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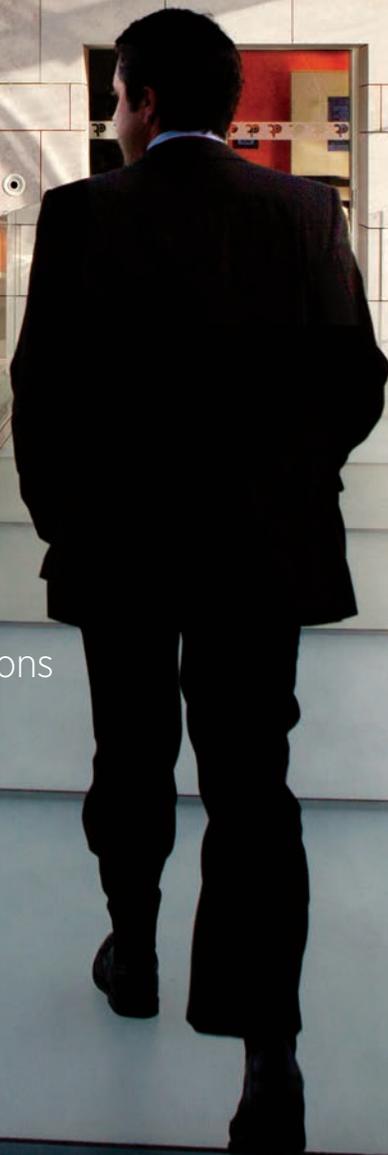
Pennsylvania Cancer Center
Builds Safety Culture

No Interruptions

Single-Vault Center Upgrades
in Record Time—Without Interruptions

Partnership

Together Varian and Siemens
EnVision Better Cancer Care





Olympic Medical Cancer Center Makes a Giant Leap in Technology— Without Missing a Beat

Images courtesy of Olympic Medical Cancer Center.

HOW A COMMUNITY HOSPITAL with one vault replaced a 10-year-old Clinac® accelerator with a TrueBeam™ system in record time, while continuing to treat patients.

By Nancy Heifferon

In 2011, Olympic Medical Cancer Center did something remarkable. They deinstalled a Clinac 21EX, refurbished their only vault, and installed the first TrueBeam system in Washington State.

In three months.

Without missing a single clinical day or sending away any patients.

The center, which averages 27 external beam treatments a day, was able to continue treating patients as usual while bringing advanced technology online rapidly through a fast installation process developed by Varian, a fully equipped temporary vault from RAD Technology, and masterful planning and coordination by all concerned.

“It was a turnkey operation for us to get our existing vault refurbished and accept the TrueBeam system. In my 20 years of practice, I have never seen an installation go this fast. It was incredible, especially considering how remote we are,” says Rena Zimmerman, MD, who came to Olympic Medical Cancer Center to be part of the technology transformation of the radiation oncology department.

Located in Sequim, Washington, between the Strait of Juan de Fuca and the Olympic National Park, Olympic Medical Cancer Center is indeed remote. It is the only radiation oncology program serving the 70,000 people of Clallam County. The nearest comparable facilities for radiation treatment are two hours away across the Puget Sound in Seattle or Tacoma. From the western reaches of the county, the journey takes at least four hours.

LEFT | Radiation oncologists Rena Zimmerman, MD, and Michael Shevach, MD, provide the best of both worlds—quality, patient-centered care with advanced radiotherapy technology.



Upgrading is necessary; shutting down impossible

Olympic Medical Cancer Center faced a dilemma common to many smaller, remote centers with aging delivery systems. Treatment options available elsewhere had advanced beyond their capabilities, and the pace of progress was accelerating. Remote though it may be, Olympic Medical Cancer Center prides itself on providing the best of modern medicine, and that means offering world-class cancer care to the community it serves. “We didn’t have on-board imaging for IGRT and we couldn’t do volumetric arc therapy,” recalls Zimmerman.

In addition, the center’s one treatment machine was reaching the end of its life, raising concerns about maintenance and downtime. “Instead of upgrading the existing machine, which would have cost about a million dollars, as I recall, we decided it was better to get a new machine with good on-board imaging for kV-kV matching and cone-beam CT,” says Zimmerman. “We also wanted to institute SRS and SBRT programs.”

Although a new system was imperative to the center’s mission for patient care, closing down its only vault for an extended period would have created an untenable hardship for Clallam County patients. They would have to endure the rigors and expense of travel, or, worse yet, might delay their treatment. “To be down completely for any significant length of time was going to be impossible for us,” says Zimmerman.

There are nearly 1,000 single-vault centers in the United States in a similar difficult situation, according to John Lefkus, president of RAD Technology Medical Systems. “These centers need to replace their accelerators, but they can’t afford to shut down. The revenue and referral losses incurred as a result of shutting down a department for several months are so high that they put off the decision and fall further behind the state of the art,” says Lefkus.



John Engstrom, chief radiation therapist, with the TrueBeam system, which has allowed Olympic Medical Cancer Center to maintain its commitment of providing world-class care to the community it serves. *Image courtesy of Olympic Medical Cancer Center.*

So that the radiation oncology practice could continue uninterrupted, Olympic Medical Cancer Center was considering adding a second vault. While not all one-vault centers have that option, Olympic Medical Cancer Center did have the space for another vault. In fact, when the new center was built in 2003, it had been constructed with two control centers in anticipation of adding a second vault when patient volume increased. “We thought seriously about building that second vault and installing a lesser machine than the TrueBeam,” says John Engstrom, chief therapist.

Then Varian suggested a way that Olympic Medical Cancer Center could, as the saying goes, “have its cake and eat it, too.” They could put in the same advanced system that the larger urban academic centers have, continue treating patients during the installation by leasing a temporary vault, and accelerate vault reconstruction and system installation to minimize costs. The center would preserve its revenue stream and its relationships with referring physicians. And patients wouldn’t have to go long distances for treatment during the upgrade.

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Rena Zimmerman, MD

Accelerating installation

Olympic Medical Cancer Center took advantage of Varian’s SuperFast Installation service to swap out its 21EX Clinac for the new TrueBeam system. Designed for single-vault treatment centers, SuperFast Installation shortens the normal installation time from four weeks to as few as 10 days—from the time the old system is removed to the hand-off of the new system for acceptance testing.

The SuperFast Installation is very fast, but it doesn’t cut any corners, says Scott Brouse, vice president of Varian Worldwide Site Solutions. His organization develops services for centers that don’t have the specialized skills or the infrastructure they need in place. These services run the gamut from physics support, IT consulting, technology utilization, and facility design to full turnkey radiation therapy facilities. The organization maintains a staff of 80 project managers and 250 installation engineers who can be deployed worldwide. “Quality is always our first concern,” emphasizes Brouse. “SuperFast Installation adheres to all processes and procedures with the same attention to quality. Expert teams work around the clock and execute tasks in parallel with clockwork efficiency and coordination.”

“Renovations and installations that go on around the clock come with special challenges, such as working with infectious disease control people and security,” says Mark Patzer, Varian’s western region manager. “Our SuperFast Installation teams understand everything that is involved so they can minimize the downtime and impact to the hospital.”

In the case of Olympic Medical Cancer Center, the vault first had to be refurbished to accommodate the larger size and higher energies of the TrueBeam system. At 4 p.m. on a Friday, January 7, after the last patient of the day had been treated, deinstallation of the Clinac machine began. By noon the next day, the accelerated three-week vault reconstruction project was under way. The TrueBeam system arrived on Saturday, January 29. It was partially assembled while the finishing touches were made to the vault. First “beam on” came 17 days after delivery. Commissioning, acceptance testing, and staff training took additional time because the center was making such a big leap in capabilities. Go-live was successfully achieved on April 12. The entire project had been completed in only three months.



Patented foundation and shielding systems made the modular temporary radiotherapy vault economical to ship and quick to install.

Treating patients as usual during renovation

During those three months, the center continued to treat patients in a modular temporary radiotherapy vault (TRV) supplied by RAD Technology Medical Systems. “Providers no longer need to shut down services to the community in order to improve services to the community,” says Kenneth Wright, director, TRV Services. “The TRV allows them to upgrade now and continue to treat while renovating their vault.”

The patented foundation and shielding systems make the TRV economical to ship and quick to install. At Olympic Medical Cancer Center, the TRV was assembled in a grassy area next to the existing radiation therapy facility. Four weeks after arrival at Olympic Medical Cancer Center, the TRV was ready for patients. “RAD got the TRV set up in an amazingly short time that blew us all away,” recalls Engstrom. “It was really mind boggling to watch the efficient assembly.”

The RAD TRV vault is actually a complete radiation therapy center, with a reception and waiting area, ADA-approved restroom, two gowning rooms, a small staff break room, and storage for patient positioning and immobilization devices. “Customers often tell us that the facility is nicer than the old one being replaced,” says Wright. “RAD has designed an upscale working facility. Although TRVs arrive on trailers, they’re not trailers.”

The TRV contained a preinstalled and precommissioned Varian Clinac 600C/D, equipped with a 120-leaf Millennium™ MLC and PortalVision system, along with a computer and interface box that allowed the Olympic Medical Cancer Center staff members to seamlessly continue using their own information systems and treatment planning systems.

With creative treatment planning and careful scheduling, the center was able to treat all its patients. “For patients who needed to be treated with electrons, we either completed them on the Clinac machine before the upgrade or scheduled them to start in the TRV and complete on the TrueBeam system,”

“The temporary radiotherapy vault [TRV] was a bridge to get us to the next level of technology.”

John Engstrom, RT

explains Engstrom. “The TRV was a bridge to get us to the next level of technology.”

Olympic Medical Cancer Center today

With the TrueBeam system, Olympic Medical Cancer Center has realized its goal to bring a world-class radiation therapy program to the people of Clallam County. The center’s expanded treatment options now include IMRT, IGRT, VMAT, and stereotactic treatment for brain and lung cases. The center is also ramping up for gated VMAT treatments. Olympic Medical Cancer Center is on course to become the first community facility in Washington State to receive American College of Radiology accreditation for its radiation oncology program.

“We crunched the numbers and found that having one machine with all the latest features available made the most sense financially for the center and clinically for our patients,” says Engstrom. “That’s how we came to get the TrueBeam system.”

“We wanted to make sure our investment would take this practice and this area through a significant number of years, so we decided to take the bull by the horns and make sure we are set for the next eight to ten years,” says Zimmerman.

Did the rapid system installation and ability to continue operating during the renovation influence their decision? Without question, says Zimmerman. Yes. ■

Nancy Heifferon is a freelance healthcare writer.

This article appeared in the June 2013 issue of "Centerline," Varian Medical Systems' bi-annual magazine for the clinical oncology community. Reprinted with permission.