

CLINICAL NEUROLOGICAL SCIENCES - Division of Neurology

Undergraduate Coordinator: Dr. Christen Shoesmith
Contact: Ms. Lisa Baker-Spiller
Rm B7-005, University Hospital - LHSC
Tel: 519 663-3696 Fax: 519 663-3982
Email: lisa.bakerspiller@lhsc.on.ca

DESCRIPTION

The 4th year elective in Neurology offers students a continuation of their introduction to Clinical Neurological Sciences that they began in first and second year. It provides an opportunity for students to consolidate their knowledge through application in the clinical care of patients.

The two-week elective is a combination of inpatient and outpatient Neurology. Students are assigned to the Neurology Clinical Teaching Unit (CTU) at University Hospital—usually the Stroke CTU but possibly the General CTU—for the first week. As part of the team, commensurate with their abilities, students will be responsible for the assessment, investigation and treatment of patients seen on the in-patient, consultation or emergency services. The second week will be spent at the Urgent Neurology Clinic (UNC) at Victoria Hospital working with the consultant and residents assessing and managing patients in an out-patient setting. Depending upon student numbers, the order of the weeks may be changed, and a student may be assigned week one at UNC and the second week on the CTU at University Hospital.

LEARNING OBJECTIVES

1. Medical Expert

A. General:

Knowledge: Students should be able to define, describe and discuss the:

- a) clinical presentations that may signify nervous system involvement;
- b) elements of the neurologic examination (mental status, language, cranial nerves, motor, reflexes, sensory, coordination and gait);
- c) components of the nervous system being evaluated by each aspect of the exam;
- d) indications, contraindications and complications of lumbar puncture;
- e) indications and contraindications for CT head and MRI brain;
- e) indications for and usefulness of electromyography and nerve conduction studies (EMG/NCS);
- f) indications for and usefulness of electroencephalography (EEG).

Skills: Students should be able to:

- a) demonstrate a focused history-taking that incorporates pertinent positives and negatives for the presenting neurologic complaint;
- b) perform an organized and focused neurologic examination distinguishing normal from abnormal findings;
- c) synthesize the history and physical findings to accurately localize the problem within the nervous system:
 - cerebral hemisphere – cortical vs subcortical

- posterior fossa – brainstem and cerebellum
- spinal cord
- anterior horn cell
- nerve root/plexus
- peripheral nerve
- neuromuscular junction
- muscle

d) formulate a differential diagnosis based on the time course, history, exam and localization;
 e) accurately interpret the results of CSF analysis;
 f) demonstrate an approach to the interpretation of CT head.

B: Specific:

Knowledge:

Students should be able to define, describe and discuss the following neurologic conditions:

- Acute stroke – ischemic or hemorrhagic
- Transient ischemic attack
- Epilepsy
- Migraine
- Tension-type headache
- Meningitis and encephalitis
- Parkinson disease
- Coma and brain death
- Multiple Sclerosis
- Polyneuropathy

Students should be able to identify risk factors (modifiable and non-modifiable) that predispose individuals to the above neurologic conditions.

Skills: History-taking:

Students should be able to obtain, document and present an appropriately complete medical history for the following clinical presentations:

- Weakness – focal vs diffuse
- Numbness/tingling/altered sensation
- Visual disturbance
- Headache
- Seizure
- Altered level of consciousness/coma
- Aphasia
- Ataxia
- Involuntary movements
- Transient neurologic symptoms
- Neuropathic pain

Students should be able to define, describe and discuss:

- the clinical presentation as abrupt, acute, subacute or chronic;

- a relevant differential diagnosis;
- and identify the critical features (“red flags”) that indicate an emergent or urgent presentation of:
 - headache
 - altered level of consciousness
 - weakness
 - visual disturbance
 - seizure
 - ataxia

Students should be able to demonstrate an initial approach to the investigation and management of the following:

- acute stroke in the emergency room;
- acute flaccid weakness;
- headache, fever and meningismus;
- abrupt, severe “thunderclap” headache;
- acute altered level of consciousness;
- status epilepticus.

2. Communicator

- a. Document clear and complete admission histories, progress notes, and discharge summaries that accurately reflect patients’ stories and their clinical course while in hospital or during their clinic visit.
- b. Develop an approach to discussing common neurologic diagnoses with patients and their families.
- c. Participate in a family meeting with support of the resident and/or consultant..

3. Health Advocate

- a. Advocate for timely access to diagnostic testing when necessary for patient care.

4. Scholar

- a. Conduct a focused literature search evaluating the evidence for at least one management decision for a patient followed on the neurology CTU service or seen in the clinic.
- b. Participate in teaching sessions.

5. Professional

- a. Recognize and discuss common ethical issues involved in the care of patients with serious neurologic illness, including the principles of substitute decision making.

6. Leader

a. Utilize patient encounters to reflect on ways that an individual's health care might be improved in a cost effective manner while maintaining quality care.

7. Collaborator

- a. Participate in patient management with the entire health care team.
- b. Participate in at least one family meeting.

Structure of the Rotation

The Neurology elective is structured as a two-week rotation.

Students are to report to Lisa Baker-Spiller, CNS Education Coordinator, after 0900 hrs on the first Monday morning of their rotation for their pager (\$100 deposit required). Lisa's office is located on the 7th floor across from the main (B) elevators, room B7-005.

The rotation will be a combination of:

Inpatients, University Hospital: One of the two weeks under the supervision of the CTU neurology senior and the neurology attending:

Neurology Clinical Teaching Unit – CTU

Inpatient consults

Emergency room consults

Urgent Neurology Clinic: One of the two weeks will be spent at the Urgent Neurology Clinic at Victoria Hospital

Assessment

It is the student's responsibility to ask for immediate formative feedback from each consultant worked with during the selective/elective and to supply the SSMD clinical clerk assessment forms. Third year clinical clerks will have a composite evaluation compiled by the consultant that they work closest with during the rotation. The student is to email names of consultants, residents and interdisciplinary team members worked with to that consultant by the Wednesday of the second week.

Students on elective may elect to have their summative assessment completed by:

- i) The Consultant the student worked most with. That consultant will do the evaluation with a composite assessment based on feedback from residents, interdisciplinary health team members and consultants the student has worked with
- ii) If there are any issues with getting an assessment completed, then the student can email Dr. Shoesmith christen.shoesmith@lhsc.on.ca

Duties of the Elective Student

Clinical Teaching Unit – the elective student will be expected to follow 2 or 3 inpatients and will be responsible for daily progress notes documenting clinical course (SOAP format), results of any investigations and developing the management plan in consultation with the senior neurology resident and/or neurology attending. Consults and discharge summaries (inpatient or emergency room) require dictated notes. Any admissions require hand written or dictated admission notes. If the opportunity arises, elective students will observe and then perform a lumbar puncture.

Urgent Neurology Clinic – the student will be responsible for seeing outpatients in the Urgent Neurology Clinic, initially with the resident and/or consultant and then independently. Each consultation note outlining the history, exam, impression and plan will be dictated by the student and reviewed by the consultant. Students must also clarify any individual learning objectives with the Urgent Neurology consultant at the beginning of the week.

Teaching Sessions

Elective students may attend the following rounds/teaching sessions if their clinic or inpatient responsibilities allow:

Rounds:

Neurology Grand Rounds Tuesday mornings UH Auditorium A, 0800-1000 hrs

Neurology Resident Academic Half-day Tuesday morning UH Auditorium D 1030-1230 hrs (as appropriate)

Neuroradiology Rounds Wednesday mornings 0800-0900 hrs, C2-210 UH

Movement Disorder Rounds every second Thursday morning 0800-0900 hrs, A10-312 UH

Neuromuscular Rounds first Wednesday of each month 1200-1300 hrs, A7-211 UH

Epilepsy rounds Fridays 0800-0900 hrs, A10-312 UH

Informal Teaching:

Informal teaching (at the bedside, in the clinic, in the ER) with senior residents and neurology consultants is a constant. Many of the consultants will also hold informal teaching sessions.

Resources

Neurology residents, nurses and consultants are available and interested in teaching.

Year 2 Neuroscience, Eye and Ear notes and Neuro exam videos for review

Other resources:

UWO Neurology Resident website:

http://www.schulich.uwo.ca/cns/education/future_students/neurology_residencies/index.html

NEJM website: Lumbar puncture procedure video:

<http://content.nejm.org/cgi/content/short/355/13/e12>

On-Call Neurology, R Marshall and S Meyer, 2001

Textbooks for those interested in Neurology: *Neurology, Neurosurgery Illustrated* by Kenneth W. Lindsay and *Practical Neurology* by Jose Biller

CNS library with computer access and current Neurology journals

NIGHT AND WEEKEND CALL

Elective students are encouraged to participate in daytime call for 1 to 2 weekend days with a senior neurology resident on the Neurology CTU at University Hospital. This is to be arranged directly with the neurology senior. Students are also encouraged to participate in one evening call per week, also on the Neurology CTU at University Hospital. .

NUMBER OF STUDENTS ACCEPTED

LHSC-UH/VH - 1 student per block