

Rotation Specific Goals and Learning Objectives

Neurology/Neurosurgical Intensive Care Unit

Patient Care and Procedural skills

- 1) Identify the need for and provide care for all critically ill adult patients in the Neurology/Neurosurgery ICU.
- 2) Identify adult ICU patients requiring chronic ventilatory support who will be appropriate candidates for intensive rehabilitation and long term ventilator weaning.
- 3) Improve resource utilization and maintain patient care quality by facilitating triage of patients to critical care and longer term ventilator weaning beds.
- 4) Gather accurate information about patients, including an appropriate history and physical examination.
- 5) Synthesize data into a prioritized problem list and differential diagnosis, then formulate diagnostic and therapeutic plans.
- 6) Manage patients with severe central nervous system dysfunction including those with intracranial hemorrhage, stroke, elevated intracranial pressure, subarachnoid hemorrhage, cerebral vasospasm, and CNS trauma.
- 7) Perform appropriate diagnostic or therapeutic procedures
- 8) Provide resuscitation, including advanced techniques to any patient sustaining a life-threatening event.
- 9) Select, place, and use appropriate invasive and noninvasive monitors for titrating therapy in any critically ill patient.
- 10) Organize and prioritize tasks in order to carry out management plans in collaboration with the residents in the NeuroICU.
- 11) Prioritize complex data to support patient care decisions and patient education. Use information technology (information and monitoring systems) to support these goals.
- 12) Use and help enforce advanced methods of infection control.
- 13) Use medication safe practice guidelines and determine cost-effectiveness of therapeutic interventions.
- 14) Work with and direct multidisciplinary critical care and rehabilitation teams including nursing staff, social workers, respiratory therapists, physical therapists, nutritionists, and pharmacists to provide patient-focused care.
- 15) Initiate consultation with other specialist physicians and delineate a joint clinical plan in managing complex ICU problems.
- 16) Initiate discussions involving ethical issues and patients' wishes in making treatment decisions, using advance directives, health care proxies, the Hospital Bioethics Committee, and using other methods.
- 17) Communicate effectively with caring and respectful behaviors with patients, families, and other involved members of the healthcare team about all treatment decisions and patient prognosis.
- 18) Support patients, their families, and other members of the healthcare team through the strain of critical illness.

Medical knowledge

- 1) Demonstrate an increasing fund of knowledge in the range of common problems encountered in the practice of critical care medicine and utilize this knowledge in clinical reasoning. The fellow should become familiar with the following:
- 2) Common and uncommon complication of neurosurgical conditions.
- 3) Evaluation of patients for acute surgical intervention.
- 4) Initiate, manage, and wean patients from mechanical ventilation using a variety of techniques and ventilators.
- 5) Direct the ventilatory care and make adjustments to ventilator settings for all intubated patients including use of new 'modes' of mechanical ventilation (e.g. Bilevel, APRV, and Tube compensation).
- 6) Know the indications/contraindications and use of non-invasive positive pressure ventilation in the critical care setting.
- 7) Treat cardiogenic, hypovolemic, and septic shock using state-of-the-art approaches.
- 8) Know the indications/contraindications and use of invasive monitoring techniques, pharmacological techniques for hemodynamic support and mechanical techniques for hemodynamic support.
- 9) Know the indications for, complications of, and be able to perform and supervise procedures germane to the NeuroICU (intracranial pressure monitors, electroencephalograms, thoracentesis, paracentesis, nasogastric tubes, central lines, arterial lines, pulmonary artery catheters).
- 10) Recognize the potential for multiple organ failure and institute measures to avoid or reverse this syndrome.
- 11) Identify life-threatening electrolyte and acid-base disturbances, provide treatment, and monitor outcome.
- 12) Diagnose malnutrition and use and monitor advanced nutrition support methodologies.
- 13) Know the appropriate use and monitoring of conscious and deep sedation and use of advanced pain management strategies.
- 14) Make informed decisions about diagnostic and therapeutic interventions based on patient information and preferences, up-to-date scientific evidence, and clinical judgment.
- 15) Interpret all radiographic studies performed in the NeuroICU including: 1) portable radiographics (e.g. chest and abdominal x-rays); 2) computerized tomography scans of head, chest, abdomen and pelvis; and 3) diagnostic and therapeutic ultrasound evaluations; 4) magnetic resonance imaging of the head
- 16) Know ACLS algorithms, how to ventilate a patient with a bag-valve-mask device, perform chest compressions, and perform cardioversion.
- 17) Understand principles of longer term weaning.
- 18) Know the principles pulmonary rehabilitation, physical rehabilitation and utilize them in the context of longer term weaning.
- 19) You should be able to cite current literature with regards to the above.

Practice-based learning and improvement

- 1) All fellows should understand their limitations of knowledge and judgment, ask for help when needed, and be self motivated to acquire knowledge.
- 2) Accept feedback, learn from own errors and develop self-improvement plans.
- 3) Use information technology to manage information and access on-line medical information.
- 4) Fellows should learn how to use knowledge of study designs and statistical methods for the critical appraisal of clinical studies, and how apply to this information to the care of patients.

Interpersonal and communication skills

- 1) Demonstrate caring and respectful behaviors with patients, families, including those who are angry and frustrated; and all members of the health care team.
- 2) Counsel and educate patients and their families.
- 3) Facilitate the learning of residents, students, and other health care professionals.
- 4) Demonstrate ability to convey clinical information accurately and concisely in oral presentations and in chart notes.
- 5) Demonstrate the ability to effectively communicate with the primary neurology or neurosurgical services and other consultants.

Professionalism

- 1) Demonstrate respect, compassion, and integrity.
- 2) Demonstrate a commitment to excellence and on-going professional development
- 3) Demonstrate a commitment to ethical principles pertaining to provision or withholding of clinical care, confidentiality of patient information, informed consent, and other aspects of clinical care.
- 4) Develop an appreciation for the ethical, cultural and socioeconomic dimensions of illness, demonstrating sensitivity and responsiveness to patients' culture, age, gender, and disabilities.

Systems-based practice

- 1) Work effectively with others (such as nurses, secretaries, nutritionist, interpreters, technicians) as a member of a health care team.
- 2) Supervision and teaching of residents and medical students rotating on the consult service.
- 3) Advocate for quality patient care and assist patients in dealing with system complexities.
- 4) Understand and appreciate the importance of contacting the patient's primary care provider at the time of consultation or soon thereafter.
- 5) Facilitate transfer and communication of patient information to the non ICU setting.
- 6) Fellows should develop proficiency in leading the health care team, organizing and managing medical care.
- 7) Learn the cost-effective use of diagnostic and therapeutic technology.