Average child may get 7 radiation scans by age 18

January 3 2011, By CARLA K. JOHNSON , AP Medical Writer

(AP) -- The first large study to examine the use of X-rays, CT scans and other medical radiation in children estimates the average child will get more than seven radiation scans by age 18, a potentially worrisome trend.

Most of the scans involve X-rays, which use relatively little radiation. But there is growing concern about CT scans, which entail far more radiation and can raise the risk for cancer, particularly in children.

The study found that X-rays of the chest, hand and foot are the most common. Forty-two percent of children had at least one radiation procedure and 25 percent had two or more during the three-year study period. Dental X-rays were not included in the study.

More troubling is that 8 percent of the children got at least one CT scan. And more than 3 percent of children got two or more CT scans.

"That's particularly concerning," said lead author Dr. Adam Dorfman of University of Michigan Medical School in Ann Arbor. "Today's children are undoubtedly getting many more of these studies than previous generations."

The rapid growth of CT scans, which provide extremely detailed pictures of the body, and other medical imaging in recent decades has led to big increases in the average American's total radiation exposure.

The new study, published online Monday in Archives of Pediatrics and Adolescent Medicine, is a best-ever snapshot of radiation use in U.S. children. However, it doesn't indicate how often the tests might be used unnecessarily.

The findings are based on health insurance data in five markets: Arizona; Dallas; Orlando, Fla.; South Florida; and Wisconsin. The records of more than 355,000 children from 2005-2007 were analyzed.

The authors extrapolate from their data that nearly 6 million U.S. children will get at least one CT scan during a three-year period.

Scans of the head were the most frequent type of CT test in the study, followed by scans of the tummy. One percent of the children received two or more head CT's.

Emergency rooms use CT scans to screen children for brain injuries and appendicitis. Some hospitals are making efforts to reduce radiation by using alternative tests like ultrasound on children with bellyaches.

Since 2008, Cincinnati Children's Hospital Medical Center has reduced the number of repeat CT scans in children with mild head trauma - without harming patients, said Dr. Alan Brody, a radiologist at the hospital.

Other hospitals can compare their data with the new findings and look for ways to lower their radiation use, Brody said. "The only way to decrease the dose of a radiation study by 100 percent is not to do it," he said.

Children's developing tissues are more sensitive to radiation and their longer life spans allow more time for risk to build up. A prior study estimated that the risk of a fatal cancer from an abdominal CT scan was

eight times higher for an infant compared with the risk for a 50-year-old.

There's no generally accepted safe lifetime radiation dose for children, but a coalition of medical groups is working to make sure radiation is given at the lowest dose every time and given only when other non-radiation tests can't be substituted.

The coalition supports efforts to update CT scanners with alert systems that would give operators a reminder to turn down the dose for children.

"We want to be as cautious as we can and protect children as much as possible," said Dr. Marilyn Goske, chair of the Alliance for Radiation Safety in Pediatric Imaging, which started the Image Gently campaign.

More information: Archives: http://www.archpediatrics.com

Image Gently campaign: http://imagegently.org