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CONTACT:

Karel Juhl Fulton
Director of Marketing
Clinch Valley Medical Center
Richlands, Virginia
(276) 596-6017
karel.fulton@HCAHealthcare.com

CVMC Invests \$2.4 Million to Bring Advanced Cancer Treatment to Region

RICHLANDS, Va. – Clinch Valley Medical Center is making room for a new high precision linear accelerator that will provide the region’s most advanced level of cancer treatment: Image-guided radiotherapy (IG-IMRT). The first use of this technology took place at the Netherlands Cancer Institute in July 2003. When the \$2.4 million project is complete later this year, CVMC will be among the first in the world to offer this state-of-the-art system.

“Our new linear accelerator has the capacity to deliver higher radiation doses to the tumor cells with decreased radiation to the surrounding normal cells,” said Robert Weinacker, M.D., medical director of radiation oncology at Clinch Valley Medical Center. “This investment, which has the potential to cure more people of cancer, shows the commitment of CVMC’s comprehensive cancer center to match the precision and effectiveness of the world’s most renowned cancer centers.”

Advanced cancer centers use a linear accelerator to deliver intensity-modulated radiation therapy (IMRT) to destroy cancer cells. With the aid of three-dimensional images taken of the patient before treatment begins, the radiation oncologist locates the cancerous tumor and “programs” the linear accelerator to radiate it from various angles. A major advantage of IMRT is the protection it gives healthy tissue while delivering high intensity radiation to the tumor. While standard IMRT provides more precise targeting than previously available, accuracy is limited because most cancerous tumors are “moving targets” – for example, rising and falling with each breath the patient takes.

The **image-guided** radiation therapy system purchased by CVMC addresses this limitation through built-in imaging capabilities. X-rays that produce 3D images, similar to a CT scan, track movement of the cancerous tumor **during treatment**. This real-time information allows adjustment of the radiation beam while the patient is in the treatment position, delivering the highest intensity of radiation to the cancerous tumor while providing more protection for healthy tissues.

“We chose this cancer treatment system because it is clinically effective, cost efficient and offers maximum comfort and convenience for the patient,” said Tim Tobin, CVMC’s president and CEO. “Image-guided radiotherapy offers a level of care that is usually

found only in large, university-affiliated medical centers. We are very pleased to be able to provide this life-saving service right here at home.”

CVMC will begin treating cancer patients with the new IG-IMRT linear accelerator in September. Radiation therapy is one component of CVMC’s comprehensive cancer program, which includes surgery, chemotherapy, advanced diagnostics, screening events, a cancer registry and support groups for patients and family members.

Clinch Valley Medical Center in Richlands is a 200 bed acute care hospital. In addition to comprehensive cancer services, CVMC offers specialty care for the heart and lungs, emergency services, physical rehabilitation, skilled nursing, pediatrics, obstetrics and advanced diagnostics.

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Sidebar

Key Facts about Image-Guided Radiotherapy (IG-IMRT)

IG-IMRT will soon be available at the Cancer Treatment Center of Clinch Valley Medical Center. The next closest hospital to offer this technology is William Beaumont Hospital in Royal Oak, Michigan, which helped pioneer the system. Approximately 40 percent of people with cancer have radiotherapy as part of their treatment.

Radiotherapy is delivered by a linear accelerator – large X-ray machines that deliver X-rays at much higher energy than the commonly known diagnostic X-rays.

While damaging cancer cells, radiation can also affect surrounding healthy cells if it is not directed with a high degree of accuracy and precision. This can lead to side effects, including damage of healthy cells.

The radiation dosage given to patients depends on the location of their tumor, the size and type of their tumor, and the patient’s general health. The total dose required is divided into smaller doses, called fractions, which are administered over a number of days or weeks.

Computerized 3D reconstruction of patient anatomy allows physicians to more precisely deliver radiotherapy to cancer patients.

Intensity-modulated radiation therapy (IMRT) allows the intensity of the radiation to be changed during treatment, which spares more of the normal surrounding tissue.

Image-guided radiation therapy (IG-IMRT) combines scanning and radiation equipment to produce images of the patient’s organs in the treatment position, at the time of treatment. The combination produces increased accuracy and precision, allowing safer delivery of higher doses of radiation while reducing exposure to healthy cells.

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