

# **Milestone-Compatible Neurology Faculty-of-Resident Evaluation Template**

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## **Overview**

Traditional Likert-style evaluation scales do not translate easily to the milestone-based assessments required in the ACGME's Next Accreditation System (NAS). While it may be tempting to use the milestone domains themselves as the faculty-of-resident evaluation format, the milestones were not intended to serve as direct evaluation tools.

The template outlined below represents one strategy to design an evaluation format that 1) is practical, intuitive, and reasonably comprehensive, and 2) directly informs each of the neurology milestone domains/subcompetencies. The approach uses two question types: 1) questions derived from the milestones, and 2) questions based on entrustable professional activities (EPAs).

For example, the Neurological Exam/Patient Care domain includes in Levels 3 and 4 several discrete skills (visualize papilledema, perform a coma exam, and perform a brain death exam):

Resident: PGY level:		CCC review date: Assigned reviewer:		
Neurological Exam — Patient Care				
Level 1	Level 2	Level 3	Level 4	Level 5
<ul style="list-style-type: none"> <li>Performs complete neurological exam</li> </ul>	<ul style="list-style-type: none"> <li>Performs complete neurological exam accurately</li> </ul>	<ul style="list-style-type: none"> <li>Performs a relevant neurological exam incorporating some additional appropriate maneuvers               <ul style="list-style-type: none"> <li>Visualizes papilledema</li> <li>Accurately performs a neurological exam on the comatose patient</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Efficiently performs a relevant neurological exam accurately incorporating all additional appropriate maneuvers               <ul style="list-style-type: none"> <li>Accurately performs a brain death examination</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Consistently demonstrates mastery in performing a complete, relevant, and organized neurological exam</li> </ul>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:				



This domain highlights the difficulty in using individual subcompetencies as standalone evaluation questions. A trainee may have achieved the overall level of skill required to perform neurologic examinations in independent neurologic practice (ie, can “efficiently perform a relevant neurological exam accurately incorporating all additional appropriate maneuvers” as in Level 4), but could be “stuck” at Level 3 if assessment of ability to visualize papilledema has not been performed. By removing these three items, or “roadblocks,” an intuitive developmental progression of overall examination skill remains, upon which an evaluation question can be based:

Resident: PGY level:		CCC review date: Assigned reviewer:		
Neurological Exam — Patient Care				
Level 1	Level 2	Level 3	Level 4	Level 5
<ul style="list-style-type: none"> <li>Performs complete neurological exam</li> </ul>	<ul style="list-style-type: none"> <li>Performs complete neurological exam accurately</li> </ul>	<ul style="list-style-type: none"> <li>Performs a relevant neurological exam incorporating some additional appropriate maneuvers</li> </ul>	<ul style="list-style-type: none"> <li>Efficiently performs a relevant neurological exam accurately incorporating all additional appropriate maneuvers</li> </ul>	<ul style="list-style-type: none"> <li>Consistently demonstrates mastery in performing a complete, relevant, and organized neurological exam</li> </ul>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:				



To ensure that the ability to visualize papilledema, perform a coma exam, and perform a brain death exam are all assessed, an EPA can be developed for each and graded on an entrustment scale. Each EPA can then be mapped to the appropriate domain and level. For example, the “papilledema EPA” could be mapped to Level 3 of the Neurologic Exam/Patient Care domain:

1. Recognize papilledema on ophthalmoscopy		The trainee cannot perform this task even with direct supervision or assistance		The trainee can perform this task, but requires direct supervision or assistance		The trainee can perform this task with indirect supervision (ie, supervisor not present)		The trainee can perform this task without supervision (ie, could do this in independent practice)		The trainee has mastered this task (ie, could train others to perform this task)
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Included below are 29 “milestone-type” questions and 33 complementary neurology EPAs derived from the milestones, which collectively can serve as a core set of faculty-of-resident evaluation questions for neurology residency programs accredited by the ACGME. The table of questions includes the milestone domain informed by the question, and room in the right-hand column to record which rotation or educational activity to which the question can be assigned for any individual program. For example, one might assign the cerebrovascular milestone question to a stroke service rotation, or the headache emergencies EPA to a consult service rotation. Faculty development is required to explain differences inherent in this evaluation approach, for example indicating that even very good junior trainees will often be scored at lower levels, and that all lower levels must be achieved to assign a given milestone level. Clinical competency committees can then use results from these evaluation tools to more accurately inform their biannual milestone assessments for each resident.

In summary, this list serves as a core set of questions which inform all of the neurology milestone domains. It is not intended to be a comprehensive assessment set for all programs. Individual residency programs would be encouraged to supplement this list based on their individual program needs.

**Neurology “Milestone-type” Questions**

For these questions, the evaluator is asked to select the most appropriate level based on his/her experience with the trainee:

Milestone-based Evaluation Questions	Evaluator instructions: Please select the most appropriate level for each of the questions below, based on your experience with this trainee from this rotation. Please note that to select a level, every item in all lower levels must have been achieved.						
	Scale					Milestone domain(s)	
Question	1	2	3	4	5		Rotations or other education activities to which the question can be assigned:

Please select the best description of the trainee's history taking skills	Obtains a neurologic history	Obtains a complete and <u>relevant</u> neurologic history	Obtains a complete, relevant, and <u>organized</u> neurologic history	<u>Efficiently</u> obtains a complete, relevant, and organized neurologic history	Efficiently obtains a complete, relevant, and organized neurologic history incorporating subtle verbal and non-verbal cues	History/PC	Eg, continuity clinic or general hospital service rotation
Please select the best description of the trainee's neurologic exam skills	Performs complete neurological exam	Performs complete neurological exam <u>accurately</u>	Performs a <u>relevant</u> neurological exam incorporating <u>some</u> additional appropriate maneuvers	Efficiently performs a relevant neurological exam accurately incorporating <u>all</u> additional appropriate maneuvers	Consistently demonstrates <u>mastery</u> in performing a complete, relevant, and organized neurological exam	Neurological Exam/PC	
Please select the statement that best describes the trainee's ability to manage patients with neurologic disease	Demonstrates basic knowledge of management of patients with neurologic disease	Discusses general approach to initial treatment of common neurologic disorders, including risks and benefits of treatment	Individualizes treatment for specific patients	Adapts treatment based on patient response, and identifies and manages complications of therapy	Demonstrates sophisticated knowledge of treatment subtleties and controversies	Management/Treatment/PC	
Please select the statement that best describes the trainee's ability to care for patients with movement disorders	Recognizes when a patient may have a movement disorder	Identifies movement disorder phenomenology and categories (hypokinetic and hyperkinetic)	Diagnoses and manages common movement disorders	Diagnoses uncommon movement disorders, and appropriately refers a movement disorder patient for a surgical evaluation or other interventional therapies	Manages uncommon movement disorders and engages in scholarly activity in movement disorders (e.g., teaching, research)	Movement Disorders/PC	

Please select the statement that best describes the trainee's ability to care for patients with neuromuscular disorders	Recognizes when a patient may have a neuromuscular disorder	Identifies patterns of neuromuscular disease (e.g., anterior horn cell disease, nerve root, plexus, peripheral nerve, neuromuscular junction, muscle)	Diagnoses and manages common neuromuscular disorders	Diagnoses uncommon neuromuscular disorders	Manages uncommon neuromuscular disorders and engages in scholarly activity in neuromuscular disorders (e.g., teaching, research)	Neuromuscular Disorders/PC	
Please select the statement that best describes the trainee's ability to care for patients with cerebrovascular disorders	Recognizes when a patient may have a cerebrovascular disorder	Describes stroke syndromes and etiologic subtypes and identifies cerebrovascular emergencies	Identifies specific mechanism of patient's cerebrovascular disorder	Diagnoses uncommon cerebrovascular disorders	Manages uncommon cerebrovascular disorders and engages in scholarly activity in cerebrovascular disorders (e.g., teaching, research)	Cerebrovascular Disorders/PC	
Please select the statement that best describes the trainee's ability to care for patients with cognitive/behavioral disorders	Recognizes when a patient may have a cognitive/behavioral disorder	Identifies common cognitive/behavioral disorders	Diagnoses and manages common cognitive/behavioral disorders, including cognitive effects of traumatic brain injury	Diagnoses and manages uncommon cognitive/behavioral disorders	Engages in scholarly activity in cognitive/behavioral disorders (e.g., teaching, research) and demonstrates sophisticated knowledge of advanced diagnostic testing and controversies	Cognitive/Behavioral Disorders/PC	
Please select the statement that best describes the trainee's ability to care for patients with demyelinating disorders	Recognizes when a patient may have a demyelinating disorder	Diagnoses and manages common demyelinating disorders	Recognizes uncommon demyelinating disorders and manages acute presentations of demyelinating disorders	Diagnoses uncommon demyelinating disorders	Manages uncommon demyelinating disorders and engages in scholarly activity in demyelinating disorders (e.g., teaching, research)	Demyelinating Disorders/PC	

Please select the statement that best describes the trainee's ability to care for patients with epilepsy	Recognizes when a patient may have had a seizure	Identifies epilepsy phenomenology, and classification of seizures and epilepsies	Diagnoses and manages common seizure disorders and provides antiepileptic drug treatment	Diagnoses uncommon seizure disorders, and appropriately refers an epilepsy patient for surgical evaluation or other interventional therapies	Manages uncommon seizure disorders and engages in scholarly activity in epilepsy (e.g., teaching, research)	Epilepsy/PC	
Please select the statement that best describes the trainee's ability to care for patients with headache syndromes	Recognizes common headache syndromes	Diagnoses and manages common headache syndromes	Recognizes uncommon headache syndromes	Diagnoses and manages uncommon headache syndromes	Engages in scholarly activity in headache syndromes (e.g., teaching, research)	Headache Syndromes/PC	
Please select the statement that best describes the trainee's ability to care for patients with neurologic manifestation of systemic disease	Recognizes when a patient's neurologic symptoms may be due to systemic illness	Diagnoses and manages common neurologic manifestations of systemic diseases	Recognizes uncommon neurologic manifestations of systemic disease	Diagnoses and manages uncommon neurologic manifestations of systemic disease	Engages in scholarly activity in neurologic manifestations of systemic disease (e.g., teaching, research)	Neurologic Manifestations of Systemic Disease/PC	
Please select the statement that best describes the trainee's ability to care for child neurology patients	Obtains basic neurologic history of infants and children	Lists the elements of a neurological examination of infants and children, and recognizes broad patterns of neurologic disease in infants and children, and lists normal developmental milestones	Obtains a complete and age-appropriate neurologic history of infants and children, and performs a complete and age-appropriate neurological examination of infants and children, and diagnoses common child neurologic disorders	Initiates management of common childhood neurologic disorders, and initiates management of common neurologic emergencies in infants and children	Diagnoses uncommon childhood neurologic disorders	Child Neurology for the Adult Neurologist	

Please select the statement that best describes the trainee's ability to care for neuro-oncology patients	Recognizes common clinical presentations of a brain or spine mass	Identifies neuro-oncological emergencies and initiates management	Provides differential diagnosis of brain or spine mass	Appropriately refers for advanced testing, including biopsy	Engages in scholarly activity in neuro-oncology (e.g., teaching, research)	Neuro-Oncology/PC	
Please select the statement that best describes the trainee's ability to care for patients with psychiatric disorders	Recognizes when a patient may have a psychiatric disorder and obtains an appropriate psychiatric history	Identifies common psychiatric disorders and identifies psychiatric co-morbidities in patients with a neurologic disease	Recognizes when a patient's neurological symptoms are of psychiatric origin, and recognizes when a patient's psychiatric symptoms are of neurologic origin, and identifies major side effects of psychiatric medications	Diagnoses common psychiatric disorders and initiates management of psychiatric co-morbidities in patients with a neurologic disease	Engages in scholarly activity in psychiatric disorders (e.g., teaching, research)	Psychiatry for the Adult Neurologist/PC	
Please select the statement that best describes the trainee's ability to interpret neuroimaging studies	Identifies basic neuroanatomy on brain MR (magnetic resonance ) and CT (computerized tomography)	Identifies basic neuroanatomy on spine MR and CT	Describes abnormalities of the brain and spine on MR and CT	Interprets MR and CT neuroimaging of brain and spine	Interprets carotid and transcranial ultrasound	Neuroimaging/PC	
Please select the statement that best describes the trainee's understanding of electroencephalography (EEG)	Explains an EEG procedure in non-technical terms	Uses appropriate terminology related to EEG (e.g., montage, amplitude, frequency)	Describes normal EEG features of wake and sleep states	Interprets common EEG abnormalities and creates a report	Interprets uncommon EEG abnormalities, and describes normal and some abnormal EEG features of wake and sleep states in children	Electroencephalogram (EEG)/PC	



Please select the statement that best describes the trainee's understanding of and ability to perform electrodiagnostic studies (NCS/EMG)	Explains an NCS/EMG procedure in nontechnical terms	Uses appropriate terminology related to NCS/EMG	Describes NCS/EMG data and lists NCS/EMG findings in common disorders	Interprets NCS/EMG data in common disorders	Performs, interprets, and creates a report for NCS/EMG	Nerve Conduction Studies (NCS)/Electromyography (EMG)/PC	
Please select the statement that best describes the trainee's ability to perform lumbar puncture	Lists the indications and contraindications for lumbar puncture	Lists the complications of lumbar puncture and their management	Performs lumbar puncture under direct supervision	Performs lumbar puncture without direct supervision	Performs lumbar puncture on patients with challenging anatomy	Lumbar Puncture/PC	
Please select the statement that best describes the trainee's ability to localize neurologic lesions	Attempts to localize lesions within the nervous system, and describes basic neuroanatomy	Localizes lesions to <u>general</u> regions of the nervous system	<u>Accurately</u> localizes lesions to <u>specific</u> regions of the nervous system	<u>Efficiently</u> and accurately localizes lesions to specific regions of the nervous system, and describes advanced neuroanatomy	Consistently demonstrates sophisticated and detailed knowledge of neuroanatomy in localizing lesions	Localization/MK	
Please select the statement that best describes the trainee's ability to formulate neurologic cases	Summarizes history and exam findings	Summarizes key elements of history and exam findings and identifies relevant pathophysiologic categories to generate a broad differential diagnosis	Synthesizes information to focus and prioritize diagnostic possibilities	Efficiently synthesizes information to focus and prioritize diagnostic possibilities, and continuously reconsiders diagnostic differential in response to changes in clinical circumstances	Consistently demonstrates sophisticated and detailed knowledge of pathophysiology in diagnosis, and effectively educates others about diagnostic reasoning	Formulation/MK	






Please select the statement that best describes the trainee's ability to design and execute a diagnostic evaluation	Demonstrates general knowledge of diagnostic tests in neurology	Discusses general diagnostic approach appropriate to clinical presentation, lists risks and benefits of tests to patient	Individualizes diagnostic approach to the specific patient, accurately interprets results of common diagnostic tests	Accurately interprets results of less common diagnostic testing	Demonstrates sophisticated knowledge of diagnostic testing and controversies	Diagnostic investigation/ MK	
Please select the statement that best describes the trainee's professionalism	Demonstrates compassion, sensitivity, and responsiveness to patients and families, and demonstrates non-discriminatory behavior in all interactions, including diverse and vulnerable populations, and describes effects of sleep deprivation and substance abuse on performance	Demonstrates appropriate steps to address impairment in self, and consistently demonstrates professional behavior, including dress and timeliness	Demonstrates compassionate practice of medicine, even in context of disagreement with patient beliefs, and incorporates patients' socio-cultural needs and beliefs into patient care, and demonstrates appropriate steps to address impairment in colleagues	Mentors others in the compassionate practice of medicine, even in context of disagreement with patient beliefs, and mentors others in sensitivity and responsiveness to diverse and vulnerable populations, and advocates for quality patient care	Engages in scholarly activity regarding professionalism	Compassion, integrity, accountability, and respect for self and others — Professionalism	
Please select the statement that best describes the trainee's adherence to ethical principles	Describes basic ethical principles	Determines presence of ethical issues in practice	Analyzes and manages ethical issues in straightforward clinical situations	Analyzes and manages ethical issues in complex clinical situations	Demonstrates leadership and mentorship on applying ethical principles	Knowledge about, respect for, and adherence to the ethical principles relevant to the practice of medicine.../Professionalism	

Please select the statement that best describes the trainee's ability to develop relationships, engage in teamwork, and managing conflict	Develops a positive relationship with patients in uncomplicated situations, and actively participates in team-based care	Manages simple patient/family-related conflicts	Manages conflict in complex situations	Manages conflict across specialties and systems of care	Engages in scholarly activity regarding teamwork and conflict management	Relationship development, teamwork, and managing conflict/ICS	
Please select the statement that best describes the trainee's ability to use medical informatics effectively	Effectively communicates during patient hand-overs using a structured communication tool, and accurately documents transitions of care	Educates patients about their disease and management, including risks and benefits of treatment options, to promote patient safety	Effectively communicates the results of a neurologic consultation in a timely manner, and effectively gathers information from collateral sources when necessary	Effectively leads family meetings, and effectively and ethically uses all forms of communication	Develops patient education materials, and engages in scholarly activity regarding interpersonal communication	Information sharing, gathering, and technology/ICS	
Please select the statement that best reflects the trainee's aptitude for self-directed learning	Acknowledges gaps in knowledge and expertise	Incorporates feedback	Develops an appropriate learning plan based upon clinical experience	Completes an appropriate learning plan based upon clinical experience	Engages in scholarly activity regarding practice-based learning and improvement	Self-Directed Learning/PBLI	
Please select the statement that best reflects the trainee's ability to integrate scientific literature into clinical care	Uses information technology to search and access relevant medical information	Uses scholarly articles and guidelines to answer patient care issues	Critically evaluates scientific literature	Incorporates appropriate evidence-based information into patient care, and understands the limits of evidence-based medicine in patient care	Engages in scholarly activity regarding evidence-based medicine	Locate, appraise, and assimilate evidence from scientific studies related to the patient's health problems/PBLI	

Please select the statement that best reflects the trainee's ability to integrate cost-effectiveness and quality guidelines into clinical practice	Describes basic cost and risk implications of care	Describes cost and risk benefit ratios in patient care	Makes clinical decisions that balance cost and risk benefit ratios	Incorporates available quality measures in patient care	Engages in scholarly activity regarding cost- and risk-effective practice	Systems thinking, including cost and risk effective practice/SBP	
Please select the statement that best reflects the trainee's ability to work in inter-professional teams to enhance patient safety	Describes team members' roles in maintaining patient safety	Identifies and reports errors and near-misses	Describes potential sources of system failure in clinical care such as minor, major, and sentinel events	Participates in a team-based approach to medical error analysis	Engages in scholarly activity regarding error analysis and patient safety	Work in inter-professional teams to enhance patient safety/SBP	

### **Neurology Entrustable Professional Activities (EPAs)**

For these questions, the evaluator is asked to select the level of entrustment of the trainee's ability to perform each task. Again, the papilledema example:

1. Recognize papilledema on ophthalmoscopy					
	The trainee cannot perform this task even with direct supervision or assistance	The trainee can perform this task, but requires direct supervision or assistance	The trainee can perform this task with indirect supervision (ie, supervisor not present)	The trainee can perform this task without supervision (ie, could do this in independent practice)	The trainee has mastered this task (ie, could train others to perform this task)

Entrustable Professional Activities (EPAs)  Evaluator instructions: Based on your experience with this trainee, please choose the level that most appropriately describes the trainee's ability to perform each task.	Milestone/Domain assignment(s)	Rotations or other education activities to which the question can be assigned:
Recognize papilledema on ophthalmoscopy	Neurological Exam/PC Level 3	Eg, OSCE or neuro-

		ophthalmology rotation
Accurately perform a neurological exam on the comatose patient	Neurological Exam/PC Level 3	
Accurately perform a brain death examination	Neurological Exam/PC Level 4 and Formulation/MK Level 4	
Recognize and manage patients with neurologic emergencies	Management/Treatment/PC Level 2/3/4 Neurologic Manifestations of Systemic Disease/PC Level 1/2 Neuroimaging/PC Level 2	
Appropriately request consultations from non-neurologic and neurology subspecialty care providers for additional evaluation and management	Management/Treatment/PC Level 3/4 Movement Disorders/PC Level 4 Cerebrovascular Disorders/PC Level 3 Cognitive/Behavioral Disorders/PC Level 3 Epilepsy/PC Level 4 Neuro-Oncology/PC Level 4	
Recognize and manage patients with movement disorder emergencies	Movement Disorders/PC Level 3/4	
Recognize and manage patients with neuromuscular emergencies	Neuromuscular Disorders/PC Level 2/3	
Appropriately order and interpret electrodiagnostic testing	Neuromuscular Disorders/PC Level 2/3, Diagnostic investigation/MK	
Recognize when nerve or muscle biopsy is warranted	Neuromuscular Disorders/PC Level 4	
Understand and demonstrate appropriate use of systemic thrombolysis for acute ischemic cerebral infarction	Cerebrovascular Disorders/PC Level 2/3	
Appropriately refer for interventional or surgical evaluation of cerebrovascular disorders	Cerebrovascular Disorders/PC Level 3	
Manage behavioral complications of cognitive/behavioral disorders	Cognitive/Behavioral Disorders/PC Level 3	
Appropriately refer for neuropsychological testing in evaluating patients with cognitive/behavioral disorders	Cognitive/Behavioral Disorders/PC Level 3	
Identify, diagnose, and manage neurologic emergencies due to systemic disease	Neurologic Manifestations of Systemic Disease/PC Levels 1/2	
Recognize and manage convulsive and non-convulsive status epilepticus	Epilepsy/PC Level 2/3	
Recognize and manage patients with headache emergencies	Headache Syndromes/PC Level 2/3	
Identify and manage neurologic complications of cancer or the treatment of cancer	Neuro-Oncology/PC Level 3/4	

Recognize emergent imaging findings on brain MR and CT	Neuroimaging/PC Level 2	
Identify anatomy and abnormalities on angiographic imaging (CTA, MRA, or conventional angiography)	Neuroimaging/PC Level 2/3/5	
Recognize EEG patterns of status epilepticus	Electroencephalogram (EEG)/PC Level 3	
Recognize common EEG artifacts	Electroencephalogram (EEG)/PC Level 3	
Recognize normal EEG variants	Electroencephalogram (EEG)/PC Level 4	
Describe common pitfalls of NCS/EMG	Nerve Conduction Studies (NCS)/Electromyography (EMG)/PC Level 4	
Formulate basic NCS/EMG plan for specific, common clinical presentations	Nerve Conduction Studies (NCS)/Electromyography (EMG)/PC Level 4	
Accurately correlate the patient's clinical presentation with the anatomy of their disorder	Formulation/MK Level 3/4	
Explain diagnostic yield and cost-effectiveness of testing	Diagnostic Investigation/MK Level 4	
Recognize indications and implications of genetic testing	Diagnostic Investigation/MK Level 4	
Recognize indications of advanced imaging and other diagnostic studies	Diagnostic Investigation/MK Level 4	
Use feedback to improve performance	Self-directed learning/PBL1 Level 2	
Participate effectively in daily interdisciplinary team rounds with nursing, social work, pharmacy, and other allied health colleagues	Information sharing, gathering, and technology/ICS Level 2	
Employ effective and timely clinical documentation (for example, consultation, admission, exam, daily progress, or overnight events)	Information sharing, gathering, and technology/ICS Levels 1-4	
Leads team-based patient care activities	Relationship development, teamwork, and managing conflict/ICS Level 4	
Communicate and use shared decision making with patients/families appropriately given the patient's level of neurologic impairment (for example, cognitive impairment, language dysfunction, alteration of awareness)	Relationship development, teamwork, and managing conflict/ICS Levels 2-3	