

Surge In Kids' ER CT Scans Raises Concerns

Lindsey Tanner, AP

More kids are getting CT scans in emergency rooms, a study found, raising concerns about exposure to adult-sized radiation doses and potential risks for cancer down the road. The number of ER visits nationwide in which children were given CT scans surged from about 330,000 in 1995 to 1.65 million in 2008. While the number of ER visits didn't increase measurably during the study, the percentage of visits involving CT scans climbed from about one percent to almost six percent.

Increases occurred at children's hospitals as well as at general hospitals. The study didn't include dose information, but general hospitals may be less likely than pediatric facilities to use special CT protocols with kids to limit their radiation exposure, the study authors said. CT scans in kids require special oversight, including adjusting doses to their smaller size, because they are more sensitive to radiation than adults, with longer life spans and more time for radiation-related cancers to develop, they said.

The study "underscores the need for special attention to this vulnerable population to ensure that imaging is appropriately ordered, performed and interpreted," the researchers said, led by Dr. David Larson at Cincinnati Children's Hospital Medical Center. The study authors analyzed annual government surveys on ER visits at non-federal hospitals nationwide, focusing on visits in patients younger than age 18. The data include information on CT scan use, but not on the radiation dose used. The results were published Tuesday in the journal *Radiology*.

The increases may be due to improvements in CT technology, as modern scanners create clearer images and are much quicker than older models, producing results in just seconds — a bonus for busy emergency rooms, Larson said. But other factors likely contributed to the increases, and in some cases, overuse, including fear of lawsuits, which drives some doctors to order tests to avoid getting sued for a missed diagnosis. "If you send a kid home (without a CT scan) and it turns out you missed an abnormality, not many juries are going to be sympathetic," Larson said.

Larson said it's impossible to tell from the data whether X-rays, which use less radiation, or other tests could have been done instead of CT scans. Dr. Marta Hernanz-Schulman, a pediatric radiologist at Vanderbilt University Medical Center, said the study trends "are very believable" and illustrate the need to make sure imaging scans aren't used inappropriately in children. She is a founder of the Image Gently campaign, started in 2008 by an alliance of doctors seeking to raise awareness about ways to reduce children's exposure to medical radiation.

Larson said there are signs CT scan use in kids may have started decreasing since the study ended. Dr. Steven Krug, emergency department chief at Chicago's Children's Memorial Hospital, said many institutions, including his own, have started

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using ultrasound to diagnose appendicitis in some kids with abdominal pain. Ultrasound images aren't as detailed as CT images, and children with uncertain results will still need CT scans, but he said the trend may help limit radiation exposure.

At Carle Foundation Hospital in Urbana, Ill., about 20 percent of the ER patients are children, said Dr. Mike Swindle, emergency department chief. Procedures call for adjusting CT scan radiation doses to children's size and weight. "We've all become a bit more conservative with ordering" CT scans, Swindle said. Parents, too, are becoming more aware and increasingly asking about the risks, instead of demanding a CT scan for every bump on the head, he said.

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