

### Medicare's New Bundled Payment For Joint Replacement May Penalize Hospitals That Treat Medically Complex Patients

#### Take Away Points

- Risk adjustment is recommended to calculate reconciliation payments under the newly implemented Comprehensive Care for Joint Replacement program.
- Risk adjustments for reconciliation payments resulted in reductions of annual penalties by as much as \$146,360 and increases in payment as large as \$114, 184 for hospitals with the most medically complex patients.

#### The Issue

The Center for Medicare and Medicaid Services (CMS) has recently designed a new mandatory episode-based bundled payment program for joint replacement, the Comprehensive Care for Joint Replacement (CJR) program effective April 1, 2016. The goal of CJR is to provide an alternative payment program to reduce 90-day episode payment variations in US hospitals. A defining characteristic of CJR are reconciliation payments, additional payments received by hospitals if their 90-day spending is less than the target or penalties paid by hospitals if their 90-day spending exceeds the target. Each hospital's target episode price is calculated by blending its own historical episode spending with the average spending of other hospitals in the same region. Over time, the blended price is increasingly weighted toward the regional benchmark, however, there are concerns that hospitals who tend to have complex patients will be inadvertently penalized based on the current reconciliation payment algorithm.

This study compared the proposed CJR reconciliation payment algorithm with a risk adjusted reconciliation payment algorithm for lower extremity joint replacement.

#### Study Methods and Design

From 2011-2013, Medicare patients with lower extremity joint replacement (N=23,251) claims were identified across 800 Michigan hospitals, throughout 67 metropolitan areas.

#### *Episodes of Care*

Payments for each 90-day episode of care were calculated by aggregating all associated claims and then removed payments for disproportionate-share hospitals, indirect medical education, and new technologies. Following a similar approach used by CMS CJR program, episodes with extremely high or low costs were excluded to limit the influence of outliers.

#### *Hospital Case Mix and Reconciliation Payments*

Hierarchical Condition Category (HCC) risk scores reflect medical complexities of a hospital's patient population. CMS-HCC software was used to calculate the risk score of each beneficiary in the study by collecting data points such as age, sex, comorbidities, dual Medicare and Medicaid eligibility status, and original diagnosis. These patient risk scores were then aggregated, to get the average for each hospital – which was used as a proxy for hospital case-mix.

#### Source

Ellimoottil C, Ryan AM, Hou H, Dupree J, Hallstrom B, Miller DC. Health Aff (Millwood). 2016 Sep 1;35(9):1651-7.  
doi: 10.1377/hlthaff.2016.0263.  
<http://content.healthaffairs.org/content/35/9/1651.full>

Each hospital's reconciliation payment was calculated using similar methods outlined in the CJR program.

Fitted linear regression models with heteroskedastic robust standard errors was used to test the association between CMS-HCC risk scores and reconciliation payments per joint replacement episode under two different scenarios: hospital's own 2011-2012 calculated reconciliation payment, and 2011-2012 average regional (in this case, state) spending.

#### *Risk Adjustment*

A standard observed-to-expected framework was used to estimate the risk-adjusted episode payment. Then the risk-adjusted payment was aggregated to hospital level. The impact of CMS's decision to exclude risk adjustment was estimated by calculating the net difference in reconciliation payments that hospitals would receive with and without risk adjustment.

#### **Key Findings**

- The average CMS-HCC risk scores averaged 0.7 to 1.8 (mean 1.12; SD  $\pm$ 0.19).
- Risk adjustment reduced reconciliation payments to hospitals with the lowest risk scores and increased payments to hospitals with the highest scores.
- There was no significant association between reconciliation payment and CMS-HCC risk scores when target prices were set by using historical spending ( $r=-0.15$ ;  $p=0.24$ ).
- There was a significant inverse association when target prices were set to a regional benchmark ( $r=-0.37$ ;  $p=0.003$ ). Reconciliation payments per episode were reduced by \$827 when CMS-HCC risk score increases by one standard deviation (95% confidence interval:  $-1,368$ ,  $-285$ ).

#### **Limitations**

Though not generally different from the hospitals selected for inclusion in the CJR program, only Michigan hospitals were analyzed for this study. Second, the risk adjustment model used did not include all the variables for joint replacement (i.e., body mass index, functional status, etc.); however, the same risk adjustment model is currently being used by CMS in other programs. Lastly, there were several elements excluded from this analysis that are included in CJR program but the investigators believe that the primary findings related to risk adjustment would not be substantially altered.

#### **Final Thoughts**

Providing risk adjustments in conjunction with the CMS-HCC scores would reduce the likelihood of inadvertently penalizing hospitals who care for sicker patients through the CJR program.