

Neurological Surgery Resident Training Program Goals and Objectives for Ohio State University Medical Center

Each resident is required to obtain competence in the six areas of Core Competencies as defined by the ACGME and upon completion of their training program be performing to the level expected of a new practitioner. Each resident regardless of PGY level is evaluated on the following objectives:

PATIENT CARE (compassionate, appropriate, and effective for the treatment of health problems and the promotion of health)

Implement an effective plan of management.

Prioritize and stabilize multiple patients simultaneously.

Analyze Outcomes.

Provide health care services aimed at preventing health problems and maintaining health.

Respond appropriately to changes in patients' conditions and communicate to more senior physician(s).

MEDICAL KNOWLEDGE (about established and evolving biomedical, clinical, epidemiological and social-behavioral sciences and the application of this knowledge to patient care)

Generate a differential diagnosis and properly sequence critical actions for patient care, including management of complications, morbidity and mortality.

Synthesize and properly utilize acquired patient data.

Identify neurosurgical emergencies.

Understand how to treat neurosurgical conditions.

Incorporate evidence-based principles.

Exhibit knowledge that is up-to-date and cite literature appropriate for the PGY level.

PRACTICE-BASED LEARNING & IMPROVEMENT (investigation and evaluation of care for their patients, appraisal and assimilation of scientific evidence, and continuous improvements in patient care based on constant self-evaluation and life-long learning)

Identify strength, deficiencies, and limits in one's knowledge and expertise.

Set learning and improvement goals and activities.

Systematically analyze practice using quality improvement methods, and implement changes with the goal of practice improvement.

Incorporate formative evaluation feedback into daily practice.

Locate, appraise and assimilate evidence from scientific studies related to their patients' health problems.

Apply knowledge of study design and statistical methods to critically appraise the medical literature.

Utilize information technology to enhance their education and improve patient care.

Participate in the education of students, residents and other health care professionals.

INTERPERSONAL & COMMUNICATION SKILLS (effective information exchange and collaboration with patients, their families, and other health professionals)

Counsel and educate patients, families, and the public, as appropriate, across a broad range of socioeconomic and cultural backgrounds.

Involve patients in medical decisions.

Communicate effectively with physicians, other health professionals, and health related agencies

Effectively communicate with out-of-hospital personnel as well as non-medical personnel.

Demonstrate effective participation in and leadership of the health care team.

Develop effective written communication skills, maintaining relevant and legible medical records.

Strengthen listening and non-verbal communication skills.

Timely response to pages, inquires and completion of paperwork.

PROFESSIONALISM (as manifested through a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to patients of diverse background)

Treat patients/family/staff/paraprofessional personnel with respect.

Demonstrate sensitivity to patient's pain, emotional state and gender/ethnicity issues.

Discuss death honestly, sensitively, patiently and compassionately.

Maintain calm, even temperament.

Demonstrated adherence to a code of moral and ethical values-integrity, responsibility, accountability, and reliability.

Responsiveness to patient needs that supersedes self-interest.

Respect for patient privacy and autonomy.

SYSTEMS-BASED PRACTICE (awareness of and responsiveness to the larger context and system of health care and the ability to call effectively on other resources in the system to provide optimal health care)

Understand, access, appropriately utilize, and evaluate the effectiveness of the resources, providers, and systems necessary to provide optimal neurosurgical care.

Practice cost-effective health care and resource allocation that does not compromise quality of care.

Advocate, coordinate, and facilitate quality patient care and optimal patient care systems.

Understand principles of and advance practices for patient safety at the institutional level.

Participate in identifying system errors and implementing potential systems solutions.

Discharges patients in a timely and appropriate manner.

All residents are required to maintain and keep up to date with operative procedure and duty hour logs.

Residents attend neurological surgery and neuroscience conferences that have been constructed around an evidence-based educational process. The resident's assimilation of knowledge is assessed on an ongoing basis. Attendance records are monitored.

Residents have the opportunity to evaluate patients referred for elective surgery and to follow-up with their patients, both operative and non-operative assuring continuity of care in an outpatient clinic held one-half day a week. The office staff that attend clinic help to assign residents to patients they have previously seen to insure continuity of care especially with post-operative patients. Continuity of care is one of the requirements by the ABNS and the RRC. Under appropriate supervision, residents gain experience obtaining complete histories, conducting examinations, ordering and interpreting diagnostic studies, and arriving independently at a diagnosis and plan of management. This plan is then presented and discussed with the attending neurosurgeon. There is an active involvement in the pre-operative decision-making and subsequent operative procedures, as well as post-surgical care and follow-up evaluations. Skills are gained in assessing post-operative recovery, recognizing and treating complications, communicating with referring physicians, and developing the physician-patient relationship.

The program is six-years. (*Beginning with the residents starting their PGY1 year in July 2005, the training period will be seven years.*) The following outlines the general rotations and the progressive responsibility by PGY level. Individual residents may have some variations due to vacancies, individual needs or specific educational goals.

PGY-1: During this year (internship) each resident begins his/her clinical experience at The Ohio State University Medical Center. They rotate on a variety of services, including three months of Neurology (This fulfills The American Board of Neurological Surgery Neurology requirement for neurology training), three months of Neurological Surgery, and six months of fundamental surgery rotations in Pediatrics, Plastics, ENT, Critical Care, Trauma and Anesthesia. This includes education and experience with the inpatient care of the surgical patient, the development of basic history/physical techniques, fundamental surgical skills, and an outpatient clinical experience. During this year, the residents are introduced to the Neurosurgery service and begin, with senior resident, chief resident, and faculty guidance, to develop a strategy for their residency program. They are required to demonstrate the ability to obtain and document a complete history from the patient and/or caretaker. With moderate faculty input they can document major abnormalities in the physical and neurological examination.

PGY-2 & 3: Each resident rotates six months at The Ohio State University Medical Center and six months at Nationwide Children's Hospital. The goals and objectives with respect to the ACGME Core Competencies are nearly identical and these goals and objectives coincide with the responsibilities at that PGY level. In the PGY-3 year the resident has more surgical responsibility especially at NCH where the PGY-3, as the Senior Resident has the operating room as his/her primary responsibility. The PGY-3 is also expected to be more involved in teaching of students and juniors and presenting at conferences. He/she is expected to achieve these objectives with occasional input from the faculty or more senior residents. The expectation is that the resident will recognize limitations and ask questions appropriately.

PGY-2 & 3 GOALS AND OBJECTIVES:

Patient Care – The resident is responsible for the following:

- Perform and document comprehensive Neurosurgery history and physical and neurological examination from patient or caretaker
- With moderate faculty/senior resident input, describe and document major neurological and other abnormalities in the physical exam
- Understand and interpret indications for laboratory studies and imaging
- Reliably recognize evidence of neurological clinical decompensation and appropriately seeks assistance
- Reliably recognize non-neurologic chronic health conditions
- Understand when to initiate specific therapies, e.g. ICP monitoring, seizure medications, ventriculostomy, etc
- Write progress notes that identify important data and demonstrate thoughtful assessment and plan
- Perform and understand indications for lumbar puncture, arterial line placement, ventriculostomy, ICP monitoring devices
- Interpret skull, spine radiographs, CT scans of the head and spine, MRI scans of the head and spine and recognize serious conditions.
- Perform selected surgical procedures under direct supervision (lumbar discectomy, simple craniotomies for trauma, etc.) particularly positioning and opening and closing of cases
- Assist in major surgical procedures and perform those portions of such procedures (under supervision) that are appropriate for level of training
- These objectives are met with significant faculty/senior resident input

- Acquire necessary skills to diagnosis and perform Gamma Knife procedures. This includes pre-operative and peri-operative decision making, frame placement, and procedural performance
- Introduction to Endovascular Surgery
- Introduction to Stereotactic Radiosurgery

Medical Knowledge – The resident is responsible for the following:

- Develop accuracy in clinical evaluation skills
- Develop a solid foundation of knowledge in the specialties associated with each of the four rotations
- Demonstrate the foundation for clinical neurosurgery problem solving and decision making
- Present regularly at the Basic Science Conference
- Prepare and take the ABNS written in-service examination for self-assessment
- Take the Mock Oral Board Examination

Practice-Based Learning and Improvement – The resident is responsible for the following:

- Demonstrate an ongoing and improving ability to learn from errors
- Develop critical care, trauma care and technical skills
- Perform a clinical or basic research project that is appropriate for presentation at a national scientific meeting and for subsequent publication
- Develop fundamental research skills and finalize plans for elective time with a formal proposal
- Read about clinical presentations in Handbook of Neurosurgery by Mark S. Greenberg, MD for diagnosis and methods of management
- Seek and accept feedback from Faculty and Senior Residents

System Based Practice – The resident is responsible for the following:

- Demonstrate an understanding of practice opportunities, practice types, health care delivery systems and medical economics
- Develop the ability to phrase clear questions when consulting a medical subspecialist
- Recognize best practices for transitioning or sharing care with a medical subspecialist
- Effectively communicate with nurses and other professionals to optimize patient care
- Write clear and effective notes
- Appropriately transition patients to the next level of care with the help of the NPs and the PCRM's

Interpersonal Skills and Communication – The resident is responsible for the following:

- Effectively establish rapport with families and patients and initiate communication with them on a regular basis
- Present on rounds in an organized and articulate fashion.
- Appropriately communicate with other health care professionals.
- Function as an effective team member.

Professionalism – The resident is responsible for the following:

- Identify ethical issues
- Strive for patient care and knowledge excellence

- Reliably accomplish assigned tasks
- Demonstrate integrity

CLINICAL DUTIES OF PGY-2 & 3:

During the junior years, the resident is responsible for the primary care of the inpatient service under the direction of the chief residents and faculty. On a daily basis, the resident provides care for neurological surgery patients in primarily an inpatient clinical setting including seeing and staffing hospital consults, Emergency Department consults and management of patients in the Neurosurgical Intensive Care Unit. At University Hospital the resident is involved with the treatment of general neurological surgery patients and head and spinal trauma patients (operative and non-operative) with the primary focus of ICU management. Each rotation at the University Hospital encompasses the entire spectrum of both operative and non-operative neurosurgery. Because University and Children's are Level I Trauma Centers, there is significant training in trauma. The trauma experience includes: assessment and stabilization of the trauma patient, management of complex head and spine injuries, as well as peripheral nerve injuries, and intracranial pressure management. They will acquire an in-depth understanding of the pathophysiology and management of head injury, intracranial pressure, spine injury, and peripheral nerve injury.

The inpatient educational experience involves direct patient care, procedural training, and interaction with patients and families. Each PGY-2 & 3 spends 8 weeks taking in-house call as part of a monthly rotating night float system.

PGY-4 for residents starting their PGY-1 year prior to June 2005 (PGY4 & PGY5 for residents starting their PGY-1 year after July 2005): The resident spends this time period on electives/research. The resident spends the beginning of this rotation completing 3 months of Neuropathology and 3 months of Neuroradiology. They also develop the formal set-up of their approved project with their faculty mentor. The PGY-4 residents work with the Program Director to develop the Basic Science Lecture Series. There is on-call clinical responsibility, which enables the resident to maintain a "clinical touch".

PGY-5 & 6 for residents starting their PGY-1 year prior to June 2005 (PGY-6 & PGY-7 years for residents starting their PGY-1 year after July 2005): The goals and objectives for these 2 years are essentially the same.

PGY-5 & 6 GOALS AND OBJECTIVES:

Patient Care – The resident is responsible for the following:

- Demonstrate the ability to obtain and document an accurate and complete neurological history from the patient or the caretaker
- Accurately describe and document the objective neurological exam and teach the important aspects of the exam to the junior residents and students
- Reliably recognize the critical and acute aspects of the case and communicate these cogently to the faculty with a plan of management
- Reliably recognize neurosurgical emergencies and have the ability to communicate the urgency of an acute situation to all members of the team and guide them to respond appropriately
- Identify causes of a patient's failure to respond to appropriate therapy
- Independently initiate emergent and ongoing management strategies and notify the faculty
- Demonstrate the highest level of patient care skills, problem solving skills and technical skills
- Interpret radiologic studies at the level of an independently functioning general neurosurgeon and make and institute therapy, including surgery based on clinical and radiologic assessment

- Understand the indications and contraindications for surgical procedures including craniotomies for tumor, vascular lesions, infections and laminectomies both emergent and elective
- Teach procedural skills to junior residents including positioning of craniotomies, placement in head rests, special equipment needed, i.e. monitoring, fluoroscopy, etc., positioning for laminectomies, opening and closing skills
- Teach junior residents the indications for lumbar punctures, ICP monitors, ventriculostomy, management of neurosurgical trauma (cranial and spine)
- Critically analyze consultant recommendations and manage conflicting opinions of multiple consultants
- Demonstrate ability to perform all major neurosurgical procedures
- These objectives are often met independently with faculty approval and supervision

Medical Knowledge – The resident is responsible for the following:

- Instruct and nurture junior residents in critical care related procedures, intensive care unit, ventriculostomy, etc.
- Demonstrate ability to teach effectively
- Assist program director in overseeing personal, academic and clinical growth and development of junior residents
- Participate actively and lead conferences in a manner that demonstrates a high level of global awareness regarding clinical neurosurgery, applied research, an understanding of the literature, neurosurgical education and program building
- Have successfully passed for credit the ABNS in-service written examination. (Resident is not able to be promoted without successfully passing the examination.)
- Take the Mock Oral Board Examination. As a Senior and Chief Resident the level of knowledge and presentation is evaluated as though the examinee is sitting for the ABNS oral examination. Feedback to the resident reflects this level of expectation.

Practice-Based Learning and Improvement – The resident is responsible for the following:

- Manage and administrate the complexities of a large clinical and academic service
- Develop skills as program builder and an administrator of the neurosurgical service
- Be familiar with current neurosurgical literature and display this knowledge at Grand Rounds and on rounds
- Seek and accept feedback particularly at Morbidity and Mortality Conferences where he/she presents his/her management and surgical complications

System Based Practice –The resident is responsible for the following:

- Demonstrate understanding of legal issues in neurosurgery
- Demonstrate a high level of understanding regarding practice types, medical economics and medical politics
- Develop and demonstrate a high level of knowledge and skill in each of the subspecialties of neurosurgery
- Meet all the goals of PGY-1 through 5 and instruct junior team members on optimizing care at transition points

- Communicate with junior residents, PCRMs, NPs, floor and ICU nurses means of optimizing patient care and management with respect to timely and appropriate transfer and discharge

Interpersonal Skills and Communication – The resident is responsible for the following:

- Manage and administrate the complexities of a large clinical and academic service
- Develop skills as program builder and an administrator of the neurosurgical service and function as an effective team leader
- Deal with the most challenging patients and families and understand when it is necessary to obtain faculty involvement and teach this to the junior residents
- Provide teaching and feedback to the more junior team members on their communication styles
- Coordinate team communication between faculty, residents, PCRMs, NPs, floor and ICU nurses, and NS staff to optimize patient care

Professionalism – The resident is responsible for the following:

- Identify ethical issues and solve those using available resources
- Strive for patient care and knowledge excellence
- Reliably identify and accomplish necessary tasks
- Provide counseling on professionalism issues for more junior team members
- Demonstrate integrity
- Set the tone of respect and collegiality for the team
- Demonstrate a high level of understanding regarding practice types, medical economics and medical politics
- Develop and demonstrate a high level of knowledge and skill in each of the subspecialties of neurosurgery
- Develop, nurture and demonstrate a high level of leadership skills

CLINICAL DUTIES:

During the PGY-5 (or PGY-6) year, each resident rotates 6 months at University Hospital as a Senior Resident and 6 months at University East. University East is a satellite hospital that is under the umbrella of The Ohio State University Medical Center. One of our neurosurgeons, Dr. Gary Rea, operates primarily at OSUE. His specialty is degenerative spine. During the 6 month rotation at East, the resident is involved in a one-on-one mentorship relationship with Dr. Rea, operating and seeing patients in clinic with him. This gives the resident valuable time as a Senior to experience the full spectrum of the day to day responsibilities of a neurosurgeon.

During the PGY-6 year, twelve months are spent as Chief Resident at University Hospital. University Hospital is split into 2 separate services, LeFever (NS1) and Hunt (NS2). Each Chief Resident rotates 6 months on each service to give them a full 12 months of Chief Resident responsibility, required by the ABNS. The Chief Resident assumes a significant share of the responsibility for conference development and management. Hence, he/she plays a seminal role in resident, student, and faculty education. All faculty members, particularly the Program Director, mentor this leadership role. As part of this process, the Chief Resident directs the patient management and mortality and morbidity conferences, supervises and teaches the junior residents, and generates resident operating room responsibilities and assignments for their assigned service.

Each Chief Resident (PGY-6) acts as administrative Chief Resident for the program for 6 months of their chief year. This includes overseeing of additional administrative responsibility such as call and vacation schedules of all the residents.

Technical operative experience and clinical decision-making is gained and refined during these years. Residents are given significant autonomy at this level.

Revised January 2009

Using ACGME Program Requirements for Graduate Medical Education in Neurological Surgery
Effective July 1, 2009