

PROFESSION

CT orders level off as awareness of radiation risk grows

Urging by physician organizations to think twice before doing imaging studies is having an impact.

By KEVIN B. O'REILLY, amednews staff. Posted June 25, 2012.

The growth rate in physician ordering of computed tomography scans began to slow between 2005 and 2008 and has flattened since then, according to data from six large HMOs that corroborates trends seen in emergency departments and among Medicare patients.

The trend suggests that research demonstrating a link between radiation exposure from medical testing and cancer is having an impact on how often doctors order CTs as well as how much radiation is used when conducting imaging studies, doctors said. High-profile physician organization educational efforts and cuts in Medicare payment for imaging also have contributed, they said.

"The message of being more cognizant of the risks related to radiation is reaching providers, and they are probably beginning to talk to their patients more about them," said Keith Kocher, MD, assistant professor of emergency medicine at the University of Michigan Medical School.

In a November 2011 *Annals of Emergency Medicine* study, Dr. Kocher and his colleagues reported a fourfold rise in CT use during emergency department visits between 1996 and 2007. About one in every seven trips to the ED involves a CT scan, but that figure remained stable in the 2008 and 2009 years for which federal data are available, Dr. Kocher said. Among Medicare patients, the CT rate started to slow in 2005 and dipped to a 1.6% annual growth rate in 2008 and 2009, said a report issued in October 2010 by The Moran Company, a health-care consulting firm based in Washington.

Meanwhile, a study in the June 13 issue of *The Journal of the American Medical Association* found slowing in CT use at six large HMOs. Overall CT use tripled from about 52 tests per 1,000 patients covered by the HMOs in 1996 to 149 per 1,000 in 2010. Though CT use at the HMOs grew by 10.2% annually between 1998 and 2005, that rate fell to 4.2% from 2005 to 2008 and "tended to flatten around 2007," the study said.

"The most important take-away message is that imaging use is leveling off or declining since the late 2000s, and this decline is particularly notable in the studies that employ ionizing radiation," said David Seidenwurm, MD, chair of the diagnostic division of Radiological Associates of Sacramento in California.

Dr. Seidenwurm also co-chaired a panel that in 2011 developed measures aimed at reducing unneeded CT scans and optimizing radiation dose on behalf of the American Medical Association's Physician Consortium for Performance Improvement.

"Direct measurement of physician performance in this area is likely to become more prevalent, and numerous projects are under way to measure physician use of appropriate imaging tests and appropriate radiation exposure when imaging tests are performed," Dr. Seidenwurm said.

Doctors leading imaging education

A Nov. 29, 2007, review article published in *The New England Journal of Medicine* attributed 1.5% to 2% of all cancers to the radiation exposure from CT scans. The following years have seen a number of other studies linking CTs — which deliver 50 times more radiation than x-rays — to cancer, with the risks higher among children.

In 2008, the American College of Radiology launched its Image Gently campaign to educate radiology professionals on how to lower the radiation dose used when imaging children. In 2010, the college joined with the Radiological Society of North America and others to start the Image Wisely initiative that offers education on lowering doses in all patients and ensuring appropriate test ordering.

In April, the college took part in the American Board of Internal Medicine Foundation's Choosing Wisely program, offering five tips for when doctors and patients should think twice before going ahead with imaging tests. For example, a patient who presents with an uncomplicated headache and no other symptoms or relevant clinical history probably does not need a CT.

The college's initiatives have had a "huge impact on radiation dose and raising awareness and motivation to optimize dose," said David B. Larson, MD, chair for quality and safety in the Dept. of Radiology at Cincinnati Children's Hospital Medical Center. At his hospital, ordering physicians have started a formal effort to collaborate with radiologists on how to cut inappropriate imaging tests.

"Awareness is really only the first step," Dr. Larson said. "Then it's a matter of going out and solving the problem."

ADDITIONAL INFORMATION:

5 scenarios where imaging may be unwise

As part of the American Board of Internal Medicine Foundation's Choosing Wisely campaign, the American College of Radiology listed five situations in which physicians and patients should think twice before ordering CT scans and other imaging tests.

- Don't do imaging for uncomplicated headache.
- Don't image for suspected pulmonary embolism without moderate or high pre-test probability.
- Avoid admission or preoperative chest x-rays for ambulatory patients with unremarkable history and physical exam.
- Don't do computed tomography for the evaluation of suspected appendicitis in children until after the ultrasound has been considered as an option.
- Don't recommend follow-up imaging for clinically inconsequential ovarian cysts.

Source: "Five Things Physicians and Patients Should Question," American College of Radiology, April (choosingwisely.org/wp-content/uploads/2012/04/5things_12_factsheet_Amer_Coll_Radiology.pdf)

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"Use of Diagnostic Imaging Studies and Associated Radiation Exposure for Patients Enrolled in Large Integrated Health Care Systems, 1996-2010," *The Journal of the American Medical Association*, June 13 (jama.jamanetwork.com/article.aspx?doi=10.1001/jama.2012.5960)

"Five Things Physicians and Patients Should Question," American College of Radiology, April (choosingwisely.org/wp-content/uploads/2012/04/5things_12_factsheet_Amer_Coll_Radiology.pdf)

"National trends in use of computed tomography in the emergency department," *Annals of Emergency Medicine*, November 2011 (www.ncbi.nlm.nih.gov/pubmed/21835499/)

"Rising use of CT in child visits to the emergency department in the United States, 1995-2008," *Radiology*, June 2011 (www.ncbi.nlm.nih.gov/pubmed/21467249/)

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