

X-rays overused in ICU: Ultrasound safer, just as effective

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A new study shows that the use of ultrasound testing rather than x-rays or CT scans in the ICU reduces patient radiation exposure and lowers costs of care. The study was presented at CHEST 2013, the annual meeting of the American College of Chest Physicians.

"We found that the use of ultrasound to diagnose patients greatly reduced [radiation exposure](#) for patients without negatively affecting their health," said Margarita Oks, MD, Long Island Jewish Hospital, North Shore-LIJ Health System. "It was also cost-effective."

Ultrasound, also called sonography, is an imaging method that uses high-frequency sound waves to produce images that lead to diagnosis and treatment of many diseases and medical conditions. Radiation is not used in ultrasound testing, but is used in [x-rays](#) and CT scans.

Dr. Oks and her colleagues studied medical charts covering 3 months of data comparing chest x-rays, CT scans, and ultrasound between two independent but similar medical intensive care units staffed by the same medical house staff in one health-care system. One unit used bedside ultrasound as the standard of care for diagnosis; the second used conventional imaging, such as x-rays and CT scans, as its standard of care in diagnosis.

Researchers found that there were 5.21 x-rays done per patient stay in the ICU using x-rays and CT scans, while there were 1.10 x-rays per patient stay in the unit using ultrasound as the standard of care. Total CT

scans were 0.91 in the nonultrasound ICU vs 0.26 per patient stay in the ultrasound unit. There were 0.27 cardiac echocardiograms in the nonultrasound ICU vs 0.11 in the ultrasound ICU per patient stay. Mortality rates did not differ greatly, with 0.27 in the nonultrasound ICU vs 0.20 in the [ultrasound](#) ICU.

Provided by American College of Chest Physicians

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