

Pediatric Radiation Oncology Goals and Objectives

Patient Care

Residents will learn to take care of children with cancer and their families in a compassionate, caring manner.

Medical Knowledge

1. Residents will understand the clinical presentation, natural history, staging, and treatment options for patients with Wilm's tumor, neuroblastoma, rhabdomyosarcomas, Ewing's sarcoma, Hodgkin's disease, retinoblastoma and childhood brain tumors (medulloblastomas, gliomas, ependymomas, germ cell tumors).
2. Residents will understand the indications for stem cell/bone marrow transplantation for acute lymphoblastic leukemia (ALL), acute myelogenous leukemia (AML), and neuroblastoma.
3. Residents will master the radiotherapy principles for the treatment of Wilm's tumor, neuroblastoma, rhabdomyosarcomas, Ewing's sarcoma, Hodgkin's disease, retinoblastoma and childhood brain tumors (medulloblastomas, gliomas, ependymomas). This will include (a) the use of CT simulation, outlining normal tissues, GTV, & CTV, (b) knowledge of relevant normal tissue tolerances, (c) appropriate treatment fields and doses, (d) use of MRI/CT fusions for tumors of the CNS and head and neck region and (d) the appropriate role of IMRT in the treatment of brain tumors.

Residents should be able to set up the following specialized fields:

- i) Craniospinal
 - ii) Whole lung/whole abdomen
 - iii) Total Body Irradiation (TBI)
 - iv) testicular boost with electrons
4. Residents will understand the indications for emergency radiation therapy in pediatric malignancies (i.e. respiratory compromise due to mediastinal mass from lymphoma/leukemia or abdominal mass from neuroblastoma, spinal cord compression from neuroblastoma impinging through neural foramina).
 5. Residents will understand the late complications that are particularly important in children, specifically impairment of bone and soft tissue growth, decreased neurocognitive function and risk of second malignancies.

Practice-Based Learning and Improvement

Residents will be expected to read and interpret the appropriate reference materials pertaining to the diseases and treatment modalities listed above. List of sources is provided at end. Assessment of the resident's knowledge base will be done through periodic teaching sessions with the attendings on the service. As part of the residents' didactic learning, they should attend the following weekly meetings at CHOP: Pediatric Oncology Grand Rounds held on Thursdays at 4 PM, the Pediatric Neuro-Oncology meeting on Wednesday 12PM, the Pediatric Bone Marrow meeting on Monday, 2PM. The residents should also attend the Pediatric Solid Tumor Board held on the first and the third Thursday of the month at 3PM at CHOP and the weekly review of pediatric patients on Monday, 1230PM at the Department of Radiation Oncology.

Interpersonal and Communication Skills

Residents will learn to effectively communicate with children who are old enough and their parents as well as other health professionals. Communication with the other physicians involved in the patients' care is particularly important on the pediatrics service since most of the children receive multimodality therapy in which chemotherapy and/or surgery are often integrated with radiotherapy. Residents will present the cases on treatment at the weekly Pediatric Oncology/Radiation Oncology conference held every Monday in Donner 2 at HUP.

Professionalism

Residents will be expected to display professionalism and respect when interacting with children of diverse socioeconomic backgrounds and their families as well as with other healthcare givers including physicians, radiation technologists, dosimetrists, physicists, nurses, nurse practitioners and social workers.

Systems Based Practice

Residents will be aware of the role that radiotherapy plays in the larger treatment plan for children with cancer. Most of our children receive chemotherapy in addition to radiation; therefore, it is important to be aware of drug/radiation interactions (i.e actinomycin D, Adriamycin) and plan accordingly. Since most residents do not have much training in pediatrics, they will be expected to have a low threshold for seeking advice from physicians and nurse practitioners at CHOP if a child on treatment is having medical problems.