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Bundled Payments for Care Improvement: Boom or Bust?

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ABSTRACT

Background: As early implementors of the Centers for Medicare and Medicaid Services (CMS) Bundled Payments for Care Improvement (BPCI) initiative, our private practice sought to compare our readmission rates, post-acute care utilization, and length of stay for the first year under BPCI compared to baseline data.

Methods: We used CMS data to compare total expenditures of all diagnosis-related groups (DRGs). Medicare patients who underwent orthopedic surgery between 2009 and 2012 were defined as non-BPCI (n = 8415) and were compared to Medicare BPCI patients (n = 4757) who had surgery in 2015. Ninety-day post-acute events including inpatient rehabilitation facility or subacute nursing facility admission, home health (HH), and readmissions were analyzed.

Results: The median expenditure for non-BPCI patients was \$22,193 compared to \$19,476 for BPCI patients ($P < .001$). Median post-acute care spend was \$6861 for non-BPCI and \$5360 for BPCI patients ($P < .001$). Compared to non-BPCI patients, BPCI patients had a lower rate of subacute nursing facility admissions (non-BPCI 43% vs 37% BPCI; $P < .001$), inpatient rehabilitation facility admissions (non-BPCI 3% vs 4% BPCI; $P = .005$), HH (non-BPCI 79% vs 73% BPCI; $P < .001$), and readmissions (non-BPCI 12% vs 10% BPCI; $P = .02$). Changes in length of stay for post-acute care were only significant for HH with BPCI patients using a median 12 days and non-BPCI using 24 days.

Conclusion: The objective of BPCI was to improve healthcare value. Through substantial efforts both financially and utilization of human resources to contain costs with clinical practice guidelines, patient navigators, and a BPCI management team, the expenditures for CMS were significantly lower for BPCI patients.

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The Centers for Medicare and Medicaid Services (CMS) beginning in 2013 introduced the Bundled Payments for Care Improvement (BPCI) initiative through the Innovation Center, a creation of the Affordable Care Act to test innovative payment and service delivery models. These new models have the potential to reduce Medicare, Medicaid, or Children's Health Insurance Program expenditures while improving quality of care to beneficiaries [1].

Traditionally in a fee-for-service model, Medicare makes individual payments to providers for each service provided for a single

illness or treatment. Research demonstrates that alignment of physicians, hospitals, and post-acute providers through bundled payments can decrease costs as well as reward quality as opposed to quantity. Currently, over 20% of Medicare fee-for-service payments are now flowing through alternative payment models with goals of 30% and 50% in 2016 and 2018, respectively [2].

Studies have shown that a great deal of variation occurs in Medicare spending in the 30 days following discharge from the hospital with 72%–92% of the variation in hip and knee arthroplasty being attributable to differences in post-acute care spending [3]. The BPCI program for this reason does place a great deal of focus on utilization of post-acute care and readmissions. Early implementors of the BPCI program have shown decreased hospital length of stays, decreased discharges to inpatient facilities, and slightly lowered readmissions rates with overall cost savings to the hospital. Many of these early implementors are large academic teaching hospitals [4,5]. Upon implementation of the BPCI program, 97% of participants were hospitals; however, now physician practices comprise

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up to 50% with potential for long-term impact of the program due to growing participation [6].

We question whether the same financial savings and improved quality of care can also be achieved through a private practice managing the bundle program. As a large proactive private practice orthopedic group in the Southeast, we were early implementors of the BPCI initiative and sought to compare our readmission rates, post-acute care utilization, and post-acute care length of stay for the year before BPCI implementation as compared to the first year under the bundled payment program. In addition, we hope to quantify the potential cost savings under the program.

Methods

We used CMS data provided by our convener to compare the total expenditures of all diagnosis-related groups (DRGs) managed under our contract bundle which included greater than 20 DRGs across numerous orthopedic specialties. Medicare patients who underwent orthopedic surgery between January 2009 and December 2012 were defined as non-BPCI ($n = 8415$) and served as our baseline comparison group. The baseline non-BPCI group was then compared to Medicare BPCI patients ($n = 4757$) who had surgery between January 2015 and December 2015. The BPCI group consisted of patients managed within Model 2 of the BPCI program which involves a retrospective bundled payment arrangement with actual expenditures including the inpatient stay and all costs for up to 90 days postdischarge reconciled against a target price based on previous performance before entering the arrangement. Post-acute events within the 90-day episode including admission to an inpatient rehabilitation facility (IRF) or subacute nursing facility (SNF) as well as home health (HH) utilization were analyzed. Readmissions and overall subacute length of stay were also analyzed for each group. No exclusions were made outside of the government-derived Medicare bundling program.

Expenditures were found to be non-normally distributed. Additionally, all expenditures were converted to 2016 dollars using the consumer price index. Wilcoxon tests were used to determine differences in expenditures and length of stay between BPCI and non-BPCI patients. Fisher exact tests were used to determine differences in post-acute event rates between the 2 groups. Overall financial savings attributed to BPCI implementation were calculated.

Results

Total and post-acute expenditures (Fig. 1) were significantly ($P < .001$) higher for surgeries performed outside of the bundle. The median total expenditure for non-BPCI patients was \$22,193 (interquartile range [IQR] of \$17,903–\$31,239) compared to \$19,476 (IQR of \$16,013–\$28,241) for BPCI patients ($P < .001$). Median post-acute care spend was \$6861 (IQR of \$4452–\$14,552) for non-BPCI patients and \$5360 (IQR of \$3559–\$12,207) for BPCI patients ($P < .001$).

Compared to non-BPCI patients, BPCI patients had a lower rate of SNF admissions with non-BPCI patients at 43% vs 37% for the BPCI patients ($P < .001$). IRF admissions were 3% for non-BPCI patients and 4% for those in the BPCI program ($P = .005$). HH utilization was 79% for the non-BPCI patients vs 73% for the BPCI cohort ($P < .001$; Fig. 2).

Readmissions for non-BPCI patients were 12% compared to 10% for BPCI patients ($P = .02$; Fig. 3). There were no significant differences in length of stay for IRF or SNF patients. Changes in length of stay for post-acute care were only significant for HH with BPCI patients using a median 12 days (IQR, 8–17) and non-BPCI using 24 days (IQR, 18–30; $P < .001$; Fig. 4).

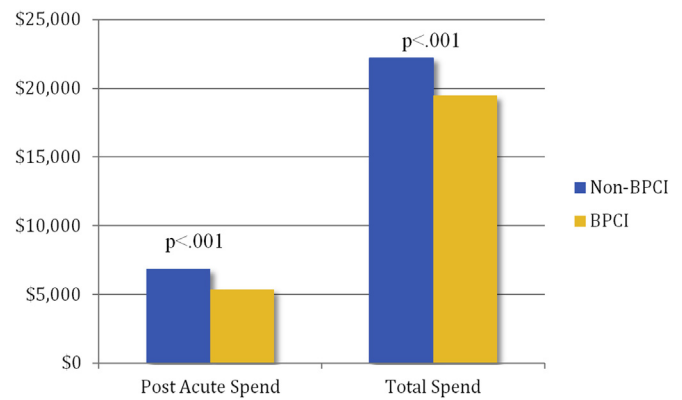


Fig. 1. Differences in expenditures.

Discussion

The BPCI program was designed to incentivize higher quality care at a lower cost for the Medicare population. The BPCI program sought to improve healthcare delivery and to ultimately reduce costs by allowing providers, both hospitals and physician groups, to enter into prenegotiated payment arrangements that included financial and performance accountability for a clinical episode in which a risk/reward was determined [7]. Previous studies particularly in large academic centers in Model 2 of the BPCI program have shown significant cost savings and improved care. Specifically, lower readmission rates, decreased length of stay, and reduced admissions to inpatient facilities were key to success of the program [8]. It has been shown that up to 50% or more of Medicare beneficiary costs may occur in the post-acute care setting following a hospitalization [9]. Post-acute care costs and quality management are substantial in this Medicare population and provide potentially large savings under the BPCI program. Early in the program, we were only able to decrease HH length of stay and are particularly focused on SNF admissions as well as SNF length of stay as the program moves forward as it is clearly a major contributor to overall post-acute care costs. Our overall summary of improvements with the BPCI bundle is provided in Table 1.

In comparison to previously published data assessing early implementation of the BPCI program, our results are quite comparable in most metrics. Dundon et al [8] presented a decrease from 44% to 28% for discharges to inpatient facilities over a 3-year period within a total joint population looking solely at DRGs 469

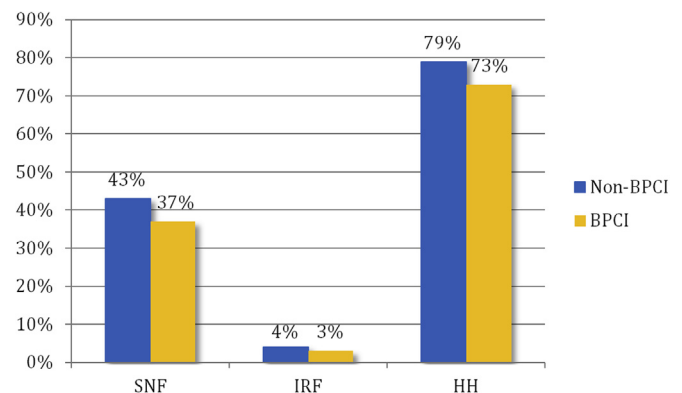


Fig. 2. Differences in utilization rates of SNF, IRF, and HH. SNF, subacute nursing facility; IRF, inpatient rehabilitation facility; HH, home health.

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