CQI RETURN ON INVESTMENT, EQUITY, & VALUE DELIVERY

ASPIRE Payment Avoidance Project

October 2021

AT A GLANCE

About ASPIRE

- Partly funded by BCBSM
- Tracks 40+ measures associated with procedures requiring anesthesia
- Supports 26+ hospitals across the state of Michigan
- More than 16,000,000 patient cases on registry

ASPIRE Resources

- Quality improvement reporting app
- Monthly provider feedback emails
- Part of MPOG Registry
- QI Toolkits
- MQUARK Case Audit App

"Participation in the BCBSM-funded CQI ASPIRE is associated with lower total episode and post-discharge payments for selected high-volume procedures. This analysis supports that participation in an anesthesia CQI can lead to reduced healthcare payments."

The Coordinating Center

Michigan Value Collaborative

Michigan Value Collaborative

MPOG MULTICENTER PERIOPERATIVE OUTCOMES GROUP

BACKGROUND

The Anesthesiology Performance Improvement and Reporting Exchange (ASPIRE) is a Collaborative Quality Initiative (CQI) that aims to improve the care of patients undergoing anesthesia by reducing unexplained variation in practice. ASPIRE is a national quality improvement (QI) group affiliated with the Multicenter Perioperative Outcomes Group (MPOG) and is funded by Blue Cross Blue Shield of Michigan (BCBSM) for the Michigan QI component. Participating ASPIRE sites work together to build quality improvement measures, review best practices, and exchange ideas for improving patient outcomes.

In order to assess whether participation in ASPIRE was associated with a reduction in payments for high-volume procedures, the ASPIRE Coordinating Center reached out to the Michigan Value Collaborative (MVC) in 2018. With its rich data sources and strong understanding of CQI operations, the MVC team was well-positioned to help assess this question.

METHODOLOGY OF ANALYSIS

MVC data sources included price-standardized, risk-adjusted payments for BCBSM PPO, Blue Care Network (BCN) HMO, and Medicare FFS beneficiaries. MVC data was matched to AHA data for this analysis to obtain important hospital-level characteristics for adults older than 18 years of age undergoing a major surgical procedure (N=30,839).

MVC and ASPIRE analysts approached the analysis as a retrospective observational study. The Group 1 ASPIRE hospitals that joined ASPIRE in January 2015 were matched to non-ASPIRE control hospitals. Episodes from 2014 comprised the pre-ASPIRE time period and episodes from June 2016-July 2017 constituted the post-ASPIRE time period. The implementation period was January 2015-May 2016, with cases during this time frame excluded from the analysis.

A difference-in-differences approach was used to evaluate whether ASPIRE implementation was associated with a greater reduction in payments. Surgical procedures studied included colectomy, colorectal cancer resection, gastrectomy, esophagectomy, pancreatectomy, hysterectomy, joint replacement (knee and hip), and hip fracture repair. It is mechanistically plausible that outcomes for each of these major procedures may depend on anesthesia processes of care that ASPIRE focuses on, including glycemic management, temperature management, lung ventilation management, and blood pressure management.

The MVC and ASPIRE teams compared total index payments, total post-discharge payments, total readmission payments, total professional payments, and total episode payments. As part of this, a 1:1 match between Group 1 ASPIRE hospitals and non-ASPIRE hospitals within the same MVC cohort grouping (similar case mix index and bed size) was performed.

To control for the effect of hospital participation in another CQI (which may impact the surgeries evaluated) and accurately determine the incremental

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value of ASPIRE specifically, hospitals were also matched on whether they were participating in the Michigan Surgical Quality Collaborative (MSQC) or the Michigan Arthroplasty Registry Collaborative Quality Initiative (MARCQI) during the baseline period. These surgical CQIs were selected as they are the lead QI collaboratives for the specific surgical procedures included in the analysis.

LIMITATIONS

The biggest limitation often cited when conducting a difference-in-differences analysis is the presence of a suitable control group. In this study, the analysis was able to compare ASPIRE hospitals to non-ASPIRE hospitals. Although it was possible to account for participation in other BCBSM CQIs as part of the matching strategy, it proved more difficult to account for the presence of other hospital factors, such as any involvement in other quality improvement initiatives.

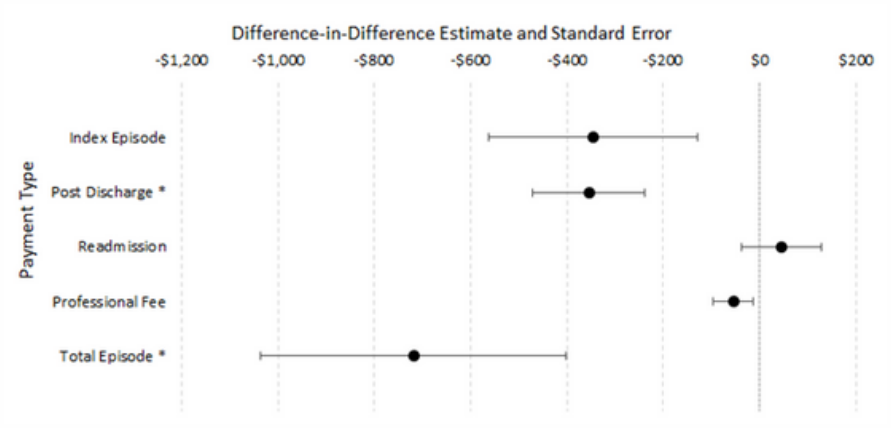
FINDINGS

The analysis found multiple decreases in estimated payment differences for combined procedures and payers in ASPIRE institutions versus non-ASPIRE controls (see Figure 1). There was a statistically significant reduction in 30-day post-discharge utilization (-$354, standard error (SE) $116, p=0.002) and price standardized total episode payments (-$719, SE $317, p=0.02) at ASPIRE hospitals compared to non-ASPIRE hospitals (see Table 1).

Subgroup analyses also revealed a significant reduction in price standardized total episode payments for joint replacements (-$860, SE $184, p<0.0001) at ASPIRE-participating hospitals (see Table 2).

Participation in the BCBSM-funded CQI ASPIRE is associated with lower price standardized total episode and post-discharge payments for selected high-volume procedures. This analysis supports that participation in an anesthesia CQI can lead to reduced healthcare payments.

Figure 1. Plot of estimated payment differences and standard error for combined procedures and payers in Group 1 ASPIRE institutions versus non-ASPIRE controls



An asterisk indicates statistical significance with p≤0.05.

Table 1. Analysis of estimated payment differences for combined procedures and payers in ASPIRE versus non-ASPIRE institutions

Payment Type	Difference-in-differences estimate ($)	Standard error	p-value
Index Episode	-346	217	0.11
Post Discharge	**-354**	**116**	**0.002***
Readmission	46	82	0.58
Professional Fee	-54	42	0.19
Total Episode	**-719**	**317**	**0.02***

An asterisk indicates statistical significance with p≤0.05.

Table 2. Joint replacement stratified analysis, overall and by payer

Payment Type	Difference-in-differences estimate ($)	Standard error	p-value
Total Episode – payer combined	**-860**	**184**	**<0.0001***
Total Episode – Medicare Fee-for-Service	-1267	280	<0.0001*
Total Episode – BCBSM Preferred Provider Organization	-584	244	0.02*
Total Episode – BCN Health Maintenance Organization	-288	408	0.48

An asterisk indicates statistical significance with p≤0.05.