

CQI VALUE ASSESSMENT

MARCQI Improvement Efforts Help Contribute to an Estimated \$24 Million in Avoided Skilled Nursing Facility Utilization after Primary Total Hip and Knee Joint Replacement

SEPTEMBER 2024



MARCQI

Michigan Arthroplasty Registry
Collaborative Quality Initiative

AT A GLANCE

About MARCQI

- Partners with orthopaedic surgeons and medical professionals dedicated to improving the quality of care for patients undergoing hip and knee replacement procedures in Michigan
- Funded by Blue Cross Blue Shield of Michigan

SNF Initiative

- MARCQI quality initiative aimed at decreasing discharge to SNF after primary total joint replacement



Since 2016, MARCQI hospitals participating in the SNF initiative achieved \$24,238,920 in savings as a result of decreased SNF utilization after joint replacement surgery.



Blue Cross
Blue Shield
Blue Care Network
of Michigan

Nonprofit corporations and independent licensees
of the Blue Cross and Blue Shield Association

BACKGROUND

The Michigan Arthroplasty Registry Collaborative Quality Initiative (MARCQI) is a group of orthopaedic surgeons and medical professionals dedicated to improving the quality of care for patients undergoing hip and knee replacement procedures in Michigan. Founded in 2011, MARCQI currently has over 90 participating sites consisting of hospitals and outpatient surgical centers.

Beginning in 2016, MARCQI launched a Pay for Performance (P4P) quality improvement (QI) initiative intended to decrease discharge to skilled nursing facilities (SNF) after primary total joint replacements (TJR) of the hip and knee. While MARCQI's P4P scorecard measure for the SNF utilization QI covered July 1, 2016 to June 30, 2018, some sites have continued to focus on this improvement initiative as a site-based QI project in the following years. During this time, MARCQI also collaborated with the Michigan Value Collaborative (MVC) Coordinating Center to introduce a variety of support strategies to help members optimize inpatient post-acute care after joint replacement. This "Value Coalition Campaign" adopted a number of improvement levers, including tailored push reports, workgroups, and other engagement opportunities.

In 2023, MARCQI and MVC began collaborating with the aim to assess the impact of MARCQI's QI initiative to decrease SNF utilization after primary TJR. The MARCQI and MVC collaboration also sought to evaluate the related impact on the value of care provided through estimated cost savings for avoiding discharge to SNF following TJR.

METHODOLOGY OF ANALYSIS

Data Sources & Study Population

The MVC Coordinating Center examined MVC-defined hip and knee joint replacement episodes with index admissions from 1/1/2015-12/31/2022 for BCBSM PPO Commercial, BCBSM PPO Medicare Advantage, BCN HMO Commercial, BCN HMO Medicare Advantage, and Michigan Medicaid. Index admissions from 1/1/2015-9/30/2022 were also examined for Medicare Fee-For-Service (FFS). Only episodes that occurred at MARCQI-affiliated hospitals and MVC member hospitals were included in this analysis. Between July 1, 2016 and June 30, 2018, MARCQI tracked facility participation in the SNF initiative; this participation information was used to create the comparison groups seen throughout this report.

Table 1 provides demographics for each comparison group, comparing payer distributions, average age, and average number of comorbidities between MARCQI hospitals participating in the SNF initiative, MARCQI hospitals not participating in the SNF initiative, and MVC member hospitals not affiliated with MARCQI.

Table 1. Patient Demographics by Comparison Group

Metric	MARCQI Hospitals Participating in SNF Initiative	MARCQI Hospitals Not Participating in SNF Initiative	MVC Member Hospitals Not Affiliated with MARCQI
Average Age	67.7	67.8	67.2
Average # of Comorbidities	1.5	1.4	1.4
BCBSM Beneficiaries	41.3%	36.1%	36.4%
BCN Beneficiaries	11.6%	9.0%	7.4%
Medicare FFS Beneficiaries	39.0%	42.6%	44.3%
Medicaid Beneficiaries	8.1%	12.3%	11.9%

Support for the Michigan Value Collaborative is provided by BCBSM and BCN as part of the BCBSM Value Partnerships program. Although BCBSM and MVC work in partnership, the opinions, beliefs, and viewpoints expressed by MVC do not necessarily reflect the opinions, beliefs, and viewpoints of BCBSM or any of its employees.

Methodological Approach

The overall 30-day SNF utilization rate was examined over the time period of 2015 to 2022 using the established comparison groups: 1) MARCQI hospitals that participated in the SNF initiative, 2) MARCQI hospitals that did not participate in the SNF initiative, and 3) MVC member hospitals not affiliated with MARCQI. The results showed a steady drop in SNF utilization from 2015 to 2019, and a considerable drop in 2020, possibly due to the COVID-19 pandemic. The SNF utilization rate then stabilized around 5-7% through the end of 2022. A similar trend was found for all three groups of hospitals; however, MARCQI hospitals that participated in the SNF initiative started at a lower SNF utilization rate.

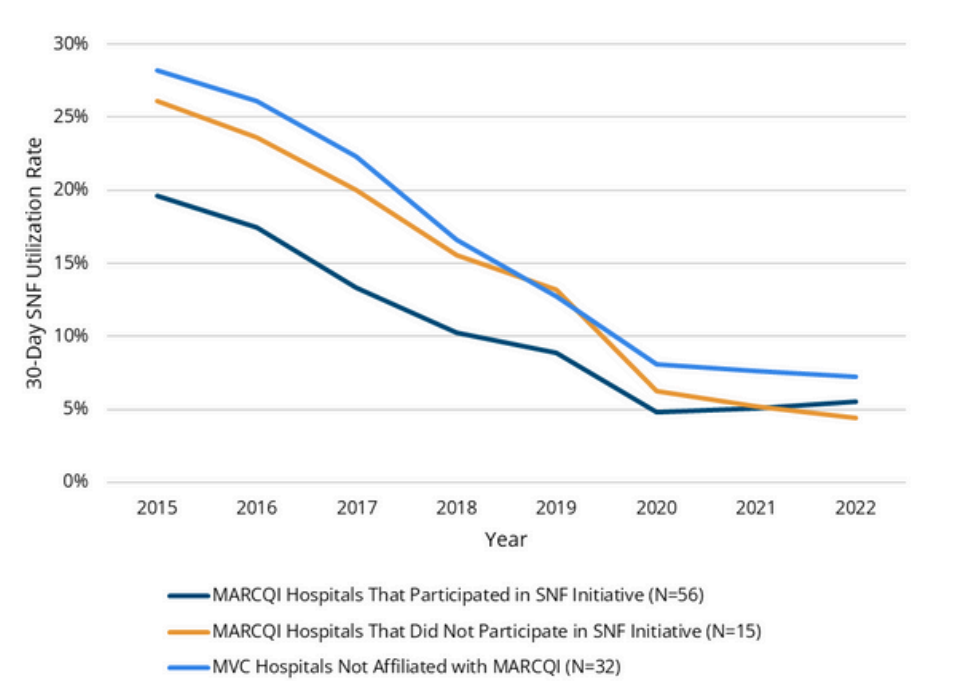
Next, MVC calculated the cost of an average SNF stay during the entire timeframe of 2015 to 2022. The cost was price-standardized to the Medicare FFS schedule but not risk-adjusted. For this approach, the MVC Coordinating Center estimated cost savings throughout the examination period based on three numbers for each insurance type: the overall average number of joint replacements performed in an average year, the decrease in 30-day SNF utilization rate from 2015 to 2022, and the average cost of a SNF stay during the timeframe.

Limitations

Participation in the MARCQI SNF utilization initiative was based on hospital participation in MARCQI’s P4P initiative in fiscal years 2017 and 2018 (July 1, 2016 - June 30, 2018) and calculations were extrapolated for 2019 - 2022. Many MARCQI sites subsequently worked on SNF QI projects and participated in MARCQI meetings discussing SNF reduction. In addition, Michigan hospitals that participate in MARCQI, particularly the 56 hospitals that took part in the SNF utilization initiative, are some of the largest volume hospitals for joint replacement across the state leading to uneven volume between the three comparison groups included in this analysis.

It is also important to note that the timeframe of this analysis directly overlaps with industry-wide shifts in site of care for joint replacement surgeries. With many hospitals moving a significant proportion of their joint replacement surgeries from the inpatient setting to the outpatient setting, this shift may also be impacting the overall utilization of post-discharge care such as SNF. This analysis did not control for the secular trends and impact of changes in site of care.

Figure 1. Trend in 30-Day SNF Utilization After Total Hip or Knee Replacement by Location of Joint Replacement



FINDINGS

Between 2015 - 2022, hospitals in all three comparison groups demonstrated a significant decrease in SNF utilization after primary total joint replacement (Figure 1).

Using the price-standardized cost estimates for SNF utilization, MVC calculated that MARCQI hospitals participating in the SNF initiative achieved \$24,238,920 in savings as a result of decreased SNF utilization after joint replacement surgery (Table 2). Additionally, MARCQI sites that did not participate in the SNF initiative and MVC member hospitals not affiliated with MARCQI saved \$1,683,946 and \$2,710,768, respectively, through reduction in SNF utilization.

Table 2. Retrospective Estimated SNF Avoidance Cost Savings After Total Hip or Knee Joint Replacements Performed at MARCQI Hospitals that Participated in SNF Initiative (2015 - 2022)

	Average Number of Joint Replacements Performed Yearly	% Decrease in Patients Utilizing SNF	Average Cost of a SNF Stay	Cost Savings Attributed to Reduction in SNF Utilization After Joint Replacement Surgery
BCBSM	9571	8.5%	\$7,542	\$6,165,002
BCN	2714	8.2%	\$7,408	\$1,655,984
Medicaid	1870	10.1%	\$7,908	\$1,493,168
Medicare	10339	19.0%	\$7,591	\$14,924,765
Total Savings				\$24,238,920

While all hospitals saw a decrease in total SNF spending over this timeframe, the majority of the cost savings came from high-volume MARCQI sites that participated in the SNF initiative. This demonstrates that a shift away from patients needing SNF care after joint replacement surgery resulted in large cost savings with such a common, high-volume procedure.

Additionally, after formal tracking for MARCQI’s SNF initiative ended in 2018, SNF utilization continued to decrease across all comparison groups, demonstrating sustained improvement following the completion of MARCQI’s P4P quality initiative.