NSGY 852: General Neurosurgery Externship ASE

Course Director: William Vandergrift, MD
Email: vandergr@musc.edu

Course Coordinator: Teena Wyatt
Telephone #: 843-876-5053
Email: wyattt@musc.edu

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Block 1	2	**Block 3**	2	**Block 5**	2	**Block 7**	2	**Block 9**	2
Block 1A		Block 3A		Block 5A		Block 7A		Block 9A	
Block 1B		Block 3B		Block 5B		Block 7B		Block 9B	
Block 2	2	**Block 4**	2	**Block 6**	2	**Block 8**	2	**Block 10**	2
Block 2A		Block 4A		Block 6A		Block 8A		Block 10A	
Block 2B		Block 4B		Block 6B		Block 8B		Block 10B	

Does this rotation accept visiting students? ☒ YES ☐ NO

COURSE DESCRIPTION:
This externship will provide exposure to all facets of pediatric and adult neurosurgery. Students will rotate through the following services depending on preference and availability: brain, spine, pediatrics, functional and cerebrovascular. Students will have the opportunity to provide outpatient and inpatient preoperative and postoperative care. Through didactic teaching, care of patients in the clinic and in the hospital, and direct observation of neurosurgical procedures, students will become familiar with common neurosurgical disorders and methods of treatment.

LEARNING GOALS & OBJECTIVES: At the completion of this clinical rotation students should be able to do the following:
1. Work as a contributing member of a resident team including but not limited to participating in handoffs, calling of a consult, procuring informed consent, writing and communicating orders, preparing discharge summaries and orders. (PC4, PC6, CS1-5, PR1-5, IP1-4)
2. Demonstrate familiarity with common and uncommon neurosurgical pathologies. (MK1, MK4)
3. Perform an advanced neurologic examination. (PC1)
4. Perform a focused history for neurosurgical patients. (PC1)
5. List and interpret advanced imaging modalities for neurosurgical pathology. (MK5, PL2)
6. Develop an appropriate differential diagnosis for new patient encounters. (MK3, MK4, PC2)
7. Discuss advanced treatment options, possible complications, and followup strategies for surgical and non-surgical patient encounters. (MK 6, PC3, PC5, PD6, PL3, PL4, SL2)
8. Perform neurosurgical patient procedures under appropriate supervision. (PC7)

INSTRUCTIONAL METHODOLOGIES AND ROTATION ACTIVITIES: Students on this rotation will be expected to learn and achieve the educational goals and objectives through:
1. Complete an Externship Log documenting level of participation in key entrustable professional activities.
2. Direct observation and patient contact in outpatient clinics, hospital inpatients, and in the operating room.
3. Attendance at weekly neurosurgery and other assigned conferences.
4. Oral presentation on a neurosurgery topic of their choosing (15-minute platform presentation to include topic review, research presentation or interesting case presentation of value to neurological surgery).
5. One-on-one and/or group team discussions.

PATIENT ENCOUNTERS: Students will be expected to evaluate patients with:
1. Neurotrauma (brain and spine)
2. Degenerative spine
3. Neurovascular disorders
4. Neuro-oncology
5. Functional disorders
6. Epilepsy
7. Hydrocephalus

EVALUATION / FEEDBACK METHODS: Students will be evaluated using the following methods:
1. E*Value Clinical Performance Evaluation.
2. Daily verbal feedback from the course director, faculty and residents.
3. Midpoint feedback from course director or residents.

Will students be expected to participate in call? ☒ YES ☐ NO
One overnight call each week supervised by the upper level neurosurgery resident and attending. Student must also work 2 of the 3 weekends.

NSGY 860: Neuroscience ICU

Course Director: Edward Kilb, MD
Email: kilbiii@musc.edu

Unit Director: Charles Andrews, MD
Email: andrewscm@musc.edu

Course Coordinator: Teena Wyatt
Telephone #: 843-976-5053
Email: wyattt@musc.edu

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Block 2B		Block 4B		Block 6B		Block 8B		Block 10B	

COURSE DESCRIPTION:
This neurosciences ICU rotation will provide students with a thorough understanding of basic general critical care and neurocritical care concepts. The students are expected to read the critical care handbook that is provided to them. Students are expected to learn the fundamentals of resuscitating patients with severe acute neurologic injuries. Students will become familiar with airway management issues, respiratory management, circulatory support, management of increased intracranial pressure, and management of comorbid conditions seen in patients with acute neurologic injury. Students will be expected to become familiar with all critical care issues and instructed on imagining interpretation as it pertains to ICU patients. Students will observe and potentially perform invasive procedures

Students will participate in a **mandatory** orientation day to cover essential critical care subject matter. Participation is expected at all simulation-based procedural skills modules unless absence is excused. Students will be expected to work at least 20 shifts. Make-up dates for unexcused absences will take place the final weekend of the rotation and then at the discretion of the unit director. There is no expectation of night call, but it can be offered by the unit director as an integral learning experience or as make-up for unexcused absences. This rotation is recommended for students interested in neurology, neurosurgery, or medicine-based specialties.

LEARNING GOALS & OBJECTIVES: At the completion of this clinical rotation students should be able to do the following:
1. Assess a critically ill patient with neurologic/neurosurgical illness and develop a timely, prioritized, and evidence-based plan for initial stabilization. (PC1, PC3)
2. Apply knowledge to develop evidence-based clinical plans for critically ill patients, including appropriate use of hemodynamic monitoring, application of ventilator modes and settings, and initiation and titration of vasomotor support. (MK4, MK5, PC3, PC6)
3. Manage the most common neurologic emergencies requiring neurocritical care. (MK3, PC3)
4. Understand and discuss the contributions and limitations of diagnostic imaging (MRI, CT) and neurophysiological testing (EEG, MG/NCV) in the assessment of Neuro ICU patients. (PL2, CS1, CS4)
5. Learn and perform a complete neurologic exam and evaluation and management of patient with coma. (MK1, MK2, MK3, MK4, MK5, PC1, PC2)
6. Be able to obtain Informed Consent for diagnostic and therapeutic tests and procedures including verbalization of risks, benefits and alternatives. (PC3, PC7, ICS1, SBP3)
7. Participate in and potentially perform procedures under direct supervision, including placement of arterial lines and central venous catheters while learning proper sterile technique. (MK8, PC7)
8. Demonstrate effective and professional interpersonal and communication skills, and model ethical behavior. (CS1, PR1, PR2)
9. Demonstrate empathy and discuss end of life issues with the patient and family including giving bad news. (PC1, PC3, CS1, CS2, CS3, PR3, PR1, PR2)
10. Perform a basic family meeting to discuss goals of care including discussing and obtaining code status. (PC1, PC4, CS1, CS2, CS3, CS4, PR1, PR2, PR3)
11. Work within a multidisciplinary team on daily rounds as an effective team member including mitigating patient risk and early identification of potential medical errors. (PR1, SL4, IP2, IP3, IP4)
12. Understand quality improvement metrics in the ICU and the team's role in reducing hospital acquired infections including VAP, CAUTI, CLASBI, etc. (MK7, PR4, PL4, PL5, PL6, SL3, IP4)
13. Concisely summarize a patient's critical illness and hand off important clinical information efficiently to other team members and consultants. (CS1, CS5, IP1, IP2, IP3, PC6)
14. Demonstrate an understanding of the pharmacology of sedation in the ICU including the prevention and treatment of pain, agitation and delirium (MK2, MK3, MK4, MK5, PC3, PL4)
15. Demonstrate a knowledge of airway management devices including high flow nasal cannula, NIV, BVM, LMA and endotracheal intubation. (MK1, MK4, MK8, PC6, PC7, CS1, CS2, PR3, PL2)
16. Describe the basic aspects of antimicrobial treatment and rational use of anti-infective therapeutic agents, as well as the negative patient complications of antimicrobial overuse. (PC3, PC6, PL3, PL6)

17. Write complete and succinct systems based medical plan with H&Ps and daily progress notes in EPIC. (MK3, MK4, MK5, PC2, PC3, PC6, CS1, CS5, PR1, PR4, PR5)

INSTRUCTIONAL METHODOLOGIES AND ROTATION ACTIVITIES: Students on this rotation will be expected to learn and achieve the educational goals and objectives through the following methodologies and activities:
1. Students will participate in all aspects of care including initial assessment, diagnosis, management and patient/family communication and decision making for critically ill patients.
2. Students will be expected to present their patients on rounds, and patient-centered clinical and educational topics will be discussed
3. Students will receive instruction in ventilator management, central line use, and invasive and non-invasive hemodynamic monitoring.
3. Students will learn about pharmacotherapy in the ICU, including vasopressors, antibiotics, and sedatives, and analgesic medications.
4. Students will have the opportunity to learn about and potentially perform a variety of procedures, including central venous catheter placement, arterial catheter placement, paracentesis, and thoracentesis.
5. Students will attend neurosciences conferences and Grand Rounds as well as other assigned relevant conferences.
6. Students may be required to develop an oral, written, or small group presentation as assigned by unit director.
7. Students will attend and participate in didactic teaching session and simulation modules as part of the curriculum

PATIENT ENCOUNTERS: Students will be expected to work-up patients with conditions from all organ systems, including:
1. Acute cerebrovascular & neuromuscular emergencies requiring critical care
2. Post-operative neurosurgical patients
3. Status epilepticus patients
4. Head and spinal cord trauma
5. Brain tumor patients
6. CNS infections
7. Acute hypoxic/hypercarbic respiratory failure
8. Shock
9. Other neurologic conditions such as pain management, coma, encephalopathy and delirium

EVALUATION / FEEDBACK METHODS: Students will be evaluated using the following methods:
1. E*Value Clinical Performance Evaluation
2. Direct observation of patient care skills by the attending physician, fellows, and residents on service.
3. Attending physicians and fellows will provide students with a verbal evaluation at end of rotation.
4. Students will give their attending a mid-point evaluation form for performance assessment.