Proton cancer centers continue to proliferate, despite shaky benefits and checkered financiers

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By Tara Bannow and Bob Herman May 26, 2022

On May 12, the South Florida Proton Therapy Institute issued a warning to its investors: It had a week's worth of cash left and had to dip into a reserve fund to pay off debt.

The proton beam therapy center at the University of Alabama at Birmingham fired off a similar warning that same day. It had a little more than three months of cash on hand and also was struggling to make debt payments.

But the longtime financial strains at those and other similar centers, which house large machines that zap cancerous tumors in a more targeted fashion than traditional radiation, aren't scaring anyone off. In fact, three other health entities — one in Connecticut, one in Texas, and another in Arkansas — are partnering with the same group that runs the two struggling facilities, Proton International, to build new centers in the next few years. Tax incentives, political photo ops, and grandiose characterizations of "cutting-edge" technology accompanied the announcements.

The investments, including from major names like Yale New Haven Health, are among more than a dozen new centers under development and will add to the 39 active centers across the country. They underscore the ongoing arms race for these facilities despite the treatment's high price tag, spotty insurance coverage, and unclear benefits.

"There has been a proliferation of them," Steven Ullmann, who studies health policy and economics at the University of Miami, said of proton centers. "So to be able to pay off this thing, you have to do a lot of procedures."

Even though building a proton center is a risky financial bet, some believe the research that's accumulating will eventually persuade insurers to expand their coverage of the therapy. And various companies and financiers are getting in on the action with hospital systems, betting on the premise that the fancy, expensive machines will draw patients back from the pandemic's lull.

The proton therapy gold rush is due at least in part to a Medicare decision many years ago. The evidence for proton therapy is stronger for tumors that are closer to vital body parts, like the brain and spine. But Medicare has never excluded any types of tumors from coverage. Medicare currently pays $1,321 per proton treatment in a hospital outpatient department. That means a Medicare patient with prostate cancer, who would likely get five treatments per week for eight weeks, would bring a facility nearly $53,000 in payments, even though other, cheaper forms of radiation are just as good for prostate cancer.

"The investment bankers figured out, 'Oh, my gosh, we can build one of these things, and they can use it for prostate cancer'" and other types of common cancers, said Paul Levy, a former CEO of Beth Israel Deaconess Medical Center in Boston who has been critical of proton centers.

Proton therapy centers also tend to be a boon for the rest of a health system's cancer program more broadly, because even patients who come for proton therapy but aren't eligible tend to stay for other treatment. At Penn Medicine, for example, the demand for conventional radiation increased substantially after the first proton center went in, said James Metz, chair of Penn Medicine's radiation oncology.

"There is something that gives prestige to health care systems when they can say they have the newest technology," Ullmann said. "It becomes a marketing device. 'We do have technology. We do have proton therapy in our cancer center.'"

While some centers are doing well, the world of proton therapy is littered with bond defaults and bankruptcies. The simplest explanation is they spent too much on massive buildings and equipment — multiroom facilities easily top $200 million — and couldn't woo enough patients or collect enough money from reluctant insurers. Today, some of the new ones going up are smaller, one-room centers.

Another common theme among centers that have faltered: They didn't make enough money to offset the enormously high interest rates on their debt. Because proton therapy is a risky investment, the loans usually are very costly for borrowers. The Maryland Proton Treatment Center in Baltimore, for example, had to stomach a $27 million interest obligation in 2021, which comprised almost three-quarters of its revenue that year.

One little-known entity appears to be making money off the failures. The Public Finance Authority is a Madison, Wis.-based organization that helped finance at least six centers, including a forthcoming center in Arkansas. PFA's proton deals have a poor track record. On top of the two Proton International facilities that issued investor warnings, another that PFA worked with went bankrupt, and another two are losing money.

"It really is interesting because the transactions they have issued have such an elevated default rate and problem rate compared to the municipal market overall," said Lisa Washburn, managing director with the independent research firm Municipal Market Analytics.

Very little of PFA's work is in Wisconsin, and neither is its small staff, most of whom are in California. The group acts as a conduit issuer: allowing entities to use its legal authority to issue tax-exempt debt, funded by outside investors. It charges high fees to issue debt with high interest rates and doesn't assume much — if any — liability if the borrowers default. At the end of 2018, PFA's borrowers had $10.4 billion in outstanding debt.

"The bond world is a relatively small cottage industry, especially when it comes to protons," said Jay Kornfeld, a partner at the law firm Bush Kornfeld in Seattle who represented Seattle Cancer Care Alliance Proton Therapy Center in its bankruptcy.

Proton centers that haven't taken on debt have fared better. Penn Medicine, for example, didn't use a third-party vendor when it built its flagship proton therapy center in Philadelphia in 2006, and it's not using one with the two proton centers it currently has underway.

"We have the expertise," Penn Medicine's Metz said. "So we don't need people who actually have less expertise than us to tell us what to do and actually cost us more money."

Like Penn Medicine, the University of Wisconsin Health is going solo for its new $60 million proton therapy program.

"I felt critical … that we pay for it from A-Z ourselves so we were not indebted to someone for how many patients were going to be treated and the speed with which we recouped that dollar amount," said Paul Harari, a radiation oncologist and chair of University of Wisconsin's oncology department. "That takes virtually all the pressure off of us to say, 'Wow, we have to fill up all these rooms.'"

But roughly an hour away from UW Health will be another new proton center at a Froedtert Hospital campus in Milwaukee. It's become increasingly common for centers to crop up near each other, which puts them in direct competition for patients and raises questions of whether all the construction is necessary. Penn Medicine's forthcoming center in New Jersey is roughly 60 miles south of the state's two existing centers. In Connecticut, a group with PFA financing is trying to get state approval to build a new center less than an hour from the one Yale is planning. Miami's two proton centers are only about 15 miles apart.

"If you have too many, they don't survive," Ullmann said.

There's also concern that even well-intentioned systems will overuse the treatment to compensate for the high cost of building and running the centers. That kind of spending drives up health care costs, even for those who don't get proton therapy.

"This has been documented over and over and over again," Levy said. "Those institutions, whether for-profit or nonprofit, that have more advanced equipment use it disproportionately."

Some existing companies are already explicitly hunting for patients by courting influential doctors and flooding social media. For example, Proton International's Florida center holds "weekly lunches with key referring physicians," hosts "monthly physician-to-physician dinners," and pays for targeted ads on Facebook and Instagram, according to financial documents from this past November.

Ullman said he's seen providers try to entice patients by offering to help with the referral documentation that's needed for insurance coverage. "Health care systems sometimes say, 'Let us help you so that we can generate revenue from treating you,'" he said.

Those ploys haven't been enough for Proton International to avoid risking default. Charles Yoo, Proton International's director of operations and finance, said the company is now in active discussions with bondholders and attorneys about how they can build up cash.

“[The bondholders] understand that we faced the volume crunch at the wrong time,” Yoo said, referring to the pandemic. When asked if that meant outside parties like private equity firms could get involved, he said he couldn’t offer more specifics due to a nondisclosure agreement.

“All options are on the table … in terms of how we can get into a situation where we don’t have to be posting any of these notices anymore,” Yoo said.

Despite pockets of financial turmoil and questionable usage, champions in the proton industry see reasons for optimism.

Providers going all-in on proton therapy share the belief they’ll be vindicated by future research, which they think will show improved outcomes and trigger more insurance coverage. But studies to date haven’t shown a clear benefit of proton therapy beyond conventional radiation for all types of tumors, and many clinical trials run by the National Institutes of Health won’t produce results for several years.

At Penn Medicine, which has been delivering the therapy for more than a dozen years, Metz said leaders feel comfortable pouring roughly $100 million into two new centers because they expect proton therapy will become the standard for cancer treatment.

“We see what’s coming and what’s coming out,” he said. “That’s why we’re investing in these centers.”

About the Authors Reprints

Tara Bannow
Hospitals and Insurance Reporter

Tara Bannow covers hospitals, providers, and insurers.

tara.bannow@statnews.com
@TaraBannow

Bob Herman

Business of Health Care Reporter

Bob Herman is a business of health care reporter at STAT. He covers hospitals, health insurance, and other corners of the industry — with a goal of explaining and shining light on the massive amount of money flowing through the system.

bob.herman@statnews.com
@bobjherman