

# Accelero Helps Position Hospital Orthopedic Program for Significant Growth

*Identifies opportunities to reduce procedural, inpatient and post-discharge care costs*

## AT A GLANCE

- 402-bed, payer-owned acute care hospital
- Member of a large, regional integrated delivery network (IDN) in the Great Lakes region
- Over 1,400 inpatient orthopedic procedures per year

## ISSUES

- Flat to declining market share
- Significant market opportunity
- Inefficient procedures and processes

## RESULTS

Identified financial savings and new revenue opportunities of over \$1.0 million for the joint product line and nearly \$1.8 million for the entire musculoskeletal service line.

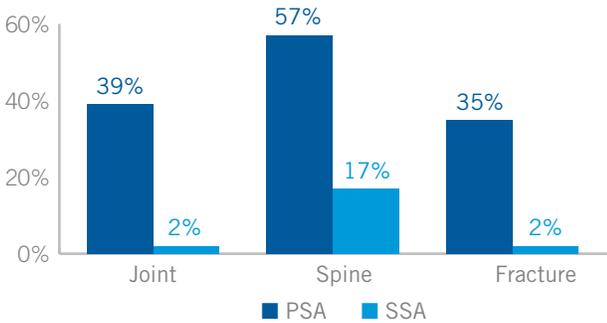


## INTRODUCTION

The hospital is a large, 402-bed acute care hospital that is part of a payer-owned integrated delivery network (IDN) located in the Great Lakes region of the United States. The hospital has a comprehensive musculoskeletal service line and performed 1,472 inpatient and 2,310 outpatient procedures in the past year. Over the next five years, the primary and secondary market for musculoskeletal services is expected to grow significantly, with an increase of 17.1% of individuals aged 65-74 and 4.4% of those aged 75 or older while the market for outpatient services is expected to decline. Accelero was brought in to provide a strategic plan to enable the musculoskeletal service line to maximize the financial opportunity based on the market growth projections while emphasizing quality care and the overall cost of care.

## FINDINGS

The musculoskeletal service line generates \$14.2 million annually; \$11.1 million through inpatient procedures. Focusing on the inpatient market, an analysis of the hospital market share for each of the three major musculoskeletal product lines can be seen in **FIGURE 1** on the following page.



**FIGURE 1** | Hospital market share in primary service area (PSA) and secondary service area (SSA).

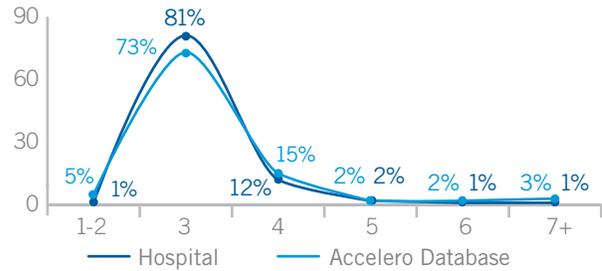
Based on the market demographics and market share data, the joint product line represents the best opportunity for growth with 2,344 procedures being done by competitors in the market. Being payer owned, cost containment and reduction is paramount to the hospital. The highest cost components aside from the cost of the implants are the cost of the surgical procedure, inpatient stay and post-surgical care.

Time in Minutes	Hospital	Target	Variance
Delays in First Case Starts	13	0	13
'Patient In' to 'Cut'	36	30	6
'Cut' to 'Close'	116	100	16
'Close' to 'Patient Out'	12	7	5
Room Turnover	32	25	7
<b>Total Time</b>	<b>209</b>	<b>162</b>	<b>47</b>

**TABLE 1** | Total knee and hip replacement perioperative times v. benchmark data.

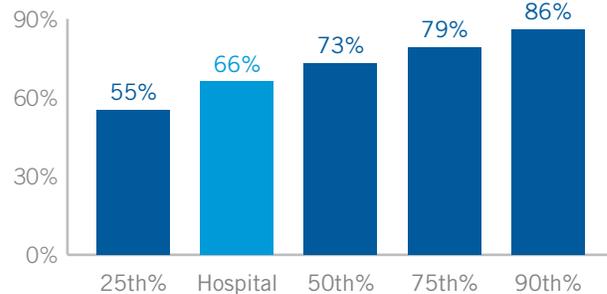
Perioperative times were analyzed and compared to data obtained from the Accelero hospital database. As a result, realistic and achievable targets have been created which would save the hospital 47 minutes per total hip or knee replacement (**TABLE 1**). By improving the overall cost structure and quality of care, the hospital will have the capacity to meet the looming market growth with the existing resources and infrastructure.

**FIGURE 2** shows the hospital length of stay distribution for total hip and knee replacement patients. At 3%, the hospital falls below the 25th percentile of hospitals in the Accelero database. Realistic goals are for 90% of total joint replacement patients to be discharged in 3 days or less and 25% in 2 days or less.



**FIGURE 2** | Length of stay distribution for total joint replacements of hospital and Accelero database

The cost of post-discharge care varies dramatically based on where it occurs. On average, inpatient care is \$5,400 higher than home care, per case. The hospital discharged 66% of their total hip and knee replacement patients to home, ranking it between the 25th and 50th percentile in the Accelero database. A reasonable goal for the short-term is 79% with a stretch goal of 86%.



**FIGURE 3** | Comparison of the hospital total hip and knee replacement patients discharged to home v. hospitals in the Accelero database, by percentile

## RECOMMENDATIONS

Based on the opportunity due to changing demographics and low market share, the initial focus was on the joint product line with an emphasis on total knee and hip replacements, followed by spine and then fracture care. The best opportunities to improve the total cost of care and increase volume are through increased perioperative efficiency, reduced length of stay, and lower post-discharge care costs.

## Perioperative Costs

The hospital metrics for OR utilization, first case on time starts and perioperative case times are all below average. Longer procedure times increase both the procedure cost and complication rate. Creating surgical team reviews on a weekly basis will help to improve utilization and scheduling accuracy. Using a perioperative dashboard to track metrics while enlisting lean methodologies will help to improve utilization by reducing case time elements, first case on time starts, waste, and variability between surgeons. Accelerero estimates these changes will reduce the average total knee and hip replacement by 47 minutes, enabling the hospital to add 15% more procedures with the same resources.

## Length of Stay

Moving to a two day pathway will significantly reduce the inpatient costs for total knee and hip replacement patients. Creating a formal joint replacement product line team with a joint coordinator, establishing consistency in the care plans, driving consistent pre-operative patient education, developing a dashboard and managing the metrics will help to improve care coordination, outcomes, patient satisfaction and length of stay, significantly lowering inpatient costs.

## Post-discharge Care

Decreasing the cost of post-discharge care requires a higher percentage of total knee and hip replacement patients being discharged to home or home care. This can be done by ensuring all patients undergo pre-operative education where expectations and goals are set. These goals must then be reinforced throughout the stay to ensure patients are mentally and physically prepared to be discharged to home. Early mobilization and integrating home healthcare into the process will ensure timely post-discharge care.

## SUMMARY

Accelerero conducted an analysis of the musculoskeletal service line; identifying savings and new revenue opportunities for each of the three major product lines – joint, spine and fracture care. In each case, the average contribution margin was well below the mean due to inefficiency and lower payments. Joint replacements had the largest disparity with a contribution margin of only 61% of the mean. Post-discharge care was also higher than the norm, which directly affected the cost of care to the payer-owner. Going forward, there is significant opportunity for volume growth. Over 5,000 procedures are currently being done by competitors and the market is expected to grow by 21% in the next five years. Increased efficiency will provide added capacity, enabling the hospital to perform an additional 75 joint replacement cases per year.

Accelerero identified savings and new margin of \$1,084,026 for the joint product line (TABLE 2) and nearly \$1.8 million across the entire musculoskeletal service line based on added perioperative efficiency, a reduced length of stay and a higher percentage of patients being discharged to home.

Additionally, the process changes driving this financial impact will serve as a foundation to grow volume and improve patient satisfaction.

Impact Area	Financial Impact
Added procedures due to efficiency	\$517,776
Length of stay savings-joints	\$97,098
Discharge to home savings	\$469,152
<b>Total Opportunity</b>	<b>\$ 1,084,026</b>

TABLE 2 | Accelerero identified cost savings for the joint product line at the hospital.



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