INTRAOPERATIVE RADIATION THERAPY (IORT)

St. Joseph Hospital remains at the forefront of medical innovation with intraoperative radiation therapy (IORT), one of the most advanced forms of radiation therapy available in the United States. IORT delivers highly targeted electron beams of radiation directly to a tumor site during surgery. In addition to improving patient outcomes, this direct application improves patient comfort and appearance by preserving healthy tissue surrounding the tumor and reducing the amount of radiation patients may need after surgery. For patients and their families, this means less stress and more time for healing.

As Orange County’s first hospital to offer this advanced form of radiation therapy for breast cancer patients, St. Joseph Hospital physicians are experts in its use and will continue their pursuit of clinical excellence and increased patient comfort by expanding the use of IORT to treat additional cancer sites in the future.

The Center for Cancer Prevention and Treatment

St. Joseph Hospital

A Ministry founded by the Sisters of St. Joseph of Orange
LEADING THE WAY IN BREAST CANCER CARE

At the Breast Program at St. Joseph Hospital, our team of clinical experts is passionate about breast cancer research and advanced treatment options that can potentially cure cancer and preserve healthy breast tissue. This pursuit of early detection and clinical excellence accounts for Breast Program outcomes that exceed state and national standards.

A TEAM APPROACH TO CARE

As pioneers in the field of breast cancer diagnosis and treatment, our Breast Program experts understand the importance of developing customized treatment plans that focus on the unique medical needs of each patient. Breast Program experts meet weekly to discuss each patient’s unique medical needs. Working as a team, these caring experts use the most advanced therapies available to treat breast cancer while preserving healthy tissue and appearance.

TARGETED THERAPY

At St. Joseph Hospital, intraoperative radiation therapy (IORT) is delivered using the latest generation, self-shielded electron linear accelerator. This mobile unit is in the operating room where a highly skilled team of breast cancer surgeons and radiation oncologists position it directly over the patient and deliver the concentrated radiation in just about one minute while the tumor is exposed. Because the radiation delivery is highly precise, no special shielding is required. Studies show that radiating the tumor site during surgery reduces the risk of the cancer returning.

Prior to the introduction of the mobile unit, hospitals that offered IORT had to transport patients to another area of the hospital that housed a stationary linear accelerator. Transporting a patient during surgery increases the risk of infection and adds to the time a patient spends under anesthesia. At St. Joseph Hospital, the mobile unit is a safe and effective method for delivering radiation.

FASTER TREATMENT MEANS FASTER RECOVERY

While there are many clinical benefits of IORT, the increased patient comfort is equally important.

- Traditionally, patients with some forms of breast cancer undergo radiation therapy for approximately six weeks followed by an additional five days of focused radiation treatment called a boost. With IORT, a high intensity boost is delivered during surgery, effectively cutting treatment to five weeks, and in some cases down to three weeks.

- IORT is delivered directly to the tumor site while it is exposed during surgery. This enables the radiation team to deliver the right amount of radiation to the right location, helping protect healthy tissue and organs. The IORT treatment method also prevents damage to the skin, which can become irritated during traditional radiation treatments that must pass through the skin to reach the tumor site. All of this helps patients heal faster in greater comfort than with traditional radiation treatments.
THE IORT PROCESS

Women who are eligible for a lumpectomy (removal of cancer and small amount of surrounding normal tissue) are taken to a designated operating room that contains the mobile IORT unit.

1. Once the tumor is removed, the IORT cone is placed directly around the tumor site for the most accurate and effective intraoperative radiation treatment. During this process, the tissue is arranged so only the edges closest to the tumor site are exposed to the radiation treatment. This delivers radiation directly to the tumor bed, protecting healthy tissue and organs.

2. The IORT mobile unit is carefully aligned with the cone. The patient is fully drapped during this process.

3. The Radiation team uses lasers to confirm the IORT unit is safely and properly docked with the cone. Once docked, the cone and IORT unit act as one to safely direct radiation to the precise location of the tumor site.

4. Using a specially designed control panel, the Radiation team delivers an accurate dose that is customized to the needs of each patient based on the tumor analysis. IORT treatment takes just about one minute.

5. Because the radiation delivery is highly precise, no special shielding is required. Once the right amount of radiation is delivered to the right location, the mobile unit is disconnected from the IORT cone and the cone is removed. The surgeons complete the procedure and prepare the patient for recovery.
ABOUT THE CENTER FOR CANCER PREVENTION AND TREATMENT

The Center for Cancer Prevention and Treatment at St. Joseph Hospital provides access to and coordination of the best resources for preventing, fighting and curing cancer. Ours is the first center of its kind in Orange County, and one of a few nationwide to offer preventive care, diagnosis, treatment and clinical trials in one convenient location, and we are the sole California participant in the National Cancer Institute Community Cancer Centers Program. Led by physicians and staff dedicated to compassionate clinical excellence, our multidisciplinary teams render site-specific cancer care with survival rates exceeding state and national standards.