

## NEUROLOGY CORE CURRICULUM

The goal of our residency program is to train Neurology physicians who excel in each of the six competency areas and maintain a life-long commitment to continue to grow and develop in these areas. The objectives by which we hope to achieve this goal follow.

### PATIENT CARE

<b>Neurology Patient Care (PGY2)</b>		
Objectives	Teaching Methods	Assessment Strategy
Gathers essential and accurate information about hospitalized patients with acute neurological symptoms including neurological emergencies (coma, mental status change, stroke, and seizure)	Direct Patient Care Performance Feedback	Global ratings Focused Record Review NEX live patient examinations
Gathers essential and accurate information about hospitalized patients with chronic neurological conditions/neurodegenerative disorders and common neurological problems, including headache, dizziness, and spine pain.	Direct Patient Care Performance Feedback	Global ratings Focused Record Review NEX live patient examinations
Performs extensive neurological examinations, summarizes their findings and localizes the lesion in the central and/or peripheral nervous system or of another origin (e.g. systemic psychiatric or psychogenic illness)	Clinical Teaching Clinical Experience Performance Feedback	Global ratings NEX live patient examinations
Formulates a differential diagnosis and management plan based upon their neurological assessment	Clinical Teaching Direct Patient Care	Global ratings Focused record review
Makes informed decisions about diagnostic evaluations including neuroimaging and laboratory investigation	Clinical Teaching Performance Feedback Radiology rotation and quiz	Global ratings Focused record review
Identifies and describes abnormalities seen in common neurological disorders on radiographic testing	Clinical Teaching Performance Feedback Radiology rotation	Global rating of live performance
Demonstrates technical skills in performing lumbar punctures	Review of LP learning module Simulated LP models Staff instruction /supervision	Global rating of live performance Simulation and models Case Logs

<b>PATIENT CARE (cont)</b>		
<b>Neurology Patient Care (PGY3 and 4)</b>	<b>Teaching Methods</b>	<b>Assessment Strategy</b>
<p><b>Objectives</b></p> <p>Evaluate the application and relevance of investigative procedures and interpretation in the diagnosis of neurological disease, including the following:</p> <ol style="list-style-type: none"> <li>1. Electroencephalogram</li> <li>2. Motor and nerve conduction studies</li> <li>3. Electromyography</li> <li>4. Evoked potentials</li> <li>5. Polysomnography</li> <li>6. Psychometry</li> <li>7. Cerebrospinal fluid (CSF) analysis</li> <li>8. Vascular imaging (Duplex, transcranial Doppler)</li> <li>9. Radiographic studies- X-ray, CT, MRI, angiogram, nuclear imaging studies, and myelography</li> </ol> <p>Identifies and describes gross and microscopic specimens taken from the normal nervous system and from patients with major neurological disorders.</p> <p>Based on a comprehensive neurological assessment, the physician shall demonstrate the ability to recognize and treat neurological disorders commonly encountered in the hospital setting</p> <p>Based on a comprehensive neurological assessment, the physician shall demonstrate the ability to recognize and treat neurological disorders commonly encountered in the outpatient setting</p>	<p>Clinical teaching Recommended reading Departmental Conferences Didactics Required independent record review of EEG with staff review following day Observation and instruction in EMG by staff</p> <p>Clinical teaching Recommended readings Neuropathology rotation Slide review</p> <p>Clinical teaching Recommended reading Departmental Conferences Didactics</p> <p>Clinical teaching Recommended reading Departmental Conferences Didactics</p>	<p>Global rating In-service training examination EMG end of course quiz EEG simulations EEG end of course test</p> <p>Global rating In-training service examination</p> <p>Global rating In-training service examination NEX examination</p> <p>Global rating In-training service examination NEX examination</p>

## MEDICAL KNOWLEDGE

Neurology (PGY2) Medical Knowledge		
Objectives	Teaching Methods	Assessment Strategy
The physician shall demonstrate knowledge of the pathophysiology of major neurological disorders and familiarity with the scientific basis of neurological diseases.	Review of evidence based guidelines and practice parameters proposed by the AAN Clinical teaching Departmental Conferences	Global ratings In-training examination Didactic lecture pre- and post-tests
The physician shall demonstrate knowledge of patient evaluation and treatment selection, including: <ul style="list-style-type: none"> <li>The nature of patients' history and physical findings and the ability to correlate the findings with a likely localization for neurological dysfunction.</li> <li>Likely diagnoses and differential diagnoses.</li> <li>Planning for evaluation and management.</li> <li>Potential risks and benefits of potential therapies, including surgical procedures.</li> </ul>	Recommend readings Didactic lectures including basic science lecture series Grand Rounds Clinical teaching Journal clubs Review of evidence based guidelines and practice parameters proposed by the AAN	Global ratings and of journal club performance In-training examination NEX live patient examination Didactic lecture pre- and post-tests
Compares and contrasts the medical and surgical approaches to treatment of ischemic stroke and explain the conditions under which each would be most efficacious	Review of evidence based guidelines and practice parameters proposed by the AAN Clinical teaching Departmental Conferences	Global ratings In-training examination Didactic lecture pre- and post-tests
Demonstrates the approach to assessing an acute change in mental status/coma and distinguish between different etiologies such as metabolic, toxic, infections, or vascular	Reading list Clinical rounds Departmental conferences	Global ratings In-training examination Focused record review Didactic lecture pre- and post-tests
Describes the underlying pathophysiology, diagnostic criteria and common treatment protocols for migraine	Review of evidence based guidelines and practice parameters proposed by the AAN AHS curriculum computer learning module Didactic lectures	Global ratings In-training examination AHS curriculum test Didactic lecture pre- and post-tests

<b>MEDICAL KNOWLEDGE (cont)</b>		
<b>Neurology (PGY2) Medical Knowledge (Cont.)</b>		
<b>Objectives</b>	<b>Teaching Methods</b>	<b>Assessment Strategy</b>
Demonstrate and analytical thinking approach to a patient presenting with acute weakness in order to distinguish whether the lesion can be attributable to the central nervous system (brain or spinal cord) or peripheral nervous system (nerve root, peripheral nerve, neuromuscular junction or muscle) based upon assessment of upper or lower motor neuron signs.	Review of neuroanatomy Clinical teaching	Global ratings In-training examination NEX examination of a live patient
Demonstrate knowledge of relevant neuroanatomy and underlying pathology found in multiple sclerosis, Alzheimer's dementia, Parkinson's disease and cerebrovascular disease	Review of neuroanatomy Departmental conferences Pathology lectures and brain cutting conference	Global ratings In-training examination Didactic lecture pre- and post-tests
The physician shall demonstrate the ability to reference and utilize electronic systems to access medical, scientific, and patient information.	Clinical teaching Library services	Global ratings

### MEDICAL KNOWLEDGE (cont)

<b>Neurology (PGY3 and 4) Medical Knowledge</b>		
<b>Objectives</b>	<b>Teaching Methods</b>	<b>Assessment Strategy</b>
<p>The physician shall demonstrate knowledge of patient evaluation and treatment selection, including:</p> <ul style="list-style-type: none"> <li>• The nature of patients' history and physical findings and the ability to correlate the findings with a likely localization for neurological dysfunction.</li> <li>• Likely diagnoses and differential diagnoses in adults and children</li> <li>• Planning for evaluation and management.</li> <li>• Potential risks and benefits of potential therapies, including surgical procedures.</li> </ul>	<p>Recommend readings Didactic lectures including basic science lecture series Grand Rounds Clinical teaching Journal clubs</p>	<p>Global ratings In-training examination NEX live patient examination Didactic lecture pre- and post-tests</p>
<p>The physician shall demonstrate knowledge of the major disorders, including considerations relating to age, gender, race and ethnicity, based on the literature and standards of practice. This knowledge shall include:</p> <ul style="list-style-type: none"> <li>• The epidemiology of the disorder.</li> <li>• The etiology of the disorder, including medical, genetic, and sociocultural factors.</li> <li>• The phenomenology of the disorder.</li> <li>• The experience, meaning, and explanation of the illness for the patient and family, including the influence of cultural factors and culture-bound syndromes.</li> <li>• Effective treatment strategies, course, and prognosis</li> </ul> <p>Critically evaluates and judiciously applies the latest knowledge of basic neuroscience that is critical to the practice of neurology</p>	<p>Recommend readings Didactic lectures including basic science lecture series Grand Rounds Clinical teaching Journal clubs Review of evidence based guidelines and practice parameters proposed by the AAN</p>	<p>Global ratings In-training examination Didactic lecture pre- and post-tests</p>
<p>Critically evaluates and judiciously applies the latest knowledge of basic neuroscience that is critical to the practice of neurology</p>	<p>Basic science lecture series Grand Rounds Clinical teaching Journal clubs Review of evidence based guidelines of the AAN</p>	<p>Global ratings In-training examination Global rating of journal club performance Didactic lecture pre- and post-tests</p>



<b>MEDICAL KNOWLEDGE (cont)</b>		
<b>Neurology (PGY3 and 4) Medical Knowledge (cont.)</b>		
Objectives	Teaching Methods	Assessment Strategy
Demonstrates the employment of principles of quality improvement in practice	CPC M&M Clinic rounds	Global ratings
<p>The physician shall demonstrate a knowledge of psychiatry, including:</p> <ul style="list-style-type: none"> <li>• Psychopathology, epidemiology, diagnostic criteria, and clinical course for common psychiatric disorders.</li> <li>• Drug dependence and substance abuse.</li> <li>• Interplay between psychogenic and neurologic clinical manifestations, including somatization and conversion disorders</li> <li>• Management of uncomplicated psychiatric disorders and indications for consultation</li> <li>• Psychopharmacology including major drug categories and potential side effects</li> <li>• Non-pharmacologic treatment approaches</li> </ul>	Psychiatry rotation on the consult liaison service Psychiatry didactic lectures	Global ratings In-training examination Didactic lecture pre- and post-tests

## INTERPERSONAL AND COMMUNICATION SKILLS

<b>Neurology (PGY 2) Interpersonal and Communication Skills</b>		
Objectives	Teaching Methods	Assessment Strategy
Demonstrates the ability to obtain, interpret and evaluate consultations from other medical specialties and to provide consultants with a diagnostic and management plan	Clinical rounds Modeling	Global ratings
Provide patients and their families explanations of neurological disorders and treatment that is geared to their educational level, as well as respecting the patient's cultural, ethnic, religious and economic backgrounds	Direct patient care Modeling	Global rating Patient surveys
Convey information to patients in a clear and meaningful fashion and partner with patients to develop an agreed upon healthcare management plan.	Direct patient care Modeling	Global rating Patient surveys
Work collaboratively with the multidisciplinary team involved in the inpatient care of neurological patients	Clinical rounds Modeling	Global ratings Peer assessments 360 degree evaluations
To develop and maintain a therapeutic alliance with patients by instilling feelings of trust, honesty, openness, rapport, and comfort in the relationship with the physician.	Clinical rounds Modeling Clinical experience	Global rating Patient surveys 360 degree evaluations

### INTERPERSONAL AND COMMUNICATION SKILLS (Cont'd)

Neurology (PGY 3 and 4) Interpersonal & Communication Skills		
Objectives	Teaching Methods	Assessment Strategy
Provide leadership, direction and instruction to junior members of the team in a way that fosters their skills as a physician.	Clinical Rounds Patient case conference	Global ratings 360 degree evaluations
Demonstrate effective communication within the team, with regards to patient's current or change in neurologic status, anticipated problem, therapeutic regimen and diagnostic tests to be reviewed	Clinical rounds Sign-out rounds	Peer assessments
To listen to and understand patients and to attend to nonverbal communication.	Clinical rounds Clinical experience	Global ratings 360 degree evaluations Peer assessments
To educate patients and professionals about medical, psychosocial, and behavioral issues.	Clinical rounds Clinical experience Modeling	Global ratings 360 degree evaluation Peer assessments
To partner with patients to develop an agreed upon healthcare management plan.	Clinical rounds Clinical experience Modeling	Global ratings 360 degree evaluation Peer assessments
Recognize one's own feelings and behaviors in dealing with difficult situations so that they do not interfere with appropriate treatment	Modeling Clinical rounds Ethics lectures	Global ratings Peer assessments 360 degree evaluations from peers and patients

**PRACTICE BASED LEARNING AND IMPROVEMENT**

<b>Neurology (PGY 2) Practice Based Learning and Improvement</b>		
<b>Objectives</b>	<b>Teaching Methods</b>	<b>Assessment Strategy</b>
Physicians shall recognize limitations in their own knowledge base, clinical skills and understand and address the need for lifelong learning.	M&M conference	Global ratings
The physician shall demonstrate appropriate skills for obtaining and evaluating up to date information from scientific and practice literature and other sources to assist in the quality care of patients. This should include educational courses, conferences	Internet medical information system, medical searches	Global ratings Evaluation of presentations/GR
The physician shall evaluate caseload and practice experience in a systematic manner	Case logs Modeling Case conference Review of evidence based guidelines and practice parameters proposed by the AAN M&M conference CPC conference	Data base of case logs Focused record review
The physician shall demonstrate responsibility for his/her patients' care, including: <ol style="list-style-type: none"> <li>1. Responding to communication from patients and health professionals in a timely manner.</li> <li>2. Establishing and communicating back-up arrangements, including how to seek emergent and urgent care when necessary.</li> <li>3. Using medical records for appropriate documentation of the course of illness and its treatment.</li> <li>4. Providing coverage if unavailable, e.g., out of town, on vacation.</li> <li>5. Providing for continuity of care, including appropriate consultation, transfer, or referral if necessary.</li> </ol>	Journal clubs Review of evidence based guidelines and practice parameters proposed by the AAN Patient centered literature review Daily sign out rounds	Global ratings 360 degree evaluation Focused review

**PRACTICE BASED LEARNING AND IMPROVEMENT (cont)**

Neurology (PGY 3 and 4) Practice Based Learning and Improvement	Objectives	Teaching Methods	Assessment Strategy
Evaluate the clinical literature applying knowledge of epidemiology, biostatistics, and research study design	Facilitate the learning of medical students	Teaching conferences including Grand Rounds Journal Clubs	Global ratings of Journal club performance
Demonstrate the ability to: 1. review and critically assess scientific literature to determine how quality of care can be improved in relation to one's practice (e.g., reliable and valid assessment techniques, treatment approaches with established effectiveness, practice parameter adherence). Within this aim, the physician shall be able to assess the generalizability or applicability of research findings to one's patients in relation to their sociodemographic and clinical characteristics. 2. Develop and pursue effective remediation strategies that are based on critical review of scientific literature. 3. Learn from one's own and other specialties.	Role Modeling Oral presentations Patient Centered instruction	Grand Rounds Clinical teaching Journal clubs Review of evidence based guidelines and practice parameters proposed by the AAN Patient centered literature review	Peer Assessments  Grand rounds evaluations Global rating of journal club presentation Global ratings

## PROFESSIONALISM

<b>Neurology (PGY 2) Professionalism</b>		
Objectives	Teaching Methods	Assessment Strategy
Interact responsibly with patients, families and co-workers taking into consideration age, disability, culture and gender issues	Direct patient care Modeling	Global ratings
Demonstrate appropriate use of the EMR in regards to patient respect and confidentiality	Direct patient care Modeling	Global ratings
The physician shall review his/her professional conduct and remediate when appropriate.	M&M	Program Director semi-yearly review Global ratings
The physician shall demonstrate ethical behavior, integrity, honesty, compassion, and confidentiality in the delivery of care, including matters of informed consent/assent, professional conduct, and conflict of interest.	Direct patient care Modeling Ethics conference	Global ratings
The physician shall demonstrate understanding of and sensitivity to end of life care and issues regarding provision of care.	Review of end of life (EOL) care teaching materials.	Global rating
The physician shall participate in the review of the professional conduct of his/her colleagues.	Teaching rounds M&M	360 degree evaluation Peer assessment
The physician shall acknowledge and remediate medical errors, should they occur.	Teaching rounds Direct patient care M&M	Global ratings Program Director semi-yearly review
<b>Neurology (PGY 3 and 4) Professionalism</b>		
Objectives	Teaching Methods	Assessment Strategy
Describe the differences of withdrawal of care, termination of care, and non-initiation of care and assist patients and their families in choosing these options in the appropriate clinical setting	Direct patient care Modeling Review of EOL learning modules	Global rating
The physician shall participate in the review of the professional conduct of his/her colleagues.	Teaching rounds M&M	360 degree evaluation Peer assessment
The physician shall acknowledge and remediate medical errors, should they occur.	Teaching rounds M&M	360 degree evaluation Peer assessment Program Director semi-yearly review

**SYSTEM BASED PRACTICE**

<b>Neurology (PGY 2) System Based Practice</b>		
<b>Objectives</b>	<b>Teaching Methods</b>	<b>Assessment Strategy</b>
<p>The physician shall have a working knowledge of the diverse systems involved in treating patients of all ages and understand how to use the systems as part of a comprehensive system of care in general and as part of a comprehensive, individualized treatment plan. The physician shall be able to:</p> <ol style="list-style-type: none"> <li>1. Use practice guidelines.</li> <li>2. Access community, national, and allied health professional resources, which may enhance the quality of life of patients with chronic psychiatric and neurological illnesses.</li> <li>3. Demonstrate the ability to lead and delegate authority to healthcare teams needed to provide comprehensive care for patients with psychiatric and neurological disease.</li> <li>4. Demonstrate skills for the practice of ambulatory medicine, including time management, clinic scheduling, and efficient communication with referring physicians.</li> <li>5. Utilize appropriate consultation and referral mechanisms for the optimal clinical management of patients with complicated medical illnesses.</li> </ol>	<p>Direct patient care                      Interdisciplinary rounds/conferences                      Review of evidence based medicine and guidelines of the AAN                      Departmental conferences including /M&amp;M</p>	<p>Global ratings                      Focused Record Review                      In-training examination</p>
<p>Demonstrate awareness of the importance of adequate cross coverage. Use accurate medical data in the communication with and effective management of patients.</p>	<p>Direct patient care                      Clinical Rounds                      Sign out rounds                      Data base log system/patient list</p>	<p>Global ratings                      360 degree evaluation</p>
<p>The physician shall demonstrate knowledge of and interact with managed health systems</p>	<p>Direct patient care                      Clinical teaching                      Rounds with case manager/social work</p>	<p>Global ratings                      Focused record review</p>

**SYSTEM BASED PRACTICE (cont)**

Neurology (PGY3 and 4) System Based Practice	Teaching Methods	Assessment Strategy
<p><b>Objectives</b></p> <p>In the community system, the physician shall:</p> <ol style="list-style-type: none"> <li>1. Recognize the limitation of healthcare resources and demonstrate the ability to act as an advocate for patients within their sociocultural and financial constraints.</li> <li>2. Demonstrate knowledge of the legal aspects of psychiatric and neurological diseases as they impact patients and their families.</li> <li>3. Demonstrate an understanding of risk management.</li> </ol> <p>The physician shall demonstrate knowledge of and interact with managed health systems</p>	<p>Direct patient care Modeling Clinical rounds</p>	<p>Global ratings Focused record review</p>
<p>The physician shall demonstrate knowledge of community systems of care and assist patients to access appropriate care and other support services.</p>	<p>Direct patient care Clinical teaching Rounds with case manager/social work</p>	<p>Global ratings Focused record review</p>
<p>The physician shall demonstrate knowledge of community systems of care and assist patients to access appropriate care and other support services.</p>	<p>Direct patient care Clinical teaching Rounds with case manager/social work</p>	<p>Global ratings Focused record review</p>