

DEFINITIONS

Block – a custom lead device used to protect normal tissues from radiation.

Brachytherapy – the use of radiation sources either into or near a tumor. Treatments may be permanent (e.g. prostate seed implants) or temporary (e.g. gynecologic tumor implants).

Consent Form - a document signed by a patient or guardian that allows the radiation oncologist to administer radiation.

Consult (New Patient Evaluation) - the initial visit scheduled with a Radiation Oncologist, where the physician will review your specific needs for radiotherapy, provide information about the treatment process and answer questions about your tumor (or reason for referral).

Dosimetrists – individuals responsible for working with a physician to plan the best way to deliver radiation to the tumor. The goal is to minimize radiation to nearby healthy tissue. Using a special computer, the dosimetrist calculates the direction of the radiation beam and the type of equipment to be used.

Dosimetry - the physics and mathematical calculations used to determine the best way to deliver the prescribed dose of radiation

High dose rate brachytherapy (HDR) - the use of a small, but very strong, radiation source to treat a tumor/cancer. The radiation source is typically placed into an applicator designed for the anatomical area of interest (e.g. Gyn applicators, esophageal applicators, etc). The dose to adjacent normal tissues tends to be reduced with this form of therapy.

Image guided radiation therapy (IGRT) - the use of CT (computerized tomography), sonography or conventional x-rays to help localize the tumor target region prior to daily radiotherapy.

Intensity modulated radiation therapy (IMRT) - a highly conformal radiation treatment, where the radiation delivered to adjacent normal tissues is significantly reduced when compared to other forms of external beam radiotherapy. IMRT enables a more precise conformal radiation dose distribution to the target area by allowing the physician to control the intensity of the radiation beam within a given area.

Intraoperative radiation therapy - the use of radiation treatments at the time of surgery. Therapy is directed to the operative bed.

Inverse Planning – refers to a sophisticated treatment planning technique that allows the physician and dosimetrist to specify “acceptable” radiation doses to various structures within the radiation’s path. This technique allows the staff to create a patient plan that optimizes the radiation dose delivered to the areas of concern, while limiting radiation dose to surrounding normal tissue(s).

Linear Accelerator (LINAC) – a high energy radiation machine designed to deliver focused radiation doses to patients.

Medical assistants: individuals who assist the physician while he/she is evaluating a patient. They will assist you into the exam room, record your vital signs and assist with medical procedures

Oncologist (Radiation Oncologist) – the individual responsible for managing your care during the time of radiation treatments. These individuals are licensed physicians with specialty training in the field of Radiation Oncology.

Partial Breast Irradiation (PBI) or accelerated partial breast irradiation (APBI) – breast sparing procedure that delivers radiation twice a day for five days following lumpectomy surgery. Treatments can be administered using either high dose rate brachytherapy (HDR) or external beam radiotherapy. In both instances, the full course of therapy is considerably reduced in duration when compared to conventional external beam therapy

Physicists – licensed members of the Radiation Oncology treatment team who validate treatment plans and conduct quality tests on the treatment machines. These frequent tests

ensure the equipment is operating safely, accurately and consistently. These individuals possess advanced degrees in physics (i.e. Masters or doctoral degrees).

Port Film – a specialized x-ray that is obtained on the treatment machine. The image is typically performed before treatment is rendered and helps the physician localize the patient's therapy.

Radiation therapist (Therapist) – an individual with specialty training in the administration of radiotherapy. Staff members are all trained and credentialed to perform the treatments designed and prescribed by your physician. They will deliver the radiation precisely as the doctor has prescribed, using a machine called a linear accelerator. You and your therapist will schedule a time for your daily treatments.

Rapid Arc – the term used by the manufacturer of radiation equipment (Varian Medical Systems) for accelerated radiation treatments. This technology allows patients to receive exceedingly accurate radiation treatment within a few minutes (usually 5 minutes). Other forms of IMRT treatments can last 15 minutes or longer.

Respiratory Gating – a technique that synchronizes radiation to a tumor's movement, sparing healthy tissue by stopping or "gating" the beam when the tumor moves out of treatment range.

Simulator – the machine used to plan a patient's radiation treatments. Conventional simulators resemble fluoroscopic x-ray machines. Most simulations occur on more advanced x-ray equipment (e.g. CT scan). Information obtained on the simulator helps the physician design an accurate treatment that is customized to a patient's needs.

Status Check (*On treatment visit*) – an opportunity for the patient and physician to meet and discuss the ongoing course of therapy. These visits commonly occur at weekly intervals during the course of radiation treatments.

Stereotactic radiation surgery and fractionated stereotactic therapy – a high dose radiation treatment that is administered to a focused region within the brain or lung. Additional regions within the body may be offered this form of highly conformal radiotherapy.

TomoTherapy – one of the most modern forms of external beam (define external beam?) radiotherapy. This technology allows patients to undergo imaging of the targeted area for treatment on a daily basis prior to each day's treatment.

Treatment Machine - a linear accelerator that administers high dose x-rays and electrons.

Treatment Planning – the process of evaluating and designing a course of radiation therapy that will be prescribed to a particular patient.

Wedge - an angled piece of metal used to correct sloping surfaces within the treatment field.

4-D Computed Tomography (CT) Scan - adds another dimension (time) to the traditional CT Scan used to plan radiation treatment. This method allows radiation therapists to precisely target therapy to moving organs such as the lungs.