

Use of rarely appropriate angioplasty procedures declined sharply

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The number of angioplasty procedures classified as rarely appropriate declined sharply between 2010 and 2014, as did the number of those performed on patients with non-acute conditions, according to a study published today in the *Journal of the American Medical Association* and simultaneously presented at a meeting of the American Heart Association in Orlando.

This study is the first analysis of national trends in the use of angioplasty procedures since the 2009 release of Appropriate Use Criteria for Coronary Revascularization. The criteria, developed by the American College of Cardiology, the Society for Cardiovascular Angioplasty and Interventions, the American Heart Association, and other professional societies, address concerns about potential overuse. These findings suggest that the criteria have been effective at improving patient selection and reducing the number of procedures in the rarely appropriate category.

However, among hospitals, variation in the performance of rarely appropriate stent procedures persisted, indicating a need for ongoing quality improvement initiatives.

Using data from the American College of Cardiology's National Cardiovascular Data Registry CathPCI Registry, researchers looked at records from 2.7 million angioplasty procedures from 766 hospitals between July 2009 and December 2014. They found that the number of stent procedures for acute or emergent conditions changed little over the

study period, with 377,540 procedures performed in 2010 compared to 374,543 in 2014. But the number of procedures for non-acute or elective reasons declined significantly, from 89,704 in 2010 to 59,375 in 2014.

Over the study period, investigators found that the proportion of rarely appropriate procedures performed for non-acute conditions - previously classified as inappropriate - declined by more than 50 percent, from 26.2 percent to 13.3 percent. The absolute number of rarely appropriate procedures went from 21,781 to 7,921, a 64 percent decrease.

Though there were dramatic reductions in rarely appropriate procedures, not all hospitals improved to the same degree. Among the hospitals with the highest initial rates of rarely appropriate procedures, some reduced their rates to less than 10 percent, while others still had rates of more than 30 percent at the end of the study period.

"The most important finding from our study is that it shows that the practice of interventional cardiology has evolved over a short period of time, and it appears that we are doing a better job of selecting patients who are more likely to benefit from having a stent procedure," said Nihar R. Desai, M.D., M.P.H., the study's lead author and assistant professor of medicine at Yale School of Medicine in New Haven, Connecticut. "At the same time, we're doing a better job of documenting the reasons why a stent procedure is indicated."

Desai said there is a need for ongoing performance improvement initiatives and hospital benchmarking to address continued variations in hospital performance. "Identifying the organizational strategies most strongly associated with lower rates of inappropriate angioplasty remains a potentially important area for future research," he said.

In an accompanying editorial, Robert A. Harrington, M.D., chair of the department of medicine at Stanford University School of Medicine in

Stanford, California, said that the cardiology community has been receptive to using data, evidence, and guidelines to inform their practice; and creating a nationally available quality registry system that allows for "measurement, analysis, and feedback" has been an important part of that development. This innovation has positioned the cardiology community to build what the Institute of Medicine calls a learning [health care](#) system, defined as one "designed to generate and apply the best evidence for the collaborative health care choices for each patient and provider." But Harrington said more can be done.

"As noted by Desai et al, not all hospitals that perform angioplasty contribute data to the NCDR," Harrington said. "Second, more emphasis must be placed on achieving interoperability across health care systems." To reach these goals, Harrington said there is a need for a national system that provides "real-time clinical support" and makes use of "accumulating data and sophisticated data analytics, including randomization when appropriate. Only at that point will the continuously learning health care system be a reality."

In 2012, the appropriate use criteria task force for the American College of Cardiology changed the classification labels for Appropriate Use Criteria to more accurately reflect their intended meaning. The label "inappropriate" was changed to "rarely appropriate" to reflect a continuum of benefit and risk. The new terminology reflects a range of frequency in which the patient may benefit from a procedure or test rather than absolutes.

Provided by American College of Cardiology

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