Neurological Surgery Residency Program
Columbia University Medical Center
Goals and Objectives NS 3

Upon completion of the NS 3 year, NS residents will be expected to meet the following educational goals and objectives:

**Patient Care**
- Accurately interpret complex laboratory and imaging tests
- Establish and implement complex patient management plans
- Acquire a solid knowledge base in Neurosurgical critical care
- Accurately interpret MRIs, angiograms, CTs, and myelograms
- With supervision of a preceptor, provide inpatient consultations
- Provide supportive and compassionate care to patients and their families

**Medical Knowledge**
- Demonstrate the ability to evaluate medical literature
- Demonstrate a detailed knowledge of the normal anatomy and physiology of the nervous system
- Demonstrate a detailed knowledge of disease processes of neurological importance including incidence, etiology, pathophysiology, natural history, differential diagnosis, investigation, management, prognosis, and complications
- Demonstrate an understanding of pharmacology appropriate to diseases of the nervous system

**Develop procedural expertise in the following areas:**
- Flap planning for craniotomy
- Incision planning for spinal surgery
- Incision planning for peripheral nerve surgery
- Opening of craniotomies or craniectomies
- Exposure of spinal lamina, dural tube, and nerve roots
- Hemostasis
- Closure of dura in head and spine
- Preparation & use of operating microscope
- Specific procedures:
  i) Carpal tunnel release
  ii) Insertion and revision of ventriculoperitoneal shunt
  iii) Ulnar nerve decompression or transposition
  iv) Elevation of depressed skull fracture
  v) Open brain biopsy
  vi) Cranioplasty
  vii) Sagittal synostosis repair
  viii) Spinal stimulators
  ix) Pump implantation
Practice-based Learning and Improvement
• Demonstrate ability to learn from complications

Interpersonal and Communication Skills
• Be able to work in a cooperative and sensitive manner with other healthcare personnel
• Be able to give and receive advice in an objective, mature manner
• Be able to communicate with patients and their families, explaining disease processes and treatment options, including benefits, risks, and possible complications in comprehensible terms

Professionalism
• Demonstrate knowledge of the ethical and legal aspects of neurosurgery
• Respect each patient’s right to privacy
• Demonstrate sensitivity to the sexual, ethnic, cultural and religious characteristics of patient and family
• Be honest, reliable, and respectful in working with patients and colleagues

Systems-based Practice
• Practice cost effective measures
• Incorporate evidence-based approaches