Medicare's experimental mandatory bundled payment model for knee and hip replacements is more likely to yield cost savings when the surgeries are performed in larger hospitals that do more of these procedures, according to a study from the Perelman School of Medicine at the University of Pennsylvania. Non-profit and major teaching hospital status also appear to be associated with cost savings, the Penn Medicine analysis found.

The study, published this week in *JAMA*, could influence the U.S. government's Centers for Medicare and Medicaid Services (CMS) in their eventual determination of how broadly to apply bundled payments for these common surgeries.

"Our findings suggest that many hospitals do well even when required to take part in bundled payments, though certain types of hospitals are better positioned than others," said study lead author Amol S. Navathe, MD, PhD, an assistant professor of Medical Ethics and Health Policy at Penn Medicine.

Medicare health insurance covers more than 55 million older Americans. CMS, which administers the Medicare program, has begun experimenting with bundled payment models in the hope of reducing healthcare cost inflation, boosting care quality, and lowering the sometimes extreme variability of both. One of CMS's leading bundled
payment experiments is the Comprehensive Care for Joint Replacement (CJR) program, a five-year trial due to end in 2020. In this program, hospitals are required to participate based on location in one of 67 selected urban markets. Participating hospitals receive normal Medicare reimbursements for hip and knee replacements, but later get a bonus if they beat CMS's quality and cost targets for the care delivered—the full "bundle" of care including joint replacement surgery, associated hospitalization expenses, and post-discharge care for up to 90 days. If a hospital fails to meet cost and quality targets, it is on the hook to repay CMS to cover at least part of that gap.

Medicare reimburses hospitals for about half a million knee and hip replacements annually, so incentivizing hospitals to keep a lid on the costs of these procedures, while maintaining care quality, could have a big impact.

The study examined results for the first year of CJR, April 2016 to March 2017, using data from Medicare claims and the American Hospital Association. Of the 799 hospitals participating in that year, 382 made their targets and received bonus payments, and 417 didn't.

Navathe and colleagues looked for characteristics that distinguished the 382 winners—"savings hospitals"—from the rest. They found that the former were more likely to be large hospitals with more than 400 beds (24.0 percent vs. 14.9 percent). The savings hospitals also handled a greater load of patients, averaging more Medicare-covered procedures (6,242 vs. 4,362) during the prior year, and more joint-replacement procedures (217 vs. 133). Savings hospitals moreover were far less likely than non-savings hospitals (2.1 vs. 23.2 percent) to be defined by CMS as "low-volume" hospitals.

The form of ownership and hospital organization appeared to matter too. Savings hospitals were more likely to be non-profit (69.6 vs. 53.4
percent) and major teaching hospitals (13.0 vs. 7.3 percent), and were more likely to have an integrated post-acute care service (55.8 vs. 40.0 percent).

Savings hospitals' costs per case before starting in the bundled payment program averaged $22,145, which was $1,003 lower than the non-savers' baseline average when "risk-adjusting" for the different severities of cases.

Nearly all the savings hospitals were rated as delivering good (52.6 percent) or excellent (39.3 percent) care quality. Data on care quality for the non-savings hospitals were unavailable.

The researchers intend that their analysis will be useful in guiding not only CMS but also those on the health care organization side.

"It's important for doctors, health care organizations, and policymakers to understand how different hospitals fared in the first year of CJR, as this will lead to better policy and better results long term," said study senior author Ezekiel J. Emanuel, MD, PhD, chair of Medical Ethics and Health Policy at Penn.

Under the new administration, CMS has begun to shift towards more voluntary bundled payment models, and last year it changed its CJR rules to allow many rural and low-volume hospitals to participate on a voluntary basis. Larger, higher-volume care centers in many larger cities continue to be mandated to participate.
