Neurology Clerkship

Department of Neurology
MS 316

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# Neurology Clerkship Syllabus

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## Medical Education Program Objectives

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| **B** - Behaves in a caring, compassionate and sensitive manner toward patients and colleagues of all cultures and backgrounds. (Interpersonal and Professionalism) | B.1 - Apply principles of social-behavioral sciences to provision of patient care; including assessment of the impact of psychosocial and cultural influences on health, disease, care-seeking, care compliance, and barriers to and attitudes toward care. (2.5)  
B.2 - Demonstrate insight and understanding about emotions that allow one to develop and manage interpersonal interactions. (4.7)  
B.3 - Demonstrate compassion, integrity, and respect for others. (5.1)  
B.4 - Demonstrate sensitivity and responsiveness to a diverse patient population, including but not limited to diversity in gender, age, culture, race, religion, disabilities, and sexual orientation. (5.5) |
| **U** - Uses the science of normal and abnormal states of health to prevent disease, to recognize and diagnose illness and to provide and appropriate level of care. (Medical Knowledge and Patient Care) | U.1 - Perform all medical, diagnostic, and surgical procedures considered essential for the area of practice. (1.1)  
U.2 - Gather essential and accurate information about patients and their conditions through history-taking, physical examination, and the use of laboratory data, imaging and other tests. (1.2p)  
U.3 - Interpret laboratory data, imaging studies, and other tests required for the area of practice. (1.4)  
U.4 - Make informed decisions about diagnostic and therapeutic interventions based on patient information and preferences, up-to-date scientific evidence and clinical judgement. (1.5)  
U.5 - Develop and carry out patient management plans. (1.6)  
U.6 - Provide health care services to patients, families, and communities aimed at preventing health problems or maintaining health. (1.9)  
U.7 - Demonstrate an investigatory and analytic approach to clinical situations. (2.1)  
U.8 - Apply established and emerging bio-physical scientific principles fundamental to health care for patients and populations. (2.2)  
U.9 - Apply established and emerging principles of clinical sciences to health care for patients and populations. (2.3)  
U.10 Recognizes that ambiguity is a part of clinical health care and respond by utilizing appropriate resources in dealing with uncertainty. (8.8) |
| **C** - Communicates with colleagues and patients to ensure effective interdisciplinary medical care (Interpersonal and Communication Skills; Patient Care) | C.1 - Gather essential and accurate information about patients and their conditions through history-taking, physical examination, and the use of laboratory data, imaging and other tests. (1.2h)  
C.2 - Counsel and educate patients and their families to empower them to participate in their care and enable shared decision making. (1.7)  
C.3 - Participate in the education of patients, families, students, trainees, peers and other health professionals. (3.8)  
C.4 - Communicate effectively with patients, families, and the public, as appropriate, across a broad range of socioeconomic and cultural backgrounds. (4.1)  
C.5 - Communicate effectively with colleagues within one's profession or specialty, other health professionals, and health related agencies (4.2, see also 7.3)  
C.6 - Maintain comprehensive, timely, and legible medical records. (4.5)  
C.7 - Demonstrate sensitivity, honesty, and compassion in difficult conversations, including those about death, end of life, adverse events, bad news, disclosure of errors, and other sensitive topics. (4.6)  
C.8 - Communicate with other health professionals in a responsive and responsible manner that supports the maintenance of health and the treatment of disease in individual patients and populations. (7.3) |
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| **A** - Acts in accordance with highest ethical standards of medical practice (Professionalism) | A.1 - Demonstrate responsiveness to patient needs that supersedes self-interest. (5.2)  
A.2 - Demonstrate respect for patient privacy and autonomy. (5.3)  
A.3 - Demonstrate accountability to patients, society, and the profession. (5.4)  
A.4 - Demonstrate a commitment to ethical principles pertaining to provision or withholding of care, confidentiality, informed consent, and business practices, including compliance with relevant laws, policies, and regulations. (5.6)  
A.5 - Work with other health professionals to establish and maintain a climate of mutual respect, dignity, diversity, ethical integrity, and trust. (7.1)  
A.6 - Demonstrate trustworthiness that makes colleagues feel secure when one is responsible for the care of patients. (8.5) |
| **R** - Reviews and critically appraises biomedical literature and evidence for the purpose of ongoing improvement of the practice of medicine. (Practice-Based Learning and Improvement and Medical Knowledge) | R.1 - Apply principles of epidemiological sciences to the identification of health problems, risk factors, treatment strategies, resources, and disease prevention/health promotion efforts for patients and populations. (2.4)  
R.2 - Locate, appraise, and assimilate evidence from scientific studies related to patients' health problems. (3.6)  
R.3 - Continually identify, analyze, and implement new knowledge, guidelines, standards, technologies, products, or services that have been demonstrated to improve outcomes. (3.10) |
| **E** - Exhibits commitment and aptitude for life-long learning and continuing improvement (Practice-based Learning) | E.1 - Identify strengths, deficiencies, and limits in one's knowledge and expertise. (3.1)  
E.2 - Set learning and improvement goals. (3.2)  
E.3 - Identify and perform learning activities that address one's gaps in knowledge, skills, and/or attitudes. (3.3)  
E.4 - Incorporate feedback into daily practice. (3.5)  
E.5 - Obtain and utilize information about individual patients, populations of patients, or communities from which patients are drawn to improve care. (3.9)  
E.6 - Develop the ability to use self-awareness of knowledge, skills, and emotional limitations to engage in appropriate help-seeking behaviors. (8.1)  
E.7 - Manage conflict between personal and professional responsibilities. (8.3) |
| **S** - Supports optimal patient care through identifying and using resources of the health care system. (Systems-Based Practice and Patient Care) | S.1 - Provide appropriate referral of patients including ensuring continuity of care throughout transitions between providers or settings, and following up on patient progress and outcomes. (1.8)  
S.2 - Systematically analyze practice using quality-improvement methods and implement changes with the goal of practice improvement. (3.4)  
S.3 - Use information technology to optimize learning. (3.7)  
S.4 - Work effectively with others as a member or leader of a health care team or other professional group. (4.3, see also 7.4)  
S.5 - Work effectively in various health care delivery settings and systems relevant to one's clinical specialty. (6.1)  
S.6 - Coordinate patient care within the health care system relevant to one's clinical specialty. (6.2)  
S.7 - Incorporate considerations of cost awareness and risk-benefit analysis in patient and/or population-based care. (6.3)  
S.8 - Advocate for quality patient care and optimal patient care systems. (6.4)  
S.9 - Use the knowledge of one's own role and the roles of other health professionals to appropriately assess and address the health care needs of the patients and populations served. (7.2)  
S.10 - Participate in different team roles to establish, develop, and continuously enhance interprofessional teams to provide patient- and population-centered care that is safe, timely, efficient, effective, and equitable. (7.4) |
Third Year Learning Objectives
During the third-year clerkships, students will
- Demonstrate use of patient-centered interviewing and communication techniques (U.2)
- Take a clinical history that demonstrates both organization and clinical reasoning (U.7)
- Perform accurate and relevant physical exam techniques (U.2)
- Demonstrate an ability to synthesize clinical information and generate a differential diagnosis, assessment and plan (U.3, R2, U.5)
- Demonstrate a compassionate and patient-sensitive approach to history taking and physical examinations (B.3)
- Communicate well organized, accurate and synthesized oral presentations (C.1)
- Counsel and educate patients and families (C.3)
- Demonstrate timely, comprehensive and organized documentation (C.6)
- Demonstrate a fund of knowledge in the clinical discipline and apply this to patient care (U.4)
- Demonstrate an awareness of one’s own learning needs and work to address these gaps (E.1, E.3)
- Show respect and empathy for others (B.3)
- Demonstrate accountability to the responsibilities of the student’s role and expectations of a clinical clerk (S.4)
- Communicate effectively with the interprofessional team (S.9)

Neurology Clerkship Learning Objectives
(Linked to Medical Education Program Objectives in parentheses)

By the end of the Clerkship the student will be able to:

a. Demonstrate competency in performing and interpreting the neurological history and examination, i.e. the ability to recognize abnormal findings on the examination and put these together with the history to localize the lesion in the nervous system. (B.3, U.2, U.3, U.4, U.7, C.1, C.4)


c. Localize a lesion in the nervous system based on history and examination. (U.2, U.3, U.7)

d. Recognize the indications and the information obtained from routine neurological tests such as lumbar puncture, electroencephalography, electromyography, computerized tomography and magnetic resonance imaging. Also, to become familiar with the possible complications of these tests. (U.1, U.3, U.4, R.2, S.3, S.7)

e. Describe routine treatments for neurological diseases and the risks of these treatments. (U.4, U.5, R.1, R.3)

f. Describe how end of life, cultural competency, and domestic violence issues are addressed in neurologic patients. (B.1, B.3, U.4, C.2, C.7, A.4)

g. Discuss how health care disparities can affect underserved populations and impact medical care. (B.4, S.8, C.4)

h. Understand the indications and contraindications for performing LPs and know the general approach for performing LPs (B.1)
i. Consistently demonstrate professional behavior consistent with the values of the medical profession (A.1, A.2, A.3, A.4, A.5, A.6, E.7).

j. Be able to demonstrate effective telemedicine delivery, clinical skills and documentation (U.1, U.4, S.3, S.4, S.5)

Contact Information

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Clerkship Description

Focus of clerkship
The purpose of the third-year clerkship in Neurology is to provide the basics of neurological disease seen in inpatient and outpatient neurology settings. This Clerkship focuses in immersing the student to Neurology and prepare them for any encounter of Neurological disease in the student’s future career in any chosen specialty. The clerkship will teach the basics of taking a neurological history and performing an examination with the goal of localizing the lesion in the nervous system. It will also teach how to synthesize information from history and physical in order to produce a differential diagnosis and treatment plan. You will be exposed to the outpatient clinic where you will encounter chronic disorders and to the inpatient where you will be involved in treatment of acute neurological disorders. Students will also learn the indications and contraindications for performing LPs and know the general approach for performing LPs. In addition, the clerkship offers support to those considering Neurology as a future career.

Neurology is an expanding field with increasing treatment modalities and breakthrough in therapeutics including multiple sclerosis medications, deep brain stimulation in movement disorders or anti-sense-oligonucleotides for genetic diseases such as Spinal Muscular Atrophy to name a few.

What to Expect During the Neurology Clerkship
You will work in high volume ambulatory and inpatient practices of Neurologists and residency programs. In the course of the clerkship, you will:

- Learn how to complete a neurological examination in a timely manner, interpret the findings of the neurological examination and localize the lesion.
- Learn how to work in a large team and focus on patient care.
- You will be taking care of patients, working with your team, preparing for rounds, and keeping-up with reading assignments.
- You will understand the concepts of evidence-based medicine
- You will get exposure to lumbar puncture

How to Succeed
To successfully complete the clerkship, the student is required to do the following:

- Remain professional at all times
- Participate fully in ALL didactics, inpatient and outpatient setting
- Treat Neurophobia
- Be pro-active about seeing patients, Follow-up patient visits on your own time by reading and doing questions about the medical problems you see. This will help you retain and integrate everything you learn.
- 5-minute topic presentations on the floors
- Review your neuro-anatomy and radiology
- Practice your neurological exam whenever possible.
- Show interest and motivation.
- For the differential mention the most common, the most treatable, most dangerous and a couple of zebras
- Carry snacks in your white coat.
• Ask questions
• Read about the diagnoses your patients have IN REAL TIME (use the syllabus’ references and Ecurriculum guides)
• Do practice questions throughout the clerkship

**Pre-requisite knowledge and skills**
Students must have completed their second-year curriculum, attended the 3rd year orientation, and have taken the Step-I exam prior to taking this clerkship.

Students in the Clerkship are expected to have passed the first year Neurosciences Course and the Neurology section of Disease and Therapeutics in the Second year.

**Clerkship Changes Made Based on Feedback**
- Inpatient and outpatient balance
- Communication with preceptors before outpt sessions

**Diversity, Equity, and Inclusion Initiatives**
We begin at orientation by emphasizing our department’s commitment to providing and inclusive and welcoming environment for both learners and patients.

We have reviewed and updated the wording in our teaching clinical cases to ensure that they contain appropriate terminology and inclusive language. We have reviewed the wording used in faculty presentations for students to ensure that race is used in the context of it being recognized as a social construct rather than an inherent biological trait.

As a department we have adopted Health Equity Rounds (HER) in our department, this was an initiative created at BMC in 2016 by a group of residents, fellows and faculty, as a way to address the impact of implicit bias and structural racism on patient care and health outcomes. It is a case-based, interdisciplinary forum in which we explore implicit biases, structural racism, and their historical and present-day contexts and brainstorm systems-based solutions; these Rounds take place every 3 months.

In addition as a department we have instituted Town Halls on Addressing Racial Inequities to address diversity in our hiring process and other steps to advance equity, inclusion and anti-racism in our department and included routine Racial Equity and Anti-Racism Updates to faculty meetings to address equity in clinical care (working to improve access to translators and financial services), research (support research teams to identify and address causes of bias) and other internal practices (targeted outreach to underrepresented groups and faculty for recruitment).

**Other Recent Changes to the Clerkship**
- Updated written OSCE

**Site Information**
Site maps indicating the availability of student resources at our affiliate hospitals can be found under the Clinical Sites section of the Medical Education Office’s Student Resources page at [http://www.bumc.bu.edu/busm/education/medical-education/student-resources/#siteinfo](http://www.bumc.bu.edu/busm/education/medical-education/student-resources/#siteinfo).
Students in the 4-week Neurology Clerkship are placed on in-patient and outpatient services at:
- Boston Medical Center
- Mount Auburn
- West Roxbury & Jamaica Plain VA
- Braintree Rehabilitation Center
- Manchester VA
- Kaiser Permanente, California
- St. Elizabeth’s Hospital

Ambulatory experiences at all of these locations are obtained in either general and/or specialty clinics.

Any questions or problems during the rotation should be brought to the attention of the Site Coordinator as early as possible.

**Boston Medical Center**
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Site Director: Shuhan Zhu, MD, (617) 638-5380, shuhan@bu.edu
Site Administrator: Joseph Russo, (617) 638-5348, jnrusso@bu.edu

**Outpatient Clinic at Boston Medical Center**
All BMC students are required to complete 1-2 weeks in the outpatient neurology clinic.

This will be a mix of televisits and inperson sessions. If you are assigned to televisits, please email the attending 1-2 days before to coordinate, when emailing include the following:
- Your cell phone number
- Ask for the attending’s cell phone number
- Their televisit Zoom code (if they have one for seeing patients on Zoom)
- Ask to be assigned to call 1 patient/halfday from their schedule to call ahead of time

**Work flow for televisit:**
Please make sure you can see the schedule for the attending that you are working with. You would call the patient ahead of time before their scheduled visit to get history, you can ask the patient if they are able to use Zoom (if so give them the attendings code if you have it). At the time of their visit you would call the attending to discuss the patient by phone and then you can help call the patient and merge the call together or all get on Zoom together.

Write a note for televisit patients that you obtained history on

**Work flow for inperson visits:**
Please make sure you can see the schedule for the attending that you are working with.
Show up to your outpatient clinic at the **Shapiro Building on the 7th floor, Suite 7B** at 8:00 AM. You will report to the conference room in the clinic, as for where the attending you are assigned to may be working today (medical assistants can help). Introduce yourself to the attending.

**Expectations for outpatient:**
- Be well prepared to present your patient with a thorough history, relevant past medical history, ROS, medications, prioritized differential, and plan.
- If clinic is slow, research your patient(s) and their disorders, volunteer to take on more patients, or study independently.

*Note: For those students whose outpatient week is the first week of the rotation, you will not have clinic on that Monday (orientation day), or that Tuesday (didactic day). Your first day of clinic will be that Wednesday.*

**General Neurology Service at Boston Medical Center**

Some students will spend a portion of their neurology rotation on the general neurology service. The service pager is 6381.

Please go to morning report at 7:30am in the Menino 7 work room. After Morning Report, ask for the senior resident on general neurology to be assigned a patient to pre-round on and to coordinate on when rounds may be; sit down rounds will typically occur via Zoom for students to reduce crowding. Please ask for the senior residents’ **cellphone number and text them with your number**

Pre-rounding includes: checking with your resident regarding any overnight issues, seeing your patient with a focused history and exam, checking Epic for new labs or imaging, reviewing vital signs and notes from consults, seeing if there are any overnight event notes or consult recommendations in the chart, and checking telemetry at the nursing station, if applicable.

After pre-rounding, you will report back to the workroom for rounds, where you will present the patient that you have pre-rounded on. The time that rounds begin depends on the attending for that day. Pre-rounding runs from 8-9. In the afternoons if you are not in the process of seeing a patient, please go to Shapiro clinic areas/conference room or medical school to work on notes and reduce physical crowding, you may also use the small work room on 7E if it is free (note, this is a shared space so may not be free as assignments change through the year).

You will mainly keep in touch with the team through a group text, please make sure you are included or added to the group text or you can help start the group text by collecting cellphone numbers.

Throughout the course of the day, the neurology team will be paged about patients presenting with neurologic complaints in the emergency room. You may be asked to independently evaluate a patient in the ER. Neurology is consulted for a wide variety of reasons, but some of the most common include possible seizure, altered mental status, headache, dizziness, or focal weakness.

**Expectations**
- Pick-up at least one patient (approved by a resident) to present at rounds.
- Pre-round on your patient(s). Specific responsibilities are listed above. In general, be aware of the results in Epic for all vitals, labs, imaging, tests, notes left by consulted teams, overnight events, etc. for your patient.
- Be well-prepared to present your patient(s) succinctly during sit down rounds, with a prioritized differential, plan, and any updates.
- Take a thorough history (including relevant past medical history and medications) and perform a comprehensive neurologic exam for a consult in the emergency room. Present to a resident, fellow, or attending, and include a prioritized differential, and plan.
- Complete at least one H&P or progress note daily, and ask your resident or attending to evaluate and review it with you.
- Sometimes you may be able to witness procedures being done, such as lumbar punctures. Try to participate in such procedures, or assist your resident/attending, as needed.
- Research your patients or other interesting patients on the team if the service is slow, volunteer to take on more patients, teach on topics, or study. If there is work to do, you should be volunteering to help.
- **Weekends:** students will be scheduled for no more than 1 weekend of the clerkship if their scheduled days fall on a weekend

**Stroke Service at Boston Medical Center**

Some students will spend a portion of their neurology rotation on the stroke service, ranging from 1-2 weeks. The service pager is 3278.

Please go to morning report at 7:30am in the Menino 7 work room. After Morning Report, please call the stroke/general work room at 617-414-4221 and ask for the senior resident on general neurology to be assigned a patient to pre-round on and to coordinate on when rounds may be; sit down rounds will typically occur via Zoom for students to reduce crowding. Please ask for the senior residents’ **cellphone number and text them with your number**

*See General Neurology Service Expectations above for more information on pre-rounding.*

Rounds begin 9AM. On the stroke service, there will be a different attending every week. In the afternoons if you are not in the process of seeing a patient, please go to Shapiro clinic areas/conference room or medical school to work on notes and reduce physical crowding, you may also use the small work room on 7E if it is free (note, this is a shared space so may not be free as assignments change through the year).

You will mainly keep in touch with the team through a group text, please make sure you are included or added to the group text or you can help start the group text by collecting cellphone numbers

During the course of the day, the stroke team may be paged about patients presenting with a possible stroke in the emergency room or in the trauma bay. Stroke is consulted for a wide variety of reasons, but some of the most common include focal weakness or numbness, dysarthria, aphasia, changes in vision, or altered mental status. You will either see these acute patients independently or with a resident.
Expectations

- Pick-up at least one patient (approved by your resident) in the morning to present at rounds.
- Pre-round on your patient(s). Specific responsibilities are listed above. In general, be aware of the results in Epic for all vitals, labs, imaging, tests, notes left by consulted teams, overnight events, etc. for your patient.
- Be well-prepared to present your patient(s) succinctly during rounds, with a prioritized differential, plan, and any updates.
- Take a thorough history (including relevant past medical history and medications) and perform a comprehensive neurologic exam for a stroke consult in the emergency room. Present to a resident, fellow, or attending, and include a prioritized differential and plan.
- Participate in chief rounds by having a patient to present to Dr. Greer, the chief of the neurology department. Chief rounds are usually on Monday afternoons in the heart center, but refer to the emails sent by the department for the most up-to-date information. Usually only one student needs to pick a patient for that day. Dr. Greer will want to discuss the history, exam findings, and imaging for that patient, and may do some bedside teaching as well.
- Attend a stroke conference that may be held once a week. Ask your resident for instructions on location, time, and whether you should go.
- Complete at least one H&P or progress note daily, and ask your resident or attending to evaluate and review it with you.
- Research your patients or other interesting patients on the team if the service is slow, volunteer to take on more patients, teach on topics, or study. If there is work to do, you should be volunteering to help.
- **Weekends**: students will be scheduled for no more than 1 weekend of the clerkship if their scheduled days fall on a weekend

**Neurology ICU at Boston Medical Center**

Some students will spend a portion of their neurology rotation in the neurology intensive care unit for 1 week. The ICU service tends to be the busiest service and covers very complex patients. The service pager is 8000.

Report to the NeuroICU work room at 6:30am for signout and then pre-round in the ICU on your patient(s).
Please go to Morning Report from 7:30-8am in the Menino 7 work room

Rounds are at 8am or 8:30am depending on the attending for the week. See General Neurology Service Expectations above for more information on pre-rounding.

Rounds typically start after sign out and morning report, where you will present the patient you have pre-rounded on. This is the service where you will learn the most about medical management of your patients. The days tend to be long (7 am to 5 PM). In addition, you are expected to research management and treatment options for your patient. You serve as a liaison for your patient to other services and with the family. You may or may not write notes on your patient’s every day. In addition, you should be prepared to present short (2-10 min) presentations on topics related to your patients. These may be presented during rounds, after rounds, or during downtime.
Expectations:

- Pre-round on your patients and be prepared for rounds with ALL information from tests, images, consults, vitals, vent settings, ins and outs, and any other ICP or line information that is available.
- Know the pulmonary, cardiac, GI, GU, hepatic, and renal function of each patient assigned to you. On this service you will be managing not only the neurological aspects of your patients but ALL systems.
- Learn how to do coma and brain death examinations. Many of the patients will be intubated so you may have a chance to learn these.
- Research your patients or other interesting patients on the team if the service is slow, volunteer to take on more patients, teach on topics, or study. If there is work to do, you should be volunteering to help.
- **Weekends:** students will be scheduled for no more than 1 weekend of the clerkship if their scheduled days fall on a weekend.

**Neurosurgery at Boston Medical Center**

Some students will elect or be assigned to spend a portion of their neurology rotation on the neurosurgery service. Depending on scheduling, you may spend one day to one week on this service.

**One-Week Inpatient Rotation**

Clinical Expectations

1. Round daily (7th Floor Shapiro Building) with the neurosurgery house staff team in the AM
2. Attend at least 2 outpatient clinic sessions (9 AM- 5 PM)
3. Observe or participate in operating room activities at least 1 day
4. Take 1- night call with the house staff or round with the house staff on a Saturday or Sunday
5. Demonstrate at least one (1) neurological History and Physical and at least 1 neurological Exam to an attending neurosurgeon.

**One-Day Clinic Rotation**

Students are to report to the neurosurgery clinic (7th Floor Shapiro Building) at 9 AM on Thursday and will see patients with Dr. Holsapple. Students are expected to review patient records, interview new and follow-up patients, present patient information to the attending, construct and review a neurological differential diagnosis for each patient seen, demonstrate history and physical exam skills, review radiographs, and demonstrate at least one full neurological exam to the attending.

**Pediatric Neurology at Boston Medical Center**

Some students will elect or be assigned to spend a portion of their neurology rotation on the pediatric neurology service. These students will receive an email from Lan Ruan, the pediatric neurology coordinator, with specific instructions and a schedule.

If your first day on the pediatric neurology week is a Monday, you will begin on that Monday in the pediatric neurology clinic on the 8th floor of the Shapiro building, Suite 8C. Introduce yourself to the attending in clinic that you will be working with (listed on your schedule). Patients report to pedi neurology clinic for a variety of conditions and disorders, including, but not limited to: seizure management, migraine management, concussions, cerebral palsy, or autism. These patients may present for an initial work-up or evaluation, treatment, or for follow-up.
Please introduce yourself to the chief resident on Wednesday morning in the resident workroom at 7:30 a.m. before clinic starts. If this is not possible, then introduce yourself on Wednesday afternoon after clinic is over.

The chief resident will orient to the current in-patients. The chief resident will also assign you a presentation topic for Thursday or Friday. This can be a 10-15 minute brief talk.

The time for attending rounds will be decided at the start of each day. During the course of the day, the pediatric neurology team may be paged about patients presenting with neurologic issues in the emergency room. After rounds, you will see these consults with your resident. Work after rounds will include reviewing these patients’ records in Epic, speaking with patients and families about updates, and communicating the issues to the team. You may be expected to go and evaluate a patient in the emergency room alone. Pediatric neurology is consulted for a wide variety of reasons, but some of the most common include for possible seizure, altered mental status, or headache.

Expect to attend neuroradiology rounds on Friday afternoons, and EEG rounds, pediatric neurology grand rounds, and other educational lectures as scheduled throughout the week. The times will be listed on your schedule.

The attending on the service will be the point person and responsible for your evaluation. You can find the attending’s last name on your schedule (emailed to you by Lan Ruan) below the listed date.

Expectations

- Prepare a 10-15 minute presentation on both a topic and date approved by your chief resident.
- Prepare for outpatient clinic days by reading up on scheduled patients in Epic. The patients will be scheduled under the attending’s name.
- Take a thorough history (including relevant past medical history and medications) and perform a comprehensive neurologic exam, if asked to see a patient in the clinic or emergency room. Present to the attending, fellow, or resident, and include a prioritized differential and plan.
- Complete at least one H&P or progress note, and ask your resident or attending to evaluate and review it with you.
- Attend all scheduled teaching conferences including Grand Rounds, EEG rounds, and neuroradiology rounds on Thursdays and Fridays.
- Sometimes you may be able to witness procedures being done, such as lumbar punctures. Try to participate in such procedures, or assist your resident/attending, as needed.
- Research your patients or other interesting patients on the team if the service is slow, volunteer to take on more patients, or study. If there is work to do, you should be volunteering to help.

Boston VA: West Roxbury & Jamaica Plain

Jamaica Plain: 150 S Huntington Ave, Boston, MA 02130
West Roxbury: 1400 VFW Parkway, West Roxbury, MA 02132
Site Director: Dr. Jason Weller, Jason.weller@va.gov
Site Administrator: Nancy Caruso, (857) 364-6184, Nancy.Caruso2@va.gov
Site Coordinator: Jessica Kamholtz, jessica.kamholtz@va.gov
Credentialing: Marianne Kane, marianne.Kane@va.gov

Students will spend two weeks on the combined ward/consult service at the West Roxbury VA, (WR) and two weeks in the outpatient clinics at the Jamaica Plain VA, (JP). **Students return to BUMC for Tuesday didactic sessions.**

**Orientation:** In the afternoon after orientation at BMC, the students assigned to the VAMC will go to the JPVA, 6D, and meet with Dr. Weller. She will orient you to the schedule at the VA and you will go through a check in process and obtain computer access. Any questions regarding the VA may be brought to the site coordinator.

**Weekends:** students will be scheduled for no more than 1 weekend of the clerkship if their scheduled days fall on a weekend

**Parking:** Free parking is available at both the JP and WR sites. Shuttle buses run between BUMC and JPVA and WRVA. The ride is 10-15 minutes (depending on the traffic).

**Mount Auburn**
330 Mt Auburn St, Cambridge, MA 02138
Site Director: Dr. Priya Shastri, Priya.Shastri@mah.org
Site Administrator: Mary V. Hewitt, mhewitt@mah.harvard.edu

Students will participate in outpatient patient interactions with a focus on general neurology and multiple sclerosis. Students will also have the opportunity to participate in the inpatient neurology consult service. **Students are expected to return to BUMC for Tuesday didactic sessions.**

**Weekends:** in place of a weekend shift students will take a “latestay” to perform new consults that may be called in

**Parking:** Please check in with the Mouth Auburn coordinator, for more details.

**Braintree Rehab Facility (HealthSouth)**
250 Pond Street, Braintree, MA 02184
Site Director: Dr. Brigid Dwyer, Brigid.Dwyer@bmc.org
Site Administrator: Nikole Miller, nikole.miller@encompasshealth.com

Students will participate in a predominantly inpatient service with a focus on traumatic brain injury, stroke, and movement disorder inpatient rehabilitation. Students may also be exposed to the outpatient clinics if possible. **Students are expected to return to BUMC for Tuesday didactic sessions.**

**Weekends:** there is no weekend coverage expectations, to maximize clinical exposure students will take 1 late stay shift at Braintree where they will stay late and evaluate new admission patients up until 10:30pm
Parking: A car is needed but free parking is available at the hospital.

**St. Elizabeth’s Medical Center**
736 Cambridge St, Boston, MA 02135
Site Director: Dr. Margot Ebril-Lei, margarita.ebril-lei@steward.org
Site Administrator: Rachel Wiegand, Rachel.wiegand@steward.org, 617-789-2375

Students will participate in a mix of one week of outpatient followed by three weeks of inpatient training. Six neurologists will assist in the training and supervision of the student. The student will have the opportunity to work in the movement disorders and general neurology clinics. Additional participation in the epilepsy, stroke, and neuromuscular clinics may also be coordinated. On the inpatient service, the student will have the opportunity to evaluate patients in the ED, on the ward, and in the ICU. The student will see a wide range of patient types including stroke, epilepsy, neuroinfectious, neurotrauma, neurooncology, and patients with neurological issues related to systemic diseases to name a few. Students will work with residents and will participate in robust educational programming. Students interested in research will have an opportunity to participate in projects.

Weekends: students will be scheduled for no more than 1 weekend of the clerkship if their scheduled days fall on a weekend

Parking: Students can park the first day in Lot B and then will receive information on parking during orientation

**Manchester VA**
718 Smyth Rd. Manchester, NH 03104
Site Director: Dr. Jim Whitlock (director) – james.whitlock@va.gov, 603-475-4978; cell
Site Administrator: Sherri Henry, Sherri.Henry2@va.gov (603)-624-4366 x6663, 603-557-3386 (cell)
Sherry Thrasher, sherry.thrasher@va.gov, Cell 603-289-1800

Manchester VA Medical Center is an all outpatient facility where 3 clinically trained neurologists see a variety of neurological diseases on a daily basis.

Students will spend week #1 at BMC to obtain inpatient training and spending weeks 2-4 at Manchester VA for remainder of rotation which is outpatient.

The student will report to the second floor Specially Clinics, starting at 8–8:30 AM. We plan to have the medical student shadow at least 1 neurologist for much of the first week to learn the culture of patient management here. Following that, we expect the student to take probably 3 patients a day to evaluate on their own, performing complete history taking and neurological examination, formulating a differential diagnosis and plan of treatment. This will then be presented to the neurologist for that day, so that this information can be reviewed together and then the patient seen together. A note will be entered by both
student and physician for each patient seen. There should be adequate time at least 1 day prior to clinic, where the student can review the patient’s record he’ll see, so that some individual study will be helpful. In times when there may be a lighter patient load (rarely), students will have time to practice the normal neurological examination, spend time with Neuroradiology, Physiatry/Spinal Cord, the Botox Clinic and Sleep Medicine.

Kaiser Permanente Regional Campus, Silicon Valley (Santa Clara and San Jose)
Santa Clara: 700 Lawrence Expy, Santa Clara, CA 95051
San Jose: 250 Hospital Pkwy, San Jose, CA 95119
Site Director: Dr. Ted Tasch, Ted.S.Tasch@kp.org (408)-829-6350
Site Administrator: Sandeep Tumber, Sandeep.X.Tumber@kp.org (408)-972-3807

Students will participate in a mix of outpatient and inpatient Neurology patient interactions. Students have the option of Pediatric Neurology or other Neurology electives like MS, epilepsy, or neurosurgery at Kaiser Santa Clara or Redwood City. Please send Dr. Tasch your choice a few weeks in advance. As students will not be able to return to BMC for Tuesday didactics, that day will be dedicated to independent reading and didactic lectures recordings located on the Blackboard Learn site as well as logging into live broadcasts.

Weekends: depending on the schedule students will be scheduled for an afterhours experience which may consist of a late stay or weekend shift, students will be scheduled for no more than 1 weekend of the clerkship if they are scheduled for a weekend

Parking: Please discuss the parking situation once on site in CA.

Clerkship Schedules

Block Schedule
Block schedule dates for all clerkships can be located on the Medical Education website:
http://www.bumc.bu.edu/busm/education/medical-education/academic-calendars/

Didactic Schedule
Didactics happen every Tuesday. Didactics are in L210. A didactic schedule will be sent out in the beginning of the block, posted on Blackboard and sent out the Thursday before and the night before.

- Neurosurgery
- Pain: From Injection to Anatomy
- Cases 1-5
- Cases 6-10
- Presentations Part 1
- Presentations Part 2
- Stroke Fellow
- Pediatric Neurology
- Epilepsy Lecture
- Sleep Intro
- Neuro ICU
- Neuro Rehab
• LP SIM
• Neurological Exam Workshops/Bedside Skills
• Neuromuscular
• Case Discussion
• Movement Disorders
• MS/Neuro Opth
• Bedside Skills Teaching

Expectations
• Take a thorough history (including relevant past medical history and medications) and perform a comprehensive neurologic exam for a consult in the emergency room. Present to a resident, fellow, or attending, include a prioritized differential, and plan.
• Sometimes you may be able to witness procedures, such as lumbar punctures. Try to participate in such procedures, or assist your resident/attending, as needed.
• Research your patients or other interesting patients on the team if the service is slow, volunteer to take on more patients, teach on topics, or study. If there is work to do, you should be volunteering to help.

Holidays/Breaks
Thanksgiving: Wednesday, November 24, 2021 at 12PM – Sunday, November 28, 2021
Intercession: Thursday, December 23, 2021 – Sunday, January 2, 2022
Spring Break: Saturday, March 5, 2022 – Sunday, March 13, 2022

Other holidays that occur during specific blocks will be communicated by the clerkship director.

Holidays by Clerkship can be viewed on the Medical Education website at: http://www.bumc.bu.edu/busm/education/medical-education/academic-calendars/#clerkhols

Assessment and Grading

Clerkship Grading Policy

<table>
<thead>
<tr>
<th>HOW MUCH EACH PART OF YOUR GRADE IS WORTH:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinical Grade Percentage</td>
<td>60%</td>
</tr>
<tr>
<td>Shelf/Exam Percentage</td>
<td>25%</td>
</tr>
<tr>
<td>“Other” Components Percentage</td>
<td>15%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HOW YOUR FINAL WORD GRADE IS CALCULATED:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Honors</td>
<td></td>
</tr>
<tr>
<td>● &gt;=90% total weighted avg (this includes CSEF, Shelf, additional assignments), AND &gt;=63% on shelf, AND average of &gt;=2.5 in all CSEF domains</td>
<td></td>
</tr>
</tbody>
</table>
### High Pass
- >=80% total weighted avg (this includes CSEF, Shelf, additional assignments), AND >=63% on shelf, AND average of >=2.5 in all CSEF domains

### Pass
- >=70% total weighted avg (this includes CSEF, Shelf, additional assignments), AND >=63% on shelf
- OR average of <2.5 in any CSEF domain

### Fail
- <70% total weighted avg (this includes CSEF, Shelf, additional assignments)
- OR <63% on Shelf
- OR average of <1.5 in any CSEF domain

### HOW YOUR CLINICAL GRADE IS CALCULATED WITH THE CSEF:

<table>
<thead>
<tr>
<th>Clinical Honors</th>
<th>&gt;4.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinical High Pass</td>
<td>3.5-4.49</td>
</tr>
<tr>
<td>Clinical Pass</td>
<td>2-3.49</td>
</tr>
<tr>
<td>Clinical Fail</td>
<td>&lt;2</td>
</tr>
</tbody>
</table>

### SHELF/EXAM GRADING

| Exam minimum passing (percentile/2 digit score) | 63 (5th percentile national avg) |

### What is “Other” and what percentage is it worth?

<table>
<thead>
<tr>
<th>Student presentation</th>
<th>7%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professionalism, PPE adherence, FOCuS form, mid-clerkship form completion, passport and other required clerkship documentation</td>
<td>1%</td>
</tr>
<tr>
<td>Written OSCE</td>
<td>7%</td>
</tr>
</tbody>
</table>

### Other components that need to be completed in order to pass the clerkship

- Patient log
- 2 FOCuS Forms – 1 Interview Technique, 1 Physical Exam
- Duty Hour logs, mid-clerkship form completion, passport and professionalism

### Standard Clerkship Clinical Grade Procedures/Policies

- Preceptors will provide clinical evaluations that contain the “raw data” on the student’s clinical performance. Preceptors DO NOT determine the final “word” grade. You are encouraged to regularly ask for specific behaviorally-based feedback on your clinical skills from your preceptors. However, do not ask them what word grade you will get, as that is a multifactorial process of which the clinical evaluation is one component.

- The CSEF form will be used to numerically calculate your clinical grade: 1 to 5 points (depending on which box is checked) for each domain which will be averaged to give you a final score out of 5. Categories: Needs intensive remediation (1); Needs directed coaching (2); Approaching competency (3); Competent (4) or Achieving behaviors beyond the 3rd year competency criteria (5) to get a final number in each domain. This can be rounded to the nearest number using standard rounding for the CSEF domain and this is the box that should be checked (e.g. if an
average of 2.4 then the student should have needs directed coaching (2) checked off). Each CSEF will be weighted based on how long the student worked with each evaluator.

- **Clinical Grade:**
  - CSEF Clinical Grade Calculations should be made using the 0.1 decimal point in each domain (though the rounded number will be checked off on the final CSEF) to give a final number.
  - Any average of < 1.5 in any domain = an automatic fail for the clerkship
  - Any average of < 2.5 in any domain = an automatic pass for the clerkship and a meeting with the MEO for clinical coaching
  - >2.5 in all domains, standard rounding will be used
    - <2 = Clinical fail which will = a Final Grade fail for the clerkship
    - 2-3.49 = Clinical pass
    - 3.5-4.49= Clinical high pass
    - >4.5= Clinical honors

The clinical grade will be reported in the CSEF final narrative

- Primary preceptors at sites with multiple preceptors will collect evaluation data from the other clinicians with whom the student works. The primary preceptor will collate this data, and submit the final clinical evaluation.

### Clerkship Specific Clinical Grade Procedures/Policies

- The clinical grade will be worth **60%** of the final grade of the clerkship and will be calculated out of a 5-point scale from the CSEF
- The shelf is worth **25%** of the final grade of the clerkship. The 2-digit score will be used to calculate the numeric score out of 100.

### Guiding Principles – We strive to provide a grading system that is:

- Fairly applied – a system that we follow for all students.
- Transparent – students can clearly see the process by which the grade is derived.
- Recognition of success – the HONORS grade represents a performance of true distinction.
- Based on your absolute performance. There is no ‘curve’ or fixed percentage about who can/cannot get HONORS.
- Performance –based – what the student does and is reported- not based on potential.

Written OSCE will be administered on last Tuesday of the block. Students will go through 2 different clinical cases. Each case is composed of 3 different short answer sections that are worth 5 points each section (total of 15 points/case); time limit is 60min.

The grading preamble will be written as:

StudentName completed Neurology Clerkship at ___ from __ to __ and received a **FINAL GRADE** of _____ with a **Clinical Grade** of _____. The Final Grade is composed of: 60% Clinical Grade, 25% Shelf Exam and 15% for additional academic assignments (written OSCE, professionalism and presentation).
**Professional Conduct and Expectations**

Evaluation of a medical student’s performance while on a clinical clerkship includes all expectations outlined in the syllabus and clerkship orientation as well as the student's professional conduct, ethical behavior, academic integrity, and interpersonal relationships with medical colleagues, department administrators, patients, and patients' families. Student expectations include those listed below in professional comportment sections. If there are multiple professionalism concerns through a clerkship the student will not be eligible to receive honors on the clerkship. A student will be given feedback during the clerkship if their professional conduct is of concern. At the end of a clerkship, if a clerkship director determines that a student does not meet the professional conduct and expectations of the clerkship, a student will fail the clerkship. Any professionalism lapses resulting in either a clerkship fail or ineligibility to receive honors will require narrative comments by the clerkship director in the summative comments section of the final evaluation and the student will be given feedback in advance of the final grade form submission.

**Clerkship-Specific Failure and Remediation Policies/Procedures**

**Fail Clinical** – If the student Fails the clinical portion of the clerkship, or does not meet the standards for professionalism, the student must retake the clerkship in its entirety.

**Fail Shelf only** – For students who meet expectations for all grading elements except that they score < 5th percentile on the subject exam, they may retake the subject exam one time. If the student fails to meet > 5th percentile on the retake shelf exam, the student must retake the entire clerkship, including the shelf exam.

**BUSM Grade Review Policy**

BUSM’s Grade Reconsideration Policy is located in the Policies and Procedures for Evaluation, Grading and Promotion of Boston University School of Medicine MD Students: [http://www.bumc.bu.edu/busm/faculty/evaluation-grading-and-promotion-of-students/](http://www.bumc.bu.edu/busm/faculty/evaluation-grading-and-promotion-of-students/)

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**AME/Kaiser Core Faculty Direct Observation**

During the third year, students will be directly observed by their core AME (or Kaiser) faculty three times throughout the year. They will also submit one write up in their core AME/Kaiser faculty’s discipline, and one video of a session with an SP for review and feedback. At the end of the year, the core AME/Kaiser faculty will write a narrative summary describing the student’s growth trajectory and competency development in the observed domains. This narrative will be included as part of the End of Third Year Assessment (in addition to the EOTYA 6 station OSCE).

**Formative Assessments**

The purpose of formative assessment is to improve student learning by providing feedback on how well they are learning skills and content during the clerkship. Formative assessments are not included in the calculations of students’ final grades. Each clerkship has required FOCuS (Feedback based on Observation of Clinical UME Student) forms which must be completed by the mid/end of the clerkship. These forms will provide formative assessment through direct observation of CSEF behaviors. Each student is required to complete one interviewing technique and one physical exam FOCuS form on each clerkship.

We want to ensure that each student has the opportunity to perform a witnessed neurological exam and history taking, and encounter the required diagnoses.

1 of the 2 FOCuS forms should be completed before the mid-clerkship meeting. **These will be reviewed at your mid-clerkship meeting.** Both FOCuS forms will be uploaded to eValue by the shelf.
Formative Assessment and Feedback Policy
Boston University School of Medicine (BUSM) ensures that each medical student is provided with formative assessment early enough during each required course or clerkship to allow sufficient time for remediation. Formative assessment occurs at least at the midpoint of each required course or clerkship four or more weeks in length.


Mid-Clerkship Review
You and your clerkship director, site director or primary faculty/preceptor will complete the BUSM Mid-clerkship Evaluation form at the mid clerkship point.

The purpose of this evaluation is to give the student a chance to understand both their strengths as well as opportunities to improve. The feedback received at the mid-clerkship review is intended to allow the student to improve their clinical skills in real time.

Final Summative Assessments
The final summative assessment will be based on the clerkship grading policy and include a final narrative describing your overall grade, clinical grade, based on the CSEF (Clinical Student Evaluation Form), and other assessments, depending on the clerkship. The summative narrative must include a final summative statement regarding your professionalism on the clerkship (meet expectations or did not meet expectations) per the AAMC MSPE requirements. The final grade form summative narrative appears in your MSPE and is based on aggregate comments from your individual CSEFs and is written by a site director/clerkship director and is reviewed by the clerkship director before submission.

NBME Subject Examination
Students will take the Neurology NBME Subject Examination on the last Friday of the clerkship (unless otherwise communicated by the Medical Education Office). Students are given a reading day the day before the exam. Students do not report to their clerkship site on the reading day or the day of the exam. Students will be given 2 hours and 45 minutes to complete this exam. Shelf exam dates can be found in the 3rd year google calendar.

Shelf exams will be remotely proctored over Zoom for AY 2021-2022.

Shelf Exam Laptop Certification Process
Students must certify their laptops one week before the NBME Subject Exam and again on the day before the exam. Instructions are provided on the Alumni Medical Library website at: [http://www.bumc.bu.edu/medlib/services/computing/nbme/](http://www.bumc.bu.edu/medlib/services/computing/nbme/)

Exam Policies

Testing Center Policies
Make-Up Exams
Students needing to make up the exam or remediate only the exam portion of the clerkship must contact the Clerkship Coordinator to arrange for a make-up/remediation date. **Students may not take a make-up or remediation exam during any block they currently have a scheduled rotation.** Make-ups and remediation exams will typically be scheduled at the end of the third year blocks between mid-May and early June.

Roles and Responsibilities

Clerkship Director
- Oversee the design, implementation, and administration of the curriculum for the clerkship
- Create and maintain an appropriate learning environment, modeling respectful and professional behaviors for and toward students
- Ensure student and faculty access to appropriate resources for medical student education
- Orient students to the clerkship, including defining the levels of student responsibility necessary for required diagnoses and procedures
- Oversee teaching methods (e.g. lectures, small groups, workshops, clinical skills sessions, and distance learning)
- Develop faculty involved in the clerkship
- Evaluate and grade students
  - Develop and monitor assessment materials
  - Use required methods for evaluation and grading
  - Assure mid-clerkship meetings and discussion with students
  - Ensure students are provided with feedback on their performance
  - Submit final evaluations for students via eValue
- Evaluate faculty and programs via peer review and reports from the Medical Education Office and national reports
- Support each student’s academic success and professional growth and development, including working with students experiencing difficulties
- Participate in the BUSM clerkship peer review process
- Ensure LCME accreditation preparation and adherence
- Adhere to the AAMC-developed guidelines regarding Teacher-Learner Expectations

Clerkship Coordinator
- Support the clerkship director in the responsibilities provided above
- Create and maintain an appropriate learning environment, modeling respectful and professional behaviors for and toward students
- Maintain student rosters and clinical schedules
- Coordinate orientations and didactic sessions
- Liaise with site directors and administrators to coordinate student experiences across all sites
- Verify completion of clerkship midpoint and final evaluations for each student
- Monitor students’ reported work hours and report any work hours violations to the clerkship director
- Coordinate and proctor clerkship exams
Site Directors
- Create and maintain an appropriate learning environment, modeling respectful and professional behaviors for and toward students
- Orients students to the clinical site
- Sets student expectations for clinical encounters and discusses student role and responsibilities
- Supervises students by observing history taking, physical exam skills and clerkship specific required observations.
- Ensures formative feedback in an appropriate and timely fashion
- Delegates increasing levels of responsibility
- Meets with the student for the Mid-clerkship review
- Meets with the student for the final exit meeting
- Recognize students who have academic or professional difficulties and communicate this to clerkship leadership
- Collects feedback and evaluation data from all physicians who work with the student
- Evaluates students fairly, objectively and consistently following medical school and department rubrics and guidelines
- Ensure student and faculty access to appropriate resources for medical student education
- Adhere to the AAMC-developed guidelines regarding Teacher-Learner Expectations

Primary Clinical Faculty/Preceptors/Trainees
- Set and clearly communicate expectations to students
- Supervise students by observing history taking and physical exam skills, and document it on the FOCuS form
- Delegate increasing levels of responsibility to the student within clerkship expectations
- Maintain appropriate levels of supervision for students at site.
- Create and maintain an appropriate learning environment, modeling respectful and professional behaviors for and toward students
- Recognize student learning or professional difficulties and communicate to clerkship director directly in real time in person or via email or phone
- Give students appropriate and timely formative feedback
- Assess students objectively using the CSEF form
- Adhere to the AAMC-developed guidelines regarding Teacher-Learner Expectations

Supervision
Initially, the primary clinical faculty members should designate time to observe you performing: history taking, focused physical exam, clinical problem-solving and interaction with patients and patient education. Once the supervisor establishes the student’s level of confidence and competency, the student should be delegated increasing levels of responsibility in patient care, as appropriate. Although students may initiate a particular patient encounter on their own and without direct supervision, the faculty must at some point review the encounter with the student and inform the patient in-person that the student’s assessment and management plan has been reviewed and approved by the faculty. The faculty is ultimately responsible for the evaluation, treatment, management, and documentation of patient care. If students have concerns
regarding their clinical supervision, the site director and clerkship director should be immediately notified. Any supervision concerns should also be immediately submitted through the ATM link or directly to the Associate Dean of Medical Education.

**Supervision and Delegating Increasing Levels of Responsibility**

It is expected that the level of student responsibility and supervision will be commensurate with student’s competency and level of confidence. When the student arrives to a new setting, a faculty may wish to observe you for the first session. Thereafter, you should begin to see patients on your own. In the outpatient setting, **the student should initially perform 4-5 focused visits per day in the first week, increasing to 6-12 thereafter. In the inpatient setting, the student should initially follow 1-2 patients and increased to 3-4 thereafter.** When a student feels that they are being asked to perform beyond their level of confidence or competency, it is the responsibility of the student to promptly inform the preceptor. It is then the preceptor’s responsibility to constructively address the student’s concerns and appropriately restructure the teaching encounter to address the student’s learning needs.

**Under no circumstances should the following occur:**

- Patient leaves the office/hospital with never having had a direct face-to-face encounter with clinical faculty/supervising resident.
- Primary faculty gives “prior approval” for student to perform intervention (order labs, prescribe meds) without satisfactory review.
- Patient leaves office/hospital without being informed that assessment/management plan has been directly reviewed and approved by the faculty.
- Learning in which a student is expected to perform an intervention or encounter without the prerequisite training and/or adequate supervision.
- Student note provides the only record of the visit. Although all faculty see all patients, faculty must document that they were actually the person responsible for seeing and examining the patient.

**Intimate Exam Policy**

Students participating in an intimate exam with a patient (which includes, pelvic, genitourinary and rectal exam) must have a chaperone with them, irrespective of the gender of the patient or the student. Permission to participate in an intimate exam must be obtained by the supervisor in advance of the examination itself. The patient has the right to decline student attendance at any examination. If a student is unable to perform any intimate exam due to patient preference, the student’s evaluation will not be impacted and if necessary the clerkship director will provide an alternative experience.

**Physical Exam Demonstrations**

The demonstration of the physical examination on students should not be done by any supervisor of students including residents and attending faculty. Practicing the physical examination on students places them in a position where they may feel pressure to consent to something they may not feel comfortable with.

**Third Year Student**

To successfully complete the clerkship, the students is required to do the following:

- Remain professional at all times
- Participate fully in ALL didactics, inpatient and outpatient setting
- Present a 10 min PowerPoint presentation during Tuesday didactics
• Topics for presentations will be selected during orientation
• Complete an observed history and physical by an attending
• Complete an observed neurologic exam
• Complete an on-line stroke module
• Complete a Mid-clerkship evaluation
• Complete a patient encounter and procedure log in eValue, hand it in to the clerkship director during the mid-clerkship evaluation and to clerkship coordinator at the beginning of the shelf
• Take a weekend day call, site specific
• Complete FOCUS forms, 1 by mid-clerkship and the final 2 should be done by the shelf
• Complete all FOCuS forms and upload them to eValue
• Complete the LP Simulation
• Complete all required Patient Encounters

**Professional Comportment**

Students are expected to adhere to the AAMC-developed guidelines regarding Teacher-Learner Expectations, located on the Policies page, under “Academic Policies and Information” ([http://www.bumc.bu.edu/bsmu/files/2015/05/AAMC-Teacher-Learner-Expectations.pdf](http://www.bumc.bu.edu/bsmu/files/2015/05/AAMC-Teacher-Learner-Expectations.pdf))

Students are expected to be aware of and follow the site expectations on professional comportment, including, but not limited to, dress code and the use of phones, pagers, and laptops. Students must arrive on time at their site and for any scheduled sessions. Any missed sessions and absences must adhere to the Attendance & Time Off Policy.

Further, below are expectations for student professional conduct and behavior in the core clerkship curriculum. These include, but are not limited to:

• Treating and communicating with the clerkship team in a respectful manner.
• Engaging in the core curriculum and participating respectfully with peers and colleagues at all times.
• Arriving at clerkship didactic sessions on time and being present throughout sessions.
• Requesting faculty and resident evaluations in a timely manner.
• Reviewing and responding to e-mail requests in a timely manner.
• Returning borrowed clerkship materials on time.
• Handing in all assignments on time.
• Completing all logs and FOCuS forms by the clerkship specific deadline.
• Informing clerkship leadership and supervising faculty/residents of absences in advance of the absence.

Professional conduct will be reviewed at the mid-clerkship feedback session and students will be given feedback when professionalism concerns are identified on the clerkship. If students are not meeting expectations for professional conduct and behavior in the clerkship or there are concerns, students will be made aware of the concerns noted by the clerkship directors, clerkship coordinator, faculty or residents.
Ethical Behavior for Examinations and Mandatory Sessions

- Refrain from any conversation with your peers during exams and as you leave the L-11 testing space (when applicable), including within the vending room and elevator waiting area, until you are on the elevator.
- Refrain from leaving your computer camera view at any point during the examination. Any time where a student cannot be viewed, may result in failure of the examination.
- Don’t seek or receive copies of the examinations
- Signing in classmates, or signing in yourself and not staying for mandatory sessions is considered cheating and violations will be referred to Medical Student Disciplinary Committee

If you are aware of any violations of the ethical standards listed above, within the Student Disciplinary Code of Academic and Professional Conduct, or otherwise, report it to the Clerkship Director.

Student Evaluation of the Clerkship

Student feedback is a highly valued, critical resource for helping us continually improve our curriculum. Evaluation of learning experiences is a requirement of the Liaison Committee on Medical Education. To ensure that we have a representative amount of data on our courses and clerkships, all students are expected to complete an evaluation via eValue (www.e-value.net) for each of the courses/modules and their instructors. All evaluations are anonymous and aggregate data is only released to clerkship directors after grades have been submitted for the blocks. Please comment freely and honestly about your experience.

Blackboard

Students will have access to a Blackboard site for the clerkship. The site is listed under “My Courses” as Neurology Third Year on your Blackboard landing page.

On our Blackboard site you will find all contact information, your current block information and schedules, call information, clinic templates, assignments, didactics, study guides, and all BUSM policies.

Students who have questions about the Blackboard site or find that they do not have access to the site should contact the Clerkship Coordinator for assistance.

Blackboard Learn: https://learn.bu.edu/

Assignments

Case Presentations

Each student will provide a 10-minute talk on a pre-approved topic of their choosing during one of the didactic days. You will choose your topic and receive your assigned time slot during the first week.

- The informational portion of the talk should be no more than 8 minutes (8-10 slides) long.
- Two minutes are allotted for the question & answer portion of the talk
  - You will present 3 USMLE style questions based on your topic.
  - The questions should be original and in a USMLE multiple-choice format.
- Please practice so that you are not rushed. It is better to present less info effectively than to try to cover everything at lightning-speed.
- Dr. Zhu will evaluate your presentation on content, presentation skills, ability to answer audience questions, USMLE type question preparation, AND ADHERENCE TO THE 10 MIN TIME LIMIT.
• On the same day as the presentation, make sure to post your slides on Blackboard for the entire class.
• When evaluating the literature for your oral presentation focus on evidence-based medicine (EBM).
  o There is an excellent breakdown of levels of evidence for each article in our journal *Neurology*.
  o Remember that in general, the highest quality information comes from double-blinded placebo-controlled trials.

**Bedside Skills Session (BS)**
This is the direct one to one observation of students on history and neuro examination.

Attendings/Residents/Fellows are expected to observe the student perform a history and physical examination for half hour at a time. They should then complete the FOCuS forms on evaluating the interview and physical examination.

Each preceptor will observe each student for approximately 20 minutes. The preceptor will not be overseeing more than 2 students/session. The patients will have consented to participate in this session.

The goal of BS is to teach students how to obtain an effective interview and perform an accurate, focused and skillful Neurological examination in a timely fashion. The diagnosis and clinical reasoning will not be tested for this exercise.

**Patient Encounters/Case Logs**
Across the third year there are required patient encounters and procedures that must be logged whenever they are seen. To log the patient encounter, students must have participated in the history, physical exam, assessment and plan development of the patient.

**Required Patient Encounters (BUSM Core)**
[http://www.bumc.bu.edu/busm/education/medical-education/faculty-resources/](http://www.bumc.bu.edu/busm/education/medical-education/faculty-resources/)
Students should log every time they see any patient with the required patient encounter and continue to log throughout all clerkships.

**Required diagnoses**
*Only the patients whom the student saw independently and wrote a note on or seen on rounds and discussed in detail and the student has a very strong understanding of should be included*

• Weakness (focal/global)
• Headaches
• Dizziness/Lightheadedness
• Altered Mental status
• Loss of consciousness
• Memory Difficulties
• Seizures
• Gait/Movement abnormalities- abnormal gait
• Gait/ Movement abnormalities- tremor
• Numbness and Tingling
• Neck/Back pain
Required procedures

- Lumbar puncture discussion: will be done during didactics.
- EMG/EEG: discussion on rounds or in clinic with some understanding of subject matter would be sufficient

If the student does not get to see a patient with a required diagnosis or procedure, preparing a small presentation to your resident/attending pertaining to the diagnosis and/or procedure would be sufficient.

Alternative Patient Encounters

If a student has not been able to experience all patient encounters required for the clerkship, students must address any gaps in their patient encounters through an alternative experience. In this clerkship, the alternative experiences are case studies and simulation. Please see the Ecurriculum accompaniment to the clerkship.

Patient Encounter Log

Students are expected to log their patient encounters in eValue (www.e-value.net). Patient logs help the clerkship ensure that each student is seeing a diagnostically diverse patient population, an adequate number of patients, and performing a sufficient number of required procedures and diagnoses. The directions on how to log patient encounters can be found on the eValue help page http://www.bumc.bu.edu/evalue/students/. Students must bring a printed copy of their patient encounter and procedure log to their mid rotation feedback meeting.

Policies and Procedures for Evaluation, Grading and Promotion of Boston University School of Medicine MD Students
http://www.bumc.bu.edu/busm/faculty/evaluation-grading-and-promotion-of-students/

Collaborative Student Assessment System

Student Disciplinary Code of Academic and Professional Conduct
http://www.bumc.bu.edu/busm/faculty/medical-student-disciplinary-code/

Attendance Policies

On-site hours must be limited to 80 hours per week, averaged over a two-week period. Violations should be reported directly to the clerkship director or to an Associate Dean (Medical Education or Student Affairs). Time off requests must comply with the Attendance & Time Off Policy.

  - 3rd Year Excused Absence Form: https://wwwapp.bumc.bu.edu/MedPersonalDays/home/Index
    This is a mandatory request form, required for all absence requests-planned or otherwise. The school tracks all student requests. This form is online and must be completed-whether or not the request is approved. It can also be found on our Blackboard site under the “Course
Information” tab. You must notify Dr. Zhu, Joey & your site ASAP of all absences. The form is due no later than 2 days after the absence. All online requests will be sent to Joey.

Note: For requests that do not fall under the BUSM pre-approved categories, Dr. Zhu (& possibly your preceptor/s) will make the final approval decision.

- Work Hours: http://www.bumc.bu.edu/busm/education/medical-education/policies/work-hours/
- Religious Observance: https://www.bu.edu/chapel/religion/religiouslifepolicies/

Personal Day Policies
As part of becoming a professional, medical student should have the flexibility to address personal and professional needs at their discretion. In the clerkship year, as students transition to more of a professional work environment, they gain the responsibility of a working professional, yet do not have the agency to attend to their personal needs. As such, the Student Affairs Office and Medical Education Office have developed this personal day policy in conjunction with the clerkship directors for the core clerkship year. In addition to addressing issues of wellness and professional development, this policy will teach students the importance of time management and managing days off.
http://www.bumc.bu.edu/busm/education/medical-education/policies/personal-days-policy/

Clerkship Specific Blackout Dates
- Didactic Days – Every Tuesday

Scrubs Policy
http://www.bumc.bu.edu/busm/education/medical-education/policies/scrubs-policy/

BUSM Policies
In addition to the expectations listed above, all students are expected to adhere to BUSM and Boston University policies.
http://www.bumc.bu.edu/busm/education/medical-education/policies/

BU Policies and Student Support Services

Appropriate Treatment in Medicine
Boston University School of Medicine (BUSM) is committed to providing a work and educational environment that is conducive to teaching and learning, research, the practice of medicine and patient care. This includes a shared commitment among all members of the BUSM community to respect each person’s worth and dignity, and to contribute to a positive learning environment where medical students are enabled and encouraged to excel.
BUSM has a **ZERO** tolerance policy for medical student mistreatment.

Students who have experienced or witnessed mistreatment are encouraged to report it using one of the following methods:

- Contact the chair of the Appropriate Treatment in Medicine Committee (ATM), Dr. Robert Vinci, MD, directly by email (bob.vinci@bmc.org)
- Submit an online Incident Report Form through the online reporting system [https://www.bumc.bu.edu/busm/student-affairs/atm/report-an-incident-to-atm/](https://www.bumc.bu.edu/busm/student-affairs/atm/report-an-incident-to-atm/)

These reports are sent to the ATM chair directly. Complaints will be kept confidential and addressed quickly.


**Needle Sticks and Exposure Procedure**

**Boston University Sexual Misconduct/Title IX Policy**

**Boston University Social Media Guidelines**

**Learning Strategies and Tools**

**Recommended Texts**
- Greenberg, Simon and Aminoff, Eds, *Clinical Neurology, 7th Ed.*, Lange Series. It is available in the bookstore. There is a copy of the 6th Edition available through etexts, which will be fine to use. [http://www.bumc.bu.edu/medlib/resources/e-books/](http://www.bumc.bu.edu/medlib/resources/e-books/)

- **History and Neurologic Exam**
  - Drislane, F., et. al., *Blueprints in Neurology*, Blackwell Publishing.
  - Denny-Brown D, Tyler HR and Dawson, DM. *Handbook of Neurological Examinationand Case Recording*. Harvard University Press, Cambridge, MA.
  - DeJong, RN. *The Neurologic Examination*, Harper and Row, New York
  - Medical Research Council. *Aid to the Examination of the Peripheral Nervous System*

- **Differential Diagnosis, Management of Neurological Illness**
  - Bradley WG, Daroff RB, Fenichel GM and Marsden CD. *Neurology in Clinical Practice*, Vols I and II, Butterworth- Heinemann, Boston
  - Patten J. *Neurological Differential Diagnosis*, Springer-Verlag, New York

- **Mental Status Examination**
  - Strub, RL and Black WF. *Mental Status Exam in Neurology*, FA Davis, Philadelphia
• **Neurologic Localization**

• **Some Useful Journals**
  - *Neurology*
  - *Stroke*
  - *Annals of Neurology*
  - *Archives of Neurology, Clinical Neurophysiology*
  - *Journal of Neurology, Neurosurgery and Psychiatry*

• **Websites**: Many useful and fun websites are listed on [Blackboard](http://www.bumc.bu.edu/evalue/students/)

• **Study Apps**

**eValue Student Resources**
[http://www.bumc.bu.edu/evalue/students/](http://www.bumc.bu.edu/evalue/students/)

**Echo360/Technology**
Echo360 may only be used for streaming captured lecture videos; the videos may not be downloaded. Taking smartphone or digital pictures or videos of any part of the lecture in class, or at home, is similar to downloading and is not allowed. There are a number of reasons for this, including that students and/or the University may be liable for violations of federal copyright and privacy laws as a result of the use of copied material.

If you experience any technical problems, please report the issue in one of the following ways to generate an IT ticket:

• **Echo360 Related Issues**: Create a ticket on the Ed Media site ([http://www.bumc.bu.edu/bumc-emc/instructional-services/echo360/](http://www.bumc.bu.edu/bumc-emc/instructional-services/echo360/)): sign in and provide pertinent information that will enable an effective response. Have a link to the problematic video ready to copy/paste into this form.

• **Educational Technology Related Issues**: For assistance with technology supported by BUMC's Educational Media (e.g. ExamSoft), tickets can be created via their website at: [http://www.bumc.bu.edu/bumc-emc/instructional-services/report-an-educational-technology-issue/](http://www.bumc.bu.edu/bumc-emc/instructional-services/report-an-educational-technology-issue/)
• **Other Technology Related Issues:** For assistance with BU-wide technology, such as Blackboard, email an example (e.g. picture or very brief phone video) to ithelp@bu.edu with a descriptive subject line and give as many details as possible on the what, where, how you are using the service and what type of computer, browser, etc. along with type of student (i.e. BUSM III). Always include link(s) to or screen shots of where the issue is occurring.


**Tutoring**
Peer tutors may be requested via the Office of Academic Enhancement’s Peer Tutoring Program at: [http://www.bumc.bu.edu/busm/student-affairs_office-of-academic-enhancement/academic-enhancement/peer-tutoring-program/](http://www.bumc.bu.edu/busm/student-affairs_office-of-academic-enhancement/academic-enhancement/peer-tutoring-program/)

**Office of Disability Services**
Boston University is committed to providing equal and integrated access for individuals with disabilities. The Office of Disability Services provides services and support to ensure that students are able to access and participate in the opportunities available at Boston University. [https://www.bu.edu/disability/accommodations/](https://www.bu.edu/disability/accommodations/)

**Session Learning Objectives and Notes**

**Neurorehabilitation**
Brigid Dwyer, MD
By the end of the lecture students will be able to:

1. Identify common etiologies of brain injury and the physiologic underpinnings of disorders of consciousness
2. Describe the natural history of recovery in disorders of consciousness resulting from brain injury
3. Become familiar with the most relevant current and emerging interventions in Neurorehabilitation
4. Understand the implications of short and long term prognostic data after brain injury

**Management of Ischemic Stroke**
Stroke Fellows (rotating)
By the end of the lecture students will be able to:

1. Acute Stroke Management – identify the acute treatment options for ischemic stroke and determine which patients are appropriate for each type of therapy
2. Inpatient Stroke evaluation – identify common causes of ischemic stroke and understand the reasoning for each element of the inpatient workup
3. Secondary Stroke Prevention – understand appropriate prevention options based on different stroke etiologies

**LP SIMULATOR**
Dr Shuhan Zhu
By the end of this lecture students will be able to:

1. To become familiar with the contents of the LP kit
2. To understand the reasons, risks and benefits for performing an LP and how to properly consent a patient
3. To learn the LP technique and to become familiar with performing an LP on a mannequin
4. To understand which tests to order and how to interpret the results

**Emergency and Critical Care Neurology**
Rotating Neuro intensivist
By the end of this session, students will be able to:
1. Introduction to the role of the Neurointensivist
2. Understand the diagnostic and treatment considerations unique to emergencies involving diseases of the nervous system
3. Be familiar with the differential diagnosis and diagnostic and therapeutic approach to common neurologic emergencies

**Pain Medicine, Career and Wellness**
Dr Michael Perloff
By the end of this lecture, students will be able to:
1. Understand basic approach and principles to Pain medicine from a Neurology point of view
2. Understand Neuropathic pain distributions, and the approach to treating these
3. Approach to Medical school, with self, wellness, and success in mind

**Movement Disorders**
Dr Bissonnette
1. To be able to identify the cardinal motor symptoms and associated non-motor symptoms of PD
2. To be able to differentiate Essential tremor from Parkinson’s disease
3. To learn commonly used drugs that can cause tremor in patients