <ul style="list-style-type: none"> • Professional Education in Neurology: Training in Neurology with Compulsory/ Optional rotations <p style="text-align: center;"><u>Research component</u></p> <p>Research work / Thesis writing must be completed and thesis be submitted atleast 6 months before the end of final year of the programme.</p>	<p><u>Final Examination</u> at the end of 5th year of MD Neurology Programme</p> <p>Written = 200 Marks Clinical, TOACS/OSCE & ORAL = 500 Marks Thesis Evaluation = 100 Marks</p> <p style="text-align: center;">Total = 800 Marks</p> <p>Thesis evaluation and defence at the end of 5th year of M.D. Neurology Programme.</p>

Intermediate Examination of MD Neurology Programme

All candidates admitted in MD Neurology course shall appear in Intermediate Examination at the end of 2nd calendar year.

Eligibility Criteria:

The candidates appearing in Intermediate Examination of the M.D. Neurology 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 of rotations.
- 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 Examination Schedule and Fee

- a) Intermediate Examination at completion of two years training, will be held twice a year.

- b) There will be a minimum period of 30 days between submission of application for the examination and the conduction of examination.
- c) Examination fee will be determined periodically 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 Roll Number Slips on receipt of prescribed application form, documents satisfying eligibility criteria and evidence of payment of examination fee.

At the end of 2nd year M.D. Neurology Programme

Written Paper 1

Cardiology 15 MCQ
 Neurology 15 MCQ
 Infectious disease 10 MCQ
 Respiratory Medicine 10 MCQ
 Emergency Medicine 10 MCQ
 Psychiatry 10 MCQ
 Critical care 5 MCQ

Written Paper 2

Gastroenterology 15 MCQ
 Neurology 15 MCQ
 Dermatology 15 MCQ
 Hematology 10 MCQ
 Endocrinology 10 MCQ
 Rheumatology 10 MCQ

Declaration of Results

The Candidate will have to score 50% marks in written, clinical and oral components and a cumulative score of 60% to be declared successful in the Intermediate Examination.

A maximum total 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 of MD Neurology Programme

All candidates admitted in MD Neurology course shall appear in Final examination at the end of structured training programme (end of 5th calendar year), and having passed the Intermediate examination.

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 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 submitted 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 shall 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 SEQ)	Total marks 200(100 MCQ,100
Clinical, TOACS/OSCE & ORAL	Total marks 500
Thesis Evaluation	Total marks 100

TOTAL MARKS =800 MARKS

Written Part of Final Examination

- a) The candidates securing a score of 60% marks in multiple choice question paper and SEQ will pass the written part of the final examination and will become eligible to appear in the clinical and oral examination.

- b) The written part result will be valid for three consecutive attempts for appearing in the Clinical and Oral Part of the Final Examination. After that the candidate shall have to re-sit the written part of the Final Examination.

Clinical, TOACS/OSCE & ORAL:

- a) The Clinical and and Toacs/OSCE & Oral will consist of 04 short cases, 01 long case and and Toacs/OSCE & Oral with 01 station for a pair of Internal and External Examiner Each short case will be of 07 minutes duration, 05 minutes will be for examining the patient and 02 minutes for discussion. The Oral Examination will consist of laboratory data assessment, interpretation of Radiology images, ECG and others.
- b) The Total Marks of Clinical, TOACS/OSCE & ORAL will be 500 and to be divided as follows:

Short Cases	Total Marks = 200
Long Case	Total Marks = 100
Modified TOACS	Total Marks = 200

- c) A panel of four examiners will be appointed by the Vice Chancellor and of these two will be from university whilst the other two will be the external examiners. Internal examiner will act as a coordinator. In case of difficulty in finding an Internal examiner in a given subject, the Vice Chancellor would, in consultation with the concerned Deans, appoint any relevant person with appropriate qualification and experience, outside the University as an examiner.

- d) The internal examiners will not examine the candidates for whom they have acted as Supervisor and will be substituted by other internal examiner.
- e) The candidates scoring 60% marks in each component of the Clinical & Oral Examination will pass this part of the Final Examination.
- f) The candidates will have two attempts to pass the final examination with normal fee.

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 MD degree shall be awarded after acceptance of thesis and success in the final examination.

IV. On completion of stipulated training period, irrespective of the result (pass or fail) the training slot of the candidate shall be declared vacant.

Submission / Evaluation of Synopsis

1. The candidates shall prepare their synopsis as per guidelines provided by the Advanced Studies & Research Board, available on university website.
2. The research topic in clinical subject should have 30% component related to basic sciences and 70% component related to applied clinical sciences. The research topic must consist of a reasonable sample size and sufficient numbers of variables to give training to the candidate to conduct research, to collect & analyze the data.
3. Synopsis of research project shall be submitted by the end of the 2nd year of MD program. The synopsis after review by an Institutional Review Committee shall be submitted to the University for consideration by the Advanced Studies & Research Board, through the Principal / Dean /Head of the institution.

Submission of Thesis

1. Thesis shall be submitted by the candidate duly recommended by the Supervisor.
2. The research thesis must be compiled and bound in accordance with the Thesis Format Guidelines approved by the University and available on website.

3. The research thesis will be submitted along with the fee prescribed by the University.

Thesis Examination

- a) The Thesis along with a certificate of approval from the supervisory will be submitted to the Registrar's office, who would record the date / time etc. and get received from the Controller of Examinations within 05 working days of receiving.
- b) The Controller of Examinations will submit a panel of eight examiners within 07 days for selection of four examiners by the Vice Chancellor. The Vice Chancellor shall return the final panel within 05 working days to the Controller of Examinations for processing and assessment. In case of any delay the Controller of Examinations would bring the case personally to the Vice Chancellor.
- c) The Supervisor shall not act as an examiner of the candidate and will not take part in evaluation of thesis.
- d) The Controller of Examinations will make sure that the Thesis is submitted to examiners in appropriate fashion and a reminder is sent after every ten days.
- e) The thesis will be evaluated by the examiners within a period of 06 weeks.
- f) In case the examiners fail to complete the task within 06 weeks with 02 fortnightly reminders by the Controller of Examinations, the Controller of Examinations will bring it to the notice of Vice Chancellor in person.

- g) In case of difficulty in find an internal examiner for thesis evaluation, the Vice Chancellor would, in consultation with the concerned Deans, appoint any relevant person as examiner in supersession of the relevant Clause of the University Regulations.
- h) There will be two internal and two external examiners. In case of difficulty in finding examiners, the Vice Chancellor would, in consultation with the concerned Deans, appoint minimum of three, one internal and two external examiners.
- i) The total marks of thesis evaluation will be 100 and 60% marks will be required to pass the evaluation.
- j) The thesis will be considered accepted, if the cumulative score of all the examiners is 60%.
- k) The clinical training will end at completion of stipulated training period but the candidate will become eligible to appear in the Final Examination at completion of clinical training and after acceptance of thesis. In case clinical training ends earlier, the slot will fall vacant after stipulated training period.

6. Award of MD Neurology Degree

After successful completion of the structured courses of MD Neurology and qualifying Intermediate and Final examinations (Written, Clinical,

TOACS/OSCE & ORAL), the degree with title MD Neurology shall be awarded.

SECTION 2: CONTENT OUTLINE

MD Neurology

Basic Principles of Internal Medicine

Resident should get exposure in the following organ and system competencies (listed below) while considering and practicing each system in terms of:-

- Medical ethics
- Professional values, student teachers relationship
- Orientation of in-patient, out-patients and Nephrological labs
- Approach to the patient
- History taking
- General physical examination
- Systemic examination
- Routine investigations

- Special investigations
- Diagnostic and therapeutic procedures

Course Contents:

1. Cardiovascular Medicine

Common and / or important Cardiac Problems:

- Arrhythmias
- Ischaemic Heart Disease: acute coronary syndromes, stable angina, atherosclerosis
- Heart Failure
- Hypertension – including investigation and management of accelerated hypertension
- Valvular Heart Disease
- Endocarditis
- Aortic dissection
- Syncope
- Dyslipidaemia

Clinical Science:

- Physiological principles of cardiac cycle and cardiac conduction
- Pharmacology of major drug classes: beta blockers, alpha blockers, ACE inhibitors, Angiotensin receptor blockers (ARBs), anti-platelet agents, thrombolysis, inotropes, calcium channel antagonists, potassium channel activators, diuretics, anti-arrhythmics, anticoagulants, lipid modifying drugs, nitrates, centrally acting anti-hypertensives

2. Dermatology;

Common and / or Important Problems:

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

- Scleroderma
- Lymphoedema

Clinical Science:

- Pharmacology of major drug classes: topical steroids, immunosuppressants

3. Diabetes & Endocrine Medicine

Common and / or Important Diabetes Problems:

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

Common or Important Endocrine Problems:

- Hyper/Hypocalcaemia
- Adrenocortical insufficiency
- Hyper/Hyponatraemia
- Thyroid dysfunction
- Dyslipidaemia
- Endocrine emergencies: myxoedemic coma, thyrotoxic crisis, Addisonian crisis, hypopituitary coma, pheochromocytoma crisis

Clinical Science:

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

4. Respiratory Medicine

Common and / or Important Respiratory Problems:

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

- Bronchiectasis
- Respiratory failure and cor-pulmonale
- Pulmonary hypertension

Clinical Science:

- Principles of lung function measurement
- Pharmacology of major drug classes: bronchodilators, inhaled corticosteroids, leukotriene receptor antagonists, immunosuppressants

5. Allergy

Common or Important Allergy Problems

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

Clinical Science

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

6. Haematology

Common and / or Important Problems:

- Bone marrow failure: causes and complications
- Bleeding disorders: DIC, haemophilia
- Thrombocytopenia
- Anticoagulation treatment: indications, monitoring, management of over-

treatment

- Transfusion reactions
- Anaemia: iron deficient, megaloblastic, haemolysis, sickle cell,
- Thrombophilia: classification; indications and implications of screening
- Haemolytic disease
- Myelodysplastic syndromes
- Leukaemia
- Lymphoma
- Myeloma
- Myeloproliferative disease

- Inherited disorders of haemoglobin (sickle cell disease, thalassaemias)
- Amyloid

Clinical Science:

- Structure and function of blood, reticuloendothelial system, erythropoietic tissues

7. Immunology

Common or Important Problems:

- Anaphylaxis (see also 'Allergy')

Clinical Science:

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

8. Infectious Diseases

Common and / or Important Problems:

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

Clinical Science:

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

9. Medicine in the Elderly

Common or Important Problems:

- Deterioration in mobility
- Acute confusion

- Stroke and transient ischaemic attack
- Falls
- Age related pharmacology
- Hypothermia
- Continence problems
- Dementia
- Movement disorders including Parkinson's disease
- Depression in the elderly
- Osteoporosis
- Malnutrition
- Osteoarthritis

Clinical Science:

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

10. Musculoskeletal System

Common or Important Problems:

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

Clinical Science:

- Pharmacology of major drug classes: NSAIDs, corticosteroids, immunosuppressants, colchicines, allopurinol, bisphosphonates

11. Nephrology

Common or Important Problems:

- Acute Kidney Injury (AKI):
- Chronic Kidney Disease (CKD):
- Glomerular Diseases:
- Renal Calculi (Kidney Stones):
- Urinary Tract Infections (UTIs):
- Polycystic Kidney Disease (PKD):
- Renal Tubular Disorders:
- Nephrolithiasis
- Hypertension and Renal Disease

12. Psychiatry

Common and /or Important Problems:

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

Clinical Science:

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

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

13. Cancer and Palliative Care

Common or Important Neurology Problems:

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

Common or Important Palliative Care Problems:

- Pain: appropriate use, analgesic ladder, side effects, role of radiotherapy
- Constipation
- Breathlessness

- Nausea and vomiting
- Anxiety and depressed mood

Clinical Science:

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

Investigation Competencies

Outline the Indications for, and Interpret the Following Investigations:

- Basic blood biochemistry: urea and electrolytes, liver function tests, bone biochemistry, glucose, magnesium
- Cardiac biomarkers and cardiac-specific troponin
- Creatine kinase
- Thyroid function tests
- Inflammatory markers: CRP / ESR
- Arterial Blood Gas analysis
- Cortisol and short Synacthen test
- HbA1C
- Lipid profile
- Amylase
- Full blood count
- Coagulation studies
- Haemolysis studies
- D dimer

- Blood film report
- Blood / Sputum / urine culture
- Fluid analysis: pleural, cerebro-spinal fluid, ascitic
- Urinalysis and urine microscopy
- Auto-antibodies
- Chest radiograph
- Abdominal radiograph
- Joint radiographs (knee, hip, hands, shoulder, elbow, dorsal spine, ankle)
- ECG
- Peak flow tests
- Full lung function tests

More Advanced Competencies;

- Ultrasound
- Detailed imaging: CT Neuroangiography, high resolution CT, MRI
- Echocardiogram
- 24 hour ECG monitoring
- Ambulatory blood pressure monitoring
- Neurophysiological studies: EMG, nerve conduction studies, visual and auditory evoked potentials

Procedural Competencies

The trainee is expected to be competent in performing the following Procedures by the end of core training. The trainee must be able to outline the indications for these interventions. For invasive procedures, the trainee must recognize the indications for the procedure, the importance of valid Consent, aseptic technique, safe use of local anesthetics and minimization of patient discomfort.

- Venepuncture
- Cannula insertion, including large bore

- Arterial blood gas sampling
- Lumbar Puncture
- Pleural tap and aspiration
- Central venous cannulation
- Initial airway protection: chin lift, Guedel airway, nasal airway, laryngeal mask
- Basic and, subsequently, advanced cardiorespiratory resuscitation
- Cytology: pleural fluid, ascitic fluid, cerebro-spinal fluid, sputum
- Urethral catheterization
- Nasogastric tube placement and checking

Specialty training in Neurology

Specific Program Content

1. Specialized training in Neurology
2. Compulsory rotations

1. Specialized Training in Neurology

Headache

- Ability to evaluate and manage people with headache & facial pains.
- Clinical features, differential diagnosis and specific pharmacological and general
- Treatment of the causes of headache and facial pain:
- Investigations: role of brain scanning, urgent blood tests, lumbar
- puncture

Disorders of consciousness

- Ability to assess the unresponsive patient and to formulate plan of investigation and
- management.
- Anatomy and physiology of consciousness, and the pathophysiology of disorders of
- consciousness: definitions, causes, pathophysiology, clinical features and prognosis of
- persistent vegetative state, locked in state and brainstem death: legal issues relating to
- disorders of consciousness: assessment of patient with disordered consciousness: use

of

- tests for brainstem death: interpersonal skills for relating to management of the family of
- people with disorders of consciousness

Disorders of Sleep

- Ability to evaluate and manage people with sleep disorders
- Narcolepsy, daytime hyper somnolence, parasomnias, obstructive sleep apnea,
- Effects of neurological conditions on sleep: indications, scope and limitations of the sleep
- laboratory: effects of sleep on the EEG: principles of physical and pharmacological
- treatment: driving regulations: consequences and complications of sleep disorders

Disorders of higher function & behavior

- Ability to evaluate and manage people with disordered higher function & behavior.
- Understanding of memory, language, visuospatial function & behavior:
- Definition and epidemiology of dementia; pathology and clinical features of individual dementias;
- Relevant investigations; specific treatments; genetic aspects; risks and costs of
- Investigations; role of neuropsychological evaluation (dementia and mood scales):
- Evaluation of competency: community and support services

Epilepsy

- Ability to evaluate and manage people with epilepsy.
- Differential diagnosis of paroxysmal and transient events:

- Scope and limitations of investigations.
- Use of anti-epileptic drugs
- Treatment of refractory seizures
- Serial seizures and status epilepticus.
- Role of epilepsy surgery
- Awareness of issues related to women and pregnancy, driving, vocation.
- Sudden death.
- Psychological and social consequences of epilepsy especially teenagers

Cerebrovascular Disease

- Ability to evaluate and manage people with stroke.
- Cerebral circulation and its determinants.
- Pathophysiology of cerebral infarction, cerebral hemorrhage, subarachnoid hemorrhage, cerebral venous thrombosis & vascular dementia.
- Epidemiology, risk factors and their management.
- Features of stroke /TIA, intracranial hemorrhage and venous thrombosis
- Investigation and management of acute stroke and TIA, the role of medical and surgical interventions.
- Role of evaluation scales.
- Cerebral aneurysm and AVM; interventional, surgical and radiotherapy treatment
- Multidisciplinary stroke care, organization of stroke units, nutrition after stroke, Rehabilitation techniques, community stroke care.

Tumors of the nervous system

- Neurological complications of systemic cancer, complications of treatment of cancer
- Ability to evaluate and manage people with tumors of the Nervous system or effects of systemic tumors or their treatment.
- Neuropathological classification of brain tumors.
- Clinical features of the common tumors of the nervous system including malignant

meningitis.

- Clinical features and immunology of paraneoplastic syndromes.
- Benefits and risks of therapies including surgery and radiotherapy.
- Neurological complications of chemotherapy and radiotherapy

Infections of Nervous system

- Ability to evaluate and manage people with infections of Nervous system.
- Principles of neurological infectious disease.
- Clinical features of these diseases and their causes.
- Diagnostic techniques and their appropriate use.
- Anti-microbial therapies and their use.
- The importance of liaison with infectious disease physicians, microbiologists, public health and occupational health medicine in relation to neurological infections

CSF Disorders

- Able to evaluate and manage people with disorders of CSF
- CSF composition and dynamics; anatomy and radiology of the ventricular system; genesis of hydrocephalus; biochemistry and immunology of CSF.
- Indications, techniques, & contraindications of CSF examination.
- Methods of intracranial pressure monitoring.
- Treatments of raised intracranial pressure, management of shunts.

Demyelination and vasculitis

- Ability to evaluate & manage people with demyelinating & vasculitic disorders.
- Biology of demyelination & vasculitis.
- Clinical features of multiple sclerosis, related demyelinating disorders (NMO with SD, ADEM, Anti MOG antibody syndrome) vasculitic and arteritic disorders.
- Management of specific impairments and disabilities arising in MS.
- Role of disease modifying drugs, symptomatic treatments and therapies

Immunological Disorder and Nervous System

- Ability to evaluate & manage people with immunological disorder caused by disease or treatment.
- Principles of immune responses in relation to the Nervous system.
- Immunological basis underlying auto-immune neurological disease.
- Clinical features of these diseases.
- Diagnostic techniques and their appropriate use.
- Immuno-suppressive and immunomodulatory therapies: their actions, side effects and indications

Parkinsonism & Movement Disorders

- Ability to evaluate & manage people with Parkinsonism & movement disorders
- Clinical features and differential diagnosis of parkinsonism, chorea/athetosis, dystonia, tics and tremors.
- Role of investigations in diagnosis and treatment.
- Treatment of movement disorders.
- Role of neurosurgical interventions

Motor neuron disease

- Ability to evaluate & manage people with motor neuron disease
- Clinical features and differential diagnosis of motor neuron syndromes: disease modifying and symptomatic treatments.
- Special issues of breaking bad news, prognosis and palliative care aspects

Metabolic & Toxic States

- Ability to evaluate and manage people with metabolic/toxic state
- Biochemistry and neuropathology of exposure to alcohol and other recreational drugs (cocaine, amphetamine, opiates), heavy metals, pesticides and therapeutic agents:
 - Clinical features of alcohol, cocaine, opiate, amphetamine neurotoxicity; of Pb, Hg, Mn, CO, NO and organophosphate poisoning and of therapeutic agents neurotoxicity (e.g vincristine, lithium, radiation):
- Role & value of blood and urine toxicology, imaging and neurophysiology.

- Assessment of other organ damage.
- Psychiatric morbidity associated with substance abuse.
- Clinical features and management of hyper and hypo-thermia, sodium, potassium, calcium and acid base disorders

Disorders of the visual system

- Ability to evaluate and manage people with disorders of the visual system
- Applied anatomy and physiology of the visual and oculomotor systems.
- Clinical evaluation of the eye and adnexae, vision (acuity, fields and high function).
- Clinical features & conditions which may affect these systems and driving regulations

Disorders of Cranial Nerves

- Ability to evaluate and manage people with disorders of cranial nerve function, anatomy of the skull base, particularly the orbit, cavernous sinus, pituitary fossa, foramen magnum and jugular foramen.
- Pathological processes involving cranial nerves and their central connections.
- Clinical features & clinical assessment of cranial nerve function.
- Management of cranial nerve disorders including multidisciplinary approaches to visual, hearing & balance, speech & swallowing disorders

Disorders of Spine, Spinal Cord, Roots and Spinal Injury

- Ability to evaluate and manage people with disorders of the spine, spinal cord and roots
 - Acute & chronic consequences of acute spinal cord injury including effects of paralysis, autonomic dysfunction and sensory loss
 - Anatomy of the spine, spinal cord, roots.
 - Clinical features of spinal cord, root and cauda equina syndromes.
 - Indications for urgent investigation, potential and limitations of spinal CT, MRI, myelography and spinal angiography.
- Emergency management of spinal cord or root compression, of spinal injury,

management of neck & low back pain and sciatica

Disorders of Peripheral Nerve

- Ability to evaluate and manage people with disorders of peripheral nerves (including plexus lesions)
- Anatomy and pathology of peripheral nerves.
- Clinical features & investigation of genetic and acquired axonal and demyelinating neuropathies, traumatic & entrapment neuropathies and plexopathies.
- Management of Guillain-Barré syndrome and other severe paralysing neuropathies and general management of acute neuromuscular paralysis

Disorders of autonomic system.

- Ability to evaluate and manage people with disorders of the autonomic nervous system.
- Anatomy and physiology of ANS.
- Clinical features of ANS disorders alone and as part of other condition e.g. multisystem atrophy.
- Investigations including autonomic function tests.
- Pharmacological and physical managements of urinary retention, erectile disorder, constipation, postural hypotension, autonomic dysreflexia.

Disorders of Muscle

- Ability to evaluate and manage people with disorders of muscle.
- Clinical features and investigation of genetic & acquired disorders of the neuromuscular junction and voluntary muscle including periodic disorders and disorders of energy metabolism (e.g. mitochondrial disorders).

Pain

- Ability to evaluate and manage people with neurological disorders causing pain and common non neurological causes of pain including musculoskeletal
- Theories of pain generation, pain patterns in neurological and systemic diseases.
- Effective use of pharmacological agents and other measures for pain relief including

nerve blocks, TNS, acupuncture, & neurosurgical interventions.

- Role of Pain Clinic, psychological and social effects of chronic pain.

Paediatric Neurology:

Epilepsy

- List the common causes of seizures in the infant, child and adolescent.
- Describe the management of status epilepticus.
- Describe the evaluation and management of new onset and recurrent seizures, including febrile seizures.
- Recognize epilepsy syndromes and their prognoses.
- Distinguish seizures from nonseizure events, e.g. syncope, jitteriness, Breath-holding spells

Altered Level of Consciousness

- Describe the major disease categories that cause lethargy and coma.
- Diagnose brain death in children and the persistent vegetative state Headache.
- Describe the features of headache in migraine, increased intracranial pressure, and Tension type.
- Describe the evaluation and therapeutic approach Psychomotor Retardation and Behavioral Problems
- Describe the approach to the child with learning disability, delayed speech, mental retardation, impaired attention, and behavioral problems

Neonatal Neurology

- Discuss the evaluation and treatment of common disorders in the term and preterm infant, including intracranial and intraventricular hemorrhage, neonatal encephalopathy, neonatal seizures, and periventricular leukomalacia.

Neurodegenerative Disorders

- Discuss the presentation, evaluation and therapeutic approach to lysosomal storage disease, peroxisomal disorders, mitochondrial disorders, amino acid disorders and other metabolic and genetic disorders

Motor Unit Disorders

- Describe the presentation and clinical course of disorders of the motor unit to include anterior horn cell (SMA), peripheral neuropathy (hereditary and non-hereditary, CMT), demyelinating (Guillain-Barre syndrome), neuromuscular junction and muscle disorders (Duchenne Muscular Dystrophy, Myotonic Dystrophy)

Upper Motor Neuron Syndromes

- List the major causes of stroke in childhood and describe evaluation and therapeutic options.
- Describe causes, evaluation and therapy of cerebral palsy.
- Discuss the etiology and complications of a child with spinal dysraphism, hydrocephalus.
- Discuss the etiology and complications of a child with brain malformation.
- Discuss the etiology and complications of a child with traumatic spine and brain injury.

Movement Disorders

- Discuss the differential diagnosis of tic (including Tourette Syndrome), chorea, ataxia, and dystonia
- Describe medications that can induce movement disorders
- Discuss the most common tumors of the neural axis in childhood (particularly those of the posterior fossa) ; the presenting symptoms and diagnostic evaluation

Infectious and Inflammatory Disorders

- Discuss the most common infections of the neural axis in childhood (meningitis, encephalitis) and the evaluation and treatment
- Discuss ADEM (acute disseminated encephalomyelitis) and MS in children

Neurocutaneous Syndromes

- Discuss the common disorders and the clinical manifestations
- Describe disorders of the visual and hearing system, acquired and congenital

Clinical Neurophysiology

- Basic Neurophysiology, Membrane properties of nerve and muscle potentials (resting, action, synaptic, generator), ion channels, synaptic transmission.
- Physiologic basis of EEG, EMG, evoked potentials, sleep mechanisms, autonomic disorders, epilepsy, neuromuscular diseases, and movement disorders
- Anatomic Substrates of EEG, EMG, evoked potentials, sleep and autonomic activity
- Indications : Know the indications for and the interpretation of the various CNP tests in the context of the clinical problem.

EEG

- Recognize normal EEG patterns of infants, children, and adults.
- Recognize abnormal EEG patterns and their clinical significance, including epileptiform patterns, coma patterns, periodic patterns, and the EEG patterns seen with various focal and diffuse neurologic and systemic disorders.
 - Know the EEG criteria for recording in suspected brain death

NCS and EMG:

- Know the normal parameters of nerve conduction studies and needle exam of infants, children, and adults
- Know the abnormal patterns of nerve conduction studies and needle exam and the clinical correlates with various diseases that affect the neuromuscular and peripheral nervous system

Evoked Potential Studies

- Know the principles and recording of evoked potential studies, including pattern Reversal visual evoked responses, brainstem auditory evoked responses and somatosensory evoked potential studies.
 - Know the generators and names of waveforms and normal values of evoke potential studies.
 - Know the clinical significance of normal and abnormal findings of evoked potential studies.

Sleep recordings

- Be familiar with the basic principles of tests, including polysomnography, and multiple sleep latency tests, and evaluation of various sleep disorders.

Autonomic Function Tests:

- Be familiar with the various tests used to evaluate disorders of the autonomic nervous system, including the quantitative sweat axonal reflex test (QSART), the thermoregulatory sweat test, heart rate, and blood pressure changes.

Special Recordings

- Be familiar with the indications for doing prolonged EEG monitoring studies, recording EEG, EMG, evoked potential studies in the ICU, intraoperative intracranial and spinal cord recording, and recording various movement disorders.

Instrumentation:

- Be familiar with basic electronics, analog/digital recording, electrodes for recording EEG, EMG, and EPs, stimulators and stimulus parameters, amplifiers, and filters.

Principles and Techniques of Recording.

- Know the techniques for localization, polarity, stimulus parameters, and montages for the various CNP Studies.

Laboratory and Electrical Safety.

- Know the principles and guidelines for electrical safety of doing recordings in the lab, ICU, and operating room.

Other Inter-related Subspecialties:

Neuroendocrinology

- Understand the principles of the NS in endocrine function and neurological features of endocrine disorder and need for referral
- Clinical features and investigations in endocrine disorders, emergency management of disorders, relationships with neurological disorders, steroid therapy

Neurogenetics

- Understand the principles of genetics as applied to neurological disorder.
- Ability to interpret a genetics report
- Basic genetic principles and common diagnostic methods, roles of a detailed family history, DNA based diagnostic tests, of liaison with clinical Genetics.
- Genetic contribution to multifactorial neurological disease (e.g. stroke, multiple sclerosis, subarachnoid hemorrhage, epilepsy).
- Clinical features of common genetic conditions (hereditary ataxias, Huntington's disease, hereditary neuropathies, muscle diseases, and neurocutaneous syndromes)

Neurointensive care

- Ability to evaluate and manage (with others) people in ICU
- Clinical features, causes, investigation and management of coma (including epilepsy and raised intracranial pressure), failure to regain consciousness and paralysis.
- Diagnosis of and ability to define the vegetative state.
- ICU neurological complications of major surgery, sepsis, drugs & medical disorders
- Management of status epilepticus, the principles of cardiovascular and respiratory support.
- Indications for and methods of artificial nutrition.
- Clinical, legal and ethical issues in brain death, coma and vegetative state, communication issues with patients, relatives & staff in ICU

Neuro-otology

- Ability to evaluate the deaf and / or dizzy person and interpret reports
- Applied anatomy and physiology of hearing and balance, history and examination techniques, conditions affecting the vestibulocochlear system: appropriate referral pathways

Neuropathology

- Ability to appropriately request pathological investigations and interpret pathology reports
- The pathological and biochemical basis of neurological disorders, anatomy of brain sections, brain preparation, histological, histochemical, immunocytochemical and E.M techniques, biochemical, immunological & microbiological techniques, and understand and interpret reports issued, role of and consent process for necropsy examination]

Neuropsychiatry

- Ability to evaluate and interpret psychiatric symptoms in and as presentations of Neurological disorders, psychiatric consequences of neurological disease and neurological features in people with psychiatric disorders.
 - Understanding of common psychiatric disorders (including learning disability),
 - Neurological features which may have psychiatric causes (including medically Unexplained symptoms).
- The mental health act and when it can be used.
- Ability to evaluate and manage acute organic brain syndromes.
- Ability to liaise effectively and appropriately with Psychiatry services

Neuropsychology

- Ability to utilize basic clinical tests of cognitive function, to understand the need to refer to and the role of the Clinical Neuropsychologist and to interpret reports.
- Understanding of neuroanatomical and neurophysiological basis of memory, attention, language and perception.
- Understand the value and limitations of Neuropsychological interventions such as Cognitive Behavioural Therapy.
 - Understand mini-mental state examination, , basic neuropsychological tests employed by Clinical Psychologists, e.g. NART, WAIS]

Neuroradiology

- Ability to request and evaluate neuro radiological investigations and reports and liaise

effectively with the neuro radiologist.

- Understand the role, risks & limitations of common techniques
- Request, interpret and utilise neuro-radiological investigations appropriately.
- Explain the nature, risks and benefits of neuro radiological investigations (CT scan cranial /angiography, MR scan cranial/spinal/ angiography, catheter angiography diagnostic/interventional, myelography, ultrasound carotid/ trans-cranial/cardia and other special investigations e.g. PET, SPECT) to patients.

Neurorehabilitation

- Ability to evaluate the requirement for rehabilitation in people with neurological disorders in the context of a multidisciplinary team and make appropriate referrals
- Understand the difference between pathology, impairment, activity & participation:
- Understanding the potential and limitations of neuro- rehabilitation.
- Ability to perform and utilize a functional assessment, contribute to and, if appropriate, lead an MDT meeting
- Being aware of the different roles, skills, approach and agenda of rehabilitation teams.
- Understand the social perspective, relevant social work legislation and availability of care in the community

Neurosurgery

- Ability to evaluate the requirement for neurosurgical interventions in people with neurological disorders and to liaise effectively with the neurosurgeon
- Understand the role of neurosurgery in the management of head injury, raised intracranial pressure, intracranial hemorrhage and ischemic stroke, aneurysm, vascular malformation and tumors, spinal cord and root disorder and peripheral nerve lesions.
- Understand the purpose, limitations, process and complications of biopsy procedures (brain, muscle, nerve).
- Understanding of the principles of general and specific risks and complications of

neurosurgical interventions.

- **Uro-neurology**

- Ability to evaluate, manage and or refer people with disordered micturition and sexual function due to neurological disorder
- Understand normal control of micturition and sexual function.
- Differential diagnosis of causes of disordered micturition and erectile dysfunction.
- Understand hypo- and hyper- sexuality.
- Understand treatment strategies for disorders of micturition and sexual function:
- Ability to refer appropriately to Urology, Genitourinary Medicine or Uro-neurologist.

Complete Neurological Examination

1. Neurologic history taking.
2. Signs and symptoms, syndromes, topical and etiological diagnosis. The principles of Correlation of neurologic signs with neuroanatomic localization of the lesion.
3. Conscious level assessment, Glasgow coma scale. Assessment of orientation.
4. Assessment of the mental status, cognitive function, assessment of aphasia, apraxia, dyslexia, dysgraphia, dyscalculia, agnosia.
5. Assessment of new learning ability, memory, concentration, reasoning and problem solving, emotional state.

Physical examination technique

6. Cranial nerve examination, signs and symptoms of cranial nerve disorders, syndromes.
7. Examination of the head and the neck, upper limbs, trunk, lower limbs, posture, gait.
8. Examination of motor functions: inspection: posture, habitus, involuntary movements, appearance (atrophy, fasciculations), assessment of passive stretch - muscle tone (rigidity, spasticity, clonus), active and passive movements, assessment of muscle strength.
9. Examination of reflexes, tendon reflexes, cutaneous superficial reflexes, pathological reflexes.

10. Types of paresis, characteristic features in upper motor neuron lesion, lower motor neuron lesion, mixed lesion, pseudoflaccid paresis.
11. The sensory examination: assessment of sense (of all sensory modalities - pain, temperature, light touch, extinction phenomenon, vibration, position sense, discriminative sensations, stereognosis).
12. Examination of meningeal irritation, signs and symptoms.
13. Detailed cerebellar and Vestibular examination.
14. Examination of the vertebral column, signs and symptoms of radicular disorders.
15. Record of a complete neurological assessment.
16. Making a diagnosis, a plan of auxiliary examinations, treatment, and rehabilitation

2. Compulsory rotations

1. Neuroradiology Rotation

Each neurology resident will be assigned 2 months rotation of neuroradiology during their first year of neurology training. It is crucial for a neurology resident to master this area early in his/her training. The resident will perform preliminary interpretations of imaging studies and review the findings with the neuroradiologist. The resident will become proficient in the interpretation of the different neuroimaging tests (CT, MRI, MRA, MRV, MRS, angiography, myelography).

2. NCS&EMG rotation

Each resident will be assigned to the EMG for 2 months during their second year of neurology training. Residents may also spend additional time in the EMG lab during their elective months. During the rotation, each resident will be provided with a series of cases with electrophysiologic data. The resident will be expected to interpret each case

by the end of the rotation. These cases will be discussed in detail with the neuromuscular faculty.

3. EEG rotation

Each neurology resident will rotate in the EEG lab for one month during their second year of neurology training. During this rotation, the primary objective for each resident is to learn the basics of electroencephalography (EEG) and evoked potentials (EP). To accomplish this, residents must concentrate in several areas. First, residents should observe the process of applying electrodes to patients and then the recording phase itself of both EEG and EP studies. Secondly, residents must review and interpret individual EEGs and EPs on their own and have a preliminary report to present to the attending physician that is reviewing studies that day. The resident should be available each day for formal review of EEG and EP studies by the attending. At this time, the resident must be prepared to present their interpretation of that day's studies. Formal teaching will be done at this time. Finally, each resident is required to enhance their "hands on" experience with adequate reading of related topics. At the end of the rotation, the resident should feel relatively comfortable performing a rough interpretation of EEG and EP studies. The neurology resident on the EEG rotation will also cover the Epilepsy Monitoring Unit (EMU).

4. Neurorehabilitation Rotation

Each neurology resident will rotate in the Neurorehabilitation/Physiotherapy department for one month during their second year of neurology training. During the neurological rehabilitation rotation, residents will learn major principles of neurological rehabilitation, with emphasis on cognitive assessment and stroke rehabilitation. Consults from the medical rehabilitation service on patients with traumatic brain injury will be an opportunity for residents to learn general treatment recommendations for optimal recovery in this population. Residents are expected to manage neurological rehabilitation patients relatively independently with respect to patient assessment, general medical care of patients, and medication management.

5. Psychiatry Rotation

Residents will spend 2 months in the psychiatry consultation service. During this rotation, the neurology resident will develop skills in the assessment of psychiatric problems in a medical setting. The resident will gain an understanding of the interaction of medical and neurological conditions with psychiatric disorders.

6. Neurosurgery Rotation

Residents will spend 2 months in neurosurgery units , during which they will involve with neurosurgical teams in management of head injuries, hematomas and tumours

7. Ophthalmology Rotation

Residents will be rotated for one month in ophthalmology unit, during which resident will learn assessment of eye evaluation and neuro-ophthalmology.

8. Outpatient Clinic Rotation

Resident will be rotated as per roster in subspecialties of neurology. The clinics that the resident will be exposed to are the following:

- Epilepsy Clinic
- Neuromuscular Clinic
- Stroke Clinic
- Movement disorder clinic
- Multiple sclerosis clinic
- Headache clinic
- Neuropsychology
- Pain management clinic
- Sleep disorders clinic .

SECTION 3: RESEARCH/ THESIS WRITING

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 5th year of training or it can be stretched over five 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 surgical 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

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.

Research involving animals

Each resident participating in research involving animals is required to:

1. Become familiar with the pertinent Rules and Regulations of the University of Health Sciences Lahore 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

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 instructions.

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, emergency and ward settings
8. Attend genetic clinics and rounds for at least one month.
9. Attend sessions of genetic counseling
10. Self study, assignments and use of internet
11. Bedside teaching rounds in ward
12. OPD & Follow up clinics
13. 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 Physician 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 MD Neurology 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.

b. Core Curriculum Meetings

All the core topics of Neurology 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

c. 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 and becoming familiar with Project Professionalism Manual such as that of the American Board of Internal Medicine.
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 may attend the series of lectures on Nuclear Medicine

procedures (radionuclide scanning and localization tests and therapy) presented to the Radiology residents.

9. Residents should have experience in the performance of clinical laboratory and radionuclide studies and basic laboratory techniques, including quality control, quality assurance and proficiency standards.
10. Each resident will observe and participate in each of the procedures, preferably done on patients firstly under supervision and then independently.

3. Annual Grand Meeting

Once a year all residents enrolled for MD Neurology should be invited to the annual meeting at RMU Rawalpindi. 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 4: CURRICULUM OF RESEARCH&MANDATORY WORKSHOPS

FOR

MD SCHOLARS & POST GRADUATE TRAINEES

Of

RAWALPINDI MEDICAL UNIVERSITY

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:

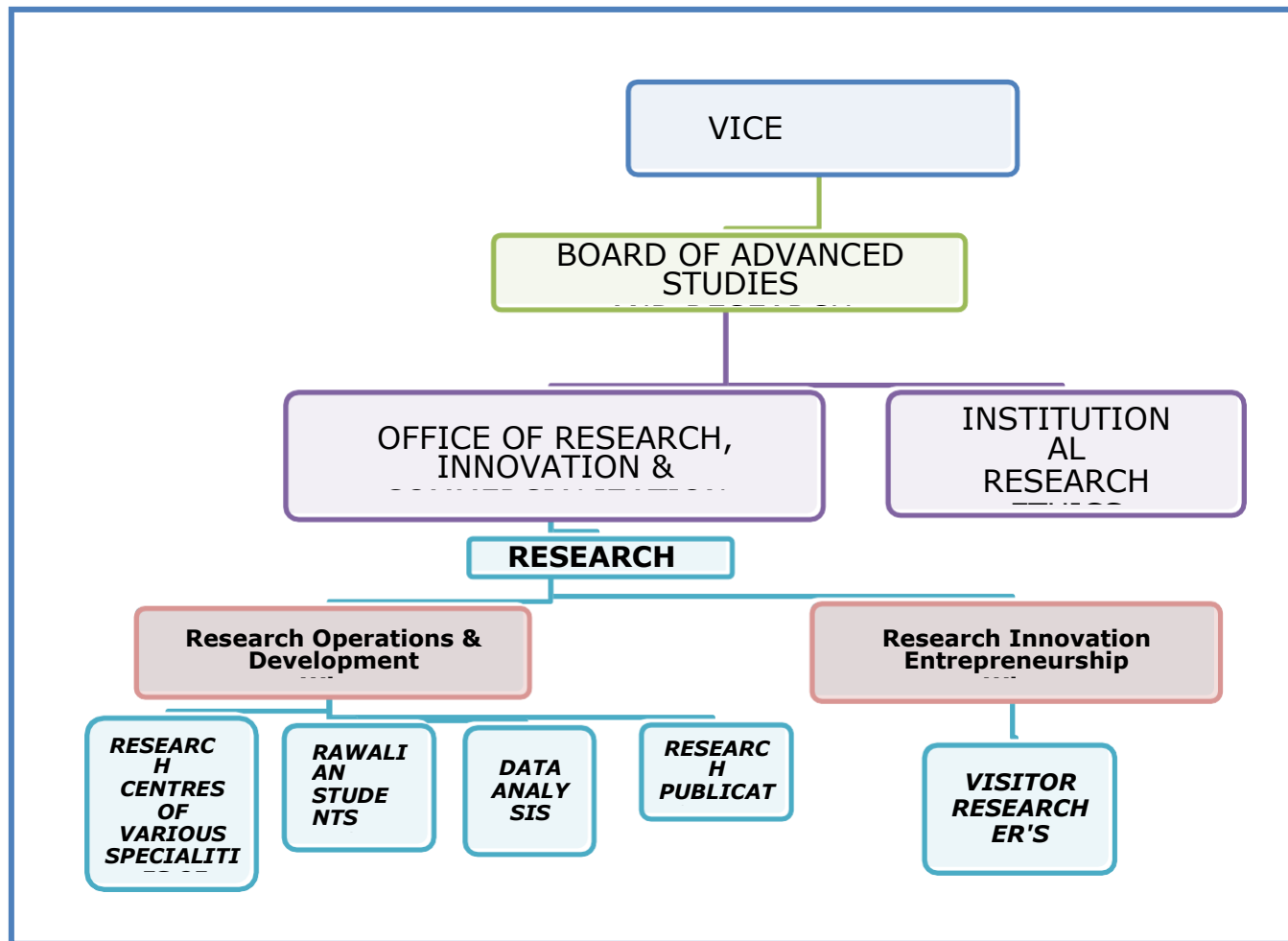
At the beginning of the research course, an orientation session or an introductory session of one hour duration will be held, organized by Director, Deputy Directors of ORIC (Office of Research Commercialization and Innovation) of RMU to make trainees acquainted to the research courses during four years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

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.

All the curriculum details and materials for assistance and guidance will be provided to trainees during the orientation session.

The research model of RMU as given in Figure 1 and will be introduced to the newly inducted trainees of RMU.

Figure 1. MODEL OF RESEARCH AT RAWALPINDI MEDICAL UNIVERSITY



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:

Discuss the value of research in health service in helping to solve priority problems in a local context.

Identify, analyse and describe a research problem

Review relevant literature and other available information

Formulate research question, aim, purpose and objectives

Identify study variables and types

Develop an appropriate research methodology

Identify appropriate setting and site for a study

Calculate minimally required sample size for a study.

Identify sampling technique, inclusion and exclusion criteria

Formulate appropriate data collection tools according to techniques

Formulate data collection procedure according to techniques

Pre-test data collection tools

Identify appropriate plan for data analysis

Prepare of a project plan for the study through work plans and Gantt charts

Identify resources required for research and means of resources

Prepare a realistic study budget in accordance with the work plan.

Critically appraise a research paper of any national or international journal.

Present research papers published in various national and international journals at journal club.

Prepare a research proposal independently.

Develop a strategy for dissemination and utilisation of research results.

Familiarization with application Performa for submission of a research proposal to BASR or IREF.

Familiarization with format of presentations and procedure of presentation and defence of a research proposal to BASR or IREF.

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

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;

Didactic lectures through power-point presentations.

On spot individual exercises.

On spot group exercises.

Take home individual assignment

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:

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.

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.

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:

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.

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. 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/MD SCHOLARS OF RMU

SESSIONS & TIMINGS	TEACHING STRATEGY	TOPIC OF SESSION	SESSION OBJECTIVES i.e. BY THE END OF SESSION THE TRAINEES SHOULD BE ABLE TO;
SESSION 1 WEEK 1 Month 1	Lecture through power point presentation followed by both individual exercise & Group exercise	Introduction to health systems research Identifying and Prioritizing Research Problems	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	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. 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	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	Describe the methods for reviewing available literature and other information for preparation of a research.

	exercise & Take home assignment		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.
SESSION 5 WEEK 2 Month 2	Lecture through power point presentation followed by Individual exercise & Take home assignment	Plagiarism	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

SESSION 6 WEEK 3 Month 2	Lecture through power point presentation followed by Individual exercise	Formulation of research objectives	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.
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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	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	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
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			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	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	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.
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			Identify appropriate data-collection techniques.
SESSION 11 WEEK 2 Month 4	Lecture through power point presentation	Data collection tools	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	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	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.

			Decide on the sample size(s) most appropriate for a research design.
SESSION 14 WEEK 3 Month 5	Lecture through power point presentation	Plan for Data Entry , storage and Statistical Analysis	<p>Identify and discuss the most important points to be considered when starting to plan for data collection.</p> <p>Determine what resources are available and needed to carry out data collection for study.</p> <p>Have knowledge of resources, available for data recording, storage and to carry out data analysis of a study?</p> <p>Describe typical problems that may arise during data collection and how they may be solved.</p> <p>Identify important issues related to sorting, quality control, and processing of data.</p>
SESSIONS & TIMINGS	TEACHING STRATEGY	TOPIC OF SESSION	SESSION OBJECTIVES <i>i.e. BY THE END OF SESSION THE TRAINEES SHOULD BE ABLE TO;</i>

			<p>Describe how data can best be analyzed and interpreted based on the objectives and variables of the study</p> <p>Prepare a plan for the processing and analysis of data (including data master sheets and dummy tables) for the research proposal being developed.</p>
SESSION 15 WEEK 1 Month 6	Lecture through power point presentation and individual exercises	Introduction to Statistical Package of Social Sciences (SPSS)	<p>Introduction to Statistical Package of Social Sciences.</p> <p>Entry of various types of variables in SPSS.</p>

<p>SESSION 16 WEEK 2 Month 6</p>	<p>Lecture through power point presentation and individual exercises</p>	<p>Pilot and project planning</p>	<p>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.</p> <p>Plan and carry out pre-tests of research components for the proposal being developed.</p> <p>Describe the characteristics and purposes of various project planning and scheduling techniques such as work scheduling & GANTT charting.</p> <p>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,</p>
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SESSIONS & TIMINGS	TEACHING STRATEGY	TOPIC OF SESSION	SESSION OBJECTIVES <i>i.e. BY THE END OF SESSION THE TRAINEES SHOULD BE ABLE TO;</i>
			<p>training and supervision.</p> <p>Prepare a work schedule, GANTT chart and staffing plan for the project proposal.</p>
<p>SESSION 17 WEEK 3 Month 6</p>	<p>Lecture through power point presentation and individual exercises</p>	<p>Budgeting for a study</p>	<p>Identify major categories for a budget.</p> <p>Make reasonable estimates of the expenses in various budget categories.</p> <p>List various ways a budget can be reduced, if necessary, without substantially damaging a project.</p> <p>Prepare a realistic and appropriate budget for the project proposal</p>
<p>SESSION 18 WEEK 1 Month 7</p>	<p>Lecture through power point presentation.</p>	<p>Project administration Plan for dissemination Research ethics & concepts of protection of human</p>	<p>List the responsibilities of the team leader and project administrator related to the administration and monitoring of a research project.</p> <p>Prepare a brief plan for administration and monitoring of a project.</p> <p>Identify the ethical considerations</p>

		study subjects	mandatory during execution of a research project and their
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			importance. 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 communication s, case reports, systematic reviews and meta-analysis	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	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.	Identify Clinical audit as an essential and integral part of clinical governance. Differentiate between research and clinical audit.
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			<p>Identify types of Clinical Audit</p> <p>Understand steps of process of Clinical Audit</p>
SESSION 22 WEEK 2 Month 8	Lecture through power point presentation and group project	Critical Appraisal of a research paper	<p>Identify the importance and purpose of critical appraisal of research papers or articles.</p> <p>Have ample knowledge of important steps of critical appraisal</p> <p>Can effectively critically appraise a research paper published in any national or international journal.</p>
SESSION 23 WEEK 3 Month 8	Lecture through power point presentation and individual exercises	<p>Making effective power- point presentations</p> <p>Making effective poster presentations</p> <p>Presenting a research paper</p>	<p>Determine various tips for making effective power-point presentations.</p> <p>Determine various tips for making effective poster and its presentations.</p> <p>Identify important components of research paper that essentially should be communicated in a presentation.</p> <p>Can effectively and confidently make a power-point presentation of a research paper published in any national or international</p>
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. 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:

For didactic lectures, the learning and knowledge of the trainees will be assessed during the end of year examination or Annual Research Paper.

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.

Total duration of the paper will be 90 minutes.

The papers will be checked by the research associates and Deputy Directors of ORIC.

Assessment of individual and group exercises:

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.

The mode of presentations will be oral using media of charts, flip charts & white boards.

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:

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.

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.

Assignments will be assessed and checked during the sessions and will be scored by the facilitators who had taken the session.

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

PARTICIPATION IN JOURNAL CLUB SESSIONS

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.

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.

6Apart 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.

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.

The journal club meeting will be chaired by the Dean of specialty.

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:

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.

The research paper will be presented through power-point and the critical appraisal of the paper will follow it.

The topic will also be discussed in comparison to other evidences available according to the latest research.

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.

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.

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

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.

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.

NOMINATION OF THE SUPERVISOR OF THE TRAINEE FOR THE DISSERTATION PROJECT

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.

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.

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.

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.

If the supervisor will also be willing to happily supervise the trainee, then the Dean will finally approve the nomination.

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.

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

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).

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.

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.

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.

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.

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.

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.

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.

UNDERTAKING A CLINICAL AUDIT PROJECT

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.

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.

If the group will comprise 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.

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.

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.

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.

The contribution of the post graduate trainees'/ MD trainees in audits will be qualitatively assessed by the supervisors and the head of departments.

MONITORING OF RESEARCH COURSE OF YEAR 1

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.

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.

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.

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.

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.

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.

The HOD will monitor the weekly meetings through observation of the documented record of meetings in log books by the end of every month.

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.

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.

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.

OVERALL ASSESSMENT OF PERFORMANCE OF TRAINEES FOR YEAR 1

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.

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.

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.

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.

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.

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.

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.

The research portfolio will be checked and endorsed by the supervisor and the Director of ORIC.

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.

QUALITY ASSURANCE OF RESEARCH COURSE OF YEAR 1

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.

All the materials will be observed and evaluated by the above mentioned once during the course and finally by the end of course year.

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.

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. 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.

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.

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.

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.

Figure 3. A FLOW CHART OF RESEARCH ACTIVITIES OF R-Y1 POST GRADUATE/MD TRAINEE OF RMU AND THEIR ASSESSMENT

ASSESSMENT

ACTIVITIES

RESEARCH TRAINING YEAR ONE R-Y1

23 RESEARCH TEACHING SESSIONS

PARTICIPATION IN AT LEAST 5 JOURNAL CLUB SESSIONS

OBSERVATION OF 2 IREF MEETINGS

UNDERTAKING 1 CLINICAL AUDIT

NOMINATION AND SELECTION OF SUPERVISOR

ANNUAL RESEARCH PAPER OF R1

INDIVIDUAL & GROUP ASSIGNMENTS

NO PRESENTATION OR ASSESSMENT IN R1

NO PRESENTATION OR ASSESSMENT IN R1

QUALITATIVE ASSESSMENT

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:

Identify and define the basic concepts of Epidemiological measures and biostatistics.

Formulate and pretest to finalize all the data collection tools for the research projects

Identify and execute proficiently all procedures required for data analysis and interpretation.

Analyze and interpret the data collected for a research project and draw conclusions related to the objectives of study.

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.

Present the major findings and the recommendations of a study to policy-makers managers and other stakeholders to finalize the recommendations.

Prepare a plan of action for the dissemination, communication and utilization of the findings and (if required) make recommendations for additional future research.

Critically appraise a research paper of any national or international journal.

Present research papers published in various national and international journals at journal club.

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.

Fill in an application Performa for submission of Dissertation's research proposal to BASR or IREF.

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

TEACHING SESSIONS:

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;

Didactic lectures through power-point presentations.

On spot individual exercises.

Take home individual assignment

Take home group assignment.

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:

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

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.

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.

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:

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.

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. 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/MD SCHOLARS OF RMU

SESSIONS & TIMINGS	TEACHING STRATEGY	TOPIC OF SESSION	SESSION OBJECTIVES i.e. BY THE END OF SESSION THE TRAINEES SHOULD BE ABLE TO;
SESSION 1 WEEK 1 Month 1	Lecture through power point presentation followed by individual exercises and Take home individual assignments	Introduction to Biostatistics Description of Variables Numerical methods of Data summarization (Manual as well as through Statistical Package of Social Sciences)	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	Lecture through	Graphical	Identify various types of graphs
WEEK 2	power point	presentation of	Identify the graphical presentations
Month 1	presentation	data	appropriate for each type of variables
	followed by		Describe data in terms of figures

	individual exercises & Take home individual assignments.		Use of Microsoft Excel and SPSS in formulation of graphs.
SESSIONS & TIMINGS	TEACHING STRATEGY	TOPIC OF SESSION	SESSION OBJECTIVES i.e. BY THE END OF SESSION THE TRAINEES SHOULD BE ABLE TO;
SESSION 3 WEEK 3 Month 1	Lecture through power point presentation followed by Individual exercise & Take home assignment	Cross-tabulation of quantitative data	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	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 med-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	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.e. BY THE END OF SESSION THE TRAINEES SHOULD BE ABLE TO;
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	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	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	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 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.e. BY THE END OF SESSION THE TRAINEES SHOULD BE ABLE TO;
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	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.

SESSION 10 WEEK 2 Month 4	Lecture through power point presentation followed by an individual exercise & Take home individual assignment.	Determining difference between two groups- numerical data Paired & unpaired observations	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. Decide when to apply the independent and dependent t 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.
SESSIONS & TIMINGS	TEACHING STRATEGY	TOPIC OF SESSION	SESSION OBJECTIVES i.e. BY THE END OF SESSION THE TRAINEES SHOULD BE ABLE TO;

SESSION 11 WEEK 1 Month 5	Lecture through power point presentation followed by an individual exercise & Take home individual assignment.	Determining difference between more than two groups- numerical data ANOVA (Analysis of Variance)	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.
SESSION 12 WEEK 2 Month 5	Lecture through power point presentation followed by an individual exercise	Determining Correlation between variables	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	<p>Explain what is a regression analysis</p> <p>Differentiate between simple linear and multiple logistic regression analysis.</p> <p>Decide when to apply the regression analysis and how to interpret.</p> <p>Make a decision concerning whether these tests can be used on give data and, if so, what test should be used on which data.</p> <p>Perform these tests on data through SPSS.</p>
SESSIONS & TIMINGS	TEACHING STRATEGY	TOPIC OF SESSION	SESSION OBJECTIVES i.e. BY THE END OF SESSION THE TRAINEES SHOULD BE ABLE TO;
SESSION 14 WEEK 1 Month 6	Lecture through power point presentation and individual exercises	Diagnostic Accuracy of a test	<p>Identify what is a diagnostic accuracy of a test compared to gold standard tests.</p> <p>Identify what are true positives, true negatives, false positive and false negatives in a diagnostic testing.</p> <p>Calculate Sensitivity, specificity, Positive and negative predictive values of a</p>

			diagnostic test using standard formulae.
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SESSION 15 WEEK 2 Month 6	Lecture through power point presentation and individual exercises	Writing a research paper	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	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:

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

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.

Total duration of the paper will be 120 minutes.

The papers will be checked by the research associates and Bio-statisticians of ORIC.

Assessment of individual exercises:

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.

The mode of presentations will be oral, electronic or written accordingly and if needed using media of charts, flip charts & white boards.

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.

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:

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.

Most of the take home assignments will be related to numerical problem solving, calculations or tasks of analysis in SPSS.

Assignments should be submitted in electronic version and no manually written assignment will be accepted.

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.

They will be assessed and checked within one week of the session and will be scored by the facilitators.

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

PRESENTATION IN JOURNAL CLUB SESSIONS

During year 2 of training, the trainees should actively participate in the journal club sessions of the department regular basis. 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.

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:

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.

Trainee will be given the selected paper one and a half month prior to the meeting by the Dean of the department.

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.

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.

The topic will also be discussed in comparison to other evidences available according to the latest research.

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:

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.

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.

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.

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.

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

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.

Trainee must submit and seek approval of the research proposal/s from the concerned institutions till end of year 2 i.e. R-Y2.

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.

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.

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.

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.

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.

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.

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.

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.

BASR will give the final approval of all topics within same month.

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.

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.

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:

Title of research project.

Introduction and rationale (with Vancouver in text citations)

Research aim, purpose and objectives

Hypothesis, if required according to the study design.

Operational Definitions

Research Methodology:

Setting

Study Population

Study Duration

Study Design

Sampling: Sample size with statistical justifications, sampling technique, inclusion criteria & exclusion criteria.

Data Collection technique/s

Data Collection tool/s

Data Collection procedure

Plan for Data entry & Analysis

Ethical Considerations

Work plan/Gantt chart

Budget with justifications

Reference list according to the Vancouver referencing style

Annexure (including data collection tool or performa, consent form, official letters, scales, scoring systems and/or any other relevant material)

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.

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.

The statistician at data analysis centre of ORIC will facilitate the trainees in sample size calculation through sample size calculators according their study designs.

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.

These research proposals along with the tools will be submitted to all concerned authorities for appraisal.

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.

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

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.

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.

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.

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.

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.

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.

The written approval letter of IREF will be issued within next two weeks of meeting, to the trainee.

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.

ASSURANCE OF FEASIBILITY & AVAILIBILITY OF RESOURCES FOR RESEARCH PROJECTS

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.

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.

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.

The trainee may also be pursuing the degree, through any scholarship that also will include the research project expenses.

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.

Moreover, if any tools, kits, equipment or physical materials will be required for research project, the trainee will provide documented evidence of its availability.

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.

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.

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

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.

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.

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.

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.

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.

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).

MONITORING OF RESEARCH COURSE OF YEAR 2

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.

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.

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.

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.

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.

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.

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.

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.

OVERALL ASSESSMENT OF PERFORMANCE OF TRAINEES FOR YEAR 2

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.

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.

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.

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.

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.

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.

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

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).

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.

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.

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.

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.

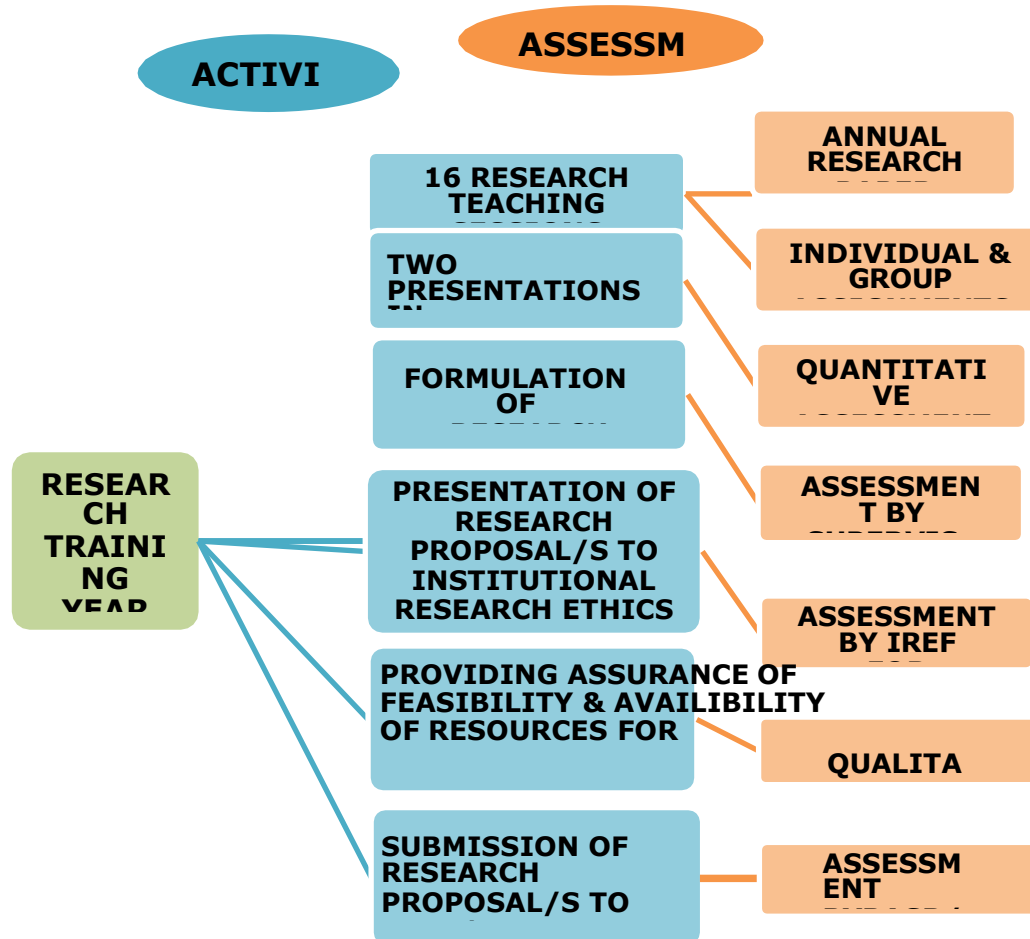
An annual meeting of the quality assessment and enhancement, by end of year 2, will also be organized by the Quality Enhancement Cell of RMU, including representatives of supervisors, Head of Departments, Dean, representative members of BASR, ORIC, DME, QEC & IREF, who will be then collectively, review 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.

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.

An over view of activities related to research training in third year, R-Y3 is also displayed in figure 3.

Figure 3. A FLOW CHART OF RESEARCH ACTIVITIES OF R-Y2 POST GRADUATE/MD TRAINEE OF RMU AND THEIR ASSESSMENTS



RESEARCH COURSE OF THIRD POST GRADUATION 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:

Revise and rejuvenate all the basic concepts of Epidemiological measures and biostatistics.

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.

Collect and store high quality information for their research project in an honest and unambiguous way.

Utilize skills to enter, analyze and interpret the data collected for a research project

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.

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:

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.

Each workshop will comprise of 8-12 modules in total.

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.

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.

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:

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.

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.

TIME FRAME WORK DURING THIRD YEAR R-Y3	TOPICS OF SHORT REFRESHER COURSES
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:

The quality, correctness and completeness of the individual as well as group exercises will be assessed during the workshops by the facilitators.

The exercises will be presented during each module of workshops by trainees either individually or in groups accordingly.

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.

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:

The correctness, quality and completeness of the individual or group exercises that will be given during the short courses/workshops will also be determined.

These will be submitted after completion to the facilitators within three days of the workshop. No Assignments will be acceptable after three days.

The assignments will be assessed and checked by facilitator within one week of submission along with extensive feedback of these assignments.

No formal quantitative assessment or scoring of any of these take home tasks/assignments of R-Y3 will be done.

PRESENTATION IN JOURNAL CLUB

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

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.

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:

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

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.

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.

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

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.

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.

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.

The data storage will also be finalized by trainee under the guidance of Supervisor and research center of specialty.

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.

By the end of R-Y3, the data collection and entry of data must be completed.

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.

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

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.

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.

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.

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.

During the data collection and entry phase, trainees will receive continuous assistance from the Research Associates and Data analysis unit of ORIC of RMU.

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.

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.

They should also be able to identify strengths and weaknesses of their studies and should make recommendations with statement of final conclusion.

The trainees will identify the target journals for publication and after formatting their write up according to the specific format required by both journals.

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.

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.

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.

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.

MONITORING OF RESEARCH ACTIVITIES OF YEAR 3

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.

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.

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.

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.

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.

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.

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.

OVERALL ASSESSMENT OF PERFORMANCE OF TRAINEES DURING R-Y3

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.

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.

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.

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.

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. 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.

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.

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.

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.

QUALITY ASSURANCE OF RESEARCH COURSE OF YEAR 3

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).

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.

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.

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.

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.

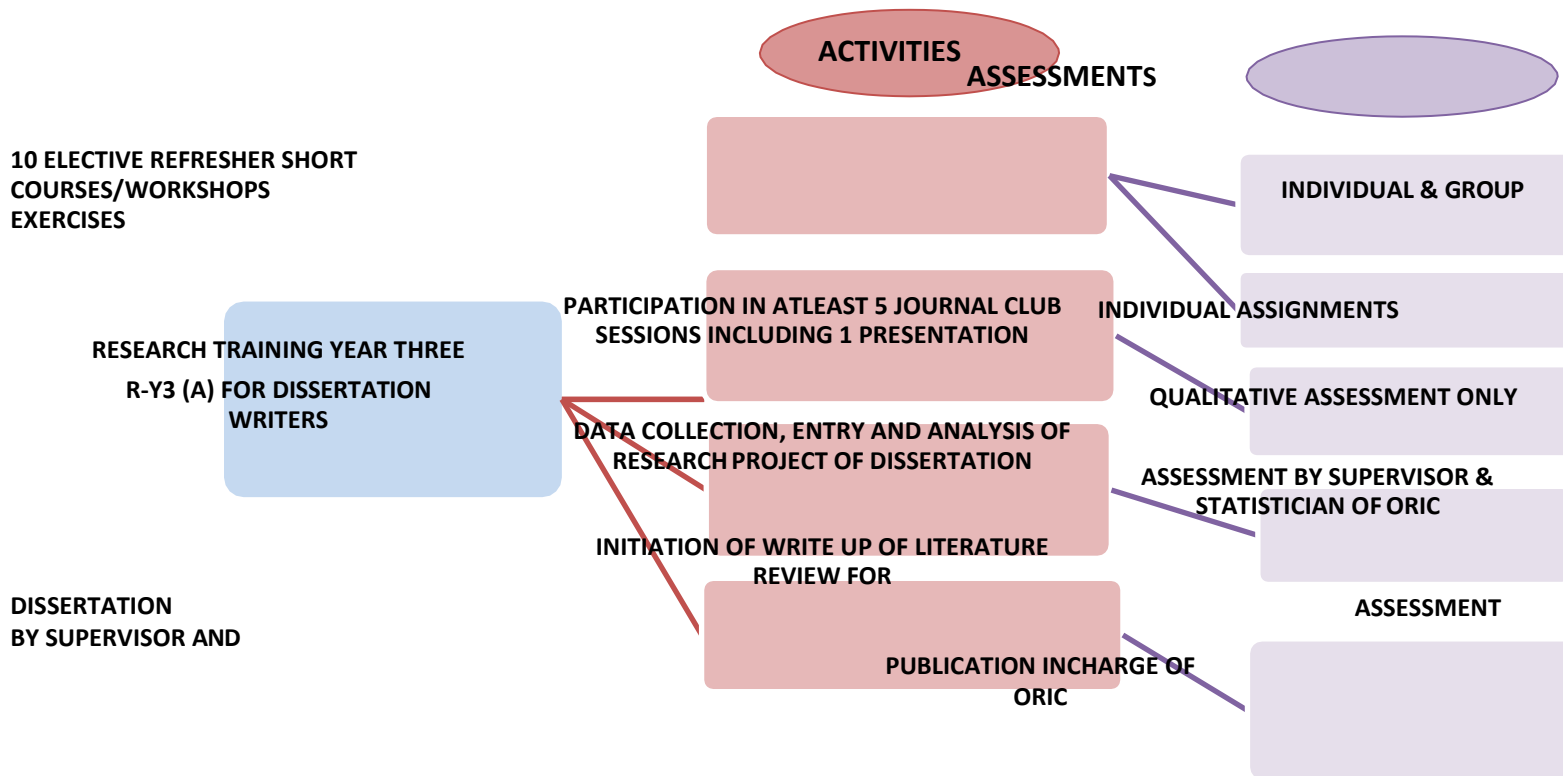
Since the R-Y3 will primarily comprise of the data collection phase of research projects of trainees, therefore, Quality Enhancement Cell (QEC) in liaison with the research centers of the specialty, will ensure the originality, transparency and unambiguity of data, during entire data collection.

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. The quality of R-Y3 course will be stringently determined with recommendations for further quality enhancement.

Successful completion of above mentioned requirements of research course, also outlined in Figure 4 ((A) and 4 (B), will be mandatory requirement for advancement to the next Post Graduate Year level i.e. last, final or fourth year or R-Y4.

Figure 4 (A) . A FLOW CHART OF RESEARCH ACTIVITIES AND ASSESSMENTS

OF R-Y3 POST GRADUATE/MD TRAINEE OF RMU WHO WILL OPT FOR DISSERTATION WRITING



DISSERTATION BY SUPERVISOR AND

Figure 4 (B) . A FLOW CHART OF RESEARCH ACTIVITIES AND RELEVANT ASSESSMENTS

OF R-Y3 POST GRADUATE TRAINEES OF RMU OPTING FOR PUBLICATION OF TWO RESEARCH PAPERS AS REQUISITE TO CPSP FELLOWSHIP DEGREE

ACTIVITIES

10 ELECTIVE REFRESHER SHORT COURSES/WORKSHOPS EXERCISES

RESEARCH TRAINING YEAR THREE

R-Y3 (B) FOR AUTHORS OF 2 RESEARCH PAPERS

PARTICIPATION IN ATLEAST 5 JOURNAL CLUB SESSIONS INCLUDING 1 PRESENTATION

DATA COLLECTION, ENTRY AND ANALYSIS OF DATA FOR BOTH RESEARCH PAPERS

COMPLETION AND SUBMISSION OF TWO RESEARCH PAPERS TO JOURNALS

ASSESSMENT

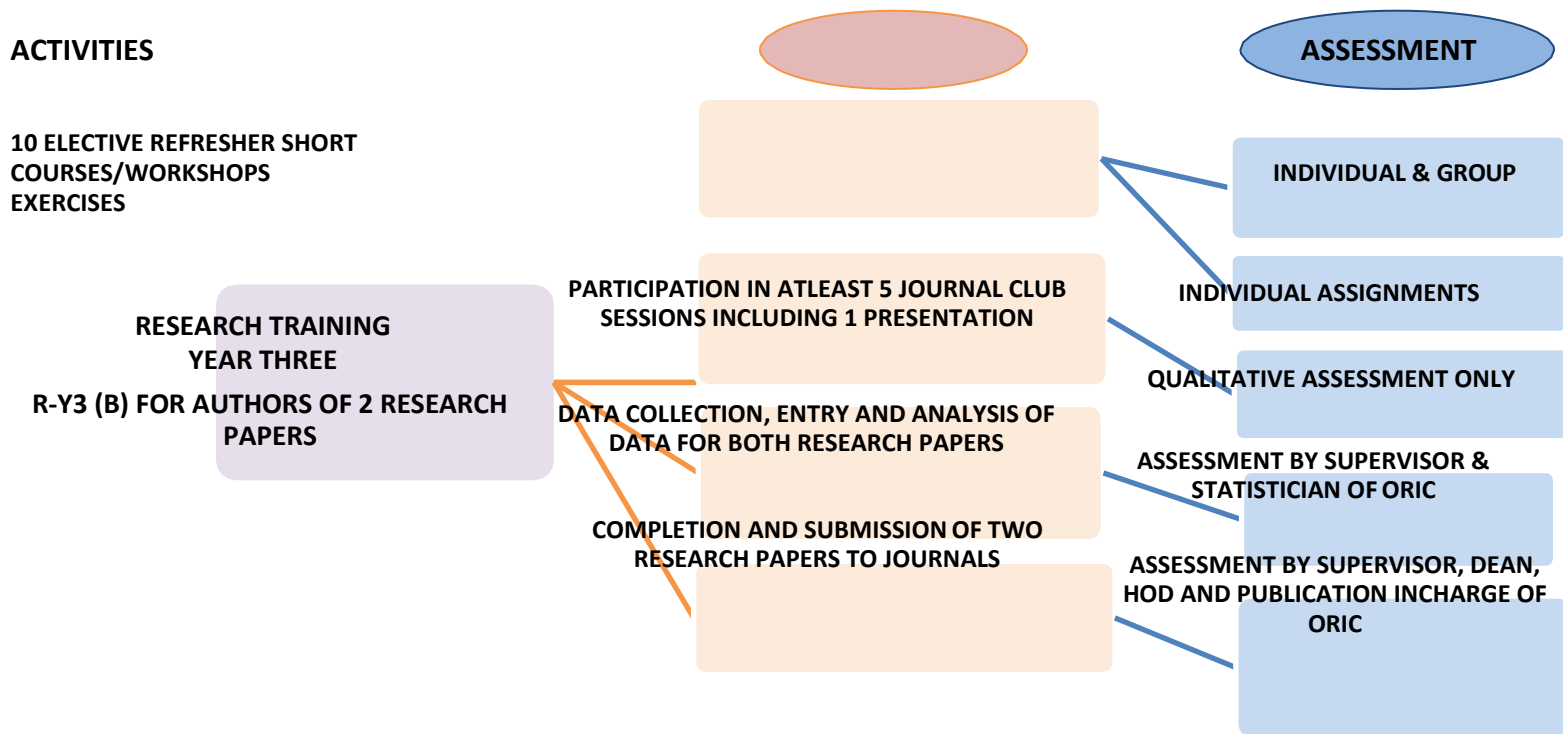
INDIVIDUAL & GROUP

INDIVIDUAL ASSIGNMENTS

QUALITATIVE ASSESSMENT ONLY

ASSESSMENT BY SUPERVISOR & STATISTICIAN OF ORIC

ASSESSMENT BY SUPERVISOR, DEAN, HOD AND PUBLICATION INCHARGE OF ORIC



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:

Identify and execute proficiently all procedures required for data analysis and interpretation.

Analyze and interpret the data collected for a research project and draw conclusions related to the objectives of study.

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.

Present the major findings and the recommendations of a study to policy-makers, managers and other stakeholders to finalize the recommendations.

Prepare a plan of action for the dissemination, communication and utilization of the findings and (if required) make recommendations for additional future research.

Critically appraise a research paper of any national or international journal.

Present research papers published in various national and international journals at journal club.

Prepare and complete final research Dissertation/ original articles, requisite to the post graduation degree of trainee, under the guidance of the nominated supervisor.

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.

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.

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.

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.

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.

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.

The trainees will also identify strengths and weaknesses of their study and should make recommendations with statement of final conclusion.

According to the required referencing systems the reference lists and in text citation will also be completed correctly.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

PARTICIPATION IN JOURNAL CLUB SESSIONS

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.

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.

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.

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.

MONITORING OF RESEARCH ACTIVITIES OF YEAR 4

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.

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.

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.

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.

OVERALL ASSESSMENT OF PERFORMANCE OF TRAINEES DURING R4

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.

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.

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.

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.

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.

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.

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.

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.

QUALITY ASSURANCE OF RESEARCH COURSE OF YEAR 4

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.

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.

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.

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 chairmanship 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.

Figure 5 (A) . A FLOW CHART OF RESEARCH ACTIVITIES AND ASSESSMENTS

OF R-Y4 POST GRADUATE/MD TRAINEE OF RMU WHO WILL OPT FOR DISSERTATION WRITING

ACTIVITIES

ASSESSMENT

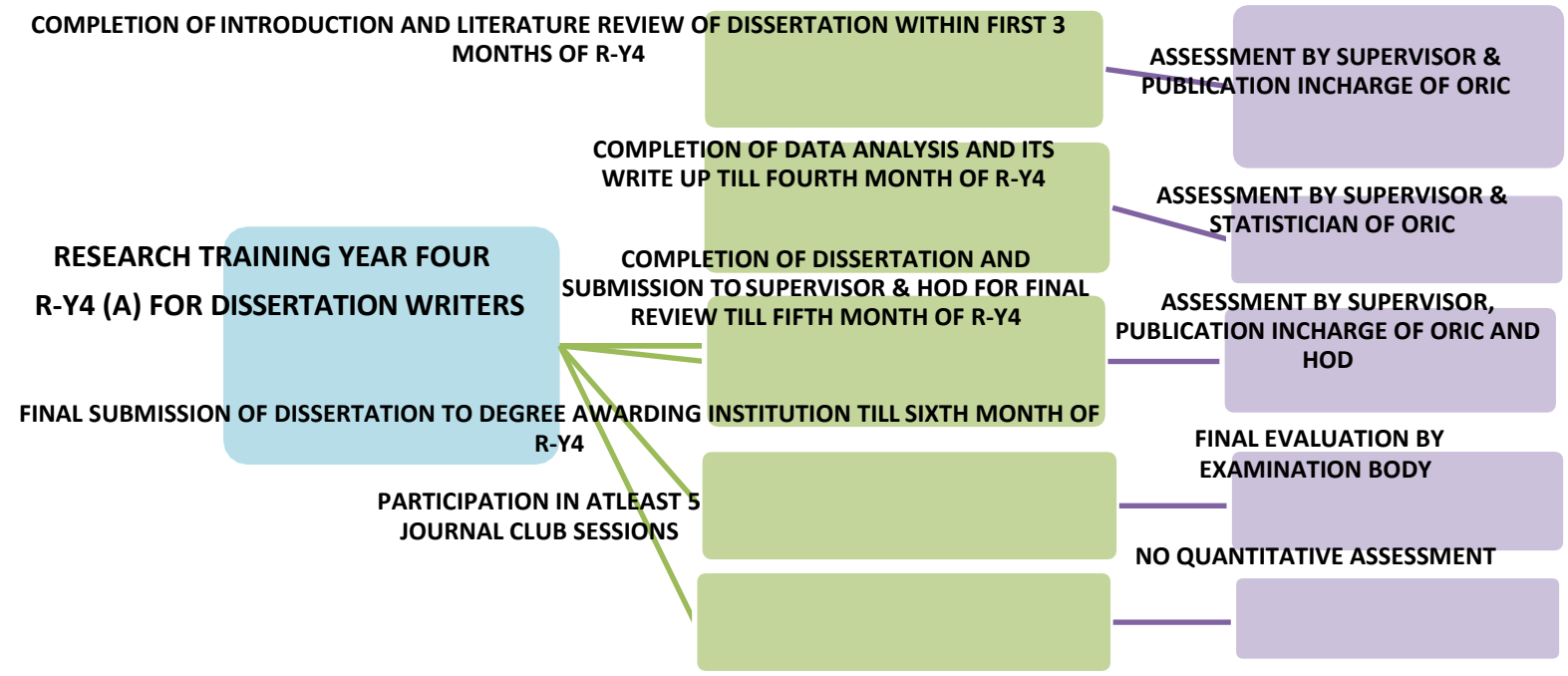
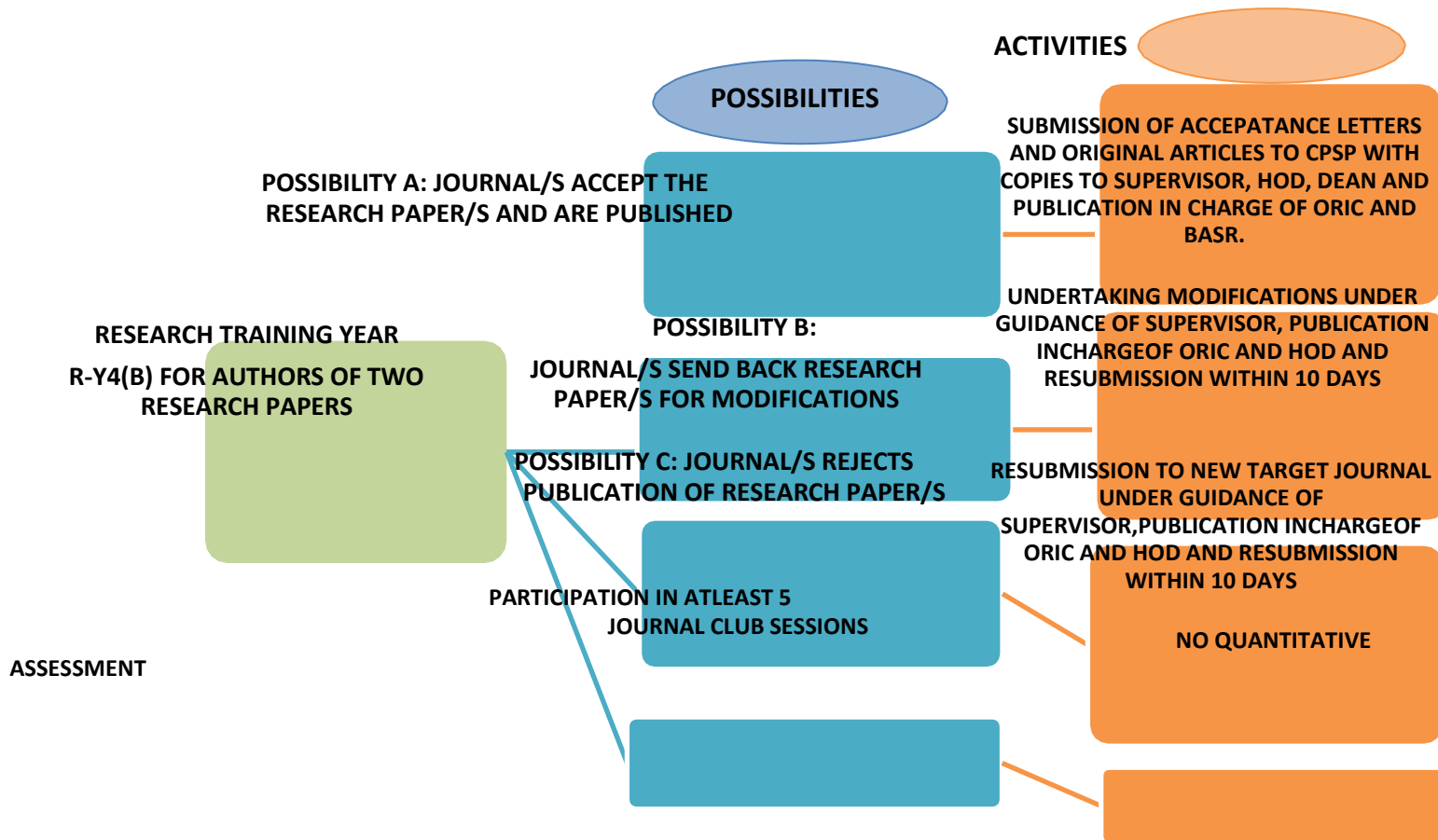
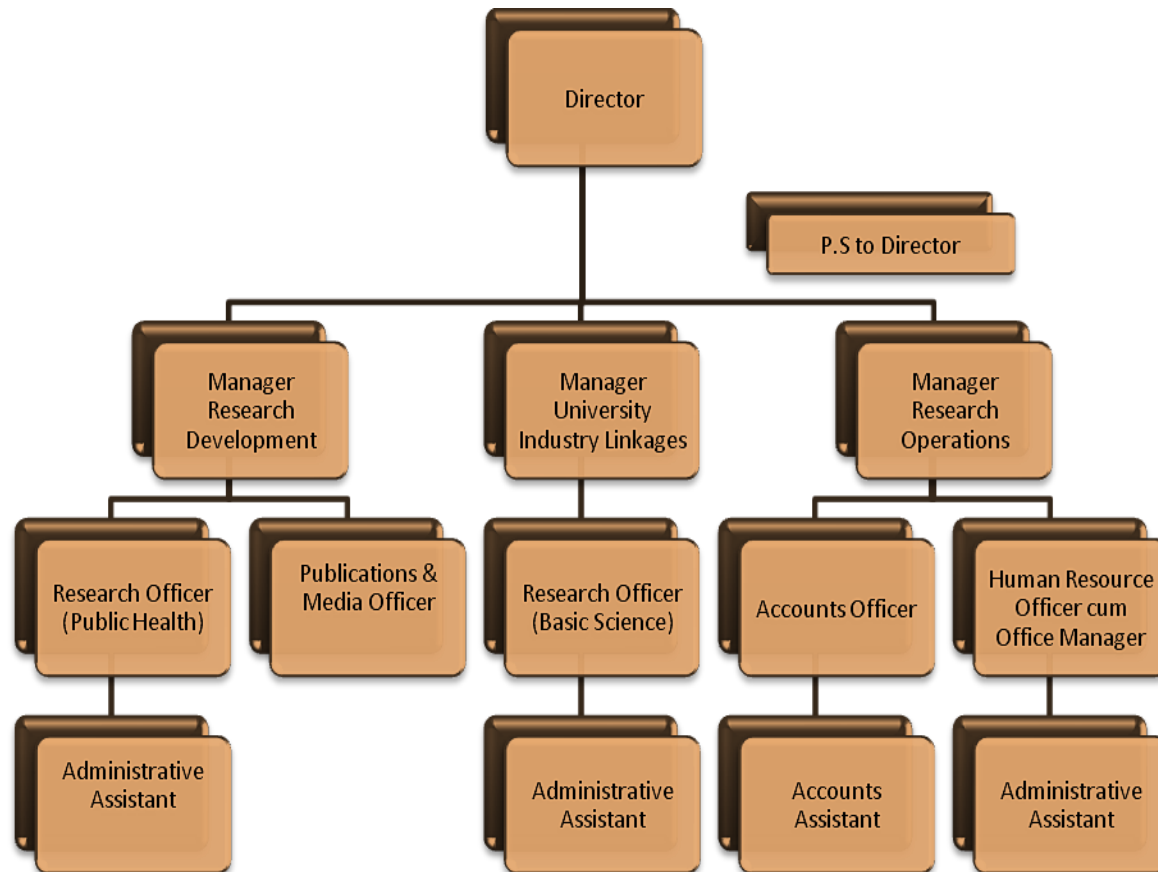


Figure 6 (B).A FLOW CHART OF RESEARCH ACTIVITIES AND ASSESSMENTS OF R-Y4 POST GRADUATE OF RMU WHO WILL OPT FOR 2 RESEARCH PAPERS AS REQUISITE TO CPSP FELLOWSHIP DEGREE



ANNEXURE 1

THE ORGANIZAITONAL CHART OF ORIC OF RMU



Note: Managers of ORIC are also referred to as Deputy Directors in RMU

ANNEXURE 2

TERMS OF REFERENCES OF STAFF MEMBERS OF RMU WITH REFERENCE TO THE RESEARCH TRAINING PROGRAM OF POST GRADUATE TRAINEES OF RMU

A. THE VICE CHANCELLOR:

The vice chancellor of RMU will be final authority to approve nominations of external supervisors of MD scholars, in consultation with the Dean of specialty.

Regarding nominations of the internal supervisors of MD trainees and also of Post graduate trainees of fellowship of CPSP, after completion of first year of training, i.e. R-Y1, no substitution in nomination will be allowed. But 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. And only the vice chancellor will make the final decision accordingly, as the final authority.

The vice chancellor will also be the head of the quality evaluation team of research training courses that will also include the Head of departments, Deans, selected representatives of BASR, IREF, Director of ORIC and Director of Quality enhancement cell (QEC). The selection of above mentioned team members will be made by the Vice chancellor of RMU.

The Vice chancellor will have the authority through the research training course, to make surprise visits, evaluations, rounds and checking (without any prior information to the trainees and trainers) at any random occasion, being member of quality evaluation team individually or in team.

An annual meeting of the trainers will also be organized by the Quality Enhancement Cell of RMU, including representatives of supervisors, Head of Departments, Dean, representative members of BASR, ORIC, QEC & IREF and this meeting will be chaired by the Vice chancellor.

In perspective of the quality assessed through extensive procedure all the year round and also during the Annual meeting of quality assessment and enhancement, the Vice Chancellor and the Board of Advanced study and Research will finalize any modifications or enhancement in the next Research course.

When 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 that will be endorsed by the Vice chancellor of RMU.

MEMBERS OF BOARD OF ADVANCED STUDIES AND RESEARCH:

The Board of Advanced studies and Research of RMU will finalize, approve and issue final approval list of the supervisors of the trainees of RMU.

The Board of Advanced Studies and Research (BASR) of RMU will receive the submitted research proposals of MD scholars 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.

The quality evaluation team of research training course will include selected representatives of BASR who will be nominated and selected by BASR and Vice chancellor of RMU. The members may pay random visits for physical observation of the proceedings and materials of all the research related activities of the trainees and supervisors for quality assessment and assurance.

The copies of research papers or dissertations submitted by post graduate trainees following option of publication of two original articles to CPSP accredited journals will also be submitted to the chairperson of BASR for quality assessment to be observed as confidential evidences

Representative members of BASR will attend the annual meeting of Quality assurance, by end of each research training year and will also share their experiences of their evaluation visits and observations to validate the existing materials.

The quality of Research Training course will be stringently determined by BASR in their meetings and the members will provide recommendations for further quality enhancement and will have the authority for policy formulation or modification regarding the research training

course.

MEMBERS OF INSTITUTIONAL RESEARCH AND ETHICS FORUM OF (IREF) RMU:

Institutional Research Ethics Forum will organize monthly meetings for approval of research proposals of the trainees of RMU in which the trainee must present along with his/her supervisor for presentation and defence of proposals of dissertations/research papers.

The members will be provided hard copies of the research proposals prior to the meetings that they will review before coming to the meeting.

Members will listen and visualize five to ten minutes' presentation through power-point by the trainees and by the end of presentation will make relevant queries to the trainees.

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.

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.

The written approval letter of IREF will be issued within next two weeks of meeting, to the trainee.

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.

The quality evaluation team of research training course will include selected representatives of IREF who will be nominated and selected by chairperson of IREF and Vice chancellor of RMU. The members may pay random visits for physical observation of the proceedings and materials of all the research related activities of the trainees and supervisors for quality assessment and assurance.

Representative members of IREF will attend the annual meeting of Quality assurance, by end of each research training year and will also share their experiences of their evaluation visits and observations to validate the existing materials.

The quality of Research Training course will be stringently determined by IREF in their meetings and the members will provide recommendations for further quality enhancement to BASR, if any, regarding research training course.

THE DEAN OF THE SPECIALITY:

The journal club meetings will be chaired by the Dean of specialty.

In a journal club meeting, one or two research paper/s published in an indexed national or international journal will be selected by the Dean and will be notified to the departments at least one and a half month prior to the meeting.

The Dean of the specialty will decide the nomination of the supervisor for the post graduate trainee as well as the internal supervisors of MD scholars within first six months of the first year of training R-Y1.

For the selection of supervisors, the Dean will chair meeting for selection of supervisors that will be held in the middle of the first research training year, preferably in June.

The list of all the first year trainees and the available supervisors in each department will be presented to the Dean, by respective heads of each department in meeting.

The Dean will consider the recommendations and proposals of most suitable supervisors for each trainee after eloquent discussions and justifications with the Head of Departments.

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.

If the supervisor will also be willing to happily supervise the trainee, then the Dean will finally approve the nomination.

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.

Both the trainees and the supervisors will be given two weeks to challenge the nominations and 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

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).

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.

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.

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 Dean will have authority to bring it to the notice of the Vice chancellor as a special case.

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. 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.

Regarding the project of undertaking clinical audits on various aspects of the department during first year of research training, on one topic assigned to each group by the Dean in consultation with Heads of Departments.

The clinical audits completed in groups will be published as Annual Audit Reports of the departments by the Dean

The Dean will make the decision regarding the presentation of clinical audit weekly Clinico-pathological conferences (CPC) of the University.

Once the research question and topic is finalized with mutual understanding of the supervisor, the Dean will also be handed over the selected topic by the trainee. The Dean of the specialty will give approval of the topic after scrutiny and will confirm after consultation with HODs that there is no duplication of the topic in the department.

The Dean will finalize the list of the topics of research proposals of all trainees during fourth month of R-Y2 and then will submit the list to BASR.

Dean will also ensure the feasibility and availability of resources during second year of research training of the trainees of RMU, before initiation of the research project.

The office of Dean will receive a copy of approval of the acceptance letter of BASR once the MD scholars of RMU will get their research proposals approved by to the Board of Advanced Studies and Research (BASR) of RMU.

The Dean will receive the copies of final manuscript by post graduate trainees following option of publication of two original articles to CPSP accredited journals that will be observed as confidential evidences by Dean for quality assessment. It will be kept strictly confidential by the office of the Dean in order to avoid any risk of potential plagiarism

The Dean will also receive the copies of final dissertation manuscript by post graduate trainees and MD trainees that will be observed as confidential evidences by Dean for quality assessment. It will be kept strictly confidential by the office of the Dean in order to avoid any risk of potential plagiarism.

The office of Dean must also receive the letter of acceptance/s by the trainees, in case the research paper/s is/are approved by the target journals. 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 Dean of speciality for evidence.

The Dean of speciality will be member of the quality evaluation team of research course and he/she will have right to make any surprise visit during the four years training research course, at any random occasion, either individually or in teams, without any prior information to the trainees and trainers.

The Dean will also attend the annual meeting that will be organized by the Quality Enhancement Cell of RMU. During the meeting, the Dean will share his/her experience of evaluation visits and observations to validate the existing materials.

THE HEAD OF THE DEPARTMENT:

The Head of the Department (HOD) will oversee all the research activities of the trainees, in close consultation with the Dean and the supervisors at the departmental level.

The HOD will attend all the journal club sessions of department.

During the first six months of research training year 1 i.e. R-Y1, the HOD will be responsible for consideration of the nominations of the internal supervisor of each trainee. The HOD will decide these nominations based on his/her own personal observation of the level of performance, talent personality and temperament of both the trainees and the supervisors. Based on his/her personal observation of the compatibility of both eligible trainees and the supervisors, Head of department will recommend or propose most suitable supervisors for each trainee after eloquent discussions and justifications to the Dean during a nomination meeting that will be especially held for this purpose.

The nominations will be finalized in a special meeting 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. In case of any objection to nominations of supervisors, the Dean will make changes after direct consultation with the HOD's, apart from final consent and satisfaction of both trainee and supervisor.

After finalization of nominations a copy of letter of agreement of supervision will be received by the office of HOD, submitted by the trainee.

The weekly meetings of the supervisor and the trainee will be monitored by the HOD through observation of the documented record of meeting in log books, by the end of every month.

During ninth month of training year 1; R-Y1 the head of department will supervise the project of clinical audit of the trainees. In this regard HOD will firstly 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.

The HOD in consultation with the Dean of specialty will assign topics of audits to each group.

The clinical audits completed in groups will be published as Annual Audit Reports of the departments under supervision of HOD's.

The presentation of clinical audit in weekly Clinico-pathological conferences (CPC) of the University, will also be supervised by HOD's.

The contribution of the trainees in execution and publication of clinical audit will also be qualitatively assessed by the head of departments.

Once the trainee finalizes research question and topic in mutual understanding with supervisor, the HOD will also be handed over the selected topic by the trainee who in consultation with the Dean of the specialty will confirm for non duplication of the topic in the department.

HOD will also ensure the feasibility and availability of resources during second year of research training of the trainees of RMU, before initiation of the research project.

The trainee should submit final draft of dissertation to the head of department till end of fifth month of year for final modifications and the Head of Department will also provide his /her feedback within 10-15 days.

The HOD will receive a copy of final dissertation by the trainee during fourth year of research training that will be kept by him/her as a confidential document in order to avoid any potential risk of plagiarism.

In case the research paper/s of the trainees is/are approved by the target journals, the office of HOD trainee will also receive a copy of the letter of acceptance/s and when the original article will be published in journal/s, even then the trainee will submit hard and soft copies of the original journal with his/her published articles to HOD.

All the Head of Departments along with other staff members of Office of Research Innovation & Commercialization of RMU will keep vigilant and continuous monitoring of all the research activities of each trainee.

The HOD will monthly check and endorse the sections 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.

The HOD will also endorse the attendance of the trainees in the Journal club sessions of the department in the log books along with his/her quantitative and/or qualitative assessment of the trainees' active participation and/or presentation during the journal club session. HOD will also endorse the information whether any question or comment was raised by the trainee during each journal club session or not. The Heads of department will observe the log books for assessments of facilitators of short courses during third year of research training and their comments regarding the home tasks/assignments apart from the remarks of supervisor regarding his/her opinion regarding the trainee's overall performance during third year of training.

In case of any deficiencies or weaknesses, HOD will personally call the trainee and supervisor and will guide them how to correct or improve accordingly.

The research course of the trainees will also be evaluated by the HOD's through end of sessions forms and then collectively through end of course feedback forms.

The HODs will also be members of the quality evaluation team of research training course and will vigilantly and equitably observe and evaluate all the documented records and materials during the course and finally by the end of each course year for quality assessment.

They will also make surprise visits at any random occasion, without any prior information to the trainees and trainers, individually or in team.

HODs will also attend the annual meeting quality assessment and enhancement where they along with other participants will actively review and discuss all the evaluation material. And will also share their experiences of evaluation visits and observations to validate the existing materials.

THE DIRECTOR OF OFFICE OF RESEARCH INNOVATION AND COMMERCIALIZATION (ORIC):

The Director ORIC (Office of Research Commercialization and Innovation) of RMU will conduct an orientation session or an introductory session of one-hour duration along with Deputy Directors of ORIC at the commencement of first research training year of all post graduate trainees of RMU. During the session, the Director will make trainees acquainted to the complete research course of four years' post graduate training, its schedule of all scholarly and academic activities and the assessment procedures. He/she will also introduce the model of research at RMU, organizational structure of ORIC and all requisites of

training along with introduction to the staff members of ORIC who will be involved in their training.

The director ORIC will take few research training sessions of first two training years (R-Y1 & R-Y2) that will comprise of didactic lecture followed by taking exercises and then also be responsible for giving and checking the home task assignments (if any) related to session.

During the third year of training the Director ORIC will conduct few of short refresher courses/workshops along with other staff members of Office of Research Innovation and commercialization. For the specific course, Director will have to carry out a 20-25 minutes' power-point presentation to restore the memories of the trainees regarding the previous knowledge attained by them in R-Y1 and R-Y2. The director ORIC will also facilitate the individual or groups exercises of trainees in the training session following the presentation and also check the take home assignments.

Director at the Office of Research Innovation & Commercialization of RMU will keep vigilant and continuous monitoring of all the academic activities of each trainee related to Research courses.

Director of ORIC will check the research portfolio of the trainee and will endorse it.

Based on his/her observations, the completeness and quality of performance of each trainee will be evaluated and in case of any deficiencies or weaknesses he/she will personally call the trainee and supervisor and will guide them how to correct or improve accordingly.

Director ORIC will supervise the formulation of evaluation report of the research training course and after its endorsement will send it to all concerned departments and stake holders. The director ORIC will also be responsible for submission of the evaluation content to the Quality Enhancement Cell (QEC) of RMU for internal evaluation and external evaluation.

The Director will also be member of the quality evaluation team of research training course and will also evaluate all the documented records and materials during the course and finally by the end of each course year for quality assessment.

Like all other members of Quality evaluation team, the director will also have the right to make a surprise visit at random individually or in team. 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.

The Director will attend the annual meeting quality assessment and enhancement where he/she will actively review and discuss all available material of training course will also share his/her experience of evaluation visits and observations to validate the

existing materials.

The trainees who will opt for publication of research papers to journals will submit copy of submitted papers to Director of ORIC who will check and keep them secured in records as confidential documents.

The Director will receive a copy of dissertation of the trainee for record as a confidential document in order to avoid potential risk of plagiarism.

THE DEPUTY DIRECTORS OF OFFICE OF RESEARCH INNOVATION AND COMMERCIALIZATION (ORIC):

The Deputy Directors ORIC (Office of Research Commercialization and Innovation) of RMU, along with Deputy Director and other staff members of ORIC will conduct an orientation/introductory session of one-hour duration at the initiation of first research training year of all post graduate trainees of RMU. The Deputy Directors will provide introduction to trainees regarding the research course of four years' post graduate training, its schedule of all scholarly and academic activities and the assessment procedures. They will also inform the trainees organizational structure of ORIC and all requisites of training along with introduction to the staff members of ORIC who will be involved in their training.

The Deputy directors ORIC will take research training sessions of first two training years (R-Y1 & R-Y2) that will comprise of didactic lecture followed by taking exercises and then also be responsible for giving and checking the home task assignments (if any) related to session.

The submitted record and scores of trainees attained for the individual and group assignments during first two training years will be endorsed by the Deputy Directors of ORIC.

During the third year of training the Deputy Directors ORIC will conduct a few of short refresher courses/workshops. For the specific course, they will have to carry out a 20-25 minutes' power-point presentation to restore the memories of the trainees regarding the previous knowledge attained by them in R-Y1 and R-Y2. In addition, they will also facilitate the individual or groups exercises of trainees in the training session following the presentation and will also check the take home assignments.

The submitted record and scores of trainees attained for the individual and group assignments of the short training courses of third year of training will also be endorsed by the Deputy Directors of ORIC.

The Deputy Directors will check and mark the written papers of end of year examination or Annual Research Paper of first two training year R-Y1 & R-Y2. They will also endorse the scores of the Annual papers in the log book of the trainees.

The research course will be evaluated by the deputy directors of ORIC too through end of sessions forms and then collectively through end of course feedback forms.

During these first three months of R-Y2, the Deputy Directors at the ORIC will provide consultation to the trainees regarding feasibility of their research questions and will be advised if any modification required.

The deputy directors will be continuously involved in an alert and continuous monitoring of all the scholarly activities of each trainee.

The structured Research component of Log books and Research portfolio of the trainees specific to research component of all the training years R-Y1 to R-Y4 will also be regularly observed, monitored and endorsed by the Deputy Directors of ORIC. Based on his/her observations, the completeness and quality of performance of each trainee will be evaluated and in case of any deficiencies or weaknesses he/she will personally call the trainee and supervisor and will guide them how to correct or improve accordingly.

The Deputy Director will also monitor the submission of the evaluation content to all including a copy to the Quality Enhancement Cell (QEC) of RMU for internal evaluation.

THE RESEARCH ASSOCIATES OF OFFICE OF RESEARCH INNOVATION AND COMMERCIALIZATION (ORIC):

The Research Associates of ORIC (Office of Research Commercialization and Innovation) of RMU, along with Deputy Director and other staff members of ORIC will facilitate the orientation/introductory session of one-hour duration at the initiation of first research training year of all post graduate trainees of RMU.

The Research Associates will take few research training sessions of first two training years (R-Y1 & R-Y2) that will comprise of didactic lecture followed by taking exercises and then also be responsible for giving and checking the home task assignments (if any) related to session.

The Research Associates will also be will be present and will be actively involved in facilitation of all the training sessions that will be taken by Director, Deputy Directors or guest facilitators. They will actively facilitate the individual and group works of the trainees during the sessions.

The Research Associates will be responsible for record keeping of the post graduate trainees regarding the training sessions and the records and scores of trainees for the individual and group assignments during all four training years that will also be endorsed by the Deputy Directors of ORIC. They will not only collate the record at the ORIC in computerized versions as well as in the form of hard copies. The Research Associates will also fill in the record in research sections of the log books relevant to the

training sessions and other relevant activities that will be supervised by them.

During the third year of training, the Research Associates will also be present in the short refresher courses/workshops for facilitating the Director, Deputy Directors or guest facilitators. They will actively facilitate the individual and group works of the trainees during the workshops.

The Research Associates along with the Deputy Directors will check and mark the written papers of end of year examination or Annual Research Paper of first two training year R-Y1 & R-Y2. They will enter the the scores of the Annual papers in the log book of the trainees and will also keep its record at the ORIC in computerized versions as well as in the form of hard copies.

During the first three months of R-Y2, the Research Associates at the ORIC will provide consultation to the trainees regarding feasibility of their research questions and will advise trainees if any modification required.

Once the trainee gets the approval of the topic/s from all concerned authorities during R-Y2 and will initiate the formal write up of proposal/s, the research associates of ORIC will guide them regarding the research methodologies.

The 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 timely during training leaving enough time for its write up.

The research associates of ORIC will also guide the trainees regarding the research formulation of data collection tools, their pre-testing and execution of data collection phase

Trainees will be individually provided an updated step wise guidance by the research associates of ORIC, regarding submission of their synopsis to IREF for appraisal. They will be supervised by Research Associates regarding how to access the RMU website, to download the application Performa and then how to electronically fill it in for final submission. They will also be provided updated format of presentation by the Research Associates for their Research Proposal presentations at IREF meetings.

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 entered by the research associates of ORIC and conveners of the IREF and BASR.

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 and the Research Associates will also guide them along with the supervisors and the publication in charge at the ORIC.

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 defence 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.

In case the dissertation is sent back with recommended corrections or modifications, research associates at ORIC will guide the trainee along

with supervisor on urgent basis to get it rectified and resubmitted within at least 10 days' time.

THE PUBLICATION IN CHARGE OF OFFICE OF RESEARCH INNOVATION AND COMMERCIALIZATION (ORIC):

The Publication in charge will be actively involved in the Research training course and for the academic sessions relevant to literature search, review and write up, he/she will take didactic lectures, followed by facilitating individual and group exercises and checking of relevant home tasks and assignments.

The post graduate trainees and MD scholars submit a copy of their finalized research proposal/s for the dissertation/research papers to the publication in charge of ORIC who will review 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 publication in charge will approve and the proposal will be further processed.

The publication in charge of ORIC will also guide the trainees to write the literature review sections and the section of "Discussion"

based on the comparison of the findings of their study with the previously available research nationally as well as internationally.

The final research papers/dissertations of trainees will also 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.

In case the research paper/s of trainees is/are sent back with recommended corrections or modifications publication in charge along with the supervisor and concerned facilitators at ORIC will assist the trainee on urgent basis to get it rectified and resubmitted within next 10 days' time.

In case any of the paper of trainee is refused publication by a journal then the publication unit at ORIC along with the supervisor and concerned facilitators 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.

THE STATISTICIANS AT DATA ANALYSIS UNIT OF OFFICE OF RESEARCH INNOVATION AND COMMERCIALIZATION (ORIC):

The statisticians at the Data Analysis Unit of ORIC at data analysis centre of ORIC will also be actively involved in the Research training course specifically those of Basic and advanced Biostatistics and Epidemiological concepts. The statisticians will take didactic lectures, followed by facilitating individual and group exercises and checking of relevant home tasks and assignments. The statisticians will facilitate the trainees in sample size calculation through sample size calculators according their study designs.

Trainees will also be assisted by the statisticians in planning the Data analysis for the research projects and also data coding, cleaning and sorting accordingly.

The statisticians will facilitate the trainees in formulation of the data entry sheets in SPSS or other data analysis softwares and will be continuously assisted in the process till data entry is completed.

The trainees will perform the data analysis of their research projects for research papers or dissertations, under continuous guidance and supervision of the statisticians who will also guide them how to interpret analyzed files and to write up results in textual forms, tabulated versions or figures/graphs.

In case the research paper/s or dissertation/s of trainees is/are sent back with recommended corrections or modifications in results section then the statisticians along with 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.

DEPARTMENT OF MEDICAL EDUCATION:

The quality evaluation team of research training course will include Director of Department of Medical Education who may pay random visits for physical observation of the proceedings and materials of all the research related activities of the trainees and supervisors for quality assessment and assurance.

The Director DME will also attend the annual meeting of Quality assurance, by end of each research training year and will also share his/her experiences of evaluation visits and observations to validate the existing materials.

The demonstrator at the DME will keep record of attendances of all the post graduate trainees and MD scholars for all the academic sessions attended by them regarding the research training course along with the record of all assessments, scores, marks of annual papers. They will monitor the log books and research portfolio for the completeness and regularity too. The record will not only be kept and maintained at DME as hard copies as well as computerized version, but they will also regularly share records with ORIC and Quality enhancement cells of RMU.

THE SUPERVISOR OF THE TRAINEE FOR THE DISSERTATION PROJECT

The supervisor of the trainee must be nominated within first six months of the research training. The Dean of the specialty will decide the nomination of the supervisor for the post graduate trainee as well as MD scholars. In this regards a meeting will be held 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. The supervisor for the trainee will be nominated based on the level of performance, talent personality and temperament of both the trainees and the supervisors by the HOD. If the supervisor will also be willing to happily supervise the trainee, then the Dean will finally approve the nomination, apart from other requirements.

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.

The supervisor will be bound to meet with the trainee, on weekly basis exclusively for research activity and will document the activity performed during the meeting in the log book along with endorsement.

During ninth month of training year 1; R-Y1 the supervisor/s will supervise trainees together in groups and will undertake clinical audit on various aspects of the department as a project assignment, on one topic assigned to each group by the Dean and Heads of Departments. The contribution of the post graduate trainees'/ MD trainees in audits will be qualitatively assessed by the supervisors and the head of departments.

The supervisor will keep vigilant and continuous monitoring of all the research related academic activities of each trainee.

The supervisors 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.

One Focus group discussion of supervisors will also be organized by the ORIC to evaluate the research course, its benefits and weaknesses and scope for improvement, each year.

The supervisor will keep a close and continuous check on the Log books, Research portfolio of the trainee and will endorse it regularly. Based on his/her observations, the supervisor will evaluate the performance of the trainee and will discuss it in monthly meeting with the Head of Department or Dean of the speciality if required.

The supervisor will not only guide and facilitate the trainee in preparation of presentation of Journal Club but will also ensure that trainees should actively participate in question & answer session of the journal club meeting and will also ensure the attendance of the trainees in Journal club as per set requirements.

During these first three months of R-Y2, supervisor will guide and supervise the trainee to do extensive review of the literature, relevant to topic and finalize the research question/s and research topic/s with mutual understanding and will submit the selected topic to the Head of Department and Dean of specialty.

The supervisor will facilitate the trainee at every step, the formal write up of research proposal/s in consultation with the research associates of ORIC for guidance in methodology. 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.

The trainees should formulate all the data collection tools under guidance of supervisor and should also pretest to finalize all the data collection tools for their research projects.

The supervisors 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. 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.

The supervisor will help the trainee to 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, the supervisor will facilitate in defence of the proposal. During first quarter of year 3, it will be mandatory for the trainees to initiate the data collection phase of their project/s under continuous guidance of their supervisors. In case the data collection will require more human resources, other than trainee himself/herself, the supervisor will 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.

The data storage will also be finalized by trainee under the guidance of Supervisor and research centre of specialty.

Whether the trainee is opting for dissertation writing or research paper publication, the supervisor will ensure that every step and procedure is being followed effectively and timely meeting all set requirements as per standard operational procedures.

The supervisor will actively assist the trainee in write up of dissertation/ research papers.

The trainee should submit final draft of dissertation to the supervisor till end of fifth month of year4 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.

In case the dissertation or research paper/s is/are sent back with recommended corrections or modifications, the supervisor will assist the trainee on urgent basis to get it rectified and resubmitted within next 10 days' time. In case any of the paper is refused publication by a journal even then the supervisor 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.

In case the research paper/s is/are sent back with recommended corrections or modifications, the supervisor will assist the trainee on urgent basis to get it rectified and resubmitted within next 10 days' time. 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.

1. While the dissertations will be under review by the degree awarding authority for acceptance, the trainees will be continuously guided by the supervisor 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.

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)	<p>To understand the basics of Bio-Statistics</p> <p>To critique why research is important?</p> <p>To discuss the importance of Selecting a Field for Research</p> <p>To prepare oneself for Participation in National and International Research</p> <p>To prepare oneself for Participation in Pharmaceutical Company Research</p> <p>To interpret the importance of research ideas & Criteria for a good research topic</p> <p>To discuss Ethics in Health Research</p> <p>To learn to write a Scientific Paper</p> <p>To learn to make a Scientific Presentation</p> <p>To learn to make a purposeful literature search</p>	<p>Introduction to Bio-Statistics</p> <p>Introduction to Bio- Medical Research Why research is important?</p> <p>What research to do?</p> <p>Selecting a Field for Research</p> <p>Drivers for Health Research</p> <p>Participation in National and International Research</p> <p>Participation in Pharmaceutical Company Research</p> <p>Where do research ideas come from</p> <p>Criteria for a good research topic</p> <p>Ethics in Health Research</p> <p>Writing a Scientific Paper</p> <p>Making a Scientific Presentation & Searching the Literature</p>
2.	Introduction to computer/Information	By the end of this workshop student should be able to:	<p>Hardware and Software</p> <p>Understand the main components of a computer,</p>

	<p>Technology & Software (5 days)</p>	<p>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</p>	<p>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. Windows 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. 3.Working with Programs Running multiple programs. Desktop icons and creating a desktop shortcut. Managing programs from the taskbar. Closing programs. 4.File Management Managing Windows Explorer. Creating, moving, renaming and deleting folders and files. Understandings file extensions. Viewing storage devices and network connections. Managing USB flash drives. 5.Word Processing 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. <input type="checkbox"/> Power Point Making Power Point presentation 7.Spreadsheets</p>
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			Understanding spreadsheet functionality.
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			<p>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. 8.Printing Print preview. Print settings. Managing the print queue. 9.Using Email The Outlook mail screen elements. Composing and sending an email message. Managing the Inbox. 10.Accessing the Internet 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. 11.Statistical Package for Social Sciences general understanding for data entry □</p>
3.	communication skills (3 days)	<p>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</p>	<p>Use of Non-medicinal Interventions in Clinical Practice Communication Skills Counseling Informational Skills Crisis Intervention/Disaster Management Conflict Resolution</p>

		To learn to manage a conflict	Breaking Bad News
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		<p>resolution</p> <p>To learn to break a bad news</p> <p>To discuss the importance of Medical Ethics, Professionalism and Doctor-Patient Relationship Hippocratic Oath</p> <p>To learn to take an informed consent</p> <p>To illustrate the importance of confidentiality</p> <p>To summarize Ethical Dilemmas in a Doctor's Life</p>	<p>Medical Ethics, Professionalism and Doctor-Patient Relationship Hippocratic Oath</p> <p>Four Pillars of Medical Ethics (Autonomy, Beneficence, Non-maleficence and Justice)</p> <p>Informed Consent and Confidentiality</p> <p>Ethical Dilemmas in a Doctor's Life</p>
4.	<p>Clinical Audit (2 days)</p> <p>(Workshop is specific for MD Internal Medicine only)</p>	<p>Road Map for workshop:</p> <p>Step 1: Topic selection</p> <p>Step 2: Setting of criteria and standards</p> <p>Step 3: First data collection</p> <p>Step 4: Evaluation and comparison with criteria and standards</p> <p>Step 5: Implementation of change</p> <p>Step 6: Second data collection – evaluation of change</p> <p>The following are factors that may affect your choice of audit topic:</p> <p>Strong impact on health</p> <p>Convincing evidence available about appropriate care</p> <p>Common condition which can be clearly defined</p> <p>Good reasons of believing that current performance can be improved</p> <p>Readily accessible data which can</p>	<p>To understand clinical audit process. To help clinicians decide exactly why they are doing a particular audit and what they want to achieve through carrying out the audit.</p> <p>To determine, how clinical audit relates to other activities related to accountability for the quality and safety of patient care.</p> <p>To select the right subject for audit.</p> <p>To use evidence of good practice in designing clinical audits.</p> <p>To help clinicians formulate measures of quality based on evidence of good practice, as the basis for data collection and also to develop data collection protocols and tools and advise on data collection for clinical audits.</p> <p>To help in understanding how to handle data protection issues related to clinical audit.</p> <p>To understand use of statistics for analyzing and presenting findings of data collection and thus help clinicians to analyze causes of problems that are affecting the quality of care. This helps in applying</p>

		be collected within a reasonable length	principles and strategies for taking action to achieve changes in clinical practice.
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		of time Consensus on the audit topic among the practice members	To help clinicians manage review of clinical audit findings with their colleagues. To be able to prepare clinical audit reports. To recognize and handle ethics issues related to clinical audit.
5.	Advanced Cardiac Life Support (4 days) (Workshop is specific for MD Internal Medicine only)	Upon successful completion of the workshop, the student will be able to: Recognize and initiate early management of pre-arrest conditions that may result in cardiac arrest or complicate resuscitation outcome Demonstrate proficiency in providing BLS care, including prioritizing chest compressions and integrating automated external defibrillator (AED) use Recognize and manage respiratory arrest Recognize and manage cardiac arrest until termination of resuscitation or transfer of care, including immediate post-cardiac arrest care Recognize and initiate early management of ACS, including appropriate disposition Recognize and initiate early management of stroke, including appropriate disposition Demonstrate effective communication as a member or leader of a resuscitation team and recognize the impact of team dynamics on overall team	The workshop is designed to give students the opportunity to practice and demonstrate proficiency in the following skills used in resuscitation: Systematic approach High-quality BLS Airway management Rhythm recognition Defibrillation Intravenous (IV)/intraosseous (IO) access (information only) Use of medications Cardioversion Transcutaneous pacing Team dynamics Reading and interpreting electrocardiograms (ECGs) - Be able to identify—on a monitor and paper tracing—rhythms associated with bradycardia, tachycardia with adequate perfusion, tachycardia with poor perfusion, and pulseless arrest. These rhythms include but are not limited to: Normal sinus rhythm Sinus bradycardia Type I second-degree AV block Type II second-degree AV block Third-degree AV block Sinus tachycardia Supraventricular tachycardias Ventricular tachycardia Asystole

		Performance	Ventricular fibrillation Organized rhythm without a pulse Basic understanding of the essential drugs used in: Cardiac arrest Bradycardia Tachycardia with adequate perfusion Tachycardia with poor perfusion Immediate post-cardiac arrest care
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SECTION 5: Charting the Road to Competence: Developmental Milestones for MD NEUROLOGY Program at Rawalpindi Medical University

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

Table-1 Developmental Milestones for Neurology Training—Patient Care

Competency	Developmental Milestones Informing Competencies	Approximate Frame Trainee Should Achieve Stage (months)
<p>A. Clinical skills and reasoning</p> <ul style="list-style-type: none"> • Manage patients using clinical skills of interviewing and physical examination • Demonstrate competence in the performance of procedures • Appropriately use laboratory and imaging techniques 	<p>Historical data gathering</p>	
	<p>1. Acquire accurate and relevant history from the patient in an efficiently customized, prioritized, and hypothesis driven fashion</p>	8
	<p>2. Seek and obtain appropriate, verified, and prioritized data from secondary sources (eg, family, records, pharmacy)</p>	12
	<p>3. Obtain relevant historical subtleties that inform and prioritize both differential diagnoses and diagnostic plans, including sensitive, complicated, and detailed information that may not often be volunteered by the patient</p>	24
	<p>4. Role model gathering subtle and reliable information from the patient for junior member so for the healthcare team</p>	40
	<p>Performing a physical examination</p>	
	<p>1. Perform an accurate physical examination that is appropriately targeted to the patient's complaints and medical conditions. Identify pertinent abnormalities using common maneuvers</p>	8
	<p>2. Accurately track important changes in the physical examination overtime in the outpatient and in patient settings</p>	12
	<p>3. Demonstrate and teach how to elicit important Physical findings for junior members of the healthcare team</p>	24
	<p>4. Routinely identify subtle or unusual physical findings that may influence clinical</p>	40

	Making	
	<i>Invasive procedures</i>	
	1. Appropriately perform invasive procedures and provide post-procedure management for common procedures	24
<i>B. Delivery of patient-centered clinical care</i>	<i>Diagnostic tests</i>	
<input type="checkbox"/> Manage patients with progressive responsibility	1. Make appropriate clinical decisions based on the results of common diagnostic testing, including but not limited to routine blood chemistries, hematologic studies, coagulation tests, arterial blood gases, ECG, chest radiographs, pulmonary function tests, urinalysis and other body fluids	16
<input type="checkbox"/> Manage patients across the spectrum of clinical diseases seen in the practice of general internal medicine	2. Make appropriate clinical decision based on the results of more advanced diagnostic tests	24
<input type="checkbox"/> Manage patients in a variety of health care settings to	<i>Patient management</i>	
	1. Recognizes situations with a need for urgent or emergent medical care, including life-threatening conditions	8
	2. Recognize when to seek additional guidance	8
	3. Provide appropriate preventive care and teach patient regarding self-care	8
	4. With supervision, manage patients with common clinical disorders seen in the practice of in patient and ambulatory general internal medicine	16
	5. With minimal supervision, manage patients with common and complex clinical disorders seen in the	16

include the inpatient ward, critical care units, the ambulatory setting, and the emergency setting

Manage undifferentiated acutely and severely ill patients

Manage patients in the prevention, counseling, detection, diagnosis, and treatment of gender-specific diseases

Manage patients as a consultant to

Practice of in patient and ambulatory Neurology	
6. Initiate management and stabilize patients with emergent medical conditions	16
7. Manage patients with conditions that require intensive care	48
8. Independently manage patients with a broad spectrum of clinical disorders seen in the practice of neurology	48
9. Manage complex or rare medical conditions	48
10. Customize care in the context of the patient's preferences and overall health	48
Consultative care	
1. Provide specific, responsive consultation to other services	32
2. Provide internal medicine consultation for patients with more complex clinical problems requiring detailed risk assessment	48

other
physicians

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Table-2 Developmental Milestones for Neurology—Medical Knowledge

Competency	Developmental Milestones Informing Competencies	Approximate Time Frame Trainee Should Achieve Stage (months)	General Evaluation Strategies Assessment Methods/ Tools
<i>Knowledge of core content</i>			
<p>A. Core knowledge of general internal medicine and its subspecialties</p> <ul style="list-style-type: none"> • Demonstrate a level of expertise in the knowledge of those areas appropriate for neurologist • Demonstrate sufficient knowledge to treat neurological conditions commonly managed 	1. Understand the relevant pathophysiology and basic science for common medical conditions	8	<input type="checkbox"/> Direct observation <input type="checkbox"/> Chart audit <input type="checkbox"/> Chart-stimulated recall <input type="checkbox"/> Standardized tests
	2. Demonstrates sufficient knowledge to diagnose and treat common conditions that require hospitalization	16	
	3. Demonstrate sufficient knowledge to evaluate common ambulatory conditions	24	
	4. Demonstrates sufficient knowledge to diagnose and treat undifferentiated and emergent conditions	24	

<p>by internists, provide basic preventive care, and recognize and provide initial management of emergency medical problems</p>	5. Demonstrate sufficient knowledge to provide preventive care	24	
	6. Demonstrate sufficient knowledge to identify and treat Medical conditions that require intensive care	32	
	7. Demonstrate sufficient knowledge to evaluate complex or rare medical conditions and multiple coexistent conditions	48	
	8. Understand the relevant pathophysiology and basic science for uncommon or complex medical conditions	48	
	9. Demonstrate sufficient knowledge of sociobehavioral sciences including but not limited to health care economics, medical ethics, and medical education	48	
<p>B. Common modalities used in the practice of Neurology & Demonstrate sufficient knowledge to interpret basic clinical tests</p>	Diagnostic tests		
	1. Understand indications for and basic interpretation of common diagnostic testing, including but not limited to routine blood chemistries, hematologic studies,	16	<ul style="list-style-type: none"> • Chart-stimulated recall • Standardized

and images,use

coagulation tests, arterial blood gases, ECG,
chest

tests

common pharmacotherapy, and appropriately use and perform diagnostic and therapeutic procedures.	radiographs, pulmonary function tests, urinalysis, and other body fluids		<ul style="list-style-type: none"> Clinical vignettes
	2. Understand indications for and has basic skills in	24	

Table-3 Developmental Milestones for Neurology Training—Practice-Based Learning and Improvement

Competency	ance characteristics	Developmental Milestones Informing Competencies	Approximate Time Frame Trainee Should Achieve Stage (months)
A. Learning and improving via audit of performance & systematically analyze practice using quality improvement methods, and implement changes with the goal of practice improvement		Improve the quality of care for a panel of patients	
		1. Appreciate the responsibility to assess and improve care collectively for a panel of patients	16
		2. Perform or review audit of a panel of patients using standardized, disease-specific, and evidence-based criteria	32
		3. Reflect on audit compared with local or national benchmarks and explore possible explanations for deficiencies, including doctor-related, system-related, and patient related factors	32
		4. Identify areas in resident's own practice and local system that can be changed to improve effect of the processes and outcomes of care	48

	papers	
	4. Independently, appraise clinical guideline recommendations for bias and cost-benefit considerations	48
	Appliestheevidencetodecision-makingfor individualpat	
	1. Determine if clinical evidence can be generalized to an individual patient	16
	2. Customize clinical evidence for an individual patient	32
	3. Communicate risks and benefits of alternatives to patients	48
	4. Integrate clinical evidence, clinical context, and patient preferences into decision making	48
	Improves via feedback	
<p>c. Learning and improving via feedback and self-assessment</p> <ul style="list-style-type: none"> Identify strengths, deficiencies, and limits in one's knowledge and expertise Set learning and improvement goals Identify and perform appropriate learning activities Incorporate formative evaluation feedback into daily practice 	1. Respond welcomingly and productively to feedback from all members of the health care team including faculty, peer residents, students, nurses, allied health workers, patients, and their advocates	16
	2. Actively seek feedback from all members of the	24

	health careteam	
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<ul style="list-style-type: none"> Participate in the education of patients, families, students, residents, and other health professionals 	3. Calibrate self-assessment with feedback and other external data	32
	4. Reflect on feedback in developing plans for improvement	32
	<i>Improves via self-assessment</i>	
	1. Maintain awareness of the situation in the moment, and respond to meet situational needs	32
	2. Reflect (in action) when surprised, applies new insights to future clinical scenarios, and reflects (on action) back on the process	48
	<i>Participates in the education of all members of the health</i>	
	1. Actively participate in teaching conferences	16
	2. Integrate teaching, feedback, and evaluation with supervision of interns' and students' patient care	32
	3. Take a leadership role in the education of all members of the healthcare team.	48

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

Competency	Developmental Milestones Informing Competencies	Approximate Time Frame Trainee Should Achieve Stage (months)	General Evaluation Strategies Assessment Methods/ Tools
A. Patients and family Communicate effectively with patients, families, and the public, as appropriate, across a broad range of socioeconomic and cultural backgrounds	<i>Communicate effectively</i>		
	1. Provide timely and comprehensive verbal and written communication to patients/advocates	16	<input type="checkbox"/> Multisource feedback <input type="checkbox"/> Patient surveys <input type="checkbox"/> Direct observation <input type="checkbox"/> Mentored self-reflection
	2. Effectively use verbal and nonverbal skills to create rapport with patients/families	16	
	3. Use communication skills to build a therapeutic Relationship		
4. Engage patients/advocates in shared decision making for uncomplicated diagnostic and therapeutic scenarios	32		

	5. Use patient-centered education strategies	32	
	6. Engage patients/advocates in shared decision making for difficult, ambiguous, or controversial Scenarios	48	
	7. Appropriately counsel patients about the risks and benefits of tests and procedures, highlighting cost awareness and resource allocation	48	
	8. Role model effective communication skills in Challenging situations	48	
<i>Intercultural sensitivity</i>			
	1. Effectively use an interpreter to engage patients in the clinical setting, including patient education	8	<input type="checkbox"/> Multisource feedback <input type="checkbox"/> Direct observation <input type="checkbox"/> Mentored self-reflection
	2. Demonstrates sensitivity to differences in patients including but not limited to race, culture, gender, sexual orientation, socioeconomic status, literacy	16	

	y,and Religiousbeliefs		
	3.Activelyseektounderstandpatientdifferenc esand viewsandreflectsthisinrespectfulcommuni cation andshareddecision- makingwiththepatientandthe Healthcareteam	40	
B. Physicians and other health care professionals <input type="checkbox"/> Communicate effectively with physicians, other health professionals, and health-related agencies <input type="checkbox"/> Work effectively as a member or leader of a health care team or other professional group <input type="checkbox"/> Act in a consultative	Transitions of care		
	1.Effectivelycommunicatewithothercaregiv ersin order to maintain appropriate continuity during transitions of care	16	<ul style="list-style-type: none"> • Multisourc e feedbac k • Direct observation • Sign-out form ratings • Patient surveys
	2.Role model and teach effective communication withnextcaregiversduringtransitionsofcar e	32	
	Interprofessional team		
	1. Deliver appropriate, succinct, hypothesis- driven oral presentations	8	<ul style="list-style-type: none"> • Multisourc e feedbac k
2.Effectivelycommunicateplanofcaretoall membersofthehealthcareteam	16		

role to other
physicians and health
professionals

3. Engage in collaborative communication with all members of the healthcare team

40

Consultation

	1. Request consultative services in an effective Manner	8	<input type="checkbox"/> Multisource feedback <input type="checkbox"/> Chart audit
	2. Clearly communicate the role of consultant to the patient, in support of the primary care relationship	16	
	3. Communicate consultative recommendations to the referring team in an effective manner	48	
C. Medical records	<i>Health records</i>		
<ul style="list-style-type: none"> Maintain comprehensive, timely, and legible medical records 	1. Provide legible, accurate, complete, and timely written communication that is congruent with medical standards	8	<ul style="list-style-type: none"> Chart audit
	2. Ensure succinct, relevant, and patient-specific written communication	32	

Table-5 Developmental Milestones for Neurology Training— Professionalism

Competency	Developmental Milestones Informing Competencies	Approximate Time Frame Trainee Should Achieve Stage (months)	General Evaluation Strategies Assessment Methods/ Tools
<p>A. <u>Physicianship</u></p> <ul style="list-style-type: none"> • Demonstrate compassion, integrity, and respect for others • Responsiveness to patient needs that supersedes self-interest • Account- 	<i>Adhere to basic ethical principles</i>		
	1. Document and report clinical information truthfully	1.5	<ul style="list-style-type: none"> • Multisource feedback
	2. Follow formal policies	1.5	
	3. Accept personal errors and honestly acknowledge them	8	
	4. Uphold ethical expectations of research and scholarly activity	48	
	<i>Demonstrate compassion and respect to patients</i>		
	1. Demonstrate empathy and compassion to all patients	4	<ul style="list-style-type: none"> • Multisource feedback
	2. Demonstrate a commitment to relieve pain and suffering	4	
	3. Provide support (physical, psychological, social, and spiritual) for dying	32	

ability to patients, society, and the profession	patients and their families		
	4. Provide leadership for a team that respects patient dignity and autonomy	32	
	<i>Provide timely, constructive feedback to colleagues</i>		
	1. Communicate constructive feedback to other members of the health care team	16	<input type="checkbox"/> Multisource feedback <input type="checkbox"/> Mentored self-reflection <input type="checkbox"/> Direct observation
	2. Recognize, respond to, and report impairment in colleagues or substandard care via peer review process	24	
	<i>Maintain accessibility</i>		
	1. Respond promptly and appropriately to clinical responsibilities including but not limited to calls and pages	15	<ul style="list-style-type: none"> • Multisource feedback
	2. Carry out timely interactions with colleagues, patients, and their designated caregivers	8	
	<i>Recognize conflicts of interest</i>		
	1. Recognize and manage obvious conflicts of interest, such as caring for family members and professional associates as patients	8	<input type="checkbox"/> Multisource feedback

2. Maintain ethical relationships with industry	40
3. Recognize and manage subtler conflicts of interest	40

- Mentored self-reflection
- Clinical vignettes

Demonstrate personal accountability

1. Dress and behave appropriately	1.5
2. Maintain appropriate professional relationships with patients, families, and staff	1.5
3. Ensure prompt completion of clinical, administrative, and curricular tasks	8
4. Recognize and address personal, psychological, and physical limitations that may affect professional performance	16
5. Recognize the scope of his/her abilities and ask for supervision and assistance appropriately	16
6. Serve as a professional role model for more junior colleagues (eg, medical students, interns)	40
7. Recognize the need to assist colleagues in the provision of duties	40

- Multisource feedback
- Direct observation

	Practice individual patient advocacy		
	1. Recognize when it is necessary to advocate for individual patient needs	8	<input type="checkbox"/> Multisource feedback <input type="checkbox"/> Direct observation
	2. Effectively advocate for individual patient needs	40	
	Comply with public health policies		
1. Recognize and take responsibility for situations where public health supersedes individual health (eg, reportable infectious diseases)	32	<ul style="list-style-type: none"> • Multisource feedback 	
<u>B. Patient-centeredness</u> <ul style="list-style-type: none"> • Respect for patient privacy and autonomy Sensitivity and responsiveness to a diverse patient population, including but not limited to diversity in gender, 	Respect the dignity, culture, beliefs, values, and opinions of the patient		
	1. Treat patients with dignity, civility and respect, regardless of race, culture, gender, ethnicity, age, or socioeconomic status	1.5	<input type="checkbox"/> Multisource feedback <input type="checkbox"/> Direct observation
	2. Recognize and manage conflict when patient values differ from their own	40	
	Confidentiality		
1. Maintain patient confidentiality	1.5	<input type="checkbox"/> Multisource	

age, culture, race, religion, disabilities, and sexual orientation

2. Educate and hold others accountable for patient confidentiality	24
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e
 feedback
 Chart audits

Recognize and address disparities in health care

1. Recognize that disparities exist in health care among populations and that they may impact care of the patient	16
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Multisource feedback

2. Embrace physicians' role in assisting the public and policymakers in understanding and addressing causes of disparity in disease and suffering	40
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Direct observation

3. Advocates for appropriate allocation of limited health care resources.	40
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Mentored self-reflection

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

Competency	Developmental Milestones Informing Competencies	Approximate Time Frame Trainee Should Achieve Stage (months)	General Evaluation Strategies Assessment Methods/ Tools
<p><u>A. Work effectively with other care providers and settings</u></p> <ul style="list-style-type: none"> • Work effectively in various health care delivery settings and systems relevant to their clinical 	<i>Works effectively within multiple health delivery systems</i>		
	1. Understand unique roles and services provided by local health care delivery systems.	16	<input type="checkbox"/> Multisource feedback <input type="checkbox"/> Chart-stimulated recall <input type="checkbox"/> Direct observation
	2. Manage and coordinate care and care transitions across multiple delivery systems, including ambulatory, subacute, acute, rehabilitation, and skilled nursing.	32	
	3. Negotiate patient-centered care among multiple care providers.	48	
	<i>Works effectively within an interprofessional team</i>		
	1. Appreciate roles of a variety of health care providers, including but not limited to consultants, therapists, nurses, home care workers, pharmacists, and social workers.	8	<ul style="list-style-type: none"> • Multisource feedback • Chart-stimulated recall • Direct observation

<p>practice</p> <ul style="list-style-type: none"> • Coordinate patient care within the health care system relevant to their clinical specialty • Work in interprofessional teams to enhance patient safety and improve patient care quality • Work in teams and effectively transmit 	2. Work effectively as a member within the interprofessional team to ensure safe patient care.	8
	3. Consider alternative solutions provided by other Teammates	16
	4. Demonstrate how to manage the team by using the skills and coordinating the activities of interprofessional team members.	48

To necessarycli nica l information			
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<p>ensuresafeand proper care of patients, including the transitionofcare betweensettings</p>			
<p>B. <u>Improving health care delivery</u></p> <ul style="list-style-type: none"> Advocate for quality patient careandoptimal patient care systems Participate in identifying system errors and implementing potential 	<p>Recognizessystemerrorandadvocatesforsystem improvement</p>		
	<p>1. Recognizehealthsystemforcesthatincreasetheriskfor errorincludingbarriersto optimalpatientcare</p>	<p>16</p>	<p><input type="checkbox"/> Multisource feedback</p> <p><input type="checkbox"/> Quality improvement project</p>
	<p>2. Identify, reflecton, andlearnfromcriticalincidents suchasnearmissesandpreventablemedicalerrors</p>	<p>16</p>	
	<p>3. Dialoguewithcareteammembersto identifyriskfor Andpreventionofmedicalerror</p>	<p>32</p>	
	<p>4. Understandmechanismsforanalysisandcorrectionof Systemerrors</p>	<p>32</p>	
	<p>5. Demonstrateabilitytounderstandandengageina system-level quality improvementintervention.</p>	<p>48</p>	
	<p>6. Partnerwithotherhealthcareprofessionalsto identify, propose improvement opportunities within the system.</p>	<p>48</p>	

<p>systems solutions</p> <ul style="list-style-type: none"> Recognize and function effectively in high-quality care <p>System</p>			
<i>Identifies forces that impact the cost of health care and advocates for cost-effective care</i>			
<p><u>C. Cost-effective care for patients and populations</u></p> <p>& Incorporate considerations of cost awareness and risk-benefit analysis in patient and/or population-based care as appropriate</p>	<p>1. Reflect awareness of common socioeconomic barriers that impact patient care.</p>	<p>16</p>	<p><input type="checkbox"/> Standardized examinations</p> <p><input type="checkbox"/> Direct observation</p> <p><input type="checkbox"/> Chart-stimulated recall</p>
	<p>2. Understand how cost-benefit analysis is applied to patient care (ie, via principles of screening tests and the development of clinical guidelines)</p>	<p>16</p>	
	<p>3. Identify the role of various health care stakeholders including providers, suppliers, financiers, purchasers, and consumers and their varied impact on the cost of care</p>	<p>32</p>	

accesstohealthcare.	
4. Understand coding and reimbursement principles.	32

Practices cost-effective care

	1. Identify costs for common diagnostic or therapeutic tests.	8
	2. Minimize unnecessary care including tests, procedures, therapies, and ambulatory or hospital encounters	8
	3. Demonstrate the incorporation of cost-awareness principles into standard clinical judgments and decision Making	24
	4. Demonstrate the incorporation of cost-awareness principles into complex clinical scenarios	48

References of Mile stones

1. <https://www.acgme.org/Portals/0/PDFs/Milestones/InternalMedicineMilestones.pdf>
2. <http://education.med.ufl.edu/files/2010/10/InternalMedicineMilestones.pdf>
3. <http://www.upstate.edu/medresidency/current/competencies.php>

SECTION : 6 UNIVERSITY RESIDENCY PROGRAM OF RAWALPINDI MEDICAL UNIVERSITY

The Assessment 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

What is the basis of curriculum and Assessment of MD Neurology of Rawalpindi Medical University Rawalpindi?

The curriculum of MD internal Medicine of Rawalpindi Medical University Rawalpindi is derived from

Accreditation Council for Graduate Medical Education which is competency / performance based system depends upon six following competencies.

- 1. Medical Knowledge**
- 2. Patient Care**
- 3. Interpersonal & Communication Skills**
- 4. Professionalism**
- 5. Practice Based Learning**
- 6. System Based Learning**

Rawalpindi Medical University Rawalpindi has two incorporated one additional component in this basic structure of six core competencies

- 7. Research**

Model of examination for MD Neurology 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	Phase -1 ➤ CIA Year	till end of Year 2	Equal to or more than 75% of the total marks	• Multi source feedback/360 degree

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%)	1 ➤ CIA Year 1		of all formative assessments/ 360° Evaluations	evaluation <ul style="list-style-type: none"> • MCQs for knowledge • Mini-CEX
	Phase -2 ➤ CIA Year 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	<ul style="list-style-type: none"> • Case based discussion • CPC presentations • TOACS/OSCE • Charts stimulated recall • Teaching rounds • Directly observed procedures • Research activities

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

S r. N o	Compete ncy to be assess ed	Teaching & learning strategies	Type of Assessment for the competency to be assessed	% weighta ge of the compet ency	Tools of Assessment
1.	Medic al know ledge	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,	Formative assessment leading to continue internal assessment and		Teaching rounds, case base discussion, presentations, CPC participations, clinical

		360° feedback evaluation, DOPS, long case/ short case discussions OPDs, emergency indoor workshops, hands on trainings.	also summative assessment in high stake exams		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 &	Formative assessment leading to continuous internal assessment		Multi source & 360 degree evaluation.

		mentors, session with research units, SDL,			
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	<p>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</p>	<p>Formative leading to continuous internal assessment Multi source & 360 degree evaluation (Logbook & portfolio)&also Summative assessment</p>	<p>10 %</p>	<p>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</p>
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Summary of all Assessments in Four & Five year training program of MD Internal Medicine:

S.N O.	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)	4. Professionalism (40% both) 5. Practice based learning 6. System based learning (10% both) 7. Research (10%)	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	Details Described at the end 50% pass marks	02 Examination in four years training program & 03 Examinations in Five years training program
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			<p>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.</p> <p>3. Publication of one article in Resident Research Journal (for five year training program only)</p> <p>4. OR Statistical report of one disease (for</p>		
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			<p>five year training program only)</p> <p>5. Completed and Duly signed Log Book for year one</p> <p>6. Completed and duly signed Portfolio for year one</p> <p>7. Submission of certificate of Continuous Internal Assessment for year one: Equal to or More than 75% (a cumulative score of the year one)</p> <p>8. Certificate of completion of</p>		
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				First year Training duly signed by the Supervisor		
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				<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)		<ol style="list-style-type: none"> 1. Submission of Pass Result of Examination of Year-1 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 3. Submission of certificate of 	Details Described at the end 60% pass marks	01
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			<p>approval of Research Protocol/Synops is 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</p>		
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				<p>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</p>		
--	--	--	--	---	--	--

				75% (a cumulative score of		
--	--	--	--	---	--	--

				<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</p>		
--	--	--	--	---	--	--

				<p>dues certificate from all relevant departments including Library, Hostel, Cashier etc. for year two of training</p>		
5	<p>During training of Year - 3</p>	<p>End of Rotation Formative Assessment /Evaluations (Formative Assessment)</p>		<p>75% or above of CIA the total marks will be considered as eligible</p>	<p>Not applicable as it is a Formative Assessment</p>	<p>04 evaluations in one year (total evaluations in four years =16 & in five years =20</p>

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 	Details Described at the end 50% Pass marks	02 Examination in four years training program & 03 Examinations in Five years training program
---	------------------------	--	--	--	--	---

			<p>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.</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</p>		
--	--	--	--	--	--

				program only) 6. Completed and Duly signed Log Book for year three		
--	--	--	--	---	--	--

				<p>7. Completed and duly signed Portfolio for year three</p> <p>8. Submission of certificate of Continuous Internal Assessment for year three: Equal to or More than 75% (a cumulative score of the year three)</p> <p>9. Certificate of completion of third year of Training duly signed by the Supervisor</p> <p>10. Submission of evidence of</p>		
--	--	--	--	--	--	--

				<p>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</p> <p>11. Submission of no dues certificate from all relevant departments including Library, Hostel, Cashier etc. For year three</p>		
7	During training of Year -	End of Rotation Formative		75% or above of CIA the total marks will be	Not applicable as it is a	04 evaluations in one year

	4	Assessment /Evaluations (Formative Assessment)		considered as eligible	Formative Assessment	(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)		<ol 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 	Details Described at the end 60% Pass marks	01

			<p>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.</p> <p>5. Publication of one article in Resident Research Journal (for five year training program only) OR Statistical report of one disease (for</p>		
--	--	--	---	--	--

				five year training		
--	--	--	--	-------------------------------	--	--

				<p>program only)</p> <p>6. Completed and Duly signed Log Book for year three and four</p> <p>7. Completed and duly signed Portfolio for year three and four</p> <p>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)</p> <p>9. Certificate of completion of Fourth year of</p>		
--	--	--	--	---	--	--

				<p>Training duly signed by the Supervisor</p> <p>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</p> <p>11. Submission of no dues certificate from all relevant departments including Library, Hostel, Cashier etc. For year four</p>		
--	--	--	--	--	--	--

				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						05
One Additional Assessment at the End of Year 4 with same pattern as end of year 1 & 3 Assessments						Summative Assessments in five years

Details about Content, number of questions (MCQs & SEQs) and Marks of various High Stake/ Summative Examinations

Name of examination	Content	Eligibility criteria	Questions MCQs/SEQs/TOA CS																		
<p>In Training - Assessment year-1 (at the end of year 1)</p>	<ul style="list-style-type: none"> • Basic principles of medicine • Symptoms analysis • Clinical methods/signs interpretation • Differential diagnosis • Basic investigations • Infectious diseases • Counseling & ethics • Management of common emergencies • Fluid & Electrolyte Management • BLS/ACLS • Principles of Antibiotic 	<ul style="list-style-type: none"> i. Completion of 1 year training ii. Workshops completion <ul style="list-style-type: none"> • Communication skills 3days • Computer & IT skills 3days • Synopsis writing --3days • BLS/ACLS -----1 days iii. Research <ul style="list-style-type: none"> • Allotment of Thesis topic by supervisor • Publication of one article in Resident Research Journal OR Statistical report of one disease iv. CIS- Minimum 75% marks- Certification by DME and Supervisor/s <p>Special note: Students with less than 75% CIS,</p>	<p>A. Written Assessment for year -1 total marks 100 (100clinical / Applied Basic Sciences MCQs) (Pass percentage: 50%)</p> <p>B - Table of Specification for written Assessment</p> <table border="1"> <thead> <tr> <th>Sr. no</th> <th>Discipline</th> <th>MCQs</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>Basic principles of medicine</td> <td>15 MCQs</td> </tr> <tr> <td>2.</td> <td>Symptoms analysis</td> <td>13 MCQs</td> </tr> <tr> <td>3.</td> <td>Signs interpretation</td> <td>13 MCQs</td> </tr> <tr> <td>4.</td> <td>Differential Diagnosis</td> <td>7 MCQs</td> </tr> <tr> <td>5.</td> <td>Clinical</td> <td>7 MCQs</td> </tr> </tbody> </table>	Sr. no	Discipline	MCQs	1.	Basic principles of medicine	15 MCQs	2.	Symptoms analysis	13 MCQs	3.	Signs interpretation	13 MCQs	4.	Differential Diagnosis	7 MCQs	5.	Clinical	7 MCQs
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1.	Basic principles of medicine	15 MCQs																			
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3.	Signs interpretation	13 MCQs																			
4.	Differential Diagnosis	7 MCQs																			
5.	Clinical	7 MCQs																			

Therapy

such cases will be referred to relevant academic review committee which will work under the umbrella of DME/ UTMC

	methods interpretation	
6.	Basic investigations	7 MCQs
7.	Infectious Diseases	8 MCQs
8.	Counseling & Ethics	10 MCQs
9.	Management of common emergencies	8 MCQs
10.	Fluid & Electrolyte Management	8 MCQs
11.	BLS/ACLS	2 MCQs
12.	Principles of Antibiotic Therapy	2 MCQs

<p>Mid Training Assessment Examination equivalent to Intermediate Modular Exam (at the end of year 2)</p>	<ul style="list-style-type: none"> • Cardiology • Gastroenterology • Respiratory medicine • Neurology • Infectious diseases • Nephrology • Emergency medicine • Hematology • Rheumatology • Psychiatry • Endocrinology 	<p>i- Completion of 2 year training ii- Passed Year One examination iii- Rotations completion</p> <p>Three rotations (each of 2 months- to be completed in first two years)</p> <ol style="list-style-type: none"> 1. Cardiology 2. Nephrology 3. IC <p>U iv- Resear ch:</p> <ul style="list-style-type: none"> • Formulation of research synopsis with approval of ERB & BASR by the end of 2nd year • Certificate will be issued by UTMC <p>v- CIS- Minimum 75% marks</p>	<p>A – Mid Training Assessment(total marks = 300) B - Written Assessment (150 marks)</p> <p>Two papers of case based 75 MCQs ----- total marks 150</p> <p style="background-color: #f4a460; padding: 2px;">(Pass percentage = 60%)</p> <p>C- Table of Specification for paper I & II PAPER-I</p> <table border="1"> <thead> <tr> <th><i>Sr. no</i></th> <th><i>Discipline</i></th> <th><i>MCQs</i></th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>Cardiology</td> <td>15 MCQs</td> </tr> <tr> <td>2.</td> <td>Nephrology</td> <td>15 MCQs</td> </tr> <tr> <td>3.</td> <td>ICU</td> <td>15 MCQs</td> </tr> <tr> <td>4.</td> <td>Infectious diseases</td> <td>8 MCQs</td> </tr> <tr> <td>5.</td> <td>Respiratory medicine</td> <td>8 MCQs</td> </tr> <tr> <td>6.</td> <td>Emergency</td> <td>7 MCQs</td> </tr> </tbody> </table>	<i>Sr. no</i>	<i>Discipline</i>	<i>MCQs</i>	1.	Cardiology	15 MCQs	2.	Nephrology	15 MCQs	3.	ICU	15 MCQs	4.	Infectious diseases	8 MCQs	5.	Respiratory medicine	8 MCQs	6.	Emergency	7 MCQs
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3.	ICU	15 MCQs																						
4.	Infectious diseases	8 MCQs																						
5.	Respiratory medicine	8 MCQs																						
6.	Emergency	7 MCQs																						

- Critical care
- Dermatology

minimum 75% marks-
Certification by DME and
Supervisor/s

Special note:

Students with less than 75% CIS,
such cases will be referred to
relevant academic review
committee which will work under
the umbrella of DME/ UTMC

	medicine	
7.	Psychiatry	7 MCQs

PAPER-II

<i>Sr. no</i>	<i>Discipline</i>	<i>MCQs</i>
1.	Neurology	15 MCQs
2.	Dermatology	15 MCQs
3.	Hematology	13 MCQs
4.	Endocrinology	13 MCQs
5.	Rheumatology	12MCQs
6.	Gastroenterology	7 MCQs

**D- Clinical Assessment (TOACS
150 marks)**

On passing the theory (60% pass
percentage), trainee will be
eligible to appear in practical exam.

<p>In Training - Assessment year-3 (at the end of year 3)</p>	<ul style="list-style-type: none"> • Stroke • Epilepsy and epilepsy syndromes • CNS infections • Neuropathies • Myopathies • Parkinson’s Disease and parkinsonism • Alzheimer’s and Dementias • Movement disorders • Neuro critical care • Sleep disorders • Multiple sclerosis and demyelinations • Headcahes • Motor Neuron diseases • Neuromuscular junction disorders 	<p>i. Completion of 3rd year training</p> <p>ii. Passed Intermediate examination</p> <p>iii. Workshops completion</p> <ul style="list-style-type: none"> • Reference Manager(Endnote)---1 day <p>iv. Research</p> <ul style="list-style-type: none"> • data collection • data analysis & interpretation • start writing thesis <p>v. Publication of one article in resident research journal or statistical report of 11 disease(optional)</p> <p>vi. CIS MINIMUM 75 % marks minimum 75% marks certification by DME and Supervisors/s</p> <p>Special note: Students with less than 75% CIS, such cases will be referred to relevant academic review committee which will work under</p>	<p>A- Written Assessment (100 marks)</p> <ul style="list-style-type: none"> ➤ 100 MCQs total marks 100 (100 clinical MCQs) <p>(Pass percentage = 50%)</p> <p>B- Table of Specification</p> <table border="1"> <thead> <tr> <th>Sr.n</th> <th>Discipline</th> <th>MCQs</th> </tr> </thead> <tbody> <tr> <td>o</td> <td></td> <td></td> </tr> <tr> <td>1.</td> <td>Stroke</td> <td>10 MCQs</td> </tr> <tr> <td>2.</td> <td>Epilepsy</td> <td>10 MCQs</td> </tr> <tr> <td>3.</td> <td>CNS infections</td> <td>10 MCQs</td> </tr> <tr> <td>4.</td> <td>Neuropathies</td> <td>5 MCQs</td> </tr> <tr> <td>5.</td> <td>Myopathies</td> <td>5 MCQs</td> </tr> <tr> <td>6.</td> <td>PD and Parkinsonism</td> <td>10 MCQs</td> </tr> <tr> <td>7.</td> <td>Dementias</td> <td>10 MCQs</td> </tr> <tr> <td>8.</td> <td>Neuro critical care</td> <td>5 MCQs</td> </tr> <tr> <td>9.</td> <td>Demyelinations</td> <td>10 MCQs</td> </tr> <tr> <td>10</td> <td>Sleep disorders</td> <td>5 MCQs</td> </tr> <tr> <td>.</td> <td></td> <td></td> </tr> <tr> <td>11</td> <td>Headaches</td> <td>10 MCQs</td> </tr> <tr> <td>.</td> <td></td> <td></td> </tr> <tr> <td>12</td> <td>Motor Neuron</td> <td>5 MCQs</td> </tr> </tbody> </table>	Sr.n	Discipline	MCQs	o			1.	Stroke	10 MCQs	2.	Epilepsy	10 MCQs	3.	CNS infections	10 MCQs	4.	Neuropathies	5 MCQs	5.	Myopathies	5 MCQs	6.	PD and Parkinsonism	10 MCQs	7.	Dementias	10 MCQs	8.	Neuro critical care	5 MCQs	9.	Demyelinations	10 MCQs	10	Sleep disorders	5 MCQs	.			11	Headaches	10 MCQs	.			12	Motor Neuron	5 MCQs
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12	Motor Neuron	5 MCQs																																																	

the umbrella of DME/ UTMC

.	diseases	
13	Neuromuscular	5 MCQs
.	junction disorders	

In Training -
Assessment
year-4 (at
the end of
year 4)

- Stroke
- Epilepsy and epilepsy syndromes
- CNS infections
- Neuropathies
- Myopathies
- Parkinson's Disease and parkinsonism
- Alzheimer's and Dementias
- Neurosurgery
- Neuro ophthalmology
- Neuropsychiatry
- EEG
- Headaches
- NCS & EMG
- Neuromuscular junction disorders

- vii. Completion of 4rth year training
- viii. Passed Intermediate examination
- ix. Workshops completion
 - Reference Manager(Endnote)---1 day
- x. Research
 - data collection
 - data analysis & interpretation
 - start writing thesis
- xi. Publication of one article in resident research journal or statistical report of 11 disease(optional)
- xii. CIS MINIMUM 75 % marks minimum 75% marks certification by DME and Supervisors/s

Special note:

A- Written Assessment (100 marks)

- 100 MCQs total marks 100 (100 clinical MCQs)

(Pass percentage = 50%)

B- Table of Specification

Sr.no	Discipline	MCQs
1.	Stroke	10 MCQs
2.	Epilepsy	10 MCQs
3.	CNS infections	5 MCQs
4.	Neuropathies	5 MCQs
5.	Myopathies	5 MCQs
6.	PD& parkinsonism	5 MCQs
7.	Dementia	5 MCQs
8.	Neurosurgery	10 MCQs
9.	Neuro ophthalmology	10 MCQs
10	Neuro psychiatry	10 MCQs
.		
11	EEGs	10 MCQs

Students with less than 75% CIS, such cases will be referred to relevant academic review committee which will work under the umbrella of DME/ UTMC

.		
12	NCS & EMG	10 MCQs
.		
13	Neuromuscular junction disorders	5 MCQs
.		

Final Assessment (at the end of year 5)

- Stroke
- Epilepsy and epilepsy syndromes
- CNS infections
- Neuropathies
- Myopathies
- Parkinson's Disease and parkinsonism
- Alzheimer's and Dementias
- Movement disorders
- Neuro critical care
- Sleep disorders
- Multiple sclerosis and demyelinations
- Headcahes
- Motor Neuron diseases
- Neuromuscular

- i- Completion of 5th year training ii- Passed 3rd year & 4th year examination iii- Research/Thesis
- Completion & submission of Thesis 6 months before completion of training
 - Defense & Approval of Thesis in BASR
 - Certificate will be issued by UTMC
- iv- Rotations
Compulsory rotations completion in last two year
- Neuroradiology (2 months)
 - Psychiatry (2 months)
 - NCS & EMG (2 months)

(Total Marks = 800)
A. **Written Assessment (200 marks)**

• **PAPER-I- Case Based 100MCQs---(100 marks) (clinical MCQs of C3 level)**

• **PAPER-II 10SEQs (100marks)**

(Pass percentage = 60%)

B- Table of Specification for paper I & II

S.N	DISCIPLI	MCQs	SEQ
o	NE		
1.	Stroke	10 MCQs	1 SEQ
2.	Epilepsy	10 MCQs	1 SEQ
3.	CNS	10	1 SEQ

- junction disorders
- Neurosurgery
- Neuropsychiatry
- Neuro ophthalmology
- NCS & EMG
- EEG

- Neurosurgery (2 months)
- EEG (1 month)
- Neurorehabilitation(1 month)
- Neuro Ophthalmology (1 month).

V.CIS Minimum 75% marks-
 Certification by DME and
 Supervisor/s

Special note:
 Students with less than 75% CIS,
 such cases will be referred to
 relevant academic review
 committee which will work under
 the umbrella of DME/ UTMC

	Infectious	MCQs	
4.	Neuropathies and myopathies	10 MCQs	1 SEQ
5.	Parkinson's disease	10 MCQs	1 SEQ
6.	Dementias	10 MCQs	From
7.	Movement disorders	5 MCQs	number
8.	Demyelinations & MS	5 MCQs	6-13
9.	Headache	5 MCQs	five
10.	NMJ and Anterior horn diseases	10 MCQs	SEQs
11.	Sleep disorders	5 MCQs	will be made

12.	Neuroelctro physiology	5 MCQs
13.	Neurocritica I	5 MCQs

**C- Clinical Assessment
(500marks)**

On passing the theory, trainee will be eligible to appear in practical exam. **Pass marks 60%.**

- Four short cases total 200 marks (each of 50marks)
- One long case 100marks
- TOACS (15-20 stations)
----- 200 marks

D- Defense of Thesis (100 marks)

- On passing the theory, trainee will be eligible to appear in defense of thesis.
- Power Point presentation : 30 marks
- Discussion session : 70 marks

(Pass percentage = 60%)

Format of defense of thesis

- Panel of 2 examiner's including one internal & one external/guest examiner
- Power point presentations of 30 min regarding his/her research project ,including major outcomes of discussion also
- This will be followed by interactive discussion session/Q&A sessions of 1 hour.

SECTION :7 LOG BOOK for MD Neurology(Templates)



MD NEUROLOGY RAWALPINDI MEDICAL UNIVERSITY RAWALPINDI



ENROLMENT DETAILS

Program of Admission _____

Session _____

Registration / Training Number _____

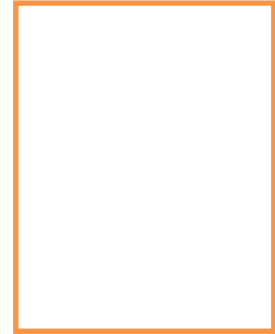
Name of Candidate _____

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 (LONG AND SHORT CASES)

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-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			
13			
14			

15			
16			
17			
18			
19			
20			
21			
22			
23			
24			
25			
26			
27			

SECTION-6

EMERGENCY CASES(repetition of cases should be avoided)

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

SECTION-12

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			
14			

15			
16			
17			
18			
19			
20			
21			
22			
23			
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			
7			
9			
10			
11			
12			
13			
14			

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SECTION-9

PROCEDURES

SR.#	DATE	REG NO. OF PATIENT	NAME OF PROCEDU RE	OBSERVED/ASSISTED/PE RFORMED UNDER SUPERVISION/PERFORME D INDEPENDENTLY	PLACE OF PROCEDU RE	SIGNATURES OF THE SUPERVISOR

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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-14**PUBLICATIONS**

SNO.	NAME OF PUBLICATION	TYPE OF PUBLICATION ORIGINAL ARTICLE/EDITORIAL/CASE REPORT ETC	NAME OF JOURNAL	DATE OF PUBLICATION	PAGE NO.	SIGNATURES OF THE SUPERVISOR

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

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

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SECTION-18

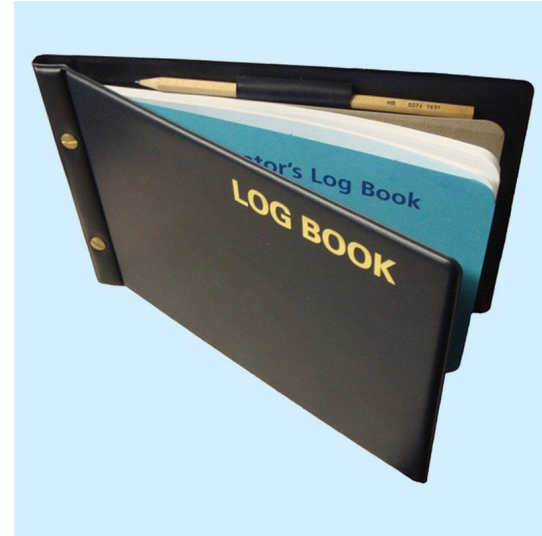
EVALUATION RECORDS

(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 _____

ermanent 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

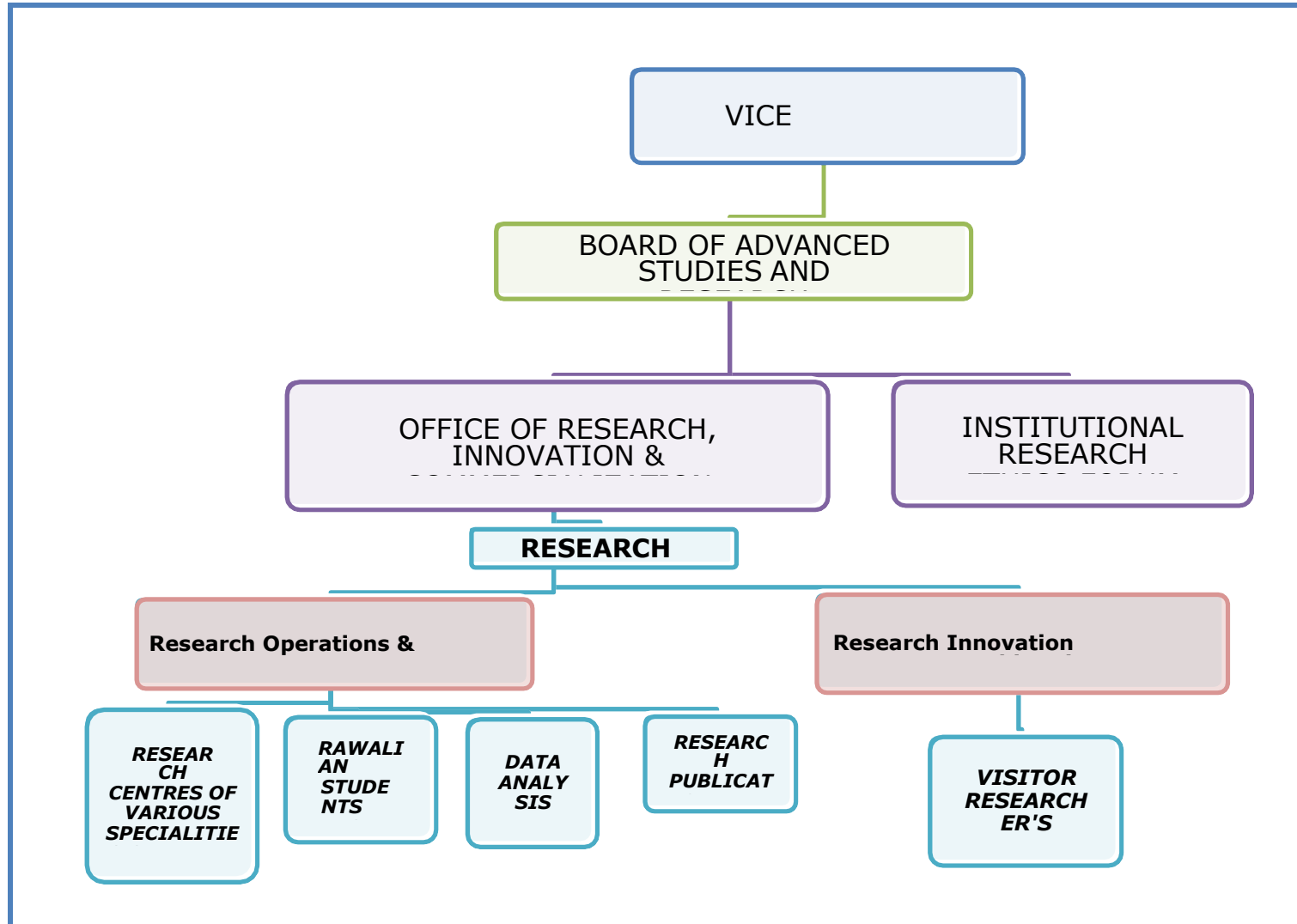
NEUROLOGY residents' outlook in research can be significantly improved using a research curriculum offered through a structured and dedicated research rotation. This is exemplified by the improvement noted in resident satisfaction, their participation in scholarly activities and resident research outcomes 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 OF MD NEUROLOGY 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 enters 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/comp any.	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/comp any.	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: the latest as Sr # 1):

14. B. If yes please mention the last five manuscripts in case of exceeding 5, starting from

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:?

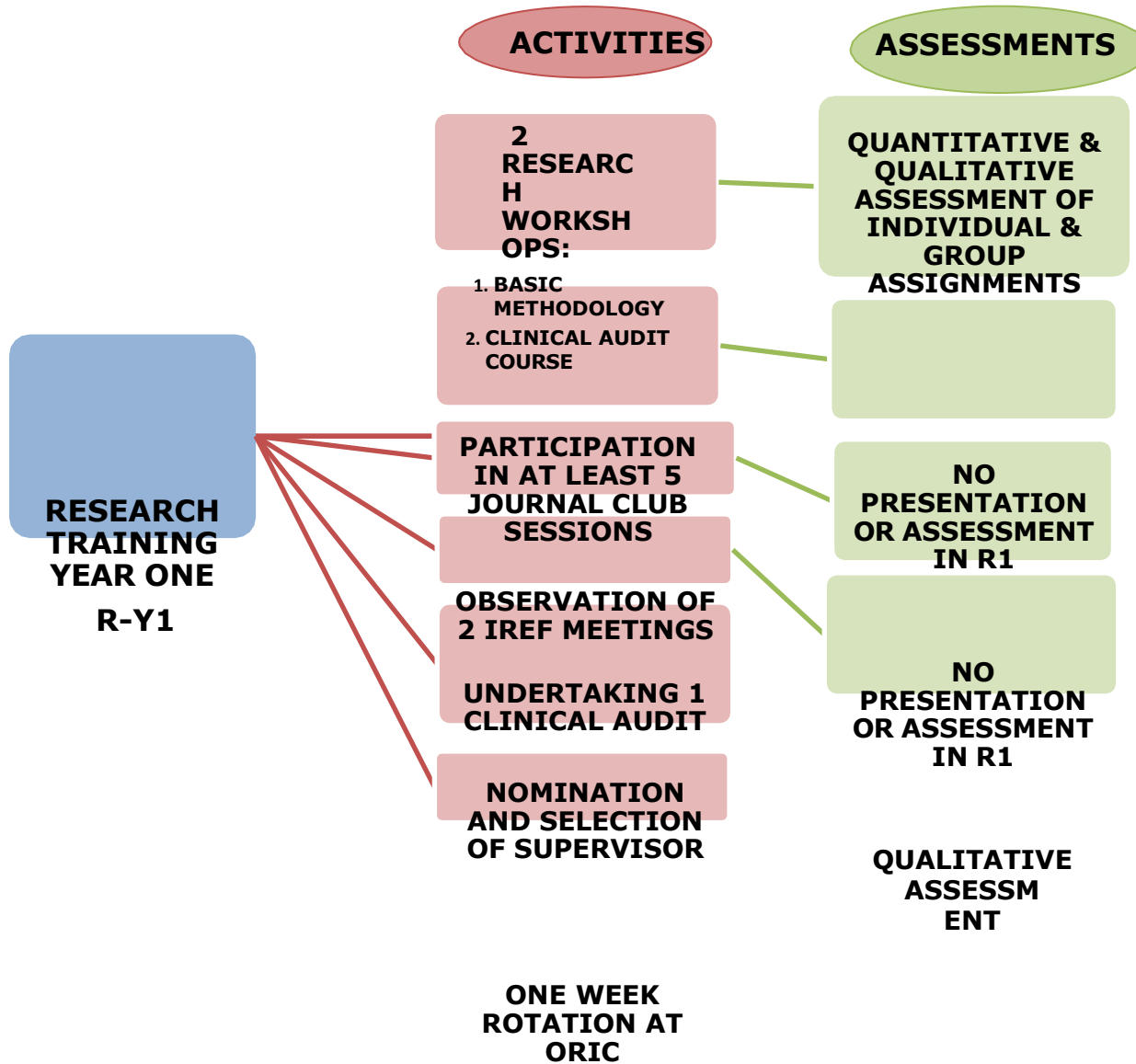
Thank you

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 OR OF ORIC (NAME/STAMP)

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

JOUR NAL CLUB MEETI NG #	DATE	TITLES OF THE ARTICLES PRESENTED IN THE JOURNAL CLUB MEETING	TITLE OF JOURNAL/ YEAR OF PUBLICATION	ANY QUESTION OR COMMENT MADE ON THE PRESENTATIO N BY THE OBSERVER	SUPERVISOR' S SIGNATURE	HEAD OF DEPARTMENT 'S SIGNATURE (NAME/STAM P)
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-**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-**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					
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SECTION-**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				

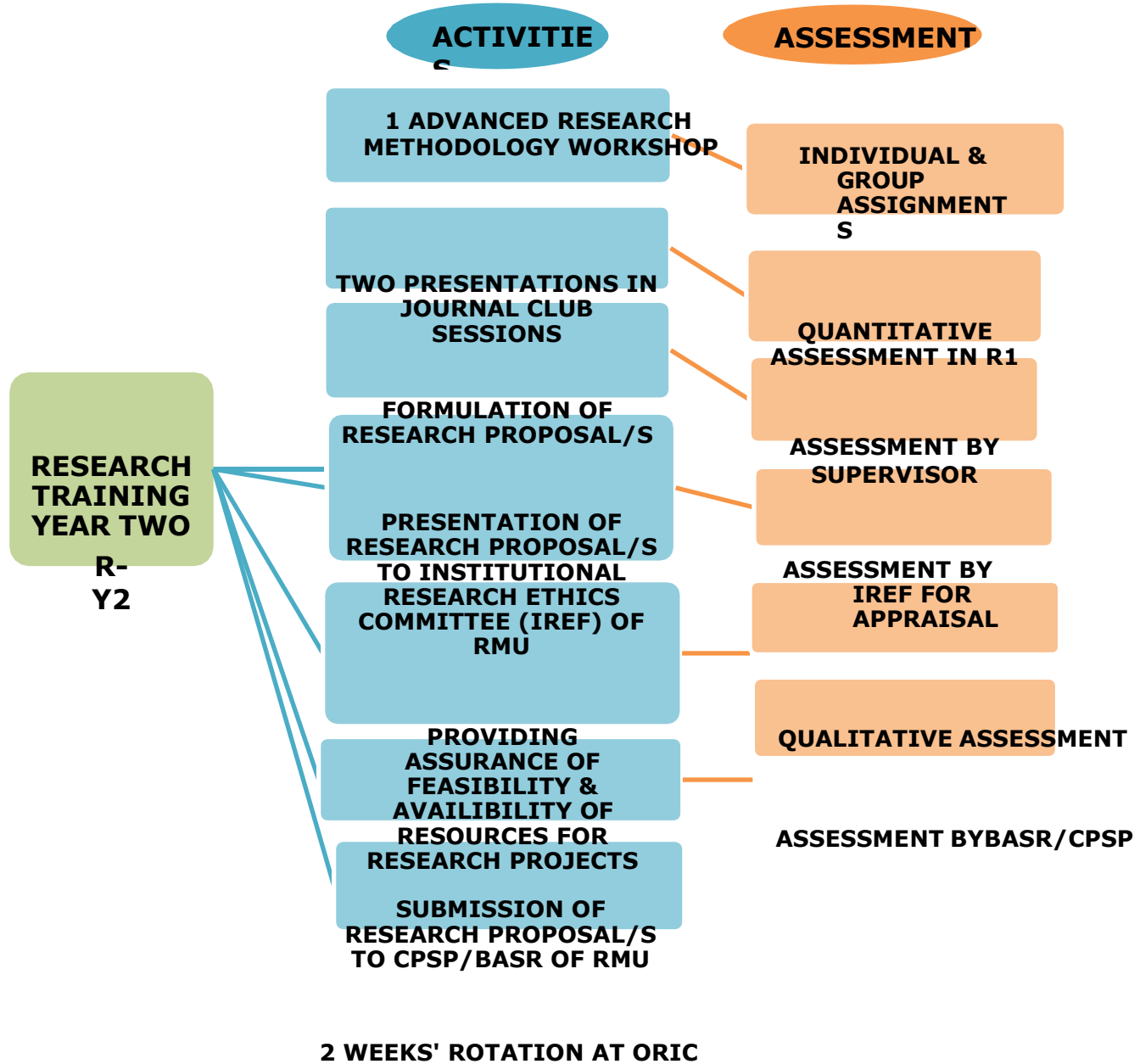
4

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SECTION-**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'S SIGNATURE (NAME/S TAMP)

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 Variables Numerical 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			
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SECTION-**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/S TAMP)

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.	A.	A.		

		B. C.	B. C.	B. C.		
5		A. B. C.	A. B. C.	A. B. C.		

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

Journ al Club Meeti ng #	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 Depart ment's Signatu re (Name/St amp)
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>		
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**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 ASSOCIATE S/DEPUTY DIRECTOR' S SIGNATURE	REFLECTION OF THE SUPERVISOR ON THE CONTENT & QUALITY OF THE PROPOSAL	SUPERVI SOR'S SIGNAT URE (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-

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</i>		

		<i>RMU</i>		
		<i>CO- CHAIRPERSON OF THE BOARD OF ADVANCED STUDIES & RESEARCH OF RMU</i>		

SECTION-

RECORD OF FORTNIGHTLY MEETINGS OF THE RESIDENT WITH THE SUPERVISOR IN YEAR 2

SR #	DATE/VE NUE /DURAT ION OF MEETIN G	AGENDA AND OUTLINE OF THE MEETING (IN TERMS OF CONTENT, DISCUSSION POINTS)	ACTION POINTS AND SUPERVISOR'S REFLECTIONS	SUPERVI SOR'S SIGNAT URE (NAME/ STAMP)	HEAD OF DEPART MENT'S SIGNAT URE (NAME/STA MP)
1					
2					
3					
4					

5					
6					

SECTION**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-**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
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**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 REVIWED, MODIFIED, ACCEPTED OR REJECTED. PLEASE SPECIFY	DIRECTO R ORIC'S SIGNATU RE (NAME/S TAMP)
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SECTION-
12

OVERALL EVALUATION OF RESEARCH THESIS PROGRAM BY SUPERVISOR

SECTION-
12

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

SECTION-

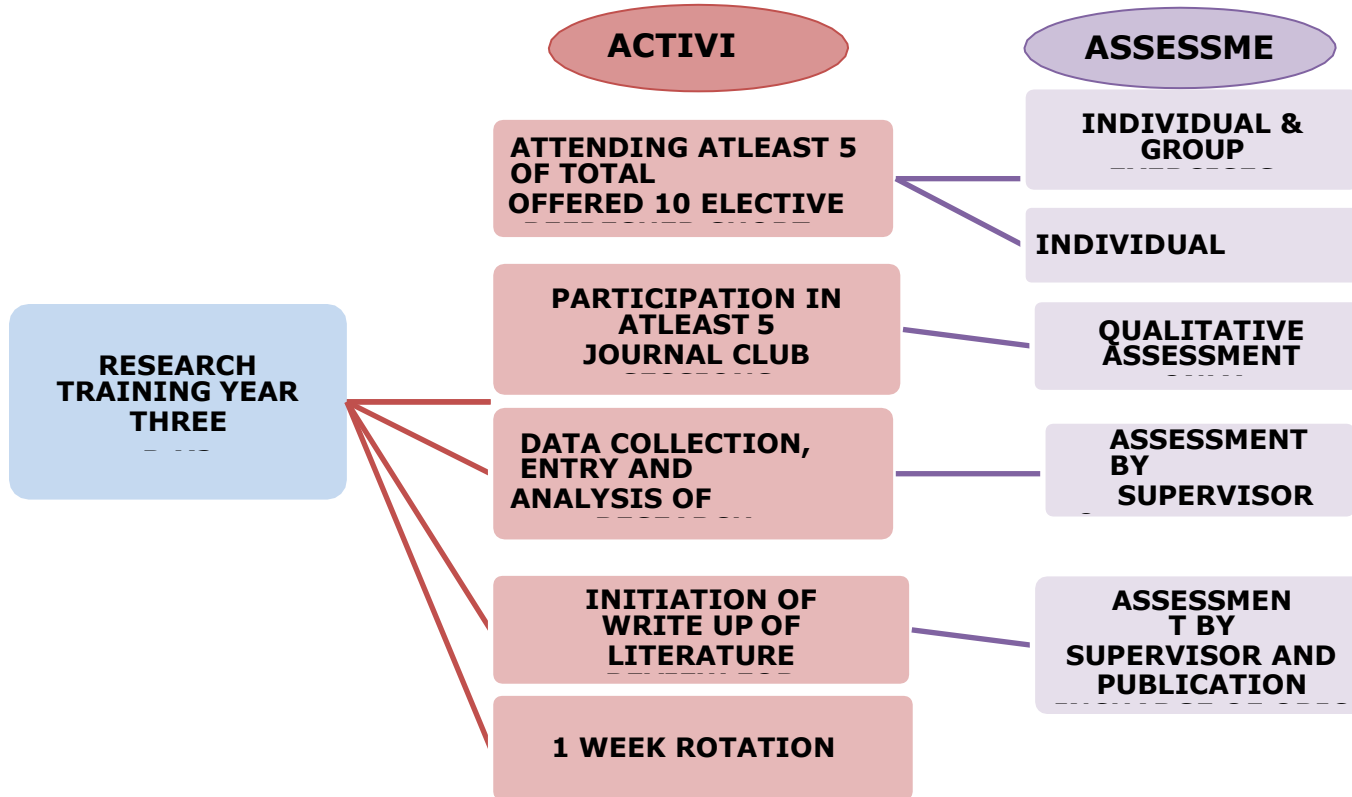
OVERALL EVALUATION OF RESEARCH THESIS PROGRAM BY ORIC (OFFICE OF RESEARCH INNOVATION AND COMMERCIALIZATION)

SECTION-
12

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

RESEARCH COURSE OF THIRD RESEARCH TRAINING YEAR

R-Y3



SECTION-**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-**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.	A.	A.		

		B. C.	B. C.	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**

JOUR NAL CLUB MEET ING #	DA TE	TITLE OF THE ARTICLE PRESENTED BY RESIDENT IN THE JOURNAL CLUB MEETING	TITLE OF JOURNAL/ YEAR OF PUBLICATION	REFLECTIO N OF TWO SENIOR FACULTY MEMBERS ON THE PRESENTAT ION	SENIOR FACULTY MEMBER S SIGNATU RE	REFLECTION OF THE HOD ON THE PRESENTATI ON AND SCORES GIVEN OUT OF ATTAINABLE TOTAL SCORE OF 25	HEAD OF DEPART MENT'S SIGNAT URE (NAME/ STAMP)
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SIGNATURE OF THE DEAN OF SPECIALITY: _____

(NAME/STAMP): _____

**SECTION-
F**

**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/VEU E /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)
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SECTION-**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)
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SECTION-**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.
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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
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SECTION-**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 REVIWED, MODIFIED, ACCEPTED OR REJECTED. PLEASE SPECIFY	DIRECTO R ORIC'S SIGNATU RE (NAME/S TAMP)
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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-

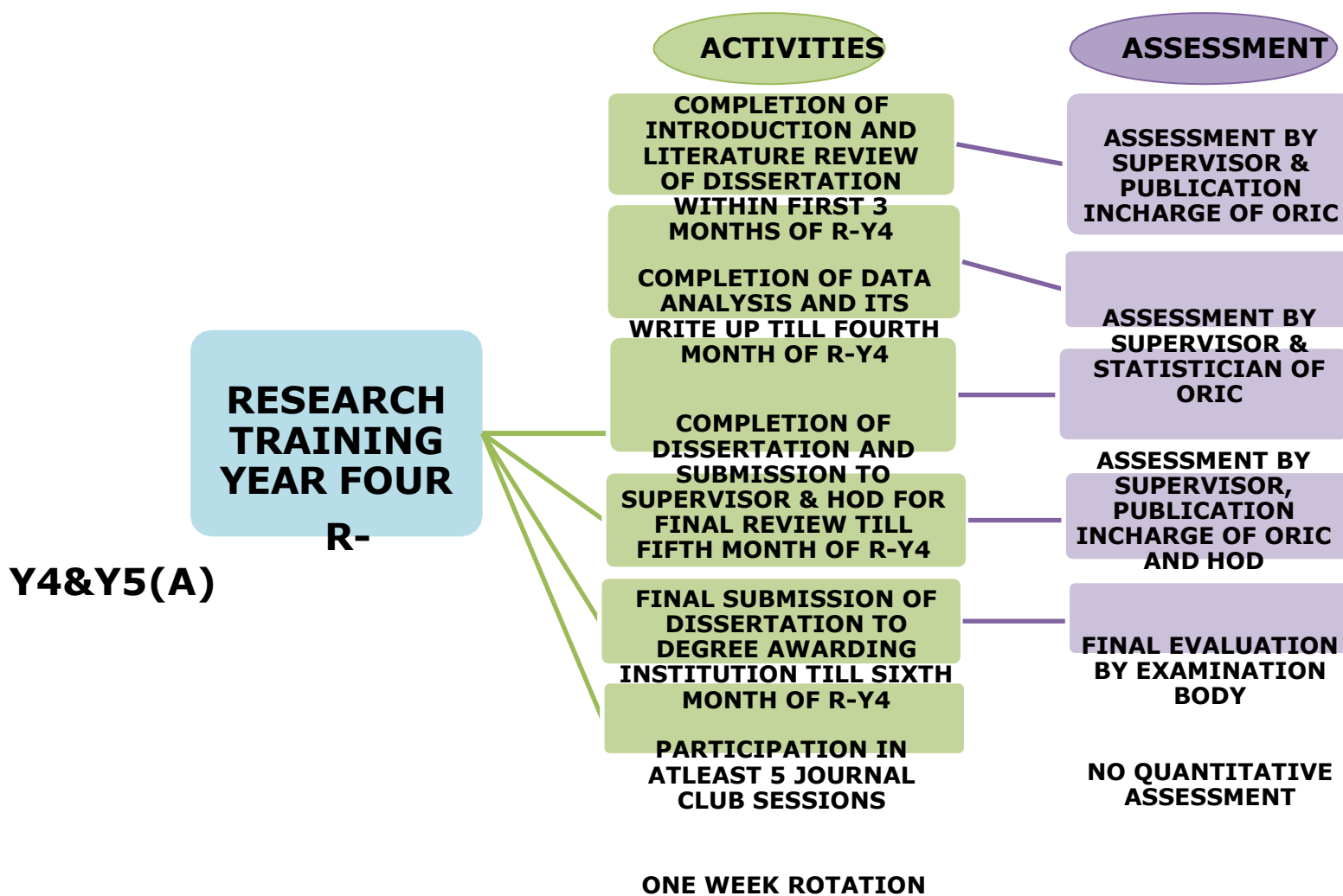
OVERALL EVALUATION OF RESEARCH THESIS PROGRAM BY ORIC (OFFICE OF RESEARCH INNOVATION AND COMMERCIALIZATION)

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

RESEARCH COURSE OF FOURTH RESEARCH TRAINING YEAR

R-Y4&Y5



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.	A.	A.		

		B.	B.	B.		
		C.	C.	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-
2**

**CONFIRMATION OF COMPLETENESS OF DATA ANALYSIS & WRITE UP OF RESULTS OF RESEARCH PROJECT
FOR THESIS BY RESIDENT TILL 4THMONTH 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>		
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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</i>		

	<i>(BASR) OF RMU</i>		
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SECTION-**6****RECORD OF FORTNIGHTLY MEETINGS OF THE RESIDENT WITH THE SUPERVISOR IN
YEAR 4**

SR #	DATE/VENUE /DURATIO N OF MEETING	AGENDA AND OUTLINE OF THE MEETING (IN TERMS OF CONTENT, DISCUSSION POINTS)	ACTION POINTS AND SUPERVISOR'S REFLECTIONS	SUPERVISOR'S SIGNATURE (NAME/STA MP)	HEAD OF DEPARTMENT'S SIGNATURE (NAME/STA MP)
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SECTION-**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**

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.
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SECTIO**RECORD OF LITERATURE REVIEW CONDUCTED BY THE**

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
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**SECTION-
10**

RECORD OF ANY MANUSCRIPT/RESEARCH PAPER FORMULATED BY THE RESIDENT IN YEAR 4

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)
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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-

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

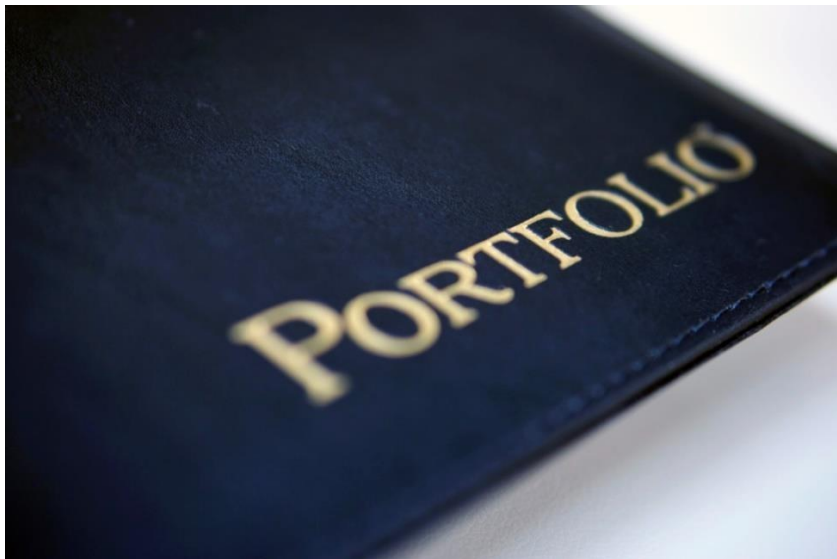
SECTION-

11

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



RAWALPINDI MEDICAL UNIVERSITY MD/MS RESIDENCY PROGRAMME



ENROLMENT DETAILS

Program of Admission _

Session ____

Registration / Training Number ____

Name of Candidate ____

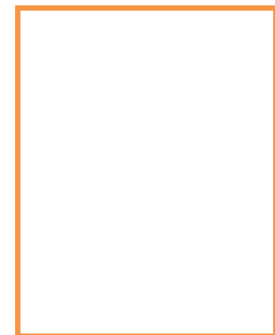
Father's Name ____

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 & Carraccio, 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.

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INDEX:

CURRICULUM VITAE (CV)

CASE PRESENTATION

TOPIC PRESENTATION

JOURNAL CLUB

EMERGENCY

INDOOR

OPD AND CLINICS

PROCEDURAL SKILLS/DIRECTLY OBSERVED PROCEDURES

MULTIDISCIPLINARY MEETINGS

MORBIDITY/MORTALITY MEETINGS

HANDS ON TRAINING

RESEARCH PUBLICATIONS/MAJOR RESEARCH PROJECT/ ABSTRACT/ SYNOPSIS/ DISSERTATION/ PAPER PRESENTATION

ASSESSMENT RECORDS & EVALUATION PROFORMAS

AWARDS/TESTIMONIALS/APPRECIATION LETTERS

ANY OTHER SPECIFIC ACHIEVEMENTS

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: 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-4

JOURNAL CLUB

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

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-5

EMERGENCY

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

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-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: 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-7

OPD AND CLINICS

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

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-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 DISCIPLINARY MEETINGS

Details of Multidisciplinary meetings attended should be written here 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-10

MORBIDITY/MORTALITY MEETINGS

Details morbidity/mortality meetings attended should be written here 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-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: 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>	

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: 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-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

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:8 REFERENCES

Teaching Methods

- Kolb, D. *Experiential Learning*. Englewood Cliffs, NJ: Prentice Hall. 1984
- Maudsley G. Do we all mean the same thing by "PBL"? *Academic Medicine* 1999; 74:178-85
- Koh G *et al* The effects of PBL during medical school on physician competency: a systemic review. *CMAJ* 2008 178(1) 34-41
- Hill W. *Learning Thru Discussion* 2nd edition. London: Sage Publications. 1977.
- Cook D. Web-based learning: pros, cons and controversies. *Clinical Medicine* 2007; 7(1):37-42.
- Greenhalgh T. Computer assisted learning in undergraduate medical education. *BMJ* 2001; 322:40-4.
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- Schon D. *Educating the reflective practitioner*. San Francisco: Jossey Bass. 1984
- Lockyer J *et al* Knowledge translation: the role and practice of reflection. *Journal of Continuing Education*. 2004; 24:50-56.

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.ttuhs.c.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
- <http://www.uhs.edu.pk/downloads/MD%20Internal%20Medicine.pdf>

Assessment methods

- Center for Creative Leadership, Greensboro, North Carolina (<http://www.ccl.org>).
- Munger, BS. Oral examinations. In Mancall EL, Bashook PG. (editors) *Recertification: newevaluation methods and strategies*. Evanston, Illinois: American Board of Medical Specialties,1995: 39-42

- Noel G, Herbers JE, Caplow M et al. How well do Internal Medicine faculty members evaluate the clinical skills of residents? *Ann Int Med.* 1992; 117: 757-65.

- Winckel CP, Reznick RK, Cohen R, Taylor B. Reliability and construct validity of a structured technical skills assessment form. *Am J Surg.* 1994; 167: 423-27.

- Norman, Geoffrey. *Evaluation Methods: A resource handbook*. Hamilton, Ontario, Canada: Program for Educational Development, McMaster University, 1995: 71-77.
- Watts J, Feldman WB. Assessment of technical skills. In: Neufeld V and Norman G (ed). *Assessing clinical competence*. New York: Springer Publishing Company, 1985: 259-74.
- Kaplan SH, Ware JE. The patient's role in health care and quality assessment. In: Goldfield N and Nash D (eds).

Providing quality care (2nded): Future Challenge. Ann Arbor, MI: Health Administration Press, 1995: 25-52.

□ Matthews DA, Feinstein AR. A new instrument for patients' ratings of physician performance in the hospital setting. *J Gen Intern Med*. 1989;4:14-22.

□ Challis M. AMEE medical education guide no. 11 (revised): Portfolio-based learning and assessment in medical education. *Med Teach*. 1999; 21: 370-86.

□ Tugwell P, Dok, C. Medical record review. In: Neufeld V and Norman G (ed). *Assessing clinical competence*. New York: Springer Publishing Company, 1985: 142-82.

□ Tekian A, McGuire CH, et al (eds.) *Innovative simulations for assessing professional competence*. Chicago, Illinois: University of Illinois at Chicago, Dept. Med. Educ. 1999

□ Mancall EL, Bashook PG. (eds.) *Assessing clinical reasoning: the oral examination and alternative methods*. Evanston, Illinois: American Board of Medical Specialties, 1995.

- Van der Vleuten, CPM and Swanson, D. Assessment of clinical skills with standardized patients: State of the art. *Teach Learn Med.* 1990; 2: 58-76.

- Haladyna TM. *Developing and validating multiple-choice test items.* Hillsdale, New Jersey: L. Erlbaum Associates. 1994.

- Case SM, Swanson DB. *Constructing written test questions for the basic and clinical sciences*. Philadelphia, PA: National Board of Medical Examiners, 1996 (www.nbme.org)
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strategies. Evanston, Illinois: American Board of Medical Specialties, 1995: 39-42.

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- Tekian A, McGuire CH, et al (eds.) *Innovative simulations for assessing professional competence*. Chicago, Illinois: University of Illinois at Chicago, Dept. Med. Educ. 1999
- Tugwell P, Dok, C. Medical record review. In: Neufeld V and Norman G (ed). *Assessing clinical competence*. New York: Springer Publishing Company, 1985: 142-82.
- Van der Vleuten, CPM and Swanson, D. Assessment of clinical skills with standardized patients: State of the art.

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- Watts J, Feldman WB. Assessment of technical skills. In: Neufeld V and Norman G (ed). *Assessing clinical competence*. New York: Springer Publishing Company, 1985, 259-74.
- Winckel CP, Reznick RK, Cohen R, Taylor B. Reliability and construct validity of a structured technical skills assessment form. *Am J Surg*. 1994; 167: 423-27.

References of Mile stones

4. <https://www.acgme.org/Portals/0/PDFs/Milestones/InternalMedicineMilestones.pdf>

5. <http://education.med.ufl.edu/files/2010/10/InternalMedicineMilestones.pdf>
6. <http://www.upstate.edu/medresidency/current/competencies.php>

SECTION :9 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”
3. Proforma for patient Medication Record----- “Appendix C”
4. Workplace Based Assessments- guidelines for assessment of Generic & specialty specific Competencies -----

Appendix “ D”

5. Supervisor’s Annual Review Report ----- Appendix “ E”
6. Supervisors evaluation Proforma for continuous internal assessments -----Appendix “ F”
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”
10. Evaluation of program by the resident ----- Appendix “ J”
11. Guidelines for program evaluation -----Appendix “ K”
12. Evaluation of Project Director by the residents----- Appendix “ L”

Workplace Based Assessments-Multi Source Feedback profoma- 360° EvaluationAppendix “A”



Rawalpindi Medical University

Quality Enhancement Cell

Evaluation Proforma (by Senior) PGT, MO, HO Proforma

Reviewer _____ Evaluation for _____

Name: Designation: _____ Name: 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

Evaluation Proforma (by Colleague) PGT, MO, HO Proforma

Reviewer Evaluation for

Name: Designation: Name: 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?
 1 2 3 4 5 6

2. He/she meets his deadlines oftenly?
 1 2 3 4 5 6

3. He/she is willing to admit the mistakes?
 1 2 3 4 5 6

4. He/she communicates well with others?
 1 2 3 4 5 6

5. He/she adjusts quickly to changing Priorities?
 1 2 3 4 5 6

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

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



Rawalpindi Medical University

Quality Enhancement Cell

Evaluation Proforma (by Paramedical Staff) PGT, MO, HO Proforma

Reviewer Evaluation for
Name: Designation: Name: Designation:
Performance ratings Assessment Date:

کبھی نہیں کم سے کم کبھی کبھار اکثر ہمیشہ لاگو نہیں

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

کبھی نہیں کم سے کم کبھی کبھار اکثر ہمیشہ لاگو نہیں

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

کبھی نہیں کم سے کم کبھی کبھار اکثر ہمیشہ لاگو نہیں

3- ٹیم ورک کو اہمیت دیتا/ دیتی ہے۔

کبھی نہیں کم سے کم کبھی کبھار اکثر ہمیشہ لاگو نہیں

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

کبھی نہیں کم سے کم کبھی کبھار اکثر ہمیشہ لاگو نہیں

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

کبھی نہیں کم سے کم کبھی کبھار اکثر ہمیشہ لاگو نہیں



Rawalpindi Medical University

Quality Enhancement Cell

Evaluation Proforma (by Attendant) PGT, MO, HO Proforma

Reviewer

Evaluation for

Name: Designation:

Name: 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

Evaluation Proforma (by Patient) PGT, MO, HO Proforma

Reviewer

Evaluation for

Name: Designation:

Name: Designation:

Performance ratings

Assessment Date: _____

کبھی نہیں کم سے کم کبھی کبھار اکثر ہمیشہ لاگو نہیں

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

کبھی نہیں کم سے کم کبھی کبھار 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 کبھار اکثر ہمیشہ لاگو نہیں

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

کبھی نہیں کم سے کم کبھی کبھار اکثر ہمیشہ لاگو نہیں

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

کبھی نہیں کم سے کم کبھی کبھار اکثر ہمیشہ لاگو نہیں

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

کبھی نہیں کم سے کم کبھی کبھار اکثر ہمیشہ لاگو نہیں

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

کبھی نہیں کم سے کم کبھی کبھار اکثر ہمیشہ لاگو نہیں

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

کبھی نہیں کم سے کم کبھی کبھار اکثر ہمیشہ لاگو نہیں

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

کبھی نہیں کم سے کم کبھی کبھار 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	<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	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	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

Appendix “D”

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

operations

The candidate assisting procedures and

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"

Resident's Name: _____ Evaluator's Name(s): _____
 _____ Hospital Name: _____
 _____ Date of Evaluation: _____

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
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 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 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 speciality 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 activities.

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 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 v	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 		

e. G&O contain delineation of resident responsibilities for patient care, progressive responsibility for patient management, and supervision of residents		
4. Evaluation System a. Resident formative evaluation meets or exceeds program requirement b. Resident summative evaluation meets or exceeds program requirement c. Faculty evaluation meets or exceeds program requirement d. program evaluation meets or exceeds program requirement.		
5. Didactic Curriculum a. includes recognizing the signs of fatigue and sleep deprivation b. the didactic curriculum meets program requirements c. the didactic curriculum meets residents needs		
6. Clinical Curriculum – the effectiveness of in-patient and ambulatory teaching experience (structure, case mix, meets resident’s needs)		
7. Volume and variety of patients and procedures (case log data) meets requirements and residents’ needs		
8. Summary of written program evaluations completed by both faculty and residents		
9. Resident supervision complies with Program Requirement		
10. Recruiting results		
11. Duty hour monitoring results		
12. Track all research and scholarly activities of faculty and residents/fellows		
13. Educational outcomes: is the program achieving its educational objectives? What aggregate data (residents as a group) can be used to show the program is achieving its objectives? Board scores, in-service training exam scores, graduate surveys, employer surveys, etc.		

15. Clinical outcomes – specialty-specific metrics aligned with dept./division QI initiatives, disease outcomes, patient safety initiatives (describe resident involvement), QI projects (describe resident involvement)		
--	--	--

Note:

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

Annual Program Evaluation (APE)

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: _____

Scale table with 5 rows: 1 Unsatisfactory, 2 Below Average, 3 Average, 4 Good, 5 Superior

Traditional Track (10% Clinic) Primary Care Track (20% Clinic)

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

Main evaluation table with three sections: Patient Care, Medical Knowledge, and Professionalism. Each section contains 6-7 items with a 5-point scale.



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 عرض کی صورت حال پوری سچائی سے بیان کی۔	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 مزے 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 ذمہ داری 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)
------------------	------------------	------------------	---------------------------------	---------------------------------	---------------------------------	----------------	---------------	---------------

Overall Rating												
Average:	___/165			___/30			___/80			___/56		

	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 _____



RAWALPINDI MEDICAL UNIVERSITY

7

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 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								
						Time taken for observation: (in minutes) <input type="checkbox"/> <input type="checkbox"/>		
Assessors signature: _____						Time taken for feedback <input type="checkbox"/> <input type="checkbox"/>		
Date (mm/yy) <input type="checkbox"/> <input type="checkbox"/> / <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: Adapted 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

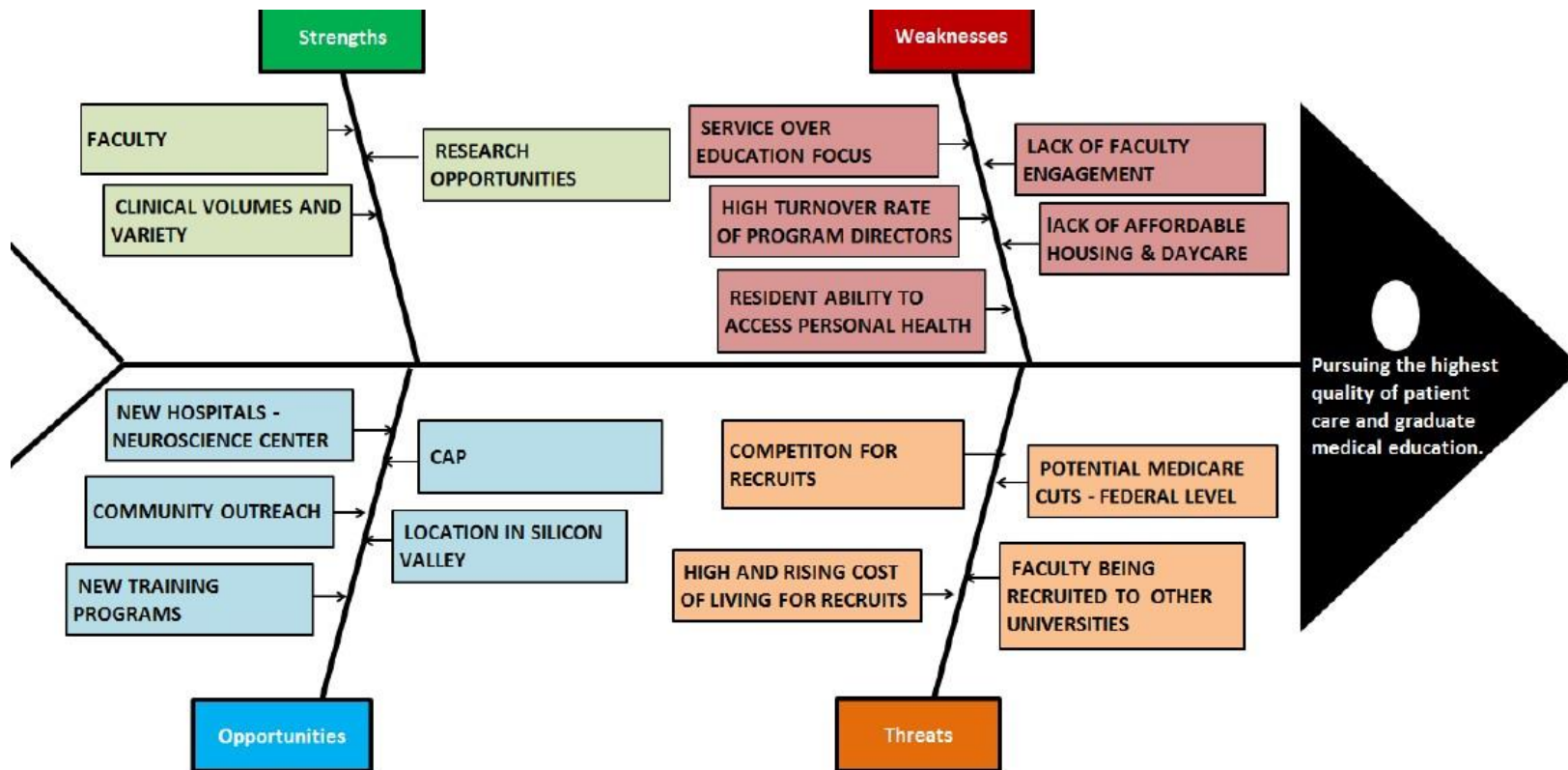
Please circle the appropriate number for each item using the scale above.

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)



Action Plan

Item	Strategy	Resources	Timeline	Evaluation
PreservationGoals (Strengths)				
EliminationGoals (Weaknesses)				
AchievementGoals (Opportunities)				
AvoidanceGoals (Threats)				

SECTION -X

Miscellaneous attached documents

SUMMARY OF THE FORMAT FOR MD MS PROGRAM

Table of contents

SNO.	Content	Instructions
SECTION – I General plan of the course		
38.	Mission Statement	<ul style="list-style-type: none"> Already given in the sample curriculum of MD Internal Medicine Mission statement will remain same for all
39.	Statutes	<p>6. <u>Nomenclature:</u> 7. <u>Course Title:</u> 8. <u>Training Centres:</u> 9. <u>Duration of Course:</u> 10. <u>Course structure :</u></p> <p>NOTE: To be written according to these headings.</p>
40.	Admission Criteria	<ul style="list-style-type: none"> Rules and regulations for admission will remain the same for all disciplines.
41.	Registration and Enrolment	<ul style="list-style-type: none"> Rules and regulations for admission will remain the same for all disciplines.
42.	Aims and objectives of the course (general & specific)	<ul style="list-style-type: none"> For guidance you can see the aims & objectives of internal medicine but one can change the aims of objectives according to the requirement of their own discipline
43.	Other required core competencies for the residents	<ul style="list-style-type: none"> All six core competencies of ACGME model & additional research competency to be mentioned here. This material will remain same for all disciplines but research competency can be modified as required. Guidance can be taken from the internal medicine curriculum.
44.	Electives/Rotations	<ul style="list-style-type: none"> For your guidance rotations regarding internal medicine can be seen from curriculum but one can modify the rotations as required.
45.	Methods of Teaching & Learning during course conduction	<ul style="list-style-type: none"> Remain the same as mentioned in the curriculum of internal medicine Read it thoroughly You can keep the teaching & learning strategy as it is or increase

		or decrease the strategies according to the requirement of your particular discipline
46.	Tools of Assessment for the course	<ul style="list-style-type: none"> • 20 tools of assessment are describe in the internal medicine curriculum for your guidance • 360 degree evaluation is the most important tool of formative assessment • You can modify/ add/ delete any tool of assessment according to the requirement of the discipline
SECTION – II Course Content		
47.	Details of the content	<ul style="list-style-type: none"> • Content of the curriculum of internal medicine is given for your guidance along with suggested teaching & learning method and tools of assessment • This section can be made more structured by adding specific learning objective of each topic along with its specific teaching & learning strategy, tools of assessment and level of cognition, level of psycho motor skill, level of attitude • For your convenience we are providing at the end of this document a structured proforma for adding specific learning objective • ACGME core competencies required for each sub section should be mentioned separately with each sub section/sub specialty /discipline /theme
SECTION – III Research &Thesis writing		
48.	Details about Research component &Thesis writing	<ul style="list-style-type: none"> • Full section of research curriculum is present in the internal medicine curriculum • The same curriculum is applicable to all the disciplines • The details about the eligibility criteria regarding research competency is mentioned in the section of research curriculum separately.
SECTION – IV Mandatory Workshops		
49.	Details of Mandatory workshops	<ul style="list-style-type: none"> • There are four mandatory workshops <ul style="list-style-type: none"> ○ Biostatistics & Research Methodology ○ Introduction to computer/Information Technology & Software

		<ul style="list-style-type: none"> ○ Communication skills ○ Advanced Cardiac Life Support ● In addition to four mandatory workshops any discipline can add additional workshop for example: internal medicine has added workshop for clinical audit.
SECTION – V Mile Stones to be achieved by the residents		
50.	Charting the Road to Competence: Developmental Milestones for MD Internal Medicine Program at Rawalpindi Medical University	<ul style="list-style-type: none"> ● In four years training program there are 48 months internal medicine milestone are describe month wise according to knowledge skill, and attitude ● Guidance can be taken from milestones of internal medicine and you can develop milestone of your respective discipline accordingly
SECTION – VI Evaluation & Assessment strategies		
51.	Evaluation & Assessment strategies a general overview	<ul style="list-style-type: none"> ● Section of assessment for internal medicine has been updated & revised many time after repeated meetings & discussion ● You can modify the same template according to your discipline but the basic rules and regulation regarding assessment & marks distribution and no. of TOACS distribution will remain the same ● Rules and regulation of thesis evaluation/defense of thesis will remain the same ● All eligibility criteria mentioned in the section of assessment will remain the same for all discipline .
SECTION – VII Log Book & Portfolio		
52.	Log Book for Internal Medicine (Templates)	<ul style="list-style-type: none"> ● Log book for internal medicine is designed as a template for all discipline but you can do minor modification in the logbook according to your discipline wherever required but the general template will remain the same
53.	Log Book for Research (Templates)	<ul style="list-style-type: none"> ● Research logbook will remain the same for all discipline
54.	Portfolio(Templates)	<ul style="list-style-type: none"> ● Template of Portfolio for internal medicine will remain the same for all discipline ● How to write various section of portfolio will be presented in a meeting separately
SECTION – VIII References		

55.		
SECTION – IX Appendices (proformas/Forms)		
56.	Multisource feedback proforma- 360 ^o evaluation--- --"Appendix A"	<ul style="list-style-type: none"> • All 9 latest updated proformas of 360 degree evaluation / multi source should be present in all discipline as annexure • These proformas are present number wise (each number is present in the text box) in the curriculum of internal medicine.
57.	Supervisor's Annual Review Report-----Appendix " E"	<ul style="list-style-type: none"> • These proformas will remain the same for all discipline
58.	Evaluation of program by the faculty-----Appendix " J"	<ul style="list-style-type: none"> • These proformas will remain the same for all discipline
59.	Evaluation of program by the resident-----Appendix " k"	<ul style="list-style-type: none"> • These proformas will remain the same for all discipline
23.	Guidelines for program evaluation----- Appendix " L"	<ul style="list-style-type: none"> • Feedback from the alumni is under process by the quality enhancement cell (QEC) • Feedback from other stakeholders from faculty and resident is also under process by the quality enhancement cell (QEC)
	<p>Note:</p> <ul style="list-style-type: none"> • Rest of the proformas mentioned in the end of curriculum of internal medicine should be considered discarded • You can add any additional proforma according to specific requirement of your discipline in addition to the above mentioned proformas 	

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Rawalpindi

TEMPLATE FOR LEARNING OBJECTIVES (to be adopted by each specialty)

TOPICS TO BE TAUGHT	LEARNING OBJECTIVES Student should be able to know:	Domains/level of learning			TEACHING METHOD	ASSESSMENT TOOL
		Knowledge (C1-C6)	Skill (P)	Attitude (A)		

THE END OF BEGINNING

