

Rotation in Neuro-Oncology for Radiation Oncology Residents

The Neuro-Oncology service evaluates and treats patients 18 years and older with a variety of neurologic neoplasms. The service performs multiple radiotherapeutic procedures including external radiation, stereotactic radiation, and brachytherapy implants. At the completion of the rotation the resident will be familiar with the treatment of multiple neoplasms and will be knowledgeable in the different radiation modalities.

Patient care skills to be developed include the ability to

1. Develop the ability to perform a complete history and physical examination of the patient with special attention to the neurologic exam. This will include a mental status exam, examination of the cranial nerves, and evaluation of the patient's motor, sensory, and cerebellar status.
2. Provide evaluation and care for the complications of the disease as well as their medical management of the side effects of their treatment.
3. Explain to the patient and their family the rationale for treatment along with the anticipated benefits and risks involved in therapy.
4. Participate in the follow up care and management of post treatment patients.

Medical Knowledge requirements include demonstrating the ability to

1. Develop a knowledge base of the current literature in the etiology, histology, diagnosis, treatment, and follow up of neurologic tumors.
2. Develop a basic understanding of the molecular processes in tumorigenesis of neurologic tumors.
3. Acquire a basic ability to interpret MRIs of the CNS
4. Develop a knowledge of the radiation tolerance of critical structures of the nervous system.
5. Develop a knowledge of treatment planning and radiation delivery including the use of 3-D conformal and IMRT external beam treatment planning, stereotactic treatment delivery, and brachytherapy,
6. Become aware of the current research in neuro-oncology, specifically with the clinical research being carried out by the neuro-oncology team at the University of Pennsylvania.

Practice based learning improvement will be demonstrated by the ability to

1. Develop a treatment plan including the treatment volume, dose and fractions for attending approval
2. Define the target volumes on MRI/CT including all the normal organs at risk and their dose constraints.
3. Evaluate field placements, dose-volumes histograms, and isodose distributions for external beam therapy.
4. Develop skill with the treatment planning system including targeting, treatment planning, and doses for various treatments.
5. Assist in the treatment with the Gliasite implant device.

The development of communication skills requires the resident to demonstrate the ability to

1. Communicate with the patient and the family regarding the treatment plan. This will involve communicating with patients who are cognitively impaired.
2. Communicate effectively with other members of the neuro-oncology team including neuropathology, neuroradiology, neurosurgery, and neuro-oncology.
3. Communicate interactively with dosimetrists and physicists in the development of a treatment plan.
4. Communicate with nursing, social work, nutrition, and rehabilitation to assure comprehensive treatment of the patient and support for their care givers.

Professionalism as manifested through a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population.

1. The resident shall conduct himself in the highest standard of moral and ethical conduct in compliance with the Hippocratic Oath.
2. The resident shall adhere to requirements of informed consent and be aware of and follow all HIPPA requirements.
3. The resident will adhere to the Standards of Practice of Radiation Oncology as set forth by the American College of Radiology
4. The resident will interact with the patient and his family to establish rapport and confidence.

5. The resident will be available at all times to respond to the needs of the patient.
6. The resident will be sensitive to the different cultural and ethnic differences in the patient population and be aware of their different response to disease and when necessary end of life issues.

System Based Practice. The resident will demonstrate an awareness of health system care and system wide resources for optimal care.

1. The resident will assist the attending physician in coordinating patient care across the multiple specialties necessary for neuro-oncology care.
2. The resident will work to expedite patient care including diagnosis, evaluation, therapy, and follow up.
3. The resident will continue to strive to provide optimal care for every patient.

The above stated goals and objectives are to be reviewed by the resident prior to the start of the rotation.