

Accelerero Identifies Opportunities for Orthopedic Efficiency throughout Hospital Network



Standardized joint program to provide improved outcomes, higher throughput

■ AT A GLANCE

- Large, regional hospital network in the Southeastern United States
- 489-bed community hospital and 649-bed academic medical center
- 1529 total hip and knee replacements per year between two hospitals

■ ISSUES

- Higher than average cost of care for total knee and hip replacements
- Desire to provide efficient and consistent practices across the network
- Need to increase joint replacement volume to offset surgeon movement

■ RESULTS

Identified over \$3.7 million in financial savings and new revenue opportunities for the hospitals, and an additional \$1.8 million for the payer

INTRODUCTION

The hospital system is a regional network in the Southeastern United States, with two large hospitals located only two miles apart conducting a combined 1,529 total hip and knee replacements annually. One is a 489-bed community hospital that performed 617 cases via an independent practice while the other is a 649-bed academic medical center that conducted 612 cases through a hospital-affiliated group of orthopedic surgeons. A third hospital located 20 miles away was being constructed at the time of this writing and will also perform total hip and knee replacements. As a result of two private practice surgeons reducing their case load, there has been a decline of nearly 400 cases at the medical center over the past two years. Accelerero was enlisted to review the joint replacement program for the hospital network and make recommendations to ensure all of the hospitals provide consistently high quality and cost effective care.

Accelero conducted an extensive review of hospital data for the musculoskeletal service line, including perioperative data, clinical outcomes and case documentation. A team was sent to each site to observe the entire continuum of care and conduct interviews with senior administration personnel, joint replacement surgeons and key staff members. Contrasting this information to benchmark data and best practices; Accelero was able to quantify financial opportunities, recommend a course of action and provide a plan for implementation.

FINDINGS

Despite substantial differences, areas were identified to improve processes at both of the hospitals.

Even though the academic hospital had a more organized pre-admission program and defined post-operative care, length of stay for both hospitals could be improved. For total joint replacement patients, the length of stay three days or less at both hospitals was below the 50th percentile as compared to the Accelero hospital database (FIGURE 1). Similar results were found for length of stay of two days or less. Additionally, the length of stay varied significantly within and between surgeon groups.

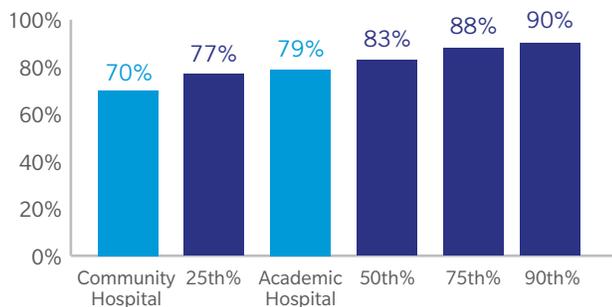


FIGURE 1 | Length of Stay three days or less for total hip and knee replacements

Discharge disposition can greatly affect the overall cost of care. For total joint replacement patients, both hospitals fell below the 50th percentile of hospitals in the Accelero database with regard to the percentage of patients that were discharged to home (FIGURE 2).

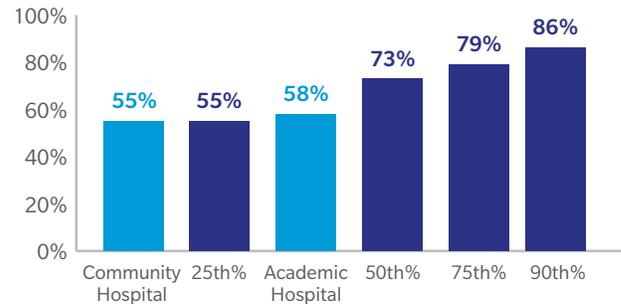


FIGURE 2 | Percentages of total knee and hip replacement patients discharged to home.

Outcomes were good, with both hospitals ranking above the 75th percentile in the Accelero hospital database for clinical complication rates. However, the lack of a consistent pre-admission testing protocol at the community hospital and the lack of risk reduction programs at both could affect the risk of complications in the future.

Patient satisfaction, as assessed via HCAHPS scores, varied greatly between the two hospitals. For the most part, the scores for the academic medical center were good while those for the community hospital were sub-par. This can be contributed to the lack of pre-admission education and inconsistent care pathways at the community hospital.

Perioperative metrics were average but could be improved. Opportunities were identified (mostly at the community hospital) to increase case volume for total joint replacement procedures by improving perioperative case time elements and team dedication.

RECOMMENDATIONS

Based on the opportunity, the initial focus was on the joint replacement product line with an emphasis on total knee and hip replacements. The best opportunities to improve the total cost of care and increase volume are through reduced length of stay, lower post-discharge care, and increased perioperative efficiency.

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 preoperative patient education, developing a dashboard and managing the metrics will help to improve care coordination, outcomes, patient satisfaction and reduce length of stay – significantly lowering inpatient costs.

Post Discharge Care

Although this did not directly impact the hospital's cost, there could be substantial savings to the payer if a higher percentage of patients were discharged to home. The benchmark data suggests 86% or 332 additional patients could be discharged to home, resulting in a savings to the payer of \$1,782,903. Recommendations were made to the hospital about the need to better set the expectation with the patient and their family regarding home discharge. A coordinated day of discharge involving the home health providers would allow for a smooth transition to home. A Post-discharge phone call would ensure the post-discharge care has begun and progressing as expected.

Perioperative Efficiency

Numerous process improvements were identified that could advance key metrics for total hip and knee replacements. In the perioperative area, opportunities for time savings were identified between 'In' to 'cut', 'cut' to 'close', and room turnover. Analysis shows that an average of 24 minutes per case could be eliminated, representing savings of approximately \$480 per case.

If this savings is allocated across all total hip and knee replacement cases, the total savings would equal \$759,360. Opportunity exists for two surgeons to add an additional case per operating room day, one day per week. Adding a fourth case in the same amount of time would translate to an additional \$437,715 per surgeon over the course of a year (45 operating days). This is more than possible based on a current scheduling delay of 4-5 months for these procedures.

SUMMARY

Although the hospitals performed a large number of joint replacements, there was substantial opportunity to improve both their processes and overall costs (TABLE 1). Reducing length of stay for total joint replacement patients would result in savings to the hospital of \$353,000. Using the same processes for fracture and spine patients should also reduce the length of stay for these patients, saving the hospital an additional \$1.2 million. Most critical to the hospital is treating perioperative efficiency to support growth. The plan, as presented, will enable the hospital to generate over \$2.1 million through increased volume. And finally, improving the percentage of patients discharged to home will reduce the total cost of care for joint replacement patients, saving the payer nearly \$1.8 million.

Impact Area	Financial Impact
Perioperative opportunity – 200 additional cases	\$2,165,200
Length of stay savings-joints	\$353,004
Length of stay savings-fracture	\$220,479
Length of stay savings-spine	\$985,968
Total Hospital Savings	\$3,724,651
Additional Savings (Payer)	\$1,782,903

TABLE 1 | Accelerated identified cost savings for the musculoskeletal service line at the hospital.



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