

Name of Rotation: Neurovascular ICU

Supervisor: Wade Smith, MD, PhD; Nerissa Ko, MD, MAS

Rotation Description: (one paragraph)

The NV-ICU service will care for cerebrovascular patients in the adult neurocritical care unit. The resident will have responsibility for inpatients on the service, and follow patients from admission through treatment and discharge from the ICU. A wide variety of acute cerebrovascular problems will be encountered and the resident will interact with the multidisciplinary team including vascular neurosurgeons and neurointerventionalists. Practical and didactic teaching sessions will supplement the patient care experience. The resident will also take part in the bimonthly journal club discussions of neurocritical care topics.

Core Competencies:

Patient Care-Resident is able to provide compassionate, appropriate and effective patient care for the treatment of health problems and promotion of health. Resident understands how to appropriately prioritize patient problems and develop an appropriate diagnostic plan, prescribes medications appropriately, shows an appropriate balance between attention to the details of patient care and the overall context of treating the patient's illness. Resident obtains consultations appropriately, and is able to perform technical procedures adequately, when appropriate.

Medical Knowledge-Resident demonstrates knowledge of established and evolving biomedical, clinical, epidemiological, and social/behavioral sciences as well as the application of this knowledge to patient care. Resident is able to assess diagnostic information critically and constructively, and recognizes the psychosocial aspects of illness. Resident is able to critically evaluate the medical literature and apply new knowledge to the delivery of safe and effective patient care.

Practice-Based Learning and Improvement- Resident is able to critically evaluate the care of their patients, appraise and assimilate scientific evidence, and continuously improve patient care delivered on the basis of ongoing self-evaluation and learning. The resident uses knowledge to educate patient families, medical students, allied health personnel, peers, and other health professionals as appropriate. Resident is capable of self-identifying strengths, deficiencies, and the limits of their knowledge and expertise. The Resident is receptive to constructive criticism (formative evaluation feedback) regarding the care of patients and physician performance. Resident is able to set learning and improvement goals, and identify and perform activities appropriate to meeting those goals.

Interpersonal and Communication Skills-The Resident demonstrates interpersonal and communication skills that result in effective information exchange and collaboration with patients, families and other health professionals.

These skills include the ability to communicate across a broad range of socio-economic and cultural backgrounds and ability to communicate with physicians, health professionals, and health related agencies effectively. Resident is able to maintain comprehensive, timely and readable medical records. Resident can work effectively as a member or leader of a healthcare team and serve appropriately as a consultant to other physicians and health professionals. Resident is able to clearly lead daily work rounds, when appropriate.

Professionalism- Committed to carrying out professional responsibilities and adhering to ethical principles. Resident demonstrates respect for patient privacy and autonomy and is accountable to patient, society and the medical profession for actions. Resident demonstrates compassion, integrity and respect for others as well as responsiveness to patient needs that supersede self-interest. The Resident demonstrates sensitivity and responsiveness to a broad patient population including diversity in gender, age, culture, race, religion, disability, and sexual orientation. Resident demonstrates the ability to manage personal stress effectively. Answer pages or messages in a timely fashion. Resident understands how to maintain appropriate professional boundaries, and demonstrates integrity, honesty and compassion. Resident completes assigned tasks in a timely fashion.

Systems-Based Practice-Resident understands and is capable to interact effectively with different systems of care. Demonstrates the ability to provide high-quality care in a cost-effective manner. Resident incorporates consideration of cost-awareness and risk-benefit analysis in patient care decisions. Resident advocates for high quality care for all patients.

Rotation Goals: (list 3 – 6 goals)

- Perform a detailed neurological history and physical exam of critically ill patients. (**Competencies Addressed:** Patient Care, Medical Knowledge, Practice-Based Learning and Improvement, Interpersonal and Communication Skills, Professionalism)
- Understand the indications and basic interpretation of monitoring and diagnostic testing in the ICU. (**Competencies Addressed:** Patient Care, Medical Knowledge, Practice-Based Learning and Improvement)
- Management of blood pressure in the NICU. (**Competencies Addressed:** Patient Care, Medical Knowledge, Practice-Based Learning and Improvement, Interpersonal and Communication Skills, Professionalism)
- Understand the clinical evaluation and treatment of neurological emergencies in the ICU, i.e. coma, hypertensive crisis, malignant stroke, cerebral edema, etc. (**Competencies Addressed:** Patient Care, Medical Knowledge, Practice-Based Learning and Improvement, Interpersonal and Communication Skills, Professionalism, Systems-Based Practice)
- Understand the pathophysiology, diagnosis and management of common neurovascular disorders including: ischemic stroke, hemorrhagic stroke, subarachnoid hemorrhage, and other cerebrovascular malformations. (**Competencies Addressed:** Patient Care, Medical Knowledge, Practice-Based Learning and Improvement, Interpersonal and Communication Skills, Professionalism, Systems-Based Practice)
- Understand patient management after neurosurgical and interventional procedures. (**Competencies Addressed:** Patient Care, Medical Knowledge, Practice-Based Learning and Improvement, Interpersonal and Communication Skills, Professionalism, Systems-Based Practice)

Rotation Objectives: (list 3 – 10 training objectives)

- Gain an introduction to the neuroanatomy and pathophysiology of acute cerebrovascular disease (**Competencies Addressed:** Patient Care, Medical Knowledge)
- Develop clinical skills in managing neurological emergencies (**Competencies Addressed:** Patient Care, Medical Knowledge, Practice-Based Learning and Improvement)

Improvement, Interpersonal and Communication Skills, Professionalism, Systems-Based Practice)

- Learn basic strategies for management of blood pressure in the ICU (Competencies Addressed: Patient Care, Medical Knowledge, Practice-Based Learning and Improvement)

Bibliography/Study List: (list 3 – 10 references). Electronic learning resources can be listed also. These references should reflect general educational materials within your field that is appropriate for a resident in training. High impact individual papers may comprise up to 3 references on the list.)

1. Mayberg, M.R., et al., Guidelines for the management of aneurysmal subarachnoid hemorrhage. A statement for healthcare professionals from a special writing group of the Stroke Council, American Heart Association. *Stroke*, 1994. 25(11): p. 2315-28.
2. Le Roux, P.D., et al., Predicting outcome in poor-grade patients with subarachnoid hemorrhage: a retrospective review of 159 aggressively managed cases [see comments]. *Journal of Neurosurgery*, 1996. 85(1): p. 39-49.
3. Sloan, M.A., et al., Sensitivity and specificity of transcranial Doppler ultrasonography in the diagnosis of vasospasm following subarachnoid hemorrhage. *Neurology*, 1989. 39(11): p. 1514-8.
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5. Kistler, J.P., A.H. Ropper, and R.C. Heros, Therapy of ischemic cerebral vascular disease due to atherothrombosis. (2). *New England Journal of Medicine*, 1984. 311(2): p. 100-5.
6. Kistler, J.P., A.H. Ropper, and R.C. Heros, Therapy of ischemic cerebral vascular disease due to atherothrombosis (1). *New England Journal of Medicine*, 1984. 311(1): p. 27-34.
7. Burchardi H. Aims of Sedation/Anesthesia. *Minerva Anestesiol* 2004 70:137-43. Gehlbach BK and Kress JP. Sedation in the intensive care unit. *Curr Opin Crit Care* 2002 8:290-98.
8. Hogarth DK and Hall J. Management of sedation in mechanically ventilated patients. *Curr Opin Crit Care* 2004 10:40-46.
9. Inouye SK. Delirium in older persons. *N Engl J Med* 2006 354:1157-65. Inouye SK et al. A multicomponent intervention to prevent delirium in hospitalized older patients. *N Engl J Med* 1999 340:669-76.