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Radiation Errors Reported in Missouri

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A hospital in Missouri said Wednesday that it had overradiated 76 patients, the vast majority with brain cancer, during a five-year period because powerful new radiation equipment had been set up incorrectly even with a representative of the manufacturer watching as it was done.

The hospital, CoxHealth in Springfield, said half of all patients undergoing a particular type of treatment — stereotactic radiation therapy — were overdosed by about 50 percent after an unidentified medical physicist at the hospital miscalibrated the new equipment and routine checks over the next five years failed to catch the error.

The revelation comes at a time of growing concern about safety procedures for a new generation of powerful, computer-controlled medical radiation equipment.

Stereotactic therapy delivers radiation in such high doses that usually only one treatment is required. It is commonly used to treat small tumors in the head, which must be firmly stabilized, allowing radiation to be delivered to a precise location.

The error was discovered in September 2009 only after a second physicist received training on the equipment, made by BrainLAB, and the hospital began questioning whether the machine had been installed correctly in 2004, in a process called commissioning.

The overdoses at CoxHealth occurred in a state where there is little or no government oversight of radiation therapy, a fact that Robert H. Bezanson, the hospital's president and chief executive, chose to emphasize.

On Wednesday, he released a letter that he wrote to the Food and Drug Administration, saying that its recent decision to toughen oversight of diagnostic radiation did not go far enough.

"The initiative should be broadened to include regulation of medical radiation therapy as well," he wrote. "We have also learned that the incident here at CoxHealth is, unfortunately, not an isolated

occurrence. Rather, similar instances of medical overradiation have occurred at other hospitals throughout the country. Without increased regulation and oversight, these instances of medical overradiation will likely continue."

The hospital promised to work with state legislators on ways to better regulate radiation therapy.

Last month, The New York Times documented the harm that can result from radiation errors when basic safety rules are not followed. It also found that in a variety of ways, the pace of technology had outpaced the ability of the medical profession and regulators to keep up.

The overdoses in Springfield echoed what occurred at the Moffitt Cancer Center in Tampa, Fla., where a similar commissioning error resulted in 77 brain cancer patients' receiving 50 percent more radiation than prescribed in 2004 and 2005. The failure of medical facilities to properly commission new radiological equipment was cited as a concern last November by the American Association of Physicists in Medicine.

A testing service for institutions participating in National Cancer Institute trials recommends that certain newly installed radiotherapy equipment undergo an external, independent review before patients are treated. That did not occur at either Moffitt or CoxHealth.

CoxHealth said that so far it had not found any patients who had been harmed beyond the complications of routine radiation therapy. But patients are still being contacted. Some patients, who were seriously ill, have died, and the hospital is looking into those cases.

"The review of their charts and situation is still ongoing," said Dr. John Duff, senior vice president for hospital operations. "It would be premature to speculate whether the overexposure was a contributing factor to their death."

Dr. Duff said he did not know why the BrainLAB employee who was present while the new equipment was being installed had not caught the mistake. He said that the hospital did not have any reports from BrainLAB indicating a problem.

The physicist who incorrectly installed the equipment no longer works at the hospital. Officials there declined to explain the circumstances of his departure.

"It's unacceptable to us that an error like this occurred, and we are taking steps to make sure that an error like this doesn't happen again," Mr. Bezanson said.

The hospital said its stereotactic system "remains suspended indefinitely while we are auditing

the entire program."

Kate Franco, a spokeswoman for BrainLAB, issued a statement Wednesday that said the company had assisted CoxHealth in figuring out what went wrong. "Reviews determined that BrainLAB equipment performed as designed and did not malfunction," the statement said.