

Radial access, same-day cardiac procedure could save \$300 million annually

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If hospitals can perform more transradial, same-day percutaneous coronary intervention, or PCIs, not only will patients benefit because it is associated with have less complications, but collectively, hospitals across the U.S. could save \$300 million each year, according to research published today in *JACC: Cardiovascular Interventions*.

Currently, balloon angioplasty and stenting—a type of cardiac procedure used to treat narrowing of the arteries in the heart, or PCI, is one of the leading national expenditures for cardiovascular procedures. PCI costs the U.S. approximately \$10 billion each year. There has been little data on strategies that can be implemented to help reduce costs of PCI.

"We now have identified a mechanism for hospitals to improve their efficiency, lower costs and which is associated with improved PCI outcomes simultaneously," says the study's lead author Amit P. Amin, MD, MSc, assistant professor of medicine at Washington University School of Medicine in St. Louis. "Our data show there is a tremendous potential to reduce costs of PCI, reduce complications and achieve a 'win-win' for both patients and hospitals. Hospitals that redesign their care pathways to perform more same-day, transradial PCIs can potentially save hundreds of thousands of dollars each year."

During PCI, a doctor accesses the blood stream through an artery in either the arm or leg and inserts a thin, hollow tube to view the blood vessels of the heart on an X-ray. Next, a small balloon is inflated in the heart artery (called a coronary angioplasty) to relieve the narrowing.

After this, a device such as a stent can be used to keep the blood vessel open.

The study evaluated different PCI approaches and care pathways to see which would be least costly. Researchers examined nearly 280,000 Medicare patients in the National Cardiovascular Data Registry's CathPCI Registry undergoing PCI who were eligible for same-day discharge. Out of this group, the arm artery access was used in 9 percent of the patients, and same-day discharge was used in 5.3 percent of patients. The adjusted cost associated with arm access with same-day discharge was \$13,389 while the cost associated with leg access with overnight stay was \$17,076, a difference of \$3,689 per PCI procedure.

The study goes on to point out that by shifting practice by 30 percent for more same-day arm access procedures, a hospital performing 1,000 elective PCI procedures per year could reduce costs by approximately \$1 million. If collectively all hospitals across the country followed this care pathway, PCI costs would be lowered by almost \$300 million annually.

"One hope is that professional medical organizations will take these findings into account when developing new PCI treatment guidelines, and consider the benefits for both the patient and the health care system as a whole," Amin said. "Also, we need to continue to pursue research like this—in all areas of medicine—that demonstrates ways in which higher quality care can be delivered at a lower cost, to elevate the value of health care that our patients deserve."

While selection bias can never be completely ruled out with registry based outcomes research, every possible attempt to reduce this bias through appropriate exclusions and statistical methodology was made to ensure that the study population was eligible for same day discharge, according to the authors.

More information: *JACC: Cardiovascular Interventions*, [DOI: 10.1016/j.jcin.2016.11.049](https://doi.org/10.1016/j.jcin.2016.11.049)

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