

**Kuwait Institute for
Medical Specialization
Ministry of Health, Kuwait
Neurosurgery Residency Program**

Kuwait Institute for Medical Specialization (KIMS) is the authority of the Ministry of Health, State of Kuwait, which is responsible for planning all aspects of postgraduate training of medical and other health professionals in Kuwait. It organizes the internship training of recently qualified medical graduates, and specialty level and continuing education programs for all health professionals.

In order to fulfill its aim of providing specialty level training in the different fields of medicine, KIMS has established a number of Faculties and Committees, which initiate and coordinate postgraduate training in Internal Medicine, Surgery, Pediatrics, Obstetrics & Gynecology, Family Medicine, Laboratory Medicine, Radiology, Nuclear Medicine, Anesthesia and Radiology, and Dentistry. This booklet gives an outline of the training program in the superspeciality of Neurosurgery. Registration in the programs is open to doctors practicing in Kuwait and other GCC countries subject to availability. Interested readers are advised to contact KIMS, for additional information on the program described here, or for details of other activities.

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Postgraduate Training Program in Neurosurgery
Department of Neurosurgery
Ibn Sina Hospital

Mission and Objectives:

The mission of the Department of Neurosurgery at Ibn Sina Hospital, consistent with that of the ministry of health in Kuwait, is to provide patient-centered clinical care focusing on the disease processes prevalent in our small nation and affecting the neurological system, and for which neurosurgical solutions may be available. In order to achieve this mission, we aim to improve the health of the people of Kuwait by providing excellent health care education, with special emphasis on the needs of our patients and by generating new knowledge through health-related research. The most important component of the educational mission of the Department of Neurosurgery at Ibn Sina Hospital will be the postgraduate training program (PGTP) in neurosurgery.

The primary objective of the PGTP is to prepare those enrolled to meet the academic and clinical standards required to work at Junior Consultant/Senior Registrar level. As a small program, residents will have close relationships with each consultant, which would optimize individualized learning. We will strive to create an environment where bright, articulate, energetic, compassionate and skillful residents can develop into highly competent neurosurgeons.

Training Centers:

Ibn Sina Hospital will be the training center for the neurosurgery component of the training program. The Department of Neurosurgery at Ibn Sina Hospital is serving a population of approximately 4 million, and has a capacity of 60 beds, fully equipped outpatient clinics, 3 major operating theaters, and a well equipped ICU unit with total capacity of 16 beds. The distribution of bed capacity is shown in Table 1. The department is staffed with 30 fully trained neurosurgeons, in different ranks from registrars to consultants (Table 2).

Ibn Sina Hospital will also serve as a training center for Neurointensive Care, Pediatric Surgery, Neuroradiology and Neurology rotations. Ancillary training locations will be:

Zain hospital for ENT rotation.

Al-Sabah histopathology unit for Neuropathology rotation.

Al-Razi Hospital for Peripheral nerve and Spine Surgery rotation.

Admission Requirements:

Applications will only be accepted from those who:

- Have obtained a basic medical qualification from a medical college approved by the Ministry of higher education, Kuwait and by Kuwait Institute for Medical Specialization (KIMS).
- Have successfully completed a 12-month post-qualification internship.
- Have at least 6 months of general surgery experience at assistant registrar level.
- Candidates fulfilling the above are also required to attend an in-depth interview.

The interviewing committee is comprised of:

Chairman, Faculty of Neurosurgery, KIMS.

Neurosurgery Program Director.

Chairman/Senior Consultants, Department of Neurosurgery, Ibn Sina Hospital.

Two candidates are admitted to the program each year.

Admission Procedure

During the month of November, the Faculty of Neurosurgery of KIMS will announce in all the hospitals in Kuwait through circulars calling for applications to admission to the First Year of the PGTP.

During the month of December the Postgraduate committee of KIMS will screen the applications, and the short listed candidates will be called for interview. The committee would have by then received two confidential reports from the personal referees of each candidate of their suitability to join the PGTP.

On the basis of assessment reports from the referees and a successful interview the candidates are selected for admission to the program.

Selected candidates will be allocated to the Department of Neurosurgery at Ibn Sina Hospital.

The new batch (PGY-1) of PGTP commences at the beginning of October every year.

General Description of the Program

The Department of Neurosurgery at Ibn Sina Hospital is offering a five-year residency program that is designed to provide a broad neurosurgical background and an exposure to subspecialty neurosurgery as well as an opportunity to engage in both clinical and basic research such that the individual resident may choose.

While it is expected that those entering the program will complete their residency, all appointments to the program are for one year with advancement based on continuing acceptable performance. Residents are evaluated continuously by the consultants and senior staff in accordance with the General Competencies.

The operative training will be structured in a gradual fashion (Table 4) to achieve a final objective at the end of the training program, of neurosurgery residents being competent in all aspects of the clinical management of patients presenting with neurosurgical conditions.

The five-year training program will be divided into:

1. Basic training:

The basic training will be for the first 36 months (PGY 1-3), 19 months in neurosurgery and 17 months in related subspecialties. The trainee is expected to develop the necessary skills, knowledge and attitude relevant to neurosurgery in the following conditions: Cranial trauma, Spontaneous intracranial hemorrhage, Hydrocephalus, Intracranial tumors, CNS infections, Degenerative spinal disorders, Spinal trauma, Benign intradural tumours, and Malignant spinal cord compression.

2. Advanced training:

The advanced training program will be for 24 months (PGY 4-5), 21 months in neurosurgery at Ibn Sina Hospital and 3 months in neurosurgery abroad. The neurosurgery rotation abroad will aim to provide exposure for the resident in a subspecialty of Vascular, minimally invasive neurosurgery, skull base; or other field depending on the interest of the candidate.

Chronology of the Residency Program (Table 3)

PGY-1

The first year is an introductory year, where the first 6 month will be spent on the neurosurgery Service at Ibn Sina Hospital. This aims at introducing the resident to basics of neurosurgery that will enable them to design their own learning objectives from the subspecialty rotations during PGY-2 and PGY-3.

The resident will spend 3 months in Neuroradiology at the department of Neuroradiology at Ibn Sina Hospital. During this rotation, residents are expected to learn the basics of MRI, CT, and cerebral angiography and to develop a high competence in the interpretation of these imaging modalities.

Resident will rotate for one month in Pediatric Surgery, and for 1 months in ENT. The objective of this rotation is to be familiar with general concepts in surgical practice.

PGY-2

The resident will spend first 6 month on the neurosurgery Service at Ibn Sina Hospital. Then 2 months at the department of Neurology (1 month in Ibn Sina and 1 month in Adan Hospital), during which the resident is expected to be familiar with CNS conditions that fall under neurology, e.g. Stroke, Epilepsy and Neurodegenerative disorders, and to be educated in their management.

Residents will spend one month in neuropathology, and are expected to demonstrate knowledge of neuropathology that is pertinent to the diagnosis of diseases of the nervous system and practice of neurological surgery.

Three months will be at the anesthesia service, where one month will be spent on learning the basics of OR anesthesia, and two months in the Neurointensive Care unit. Residents are expected to master the art of care of patients in critical condition requiring intensive care.

PGY-3

Seven months will be spent in neurosurgery at Ibn Sina Hospital, one month of which will be assigned to radiosurgery at the Gamma knife center. The concept of radiosurgery and its common indications will be the focus of this rotation.

Residents will rotate for 2 months at Al-Razi Hospital, where they will spend 1 month in the departments of spine surgery and another month in peripheral nerve surgery.

In PGY-3, three months will be dedicated for research, the topic of which will be decided by mutual agreement between the resident and the department staff.

During PGY-2 and -3, residents will focus on all types of neurosurgical conditions and will participate in the perioperative care of inpatients. Surgical training will be focused on basic neurosurgical procedures like Burr hole evacuation of CSDH, Insertion of lumbar drain and Application of skull traction. Other objectives include Insertion of Intracranial (ICP) monitor, Elevation of depressed, skull fracture, Craniotomy for traumatic haematoma (EDH, ASDH), Insertion and Revision of VP shunt.

PGY-4

The resident will spend 9 months in neurosurgery. The objective of this rotation will be training on fashioning craniotomy for planned cases, as well as for emergency cases like spontaneous supratentorial ICH and spontaneous infratentorial ICH. Other parts of the training would include repair of MMC and management of degenerative spinal disorders.

Three months of Extramural Rotation outside Kuwait. This will be arranged to address an individual's special interest and career needs.

All rotations outside of Ibn Sina Hospital must be approved in advance by the program director and KIMS.

PGY-5

12 months of neurosurgery will be at Ibn Sina Hospital as a Chief Resident. The Chief Resident has the overall administrative responsibility of running the neurosurgical service including OR, NICU, inpatient, conference, and medical student assignments. Resident will take a leading role in the OR in all cases assigned to his/her unit according to their level of competence.

The focus of this rotation would be training on craniotomy for tumors, midline posterior fossa approach, Transsphenoidal approach, surgery for intradural spinal tumors, Lumbar and Cervical spine instrumentation

Educational Activities:

During the five years of training, it is compulsory for all trainees to attend the following activities:

Daily ward rounds and ward activities.

Grand rounds once weekly.

ICU Rounds

Operation planning sessions

Outpatient Clinic

Operating Room

On-Call activities

Journal Clubs

Neuroradiology Conferences

Neuro-oncology meetings

M and M meetings

Conferences (2 national and 1 international conferences)

Guest lectures

Seminars

Research:

Residents are encouraged to participate in clinical and basic research studies and presenting papers at national and international meetings, with exposure to emerging concepts and innovations. Numerous visiting professors come to Ibn Sina hospital and will interface with our trainees.

Assessment:

To ensure that residents are "on track" in their acquisition of the neurosurgical competencies, resident performance is carefully monitored during the course of the residency.

After each clinical rotation, residents are evaluated formally by the supervising faculty members.

In addition residents meet individually with the program director on a bi-annual basis to discuss performance and career goals to better construct that resident's training program.

Certification Procedure:

At the end of PGY-2, residents will sit or the principles of surgery examination. Passing this examination is prerequisite for proceeding to PGY-4.

At the end of the training program, residents will be required to pass an exit exam that is supervised by external and local examiners. The exam format will be:

A. Theory exam:

Paper I: Cover clinical and operative neurosurgery, and will be in short-notes format.

Paper II: will cover recent advances in neurosurgery, and will be in short-notes format.

B. Practical exam:

I: Neuroradiology stations.

II. Oral examination covering all aspects of neurosurgery. This exam may include pathology specimens, clinical problems and recent advances in neurosurgery.

Two external and two local examiners (chairman of neurosurgery and Program director) will participate in the examination.

Table 1.

Location	Capacity
Ward 4 (Males)	Adults: 30 Bed
Ward 6 (Females)	Adults: 17 Bed; Pediatrics: 8 beds
ICU	Adults: 8 Bed; Pediatrics: 8 beds

Table 2.

Consultant	7
Senior Specialist	1
Specialist	5
Senior Registrar	7
Registrar	10
Residents	6

Table 3. Rotation Outline

PGY1	<p>7 months Neurosurgery at Ibn Sina Hospital. 3 months Neuroradiology 1 month Pediatric Surgery 1 month ENT</p>
PGY2	<p>6 months Neurosurgery at Ibn Sina Hospital 2 months Neurology 1 month Neuropathology 1 month OR Anaesthesia 2 months Neurointensive Care</p>
PGY3	<p>6 months of neurosurgery at Ibn Sina Hospital. 1 months radiosurgery 2 months at Al-Razi Hospital (1 month spine, 1 month peripheral nerve). 3 months Research</p>
PGY4	<p>9 months neurosurgery at Ibn Sina Hospital 3 months of Extramural Rotations</p>
PGY5 (Chief resident)	<p>12 months of neurosurgery at Ibn Sina Hospital</p>

Table 4. Surgical Objectives

PGY1	Assisting in variety of cases
PGY2 and 3	<p>Burr hole evacuation of CSDH Insertion of lumbar drain Application of skull traction</p> <p>Management of cranial trauma Insertion of Intracranial (ICP) monitor Elevation of depressed skull fracture Craniotomy for traumatic haematoma (EDH, ASDH)</p> <p>Management of hydrocephalus Tapping/draining of CSF reservoir Insertion of ventricular drain/access device Insertion of VP shunt Revision of VP shunt</p>
PGY4	<p>Craniotomy for planned cases</p> <p>Craniotomy for spontaneous supratentorial ICH Craniotomy for spontaneous infratentorial ICH</p> <p>Repair of MMC</p> <p>Management of degenerative spinal disorders Laminectomy Lumbar microdiscectomy Cervical surgery (Laminectomy, ACDF)</p>
PGY5 (Chief resident)	<p>Craniotomy for tumours– convexity, pterional, midline supratentorial, midline posterior fossa</p> <p>Transsphenoidal approach</p> <p>Posterior fossa</p> <p>Management of intradural spinal tumours</p> <p>Lumbar spine instrumentation Cervical spine instrumentation</p>

Resident work Guidelines

The resident has the primary responsibility during their rotation for inpatients, consults, OR, and outpatient clinics.

These responsibilities include direct patient care, documentation, and helping to coordinate the cross-coverage by other residents and departmental staff.

The Residents must be proactive and take the initiative to solve patient care problems and should not expect the senior department staff to micro-manage the patients.

To promote continuity of patient care, the resident must check in daily with the on call departmental staff to update them about the service.

Daily weekday morning (7:30 a.m.) and afternoon (1:30 p.m.) meetings will be attended by the neurosurgery resident.

The resident will write daily progress notes on neurosurgery floor patients, including on weekends.

Scientific meetings – when the neurosurgery resident is in attendance at a scientific meeting, they should present to the department the highlights of that meeting.

The neurosurgery resident should independently review all tests and studies obtained on neurosurgery floor patients.

The neurosurgery resident and other team members will implement the daily care plan together.

The resident will confer with the Chief resident and/or senior department staff for all issue related to patient care. Any issues that cannot be satisfactorily resolved by phone consultation must be resolved by the Chief resident and/or senior department staff at the bedside.

The neurosurgery Chief resident (or a senior resident specifically designated by the chief resident) will provide phone consultation and bedside consultation for all neurosurgery patients, as needed.

Daily neurosurgery ICU rounds will be coordinated by the neurosurgery resident. The neurosurgery resident will round on and write notes on neurosurgery ICU patients every day of the week. On weekends, the neurosurgery Chief resident (or their designee) to round on the ICU patients and write notes.

All neurosurgery consults must be seen and documented by a senior or Chief neurosurgery resident. Phone triaging of inpatient or outside consults is not acceptable.

The neurosurgery attending physician is responsible for supervising the care of neurosurgery patients, and must be kept “in the loop” about significant clinical events.

When admitting patients to the neurosurgery service, the attending of record must be “in town”. If this is not the case, then the patient should be admitted under the on call attending, and transferred to another attending latter, when indicated.

The consultant on call must be notified of any admissions, regardless of the hour.

Consultants should be immediately notified of any significant clinical events that happen to their patients (e.g., change in neurostatus, hemodynamic instability, transfer to ICU, etc.).

Call coverage

Residents will have the primary on-call responsibility.

The resident call schedule will be coordinated by the neurosurgery Chief resident.

During PGY1 residents will take on-call inside Ibn Sina Hopsital, and will be responsible for neurosurgery inpatient coverage, and inpatient consults for Sabah area.

During PGY2-5, residents will cover outside consults for Amiri, Mubarak, Adan, Farwania, Jahra, Al-Razi and KOC hospitals.

For both call levels, the neurosurgery registrars and senior registrars will function as 1st call-backup.

The on-call team will be backed up at two levels:

2nd backup – neurosurgery junior consultant on-call.

3rd backup – senior consultant on-call.