UNMRP

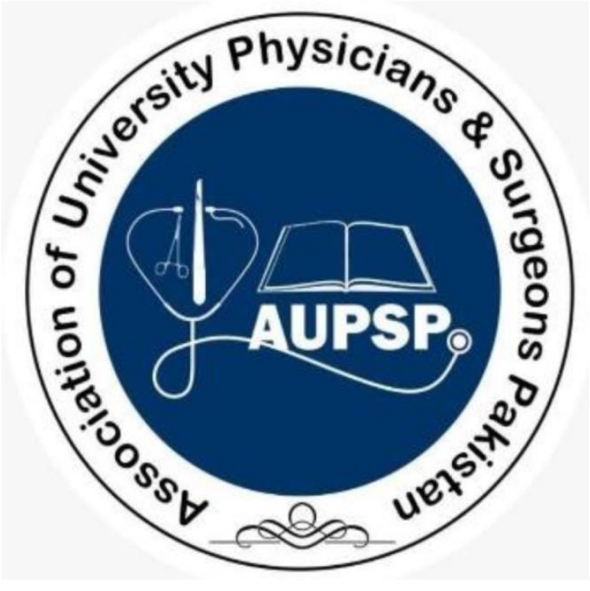
UNIVERSITY NATIONAL MEDICAL RESIDENCY PROGRAM PAKISTAN

UNIFIED CURRICULA REGISTRY MEDICAL UNIVERSITIES OF PAKISTAN

CURRICULUM

MD RADIATION ONCOLOGY

5 years, Residential, Clinical, Stipend based, Full time



United Nations Academic Network (UNAN)
The UNESCO via the NEQMAP Bangkok

Note: All universities are included the international WHO directory discovered on the website of WHO and are duly recognized by the United Nations Academic Network (UNAN) and the UNESCO via the NEQMAP Bangkok

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INTRODUCTION

MD Program in Radiotherapy

(Clinical Oncology)

Subsequent to the approval by Pakistan Medical and Dental Council, it has been decided to start MD program in the field of radiotherapy at the Department of Oncology of Medical University,. A comprehensive Residency Training Program in Radiotherapy (Clinical Oncology) has been designed to graduate well trained oncologists with high professional competence in modem diagnostic and therapeutic approach In the management of oncological diseases. The specialty of radiotherapy (clinical oncology) involves all aspects of the management of patients with malignant disease, from diagnosis through treatment with both radiotherapy and systemic therapies to management and symptom control in advanced and recurrent disease.

The four-year scheme residency training program shall fulfill the following objectives:

- To produce well-qualified clinical oncologists and radiotherapist to meet the need of increasing demand of oncological services.
- To provide comprehensive teaching and training in all subjects related to clinical oncology and radiotherapy and oncology related diseases.
- To provide a structure overview of the theory and practice of clinical oncology including the principles of surgical oncology, medical oncology and radiation oncology. The emphasis will be placed on multi- disciplinary approaches to ·patient management using the Hospital's specialized unit structure.
- The syllabus is stated in general terms as the relevant topics are continually advancing and candidates and faculty will be required to keep themselves aware of new developments. In the first 2 years, it is planned to offer a minimum of 175 hours of instruction including lectures, tutorials and practical’s, according to the following:

Cancer Biology and Radiobiology	15 Hrs.
Clinical Pharmacology Medical	20 Hrs.
Statistics	15 Hrs.
Oncological Science Physics	120 Hrs.
54 Hrs	

For clinical oncology experience for the next 2 years, the candidates will be rotated in other relevant departments and certain other reputed facilities of the country

Objectives

In Pakistan, the facilities for management of patients with malignancies arenot significant. There is also an extreme shortage of trained personnel. Are pursuing the program of study and training for a period of 4 years, the enrolled candidates are expected to attain high professional competence in modern diagnostic and therapeutic approach in the management of oncological diseases and will become eligible for the final examination leadingto MD.

Training

The 4-year training program in radiotherapy (clinical oncology) will include a minimum of 2 years full-time clinical training in the diagnosis and management of broad spectrum of neoplastic diseases. Full-time clinical training means that at least 80% of the trainee's professional time and effort during a standard working week is dedicated to clinical activities (patient careor education). These may include the primary care of cancer patients, supervision of cancer patients on the general medical service or in designated medical oncology in- patient units, oncologic consultations and consultation rounds, oncology ambulatory care, scheduled clinical conferences, performance of procedures on patients, review of imaging, pathology, and other diagnostic materials, other direct patient care, attending national and international scientific meetings, and reading relevant literature.

Clinical activities may also include research involving patient contact, care, and treatment. Research experience for I or more years, including international training, will be strongly encouraged, especially for the oncologists who want an academic career.

Place of Training

The program of study and training will be conducted at the Department of Oncology, Cancer Hospital.

A short term exchange training facility would also be arranged at the other approved institutions of the country.

Eligibility Criteria

A candidate will be eligible for induction into the program provided the following conditions are fulfilled:

- Should possess degree of MBBS or equivalent from a recognized university with one year house job experience.
- Should hold valid registration with PMDC.
- Has passed JCAT exam and aptitude cleared Interview.
- Has agreed to accept full-time on-the-job training.
- Shall abide by the rules and regulations of University.

Evaluation

- Internal evaluation of the candidates will be carried out every 4 months with examination papers consisting of MCQs and subjective questions. The evaluation will be added to the final evaluation.
- At the end of second year ,examination would be conducted to evaluate the competency of the candidates. The evaluation will be added to the final evaluation.
- Mid term examination to be passed with 75% mark in each component.
- The final examination will be held at the end of four years training program consisting of theory, clinical examination and defense of thesis.
- The candidate will be eligible to take final examination provided his thesis is accepted and one paper and one review article is published in PMDC approved Journal.
- The candidate will be permitted one Final Examination and 2 Re-sit Examination 75 % passing marks.
- Educational set-up Program leader

  The program leader fully committed to the training program and related activities will be based at the primary training site.
- The trainees will be required to maintain a record of training. The program leader will countersign it, as appropriate, to confirm the satisfactory fulfillment of the required training experience and the acquisition of the competencies that are accumulated in the specialty curriculum. It will remain the property of the trainee and must be signed at the annual assessments. The assessment of the trainee will be based on the standard format of annual reviews.

Faculty

Faculty members

The radiotherapy (clinical oncology) program faculty will include a minimum

of three full-time qualified teaching faculty members, including the program leader. All the faculty members will be certified in radiotherapy (clinical oncology)or possess equivalent qualifications, and each of them will devote substantial time (at least 10 hours per week) to teaching, research, administration, and/or the critical evaluation of the performance, progress, and competence of the trainees.

Faculty standards

The teaching staff will demonstrate an interest in teaching, and set an example for trainees by documented engagement in the following pursuits: actively sharing in aclinical oncology practice; continuing his/her own medical education; active membership in regional, national and international scientific societies; active participation in research; and presentation and publication of scientific studies.

Educational program

The educational program will be organized to provide training and experience ata level high enough for the trainee to acquire the competency of a specialty in the field. The program will emphasize self-instruction

development of critical analysis of clinical problems, and the ability to make appropriate decisions. Appropriate supervision of the trainees will be providedfor the duration of their educational experience.

Educational environment

The training program will provide an intellectual environment for acquisition of the knowledge, skills, clinical judgment, and attitudes essential to the practice of radiotherapy (clinical oncology.

Professionalism-ethics

Professionalism will be fostered during radiotherapy (clinical oncology) training. In addition to mastering the comprehensive clinical and technical skills of the consultant clinical oncologist, trainees are expected to maintain the values of professionalism. These values include placing the needs of one'spatient ahead of one's self-interest, being responsive to the needs of society, and maintaining a commitment to scholarship and high standards of related research. Trainees, therefore, will be encouraged to participate in professional organizations,

community program, and institutional committees.

Available

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iesClinical setting

The clinical setting includes opportunities to observe and manage patients with a wide variety of neoplastic diseases on an in-patient and out-patient basis. The trainee will have the opportunity to assume the continuing responsibility for both acute and chronically ill patients in order to learn the natural history of cancer, the extent of the effectiveness of the various therapeutic program, and how to impart information to the patient, including bad news.

Hospital facilities

Modern in-patient, ambulatory care, and laboratory facilities necessary for the overall educational program are available and functioning. Adequate pathology services, modem diagnostic radiology services, resources for nuclear medicine imaging, blood banking and blood therapy facilities, and facilities for clinical pharmacology and tumor immunology are available at the training site. A general surgical service and its support are also available, in addition to access to radiation therapy. The program also includes attendance at a multidisciplinary tumor conference, and clinical cancer protocol studies applied according to the guidelines for good clinical practice.

Update of skills a11d knowledge .

Having obtained certification in radiotherapy (clinical oncology), the specialist is expected to update the acquired skills and knowledge by participating in Continuing Medical Education program such as courses, symposium or self-learning processes on a regular basis.

Perception of other specialties

The support of oncology nursing, pharmacy, rehabilitation medicine, palliative car medicine, and dietetic and psycho social services are available so that the trainee can perceive the role of other specialties in the total care of the cancer patient.

The Curriculum

CANCER BIOLOGY and RADIOBIOLOGY CURRICULUM (15 Hrs.)

Summary

An understanding of carcinogenesis, cellular and molecular features of malignancy, including biochemical control, signaling and cell death. Tumor development, growth kinetics, micro-environmental changes, metastasis and immune response. Common laboratory techniques to demonstrate these features. A knowledge of the cellular and molecular basis for the response of cells, tissues and tumors to ionizing radiation and chemotherapy. A knowledge of current models of radiation response and the biological principles underlying the application of radiotherapy to the treatment of disease, including normal tissue responses.

CLINICAL PHARMACOLOGY CURRICULUM (20 Hrs.)

Summary

The emphasis is on cytotoxic drugs, hormones and biological therapies used in clinical practice, their mode of. action and side-effects. The syllabus also includes the basic principles of pharmacokinetics and pharrnacodynamics, clinical trials and the basic pharmacology of drugs used in the supportive care of patients with cancer.

MEDICAL STATISTICS CURRICULUM (15 Hrs.)

Summary

Candidates will be required to have sufficient knowledge of the principles of the subject to enable them to study critically the statistical validity of published investigations. Particular emphasis is placed on candidates acquiring sufficient knowledge of the subject to enable them to appreciate the requirements needed to design, monitor and assess clinical trials and epidemiological studies.

ONCOLOGICAL SCIENCE (120Hrs.)

Basic scientific principles

As a foundation for treating malignant disease, the candidate is required to understand the biology of cancer, principles of therapy, and proper conduct and interpretation of clinical research. This involves in-depth familiarization of cancer biology and the basic processes of carcinogenesis, tumour immunology and the regulatory action of cytokines on the immune system, etiology of genetic and environmental factors in oncogenesis, epidemiological factors and descriptors of disease, the principles and indications for genetic screening.

Knowledge of the design and conduct of clinical trials along with the ethical, regulatory, and legal issues involved.

Capability to adopt multidisciplinary approach with integration of the various subspecialities in the management and treatment of malignant diseases.

Ability to review biopsy material and surgical specimens with a pathologist and familiarize with newer pathological techniques helpful in staging the patient.

Familiarization of the indications and contraindications of surgery. the role of surgery in the staging, cure, and palliation of patients and organ preservation.

Understanding of radiation biology, radiation therapy as a curative and palliative modality, treatment planning and dosimetry and the acute and late effects of radiation therapy.

Usefulness of anticancer agents in primary and recurrent malignant disorders in the Neo-adjutant, concomitant, and adjuvant setting. Familiarization with the activities and indications for biologic therapy, including cytokines and hematopoietic growth factors.

Knowledge of the various etiologies of nausea and vomiting and pharmacology of anti-emetic agents, the principles of diagnosis and management of infections and neutropenic fever, the indications and complications of red blood cell transfusions, the indications and complications of platelet transfusions.

Organ protection. Mucositis. Malignant effusions. Extravasation. Oncologic emergencies. Para neoplastic syndromes. Nutritional support. Palliative care and end-of-life care: Pain. Rehabilitation

Management and treatment of individual cancers
Acquisition of competency in the epidemiology, pathophysiology, genetics, signs and symptoms, diagnostic work-up, treatment, and follow-up of the following individual cancers.

- Head and neck cancersLung cancer and mesothelioma Small- eel/ lung cancer
- Non-small-cell lungcancer Mesothelioma **Gastrointestinal cancers** Esophageal cancer Gastric
- cancer Coloncancer
- Anal cancer Hepatobiliary
- *cancers Pancreatic cancer* ***Genitourinarycancers*** *Renal cell cancer Urothelial* cancers Penile cancer
- Prostate cancer
- Germ cell tumorsGy11ecologlc malignancies Ovarian cancer Uterine
- cancer Cervicalcancer
- Vulvar and vaginal cancers
- **Breast cancer Sarcomas**Bone sarcomas
- Soft tissue sarcomas
- **Ski11 cancers**
- Melanoma
- Basal cell and squamous cell cancers
- Endocrine cancers Ce11tral nervous system malignancies Carcinoma of unk11own primary site
- Hematologic malig11a11ciesLeukemia
- Acute leukemias and myelodysplasia:
- Chronic leukemias:
- LymphomasHodgkin's disease:
- Non-Hodgkin 's lymphoma:
- Cutaneous T-cell lymphoma:
- Plasma cell dyscrasias
- AIDS-associated malignancies

Other Aspects

Psycho social aspects of cancer
PHYSICS CURRICULUM (54 Hrs.)

Atomic and nuclear structure [including decay and radioactivity], production of X-rays, photons, and electrons, radiation interactions, treatment machines and generators; simulators (including computed tomography), radiation beam quality and dose radiation measurement and calibration photons and .X- rays (including concepts, monitor unit, heterogeneity, field shaping, Compensation, field matching, etc.), electrons (including concepts, iso doses, monitor unit, heterogeneity, field shaping, field matching, etc.) external beam quality assurance radiation protection and shielding, imaging for radiation oncology 3D-CRT including ICRU concepts and beam-related biology.

Assessment of patient setup and treatment (Including electronic portal imaging device, immobilization, etc.) IMRT, Special procedures (including radiosurgery,TBI,etc.)
Brachy therapy (including intracavitary, interstitial, HDR, etc.)Hyperthermia
Particle therapy

SPECIALIST TRAINING

The framework for-specialist training will consist of rotations, which should give appropriate experience in the areas identified below.

- Generic modules:
- Prescription and administration of cytotoxic chemotherapy Professionalattitudes
- Communication skills System-basedsite specialties:

- Breast
- Thoracic malignancy
- Upper and lower gastrointestinal (GI)
- Head and neck
- Sarcomas
- Gynecological oncology
- Urological malignancy and germ cell tumors
- Nero-oncology
- Skin
- Lymphomas
- Pediatric oncology

Technique-based specialties:

Brachytherapy

In many training schemes trainees will receive specialist training in morethan one site specialty at the same time. The order of rotations and their duration will be decided on case to case basis.
Training schemes must ensure that their trainees are able to achieve all or almost all of the specialist training objectives for each site specialty.

On-call. When competence for such work has been established, each trainee will participate in an appropriate on-call rota, or other schemes of exposure to acute and emergency oncology, in which he/she will be responsible to a named consultant(s).

Clinical skills

The Clinical Skills Section of the curriculum delineates the training objectives (knowledge and skills) that will be acquired at expert and advanced levels.

Each component of the training program will have a clearly defined structure for the supervision of the trainee by senior colleagues (trainers).

There will be a named consultant(s) who will assume overall responsibility for the training given during that period.

The trainer will also be responsible for undertaking appraisal of the trainee at the beginning, during and at the end of the rotation and may be involved in the end of rotation assessment.

Teaching Faculty

Radiation Oncology

Dr. Jawaid A Mallick - Associate Professor & Head Cancer Hospital Dr. Abn-e-Hasan - Consultant Radiation Oncologist Dr. Qurat ul Ain- Consultant Radiation Oncology Dr. Ayesha Javed- Senior Registrar Oncology

Medical Oncology

Prof. Tariq Siddiqui -Director Oncology

Medical Physics

Mr. Aziz Ahmad Siddiqui - Chief Medical Physicist Mr. Asghar Hussain - Principal Medical Physicist Mr. Arshad Mahmood - Senior Medical Physicist Mr. Rahim Gohar- Senior Medical Physicist

Histopathology

Dr. Saba Jamal- Consultant Hematologist & Pathologist Dr. Fauzia Lateef - Sr.Consultant Pathologist

Dr. Adnan Mustafa Zuberi - Consultant Clinical Pathology

Medicine

Prof. Ejaz A. Vohra - Chairman Deptt. of Medicine & Dean Postgraduate Education (Clinical) Dr. Javed Warind Abu Baker- Department of Medicine.
Dr. Imtiaz Khalil - Assistant Professor, Deptt. Of Medicine.

Radiology

Dr. Kashif Shazlee - HOD Radiology & Consultant Dr. lrfan Ahmed Lutfi Associate Professor Radiology

Dr. Muhammad Saad Ahmed Senior Registrar Radiology

Surgery

Professor Shafiq Ur-Rehman Chairman Deptt. Of Surgery
Professor Abbas Zafar- Chairman Deptt. Of Otolaryngology, Consultant (ENT)

GI Medicine

Dr. Nasir Laeeq Assistant Ptrofessor

Gastroenterology Dr. Qamar-Ul-Arfin

Consultant Gastroenterologist

Pediatrics

Dr. Shamvil Ashraf Medical Director Indus CCH

Bio statics

DEPARTMENT OF ONCOLOGY MEDICAL UNIVERSITY

PERIODIC M.C.Q. TESTSUMMARY SHEET CLINICAL ONCOLOGY AND RADIOTHERAPY

Name of Resident :				
Subjectct	NO.	DATE	TIME	LECTURES
CANDIDATES ATTENDING DRS.				
Lecturer's COMMENT:				

	Signature	Date
Dr. Jawaid A. Mallick - Associate Professor & Head Cancer Hospital		
Dr. Ahn - e - Hassan - Consultant Radiation Oncologist		
Attested by: Professor Ejaz A. Vohra - Chairman Department of Medicine &		
Dean Postgraduate Education {Clinical)		