

Medicare bundled-payments model cut joint replacement costs by more than 20 percent

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Bundled payment models can push Medicare and health system costs down considerably without sacrificing quality of care, according to new research from the Perelman School of Medicine at the University of Pennsylvania. The study, the first to combine hospital cost and Medicare claims data to identify drivers of joint replacement cost savings - evaluated costs and care quality at for hip and knee replacements performed from 2008-2015 at the five-hospital Baptist Health System (BHS) network in San Antonio, Texas. Results, published online in *JAMA Internal Medicine*, show that the average cost dropped 20.8 percent while the effect on quality of care was unchanged or improved.

"This study outlines how one bundling participant achieved hospital and post-hospital discharge savings while reducing Medicare payments - all without compromising quality," said lead author Amol S. Navathe, MD, PhD, an assistant professor in the department of Medical Ethics and Health Policy at the Perelman School of Medicine at the University of Pennsylvania, and a member of Penn's Center for Health Incentives and Behavioral Economics. "The results offer guidance for both providers and a new administration considering decisions that will impact the health of patients and communities nationwide. Policymakers should take note of the fact the results suggest hospitals may directly benefit in bundled payment models."

In recent years, the Centers for Medicare & Medicaid Services (CMS) and some [private health insurance](#) companies have begun switching to bundled-payment models to help keep a lid on costs. Under a bundled-

payment model, an insurer reimburses hospitals a single, fixed amount for a common procedure and associated costs, rather than reimbursing for separately itemized services and supplies.

Results of the analysis revealed that for the 3,738 patients who received [joint replacement surgery](#) and had no significant pre-existing complications, the average cost of joint replacement plus 30 days' post-acute care (PAC) fell from \$26,785 in 2008 to \$21,208 in 2015, a drop of \$5,577, or 20.8 percent, per patient.

The cost reductions came chiefly from two sources:

- A 29 percent (\$1,920.68) drop in the average per case cost of an artificial joint, accomplished in part through use of evidence-based data to engage surgeons and manufacturers; and
- A 27 percent (\$2,443.12) drop in the average per case spending on PAC, achieved once PAC was added to bundles.

BHS also saw a 67 percent decline in extended hospital stays, a validated measure of surgical complications, while the severity of patient conditions remained unchanged.

At the start of the study period in 2008, Medicare was still reimbursing the network for joint replacements in its standard "fee-for-service" manner, covering separately itemized service and supply costs. In January 2009, however, CMS began a voluntary trial of a bundled payment model for some common procedures including knee and hip replacements. BHS was one of the participants. Initially, Medicare reimbursed participating hospitals a single amount for surgical and facility fees, but in 2013, the bundling model was expanded to cover 30 days of follow-up "post-acute" care as well.

Under these bundling models, the hospital system had an incentive to

reduce its costs so that the total for each [joint-replacement](#) would fall below the Medicare fixed reimbursement level—the gap being the hospital's profit margin. Under the 2013 model, hospitals also had an incentive to rein in over-use of expensive follow-up care in rehabilitation facilities.

"On the whole, the health system's rapid achievement of savings through changes in a few key areas suggests that hospitals in the long run will be able to reduce costs in many areas, not only internally but through greater care coordination with external facilities," Navathe said. "There are still more savings on the table."

The findings also hint that such cost-reduction strategies won't work well unless they incentivize physicians as well as hospital managers. "It's striking that those costs fell only with the introduction of a bundled payment model that incentivized physicians too," Navathe said.

The research team is now analyzing the strategies Baptist Health System used to control care costs and quality.

Since April 2016, CMS has mandated a bundled payments system for knee and hip replacements in 800 hospitals across the US; the new system extends the 2013 model to cover 90 days of post-acute care.

CMS has committed to switching at least half of its reimbursements to alternative payment models by 2018.

Provided by Perelman School of Medicine at the University of Pennsylvania

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