Neurology

Clerkship Handbook

2024-2025

Clinical Clerkship Director and Coordinators

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IMPORTANT NOTICE

The clerkship director reserves the right to modify, amend, delete, replace, or revise all policies, procedures, and scholarly content if needed to maintain or improve the academic integrity of the clerkship. When possible, such changes will be planned to minimize disruption to current students and preceptors, however, fairness and the academic soundness of the clerkship must take precedence. Any such changes will be communicated promptly to neurology clerkship students as well as attending preceptors.

Clerkship Director Responsibilities:

- Clerkship Directors should provide students assigned schedules for on-site clinical and educational activities.

- Clerkship Directors will monitor the academic and clinical workload of students within individual clerkships by the virtue of clerkship design and student scheduling.

- Clerkship directors will include relevant excerpts from the policy on duty hours in the clinical clerkship handbooks and will discuss this policy with students at clerkship orientation.

INTRODUCTION

Up to 10% of patients seen by family practitioners present with neurologic symptoms and pose neurologic questions to their physicians. Only 16% of the 45 million Americans who visit a physician for a chief complaint referable to the nervous system are ever evaluated by neurologists. Clearly, primary care physicians are routinely called upon to evaluate and manage patients with neurologic disease. Practicing physicians require a firm understanding of the general principles of clinical neurology. The most suitable setting in which to lay the foundation for that understanding is in a neurology clerkship in the clinical phase of medical school. This document outlines the desirable components of a clinical neurology clerkship.

The purpose of the neurology clerkship is not to train neurologists.
(that is the goal of residency training*)*

The goal of the neurology clerkship is to provide students with the fundamental skills required by all physicians to recognize, diagnose, and formulate an initial treatment plan for patients with common neurologic disorders.

As such, the principal goal of the clerkship is to help refine skills in taking a neurologic history and performing a thorough neurologic examination. Many physicians will eventually practice in settings where acute neurologic consultation is available only by phone. The better historical and examination information provided, the better the quality of the advice that can be given by a Neurologic consultant regarding immediate interventions needed.

GOALS AND OBJECTIVES

A. Goal

To teach the principles and skills underlying the recognition and management of the neurologic diseases a general medical practitioner is most likely to encounter in practice.

B. Learning Objectives

1. Apply knowledge of basic & clinical sciences into medical practice.
2. Obtain and deliver a complete clear, concise, and thorough oral & written presentation of a patient's history and examination.
3. Distinguish normal from abnormal findings and the ability to localize the likely sites of lesion in the nervous system from available clinical information
4. Perform certain procedures including lumbar puncture
5. Utilize and interpret common tests used in diagnosing neurologic disease
6. Formulate a differential diagnosis based on clinical information, lesion localization, and relevant historical and demographic features
7. Demonstrate an awareness of the principles underlying a systematic approach to the management of common neurologic diseases (including patients with altered level of consciousness, and the recognition and management of problems that are potential emergencies)
8. Review and interpret the medical literature (including electronic databases) pertinent to specific issues of patient care and its application towards evidence based practice.
9. Demonstrate professionalism and effectively communicate with patients, patents' families, peers, members of the patient care team, and faculty to work collaboratively in patient care
10. Adapt to work in different health delivery systems and be able to use various forms of health information systems
11. Demonstrate skills of time management, stress coping, non-confrontational negotiation, and self-assessment and reflection in his/her/their medical practice.

EDUCATIONAL PROGRAM OBJECTIVES (EPOS) AND COURSE LEARNING OBJECTIVES (CLOS)

The Curriculum follows the 6 ACGME Curriculum General Competencies. These are mapped to the Educational Program Objectives (EPOs) as indicated on the table below. The Final Evaluation of the students in MedHub assesses the student's performance in each area. The Clerkship Learning Objectives (CLOs) are mapped to the EPOs in the second table.

General Competency	Educational Program Objectives
PC1: Patient Care	PC1: Clinical History Taking PC2: Patient Examination PC3: Medical Notes PC4: Oral Presentations PC5: Medical Skills PC6: Patient Care Teams PC7: Patient Management PC8: Cost Effective Comparison in Treatment
MSK2: Medical and Scientific Knowledge	MSK1: Knowledge of Medical Practices MSK2: Problem Solving & Diagnosis MSK3: Medical Treatment MSK4: Life-Long Learning MSK5: Research or Knowledge Expansion
C3: Communication and Interpersonal Skills	C1: Communication Medical Team C2: Communication with Patient, Family and Community
P4: Professionalism	P1: Ethical Behavior P2: Ethical Responsibility P3: Ethical Principles and Boundaries P4: Professional Relationships
HC5: Health Care Systems	HC1: Healthcare Delivery Systems HC2: Delivery Systems Improvement
RP6: Reflective Practice and Personal Development	RP1: Personal Assessment RP2: Time Management RP3: Stress/Wellness Management RP4: Conflict Resolution

Clerkship Learning Objectives (CLO)	Narrative	EPO	Assessment
CLO-1	Demonstrate the ability to communicate effectively relevant medical information, both orally and in writing, with all members of the healthcare profession, patients and families from a broad range of cultures and backgrounds. Demonstrate effective and empathetic communication with patients and families.	C1, C2; PC1-4	Preceptor evaluations
CLO-2	Demonstrate knowledge of scientifically established standards for developing differential diagnoses of acute and chronic conditions encountered in Neurology and apply their knowledge. Recognize symptoms from history and abnormal findings from physical examination that may signify Neurological disease and formulate clear differential diagnosis based on lesion localization and clinical reasoning.	PC2,PC5; MSK1,MSK2	NBME exam, preceptor evaluations, didactics grading
CLO-3	Develop sound evidence-based management plan of acute and chronic diseases encountered in Neurology and recognizing timely management to Neurologic emergencies. Identify social, economic, psychological and cultural factors that may influence development and management of Neurologic disease	PC7-8;MSK3	NBME exam, preceptor evaluations
CLO-4	Demonstrate the ability to effectively identify possible prevention of neurologic diseases and demonstrate knowledge of the evolving recommendations for the screening and treatment of Neurologic disease. Explain the indications, potential complications and interpretation of common tests used in diagnosis and screening of Neurologic disease	PC7;MSK3	NBME exam, didactics grading
CLO-5	Foundational knowledge of the structure and function of the nervous system, as well as understanding of the pathogenesis of Neurologic disease, lesion localization, interventions and effective treatment. Appropriately review, interpret and apply pertinent medical literature and scientific knowledge with an evidence based approach to patient care.	MSK4,MSK5	NBME exam, preceptor evaluations, didactics grading
CLO-6	Demonstrate dedication to the standards of the medical profession, upholding the ethical principles of honesty, integrity, compassion and dedication to excellence while continuing to self-reflect and engage in independent learning as a means to self-improvement.	P1-4; RP1-3	preceptor and CD evaluations

CONTENT OF SUBJECTS TO BE TAUGHT

A. Recognizing that history is the key to the neurologic evaluation, perform a competent history noting the following key factors:
    1. Establish the onset, progression (temporal profile) and character of the disorder identifying all related symptoms and exacerbating/relieving factors
    2. Perform a standard neurological review of symptoms with regard to personality, memory, headaches, pain, seizures, impairments of consciousness, vision, hearing, language function, swallowing, coordination, gait, weakness, sensory alterations, sphincter disturbance and involuntary movements, etc.

B. The Neurologic Examination (as an integral component of the general medical examination)
    1. How to perform a focused but thorough neurologic examination [see Appendix 1]
    2. How to perform a screening neurologic examination [see Appendix 2]
    3. How to perform a neurologic examination on patients with an altered level of consciousness [see Appendix 3]
    4. How to recognize and interpret abnormal findings on the neurologic examination – localization and differential diagnosis (see Appendix 4)

C. Localization - general principles differentiating lesions at the following levels:
    1. Cerebral hemisphere
    2. Posterior fossa
    3. Spinal cord
    4. Nerve root/Plexus
    5. Peripheral nerve (mononeuropathy, polyneuropathy, and mononeuropathy multiplex)
    6. Neuromuscular junction
    7. Muscle

D. Symptom Complexes - a systematic approach to the evaluation and differential diagnosis of patients who present with:
    1. Focal weakness
    2. Diffuse weakness
    3. Clumsiness
    4. Involuntary movements
    5. Gait disturbance
    6. Urinary or fecal incontinence
    7. Dizziness
    8. Vision loss
    9. Diplopia
    10. Dysarthria
    11. Dysphagia
    12. Acute mental status changes
    13. Dementia
    14. Aphasia
    15. Headache

16. Focal pain (Facial pain, Neck pain, Low back pain, Neuropathic pain)
17. Numbness or paresthesia
18. Transient or episodic focal symptoms
19. Transient or episodic alteration of consciousness
20. Sleep disorders
21. Developmental disorder

E. Approach to Specific Diseases - general principles for recognizing, evaluating and managing the following neurologic conditions (either because they are important prototypes, or because they are potentially life-threatening):

Neurology Must See Cases		
Toxic-metabolic encephalopathy Coma/Infections/increased intracranial pressure	Participate all ages	Inpatient where available
Seizures/Epilepsy/Status Epilepticus	Participate all ages	Inpatient/ambulatory
Movement Disorder/Parkinson's Disease/Essential Tremor	Participate all ages	Inpatient/Ambulatory
Multiple Sclerosis	Participate all ages	Inpatient/Ambulatory
Neuromuscular disorders including Peripheral Neuropathy/Carpal Tunnel Syndrome/Bells Palsy/Radiculopathy, myopathy and neuromuscular junction disorders	Participate all ages	Inpatient/Ambulatory
Alzheimer's Disease and dementia	Participate all ages	Inpatient/Ambulatory
Stroke (ischemic or hemorrhagic)	Participate all ages	Inpatient
Migraine/headache	Participate all ages	Inpatient/Ambulatory

RECOMMENDED READING

1. **Harrison's Principles of Internal Medicine**, 20e, by Jameson et al.: Part 13; sections 1-3. (Available on Access Medicine)
2. **Adams and Victor Principles of Neurology 11e,** Allan H. Ropper, et al. (On Access Medicine)
3. **Clinical Neurology 10e** Roger P. Simon , Michael J. Aminoff, David A. Greenberg
4. Preparation for Shelf Exam prep: one of the following
    a. **Neurology Pretest Self-Assessment and Review**, 9th edition, by David Anschel (for shelf exam prep) Note: Also available in USMLE Easy.
    b. **NBME Clinical Sciences Subject Exam Self-Assessment Tests** (fee required)
5. **Case Files in Neurology** (in Access Medicine) – for clinical rotation information

SKILLS, ATTITUDES AND BEHAVIORS

Students are expected to meet and exceed the following minimum standards:

a) Be present and participate fully in all clerkship activities, including orientation, group meetings, and examinations.
b) Be on time every day.
c) Give 100% effort while on the clerkship and expect the same from classmates.
d) Make decisions, explain them, and understand the consequences of each decision. Such self-reflection is essential to improve clinical understanding and practice.
e) Be current with all followed patients and prepare in advance relevant reading. Search peer-reviewed literature and bring articles. The team will appreciate it.
f) Be respectful of classmates, residents, faculty, and other staff at all times.
g) Remember that the patient is the focus of clinical care.
h) In order to improve clinical skills throughout the clerkship, residents and attendees will be providing constructive criticism. Formal mid-rotation and end-of-rotation feedback sessions will also be held with the clerkship director.
i) Continuity of care will be emphasized during the clerkship whenever possible and appropriate. For example, when a student has a role in the admission of a patient, whenever possible, the student will be expected to follow that patient throughout their treatment and hospitalization course and, upon discharge, into the outpatient setting.

PROFESSIONALISM

The clerkship experience is not only about knowledge; it is also about instilling the behaviors and attitudes that comprise the professional demeanor of the physician. These skills are essential in all interactions including patients and their families, staff and colleagues. Toward this end, neurology preceptors will be asked to comment on the following professional attributes for each student.

Interpersonal skills

a) Definition: Includes demonstration of inquiry about family and support systems; understanding of cultural diversity in health care delivery; understanding social, psychological, and economic factors in health care delivery; accurately assessing patients' expectations and assumptions; and effectively engaging patients and families in verbal communication.

b) Assessment: The ability to develop rapport with patients, patient families, and other medical professionals.

Professional behavior

a) Definition: Includes demonstration of respect, truthfulness and honesty; appropriate self-assessment; understanding patients' rights; recognizing and responding appropriately to conflicts between personal convictions and patients' choices of medical treatments; and sensitivity to cultural and ethnic diversity.

b) Assessment: Interaction with staff and patients will be continually assessed.

COMMENDATION AND EARLY WARNING FORMS

It is important to maintain documentation about student performance. For performance outside the norm, supervising preceptors will have access to documents that allow them to call special attention to individual students when necessary. This may be in the form of a *Commendation Card* (to commend exceptional performance above usual expectations), or in the form of an *Early Warning Card* (to document concerns about student performance). Commendations and concerns may be regarding any area of performance, including but not limited to patient care, interactions with other health care professionals, knowledge or skills performance, professionalism, dress, demeanor, etc. Commendations and concerns will go directly to the clerkship director who will determine what, if any, immediate action is required.

DRESS CODE

Professional attire is expected at all times during the neurology clerkship rotation. Professional business attire is the standard. Scrubs are not acceptable, particularly since this rotation does not require overnight call responsibilities. All students should wear white coats that are clean and free of excessive wrinkles. Men should wear dress shirts unless rounding on a weekend at which time a more relaxed attire is permissible. Women should wear slacks or dresses of appropriate length. Closed toed shoes are essential for both men and women for safety reasons and men should wear socks; athletic shoes are not acceptable unless required by a medical condition. Students should not wear jeans while participating in patient care. Fingernails must be clean and trimmed to an appropriate length to avoid injury to patients and minimize transmission of pathogens. Tasteful jewelry is permissible but should not be excessive. Hair (including facial hair for men) should be clean, neatly groomed, and of appropriate length. Hair coloring is acceptable as long as it is tasteful and does not detract from professional appearance. Lapel pins and other clothing adornments should be tasteful, non-inflammatory, and apolitical. Acceptable examples include pins promoting breast cancer or HIV/AIDS awareness; unacceptable examples include political slogans or support for non-medical social issues. Please direct questions regarding dress code issues to the clerkship director. Violation of these professional standards may be referred to Student Affairs for further assessment, remediation, or other necessary action.

ATTENDANCE POLICIES

Overview: College Policies

CNU College of Medicine policies on attendance are outlined in the Student Handbook and on the College of Medicine web site. It is the student's responsibility to review and adhere to these policies, and ignorance of the policies is not an excuse for absence. Failure to comply may result in academic or disciplinary penalties.

Attendance Policy

See general clerkship handbook for full details. For excused absences, make up time may be needed.

Unexpected Absences

In brief, students should regard their duties on the neurology clerkship as they would as a fulltime, employed physician. Patients and other members of the health care team rely on timely execution of patient care responsibilities. Only illness or extenuating personal emergencies should be viewed as legitimate grounds for absence or tardiness.

The key to handling unforeseen absences professionally is communication. If being late or absent is unavoidable, please inform all relevant parties as soon as possible. This should include a phone call to:

1. Attending Preceptor;
2. Attending Preceptor's clinical or office manager (if applicable);
3. Supervising resident or intern (if applicable);
4. The College of Medicine's Neurology Clerkship Coordinator;
5. Any others as specified in the College of Medicine Student Handbook.

How Unexpected Absences Should Be Reported: As soon as a student knows he/she will be absent from their scheduled clerkship, he/she should make at least TWO notifications. As soon as possible after an unexpected absence has occurred, students should follow through with proper paperwork/documentation.

1. Clerkship coordinator: phone and email
2. Supervising preceptor: both email and text/call
3. Expected Absences

Pre-approved absences may be considered by the Clerkship Director with sufficient advance notice. In general these will be limited to unique scholarly or educational opportunities (e.g., presenting original research at an academic conference). Any expected absence must be approved by the Office of Student affairs and the Clerkship Director in order to count as an excused absence.

Grading Policies

Evaluation

Evaluation procedures are consistent with standards set by the College of Medicine, in particular the Curriculum Committee, the Phase B subcommittee and the Student Committee. In the neurology clerkship, the following general plan will apply.

Formative Feedback

Ongoing formative evaluation during the clerkship is essential to allow students to improve skills during the rotation. At minimum, students may expect daily feedback from preceptors in the following areas:

Cognitive skills

1. History taking
2. Neurologic examination
3. Understanding of ancillary testing & data
4. Formulation, differential diagnosis, and treatment plan

Personal skills

1. Professionalism
2. Dress
3. Demeanor
4. Any other concerns: Preceptors should communicate any concerns to the clerkship director immediately for monitoring or remediation as appropriate.

The frequency and mechanisms of formative feedback delivery are shown in the table.

Frequency and Mechanism of Formative Feedback	
Frequency	Mechanism
Daily	Verbal feedback from attending physician preceptor
	One-on-one interaction with preceptors & residents
	At "teachable moments" at the bedside and during clinical care
Weekly	Formative questions/quizzes in didactic sessions
	Case discussions in didactic setting
Mid-clerkship	Formative feedback summarized & discussed in communication with clerkship director
Mid-clerkship	Formal review of patient log, adjustment of assignments as needed
End of Clerkship	Exit meeting with clerkship director
	Final examination
	Formal evaluation report
Ongoing	Monitoring patient log

Summative Evaluation

Current standards suggest summative assessment be based on a minimum of one comprehensive written examination, narrative observations by primary teaching faculty, and other observable performance-based measures. Small- and large-group discussions will be administered throughout the Clerkship Curriculum. The clerkship curriculum will include clinical skills and case sessions during

protected didactic days to refine neurological skills.

CNU COM Clerkship Grading Policy

A student's final clerkship grade will be based on the following three components:

- Academic NBME Shelf Exam Results.
- Clinical Evaluation of Student by Preceptor in rotations.
- Clinical Evaluation of Student by Clerkship Director in didactics.

The NBME Shelf exam score is an empirical measurement of student knowledge in the particular specialty field. Students are scored against a large national cohort of similar third year medical students. CNSU-COM's policy is that students Shelf score will be graded based upon the following percentile results on Shelf:

- ≥ 5 = Pass
- ≥ 30 = High-Pass
- ≥ 75 = Honors

This NBME Shelf "grade" will be the starting point of the student's final grade.

But this Shelf grade will then be compared against a composite Clinical grade, generated from the combination of Clinical Evaluation by Preceptor, and Clinical Evaluation by Clerkship Director.

The **Final Grade** will then be determined as follows:

- The NBME Shelf exam grade will generally* be the starting point
- But the final grade can be moved up, or down, based upon student performance in the clinical segments (Preceptor and Didactic)*

Example Grading Scenario #1

- NBME score of "pass" but is in the upper half* of the "pass" range
- Combination of Preceptor and Didactics Score is "honors"
- Students final grade can be elevated (at discretion of CD) from pass to high-pass based upon superlative clinical performance.

Example Grading Scenario #2

- NBME score of "honors" but in the lower half* of the "honors" range
- Combination of Preceptor and Didactics Score is only "pass"
- Students final grade can be reduced (at discretion of CD) from honors to high-pass based upon less than stellar clinical performance.

An academic grade of pass, will not be lifted all the way to honors by even stellar clinical performance, but it can move the final grade up (or down) to the next adjacent grade level above (or below) their academic grade.

*** Flexibility in the Grading System**

Clerkship Directors may and can opt to tighten up the parameters, for example only allowing movement up or down…if Shelf is in upper or lower quarter of grade range (rather than the upper or

lower half of the grade range). Doing so would give the Shelf move weight, as compared to clinical and didactics components.

Details of Preceptor Grade Component (Attending preceptors please note)

Numeric "5 Point Likert Scale" Scoring

Completion of the MedHub Educational Program Objectives (EPO) scores are important to help us assign student grades. Preceptors are asked to rank students on 15 areas of performance. These 15 topics are grouped and follow the COM General Competencies System:

- GC1 are questions about Patient Care (PC)
- GC2 cover Medical Skills and Knowledge (MSK)
- GC3 addressed Communication Skills (C)
- GC4 deals with Professionalism (P)
- GC5 deals with EMR and Healthcare Systems (HC)
- GC6 deals with Reflective Practice and Personal Development. (RP)

In each area of student performance, preceptors are asked to evaluate the student on a 1 to 5 Likert scale, with the 1 to 5 scale representing:

1. Fail – you believe the student should flunk the clerkship (and repeat)
2. Needs Improvement – performance not so low as to fail student, but in this area student should obtain remediation before passing
3. Pass – good performance sufficient (at this level of training and without remediation) to proceed forward with training
4. High-Pass – exemplary performance above average
5. Honors - outstanding performance

On average, a student performing at or above 3.0 on average will be considered to have Passed their preceptor evaluation. A student performing from 3.5-4.4 will be considered for the "High-Pass" grade. A student who averages 4.5 or above will be a candidate for an "Honors" grade. A student scoring below 3.0 will be seriously evaluated for necessary remediation. This could include additional course assignments, repeat of some or all of the clinical time in the clerkship, or might contribute to a failing grade in the clerkship. Any of the 15 topics ranked or graded as 1 (fail) will require full review by CD and possibly Student Evaluation & Promotions Committee (SPC), even in the case of of the overall score reaching a passing average of 3.0 or above.

Narrative comments are critical to thorough student evaluation.
Preceptors provide narrative comments on each student, commenting on both strengths and weaknesses.
All narrative comments by preceptors will be reviewed by the Clerkship Director, along with the checklist scores when determining final grades for the clerkship rotation. Student's numeric preceptor grade component for the clerkship rotation component may be raised or lowered based on

exceptionally persuasive narrative comments from an attending preceptor. This is entirely at the discretion of the CD, and their own judgement of the narrative comments.

Details of Didactics Grade Component

The bulk of the Final Grade is based upon the above two components:

- The Academic NBME Grade
- The Clinical Preceptor Grade

But there is one final component, that similar to the Clinical Preceptor Grade, can bump the Final Grade up, or down. That final component is the Grade conferred during Didactics by the individual Clerkship Director. The specific structure used in the production of this component will not be specified here, as it can and does vary from clerkship specialty, to clerkship specialty, and may even vary somewhat from block to block, as the availability of resources (guest lecturers, lab availability, in-person vs virtual didactics, etc) is changing and active. At times, even the Clerkship Director themselves may change, and the new CD may recommend different grading ideas and rubrics from the former. But the sum-components of the Didactics experience that may be brought to play in the production of this Didactics component may include:

- Attendance
- Timely submission of assignments
  - Assignments may include
    - case reports
    - quizes
    - mid-clerkship evaluations
    - clinical topical write-ups or presentations
    - other at discretion of CD
- Successful logging of “Must-See Cases”
- Ongoing logging of “Must-Do Procedures”
- Participation in Discussions
- Participation in Lab (if any)
- Grading of any of the above (vs pass/fail)

To be clear, the Didactics grade is entirely at the discretion of the Clerkship Director, and to reiterate cannot by subject to strict simplification or restriction in this document.

Professionalism and Remediation

Lapses of professionalism or low preceptor ratings. Professional behavior (discussed elsewhere) is the sine qua non of being a physician. Any allegation of a lapse in professionalism in the clerkship will be investigated by the clerkship director. Such lapses may include, but are not limited to, cheating; plagiarism; or failure to fulfill patient care responsibilities. Likewise, any score of "below expectations" or less by any preceptor will be investigated by the clerkship director. If the allegation of a lapse in professionalism is substantiated, or if the rating of "below expectations" or less is found to be accurate, either of these criteria alone (regardless of NBME exam scores and other preceptor evaluations) may be grounds to receive a failing grade in the clerkship. The student will also be referred to the Student Evaluation and Promotions Committee for further consideration. Y "incomplete" grade may be assigned, and remediation may be required. Further details are discussed in the next section.

Details of remediation of borderline performance; Y grade options.
Scenario: Low NBME score, acceptable preceptor evaluations
A student who receives ratings from preceptors at or above the "meets expectations" level, but who scores less than 5% on the NBME Subject Examination in emergency medicine can me managed along one or both of the following pathways:

1. "Bad Test Day" – if the student feels he are she was prepared for the test, but suffered from some unforeseen problem such as illness, family or other stress, or other un-avoidable distraction that prevented them from performing up to par, that student may request a "quick re-take" of the Shelf exam. This must be explained to the Clerkship Director and the CD must agree that a quick re-take is justified. Quick means ideally that the students sits for the re-take in general within a week of the original exam date, or at most two weeks of original exam date. Note that this quick re-take is not intended to allow the student to study more. This presumes that they already did study enough, but just suffered from unforeseeable stresses on the test day.

2. If the student does require a quick retake test, and fails this second attempt...OR if the reason the student did not pass the first attempt was actually lack of study and preparation for the first test, then the student will be given a Y grade for the course. Student and CD then need to sit down and discuss the situation, and come up with a remediation plan. A remediation plan could involve:

    1. Identification of flex or other time where student can study more for a re-take test

    2. Deferral of an upcoming clerkship to create time for study

    3. Referral to student affairs for test preparation counseling

3. This plan must be documented in a SPC referral, signed by student and CD and the Chief of Clinical Education, and submitted to SPC for review and either approval, or other remediation recommendation.

The student may remediate the Y grade by taking the examination a final second, or third time (third if a "quick retake test" was allowed), the time frame to be determined in consultation with the clerkship director.

If the student passes the retake NBME exam (after the administration of a Y grade), their Y will then be upgraded to a Y/P grade, which is a passing grade, but the Y will remain along with the Pass. The maximum grade achievable upon remediation shall be that of "Y/Pass".

***Attending preceptors please note*:** while completion of the checklists is necessary for assigning student grades, narrative comments and overall grade are critical to thorough student evaluation. Please provide narrative comments on each student, commenting on both strengths and weaknesses. Supportive narrative comments may be used to increase the final clerkship grade for students with a borderline final score.

Use of narrative comments. All narrative comments by preceptors will be reviewed by the Clerkship Director when determining final grades for the clerkship rotation. Student's grade for the clerkship rotation may be raised based on exceptionally persuasive narrative comments from an attending preceptor.

Student's grade may not be revised downward based on narrative comments from an attending preceptor unless such comments raise grave concerns about a student's professional integrity or medical knowledge. If such concerns are raised, the Clerkship Director shall investigate further and report to the Phase B Subcommittee Chair within one week of the end of the rotation.

The NBME Subject Examination in Neurology will be used as an assessment of fundamental medical knowledge. This examination has excellent psychometric properties and statistical validity to assess student knowledge over a wide range of neurologic data. The trend nationally is to set the passing grade for the third-year neurology clerkship at about the 5th percentile. Performance at or above this level is thought to represent a knowledge base sufficient for the non-specialist, third-year clinical clerk to proceed with training in other clinical disciplines.

The NBME exam will be administered on the last Friday of the clerkship at the College of Medicine. Standard NBME timing will apply. Students arriving late for the examination will not be given extra time for completion. Extra time may be allotted to students who have requested it based on medical needs.

Written Patient Notes and Reports

Neurologic history and physical exam notes are an essential part of clinical participation: Students are expected to maximize the number of notes taken during the clerkship. Attending preceptors may have additional requirements such as daily SOAP notes as part of delivering effective clinical care.

In addition, part of the final clerkship grade will be based on submitting to the Clerkship Director required number of history and physical reports. These reports should be submitted by students CNU email address to the clerkship director or reported online as directed. It is important these reports are HIPPA compliant and omit any specific clinical identifying data (name, date of birth, etc.)

History and Physical report submitted to Clerkship Director: During the initial weeks of the rotation, each student must select one H&P to be submitted to the Clerkship Director. It is due the end of the first week (exact deadline will be given at the beginning of the rotation). Students may submit report revisions for regrade until the end of the clerkship (exact deadline given at beginning of rotation). A write up that is judged sub-standard by the clerkship director may also be returned to the student for revision and re-evaluation. Failure to meet these requirements may result in assignment of remedial work before receiving a final grade in the clerkship rotation (including, but not limited to, additional written or clinical assignments, oral examination, or written essay examination). There may be small deductions for late reports. Please see Canvas for more specific details and examples of sample model H&Ps

Grading Rubric for History and Physical reports (see detailed H&P instructions in separate document)

Score	Exceeds Expectations (100%)	Meets Expectations (75-87.5%)	Needs Improvement (50-62.5%)
1) CC/HPI: 1.25 point	• Includes source of history • Includes Chief Complaint • Includes **all** key components in HPI including detailed first sentence of HPI.	• Adequately identifies source of history or chief complaint • Identifies **most** key components of HPI	• Identifies **some** key components of HPI
2) History: 1.25 point	• Other areas of history (Past Medical History, Medications, Allergies, Family History, Social History and Review of Systems) fully addressed including complete past medical history and if applicable inpatient medications	Other areas of history (CC, Past Medical History, Medications, Allergies, Family History, Social History and Review of Systems) are adequately addressed	• Identifies **some** key components of HPI • Other areas of history (CC, Past Medical History, Medications, Allergies, Family History, Social History and Review of Systems) are not fully addressed
3) Physical Exam: 1.25 point	• **All** key components of physical exam are included Neurologic exam is included with good detail	• **Most** key components of physical exam are included Neurologic exam is included with adequate detail	• **Some** key components of physical exam are included Neurologic exam is included but limited detail
4) Laboratory and Investigations: 1 point	• All relevant known other objective data reported (laboratory, radiological and other test results) listed. • **Note**: for test results that are not available, please state which tests are ordered/pending.	• Most relevant known other objective data reported (laboratory, radiological and other test results) listed.	• Some relevant known other objective data reported (laboratory, radiological and other test results) listed.
5) Assessment 1.25 points	• **All** key differential diagnoses are identified with thoughtful and convincing reasoning for their inclusion. • Supportive information from pertinent positive and	• **Most** differential diagnoses are identified with some reasoning for their inclusion included. • **Most** supportive information from	• **Some** differential diagnoses are identified with some reasoning for their inclusion included. • **Some** supportive information from pertinent positive and

	negatives in H&P and objective data included. • Demonstrates clear understanding of lesion localization and neurologic approach to issue.	pertinent positive and negatives in H&P and objective data included. • Demonstrates adequate understanding of lesion localization and neurologic approach to issue.	negatives in H&P and objective data included. • Demonstrates some understanding of lesion localization and neurologic approach to issue.
6) Plan/ Problem-Based Patient Management: 1.25 points	• **Excellent** and well-prioritized plan • **Plan by problem included** • **All** considerations are addressed (consultation, education, follow-up, etc.) **Convincing** evidence that the patient is safe in the short-term and will benefit from the plan in the long-term	• **Most** Short- and long-term management considerations are presented, with **good** indication that a higher degree of thought and consideration of the big picture for management is indicated Many aspects of short and long-term management are considered	• Short- and long-term management considerations are presented, with **some** indication that a higher degree of thought and consideration of the big picture for management is indicated Some aspects of short and long-term management are considered
7) Organization and thought process 0.5 points	• **Excellent** organization and thought process, easy to follow line of reasoning and concise but detailed presentation.	• **Good** organization and thought process. Can generally follow line of reasoning without difficulty. Either or both additional detail/more concise wording needed.	• **Needs improvement** in organization and thought process. Trouble follow line of reasoning and difficulty with clarity of concepts. More detail needed.

Oral Presentation: Each student will be required to make one case presentation and present a discussion of related subject during didactics sessions.

Presentations will include case presentation and discussion of related subject to clinical disorder.

Grading: based on the following criteria (see separate document for more details):

1. Organization of material presented and demonstrating command of knowledge about case
2. Focused with appropriate time (10-15 minutes)
3. Provides main elements of Neurological History and Physical: focused but pertinent negatives and positives presented
4. Differential diagnosis: includes important considerations/good thought process about what is most likely
5. Plan: key elements of plan presented
6. Presentation of related topic well researched and references included
7. Presentation of related topic: material with educational merit
8. Presentations skills: General interaction and communication/eye contact/knowledge of material/appropriately answering questions

Participation: This portion of the Neurology Clerkship grade will be based on professionalism during

clerkship rotations, general participation in discussions during the Friday afternoon didactic sessions and completing all requested work including evaluations.

CLINICAL CONTACT EXPERIENCE & DOCUMENTATION REQUIREMENTS

Required Patient Types

According to national data, on average, about 80% of neurology students work up 1 outpatient in detail every day or every other day. A minimum number of contact experiences for specific types of patients has been determined based on published data, and local practice patterns. Over the course of the four-week rotation students should see and examine a minimum of:

a) 2 patients with stroke/TIA;
b) 2 patients with an episodic disorder (e.g., headache, seizure);
c) 1 patient with coma/altered mental status (coma strongly recommended if possible);
d) 2 patients with neurodegenerative disease (e.g., dementia, movement disorder); and
e) 2 patients with peripheral neurologic disease (e.g., neuropathy, neuromuscular disease).

In addition, it is strongly recommended for students to see and/or assist in performance and interpretation of neurologic procedures, including the following:

a) lumbar puncture;
b) EMG/NCS studies;
c) EEG;
d) CT
e) MRI

These are goals for the overall clerkship; not every type of patient or every procedure must be seen in each setting.

Each student is required to track all Must See Cases with documentation. Optional procedures and other cases seen can also be added to the pocket card for those students who want to track this information.

Students are responsible for using student logs/pocket cards to track the must see patients they see during their rotation. Failure to complete this documentation may result in review by the Student Evaluation and Promotions Committee.

The need for this stringency is that the College of Medicine is required by the LCME and best educational practices to demonstrate adequate diversity of exposure to various patient populations, especially in the early years of curriculum implementation. Students must take this mission seriously not only for their own education, but also for quality control in the college.

The clerkship director and coordinator will monitor patient logs in real time. Students should also be attentive to their patient experiences and should contact the clerkship director if they need additional exposure to a given type of patient. Logs will be formally reviewed with the student during meetings with the clerkship director for formative feedback at the mid-point of the rotation and in

summative fashion at the end of the rotation. If a live patient experience is not possible for some given condition, students will, at the discretion of the clerkship director, use some combination of the following resources to round out their clinical knowledge:

a) Completion of relevant case in Aquifer database or equivalent
b) Continuum: high-quality, peer reviewed, clinical CME publications of the American Academy of Neurology;
c) Literature review with directed readings and discussion with the clerkship director or other neurology faculty;
d) Preparation and presentation to neurology faculty of a short oral or written summary on a given topic
e) Use of the resources in the COM Clinical Skills and Simulation Center which may include an encounter with a standardized patient; use of computer-based or mannequin simulation; or use of part-task trainers (e.g., lumbar puncture simulation model).

ROTATION SCHEDULE

Rotation Sites Daily and Weekly Schedule

Operational details of the daily and weekly schedule will be at the discretion of the attending preceptor. In general, students will work Monday through Friday. Students on inpatient services may be required to attend one weekend day at the discretion of the attending. Students will not be required to take overnight call. Important variations in the schedule are:

- The first Monday morning of the rotation will be spent at the College of Medicine for orientation and assignment of clinical sites.
- Some part of the clerkship will focus on didactics sessions, oral presentations and virtual learning including assignments of virtual cases, physical exam learning and other subjects (details below)
- The last Friday of the rotation is reserved for the NBME Subject Exam in Neurology in the afternoon. This will take place at the College of Medicine unless otherwise indicated.
- Students rotating through private offices will follow the schedule set by those physicians, including days when the office is not open

Duty Hours Restrictions

The California Northstate University College of Medicine will follow the duty hour guidelines set by the Accreditation Council for Graduate Medical Education (ACGME). In brief, these guidelines encompass the following for medical students–:

"Duty hours" are defined as all clinical and academic activities related to the education of the medical student, i.e., patient care (both inpatient and outpatient), administrative duties relative to patient care, the provision for transfer of patient care, time spent in-house during call activities, and scheduled activities, such as didactic sessions, grand rounds and conferences. Duty hours do not include reading and preparation time spent away from the duty site. Important points of this policy are:

a. Duty hours must be limited to 80 hours per week, averaged over a four-week period, inclusive of all in-house call activities.
b. In-house call must occur no more frequently than every third night.
c. Continuous on-site duty, including in-house call, must not exceed 24 consecutive hours.
b. Students may be on site for up to 6 additional hours in order to participate in didactic activities.
c. Students must be provided with one day (24 consecutive hours) in seven, free from all educational and clinical responsibilities, averaged over a four-week period.
d. Students will have a minimum of 10 hours' break between shifts.

This policy will be published on the College of Medicine website, in the clerkship handbooks, and in the faculty and preceptor handbooks. This information will also be covered in the COM Clerkship Orientation.

Oversight of this policy will be the responsibility of the Clerkship Director and the relevant Clerkship Site Director/s. Faculty and students with concerns regarding possible duty hour violations should report those concerns directly to the Clerkship Director in a timely fashion.

LEARNING SESSIONS (INCLUDING DIDACTICS)

Schedule:

All students will receive structured learning sessions (seminars) during their clinicals and during didactics Students are expected to read in preparation for each session. A limited amount of lectures may be delivered, but as a rule, sessions will focus on cases, answering student questions, and applying knowledge from the text. Formative quizzes may be given.

Orientation Day:

The first Monday morning of the clerkship will begin with orientation at the College of Medicine. Salient points of this syllabus and clerkship requirements will be reviewed, as well as main point of this handbook and specific site assignments.

Didactic and virtual learning

This will include didactics by faculty, case and topic oral presentations by students and independent work on cases and subjects including Neurologic Exam, Neuroradiology and Neuroanatomy. Students should come prepared to provide a case history to the faculty and other students in the manner in which the case unfolded in the student's experience. Students should bring copies of relevant imaging studies if possible.

Didactic Presentations from faculty will likely include the following subjects: Altered Mental Status, Stroke, Neuroimaging, Multiple Sclerosis, Movement disorders, Functional Neurologic Disorders, Spine disorders, Infections related to Neurologic disorders, Seizure, Headache, Acute and Ambulatory Neuromuscular conditions. Topics will primarily be presented in lecture and discussion in question and answer format.

INFORMATION FOR ATTENDING AND PRECEPTORS

Rotation Schedule

Days: Monday through Friday.

Exceptions:

1. The first Monday morning of the rotation is reserved for orientation at COM.
2. The last Friday of the rotation is reserved for review and the NBME Subject Exam.

Attendance: mandatory except for personal emergencies or as arranged with the clerkship director and preceptor.

Hours: at discretion of attending preceptor. (Generally not earlier than 7:00 AM or later than 7:00 PM.) No night call.

Maximum work hours per week: per ACGME duty hours policy (summarized in section 11).

Grading

Preceptor evaluations: 40%

NBME subject exam: 30%

Oral presentation: 20%

H&P turned in to clerkship director: 10%

General Participation: 2%

Please note that oversight with respect to grading consistency and trends between preceptors, specialties and clerkship sites will be the responsibility of the Clinical Governance Committee with the assistance of the Assessment and Curriculum Committees, if necessary.

Clerkship Goals

The overarching goals of the clerkship are to

(a) Refine the neurologic examination;

(b) Localize lesions;

(c) Develop a reasonable differential diagnosis; and

(d) Outline an initial diagnostic and treatment plan.

We want students to meet these goals by examining patients with both acute and chronic neurologic problems in both the inpatient and outpatient settings.

Preceptor Responsibilities

All attending physicians and residents are expected to provide:

1. Daily supervision.
2. Direct observation of basic skills.
3. Teaching and guidance.
4. Constructive feedback.
5. Written and verbal assessment of student performance must be performed at mid-clerkship and upon completion of the rotation. The written assessments are due no later than 3 weeks from completion of the clerkships, respectively.

6. Preceptors are prohibited from medically treating the medical students that they are supervising.

Specific responsibilities. These goals can be met in different ways in different venues. At minimum, we request the following of attending preceptors:

1. Allow each student to perform one complete neurologic history and examination and present the patient to the preceptor, on average once per day. Students should write up each evaluation overnight and submit it to the preceptor for comments.
2. Students will also be submitting write ups to the clerkship director.
3. Assign additional patient experiences that may include focused exams on follow-up patients.
4. Exposure to neurologic critical care is highly desirable.
5. Ensure student experiences are hands-on, with oral patient presentations to preceptors.
6. Provide constructive feedback on physical exam, differential diagnosis, and treatment.
7. Fill out one evaluation form per student: (These will be available electronically or on paper as you prefer.) These evaluations are due no later than 3 weeks after the completion of the clerkship week.
8. Attend any workshop at College of Medicine to provide feedback on clerkship rotation and organization.
9. Assign brief readings (preferably from recent primary literature) on interesting patient topics as you see fit.

Giving feedback. Ongoing formative feedback during the clerkship is essential to allow students to improve skills during the rotation. At minimum, the following categories should be evaluated:

A) Cognitive skills
   - History taking
   - Neurologic examination
   - Understanding of ancillary testing & data
   - Formulation, differential diagnosis, and treatment plan

B) Personal skills
   - Professionalism
   - Dress
   - Demeanor
   - Any other concerns

Preceptors should communicate any concerns to the clerkship director immediately for monitoring or remediation as appropriate.

Frequency and Mechanism of Formative Feedback	
Frequency	Mechanism
Daily	Verbal feedback from attending physician preceptor
	One-on-one interaction with preceptors & residents
	At "teachable moments" at the bedside and during clinical care
Weekly	Formative quizzes in didactic sessions
	Case discussions in didactic setting
Mid-clerkship	Formative feedback summarized & discussed with clerkship director
Mid-clerkship	Formal review of patient log, adjustment of assignments as needed
End of Clerkship	Exit feedback with clerkship director
	Final examination
	Formal evaluation report
Ongoing	Monitoring patient log

Documenting student performance. Attending preceptors please note: while completion of the checklists is necessary for assigning student grades, narrative comments are critical to thorough student evaluation. PLEASE provide narrative comments on each student, commenting on both strengths and weaknesses. Your narrative comments may boost a student's clerkship score if their final clerkship grade is on the borderline between two letter grades. Likewise, choosing the higher rankings in a category on rating scales may provide evidence of superior performance in borderline cases.

Commendation and Early Warning Cards. It is important to maintain documentation about student performance. For performance outside the norm, supervising preceptors will have access to documents that allow them to call special attention to individual students when necessary. This may be in the form of a Commendation Card (to commend exceptional performance above usual expectations), or in the form of an Early Warning Card (to document concerns about student performance). Commendations and concerns may be regarding any area of performance, including but not limited to patient care, interactions with other health care professionals, knowledge or skills performance, professionalism, dress, demeanor, etc. Commendations and concerns will go directly to the clerkship director who will determine what, if any, immediate action is required.

Examples of Outpatient Preceptor Routine

Note: These are basic examples. Development of bedside and in-office teaching techniques will be the focus of future faculty development workshops.

- Preparatory issues:
  - Meet with student each morning to review the schedule of patients;
  - Identify patients whom the student will evaluate independently (including the specific educational focus of the encounter);
  - Identify patients for whom the student will shadow the preceptor;
  - Discuss any questions from reading assignments or self-directed learning that student performed overnight.
- Patient encounter (several possible variations, preceptors are encouraged to use each of these techniques over the course of the rotation depending on the educational objective of the encounter):
  - Preceptor sees the patient and the student observes;
  - Student interviews and/or examines patient independently, presents patient to preceptor, student and preceptor then interview/examine patient together;
  - Student interviews and/or examines patient with preceptor observing.
  - Preceptors are encouraged to fill out brief student evaluation forms during or immediately after the patient encounter.
- Short debriefing (immediately following encounter): student and preceptor reflect on patient encounter; follow up on questions and teaching points; identify plan for further self-directed learning.
- Daily debriefing (at end of day): more leisurely discussion of any remaining questions; review plans for self-directed learning; review next day's patient schedule, assign any pertinent preparatory reading based on anticipated patient encounters.

College of Medicine Policy on Student Mistreatment & Abuse

Medical students should report any incidents of mistreatment or abuse to the CNU College of Medicine Associate Dean for Students immediately. It is the policy of the CNU College of Medicine that mistreatment or abuse will not be tolerated. Anyone made aware of any such mistreatment or abuse should notify the COM Assistant/Associate Dean for Students Affairs. See next page for full policy.

FERPA

FERPA, the Family Educational Rights and Privacy Act of 1974, as Amended, protects the privacy of student educational records. It gives students the right to review their educational records, the right to request amendment to records they believe to be inaccurate, and the right to limit disclosure from those records. An institution's failure to comply with FERPA could result in the withdrawal of federal funds by the Department of Education.

As a Faculty Member, you need to know the difference between Directory Information and Personally Identifiable Information or Educational Records:

Personally Identifiable Information or Educational Records may not be released to anyone but the student and only then with the proper identification.

Parents and spouses must present the student's written and signed consent before the University may release Personally Identifiable Information or Educational Records to them.

(Please refer callers to the COM Registrar's Office)

General Practices to Keep in Mind:

1) Please do not leave exams, papers, or any documents containing any portion of a student's Social Security Number, Personal Identification Number (PID), grade or grade point average outside your office door or in any area that is open-access.
2) Please do not record attendance by passing around the Class Roster, which may contain the student's PID.
3) Please do not provide grades or other Personally Identifiable Information/Education

Records to your students via telephone or email.

Anti-Harassment and Anti-Mistreatment

California Northstate University is committed to providing a work environment free of harassment, disrespectful or other unprofessional conduct. University policy prohibits conduct that is disrespectful or unprofessional, as well as harassment based on:

1. Sex (including pregnancy, childbirth, breastfeeding or related medical conditions),
2. Race
3. Religion (including religious dress and grooming practices)
4. Color
5. Gender (including gender identity and gender expression)
6. National origin
7. Ancestry
8. Physical or mental disability
9. Medical condition
10. Genetic information
11. Subordinate position (“power mistreatment”)
12. Marital status or registered domestic partner status
13. Age
14. Sexual orientation
15. Military and veteran status
16. Any other basis protected by federal, state or local law or ordinance or regulation.

It also prohibits harassment, disrespectful or unprofessional conduct based on the perception that anyone has any of those characteristics, or is associated with a person who has or is perceived as having any of those characteristics. **All such conduct violates University policy**.

The University's anti-harassment policy applies to all persons involved in the operation of the University and prohibits harassment, disrespectful or unprofessional conduct by any employee of the University, including supervisors and managers, as well as vendors, students, independent contractors and any other persons. Applicants, employees, unpaid interns, volunteers and independent contractors are all protected from harassment.

Prohibited harassment, disrespectful or unprofessional conduct includes, but is not limited to, the following behavior:

1. Verbal conduct such as public humiliation, epithets, derogatory jokes, disparaging or deprecating comments, slurs or unwanted sexual advances, invitations or comments.
2. Visual displays such as derogatory and/or sexually-oriented posters, photography, cartoons,

drawings or gestures.

3. Physical conduct including intimidation, assault, unwanted touching, intentionally blocking normal movement or interfering with work because of sex, race or any other protected basis;
4. Threats and demands to submit to sexual requests as a condition of continued employment, appropriate evaluations or to avoid some other loss, and offers of employment benefits in return for sexual favors.
5. Retaliation for reporting or threatening to report harassment.
6. Communication via electronic media of any type that includes any conduct that is prohibited by state and/or federal law, or by University policy.

Sexual harassment does not need to be motivated by sexual desire to be unlawful or to violate this policy. For example, perceived or actual hostile acts toward an employee because of his/her gender can amount to sexual harassment, regardless of whether the treatment is motivated by any sexual desire.

If you believe that you have been the subject of harassment or other prohibited conduct, bring your complaint to the attention to one of the following: your supervisor, Clerkship Director, Clinical Sciences Senior Chairperson, Assistant Dean of Student Affairs and/or Human Resources of the University as soon as possible after the incident. You will be asked to provide details of the incident or incidents, names of individuals involved and names of any witnesses. It would be best to communicate your complaint in writing, but this is not mandatory. Supervisors will refer all complaints involving harassment or other prohibited conduct to Human Resources. The University will immediately undertake an effective, thorough and objective investigation of the allegations.

If the University determines that harassment or other prohibited conduct has occurred, effective remedial action will be taken in accordance with the circumstances involved. Any employee determined by the University to be responsible for harassment or other prohibited conduct will be subject to appropriate disciplinary action, up to, and including termination. A University representative will advise all parties concerned of the results of the investigation. The University will not retaliate against you for filing a complaint and will not tolerate or permit retaliation by management, employees or co-workers.

The University encourages all individuals to report any incidents of harassment or other prohibited conduct forbidden by this policy **immediately** so that complaints can be quickly and fairly resolved. You also should be aware that the Federal Equal Employment Opportunity Commission and the California Department of Fair Employment and Housing investigate and prosecute complaints of prohibited harassment in employment. If you think you have been harassed or that you have been retaliated against for resisting or complaining, you may file a complaint with the appropriate agency. The nearest office can be found by visiting the agency websites at *www.dfeh.ca.gov* and *www.eeoc.gov*.

APPENDIX 1: GUIDELINES FOR A COMPREHENSIVE NEUROLOGIC EXAMINATION

All medical students should be able to perform the following parts of the neurologic examination.

A. Mental Status
   1. Level of alertness
   2. Language function (fluency, comprehension, repetition, and naming)
   3. Memory (short-term and long-term)
   4. Calculation
   5. Visuospatial processing
   6. Abstract reasoning

B. Cranial Nerves
   1. Vision (visual fields, visual acuity & funduscopic examination. Specify how visual fields and acuity are tested)
   2. Pupillary light reflex
   3. Eye movements
   4. Facial sensation (checking V1-3 distributions)
   5. Facial strength (muscles of facial expression and muscles of facial expression)
   6. Hearing (specify how hearing test performed)
   7. Palatal movement
   8. Speech
   9. Neck movements (head rotation, shoulder elevation)
   10. Tongue movement

C. Motor Function
   1. Muscle Bulk
   2. Tone (resistance to passive manipulation)
   3. Pronator Drift
   4. Strength (shoulder abduction, elbow flexion/extension, wrist flexion/extension, finger flexion/extension/abduction, hip flexion/extension, knee flexion/extension, ankle dorsiflexion/plantar flexion)
   5. Involuntary movements (watch throughout assessment)

D. Coordination and Gait
   1. Coordination (fine finger movements, rapid alternating movements, finger-to-nose, and heel-to-shin)
   2. Gait (casual, on toes, on heels, and tandem gait)
   3. Romberg

E. Reflexes
   1. Deep tendon reflexes (biceps, triceps, brachioradialis, patellar, Achilles)
   2. Plantar responses

F. Sensation (2 or more depending what is appropriate for case)
   1. Light touch (more than touch by hand)
   2. Pain or temperature
   3. Proprioception
   4. Vibration
   5. Extinction

APPENDIX 2: GUIDELINES FOR A SCREENING NEUROLOGIC EXAMINATION

All medical students should be able to perform a brief, screening neurologic examination that is sufficient to detect significant neurologic disease even in patients with no neurologic complaints. Although the exact format of such a screening examination may vary, it should contain at least some assessment of mental status, cranial nerves, gait, coordination, strength, reflexes, and sensation. One example of a screening examination is given here.

A. Mental Status
    1. Level of alertness, appropriateness of responses, orientation to date and place
    2. General speech

B. Cranial Nerves
    1. Visual acuity and Visual Fields (and how tested)
    2. Pupillary light reflex
    3. Eye movements
    4. Facial strength (smile, eye closure)
    5. Hearing
    6. Tongue movement

C. Motor Function
    1. Muscle bulk and tone
    2. Strength (shoulder abduction, elbow extension, wrist extension, finger abduction, hip flexion, knee flexion, ankle dorsiflexion)

D. Coordination and Gait
    1. Coordination (finger-to-nose)
    2. Gait (casual, tandem)

E. Reflexes
    1. Deep tendon reflexes (biceps, patellar, Achilles)
    2. Plantar responses

F. Sensation (one modality include distally at toes)

Note: If there is reason to suspect neurologic disease based on the patient's history or the results of any components of the screening examination, a more complete neurologic examination may be necessary.

APPENDIX 3: GUIDELINES FOR THE NEUROLOGIC EXAMINATION IN PATIENTS WITH ALTERED LEVEL OF CONSCIOUSNESS

A. Mental Status
    1. Level of arousal (if responds, check orientation, speech, etc)
    2. Response to auditory stimuli (including voice)
    3. Response to visual stimuli
    4. Response to noxious stimuli (applied centrally and to each limb individually)

B. Cranial Nerves (depending on level of consciousness some or all of these maybe appropriate)
    1. Response to visual threat
    2. Pupillary light reflex
    3. Oculocephalic (doll's eyes) reflex
    4. Vestibulo-ocular (cold caloric) reflex
    5. Corneal reflex
    6. Gag reflex

C. Motor Function
    1. Voluntary movements (spontaneous vs. voluntary withdrawal)
    2. Reflex withdrawal
    3. Spontaneous, involuntary movements
    4. Tone (resistance to passive manipulation)

D. Reflexes
    1. Deep tendon reflexes
    2. Plantar responses

E. Sensation (to noxious stimuli)

APPENDIX 4: PRINCIPLES OF LOCALIZATION AND DIFFERENTIAL DIAGNOSIS

A. Differentiate focal, multifocal, and diffuse processes.

B. Determine if the history and examination indicate a neurological disorder.

C. Differentiate anatomically, aphasia, dysarthria, and confusion.

D. Differentiate dominant hemisphere from non-dominant hemisphere deficits.

E. Describe the anatomical basis for brainstem lesions with respect to crossed deficits and dysconjugate gaze.

F. Contrast conjugate gaze deficits for cortical vs. brainstem lesions.

G. Localize the following visual field deficits:

1. Deficits isolated to one eye
2. Bitemporal deficits
3. Homonymous deficits (e.g. homonymous hemianopia)

H. Differentiate central from peripheral facial palsy.

I. Differentiate between an upper motor neuron (UMN) and a lower motor neuron (LMN) deficit with regard to patterns of weakness, muscle bulk, the presence of fasciculation, altered tone, reflex changes, and the plantar reflex.

J. Discuss the significance of a sensory level and dissociated sensory deficits (contralateral spinothalamic and dorsal column deficits).

K. List the major deficits due to cerebellar lesions and distinguish midline deficits from those of a hemisphere.

L. Define the characteristics of a lesion of the following:

1. Nerve root
2. Plexus
3. Peripheral nerve
4. Neuromuscular junction
5. Muscle

APPENDIX 5: FORMS

California Northstate University
College of Medicine

Clerkship Commendation Form

Please complete and submit this card to the clerkship director when you wish to complement a student for his/her performance. This information will be conveyed to the student and noted in the student's file.

Name of Student_____ Date _____

Clerkship: _____

My commendation about the performance of this student is based upon his/her demonstration of exceptional ability/quality in the following areas (check all that apply):

	Clinical skills		Teaching
	Communication skills		Professionalism
	Medical knowledge		Team work
	Clinical judgement		Leadership

Please include any additional comments:

_____

_____

_____

_____

Faculty name: _____ Faculty Signature_____

Title: _____

California Northstate University
College of Medicine

Clerkship Early Warning Form

Please complete and submit this form to the clerkship director or coordinator when you have any concerns about the performance of a student. This information will be used constructively to help the student.

Name of Student_____ Date _____

Clerkship: _____

My concerns with the performance of this student include (please check all that apply):

	Professionalism
	Clinical practice
	Medical knowledge
	Team work
	Interpersonal relation and/or communication skills
	Other

Please include additional comments:

_____

_____

_____

_____

Faculty name: _____ Faculty Signature_____

Title: _____