

Putting the PA in PACU: Evaluating the Effects of Physician Assistant PACU Integration on Outcomes and Efficiency in Total Arthroplasty Patients

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INTRODUCTION:

Physician assistants (PAs) have increasingly become integral members of surgical teams, demonstrating the ability to enhance operational efficiency, optimize clinical workflows, and improve patient satisfaction across various perioperative settings. Their roles have been well studied in inpatient and outpatient care, yet their specific contribution in the immediate postoperative period, particularly in the post-anesthesia care unit (PACU) remains underexplored. Given the growing demand for joint arthroplasty procedures and the increasing emphasis on value-based care, optimizing PACU efficiency is critical. This study aimed to determine whether the integration of PAs into the PACU following total joint arthroplasty (TJA) would improve operational throughput and clinical outcomes in a high-volume academic medical center.

METHODS:

A retrospective cohort study was conducted at an academic medical center. Data from patients undergoing primary total hip arthroplasty or total knee arthroplasty were reviewed before PA integration into the PACU (November 1, 2022 – April 30, 2023) and following PA integration (June 1, 2023 – November 30, 2023). The primary outcome was PACU length of stay, while secondary outcomes included same-day discharge rate, hospital length of stay, administration of products for hemodynamic or electrolyte derangements, and surgical intensive care unit (SICU) admissions.

RESULTS:

Retrospective review yielded 323 patients, 170 before PA integration into the PACU and 153 following PA integration (Table 1). The mean PACU length of stay significantly decreased from 313.46 minutes pre-integration to 252.49 minutes post-integration ($p=0.0118$) (Figure 1). Additionally, hospital length of stay improved from 1.13 days to 0.93 days. Furthermore, the incidence of product administration for hemodynamic or electrolyte derangements decreased from 20.0% to 16.0%, and SICU admissions were reduced from 1.18% to 0%. Same-day discharge rates remained stable (22.94% vs. 22.22%) (Figure 2).

DISCUSSION AND CONCLUSION:

Integration of PAs into the PACU following TJA significantly improved PACU operational efficiency and was associated with decreased hospital resource utilization without compromising patient safety. Although trends toward improved clinical outcomes were observed, including reduced SICU admissions and decreased need for corrective interventions, these findings warrant further investigation. The results of this study support the broader incorporation of advanced practice providers into perioperative workflows to meet the growing demands of arthroplasty care (Figure 3). Future prospective, randomized studies are needed to rigorously evaluate patient satisfaction, cost-benefit metrics, and both short- and long-term clinical outcomes of PA involvement in the PACU.

Figure 1. Time patients spent in the PACU before and after PA integration.

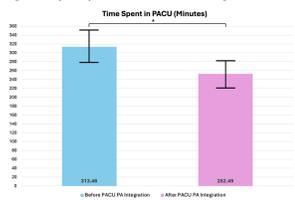


Figure 2. A) Percent of patients discharged on the same day before and after PA integration. B) Number of days patients spent in the hospital before and after PA integration. C) Percent of patients receiving products before and after PA integration. D) Percent of patients admitted to the SICU before and after PA integration.

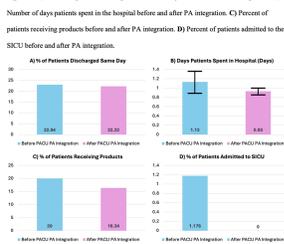


Figure 3. Graphic showing PAs as the "missing piece of the puzzle" when it comes to improved outcomes and efficiency in a patient-centered PACU.



Table 1. Patient demographic data.

Characteristic	Before PACU PA Integration Group	After PACU PA Integration Group	P-value
Age	70.88 (9.85)	69.39 (7.82)	0.4662
Mean (SD)			
Gender	79 / 91	58 / 95	0.1200
Male / Female			
Race	135 / 35	132 / 21	0.1658
White / non-White			
Ethnicity	165 / 5	147 / 6	0.6276
Hispanic / non-Hispanic			
BMI	30.21 (4.96)	30.23 (4.66)	0.9745
Mean (SD)			
Smoking Status	81 / 89	63 / 90	0.2427
Current or Former / Never			
ASA Score	2.76 (0.35)	2.66 (0.50)	0.0702
Mean (SD)			
Procedure	82 / 88	75 / 78	0.8880
THA / TKA			