

Program goals and competencies for each year of training;

NS-1

Patient Care:

- Perform a neurological exam
- Triage of neurosurgical emergencies
- Execute pre-operative patient care
- Execute post-operative patient care
- Neurosurgical critical care management
- Interpret laboratory studies
- Identify neurosurgical and neurological conditions using imaging studies
- Perform critical care procedures under supervision (central line, ventriculostomy, ICP monitoring)
- Perform under supervision or assist in surgical procedures (burr holes, lumbar discectomy, shunt)
- Evaluate neurosurgical patients at the out patient clinic

Medical Knowledge:

- Develop clinical research
- Demonstrate the ability for Neurosurgery problem solving
- Demonstrate knowledge during the clinical and basic sciences conferences
- Demonstrate adequate medical evaluation
- Demonstrate good understanding of conferences and journal papers given

Practice-Based Learning and Improvement:

- Develop a complete approach to patient care
- Learn the basics of working in a team
- Develop his ability to learn from past experiences and from errors
- Demonstrate good critical evaluation during Morbidity and Mortality conferences

Interpersonal and Communication Skills:

- Develop good communication with the patients and families
- Develop good communication with his colleagues and other health professionals

Professionalism:

- Demonstrate his level of professionalism at all times

System Based Practice:

- Learn the process of health care system
- Learn the process of out patient clinic management

NS-2

Patient Care:

- Perform a neurological exam
- Teach the fundamental of the neurological exam to medical students and rotating physicians
- Triage of neurosurgical pediatric and adult emergencies
- Execute pre-operative patient care
- Execute post-operative patient care
- Neurosurgical critical care management
- Identify neurosurgical and neurological conditions using imaging studies
- Perform critical care procedures
- Perform under supervision or assist in surgical procedures (cervical discectomy, intermediate level craniotomy)
- Perform pediatric surgery under supervision that is appropriate to the resident's level of training
- Evaluate neurosurgical patients at the out patient pediatric and adult clinics

Medical Knowledge:

- Take the ABNS primary written examination for candidate experience
- Develop clinical research
- Prepare a peer review publication
- Demonstrate ability for decision-making
- Demonstrate knowledge during the clinical and basic sciences conferences
- Demonstrate adequate medical evaluation
- Demonstrate ability to evaluate medical literature during journal club papers

Practice-Based Learning and Improvement:

- Demonstrate an improving ability to learn from errors
- Demonstrate ability to learn from exposure to surgical procedures
- Demonstrate the understanding of teamwork in the management of neurosurgical critical care
- Learn the appropriate preparation and presentation of scientific publications and presentations

Learn the basic fundamental skill for an academic career

Interpersonal and Communication Skills:

Develop good communication with the patients and families
Develop good communication with his colleagues and other health professionals
Demonstrate a compassionate approach to patient counseling

Professionalism:

Demonstrate his level of professionalism at all times

System Based Practice:

Apply cost effectiveness to the clinical decision making skills

NS-3

Patient Care:

Perform a neurological exam
Teach the fundamental of the neurological exam to medical students and rotating physicians
Triage of neurosurgical pediatric and adult emergencies
Execute pre-operative patient care
Execute post-operative patient care
Perform under supervision or assist in surgical procedures (cervical discectomy, craniotomy)
Perform pediatric surgery under supervision that is appropriate to the resident's level of training
Evaluate neurosurgical patients at the out patient pediatric and adult clinics
Perform diagnostic cerebral angiography

Medical Knowledge:

Take the ABNS primary written examination for candidate experience
Develop clinical research
Prepare a peer review publication
Demonstrate ability for decision-making
Demonstrate knowledge during the clinical and basic sciences conferences
Demonstrate ability to evaluate medical literature during journal club papers
Demonstrate solid knowledge in Endovascular Neurosurgery
Demonstrate knowledge in Radiosurgical procedures
Demonstrate solid knowledge in Neuropathology

Practice-Based Learning and Improvement:

- Demonstrate an improving ability to learn from errors
- Demonstrate ability to learn from repeated exposure to surgical procedures
- Demonstrate the understanding of teamwork in the management of neurosurgical patients
- Learn the appropriate preparation and presentation of scientific publications and presentations
- Learn the basic fundamental skills for an academic career

Interpersonal and Communication Skills:

- Develop good communication with the patients and families
- Develop good communication with his colleagues and other health professionals
- Demonstrate a compassionate approach to patient counseling

Professionalism:

- Demonstrate his level of professionalism at all times

System Based Practice:

- Learn some concepts in practice management (coding, documentation, reimbursement)
- Demonstrate understanding of practice opportunities, fellowships
- Demonstrate understanding of medical economics

NS-4

Patient Care:

- Teach the fundamental of the neurological exam to medical students and rotating physicians
- Execute pre-operative patient care
- Execute post-operative patient care
- Perform under supervision or assist in surgical procedures (cervical discectomy, craniotomy)
- Perform pediatric surgery under supervision that is appropriate to the resident's level of training
- Evaluate neurosurgical patients at the out patient pediatric and adult clinics

Medical Knowledge:

- Develop basic science research
- Take the ABNS primary written examination for candidate credit if approved by the program director
- Prepare a peer review publication
- Demonstrate ability for decision-making
- Demonstrate knowledge during the clinical and basic sciences conferences
- Demonstrate ability to evaluate medical literature during journal club papers

Practice-Based Learning and Improvement:

- Demonstrate scholarship and scientific inquiry
- Demonstrate ability to work in an academic setting

Interpersonal and Communication Skills:

- Develop effective communication with the research team
- Develop good communication with the patients and families
- Develop good communication with his colleagues and other health professionals
- Demonstrate a compassionate approach to patient counseling

Professionalism:

- Demonstrate his level of professionalism at all times

System Based Practice:

- Learn some concepts in practice management (coding, documentation, reimbursement)
- Demonstrate understanding of practice opportunities, fellowships
- Develop the habit of scientific research if an academic career is planned

NS-5

Patient Care:

- Begin to direct ward care and clinic care in the absence of the chief resident
- Teach the fundamental of the neurological exam to medical students and rotating physicians
- Demonstrate ability to implement patient care plans
- Perform under supervision or assist in surgical procedures (cervical discectomy,

craniotomy)

Be responsible for a full trauma service

Evaluate neurosurgical patients at the out patient adult clinic

Medical Knowledge:

Teach junior residents

Demonstrate adequate medical knowledge to be promoted to chief resident

Take the ABNS primary written examination for candidate credit and pass with a score above 400

Prepare a peer review publication

Demonstrate ability for decision-making

Demonstrate knowledge during the clinical and basic sciences conferences

Demonstrate ability to evaluate medical literature during journal club papers

Practice-Based Learning and Improvement:

Demonstrate the ability to care for a full service of trauma patients under the guidance of a supervisor

Demonstrate an improving ability to learn from errors

Demonstrate ability to learn from repeated exposure to surgical procedures

Interpersonal and Communication Skills:

Develop good communication with the patients and families

Develop good communication with his colleagues and other health professionals

Demonstrate a compassionate approach to patient counseling

Professionalism:

Demonstrate his level of professionalism at all times

System Based Practice:

Demonstrate understanding of fellowships, practice types and practice opportunities

NS-6

Patient Care:

Demonstrate the ability to perform all major neurosurgical procedures

Demonstrate the highest level of patient care including treatment decision and technical skill

Manage and administrate the academic service under the supervision of the

program director
Lead the neurosurgery clinic and demonstrate the highest level of decision-making

Medical Knowledge:

Demonstrate the ability to teach effectively all residents
Demonstrate the ability to lead all academic activities
Administer the academic program under the supervision of the program director
Demonstrate knowledge during the clinical and basic sciences conferences
Demonstrate ability to evaluate medical literature during journal club papers

Practice-Based Learning and Improvement:

Manage a large complex clinical and academic service

Interpersonal and Communication Skills:

Develop a high level of communication with the program director
Develop a high level of communication with the teaching faculty
Develop good communication with the patients and families
Develop good communication with his colleagues and other health professionals
Demonstrate a compassionate approach to patient counseling

Professionalism:

Demonstrate his level of professionalism at all times

System Based Practice:

Demonstrate understanding of fellowships, practice types and practice opportunities.
Demonstrate understanding of the legal aspect of neurosurgical practice