Neurology Syllabus

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Institutional and Clerkship Learning Objectives

Institutional Learning Objectives (BU CARES)

The BUSM Graduate:

- Behaves in a caring, compassionate and sensitive manner toward patients and colleagues of all cultures and backgrounds. (Patient Care and Professionalism)
- Uses the science of normal and abnormal states of health to prevent disease, to recognize and diagnose illness and to provide an appropriate level of care (Medical Knowledge; Patient Care)
- Communicates with colleagues and patients to ensure effective interprofessional medical care (Interpersonal and Communication Skills, Patient Care)
- Acts in accordance with the highest ethical standards of medical practice (Professionalism)
- Reviews and critically appraises biomedical literature and evidence for the purpose of ongoing improvement of the practice of medicine (Practice-based learning and Improvement, Medical Knowledge)
- Exhibits commitment and aptitude for life-long learning and continuing improvement (Practice-based Learning)
- Supports optimal patient care through identifying and using resources of the health care system (Systems-based Practice; Patient Care)

Clerkship Learning Objectives

(Linked to BU CARES in parentheses)

Neurology Clerkship Learning Objectives

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, U, C) (U.1(1.1), U2(1.2p), U2(1.2p), U3(1.4), U4(1.5), U7(2.1), B3(5.1), C1(1.2h), C4(4.1)

b. Assess, formulate a differential diagnosis and propose initial evaluation and management for patients with common neurological disorders. (U, R, S) (U3(1.4), U4(1.5), U5(1.6), U7 (2.1), U9 (2.3), R2 (3.6), R3(3.10), S3 (3.7), S4 (4.3)

c. Localize a lesion in the nervous system based on history and examination. (U) (U2 (1.2p), U3 (1.5), U7 (2.1)

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. (A, R, S, E) U1 (1.1), A2 (5.3), R2 (3.6), E3 (3.3), S2 (3.4), S4 (4.3), S7 (6.3)

e. Describe routine treatments for neurological diseases (for example, pulse intravenous steroids for the treatment of multiple sclerosis or plasmapheresis in the treatment of Guillain-Barre Syndrome) and the risks of these treatments. (U, A, R) U4 (1.5), U5 (1.6), A2 (5.3), A1(5.2), R2(3.6), R3 (3.10)
f. Describe how end of life, cultural competency, and domestic violence issues are addressed in neurologic patients. (B, U, S)  B1(2.5), B2(4.7), B3 (5.1), S10 (7.4), U4(1.5)
g. Discuss how health care disparities can affect underserved populations and impact medical care. (B, A, S)  (B4 (5.5), U9(2.3), S7(6.3), S8(6.4)
5. Demonstrate competency in performing LP Simulation (B1(2.5))
Contact Information

Clerkship Director
Okeanis Vaou
Email: okeanis.vaou@bmc.org
Pager: 0055
Office: Sleep Lab 6th Floor Newton Pavillion Rm 6

Associate Director of 4th Year Electives

Shuhan Zhou
Email: shuhan.zhou@bmc.org

Clerkship Coordinator

Alison O’Connor
Academic Coordinator
Telephone: (617) 638-5348
Email: amoconn@bu.edu
Office: Newton pavilion, Sleep lab, 6th floor, Room 4
Office Hours: M-Fr 8:30 AM-5PM

Clerkship Description

Focus of clerkship
This is Neurology for the General Practitioner. Patients with neurological disease are seen in all primary care and specialty offices. All physicians should
know the basics of taking a neurological history and performing an examination with the goal of localizing the lesion in the nervous system.

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.

Students in the 4-week Neurology Clerkship are placed on in-patient and out-patient services at Boston Medical Center, Mount Auburn, West Roxbury & Jamaica Plain VA, Braintree Rehabilitation Center, Manchester VA, Kaiser Permanente, California and St. Elisabeth’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.

**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.

Carry dried fruit, granola bars, or some sort of snack in your white coat. Oftentimes you will not have time to get meals on the wards/clinic and it is important to keep your energy up during these longer days.

Be pro-active about seeing patients! Follow-up these 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.

Review your neuro-anatomy and radiology! Memorize the circle of Willis.

Practice your neurological exam whenever possible. It is important that you become comfortable with all the sections of the exam as this will be key for recognizing pathology.

**Site Information**

**Site-Specific Overview**

Students will be assigned to East Newton (ENC), Menino Pavilion (MP), the Veteran’s Hospital (VA), Mount Auburn (MA), Braintree Rehabilitation Hospital, St. Elizabeth’s Hospital (SE) or Kaiser Permanente in California.
All BMC students are required to complete one clinical week in the outpatient neurology clinic.

Depending on the specialty of your attending, you will show up to your outpatient clinic at either 88 east newton, east wing (sleep clinic and movement disorders clinic**) or Shapiro Building on the 7th floor, Suite 7B at 8:00 AM. You will report to the conference room in the clinic. Introduce yourself to the residents there (on each day of the week you’re supposed to be there), and ask which patient(s) you should see alone, and then later present to that resident. You may also be shadowing the attending and/or residents. You may get to see procedures being completed in clinic. The patient schedule is listed in Epic by the name of the neurology resident/attending with scheduled patients for that day, and you should refer to it to look up the patient(s) you will be seeing either alone, or with a resident/attending. Alternatively you can find the patient list in Shapiro under SHA Neurology and at ENC under ENP Neurology. Usually the resident or attending will ask you to write a note.

Patients report to the neurology clinic for a variety of conditions and disorders. These patients may present for an initial work-up or evaluation, treatment, or for follow-up. It is your responsibility to plan the visit accordingly.

*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.

** Attendings located at 88 east newton: Drs. Bissonnette, Vaou, Saint- Hilaire, Ellias, Auerbach

Expectations:
- 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.

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 (1) 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 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 (1) 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.

(1) 7th floor Shapiro Building

General Consult Service at Boston Medical Center
Some students will spend a portion of their neurology rotation on the general consult service. You will receive an assignment of either the Menino or East Newton side. On the first day of your scheduled consult week, report to sign out rounds at 7am and then Morning Report at 7:30 a.m. held in 7th floor neurology workroom of Menino on 7W next to the service elevators. Your resident will help you choose a suitable patient who you will then pre-round on.

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 and general rounds begin at 9:30. After rounds are over, you will return to the workroom, and assist the resident with managing the patients on the neurology service as needed. Expect to work with an attending, fourth or third year resident, second year resident, and occasionally another third year student and/or sub-I(s).

During the course of the day, the neurology consult 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.

Expectation
• 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 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 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.

**Stroke Service at Boston Medical Center**

Some students will spend a portion of their neurology rotation on the stroke service, ranging from 2 weeks.

On the first day of your scheduled stroke assignment, **On the first day of your scheduled consult week**, report to sign out rounds at 7am and then Morning Report at 7:30 a.m. held in 7th floor neurology workroom of Menino (7W21). Then you will be expected to pre-round on a patient approved by your resident. See General Consult Service Expectations above for more information on pre-rounding.

Rounds begin 9AM. On the stroke service, there will be a different attending every week. After rounds are over, you will return to the workroom, and assist the resident and team with managing the stroke service as needed. Expect to work with an attending, stroke fellow, third year resident, second year resident, and sometimes another third year student and/or sub-I.

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.

**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. Pedi 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 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.

**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. You manage numerous patients and rounds can last half or the whole day depending on the patient census. The ICU team covers very complicated patients both in Menino and ENC.

On the first day of your scheduled ICU week, report to sign out rounds at 7am and then Morning Report at 7:30 a.m. held in 7th floor neurology workroom of Menino (7W21). At the conclusion of morning report, ask which residents are covering the ICU service, and introduce yourself. You will then look up your patients. If you cannot find the residents, Page 8000 and the team will let you know where they are and they will orient you to the service. Then you will be expected to pre-round on a patient approved by your resident. See General Consult 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.

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**West Roxbury & Jamaica Plain VA**

Site Director: Dr. Manisha Thakore Manisha.Thakore-James@va.gov

Site Administrator: Christina Bianchetto Christina.Bianchetto@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. Thakore. 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, Christina Bianchetto (Christina.Bianchetto@va.gov).

**Call:** Students at the VA are expected to take one weekend day call per rotation from 7:30am-9pm. Call schedules will be given during orientation
Parking: Free parking is available at both the JP and WX sites. Shuttle buses run between ENP and JPVA and WRVA. The ride is 10-15 minutes (depending on the traffic).

**Mount Auburn**
Site Director: Dr. Hreib, K Hreib, khreib@mah.harvard.edu  
Site Administrator: Elenore D’Agostino, edagosti@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.*

**Call:** Mount Auburn students will take call at BMC: one weekend day call per rotation from 7:30am-9pm. Call schedules will be given during orientation

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

**Braintree Rehab**
Site Director: Dr. Brigid Dwyer, Brigid.Dwyer@bmc.org  
Site Administrator: Savage, Linda Linda.Savage@healthsouth.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.*

**Call:** Braintree students will take call at BMC: one weekend day call per rotation from 7:30am-9pm. Call schedules will be given during orientation

**Parking:** A car is needed but free parking is available at the hospital.

**Kaiser Permanente**
Site Director: Dr. John Neely, John.D.Neely@kp.org  
Site Administrator: Sandeep Tumber, Sandeep.X.Tumber@kp.org

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. Neeley 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.

**Call:** Takes place as organized by Dr. Neely, 1 weekday day per rotation.

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

Site Director: Dr. Selbst, Richard.Selbst@va.gov  
Site Administrator: Sherri Henry, Sherri.Henry2@va.gov

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

**ST. Elizabeth's Medical Center (SEMC)**

Site Director: Dr. Anna Hohler, Anna.Hohler@steward.org  
Site Administrator: Maureen Walsh, Maureen.Walsh@steward.org

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.

**Call:** Takes place at BMC one weekend day of the rotation.  
**Parking:** Students can park the first day in Lot B and then will receive information on parking during orientation

**Clerkship Schedules**  
**Site-Specific Daily Schedules**

*ALL students at ALL sites will spend Tuesday at BMC (see below)*
Schedule for BMC(ENC/MP) Inpatient Service:

**Monday**
7:00am: Sign out and Morning Report, Menino Building 7W next to the service elevators (7W21)
2:00-3:00pm: Chief’s Rounds at bedside (depending on faculty availability)

**Tuesday (ALL STUDENTS ATTEND THESE SESSIONS)**
8:00am-9:00am: Neurology Grand Rounds Room L110
9:00am-5:00pm: Resident and Medical Student Lecture Series
*Session time and room assignments will be sent out in an email to students prior to the conferences*

**Wednesday, Thursday, Friday**
7:00am: Sign out and Morning Report, Menino Building 7W next to the service elevators (7W21)

**Note: All students at ENC and MP are to attend Morning Report*, except while on the outpatient portion of the Clerkship.**

*For the students are on the Pediatric Neurology rotation, the morning report takes place with that service in Dowling.

*The students on the Neurosurgery service will go to the Neurosurgery morning report.

**Schedule for VA Medical Center:**
(JP=Jamaica Plain site. WR = West Roxbury site)

**Daily**
8:00am: Morning report, Neuro Conf Rm 6D(JP), Resident Rm (WR)
*Note: This is a teleconference and both sites participate.*

**Wednesday**
2:30pm: Didactics with Dr. Moore, 1D-124 (Res Rm at JPVA)

**Thursday**
After clinic: Neuromuscular Cases with Dr. Thakore, 6D-116

**Schedule for Braintree, Mt. Auburn, and Kaiser:**
Students assigned to these sites will be given a schedule on their first day on site.

**Block Schedule**
Block schedule dates for all clerkships can be located on the Office of Academic Affairs website: http://www.bumc.bu.edu/busm/education/academic-affairs/academic-calendars/
**Didactic Schedule**

Didactics happen every Tuesday. Times and locations change weekly. 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 as a refresher.

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<th>Neurosurgery</th>
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<td>Cases 1-5</td>
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<td>Movement Disorders</td>
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<td>MS/Neuro Opth</td>
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<td>Bedside Skills Teaching</td>
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**Call Schedule**

**Call Day**

All students are required to complete one weekend call day from 7:30am-9pm. Call schedule will be determined during orientation.

Students rotating with Neurosurgery will take call with that group instead. No overnight call is expected.

**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, and include a prioritized differential, and plan.
● Sometimes you may 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.

Holidays
Specified by Registrar, can be located: https://www.bumc.bu.edu/bstm/education/academic-affairs/academic-calendars/

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

Evaluation and Grading

Clerkship Grading Policy

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<tr>
<th>HOW MUCH EACH PART OF YOUR GRADE IS WORTH:</th>
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<tbody>
<tr>
<td>Clinical Grade Percentage</td>
<td>50%</td>
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<tr>
<td>Shelf/Exam Percentage</td>
<td>30%</td>
</tr>
<tr>
<td>“Other” Components Percentage</td>
<td>20%</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>88.5%-100% **</td>
</tr>
<tr>
<td>High Pass</td>
<td>79.6-88.4% **</td>
</tr>
<tr>
<td>Pass</td>
<td>69.6-79.5 **</td>
</tr>
<tr>
<td>Fail</td>
<td>&lt;69.6% OR &lt;5% on the shelf or &lt;2 on Professionalism</td>
</tr>
</tbody>
</table>

SHELF/EXAM GRADING
Exam minimum passing (2 digit score) 65

What is “Other” and what percentage is it worth?
Student presentation 15%
FOCUS form, midclerkship form completion and professionalism? 5%

Other components that need to be completed in order to pass the clerkship
Patient encounter and procedure log
Hours logging
QI project
Call weekend day
Clerkship Specific Clinical Grade Procedures/Policies

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.
Discriminating- 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.

The CSEF score (a total of 52 points) will be converted to a score out of 100 to generate the
clinical grade. (Example CSEF score of 42 out of a total of 52 points correlates to 80.7 points
out of 100, which would count towards 50% of the final grade).

The CSEF grade is complemented by narrative description on the EValue form and by other
observations conveyed by instructors.

The Formal Evaluation of the Oral Patient Presentation is graded using standardized grading
rubric.

If the student scores > 5th percentile nationally on the initial attempt at the NBME Shelf Exam,
he/she is assigned points for the NBME Shelf Exam component of the final grade in proportion
to the 2-digit score.

*** Integrating the Clinical Performance Score into the Final Grade

The student will request evaluations from residents and faculty with whom they had a
meaningful encounter. A meaningful encounter would be at least a half day on the inpatient
wards or in clinic. The evaluations will be weighed depending on the number of sessions a
student spends with a preceptor/resident.

To achieve a final grade of HONORS, the student must achieve ≥88.5 Total Points, an average
CSEF score of ≥ 2.5 in “Management Planning Skills” and ≥ 3 in each other CSEF category. In
addition, the student must achieve a score on the shelf exam of 70 or above.

To achieve a final grade of HIGH PASS, the student must achieve 79.6 to < 88.4 Total Points, a
CSEF score of ≥ 2 in “Management Planning Skills” and ≥ 3 in each other CSEF category. The
student must pass the shelf exam.

To achieve a final grade of PASS, the student must achieve 69.6 to < 79.5 Total Points, and an
average CSEF score of ≥ 2 in each CSEF category, except for “Management Planning Skills”.
The student must pass the shelf exam.
Deriving the Final Composite Grade from the input. An example:

50% ---Clinical evaluation--- CSEF score 42 out of 52 is converted to score of 80.7 out of 100. The student received a CSEF score of \( \geq 2 \) in “Management Planning Skills” and \( \geq 3 \) in each other CSEF category.
30 % ---NBME shelf exam--- 84 points x .30
15 % ---Averaged score of the oral presentation, 100 x 0.15
5% - completion of passport: 100 x 0.5

\[
(80.7) \times 0.50 + (84) \times 0.30 + (100) \times 0.15 + 100 \times 0.5 = 85.5
\]

This student’s final (composite) grade for the clerkship is HIGH PASS.

**BUSM Professionalism Statement**

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. Any lapses in professionalism may result in a loss of up to 3% of the total possible clerkship points regardless of performance in other areas of the clerkship. Any professionalism lapses resulting in a loss of clerkship points will require narrative comments by the clerkship director in the professionalism comment section of the final evaluation and a discussion with the student.

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

If a student scores <36.4/52 on the CSEF or if a student receives a score of 1-1.9 (averaged score across evaluators) in any CSEF domain (except for “Management Planning Skills”), this may result in a failure.

**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 < 5\(^{th}\) percentile (63) on the subject exam, they may retake the subject exam one time. If the student fails to meet \( \geq 5^{th} \) percentile on the retake shelf exam, the student must retake the entire clerkship, including the shelf exam.

**BUSM Grade Review Policy**


**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 for students’ final grades.
**Mid-Clerkship Review**
Your preceptor will complete the BUSM Clinical Student Evaluation Form (CSEF), and any other communication received from your instructors and residents which will be reviewed with you by your preceptor, site director, or clerkship director.

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 clinical performance grade, a NBME performance grade and other assessments depending on the clerkship.

**NBME Subject Examination**
Students will take the Neurology Shelf NBME Subject Examination on the last Friday of the clerkship. Students do not report to their clerkship site on the day of the exam. Students will be given two hours and forty five minutes to complete this exam.

**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://medlib.bu.edu/computing/nbmelaptopcertification.php](http://medlib.bu.edu/computing/nbmelaptopcertification.php)

Exam Policies
[http://www.bumc.bu.edu/busm/education/academic-affairs/policies/exam-policies-for-medical-students/](http://www.bumc.bu.edu/busm/education/academic-affairs/policies/exam-policies-for-medical-students/)

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.

**Scheduled Exam Times- Shelf Policy**
NBME exams will be administered in the afternoon, due to a pattern of NBME technical difficulties. Students are expected to report for their exams per the start time provided by their clerkships. End times provided are approximate, based on starting the exam on time without any complications. NBME technical difficulties, personal laptop issues, and/or weather issues have the potential to substantially delay examination end times; students should take this into account when scheduling travel (flights or any other travel arrangements) after examinations. While it is the rare occurrence, NBME online difficulties have delayed end times by over 4 hours. The
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 E*Value
- Evaluate faculty and programs via peer review and reports from the Office of Medical Education 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

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
● Oversee teaching methods (e.g. lectures, small groups, workshops, clinical skills sessions, and distance learning)
● Develop site faculty involved in the clerkship
● Ensure student and faculty access to appropriate resources for medical student education
● Support each student’s academic success and professional growth and development, including working with students experiencing difficulties

**Preceptors**

● Set and clearly communicate expectations to students
● Supervise students by observing history taking and physical exam skills, and document it on the director observation form, i.e. Structured Clinical Observation (SCO)
● 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

**Residents and Fellows**

● Supervise students by observing history taking and physical exam skills
● Give appropriate and timely formative feedback
● Delegate increasing levels of responsibility to the student
● Recognize student learning or professional difficulties and communicate to clerkship site director
● Create and maintain an appropriate learning environment, modeling respectful and professional behaviors for and toward students

**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 a Neurology clerkship specific QI
- Complete an on-line stroke module
- Complete a Mid-clerkship evaluation
- Complete a patient encounter and procedure log in e-value, 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, 2 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 session

**List of required diagnosis:** only the patients who 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 simulation: 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 fails 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*

**Professional Comportment**

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 Clinical Student Time Off Policy.

Students are expected to review and respond to e-mail requests within 24-hours on business days. If students expect to be unavailable for any reason, they should enable their out of office message indicating that they are unavailable and when they are expected to return. *Please note: students who check only their BU or their BMC email, should ensure that email forwarding is set up to avoid missing communications.*

*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. Any lapses in professionalism in any of these areas may lower the final grade or result in a failing grade for the course regardless of performance in other areas of the clerkship. Any lapses in professionalism will be documented by the clerkship and forwarded to the Office of Student Affairs.

Professionalism Policy: http://www.bumc.bu.edu/busm/education/academic-affairs/policies/professionalism/

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, including within the vending room and elevator waiting area, until you are on the elevator.
- 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 E*Value (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.

The school considers the completion of course and clerkship evaluation to be part of a student’s professional responsibilities and essential feedback for the ongoing monitoring of the learning environment. To obtain adequate feedback, all students must complete at least 80%, per academic year, of their assigned evaluations of courses, modules, faculty, clerkships, and clinical sites. In order to obtain actionable feedback, evaluations must be submitted via E*Value within 10 business days of the completion of the module/course. Students are highly encouraged to complete evaluations after the completion of exams. When possible, faculty will provide time after the exam to complete evaluations. Evaluations not completed within seven days will be automatically removed and no longer available for completion by the student.

The Office of Medical Education monitors compliance rates multiple times a year and formally notifies students of their compliance rate quarterly. Students will be notified of delinquent
evaluations 48 hours before they expire. Students who have completed less than 80% of course evaluations at the end of a quarter will receive a warning email from the Director of Evaluation and Curriculum Management. If the compliance rate is less than 80% at mid-year, students will be expected to meet with either the Assistant Dean for Medical Education or the Associate Dean for Academic Affairs to develop a plan for improvement. Any student with less than 80% of course evaluation completed at the end of a full academic year will be referred to the Student Evaluation and Promotion Committee (SEPC).

**Blackboard**

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

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/](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. Vaou 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.
- **One 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).
  - There is an excellent breakdown of levels of evidence for each article in our journal *Neurology*.
  - Remember that in general, the highest quality information comes from double blinded placebo controlled trials.

**NBME Subject Examination:** All students at all sites are required to sit for the National Board of Medical Examiners Subject Examination in Neurology.
○ The examination will take place on the **last Friday morning** of the Clerkship unless it is a holiday in which case it will be given earlier. Details regarding exact time and location will be given during the block.

○ Students with special testing needs, as determined by the Office of Student Affairs, should bring this to the attention of the Clerkship Coordinator as early as possible and accommodations will be made.

○ **This is often a difficult examination and we suggest that you start studying for this examination during the first week of the rotation for maximal preparation.**

○ Students who score at less than the 5th percentile or score < 63 will need to re-take the exam.
  ○ If you fail the shelf exam, you get an automatic FAIL for the rotation with a chance to retake the shelf exam during an unoccupied block.
  ○ If you pass the shelf on the 2nd try, the highest grade you can receive for the clerkship is a PASS.

Feedback and Observation of Clinical (UME) Skills (FOCuS): **These are replacing the passports.** Students will need to print the form and have it completed by their faculty/resident and then will upload to e-value. Clerkships should expect students to complete at least 2 forms before mid rotation and bring to mid meeting so feedback can be reviewed and discussed with student. FOCUS forms are required.

○ We want to ensure that each student has the opportunity to perform a witnessed neurological exam and history taking, a lumbar puncture on the simulator, encounter the required diagnoses and participate in call.

○ **Two of the four FOCuS forms will be reviewed at the mid-clerkship meeting.**

○ All four FOCuS forms will be uploaded to evalue by the shelf

*Required Patient Encounters*

Students are expected to log their patient encounters in E*Value ([www.e-value.net](http://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.

*Alternative Patient Encounters*

If a student has not been able to experience all required patient encounters, students may address any gaps in their patient encounters by speaking with the Clerkship Coordinator and checking in at Mid-clerkships so all encounters can be organized and scheduled.

*Patient Encounter Log*

Students are expected to log their patient encounters in E*Value ([www.e-value.net](http://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.
Policies and Procedures for Evaluation, Grading and Promotion of Boston University School of Medicine MD Students

Collaborative Student Assessment System
http://www.bumc.bu.edu/bstm/files/2016/03/OAA_Collaborative_Student_Assessment_System.pdf

Student Disciplinary Code of Academic and Professional Conduct

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 (Academic Affairs or Student Affairs). Time off requests must comply with the Clinical Student Time Off Policy.

- Work Hours: http://www.bumc.bu.edu/bstm/education/academic-affairs/policies/work-hours/
  - Time Off Request Form: www.bumc.bu.edu/bstm/files/2015/06/Time-off-Request-Form.doc

Core Clerkship Personal Days Policy

Policy Statement

This personal day policy will define the procedures and expectations of students taking personal days during their required clerkship experiences.

Purpose

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, this personal day policy has been developed by the Office of Student Affairs, Academic Affairs 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.

Definitions

A personal day is defined as a day during a required clerkship in the third year when a medical student will be excused from the rotation and is not required to state why they are taking the day.

Procedure

BUSM 3 students are allowed two personal days in their third year. No more than one personal day can be taken on any individual clerkship. Personal Days should be requested as early as possible but not less than 4 weeks prior to the start of a clerkship. Requests made after that time will most likely be denied. Students must complete the following procedures in order to take a personal day.

Instances where personal days are restricted:

- Clerkship orientation day
- End of clerkship exam or OSCE
- Assignment in which a student has responsibilities that would impact the clerkship, i.e. overnight or weekend call. (Unless the student can make arrangements for coverage)
- Clerkship specific blackout dates that will be clearly outlined on the OAA website.

Steps that must be completed before personal day is granted:

- Student completes the on-line Core Clerkship Personal Day request Form, and indicates the clerkship and dates requested.
- The student attests that the personal day request does not fall on a day which the clerkship has defined as a blackout or restricted day.
- An email is automatically generated via the Registrar’s personal day database/system to the clerkship director or coordinator.
- The Registrar reviews the student’s Personal Day log and if the student has not previously used all personal days notifies via email the clerkship director and clerkship coordinator.
- The clerkship coordinator is responsible for confirming that the requested date does not fall in a restricted period and notifies the student that the request is approved and the service attending or preceptor that the student’s absence is approved.
Responsibility

Clerkship directors will not penalize students or make assumptions regarding interest when students take a personal day.

Students must understand that there are a minimum number of experiences required for valid assessment of their performance on a clinical clerkship. Students must meet all required experiences for a clerkship and as such, students will not be able to meet expectations of a third-year clerkship if too many days are missed. Total absences of more than 3 days in a 4 week third-year clerkship, 4 days in a 6 week third-year clerkship, or 5 days in an 8 week third-year clerkship will require notification to the Director of the Office for Medical Education, who in collaboration with the clerkship director and the Associate Dean of Academic Affairs determines if the clerkship needs to be repeated or if the missed time can be remediated. If there are concerns with multiple absences, the clerkship director will notify the Associate Dean for Student Affairs and Academic Affairs.

Neurology Block Out Dates: Didactic Days-Every Tuesday

Scrubs Policy
http://www.bumc.bu.edu/busm/files/2015/06/Scrubs-Policy.pdf

BUSBM 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/academic-affairs/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), Dean Paige Curran, directly by email (pkcurran@bu.edu)
● Submit an online Incident Report Form through the online reporting system  

These reports are sent to Dean Curran 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  
http://www.bu.edu/policies/information-security-home/social-media-guidelines/

Recent Changes to the Clerkship

The neurology clerkship has gone through some amazing changes in the last couple of years which has resulted in a more comprehensive and a rewarding learning experience for the students.

1. Site expansion:
   - We have added St. Elizabeth’s Hospital for the new academic year 2018-2019
   - We have added the Kaiser permanente site in San Jose, CA and expanded it to Santa Clara, CA in the academic year 2017-2018
   - We have added a Manchester VA site in the academic year 2017-2018
   - The Mount Auburn site expanded to 2 students per block with a new improved curriculum under the leadership of their chair Dr. Hrieb
   - The Braintree site has welcomed Dr. Bridgid Dwyer has already improved the student experience by creating a more streamlined introduction/orientation for the students and added to their education experience

2. Curriculum changes:
   - Added lectures to the student didactics to enhance the learning experience for the students
   - The residents and faculty will participate in Bedside Skills teaching, a direct one to one observation on history and neuro examination.
   - Revised Neurology Handbook
   - QI project
- Stroke on line module

3. Grading changes:
   - New CSEF form which will allow for more fair grading for the students to assess their clinical performance on the wards and in clinic
   - New requirements on the CSEF and the shelf in order to achieve an Honors/High Pass/Pass/Fail (please refer to specifics in the syllabus)
   - Professionalism policy updated

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. Link is: http://med-libwww.bu.edu/ebooks/

Pretest can be a very useful supplement to your textbook reading. NBME type questions closely match the difficulty of the Pre-Test questions. Students find it most helpful to go through each section leaving 50 sec or less per question. Students then grade each section and determine what areas of difficulty they are having. If they are getting <80% correct in any section they review this material in a textbook. Most students get through Pretest once in the first two weeks and again in the second two weeks.

When using Case Files and Blueprints please be aware that these resources have limited depth of information.

History and Neurologic Exam

Drislane, F., et. al., Blueprints in Neurology, Blackwell Publishing.
Denny-Brown D, Tyler HR and Dawson, DM. Handbook of Neurological Examination and 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*

**DVD:**
Dr. Jose Biller examination DVD

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

The Neurology Clerkship uses BlackBoard for, among other things:
Case studies that will be discussed in didactic sessions
Classic papers in Neurology
Useful Websites
Clerkship information

**Study Apps**

**E*Value 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: [https://www.bumc.bu.edu/busm/student-life/professional-development/academic-enhancement/peer-tutoring-program/](https://www.bumc.bu.edu/busm/student-life/professional-development/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. [http://www.bu.edu/disability/policies-procedures/academic-accommodations/](http://www.bu.edu/disability/policies-procedures/academic-accommodations/)

**Session Learning Objectives and Notes**

These are the CORE didactics that happen every block- but there are over 20 that happen.

**Neurology Didactic Lecture:** Neurorehabilitation

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<th>Brigid Dwyer, MD</th>
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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

**Neurology Didactic Lecture: Management of Ischemic Stroke**

Stroke Fellow

~45 minutes (will add material to target 50-55 minutes for next lecture)

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

**Neurology Didactic Lecture: LP SIMULATOR**

Clerkship Director

1.5 hours

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

**Neurology Didactic Lecture: Emergency and Critical Care Neurology**

Anna M. Cervantes-Arslanian, MD
Director of Neurocritical Care
Assistant Professor of Neurology and Neurosurgery

1 hour

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

Neurology Didactic Lecture: Pain backwards

Michael Perloff

60 min

1. Career choice pathways
2. Pain differential diagnosis
3. Occiput and cervical anatomy

Resiliency Curriculum Program

The mission of the Resiliency Curriculum is to guide students in creating a toolbox of skills to become more resilient in their roles as student doctors and future practicing physicians by discussing difficult topics such as patient suffering, death and dying, or medical errors in a safe and supportive environment through techniques such as reflection and appreciative inquiry with an underlying tone of preventing and proactively addressing burnout.

Learning Objectives

By the end of the clinical clerkship Resiliency Curriculum, students will:

- Define resiliency and burnout and key features associated with these topics in medicine
- Discuss and reflect upon issues challenging in the clinical years including death and dying, the hidden curriculum, ethical dilemmas, moral distress, and personal countertransference.
● Define strategies to maintain resilience in the face of challenges and failures including the capacity to make realistic plans, a positive view of self, confidence in strengths and abilities, skills in communication and problem solving, and the capacity to manage strong feelings and impulses.
● Practice using resiliency skills across clerkship educational sessions in the 3rd years

What you should expect?
A 50-90 minute long opportunity to discuss and reflect on challenges and experiences you and your peers have had during 3rd year with a faculty mentor facilitating the discussion

What should you not expect?
A venting session, other peers telling you what to do, judgement, being evaluated by faculty.

How can you prepare?
You will receive an email 3-5 days prior to your session. In that email there will be prompts and ideas to consider. We ask that you read the email and just think about an experience you or a friend has had in 3rd year. That’s it!

Please contact Katie Ivy [ivyk@bu.edu or 865-256-4466] if you have any questions, concerns or suggestions!

Neurology Clerkship Topic:
Coping with Medical Errors: Have you ever witnessed a medical error and wondered if it was handled appropriately? Have you ever made a medical error and not known how to cope with the feelings following it? We all make mistakes, and this session will give you the opportunity to reflect on medical errors and develop an understanding of how to cope with inevitable mistakes in the practice of medicine.