Learning Experience:

Learning Experience Leader:

Synopsis of Learning Experience:

PGY 1 Core Competencies:

Medical Knowledge:

1) The resident must develop a basic understanding of common neurosurgical disease processes, appropriate initial management, and need for neurosurgical consultation.

2) The resident must demonstrate knowledge of and skills in taking an adequate history and performing a fundamental neurological exam. This should result in logical conclusions regarding the presence of, nature, and location of neuropathology.

3) A minimum level of understanding should include:
   a) Diagnosing changes in level of consciousness, performance of voluntary motor function, and speech.
   b) Recognizing the significance of cranial nerve changes and their reflection on brain stem function.
   c) Identifying complaints differentiating spinal cord from spinal nerve injuries.

4) The resident is to demonstrate a basic understanding of neuroanatomy directed towards localizing lesions seen in the central and peripheral nervous system. A minimum level of understanding should include:
   a) Sensory, motor and language regions of the brain.
   b) General divisions of the cranial nerves; e.g. ocular, facial, pharyngeal, and visceral.
   c) Spinal cord and spinal nerve levels and their association with the spine.
   d) Peripheral nerve; e.g. brachial plexus, sciatic nerve.

5) The house officer must apply knowledge of neuroanatomy and neuropathology to decide on appropriate radiographic tests to order. This includes judicious use of:
   a) Plain X-rays of the skull and spine.
   b) CT scan of the head and spine.
   c) Cerebral Angiography and non-invasive angiography techniques.
   d) Magnetic Resonance Imaging of the head and spine.

6) The resident is expected to demonstrate knowledge of the initial work-up and basic principles in the management of neurological emergencies, such as:
   a) Closed and open head injuries.
   b) Intracranial hypertension.
   c) Acute hydrocephalus.
   d) Subarachnoid hemorrhage.
   e) Spine injury.

7) The resident is expected to demonstrate a basic understanding of the work-up
and management of elective neurosurgical cases, such as:
  a) Supra- and infra tentorial brain tumors.
  b) Pituitary tumors.
  c) Cerebral aneurysms
  d) Temporal lobe epilepsy.
  e) Herniated spinal disks.

**Patient Care:**
1) The resident must develop basic techniques in the evaluation and management of neurosurgical disease.

2) The resident is expected to demonstrate the ability to perform a basic neurological exam so as to differentiate brain, brain stem, spinal cord, or peripheral nerve pathology.

3) The resident is expected to demonstrate the ability to perform basic emergency procedures, such as:
   a) Immobilization of an unstable spine injury.
   b) Institution of hyperventilation, osmotic diuresis, and head elevation as initial management concerns in head injury.
   c) Placement of a burr hole.

4) The resident is expected to gain fundamental operative skills in the exposure and closure of neurosurgical wounds, such as:
   a) Tissue handling during opening of a cranial or spinal wound.
   b) Suturing techniques in closure of a cranial or spinal wound.
   c) Exploration of open cranial wounds to determine violation of the galea and/or presence of skull fractures and defects.

5) The resident is expected to assist, if appropriate, in common neurosurgical procedures, such as:
   a) Excision of a herniated spinal disk.
   b) Evacuation of an intracranial hematoma.
   c) Decompression of an entrapped peripheral nerve.

**Practice Based Learning and Improvement:**
The resident must participate in neurosurgery quality and performance improvement conference.

**Interpersonal and Communication Skills:**
The resident must maintain effective communications with the patient, family and support staff in an effort to provide optimal, multidisciplinary care of patients with illnesses that require neurosurgical intervention.

**Professionalism:**
The resident is expected to respond to the medical needs of patients under their care while teaching medical students the principles of surgical management of these patients.

**Systems-Based Practice:**
The resident must communicate with other services, therapy staff, and nursing staff in
the day-to-day management of patients on the neurosurgery rotations.