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Comprehensive Care for Joint Replacement Performance Year 1 results – Key considerations

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The Centers for Medicare and Medicaid Services (CMS) recently released information on Performance Year 1 (PY1) payments made to hospitals participating in the Comprehensive Care for Joint Replacement (CJR) model. The CJR model is a mandatory bundled payment model in which 799 participating hospitals from 67 metropolitan statistical areas (MSAs) are required to participate. Each episode begins with a lower extremity joint replacement procedure, defined by an inpatient admission for Medicare Severity-Diagnosis Related Group (MS-DRG) 469 or 470, and completes after 90 days of post-discharge care. All qualifying services during the episode contribute to the total cost of the episode. A retrospective reconciliation process occurs annually, where the total episode spending is compared to the target price to determine payments to the hospital. CMS released a final rule related to CJR on December 1, 2017, which makes participation in CJR voluntary for hospitals in half (33) of the original 67 MSAs in which the program was originally mandated. As such, the number of CJR participant hospitals in future years will likely be lower than it was in PY1.[1]

The first CJR reconciliation, for PY1, was completed in spring 2017 and included episodes with start dates between April 1, 2016, and September 30, 2016 (inclusive) and end dates on or before December 31, 2016. There is no downside risk in PY1, meaning that hospitals that lost money in CJR were not required to pay it back to CMS. However, this was considered a ramp-up year and future reconciliation years will include downside risk.

In order to receive a reconciliation payment, a CJR hospital must meet two criteria:

1. **Generate savings**: Expenditures on CJR episodes must not exceed the pre-set target price, which is based on a combination of the hospital's historical episode experience and the experience of other hospitals in the region. Note that hospitals with fewer than 20 episodes of a given type use target prices based on regional episode costs.
2. **Exceed certain quality score thresholds**: Quality performance categories are assigned based on a points system that takes into account three metrics: the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) score, total hip arthroplasty/total knee arthroplasty (THA/TKA) complications score, and patient-reported outcomes (PRO). Each hospital's scores are converted to points based on the decile in which they rank relative to all eligible hospitals nationally. In order to receive payment, the hospital must achieve an aggregate quality performance score of "excellent," "good," or "acceptable."

The recently released report of CJR PY1 results from CMS included only hospitals that received a payment, meaning that any hospital failing to meet both of these criteria was excluded from the report.[2] This paper combines data from the report of PY1 results and other publically available sources to compare hospitals that received payments in CJR PY1 to those that did not.

Financial performance

Out of 799 participating CJR hospitals, 382 (48%) received a reconciliation payment in PY1 and 417 (52%) did not.[3] The 382 hospitals that received payments accrued 33,152 lower extremity joint replacement episodes and $37,594,131 in total reconciliation payments. Reconciliation amounts reported here are waged, meaning they have been adjusted by hospital wage factor to reflect geographical variation in costs. Figure 1 shows the average episode volume and average reconciliation amount per episode for hospitals receiving reconciliation payments by CJR region.

FIGURE 1: AVERAGE CJR RECONCILIATION AMOUNTS BY REGION

Region	Number of Participating Hospitals with Payments	Average Number of Episodes per Hospital	Average Reconciliation Amount per Episode
East North Central	56	97.4	$986.56
East South Central	12	119.8	$949.80
Middle Atlantic	87	100.9	$1,470.16
Mountain	20	85.4	$1,021.00
New England	3	76.0	$974.50
Pacific	73	63.2	$1,261.30
South Atlantic	60	83.6	$976.51
West North Central	28	101.2	$750.86
West South Central	43	71.9	$1,016.48
WEIGHTED TOTAL*	**382**	**86.79**	**$1,133.99**

**The Average Reconciliation Amount is weighted by the number of episodes per region.*

Quality performance

Because the quality metrics used to calculate the CJR composite quality score are publicly reported on Hospital Compare,[4] we are able to calculate the composite quality score and quality performance category for nearly all hospitals in the program. Hospital HCAHPS or THA/TKA scores are not reported if sample sizes for measure calculation are below a specified threshold.[5,6] Hospitals without scores are assigned to the 50th percentile for each quality measure. Ten of the 417 hospitals without payments were not found in the public Hospital Compare database and were also assigned to the 50th percentile categories for the purposes of analysis. If a hospital did not have either score, their quality performance category would be "good" based on the threshold for each category. Figure 2 demonstrates the quality results across CJR hospitals.

FIGURE 2. QUALITY PERFORMANCE CATEGORY DISTRIBUTION OF CJR HOSPITALS

CMS Quality Performance Category	Participating Hospitals with Payments		Participating Hospitals Without Payments		Total	
	Count	% of total	Count	% of total	Count	% of total
Excellent	150	39%	92	22%	242	30%
Good	201	53%	241	58%	442	55%
Acceptable	31	8%	30	7%	61	8%
Below Acceptable	N/A	N/A	54	13%	54	7%
TOTAL	**382**		**417**		**799**	

Note: Ten of the 417 hospitals without payments were not found in the public quality database and were assigned to the 50th percentile categories for the purposes of analysis. "Below acceptable" hospitals are not eligible to receive reconciliation payment.

Of the hospitals that received a reconciliation payment, the vast majority (92%) had a quality performance category of "excellent" or "good." Based on the analysis of quality data, we note that only 80% of hospitals that did not receive a reconciliation payment fell in the "excellent" or "good" categories. Of all of the hospitals that did not receive a reconciliation payment, 87% had a quality score of "acceptable" or higher, indicating that they would have been eligible to receive a payment if they had saved money compared to their pre-set target price. For the remaining 13% of hospitals with "below acceptable" scores, we cannot assess whether or not they saved money compared to the pre-set target price because they were ineligible to receive payment whether or not savings were achieved.

Additionally, the majority of "excellent" hospitals (62%) received a reconciliation payment, while 45% of "good" and 51% of "acceptable" hospitals received a reconciliation payment. Hospitals with strong quality performance may be able to simultaneously lower costs as a result of their actions to improve quality.

Of the 417 hospitals without reconciliation payments, 164 (64.8%) did not have a THA/TKA complications score and 55 (15.2%) did not have a HCAHPS score. In comparison, a much smaller volume of hospitals that received reconciliation payments were lacking these scores. Of the 382 hospitals with reconciliation payments, 43 (12.7%) did not have a THA/TKA complications score and six (1.6%) did not have a HCAHPS score.

Figure 3 presents the average number of episodes and average reconciliation amounts among hospitals with reconciliation payments. The average reconciliation amount per episode was highest among "good" hospitals ($1,157). "Excellent" hospitals that received reconciliation payments had nearly twice as many CJR episodes on average compared to both "good" and "acceptable" hospitals.

FIGURE 3: AVERAGE RECONCILIATION AMOUNT (WAGED) FOR PARTICIPATING HOSPITALS WITH PAYMENTS

CMS Quality Performance Category	Average Number of Episodes	Average Reconciliation Amount per Episode
Excellent	123.1	$1,121.48
Good	65.0	$1,156.84
Acceptable	52.5	$1,092.70
TOTAL	**86.79**	**$1,133.99**

CJR hospital size

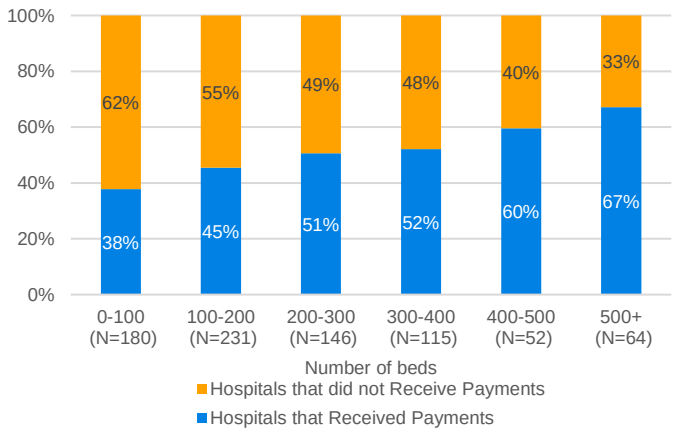
Hospital size, measured by the number of beds, was identified in the CMS Inpatient Prospective Payment System (IPPS) Fiscal Year (FY) 2016 file for participating CJR hospitals.[7] Among hospitals that did not receive a payment, a larger percentage (58%) had 200 or fewer beds compared to the hospitals that did receive a payment (45%).

The percentage of hospitals receiving payments increases as hospital size increases (Figure 4 on page 3). For hospitals with 0 to 100 beds, only 38% received a reconciliation payment while 62% did not. In comparison, for hospitals with 500+ beds, 67% received a reconciliation payment and 33% did not. Increasing hospital size correlates to a higher percentage of hospitals receiving payments.

Hospital size may affect a hospital's financial performance in CJR in several ways. Smaller hospitals typically have a lower average number of episodes and could potentially be affected to a larger extent by expensive outlier episodes compared to larger hospitals that have more episodes. Hospitals with extremely low volume are subject to a program policy that uses fully regional pricing, which would likely affect their level of risk in reconciliation calculations. These hospitals may be negatively affected if regional baseline episode costs are lower than those of the hospital. Additionally, larger hospitals may have higher quality performance due to more resource investment or coordination of CJR procedures. With the potential for a larger payout given

greater episode volume, larger hospitals may have made more changes to care to reduce costs.

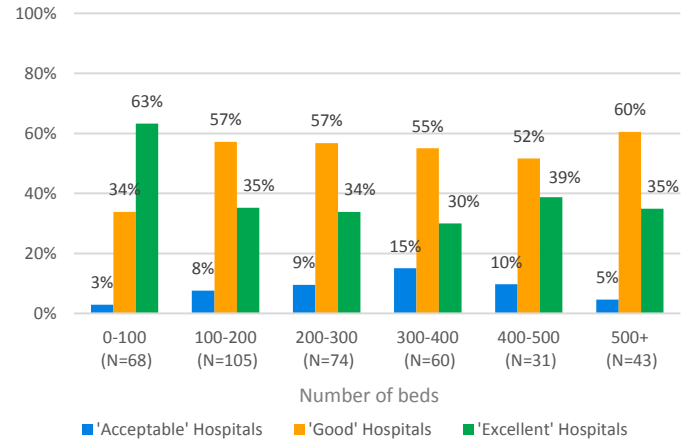
FIGURE 4: DISTRIBUTION OF HOSPITAL PAYMENT STATUS BY HOSPITAL SIZE



Note: One hospital with payment and 10 hospitals without payments are missing from the CMS IPPS FY 2016 file and are not included in this graph.

After stratifying hospitals with reconciliation payments by hospital size and quality performance category, it appears that smaller hospitals with 100 or fewer beds have a higher proportion of "excellent" hospitals relative to larger hospitals (Figure 5).

FIGURE 5: DISTRIBUTION OF QUALITY PERFORMANCE CATEGORY BY HOSPITAL SIZE FOR HOSPITALS THAT RECEIVED PY1 PAYMENTS



Note: One hospital with payment is missing from the CMS IPPS FY 2016 file and is not included in this graph.

A potential driver for the high proportion of "excellent" hospitals among smaller hospitals may be the points received for performance on the HCAHPS quality measure. Figure 6 shows that the average quality points based on HCAHPS performance among the smallest hospitals is higher compared to the HCAHPS points at larger hospitals. A similar pattern is not seen in the THA/TKA complications points.

FIGURE 6: AVERAGE HCAHPS AND COMPLICATIONS QUALITY POINTS STRATIFIED BY HOSPITAL SIZE

Number of Beds	Number of Participating Hospitals with Payments	Average HCAHPS Points	Average THA/TKA Complications Points
0-100	68	6.5	6.9
100-200	105	4.3	6.3
200-300	74	3.8	6.7
300-400	60	3.9	6.2
400-500	31	4.6	6.5
500+	43	3.6	6.8
TOTAL	**381**		

DRG 469/470 volume

The number of discharges for DRG 469 and 470 for each CJR hospital was obtained from the DRG Summary for Medicare IPPS Hospitals for FY 2015.[8] Figure 7 presents the proportion of hospitals that received or did not receive payments by number of discharges for these two DRGs. Of hospitals with low discharge volume, categorized as 0 to 10 discharges for DRG 469 and 0 to 100 discharges for DRG 470, a lower proportion received payments compared to hospitals with more volume.

FIGURE 7: PERCENT DISTRIBUTION OF HOSPITALS WITH AND WITHOUT PAYMENTS BY NUMBER OF DISCHARGES IN 2015

Number of Discharges	Number of Hospitals with Payments	Number of Hospitals without Payments	Total Hospitals	% of All Hospitals that Received Payments	% of All Hospitals that did not Receive Payments
DRG 469 - MAJOR JOINT REPLACEMENT OF LOWER EXTREMITY W MCC					
0-10	227	314	541	42%	58%
11+	155	103	258	60%	40%
DRG 470 - MAJOR JOINT REPLACEMENT OF LOWER EXTREMITY W/O MCC					
0-100	156	285	441	35%	65%
101+	226	132	358	63%	37%

Note: MCC = major complication or comorbidity.

The difference in payment by procedure volume may be explained by similar factors that influence the trend in hospital size. Hospitals that do not perform many of these procedures may be more negatively affected by a few high-cost episodes. Furthermore, hospitals that frequently perform these procedures may invest more resources to develop strategies for cost reduction given the potential large payout due to higher volume.

Conclusion

Larger hospitals were more likely to receive a reconciliation payment in the first year of CJR as compared to smaller hospitals as were hospitals with a higher volume of DRG 469 and 470 procedures. The majority of hospitals that did not receive payments still had quality scores that were sufficient for payment had their episode spending not exceeded the target price threshold, indicating that episode costs were a more substantial barrier to payment than quality performance overall.

REFERENCES

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