

Dalhousie University Neurosurgery

Resident Rotation Objectives: Senior Residents (PGY4-6)

Medical Expert

General Requirements:

1. Admit patients, record their medical history and physical examination in clinic, ward, and emergency department environments.
2. Assist in the operating room or operate as the principal surgeon under supervision of the attending surgeon.
3. Consult on patients on medical wards, ICUs, outpatient clinics, and emergency departments.
4. Make rounds in the various hospital units as assigned, order appropriate medications, tests and other forms of therapy required for continued care, plan discharge with nurse clinicians and charge nurse and write a daily progress note in the chart where appropriate.
5. Attend clinics with faculty members.
6. Provide guidance and direction to the junior residents on the neurosurgery service regarding patient care issues.

Specific Requirements:

KNOWLEDGE

1. A complete understanding of the disorders requiring neurosurgical attention including infectious diseases, head and spinal cord injury, brain tumours, stroke, vascular malformations, and degenerative diseases of the brain and spinal cord.
2. A detailed knowledge of the anatomy of the nervous system and its supporting structures including the spine and skull, and a working basic knowledge of the other disciplines including physiology, pathology, endocrinology, and neuropsychology.
3. Familiarity with and understanding of diagnostic studies used to investigate the patient with a neurosurgical disorders including EEG/EMG, x-ray, CT, MRI, PET and ultrasound.
4. A comprehensive understanding of the spectrum of surgical interventions that are available for the treatment of the patient with neurosurgical disease.
5. An understanding of the brain targets selected for functional neurosurgical procedures.
6. An understanding of the work-up of patients considered for neurosurgical management of epilepsy.
7. An understanding of the conduct of clinical trials.

CLINICAL SKILLS

1. The ability to obtain a detailed history and perform a complete neurological examination in order to provide a differential diagnosis and localization of diseases affecting the central nervous system.

2. The demonstration of skills in interpreting appropriate general diagnostic tests (haematology, x-ray, chemistry, etc.) for the satisfactory management of patients.
3. The provision of comprehensive ongoing post-operative assessment and care including intensive care to the neurosurgical patient.
4. A superior ability to interpret diagnostic imaging studies of patients with all types of neurosurgical disorders.

TECHNICAL SKILLS

At the completion of their neurosurgical rotation, senior neurosurgery residents will have demonstrated a thorough understanding of neurosurgical anatomy, and the technical ability to satisfactorily and safely perform the following procedures:

1. Ventriculostomy including endoscopic third ventriculostomy
2. Burr holes for drainage of subdural hematoma
3. Insertion of ICP monitor
4. Craniotomy for traumatic head injuries including extradural hematoma, subdural hematoma, intracerebral hematoma, depressed skull fractures and basal skull fractures, and lobectomy
5. Craniotomy for tumour including intradural removal of primary and metastatic tumours, and tumours in the posterior fossa
6. Awake craniotomy for tumour removal
7. Posterior fossa craniotomy for acoustic schwannoma, trigeminal neuralgia and hemifacial spasm
8. Craniotomy for clipping of intracranial artery aneurysms
9. Craniotomy for excision of AVMs and cavernous malformations
10. Transphenoidal resection of pituitary tumours
11. Lobectomy for epilepsy, temporal lobe resections for epilepsy
12. Craniotomy for invasive monitoring for epilepsy including depth electrodes
13. Utilization of image guidance (neuronavigation)
14. Posterior fossa decompression for Chiari malformation
15. Carotid endarterectomy
16. Performance of stereotactic brain biopsy
17. Cranioplasty
18. Repair CSF leak
19. VP shunt insertion and revision
20. Application of Halo ring and use of cervical spinal traction
21. Laminectomy, decompression and fusion of cervical spinal fracture with instrumentation as required
22. Laminectomy for cervical, thoracic, and lumbar degenerative disc disease
23. Laminectomy for epidural metastatic disease and other spinal tumours including intramedullary spinal cord tumours
24. Carpal and ulnar tunnel decompressions
25. Excision of peripheral nerve tumours
26. Percutaneous access to epidural space

Under the supervision of the staff neurosurgeon, the senior resident will assist at various levels in the completion of the following complex procedures:

1. Supratentorial and infratentorial craniotomy for complex skull base lesions
2. Craniotomy for complex aneurysm repair or AVM excision
3. Treatment of movement disorders (including spinal cord/deep brain stimulation), and epidural infusion of analgesics
4. Endoscopic pituitary tumour resection

Communicator

General Requirements:

1. Establish therapeutic relationships with the patients and their families
2. Obtain and synthesize relevant history from patients/families/communities
3. Listen effectively to advice and suggestions from faculty and senior residents
4. Discuss appropriate information with patients/families and the health care team including the junior residents on the neurosurgery service

Specific Requirements:

1. Document appropriate histories, physical examinations, and progress notes.
2. Establish communication with the patient and family that supports a trusting and open relationship.
3. Provide information to the patient and family that support the patient's participation in decision- making.
4. Respond appropriately to patients, families, and colleagues, who express anger, hostility, or a complaint.
5. Share information with the senior resident and faculty that supports teamwork and effective care planning and provision in an expeditious manner.
6. Be sensitive to the needs of patients and their families as they are affected by age, gender, cultural and ethnic perspectives.
7. Be able to communicate in a clear, concise and collegial manner with referring physicians.
8. Be able to present data to a group of peers or allied health personnel in a clear and understandable way at weekly neurosurgery and neuroscience conferences.
9. Learn the avenues of communication with institutional managers and administrators to be able to clearly express the needs of his/her service.
10. Prepare written documentation regarding patient consultations in a timely and accurate fashion.

Collaborator

General Requirements:

1. Consult effectively with other physicians and health care professionals.
2. Contribute effectively to other interdisciplinary team activities.

Specific Requirements:

1. Learn to communicate with other physicians and health care professionals to contribute effectively to interdisciplinary team activities to improve patient care in the management of surgical disorders that benefit from such approaches.
2. Be able to collaborate with allied health care personnel in developing public education tools.
3. Be able to work with healthcare governance at all levels.
4. Contribute administrative skills to the physician team, including direction to the junior residents on the service.
5. Be able to delegate responsibilities where and when appropriate.
6. Listen to concerns expressed by others providing care and assist in resolving these concerns if appropriate.

Leader

General Requirements:

1. Utilize resources effectively to balance patient care, learning needs, and outside activities.
2. Allocate finite health care resources wisely.
3. Work effectively and efficiently.

Specific Requirements:

1. Set priorities and manage time for clinical activity, learning needs and family and recreational activities.
2. Optimize the application of existing resources.
3. Interact with the community to preserve and secure adequate resources for the provision of excellent care.
4. Direct the complete care of a group of patients on the service of one or more members of the neurosurgical staff (clinical teaching unit) by delegating responsibilities to other members of the team including junior residents and nurse practitioners.

Health Advocate

General Requirements:

1. Identify the important determinants of health affecting patients.
2. Contribute effectively to improved health of patients and communities.
3. Recognize and respond to those issues where advocacy is appropriate.

Specific Requirements:

1. Identify the important determinants of health that affect their patients.
2. Contribute effectively to injury prevention, health maintenance and health enhancement programs in the community.
3. Be effective advocates of practices that enhance health and well-being.

Scholar

General Requirements:

1. Develop, implement and monitor a personal continuing education strategy.
2. Critically appraise sources of medical information.
3. Facilitate learning of patients, house staff/students and other health professionals.

Specific Requirements:

1. Acquire current techniques to appraise sources of medical information and develop, implement and monitor a personal education strategy so as to become life-long learners.
2. Acquire a sufficient awareness of the scientific method, including the principles of epidemiology, in order to critically analyze the literature for continuing medical education and investigation.
3. Learn to facilitate the learning of patients, medical colleagues, both junior and senior, and other health care professionals.
4. Organize and present at various academic rounds and seminars.
5. Supervise and teach medical students, junior residents, and off-service rotating residents.
6. Guide the clinical and operative decision-making process of the junior residents.
7. Prepare cases for discussion at monthly morbidity and mortality rounds
8. Review topics for discussion at didactic teaching rounds.
9. Learn the organization and supervision of the neurosurgical clinical teaching unit, including the supervision of the flow of patients in and out of the unit, their diagnostic and operative management as well as their discharge planning.
10. Undertake one or more research projects leading to a presentation and/or publication as supervised by the faculty.
11. Present at Neurosurgery Resident Research Day.
12. Submit an abstract annually to DoS Resident Research Day.
13. Submit an abstract on an annual basis to at least one national or international meeting.

Professional

General Requirements:

1. Deliver the highest quality care with integrity, honesty and compassion.
2. Exhibit appropriate personal and interpersonal professional behaviours.
3. Practice medicine ethically consistent with obligations of a physician.

Specific Requirements:

1. Have a thorough appreciation of the necessity for methods of quality assurance in the delivery of health care.
2. Learn to deliver the highest quality care with integrity, honesty and compassion, and understand the importance of bio-ethical issues in the delivery of health care.
3. Have the deportment of a professional including the demonstration of a sincere, caring attitude in dealing with patients.
4. Fulfill medical, legal, and professional obligations of the specialist.
5. Meet deadlines, be punctual, monitor patients, and provide follow-up.
6. Understand the principles of ethics and apply these in clinical situations.
7. Demonstrate self-assessment, seek and accept advice when necessary