



## Neurology Clerkship Educational Course Objectives

### Educational Course Objectives:

**The fundamental goal of this rotation is to develop a correct approach to *diagnosis and management of neurological disorders***

At the end of the 4-week Neurology Clerkship, medical students will be able to:

1. Obtain and present a complete neurological history including all relevant components (S1, S3).
2. Conduct a comprehensive and complete neurological exam. The student should also be able to describe the anatomic and physiologic basis of the neurological examination as it relates to the clinical problem (S4, K4, and K5).
3. Present and document a succinct and accurate neurological history and examination (S1, S5).
4. Appropriately apply diagnostic studies to the evaluation of neurological patients (K5, S7 and S8).
5. After each evaluation, develop a differential diagnosis based primarily on the history and examination (S7, S8).
6. Demonstrate knowledge of the major categories of neurological disease and their primary modes of presentation (K3, K5).
7. Recognize neurological emergencies and the need for immediate management and requirements for appropriate intervention (S10).
8. Demonstrate knowledge of the standard methods of care for the major neurological disorders and form a rational plan of management (S8, S9).
9. Apply knowledge of neurosciences to the understanding of the mechanisms of neurological disease and their treatment (K1, K2, K3, K6 and K7).
10. Recognize neurological issues specifically related to aging (S2).

11. Review relevant clinical literature as it pertains to specific neurological problems encountered and utilize evidence based guidelines in diagnosis and management of patients ( i.e. demonstrate life long learning) (S 11).
12. Identify and discuss ethical issues relevant to care of the patient with neurological disorders (K10).

All students participating on this clerkship will meet or exceed the institutional standards for professional behaviors (EPO P1-7) as evidenced by

- 1- Adhering to the dress code consistent with clerkship standards.
- 2- Being punctual for all educational experiences (i.e. exams, clinics, rounds, small group sessions, appointments at the clinical skills center).
- 3- Fulfilling all educational assignments and responsibilities on time.
- 4- Displaying honesty in all interactions and situations.
- 5- Contributing to an atmosphere conducive to learning and is committed to advance scientific knowledge.
- 6- Establishing and maintaining appropriate boundaries in all learning situations
- 7- Using professional language being mindful of the environment.
- 8- Establishing effective rapport.
- 9- Being respectful at all times of all parties involved.
- 10- Resolving conflict in a manner that respects the dignity of every person involved.
- 11- Respecting the diversity of race, gender, religion, sexual orientation, age, disability and socioeconomic status.
- 12- Exhibiting humanism in all interactions.
- 13- Protecting patient confidentiality.
- 14- Being aware of and adapting to differences in individual patients including those related to culture and medical literacy
- 15- Recognizing personal limitations and seeking appropriate help.
- 16- Accepting constructive feedback and making changes accordingly.
- 17- Exhibiting independent and self-directed learning.

## Required Clinical Experiences:

To help learners achieve these goals, requirements for both patient type (diagnostic category) and students' level of involvement have been established. These clinical experiences will be complimented by assigned readings and didactic sessions related to diagnosis and management of patients in each category.

### *Patient type:*

During this clerkship, students are required to recognize symptoms that may signify disease in the following categories, distinguish normal from abnormal findings on physical exam, formulate a differential diagnosis based on signs and symptoms, use and interpret common tests used in diagnosing disease and develop a systematic approach to management of these common diseases. This provides the core of the neurology clerkship experience. The following categories are considered essential as part of an introduction to neurology. Patients are seen in both inpatient and ambulatory settings. Students must log all patient encounters and logs will be monitored to ensure adequate experience. Diagnostic categories marked with an \* are desirable but not required for the clerkship experience.

<b>Diagnostic category</b>	<b>Number of Patients to be seen</b>	<b>Comments/Explanation</b>
Cerebrovascular Disease	2	Evaluate at least two patients with cerebrovascular disease (cerebral infarct, intracerebral hemorrhage, subarachnoid hemorrhage).
Cognitive Impairment	1	Evaluate Inpatient or outpatient e.g. dementia or delirium
Epilepsy	3	Either on inpatient or outpatient setting
Headache	3	Evaluate at least three patients with headaches in either outpatient or inpatient setting
Movement Disorder	2	Includes Parkinson's, Huntington's, and drug induced movement disorder
Multiple Sclerosis	1	Evaluate one patient either on inpatient or outpatient with demyelinating disease
Neuropathy	1	Evaluate at least one patient with peripheral neuropathy in outpatient or inpatient setting
Acute or chronic pain	1	Either inpatient or outpatient

### *Level of involvement:*

In addition to seeing patients in the diagnostic categories listed above, how the students are engaged in the encounter is also an important factor in helping students achieve the objectives for this clerkship. Level of involvement is likely to include various types of interaction with patients and the health care team and should be monitored to ensure a complete experience. Levels of involvement will be indicated for logged patient encounters. The logs will be reviewed mid-block to ensure that students have a range of experiences in both in-patient and/or out-patient settings.

Level of involvement during patient encounters will be logged using the following categories:

- Independently gathered history information
- Observed patient interview
- Independently performed physical exam
- Observed physical exam
- Presented patient case
- Wrote patient note
- Opportunity to discuss laboratory or test results
- Opportunity to offer and discuss differential diagnosis
- Opportunity to offer and discuss management options
- Observed procedure
- Performed procedure (no procedures required for this clerkship)

### **Level of Involvement of Students in Neurology Clerkships**

Students are expected to see as many clinical cases as possible to obtain an optimal clinical experience during the neurology clerkship. The level of interaction with the patient is of equal educational value more so than the number of encounters. A meaningful *clinical* encounter in a clerkship is defined as an interaction between a patient and the learner that involves history taking (focused or detailed), examination (focused or detailed) followed by a thoughtful assessment and plan discussed with a supervising individual such as a resident or an attending. At the very least 4 new evaluations need to be performed every week of the rotation.

The following clinical experiences would be considered to fulfill these criteria

- 1- New patient evaluation in ambulatory setting – history, physical, assessment and plan of management
- 2- Return visit encounter-focused history, examination, assessment and plan.
- 3- Inpatient new patient evaluation-detailed history, examination, assessment and plan
- 4- Inpatient follow up evaluation-detailed history, examination, assessment and plan

Other meaningful clinical experiences would include

- 1- Standardized patient with supervised review
- 2- OSCE
- 3- Web based or paper case vignettes with formal discussion as in a small group with opportunity for discussion.

## **Other Clerkship Experiences:**

Students are required to:

- Use the electronic, web-based, database to keep a log of patient work ups documenting the types of patients seen and the level of responsibility.
- Obtain mid-block formative feedback concerning individual progress during each 4-week block from an attending and/or resident.

In addition to required clinical experiences (patient type and level of involvement), successful completion of the clerkship requires student participation in a variety of additional experiences. These experiences are coordinated through the Department of Neurology.

Students are required to attend and participate fully in the seminar series. These sessions *are not didactic lectures*, so the student is expected to know the material prior to attending the seminar. Students are also required to participate in a Clinical Performance Exam with standardized patients. The skills exam includes eliciting appropriate history information and performing a neurological physical exam.