

Overall Educational Goals for the Program

Learning Objectives for Radiation Oncology Rotations

Educational Purpose:

Our training program in Radiation Oncology training is designed to enable residents to achieve the knowledge, skills and attitudes to be competent general radiation oncologists. In the course of their rotations at HUP, VAH and PAH, residents are expected to gain proficiency in the diagnosis, work-up and management of malignancies. Learning occurs through hands on, supervised clinical experiences, amplified by teaching at the time of consultation, simulation, on-treatment visits, and planning of radiation delivery. In addition, formal didactic conferences occur 5-6 times per week and are designed to reinforce the clinical presentation and natural history of diseases treated by radiation oncologist; demonstrate appropriate skills in diagnosis, judgment and resourcefulness in therapy; receive instruction and feedback to master appropriate work-up, communication and interpersonal skills that are necessary to elicit and record a thorough and accurate history, establish and maintain a therapeutic physician-patient relationship, and initiate or motivate the patient to implement optimal medical management; receive instruction and feedback to master physical exam skills; demonstrate the humanistic treatment and care of patients. The average PGY2, PGY3, PGY4, and PGY5 will spend 3 months respectively on each rotation at HUP, VAH and PAH.

Patient Characteristics/Disease Mix:

The combination of 3 clinical sites affords a unique opportunity to experience the breadth of radiation oncology. HUP is both a community hospital as well as a tertiary and quaternary referral center. The patient population is drawn from surrounding West Philadelphia, a working class population with large number of unemployed and homeless people. The Clinical Care Associates (Penn's primary care network) and the subspecialty network provide a large referral base for both common presentations of uncommon disease as well as uncommon presentations of common diseases. In addition, HUP is a regional and national leader for many types of care from referrals nationwide. There are 9 rotation services at HUP: Pediatrics, CNS, Lymphoma, GYN, Breast, GU, H&N, Lung/Sarcoma, and GI; and 2 general radiation oncology services run by radiation oncologists at our satellite facilities. The VAH is a large veteran's hospital that cares for patients with a large number of cancers often presenting with advanced diseases. The PAH is predominantly a community based hospital serving the Center City community. The patient population reflects the upper, middle class, and working class.

Procedures:

Directly Supervised Procedures (DSP)

Residents have the opportunity to learn procedures under the direct supervision of the Radiation Oncologist. Brachytherapy cases are done in the presence of the attending. The attending evaluates the resident's proficiency in performing these procedures.

Principal Teaching Methods/Learning Venues:

Listed below are the principal goals for the radiation oncology program for all 3 sites.

Each year emphasizes components addressing all six ACGME core competencies.

Chart Rounds (CR) are held once per week and function to present patients being planned for treatment. Attendings and residents present patients' diagnoses and review each treatment plan. This is a major educational forum and a time when residents discuss literature and practice evidence based medicine.

Physics Course (PC) is held once per week for approximately 8 months. During this time staff physicists teach principles of radiation physics and treatment planning. The content spans basic science and the technical aspects a radiation oncology.

Radiobiology/cancer biology course (RBC) is held once per week over a 4-month period. During this time laboratory based radiobiologists and attending physicians with a teach concepts of regarding basic cancer biology and biological effects of radiation. The content of these classes expands fundamentals of biology and how they apply to patients' cancer treatments in regard to radiation and chemotherapy.

Didactic Lectures (DL) are held once a week and cover specific disease sites. Lectures given by both attendings and residents. Primary literature specific aspects of patient care are discussed and presented in a formal teaching manner.

Statistics Lectures (SL) are held several times a year. Specific lecture dates are set aside for statistics as it relates to the literature and to the clinical application of these radiation disciplines.

Additional conferences further expand upon management issues of specific caners. These conferences include **joint-radiology and radiation oncology case conference (JRC)**, **journal clubs (JC)**, **morbidity and mortality (MM)**, **Cancer Center Grand Rounds (CGR)** **question-answer forums (QA)**, and **radiation oncology specific case conferences (RCC)**.

Multidisciplinary Conferences (MC) and tumor boards are held on a weekly basis to discuss specific patients and their diagnoses. A treatment plan is often generated that involves the coordination of multiple services, such as surgery, medical oncology, radiology, and pathology.

Individual one-on-one teaching from **attending to resident (AR)** occurs on a regular basis with direct patient care.

Principal Educational Goals by Relevant Competency

In the table below, the principal educational goals are listed and how they relate to 6 competencies are given.

1) Patient Care

<u>Principal Educational Goals</u>	<u>Learning Activities</u>
Interview patients more skillfully	AR, DL, RCC
Create and sustain doctor-patient relationships to maximize the likelihood of the best outcome	AR
Examine patients more skillfully	AR, RCC
Generate and prioritize proper work-up of the patient	AR, DL, JRC, RCC
Develop rational, evidence-based management strategies	JC, DL, AR, RCC, CR

2) Medical Knowledge

<u>Principal Educational Goals</u>	<u>Learning Activities</u>
Expand clinically applicable knowledge base of the basic and clinical sciences underlying the care of cancer patients.	AR, DL, JC, JRC
Access and critically evaluate medical information and scientific evidence relevant to patient care	AR, DL, JC, CR, JRC
Know the strengths of weaknesses of: randomized clinical trials, case control studies, cohort studies (retrospective, prospective and meta-analyses)	AR, DL, JC, CR, JRC
Understand technological aspects of radiation delivery and biological effect of radiation	PC, RBC

3) Practice-Based Learning and Improvement

Principal Educational Goals

Learning Activities

Identify and acknowledge gaps in personal knowledge and skills in the care of cancer patients

AR, MM, QA

Develop and implement strategies for filling gaps in knowledge and skills

AR, MM, QA

Demonstrate facility in using electronic data bases, literature retrieval services and computer-based diagnostic reasoning programs

SC, PC, SL

4) Interpersonal Skills and Communication

Principal Educational Goals

Learning Activities

Communicate effectively with patients and families

AR, DL

Communicate effectively with physician colleagues at all levels

AR, DL, JRC

Communicate effectively with all non-physician members of the health care team to assure comprehensive and timely care of hospitalized patients

AR, DL, JRC

Present patient information concisely and clearly, verbally and in writing

AR, DL, JRC, CR

Teach colleagues effectively

DL, AR, RCC, JC, CR

Understand one's own personal reactions to difficult situations in order to understand potential barriers to communication

AR

Know how to inform patients and obtain voluntary consent for radiation delivery

AR

5) Professionalism

Principal Educational Goals

Behave professionally towards patients, families, colleagues, and all members of the health care team

Learning Activities

ALL

6) Systems-Based Practice

Principal Educational Goals

Understand and utilize the multidisciplinary resources necessary to care optimally for cancer patients.

Learning Activities

AR, DL, JRC, MC

Collaborate with other members of the health care team to assure comprehensive patient care.

AR, DL, JRC, MC

Use evidence-based, cost-conscious strategies in the care of cancer patients.

AR, DL, JC

Principal Educational Goals by PGY level

PGY 2-5 residents are all equally involved in educational objectives.

Evaluation Methods

A competency-based oral evaluation is performed at the end of each rotation.

The evaluation methods that apply to all of the rotations include:

- Web enabled competency-based evaluation forms that are completed by faculty, and staff when applicable.
- Procedure logs
- In-training examination scores
- ABR summative exam results