

Washington University will open second proton center for cancer treatment as others shut down

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Proton beam therapy, which has struggled to live up to its promise for treating cancer, is poised for a resurgence in St. Louis.

As several other [proton](#) centers across the country shut down or file for bankruptcy, Siteman Cancer Center has doubled down on the technology. Its second machine is set to open in 2020. Mercy Hospital St. Louis has plans to open its own proton [center](#) two years later.

Proton therapy is designed to zap cancerous cells with precise beams of radiation while sparing surrounding tissue. Unlike traditional X-rays, the proton beams stop at the tumor instead of traveling through the body.

While generally considered preferable for radiating tumors in sensitive areas of the head and neck, as well as cancers in children, there is a lack of data showing the more expensive therapy beats traditional radiation at treating more common cancers of the prostate, lung or breast.

The new \$32 million proton system at Barnes-Jewish Hospital will provide "pencil-beam" precision to target tumors, like painting with a fine-tipped brush, said Dr. Jeffrey Bradley, director of Siteman's S. Lee Kling Proton Therapy Center. It will be built next to the \$20 million machine that opened in late 2013, which uses magnets to scatter proton beams across a tumor.

Bradley said he is confident the St. Louis area can support the two machines despite recent reports of proton centers struggling to treat enough patients to stay viable. About 800 patients have been treated with proton therapy at Siteman, close to its original projections of 200 patients a year.

The first proton centers built in the 1990s were known for their football-field size and up to \$200 million price tag. To offset the costs, the centers marketed heavily to men with prostate cancer despite a lack of evidence that patients have better outcomes or fewer side effects compared to cheaper treatment alternatives.

Soon [private insurers](#) declined to cover protons for prostate cancer, and Medicare reduced its reimbursement from \$32,000 to less than \$25,000 per patient. Medicare pays about \$19,000 for traditional radiation to treat prostate cancer.

"Something that gets you the same clinical outcomes at a higher price is called inefficient," said Dr. Ezekiel Emanuel, a health policy professor at the University of Pennsylvania and critic of the proton-center boom.

In 2013, Washington University was the first to open the next generation of smaller, less expensive proton systems with one treatment room.

"That's very different from other centers that went all in, borrowed money, and put in four-room centers," Bradley said. "The one room at a time idea is a very viable idea."

As a general rule, the number of proton machines in a city should equal the number of professional sports teams because the population requirements for sustainability are about the same, said Dr. Peter Johnstone, the former CEO of Indiana University's proton center before it closed in 2014. He now works at Moffitt Cancer Center in Florida, which doesn't have a proton center.

If the professional sports theory is true, Mercy could be banking on Major League Soccer launching a team in St. Louis. The Creve Coeur-based hospital system plans to build the third proton center in the area, a \$28 million system in St. Louis County, according to state records. Steve Mackin, president of Mercy Hospital St. Louis, said as many as 650 area cancer patients could be candidates for proton treatment each year when it opens in 2022.

"Protons as a rule should not be considered a money-making venture; they should be considered part of the cost of doing business," Johnstone

said. "The big cancer centers, the places that have great reputations are going to need it."

Many of the 30 or so proton centers across the country have failed to cover those costs. An abandoned proton center in Dallas is bankrupt. So is California Protons, formerly associated with Scripps Health in San Diego. Other centers in Oklahoma, Maryland, New Jersey, Tennessee and Virginia are losing money or have defaulted on debts, according to a Kaiser Health News investigation.

Bradley and other radiation oncologists say an ongoing challenge is insurance companies' reluctance to cover proton therapy, which can cost 50 percent to 75 percent more than traditional radiation, according to industry groups.

Medicare typically covers [proton beam therapy](#) for solid tumors. But more than 60 percent of prescriptions for proton therapy are denied by private insurance companies, according to an analysis of data from 1,100 cancer patients by the Alliance for Proton Therapy Access.

Even after appeals, 42 percent of patients are still denied coverage for the therapy, the report says.

"Where the insurers like to say that proton therapy is not beneficial is often because they do not perform an adequate review of the evidence," said Scott Warwick, executive director of the National Association for Proton Therapy. "We have notified the payers that they have often either misinterpreted data, reviewed older evidence or omitted key evidence in development of their coverage policies."

A judge agreed in a ruling recently, ordering Aetna to pay more than \$25 million to the family of an Oklahoma City woman who died a year after the insurance company refused to cover proton beam therapy for

nasopharyngeal (upper throat) cancer.

After she was denied coverage, Orrana Cunningham and her husband decided to mortgage their home in Oklahoma to pay for the therapy in Texas. She died in May 2015 at age 54. Jurors found that Aetna's doctors didn't spend enough time reviewing Cunningham's case before deeming the proton therapy experimental.

Proponents of proton [therapy](#) say they hope the ruling will make insurance companies more willing to cover the treatment. Bradley said more clinical evidence is forthcoming, with one-quarter of Siteman proton patients enrolled in clinical trials, including one showing "encouraging results" for lung [cancer](#), he said.

"We need to complete these clinical trials to help us establish where protons might have an advantage," Bradley said. "From a patient's perspective and a physician who wants to do the best for my patients, ([proton therapy](#)) needs to be available for situations that call for it."

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