

Anaesthesia

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| Location: | Shaukat Khanum Memorial Cancer Hospital and Research Centre |
| Duration and Timings: | Minimum 2 weeks - Maximum 8 weeks Monday - Friday 0800 - 1700 hours |
| Months Offered: | January - December |
| Approving Authority: | Head of Department |
| No. of Students: | 2 Per month |
| Prerequisite: | MBBS (Year 3 rd , 4 th & 5 th) Pre-Medical Students (for 2 weeks only) |
| Description of Program | |
| <p>Learning objectives of medical student on clinical rotation (electives) anesthetics At the end of one month rotation, s/he is able to:</p> <ul style="list-style-type: none">• Discuss preoperative fasting requirement and its practical application.• Conduct preoperative anesthesia assessment of patient.• Describe characteristics of difficult airway and demonstrate airway evaluation.• Discuss basic pharmacology of commonly used anesthetic drugs.• Describe the indications/complications of different airway adjuncts (oral/nasal airway, mask ventilation, supraglottic devices and orotracheal intubation using direct laryngoscopy).• Demonstrate basic airway management techniques including mask ventilation and use of supraglottic airway devices.• Demonstrate skill at establishing venous access.• Explain rationale of monitoring used in anaesthesia.• Assess patient for suitability of extubation.• Assist in extubation (Tracheal tube/ supraglottic device).• Assess patient for post-operative acute pain, using pain rating scale.• Formulate basic pharmacological pain management plan.• Discuss rationale of post-operative oxygen therapy and identify equipment used to deliver it. | |

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| Report To: | Elective will meet the respective departmental secretary, who will direct the elective to the respective supervisor. Each elective will have a nominated supervisor attached with him/her. |
| <p>Activities and Responsibilities:</p> <p>Formal Learning Activities:</p> <ul style="list-style-type: none"> • CME • M&M • Departmental teaching session <p>Week 1:</p> <p>Holding bay:</p> <ul style="list-style-type: none"> • Discuss preoperative fasting requirement and its practical application. • Conduct preoperative anesthesia assessment of patient. • Describe characteristics of difficult airway and demonstrate airway evaluation. • Demonstrate skill at establishing venous access. <p>Week 2 & 3:</p> <ul style="list-style-type: none"> • Discuss basic pharmacology of commonly used anesthetic drugs. • Describe the indications/complications of different airway adjuncts (oral/nasal airway, mask ventilation, supraglottic devices and orotracheal intubation using direct laryngoscopy) • Demonstrate basic airway management techniques including mask ventilation and use of supraglottic airway devices. • Demonstrate skill at establishing venous access. • Explain rationale of monitoring used in anaesthesia. <p>Week 4:</p> <ul style="list-style-type: none"> • Assess patient for suitability of extubation. • Assist in extubation (Tracheal tube/ supraglottic device). • Assess patient for post-operative acute pain, using pain rating scale. • Formulate basic pharmacological pain management plan. • Discuss rationale of post-operative oxygen therapy and identify equipment used to deliver it. | |
| <p>Assessment/ Evaluation:</p> <p>Student is assessed during his/her rotation in medical knowledge, clinical skills, verbal presentation, interpersonal skills and is graded from poor to excellent. Teaching Attending / Head of Department's feedback and written evaluation is handed over to the student upon successful completion of the rotation.</p> | |

Internal Medicine

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| Location: | Shaukat Khanum Memorial Cancer Hospital and Research Centre |
| Duration and Timings: | Minimum 2 weeks - Maximum 8 weeks Monday - Friday 0800 - 1700 hours |
| Months Offered: | January - December |
| Approving Authority: | Head of Department |
| No. of Students: | 4 Per month |
| Prerequisite: | MBBS (Year 3 rd , 4 th & 5 th) Pre-Medical Students (for 2 weeks only) |
| <p>Description of Program</p> <p>Clinical electiveship in the department of Internal Medicine at SKMCH&RC provides insight into day to day responsibilities of physicians in their respective specialties. It is an opportunity for medical students/ fresh graduates to observe patient care practices under direct supervision and guidance of consultants. SKMCH&RC is a tertiary care cancer center with a capacity of 148 beds comprising three inpatient floors and an Intensive Care Unit (besides thirty day-chemotherapy beds and eight emergency room beds). The department of Internal Medicine is accredited to provide post graduate training for FCPS medicine and MRCP as well as fellowship training in Infectious diseases and Gastroenterology. Fellowship program in pulmonary medicine has also been approved by CPSP and it is going to commence soon. Faculty comprises of Internists, Gastroenterologists, Infectious Disease physicians, Pulmonologists/Intensivists, Endocrinologists, Cardiologists, Palliative Care Physician and Nephrologist.</p> | |
| Report To: | Elective will meet the respective departmental secretary, who will organize a meeting with the HOD of Internal Medicine. The departmental secretary will provide a time table as well as a handbook for elective students explaining some basic hospital rules and responsibilities. |
| <p>Activities and Responsibilities :</p> <p>Objectives of the electiveship: Rotation is designed such that by the end of the electiveship period the student becomes familiar with</p> <ul style="list-style-type: none"> • Patient care protocols in line with International standards. • Importance of thorough history and physical examinations. • Need to order appropriate / essential tests. • Observe the crucial art of documenting patient care notes. • How to device a therapeutic plan in light of data interpretation in a step-wise multi-disciplinary approach. <p>The elective student will be rotated in following disciplines:</p> <ul style="list-style-type: none"> • Internal Medicine • Emergency Medicine. • Gastroenterology • Intensive Care • Infectious Diseases | |

- Respiratory Medicine (Pulmonology)
- Palliative Care
- During the electiveship, students get the opportunity to rotate through general Internal Medicine and sub-specialty out-patient clinics, participate in inpatient floor rounds and consults.
- As part of medical/specialty teams, students participate in daily rounds, clinic/OPD sessions, once a week multi-disciplinary team meetings, teaching lectures including journal club and CMEs. They also have the opportunity to observe procedures like endoscopy and bronchoscopy.
- Students are also scheduled to attend 1 call per week (till 9 PM) with a total of 2 calls each in ICU and 2 in the ER.

Assessment/Evaluation:

Student is assessed during his/her rotation in medical knowledge, clinical skills, verbal presentation, interpersonal skills and is graded from poor to excellent. Head of Department's feedback and written evaluation is handed over to the student upon successful completion of their rotation.

Medical Oncology

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| Location: | Shaukat Khanum Memorial Cancer Hospital and Research Centre |
| Duration and Timings: | Minimum 2 weeks - Maximum 8 weeks Monday - Friday 0800 - 1700 hours |
| Months Offered: | January - December |
| Approving Authority: | Head of Department |
| No. of Students: | 2 Per month |
| Prerequisite: | MBBS (5 th year only) |
| <p>Description of Program</p> <p>The department of Medical Oncology is accredited from College of Physicians and Surgeons of Pakistan to provide fellowship training in Medical Oncology.</p> <p>Elective students in the department of Medical Oncology Department fall into the responsibilities of HOD of Medical Oncology and consultants in their relevant specialties. Being an elective student, is an opportunity for medical college final year students to observe patient care under direct supervision and guidance of consultant.</p> <p>Medical Oncology at SKMCH&RC includes in-patient care and Out-patient clinics. In the chemobay, patients undergo chemotherapy administration and management of it's toxicity. Invasive diagnostic procedures including bone marrow biopsy tests, ascitic fluid and pleural fluid aspiration is done in the procedure room.</p> | |
| Report To: | Elective will meet the respective departmental secretary, who will direct the elective to the respective consultants and fellows. Each elective student will be given the roster for rotation and clinics. |
| <p>Activities and Responsibilities of Students:</p> <p>Learning objectives for elective students:</p> <ul style="list-style-type: none"> • Elective students will attend morning Hematology / Oncology teaching sessions from 8am - 9am Monday to Friday. • They are supposed to do daily ward rounds with fellows and will help them in preparation for the rounds (9:00am - 1:00pm). Fellows & residents will supervise the elective students while taking history to learn the basic history taking skills. • Students are expected to attend the medical activities like CME and tumor board meetings between 1:00pm - 2:00pm. • Attend the oncology clinics between 2:00pm - 5:00pm. Only one student will be allowed to | |

attend any consultant's clinic at any given time so as not to disturb the flow of patient care.

- They will have electives status in chemotherapy bay for administration of chemotherapies and relevant procedures.
- Students will be assigned a topic for a short oral presentation at the end of their elective period.
- Students may help in guiding patients to different places in the hospital that they need to go to e.g. radiology, laboratory and chemo bay etc.

Assessment/ Evaluation:

Student is assessed during his/her rotation in medical knowledge, clinical skills, verbal presentation, interpersonal skills and is graded from poor to excellent. Teaching Attending / Head of Department's feedback and written evaluation is handed over to the student upon successful completion of their rotation.

Nuclear Medicine

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| Location: | Shaukat Khanum Memorial Cancer Hospital and Research Centre |
| Duration and Timings: | Minimum 2 weeks - Maximum 8 weeks Monday - Friday 0800 - 1700 hours |
| Months Offered: | January - December |
| Approving Authority: | Head of Department |
| No. of Students: | 1 Per month |
| Prerequisite: | MBBS (Year 3 rd , 4 th & 5 th) Postgraduate Medical Trainees [i.e. MSc (Nuclear Medicine), Radiology trainees, and other specialist trainees]. MS students in Physics, Chemistry and Pharm D. Pre-Medical Students (for 2 weeks only) |
| <p>Description of Program</p> <p>This program aims to provide students with the basic theoretical and practical knowledge of nuclear medicine in a clinical setting. The program involves short rotations in different areas within the Nuclear Medicine department.</p> <p>This program will introduce students/electives to nuclear medicine so that they can develop an understanding of the specialty, the role of nuclear medicine physician (and scientific staff) in application of radiopharmaceuticals. There will be introduction to history taking and clinical skills with respect to nuclear medicine, radiation biology, radiation protection, working of gamma camera, PET-CT and radiopharmacy (SPECT and PET tracers).</p> <p>Successful completion of this program may assist pre-medical and medical students to consider medicine in general, and nuclear medicine as a postgraduate specialty. Similarly students/electives with interest in basic sciences will have the opportunity to observe the role of medical physicists, radiopharmacist and Radiochemist in a nuclear medicine setup.</p> <p>Objectives for postgraduate medical trainees [i.e. Medical Imaging and other specialist trainees].</p> <p>At the end of the 2-8 weeks nuclear medicine experience, the postgraduate medical electives should have understanding of the following:</p> <ul style="list-style-type: none"> • The importance of history taking / clinical examination with respect to nuclear medicine. • Basic concepts related to radiation biology and radiation protection. • Bases of radiopharmacy, radiopharmaceutical preparation and QC. • Functions of dose calibrator, gamma camera and PET-CT. • Imaging acquisition techniques. • Scan interpretation with respect to clinical history and their impact on clinical management. • Therapeutic applications of nuclear medicine. | |
| Report To: | Elective will meet the respective departmental secretary, who will direct the elective to the respective supervisor. The rotation schedule will be provided on the day of joining. |

Activities and Responsibilities :

Week 1

Orientation:

*Electives will be required to fill a Pre-elective questionnaire

- Introduction to Nuclear Medicine lecture by year 1 resident and consultant (or senior scientist).
- Meeting with medical physicist for radiation protection.
- Significance of history in Nuclear Medicine procedures.
- Orientation with working in Radio-pharmacy [hot-lab], Injection area and Gamma camera.

Learning Objectives:

- What is Nuclear Medicine and how it works?

Week 2 & 3

Work area:

- Shadowing in: Image Reporting and Thyroid Clinic (Scientists in respective areas).

Learning Objectives:

- Importance of history taking in Nuclear Medicine procedure.
- Common procedures.
- Common indications.

Week 4

- Review of things learnt in three weeks.

*Post-elective questionnaire to be filled by the electives and an informal interview with the Supervisor / Consultant.

Assessment/Evaluation

1. Each elective student will be evaluated by the respective supervisor at the end of their rotation.
2. Human Resources will issue a letter on the recommendation of HOD.

Pediatric Oncology

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| Location: | Shaukat Khanum Memorial Cancer Hospital and Research Centre |
| Duration and Timings: | Minimum 2 weeks - Maximum 8 weeks Monday - Friday 0800 - 1700 hours |
| Months Offered: | January - December |
| Approving Authority: | Head of Department |
| No. of Students: | 1 Per month |
| Prerequisite: | MBBS (Year 3 rd , 4 th & 5 th) Pre-Medical Students (for 1 weeks only) |
| <p>Description of Program</p> <p>Pediatric Oncology is recognized for 3-year post graduate program leading to FCPS in Pediatric Oncology. Pediatric Oncology is comprised of 28 inpatient beds, outpatient department, chemobay and emergency services. Medical officers and fellows rotate through all these departments and are primarily responsible for seeing oncology patients referred from Walk-In clinic of SKMCH&RC and follow up accepted oncology patients on a daily basis in OPD. Patients who need chemo administration on outpatient basis are seen in chemobay. Those patients requiring chemo administration as inpatients and those suffering from various complications of chemotherapy are admitted to our Pediatric Oncology floor. We have 24-hour emergency coverage and an active didactic program.</p> | |
| Report To: | Elective will meet the respective departmental secretary, who will direct the elective to the respective supervisor. Each elective will have a nominated supervisor attached with him/her. |
| <p>Activities and Responsibilities of Students:</p> <p>Students who opt to perform elective in Pediatric Oncology at SKMCH&RC are expected to participate in daily morning rounds, present at least one case on a daily basis and observe OPD with pediatric oncology consultants twice a week. They are also expected to give one presentation on topics assigned by a senior and complete a research project of their choice.</p> | |
| <p>Assessment/ Evaluation:</p> <p>Elective Students will be evaluated by the senior members of the team including the senior Medical Officer, Pediatric Oncologist and Pediatric Oncology Fellow who supervises their rotations. General demeanor, background knowledge and presentation skills on rounds as well as in didactic sessions, interaction with team members, patients and attitude towards learning and handling criticism are main points in the evaluation.</p> | |

Pathology

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| Location: | Shaukat Khanum Memorial Cancer Hospital and Research Centre |
| Duration and Timings: | Minimum 2 weeks - Maximum 8 weeks Monday - Friday 0800 - 1700 hours |
| Months Offered: | January - December |
| Approving Authority: | Head of Department |
| No. of Students: | 12 per month |
| Prerequisite: | MBBS (Year 3 rd , 4 th & 5 th) B.Sc. Lab Technologist & Pre-Medical Students (for 2 weeks only) |
| <p>Description of Program:</p> <p>This program aims to provide students with the theoretical and practical knowledge of medical laboratory technology in clinical and anatomical pathology settings. The program involves a coordinated combination of short rotations, to provide exposure to several subspecialty areas within the pathology department so that students acquire an integrated understanding of the role of pathologists, medical laboratory technologists, laboratory information systems, in medical and surgical diagnosis, and management. The cumulative effect will be a representative introduction to elements of surgical pathology, molecular pathology, cytopathology, microbiology, hematology, blood bank, immunology, clinical chemistry and informatics. Students will work closely with experienced supervisors/consultants in various clinical sections to gain maximum exposure in an ISO certified laboratory work environment.</p> <p>Consideration of career options in academic pathology is integral to this program. While the program is primarily organized to provide preparation for a potential career in pathology, students interested in other areas of medicine will also be able to gain insights into disease processes and the role of pathologists in their management. Successful completion of this program may assist students to evaluate their options to enter into further medical laboratory study programs and/or may contribute towards study credits.</p> | |
| Report To: | Elective student will meet the respective departmental secretary, who will direct him/her to the respective supervisor. |
| <p>Activities and Responsibilities of Students:</p> <p>The rotation schedule is given on the day of joining with special attention/focus on any subspecialty based on student's preference.</p> <p>At the end of this elective, the student should understand:</p> <ul style="list-style-type: none"> • The importance of safety and non-infectious practices in a laboratory workplace. • Concepts related to pre-analytical, analytical and post-analytical procedures. • The need and role of adapting latest techniques, use of state of the art analyzers and implementation of SOPs in a medical laboratory. • Concepts related to Pathology imaging and image analysis technology. • The process of tissue analysis in surgical pathology, from examination of the gross specimen through slide preparation, examination and interpretation. • The current and future role of molecular diagnostics in tumor pathology and medical microbiology. | |

- The scope of testing offered by clinical laboratory.
- The pre-analytic variables that may affect laboratory test results.
- Concepts related to Pathology information systems.
- The role of informatics in improving healthcare delivery and reducing error.
- The varied and interesting career opportunities within the field of Pathology.

Assessment/Evaluation

- The student will be evaluated on the attached form by each supervisor/consultant at the end of respective rotation period.
- Lab Management will aggregate the individual area's rating.
- The aggregated rating will be discussed and finalized by HOD to be forwarded to Human Resources for issuance of their evaluation letter.

Radiation Oncology:

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| Location: | Shaukat Khanum Memorial Cancer Hospital and Research Centre |
| Duration and Timings: | Minimum 2 weeks - Maximum 8 weeks Monday - Friday 0800 - 1700 hours |
| Months Offered: | January - December |
| Approving Authority: | Head of Department |
| No. of Students: | 2 Per month |
| Prerequisite: | MBBS (Year 3 rd , 4 th & 5 th) Pre-Medical Students (for 2 weeks only) |
| <p>Description of Program:</p> <p>Upon completion of this rotation elective students should be able to:</p> <ul style="list-style-type: none"> • Understand and become familiar with various roles therapeutic radiation plays in the management of malignant diseases and benign conditions. • Understand and become familiar with the steps involved in radiation therapy application [e.g. Initial evaluation, decision making, simulation, treatment planning and administration. • History taking, pertinent examination, diagnosis and management of new patients. • Evaluations while on radiation treatment and follow up after treatment is completed. • Become familiar with multidisciplinary management of various types of cancer and the role of radiotherapy in this context. • Potential acute and long term adverse effects. | |
| Report To: | Elective student will meet the respective departmental secretary, who will direct him/her to the respective supervisor. |
| <p>Activities and Responsibilities:</p> <p>Learning objectives for elective students:</p> <ul style="list-style-type: none"> • Medical students will follow the schedule and interact with different attending-resident teams in order to be exposed to management of various types of cancer. • The student will function as part of the team and will be under direct supervision of house staff and attending. • The team schedule for the entire rotation will be generated by the coordinator and will be given to each student at the beginning of his/her rotation • Students will work closely [observation, hands on with radiation oncology faculty and residents in evaluating patients in consultation [inpatient and outpatient] • Treatment planning, monitoring their course of treatment and observing them in follow-up examinations. • Students will have the opportunity to perform history and physical examinations for patients who are candidates for radiation therapy with the guidance and supervision of faculty and residents. Students will also be exposed to such procedures as brachytherapy, CT planning, volume marking and plan evaluation. • Their clinical experience will be enhanced by attendance at departmental teaching sessions, hospital CME and multidisciplinary tumor boards | |

- Elective schedules can be tailored to the students particular interest and goals expressed for the elective.
- There are no night or weekend calls during this elective

Evaluation/Assessment:

- Students will be observed directly by the attending physician and resident with whom they are on the team. And given feedback on his/her clinical and history taking skills, medical knowledge, and interpersonal skills.
- Students will be required to prepare a 30-minute presentation on the topic of their choice as it pertains to oncology and radiation oncology that will be presented in the 3rd or 4th week of their rotation.
- Head of Department's feedback and written evaluation is handed over to the student upon successful completion of their rotation. Students' involvement, attendance and participation in clinic and academic sessions as well as their final presentation will be taken into consideration.

Radiology

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| Location: | Shaukat Khanum Memorial Cancer Hospital and Research Centre |
| Duration and Timings: | Minimum 2 weeks - Maximum 4 weeks Monday - Friday 0800 - 1700 hours |
| Months Offered: | January - December |
| Approving Authority: | Head of Department |
| No. of Students: | 2 Per month |
| Prerequisite: | MBBS (final year only) Pre-Medical Students (for 2 weeks only) |
| Description of Program | |
| <p>Department of radiology offers elective rotational exposure to this novel specialty for undergraduate medical students. It facilitates the students in familiarizing with a field of medicine to which they are relatively underexposed. Many students get a chance to have closer look and redefine their future career paths and others get a better understanding of working in a modern radiology set up alongside a busy and demanding clinical service.</p> | |
| Report To: | Elective will meet the respective departmental secretary, who will direct the elective to the respective supervisor. Each elective will have a nominated supervisor attached with him/her. |
| Activities and Responsibilities of Students: | |
| <p>During this period, the students are rotated in all major sections of the department e.g. ultrasound, radiography, computed tomography, magnetic resonance imaging, fluoroscopy, mammography and digital subtraction imaging. The goal is not to overwhelm the students with lots of activities rather to orient them with various modalities and introduce their utility in clinical practice. Students are encouraged to attend various educational activities going on in the department in addition to some of the multidisciplinary clinical meetings. This emphasizes and highlights the role of radiologist in clinical decision making. Chief resident in the department makes sure that all students get adequate exposure and maintain regular attendance.</p> | |
| Assessment/ Evaluation: | |
| <p>At the end of rotation in the department, each student is expected to have acquired sufficient basic information regarding ordering, justification and execution of various radiologic investigations. In addition, each student is also expected to present at least two simple imaging based cases, with clear description of findings, differential diagnosis, possible diagnosis and outcome with a conclusion. The cases are selected from everyday workload and usually comprise radiographs. At the end of elective rotation, confidential evaluations are performed by faculty members.</p> | |

Surgical Oncology

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| Location: | Shaukat Khanum Memorial Cancer Hospital and Research Centre |
| Duration and Timings: | Minimum 2 weeks - Maximum 4 weeks Monday - Friday 0800 - 1700 hours |
| Months Offered: | January - December |
| Approving Authority: | Head of Department |
| No. of Students: | 8 Per month |
| Prerequisite: | MBBS (final year only) |
| Description of Program | |
| <p>The department of Surgical Oncology is accredited to provide post graduate training for FCPS Surgery and Oral & Maxillofacial Surgery as well as fellowship training in Surgical Oncology. Faculty comprises of two full time G.I Surgeons, two Breast Surgeons, one Orthopaedic Surgeon, one Head & Neck surgeon, two Urologists and one Paediatric surgeon. Each elective student spends one week with four of the nine full time surgeons according to their wish or the slots available at that particularly time. The students will attend their outpatients and operating sessions. The surgical department at SKMCH&RC deals with a wide variety of cancer and non-cancer cases and this elective rotation gives the elective students a good overview of surgery as a whole.</p> | |
| Report To: | Elective will meet the respective departmental secretary who will direct the elective to respective supervisor. Each elective will have a nominated supervisor attached with him/her. |
| Activities and Responsibilities of Students: | |
| <p>They are offered attachments in the surgical specialty/ies of their choice where they are exposed to outpatient, inpatient and operative management of patients. They also get the opportunity to attend the multidisciplinary meetings and teaching sessions of SKMCH & RC trainees.</p> <p>The elective student will be rotated in following disciplines:</p> <ul style="list-style-type: none"> • Breast Surgery • Head & Neck Surgery • Oral & Maxillofacial Surgery • Orthopaedics Surgery • Paediatric Surgery • Uro-oncology Surgery • Upper and Lower GI/Hepato Pancreatico-biliary Surgery | |
| Assessment/Evaluation: | |
| <p>Student is assessed during his/her rotation in medical knowledge, clinical skills, verbal presentation and interpersonal skills and is graded from poor to excellent. Teaching Attending / Head of Department's feedback and written evaluation is handed over to the student upon successful completion of the rotation.</p> | |