

Analyzing Factors Influencing Total Recovery Room Time

Igor Suarez, MSN, APRN, CAPA , Maria Ruffner, BSN, RN, CAPA , Karina Gattamorta, Ph.D., Debbie Anglade, Ph.D., RN, MSN, CPHQ, CCM

Objectives

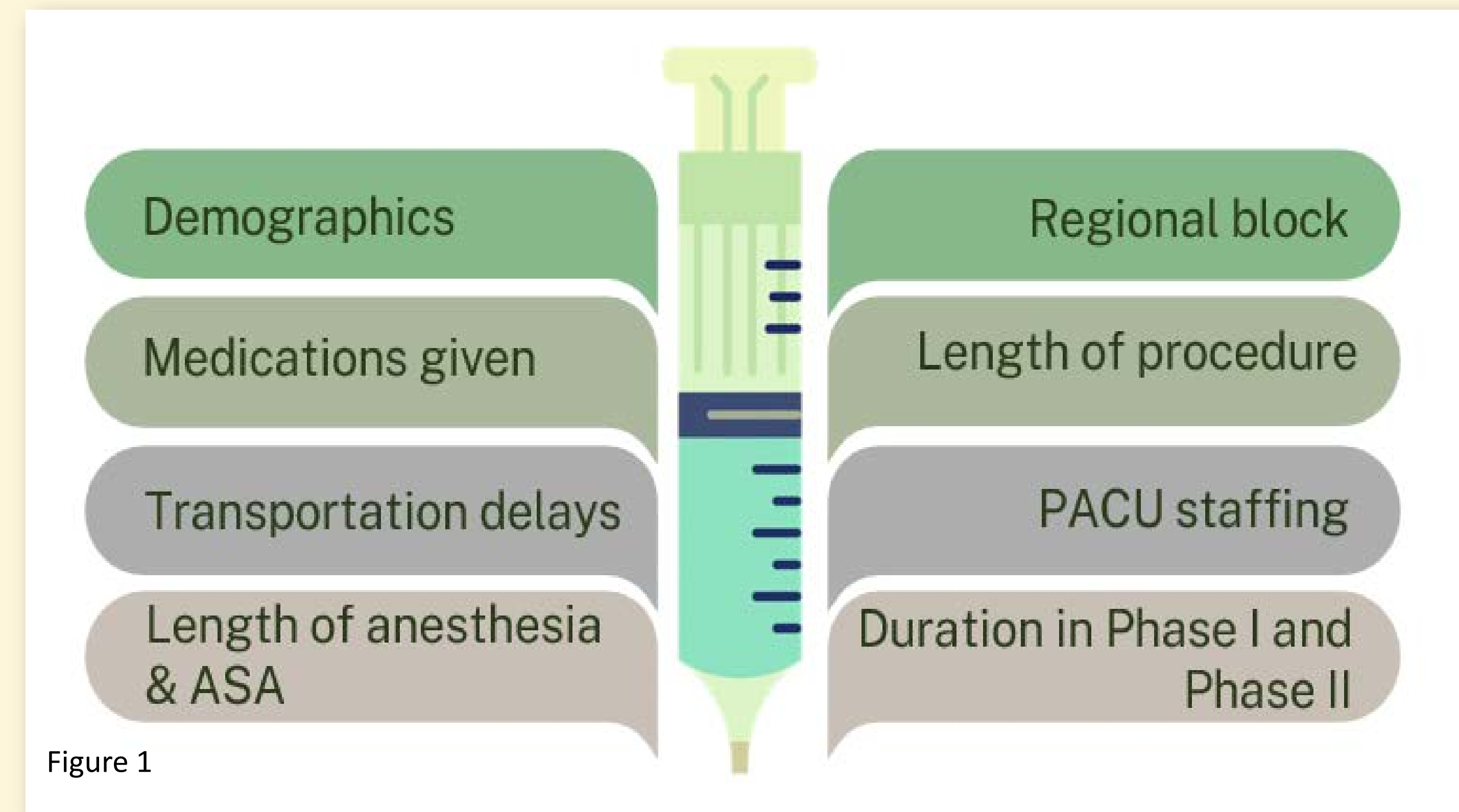
- To identify clinical and non-clinical factors that prolong the post-anesthesia care unit (PACU) Length of Stay (LOS) for surgical patients
- To identify and evaluate nurse-sensitive factors associated with prolonged PACU LOS in patients

Background

- Prior research has demonstrated that clinical and nonclinical factors influence the discharge time for surgical procedures (Cobbe & Barford-Cubitt, 2018; Cowie & Corcoran, 2012; Pavlin, 1998).
- Rice et al. (2021) noted that delayed discharge is a significant issue in outpatient surgery at academic institutions, as it can lead to increased healthcare costs, patient dissatisfaction, and decreased human resource availability.
- Clinical factors, including patient age, ASA classification, increased surgery length, and anesthesia type, are significantly associated with delayed discharge (Rice et al., 2021; Sephton et al., 2019; Shariat et al., 2021).
- Peng et al. (2023) noted that PACU nurses' perception of non-clinical discharge delays increased feelings of stress and frustration.
- A gap in the literature was identified on nursing factors that impact the length of stay in PACU.
- Prior studies have recommended that future research evaluate PACU nurses as individuals, their efficiency as a team, and their impact on patient PACU length of stay (Cowie & Corcoran, 2012; Pavlin, 1998).

Methods

- Quantitative, retrospective electronic medical record review from January 2021 to December 2022.
- Reviewed 1068 charts of patients who underwent any arthroscopic knee procedures at an ambulatory surgery unit in South Florida.
- Factors measured are illustrated in Figure 1.



Results

Variable	N	Mean (min)	Median (min)	SD	p
Male	663	158	132	155	<.001
Female	353	170	145	162	<.001
Dilaudid	642	180	145	179	<.001
No Dilaudid	374	133	123	104	<.001
Zofran	306	195	152	174	<.001
No Zofran	542	154	132	161	<.001
Toradol	131	193	147	194	<.001
No Toradol	879	158	134	151	<.001
Percocet	240	199	147	205	<.001
No Percocet	770	151	132	138	<.001
Phenergan	10	774	736	376	<.001
No Phenergan	1000	157	135	142	<.001
Barhemsys	23	369	230	299	<.001
No Barhemsys	987	158	134	150	<.001
Phase II Adequate Staffing	970	165	136	166	<.004
Phase II Non-adequate Staffing	90	130	123	41.9	<.004
Phase I Patient/family special requests	4	59.5	-	12	.007
Phase II Discharge instructions given in Spanish by a different nurse	20	76.3	-	0.13	.027

Not Statistically Significant

- Race
- Ethnicity
- Length of procedure
- BMI
- ASA
- Last PACU pain score
- Roxicodone
- Demerol
- Morphine
- Phase I Staffing
- Oral airway
- Voiding prior to discharge

Variables	Spearman's rho	p
BMI and ASA	0.309	<.001
First PACU Pain Score and Total PACU Time	0.116	0.013
First PACU Pain Score and ASA	0.105	0.025

The independent samples T-Test, one-way ANOVA, and Spearman's rho statistical tests were applied to analyze the variables.

Conclusion

- The results highlighted the importance of pain management in the recovery room. Since patients who reported a higher pain score on entering the PACU had a higher LOS, promptly assessing and managing pain effectively may reduce PACU LOS
- Patients receiving Barhemsys had almost double the LOS in PACU than those receiving Zofran; however, this includes the time needed to retrieve Barhemsys from the pharmacy.
- Unexpectedly, increased nursing staff was associated with longer PACU LOS. Further evaluation is needed to determine the elements that impacted this variable.
- Study limitations included not having an area to document discharge planning or transportation delays, undifferentiated SmartPhrase documentation, and utilizing a retrospective study design.

References

- Cobbe, K.-A., & Barford-Cubitt, S. (2018). Nonclinical factors affecting PACU discharge: A clinical audit in a one-day surgery unit. *Journal of PeriAnesthesia Nursing*, 33(5), 676-680. <https://doi.org/10.1016/j.jopan.2016.11.012>
- Cowie, B., & Corcoran, P. (2012). Postanesthesia Care Unit Discharge Delay for Nonclinical Reasons. *Journal of PeriAnesthesia Nursing*, 27(6), 393-398. <https://doi.org/10.1016/j.jopan.2012.05.013>
- Pavlin, D. J. (1998). Factors affecting discharge time in adult outpatients. *Anesthesia and Analgesia*, 87(4), 816-826. <https://doi.org/10.1097/0000539-199810000-00014>
- Peng, R., Saghabi, F., & Maxwell, H. (2023). Discharge delay from the Post Anaesthesia Care Unit: A nursing perspective. *Journal of Perioperative Nursing*, 36(2). <https://doi.org/10.26550/2209-1092.1214>
- Rice, A. N., Douglas, C., Bosarge, H., Young, G., Muckler, V. C., & Vacchiano, C. A. (2021). Fast-tracking Patients in an academic hospital to increase efficiency and decrease discharge delays: A process improvement plan. *Journal of PeriAnesthesia Nursing*, 36(6), 615-621. <https://doi.org/10.1016/j.jopan.2021.04.005>
- Sephton, B. M., Bakhshayesh, P., Edwards, T. C., Ali, A., Kumar Singh, V., & Nathwani, D. (2019). Predictors of extended length of stay after unicompartmental knee arthroplasty. *Journal of clinical Orthopaedics and Trauma*, 11(Suppl 2), S239-S245. <https://doi.org/10.1016/j.jcot.2019.09.009>
- Shariat, A., Marcus, B., & Latmore, M. (2021). High turnover for ambulatory orthopedic surgery. *Current Opinion in Anaesthesiology*, 34(5), 659-665. <https://doi.org/10.1097/ACO.0000000000001045>