

Gamma Knife adds weight to PCMH's cancer treatment

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By Ginger Livingston, The Daily Reflector

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One of the most expensive equipment purchases made by Pitt County Memorial Hospital should reduce medical costs for some brain cancer patients, officials said.

The Leksell **Gamma Knife** installed at the Leo W. Jenkins Cancer Center on Tuesday will use targeted radiation rays to treat brain tumors and other abnormalities. The procedure will allow many to forego traditional brain surgery and other treatments, which often are more expensive and perilous.

"It's hard to believe it's finally here," Dr. Barbara Lazio, neurosurgery co-director of the **Gamma Knife** program, said. Lazio and more than a dozen other doctors and medical staff gathered behind the Jenkins center to watch workers unload the 20-ton metal and lead housing for the cobalt.

"It's not traditional brain surgery," said Lazio, who was recruited from the University of Maryland Medical Center because of her fellowship training in **Gamma Knife** surgery.

The equipment should be operational by October. The hospital will spend \$5.6 million on the project.

The Leo W. Jenkins Cancer Center is a joint undertaking of the hospital, East Carolina University's Brody School of Medicine and private practice physicians.

The **Gamma Knife**, marketed worldwide by **Elekta**, draws from 201 sources of cobalt to create a radiation beam that targets lesions in the brain without cutting into a patient's skull.

Neurosurgeons and radiation oncologists can pinpoint a tumor within .2 millimeters, the width of a human hair, sparing healthy tissue surrounding the lesion.

"There is no other technology as accurate as the **Gamma Knife**," said Dr. Marc Randall, director of the Leo W. Jenkins Cancer Center and **radiation oncology** co-director of the **Gamma Knife** Program. " ... We can accurately focus the radiation to even small targets within the brain – even around the optic nerve itself."

The **Gamma Knife**'s ball-shaped housing opens like a clam shell, Randall said. A retractable bed slides into the ball and the treatment begins. Sessions can last from five minutes to an hour, with the occasional 90-minute treatment, Lazio said.

Radiation oncologists and neurosurgeons prepare a treatment plan based on images of the patient's brain gathered from one or more of several sources, including magnetic resonance, computerized tomography and angiography scans.

Using that information, doctors outfit patients with a helmet that focuses the radiation beams.

Treatment with the **Gamma Knife** does not have the traditional side effects of radiation treatment.

Where traditional brain surgery patients are kept in the intensive care unit for several days and can be hospitalized for a week, **Gamma Knife** patients usually require an overnight stay. They usually return to work within several days, Lazio said.

"Most of them, when they leave, may have a little bit of a headache, but usually nothing more than that," Lazio said.

Gamma Knife procedures are covered by most health insurance plans. Without the lengthy hospital stay,

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patients medical expenses should be lower, Lazio said.

The **Gamma Knife** doesn't work with every tumor or lesion, she said. Larger tumors and multiple tumors are best treated with conventional surgery, chemotherapy and radiation, she said.

People with deeply embedded lesions that are difficult to reach and small tumors are good candidates for the surgery, she said.

When the hospital decided to pursue the equipment, it received letters of support from hospitals both inside and outside the state, Davis said. Wake Forest University Baptist Medical Center in Winston -Salem is the only other hospital in the state that has a **Gamma Knife**. There are about 200 devices nationwide.

Because of the ball's size and the regulations related to the use of cobalt, a new 2 -foot-thick, 400-square-foot concrete vault was added to the Leo W. Jenkins Cancer Center. Because of the ball's size and weight, the chamber's floor was designed to support a weight of nearly 40 tons.

Much of the **Gamma Knife**'s weight is attributed to the lead shielding doors which protect patients and staff before, during and after treatment.

Beverly Cratch, patient care coordinator with the center's department of **radiation oncology**, had a professional and personal interest in the day's proceedings.

Cratch had a friend who was treated with a **Gamma Knife** at the Wake Forest University after the breast cancer spread to her brain.

The treatment cured the tumor in her head. She died three years later, however, when the cancer reoccurred in other parts of her body.

"It helps give an enhanced quality of life," Cratch said.

"We've seen a number of patients we had to send away for this type of treatment," she said.

Offering this treatment locally allows patients to stay closer to home and their support system, Cratch said.

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