

Neuro-Oncology Resident Rotation

Background. The past decade has witnessed significant strides in our ability to manage breast, lung, colon, and prostate cancer. These advances are a direct result of our improved ability to diagnose and treat these cancers. Unfortunately, the survival of patients diagnosed with the most common form of brain cancer has not improved, despite years of scientific investigation and numerous clinical trials. In the United States alone, there are over 17,000 new cases of malignant brain tumor diagnosed per year, and this figure has been increasing by 1-2% per year over the past decade. Unlike other cancers, brain tumors are often undetected until late and represent difficult tumors to completely remove and effectively treat with conventional therapies. In this regard, the majority of patients with malignant brain tumors die within 9-12 months despite aggressive treatment, and less than 3% survive more than 3 years.

Overall Goal. Provide an outpatient-oriented combined pediatric and adult neuro-oncology experience for adult neurology residents and pediatric neurology fellows.

Specific Objectives:

1. Attend multidisciplinary adult and pediatric neuro-oncology clinics and case conferences (tumor boards)
2. Attend adult and pediatric radiation oncology clinics
3. Attend neuropathology brain tumor review
4. Participate in subspecialty brain tumor clinics
5. Attend monthly brain tumor research conferences

Rotation coordinator. David H. Gutmann, MD, PhD (gutmannd@neuro.wustl.edu)

Weekly Schedule

Monday

- 8:30 am – 11:30 am Timothy Hullar, MD (ENT)
CAM 11th Floor
- 1:00 pm – 4:00 pm Keith Rich, MD (Neurosurgery)
CAM 6th Floor; Suite C (weeks 1 and 3)
- 1:00 pm – 4:00 pm Jay Huang, MD (Radiation Neuro-Oncology)
Lower Level CAM (weeks 2 and 4)
- 4:00 pm – 5:00 pm Adult Tumor Board
5th Floor McMillan Conference Room

Tuesday

- 8:30 am – 11:30 am Albert Kim, MD, PhD (Neurosurgery)
CAM 6th Floor; Suite C
- 1:00 pm – 4:00 pm Jeff Michalski, MD (Radiation Oncology)
Lower Level, CAM
- 5:00 Skull base conference
5th Floor McMillan Conference Room (2nd week)
- 5:30 pm Pituitary conference
Farrell Room 302A (3rd week)

Wednesday

- 7:00 am – 8:00 am Multidisciplinary Case Conference
5th Floor McMillan Conference Room
- 8:30 am – 10:30 am Pediatric Neuro-Oncology (2nd and 4th weeks only)
SLCH, 4th Floor; Neurosurgery Suite
- 1:00 pm – 4:00 pm Michael Chicoine, MD (Adult Neurosurgery)
Gerald Linette, MD, PhD (Neuro-Oncology Consultations)
CAM 6th Floor; Suite C

Thursday

- 8:00 am – 10:00 am Pediatric Neuro-Oncology
SLCH, 4th Floor; Neurosurgery Suite
- 10:00 am – 3:00 pm Neurofibromatosis Clinic (2nd and 4th weeks only)
SLCH, 2nd Floor; Suite D

10:00 am – 3:00 pm Stephanie Perkins, MD (1st and 3rd weeks)
Pediatric Radiation Oncology
SLCH, 4th Floor; Neurosurgery Suite (morning)
Lower level, CAM (afternoon)

3:30 pm – 4:30 pm Pediatric Tumor Board
SLCH, 4th Floor; Neuro-Oncology Offices (across from clinic)

Friday

8:30 am – 12:00 pm Joseph Simpson, MD (Adult Radiation Oncology)
Lower Level, CAM

1:00 pm – 5:00 pm David Tran, MD, PhD (Medical Neuro-Oncology)
CAM 7th Floor; Suite C

NOTE: If a clinic is cancelled, you could use the time for reading or to attend another clinic. Many of the attending physicians have additional clinic days.

| | MONDAY | TUESDAY | WEDNESDAY | THURSDAY | FRIDAY |
|------|---|--|--|--|--|
| 7am | | | Multidisciplinary Case Conference McMillan 5th Floor | | |
| 8am | | | | | |
| 9am | Timothy Hullar, MD (ENT) CAM 11th Floor | Albert Kim, MD, PhD (Neurosurgery) CAM 6th Floor; Suite C | Pediatric Neuro-Oncology SLCH, 4th Floor (Neurosurgery) (2nd and 4th weeks only) | Pediatric Neuro-Oncology SLCH, 4th Floor (Neurosurgery) | Adult Radiation Oncology Lower Level; CAM Joseph Simpson |
| 10am | | | | Neurofibromatosis Clinic Suite D, SLCH (David Gutmann) 2nd and 4th weeks only | |
| 11am | | | | | |
| 12pm | | | | | |
| 1pm | Adult Neurosurgery (Keith Rich) CAM 6th Floor; Suite C (1st & 3rd weeks) | Jeff Michalski, MD (Radiation Oncology) Lower Level, CAM | Adult Neurosurgery (Michael Chicoine) CAM 6th Floor; Suite C | Pediatric Neuro-Oncology Rad. Therapy (Stephanie Perkins; 1st and 3rd weeks) SLCH, 4th floor, Neurosurgery (am) Lower level, CAM (pm) | David Tran, MD, PhD CAM, 7th Floor, Suite C |
| 2pm | Neuro-Oncology Radiation Therapy (Jay Huang; Lower Level CAM) (2nd & 4th weeks) | | | | |
| 3pm | Adult Tumor Board McMillan 5th Floor | | | Pediatric Tumor Board 4th Floor SLCH | |
| 4pm | | | | | |
| 5pm | | Skull base conference (2nd week; 5p) McMillan 5th Floor | | | |
| | | Pituitary conference (3rd week; 5:30p) Farrell Room 302A | | | |

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| Goals & Objectives for Neuro-oncology Elective Rotation (PGY2, PGY3 and PGY4) |
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I. Purpose

The past decade has witnessed significant strides in our ability to manage breast, lung, colon, and prostate cancer. These advances are a direct result of our improved ability to diagnose and treat these cancers. Unfortunately, the survival of patients diagnosed with the most common form of brain cancer has not improved, despite years of scientific investigation and numerous clinical trials. In the United States alone, there are over 17,000 new cases of malignant brain tumor diagnosed per year, and this figure has been increasing by 1-2% per year over the past decade. Unlike other cancers, brain tumors are often undetected until late and represent difficult tumors to completely remove and effectively treat with conventional therapies. In this regard, the majority of patients with malignant brain tumors die within 9-12 months despite aggressive treatment, and less than 3% survive more than 3 years.

Junior residents (PGY2) will be expected to master the basic aspects of these objectives, More advanced residents (PGY3 and PGY4) will be expected to develop a more nuanced and complete understanding and engage in more independent patient care and evaluation and more teaching.

II. Patient Care

Goal: Provide an outpatient-oriented combined pediatric and adult neuro-oncology experience for adult neurology residents and pediatric neurology fellows.

Objectives:

- Attend multidisciplinary adult and pediatric neuro-oncology clinics and case conferences (tumor boards)
- Attend adult and pediatric radiation oncology clinics
- Participate in subspecialty brain tumor clinics
- Evaluate patients in the clinics and formulate diagnosis and treatment plan and institute care following discussion with the neuro-oncology attending physicians
- Integrate history and physical examination with medical knowledge for neurological disorders to arrive at a differential diagnosis and plan
- Make an informed diagnosis using the most current pathophysiological explanations
- Make evidence-based treatment decisions
- Discuss care plan for new patients with the neuro-oncology attending physician
- Prescribe current concepts of therapy including mechanisms of drug action and available surgical and radiological intervention

III. Medical Knowledge

Goal: The resident rotating on the neuro-oncology rotation must demonstrate knowledge of established and evolving biomedical, clinical, epidemiological and

behavioral aspects of primary and metastatic nervous system tumors, and must learn to use this knowledge in the care of patients with neurologic tumors.

Objectives:

- Demonstrate an understanding of the basic and neurological science background underlying neuro-oncology and apply this knowledge to the clinical care of patients
- Be able to explain and examine the interaction of neurological diseases with other organ systems and with other medical illnesses
- Have knowledge of the most current pathophysiological explanations for neurological disorders and for the impact of neurologic tumors
- Further refine their localization and neurological examination skills

IV. Practice-based Learning and Improvement

Goal: The resident rotating on Neuro-oncology must demonstrate the ability to investigate and evaluate their care of oncology patients, to appraise and assimilate scientific evidence, and to continuously improve patient care based on constant self-evaluation and life-long learning.

Objectives:

- Attend neuropathology brain tumor review
- Attend monthly brain tumor research conferences
- To prioritize clinical responsibilities, provide timely service, and seek appropriate consultation and support
- Develop the ability to use information technology to improve the practitioner's fund of knowledge and technical skills to provide better care to patients

V. Interpersonal and Communication Skills

Goal: The resident rotating on Neuro-oncology must demonstrate interpersonal and communication skills that result in the effective exchange of information and collaboration with patients, their families, and health professionals.

Objectives:

- Communicate effectively with other health care professionals, particularly those on the multidisciplinary neuro-oncology care team
- Communicate with patients and their families in easily understood and culture-sensitive language
- Work effectively as both a member of a professional group and as a group leader.
- Demonstrate the ability to serve as a consultant to colleagues and health care professionals
- Maintain comprehensive, timely and legible medical records

VI. Professionalism

Goal: The resident rotating on Neuro-oncology must demonstrate a commitment to carrying out professional responsibilities and an adherence to ethical principles.

Objectives:

- Understand good and bad communication behavior and leadership characteristics. Demonstrate appropriate nonverbal behavior.
- Have a commitment to carrying out professional responsibilities
- Adhere to ethical principles
- Develop sensitivity to a diverse patient population, with respect for colleagues and other health professionals
- Function well as a team member

VII. Systems-based Practice

Goal: The resident rotating on neuro-oncology must demonstrate an awareness of and responsiveness to the larger context and system of health care, as well as the ability to call effectively on other resources in the system to provide optimal health care.

Objectives:

- Describe the responsibility of the individual physician to the patient, the practice and the overall health care system
- Describe the concepts of cost containment and cost-effectiveness and learn the relative cost to the patient and society of studies and treatments requested
- Describe methods for ensuring that the practitioner and the practice group use scarce resources in a sound, thoughtful and cost-effective manner
- Understand how to utilize available resources in the hospital and via electronic media to improve patient care and outcomes
- Understand how to use community resources, including home nursing and hospice, in the care of patients and their families

Evaluations: Residents will be evaluated by the full-time faculty attending working with the resident with additional assessment by the neuro-oncology clinic and nursing staff, patients and students. Final evaluations will be collated and submitted by Dr. Gutmann.

ADDITIONAL INFORMATION:

Specific Objectives:

1. Attend multidisciplinary adult and pediatric neuro-oncology clinics and case conferences (tumor boards)
2. Attend adult and pediatric radiation oncology clinics
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Rotation Coordinator: David H. Gutmann, MD, PhD (gutmannd@neuro.wustl.edu);
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**American Academy of Neurology
Neuro-oncology Section
Residency Core Curriculum**

10/01/01

I. Purpose:

The purpose of this document is to broadly define the content of the core knowledge and principles to be mastered during rotation of resident on Neuro-Oncology services.

II. Core Curriculum:

A. Definition of sub-specialty:

Neuro-Oncology is a specialty which involves the management of primary and metastatic central and peripheral nervous system neoplasms; neurologic complications of cancer and related disorders; and neurologic complications of therapy utilized in such patients.

B. Core Content and Knowledge Base:

Rotations of residents in Neuro-Oncology during training programs will have the following goals:

1. Residents should gain a basic knowledge which may include but not be necessarily limited to the following:
 - a. Basic familiarity with the common primary nervous system malignancies, including:
 - Recognition of common clinical presentations for the different common primary brain tumors.
 - Ordering of appropriate diagnostic testing or consultations.
 - Common therapeutic interventions, in particular acute or emergent supportive care measures.
 - b. Basic familiarity with basic principles of diagnosis and management of metastatic cancer to the nervous system including:
 - Brain and spinal cord metastasis
 - Neoplastic meningitis
 - Epidural cord compression

- Nerve and plexus metastasis
- c. Basic familiarity with diagnosis and management of cancer related neurologic complications including:
- Encephalopathy
 - CNS infections
 - Cerebrovascular disease
 - Seizures
 - Increased intracranial pressure
 - Basic palliative and end-of-life management principles pertaining to neuro-oncology
 - Recognition of neurologic complications of radiation, chemotherapy and other cancer therapeutics