

Department of Medicine
Division of Neurology

Rotation Learning Objectives

Sunnybrook Health Sciences Centre

Sunnybrook Health Sciences Centre (SHSC) Neurology Rotation Learning Objectives

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INTRODUCTION

The neurology rotation at the Sunnybrook HSC is unique as it consists of two separate training streams for neurology trainees. The consultation liaison service consists of a predominantly inpatient consultative experience to general internal medicine and to all the departments of medicine, and to psychiatry, geriatrics, surgery, the critical care units (neuro, trauma, burn units), the emergency department and Women's health related fields, including obstetrics and gynecology. The out-patient and behavioural neurology service consists of clinics in multiple neurological subspecialties and in general neurology.

The general goals and specific objectives of the Royal College of Physicians and Surgeons of Canada for Trainees in the Neurology program apply to the neurology residents rotating through the Sunnybrook Health Sciences Centre.

In keeping with the CANMEDS roles, the following are expected in residents rotating through the Sunnybrook Health Sciences Centre:

Medical Expert

- *Become familiar with the history taking and presentation of patients with neurological problems
- *Become familiar with the neurological examination and demonstrate relevant clinical findings
- *Be able to synthesize the history, the physical examination findings, and localize the lesion site in patients with neurological disease
- *Be able to formulate a reasonable management plan for patients with a variety of neurological presentations

Communicator

- *Develop communication skills in conveying understandable information to patients and their families regarding common neurological disorders
- *Be able to compose a well-organized and legible consultation note (inpatient setting)
- *Be able to document well-organized and legible notes in the hospital chart regarding concurrent neurological care of the patient while they are being followed by the inpatient service
- *Be able to dictate a well-organized and concise letter (outpatient setting)
- *Develop communication skills with clinical and para-clinical services to enhance patient care

Collaborator

- *Develop intra- and inter-professional skills in the health care organization to facilitate patient care and create opportunities for academic research and productivity

Manager

- *Develop skills in assessing patients, managing clinical and academic responsibilities in an efficient and comprehensive manner

*For the Senior resident, to develop leadership skills in balancing educational and clinical care duties, and as well setting up the clinic/call schedules (see the section below regarding the responsibilities of the residents for more details)

Health Advocate

- *Be able to educate patients regarding lifestyle modifications, required for preventative medical care
- *Develop awareness of community resources available to patients with various neurological disorders

Scholar

- *To develop critical appraisal skills when evaluating the neurological literature
- *Develop an interest in scholarly activity, whether based on interesting cases encountered, or a stimulated interest in either clinical or basic science research
- *Develop presentation skills, that are held informally in teaching rounds or in a more formal setting (such as the interprofessional Neuroscience Rounds)

Professionalism

- *Develop professional attitude in demeanor, and manner of conduct towards patients, colleagues and other healthcare professionals
- *Being on time for scheduled events, including teaching and clinic, and arranging for a replacement in the case of an unexpected absence

Responsibilities of the Neurology Resident:

The Chief/senior resident(s) will coordinate both the inpatient consultation and outpatient/behavioural neurology services. He/She will assign the trainees to each stream and review the responsibilities of the trainee. Teaching by the Chief/senior resident will be encouraged and expected on the days that the staff are not able to provide the teaching. The neurology trainee will also be responsible for arranging patients to be presented in Neurology Case Presentation/Phenomenology rounds and will be expected to present at least once during the rotation at Neuroscience Rounds.

Call Responsibilities:

Each neurology trainee will be assigned a 1 in 4 call, (which can be home-call), depending on numbers. Of service trainees will be assigned call that will be within the guidelines of the PAIRO agreement. It is expected that the resident can meet the reasonable time requirements of providing consultations (such as TPA for acute stroke, necessitating an on-site response within 20-30 minutes). If not possible, arrangements can be made for in-house call.

Inpatient Consultation Service

Residents on this team will develop skills to function as a neurological consultant to inpatients at a busy academic tertiary referral hospital, which sees on average, six new consults a day. In many instances, they will function and work in conjunction with the referring teams, collaborating in the diagnosis and management of the patients. Residents will be responsible for completion of these consultations, and reviewing them with the attending staff and ensuring that any management issues of previous consultations

have been appropriately addressed. Evidence based medical practice, professionalism (interpersonal skills, attitudes), improvement of clinical skills (history taking, clinical examination and case synthesis), scholarly achievements and collaboration will be encouraged. Residents in this stream are also given an outpatient neurology experience by attending two outpatient clinics throughout the week:

Monday to Thursday am (08:00-12:00, A454) – Stroke Prevention Clinics

Thursday am (08:00-11:00) – Neuro-ophthalmology Clinics (geared for Neurology trainees, but open to all)

Educational sessions include mandatory regular rounds as outlined below:

Monday am (11:00-12:00, A450) - Neurology Subspecialty Lecture Series

Tuesday am (11:00-12:00, A450) – Stroke Teaching Rounds

Wednesday am (11:00-12:00, C4) – General Neurology Teaching Seminar (led by attending staff or senior resident)

Thursday am (11:30-12:30, A450) – Neurology Case Presentation/Phenomenology Rounds

Thursday pm (16:30-17:30, SG22) – Brain Sciences Rounds

Friday am (11:00-12:00, C4) – General Neurology Teaching Seminar (led by attending staff or senior resident)

Outpatient and Behavioural Neurology Service

Residents on this team will develop their skills in the diagnosis and management of neurological patients on an outpatient basis in a variety of neurological subspecialties and general neurology. Furthermore, it includes a special emphasis on cognitive neurology consultations to be reviewed by Dr. Sandra Black or the Neuro-behavioural Fellows in the inpatient setting.

There are a number of subspecialty interests at Sunnybrook that include:

Cognitive Neurology (including stroke, dementia)	Dr. Sandra Black ; Dr Mario Masellis
Electrophysiology	Dr. Lorne Zinman, Dr Esther Bui, Dr. Andrew Lim
Epilepsy	Dr. Esther Bui
Neuromuscular	Dr. Lorne Zinman; Dr. Marek Gawel
Neuro-oncology	Dr. James Perry
Multiple Sclerosis and General Neurology	Dr. Liesly Lee
Sleep Neurology	Dr. Brian Murray , Dr Andrew Lim
Stroke	Dr. David Gladstone; Dr. Julia Hopyan; Dr Rick Swartz

Residents on this service are expected to attend the following clinics and sessions:

Monday am (9:00-10:00, A421) - Orientation to Cognitive Neurology Assessment (first Monday of every month)

Monday am (10:00-11:00, A421) – Cognitive Neurology consults

Monday am (11:00-12:00, A425) – Neurology Subspecialty Lecture Series

Monday pm(12:00- 15:00, FG38) – Neuropsychiatry Clinics (for Psychiatry residents)

or

Monday pm (13:00-16:30, E209) – Multidisciplinary Memory Clinics (for Psychiatry residents)

or

Monday pm (13:00-17:00, C4) – Sleep Neurology Clinic

Tuesday am (08:00-11:00, SCIL-UG26) – ALS/Neuromuscular Clinic

Tuesday pm (11:00-12:00, A450) – Stroke Teaching Rounds

Tuesday pm (12:00-13:00, A421) – Orientation to Neuropsychological Testing (first Tuesday of every Month)

Tuesday pm (13:00-17:00, A442) – Cognitive Neurology Clinic

Wednesday am (09:00-12:00, TSRCC, Pod C) – Neuro-oncology Clinic

Wednesday pm (13:00-17:00, A442) – Cognitive Neurology Clinic (Psychiatry +/- Neurology trainees)
or

Wednesday pm (13:00-17:00, TSRCC, Pod A/B) – Neuro-oncology Clinic

Thursday am (09:30-11:00, A421) – Cognitive Neurology consults

Thursday am (11:30-12:30, A425) – Neurology Case Presentation/Phenomenology Rounds

Thursday pm (13:00-16:00, A411) – General Neurology/MS Clinic

Thursday pm (13:00-1600, A454) – Cognitive/Movement Disorders Clinic

Thursday pm (16:30-17:30, SG22) – Brain Sciences Rounds

Friday am (08:00-12:00, A454) – Stroke Prevention Clinic

Specific details and goals of the outpatient clinics are as outlined below:

Cognitive Neurology (A442, Tuesday and Wednesday pm)

Objectives

1. To develop clinical skills in cognitive neurology including history, examination and management of common cognitive disorders.
2. To develop assessment skills in mental status including assessment of aphasia, neglect and dementia.
3. To learn how to integrate this assessment in a differential diagnosis and management plan of dementia and other cognitive disorders.

The two Cognitive Neurology Clinics are on Tuesday and Wednesday afternoons. Residents see a mix of follow up and new patients (eg.1 new patient on whom a detailed behavioural neurology assessment is performed using a standardized letter form, and 1 or 2 follow-ups; or 4 follow-ups to get a feel for management of dementia and other disorders). Inpatient training includes consultation to Neuropsychiatry, Geriatric Psychiatry and Adolescent Psychiatry in F-Wing, in addition to inpatient consultations in K- and L-Wing and also the acute hospital, particularly the Geriatric Assessment Unit.

A multidisciplinary clinic (geriatric medicine, geriatric psychiatry and cognitive neurology) is held on Monday afternoons with an opportunity to assess one new patient with dementia, and to participate in this tri-specialty review of this and other patients.

Sleep Neurology

Monday PM Sleep Neurology Clinic

Objectives

1. To understand that neurological disorders affect sleep
2. To understand how sleep disorders affect neurological function
3. To learn how to take a sleep history/exam, arrange appropriate tests, and manage neurological sleep disorders.

Vascular Cognitive Impairment and Stroke Prevention Clinics

Stroke Prevention Clinic - Sunnybrook (A454 clinics, every morning)

Objectives

To learn the clinical approach to differential diagnosis of TIA, cerebrovascular risk factor stratification and optimization, neuro-vascular diagnostic investigations, and treatment options for stroke prevention (medical and surgical)

The Stroke Prevention Clinic at Sunnybrook campus serves as the Secondary Prevention Clinic for the North and East GTA Regional Stroke Centre at Sunnybrook, and operates on a daily basis. Drs David Gladstone, Rick Swartz and Julia Hopyan see patients every morning and Thursday and Friday afternoons. The morning clinics are urgent TIA clinics which serve to assess unstable patients and cases that are stroke mimickers.

The Stroke Prevention Clinic serves an important role in following discharged stroke in-patients from Sunnybrook and providing consultations for complicated cases of cerebrovascular disease. Optimization of secondary stroke prevention along with evaluations of patient recovery along with research studies are carried out. Finally, the clinic serves a regional role in terms of tertiary referrals from community neurologists, vascular and neurosurgeons, and internists.

Neuro-oncology Clinics

Wed morning clinic, POD "C", TSRCC, 9-12am

Objectives

New general neuro-oncology patients, follow-up patients with primary brain tumours on clinical trials

1. To appreciate the spectrum of diseases caused by the effects of cancer and its treatment on the nervous system
2. To be able to assess neurological complications of cancer
3. To describe the process of clinical trials research and to participate in clinical assessments, informed consent, and evaluation of clinical trials results

Wed afternoon clinic, POD "A" TSRCC, 1-6pm

New primary brain tumour patients seen in a multidisciplinary setting, follow-up of patients on active treatment

1. To evaluate and understand the principles of treatment for the various types of primary brain tumors
2. To learn the principles of "breaking bad news" to patients with severe terminal illness
3. To evaluate, assess, and treat the complications of cancer chemotherapy

ALS/Neuromuscular Clinic

Objectives

Tuesday am, SCIL UG 26

1. To evaluate patients with neuromuscular disorders, obtaining pertinent histories and identifying abnormalities
2. To develop a differential diagnosis of these clinical presentations
3. To participate in a multi-disciplinary team approach in the management of these disorders

General Neurology/MS Clinic

Objectives

Thursday pm, A411

1. To develop resident clinical skills with appropriate history taking and practicing neurological examination skills
2. To generate a differential diagnosis of common neurological problems (headaches, movement disorders)
3. To develop resident skills in case synthesis and develop a management plan
4. To recognize the clinical presentation of MS patients
5. To learn the evolving management strategies of MS patients
6. To participate in a multi-disciplinary team approach in the management of MS patients

Through the exposure to the mixture of patients seen, it is expected that residents:

Become familiar with the clinical presentation and management of:

- Patients with Alzheimer's disease and other dementias
- Patients with Parkinson's disease and other Parkinsonian-Plus Syndromes
- Patients with Primary Brain tumors, associated complications and paraneoplastic syndromes
- Patients with Epilepsy and seizure management
- Patients in the Critical Care unit and prognostication factors
- Patients with primary and secondary Headache syndromes
- Patients with acute Stroke and secondary stroke prevention issues
- Patients with Multiple Sclerosis
- Patients with Neuromuscular diseases, including ALS
- Patients with Sleep disorders
- Patients with Peripheral Neuropathies

Become more familiar with the purpose, utility, interpretation and techniques of:

- Electro-encephalograms (EEG)
- Nerve Conduction Studies and Electromyography (NCS/EMG)
- Evoked Potential Studies (EP)
- Lumbar Punctures
- Botulinum Toxin injections
- Neuro-imaging modalities (CT, MRI, Cerebral Angiograms, SPECT scans)
- Inner ear repositioning techniques

Selected References for the Neurology Rotation:

General/Examination:

Black, Sandra; *Medicine North America* 1986;36:5224-5242
Gladstone D and Black, S; *Geriatrics and Aging* 2002;vol 5, no 7:36-43
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Multiple Sclerosis:

Compston, A and Coles, A; *Lancet* 2008; 372:1502-17
O'Riordan, J.I. et al., *Brain* 1998; 121: 495-503

Sleep:

Gagnon, JF. et al., *Lancet Neurology* 2006;5:424-32
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Epilepsy

French, JA and Pedley TA, NEJM 2008;359:166-76

Lowenstein, DH and Alldredge BK, NEJM 1998;338, 14:970-976

Neuromuscular:

Yuki N and Hartung, HP, NEJM 2012;366:2294-304

Mastaglia FL, et al., Muscle Nerve 2003;27:407-425

Stroke:

Brott, T and Bogousslavsky, J, NEJM 2000; 343:10:710-722

Davis SM and Donnan, GA, NEJM 2012;366:1914-22

Neuro-oncology:

Behin A, et al., Lancet 2003;361:323-31

Dalmau J and Rosenfeld, MR, Lancet Neurology 2008;7:327-40

Neuro-behavioural:

Cummings, JL., NEJM 2004;351:56-67

Neary D, et al., Lancet Neurology 2005;4:771-80

Movement Disorders:

Lang, AE and Lozano AM., NEJM 1998;339, 15:1044-1053

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