

Study finds rise in rate of diagnostic imaging in managed care

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Use of radiology imaging tests has soared in the past decade with a significant increase in newer technologies, according to a new study that is the first to track imaging patterns in a managed care setting over a substantial time period.

Study results are reported in the November/December 2008 issue of the journal *Health Affairs*, which focuses on the pros and cons of the medical technology boom, the biggest driver of increasing healthcare costs.

A team of researchers from the University of California, San Francisco and the Group Health Center for Health Studies in Seattle conducted the study using data from 377,000 patients enrolled in the Group Health Cooperative in Washington state between 1997 and 2006. The study population underwent five million radiology tests during this 10-year period.

Analysis showed an increase in all type of imaging technologies, with the majority of the tests being X-ray procedures. The average total imaging cost per patient, per year doubled during the study period, from \$229 to \$443.

The most striking finding was the increase in the number of newer and pricier tests such as computed tomography and magnetic resonance imaging scans, according to the research team. In 1997, 13.5 percent of the study group had undergone a CT, MRI, or both, and in 2006 it was

21 percent. Study results showed the per-patient number of CT scans doubled over the 10 years, and the number of MRI scans tripled.

This increase in CT and MRI imaging appeared across the board, with no single patient group or disease group dominating, according to lead author Rebecca Smith-Bindman, MD, an associate professor of radiology and biomedical imaging, epidemiology and biostatistics, and obstetrics, gynecology, and reproductive sciences at UCSF.

The goal with newer imaging tests is to use them in the most efficient and effective way possible and as a replacement for older, less accurate tests, emphasized Smith-Bindman. "But we found the newer tests, such as CT and MRI, are being added on top of the old tests, such as X-rays, rather than replacing them—and this increases costs.

"Like first-time parents taking baby pictures, we may be overdoing it with newer diagnostic imaging tests. Using these tests wisely can detect treatable diseases and save lives. Excess imaging may be too much of a good thing. In addition to health care costs, we need to consider patients' exposure to potentially cancer-causing radiation. The benefit of testing needs to be balanced against the risk," she said.

Smith-Bindman's study confirms previous reports of a trend toward over-imaging, including one that found imaging has risen faster than any other medical service that Medicare patients receive.

The study findings also highlight concern about a correlation between the type of health care practice and rates of imaging, Smith-Bindman said. "Unlike managed care systems such as Group Health that receive a fixed amount to care for each patient, 'fee-for-service' practices get financial rewards for doing extra testing, including recouping investments in office-based scanning equipment. It is likely that rates of testing are higher in fee-for-service practice, and this habit of doing

more imaging may be spreading into managed care."

The study did not address the appropriateness of imaging and whether the increase was associated with improvements in patient care, and this is an area that needs further study, the research team noted.

"Our results definitely highlight the need to curb unnecessary imaging. In future research we need to examine the value of imaging so that we can assess when the new technology leads to improved patient care and improved outcomes, and when the value of new technologies is limited or nonexistent. In all cases, we need to use the technology in a way that limits unnecessary exposure to radiation," Smith-Bindman said.

Source: University of California - San Francisco

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