

The Use of Peppermint Essential Oil to Reduce PACU Length of Stay

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Background

Post-operative urinary retention (POUR) is one of the possible complications that can occur after surgery which is a most common occurrence after gynecological surgery (Geller, 2014) and high risk for those having incontinence procedures (Jackson et al, 2018). Patients who had an indwelling foley catheter, straight catheterization during or at the end of surgery may experience bladder and urethral spasm, pain or discomfort that can interfere with their ability to urinate (Ghoshal, 2023).

Voiding is one of the discharge criteria in PACU at Texas Children's Pavilion for Women. Inability to void within two hours is a leading cause of delay in PACU discharge.

Project Aims

The purpose of this quality improvement (QI) project is to determine whether peppermint essential oil (PEO) will reduce discharge delays in the PACU among women who had undergone gynecological same day surgery procedures.



Methods

Criteria for inclusion in the project – all day surgery patients excluding pregnant or breastfeeding, below 18 years of age, has allergy to peppermint, with history of cardiac fibrillation, G6PD and refusal.

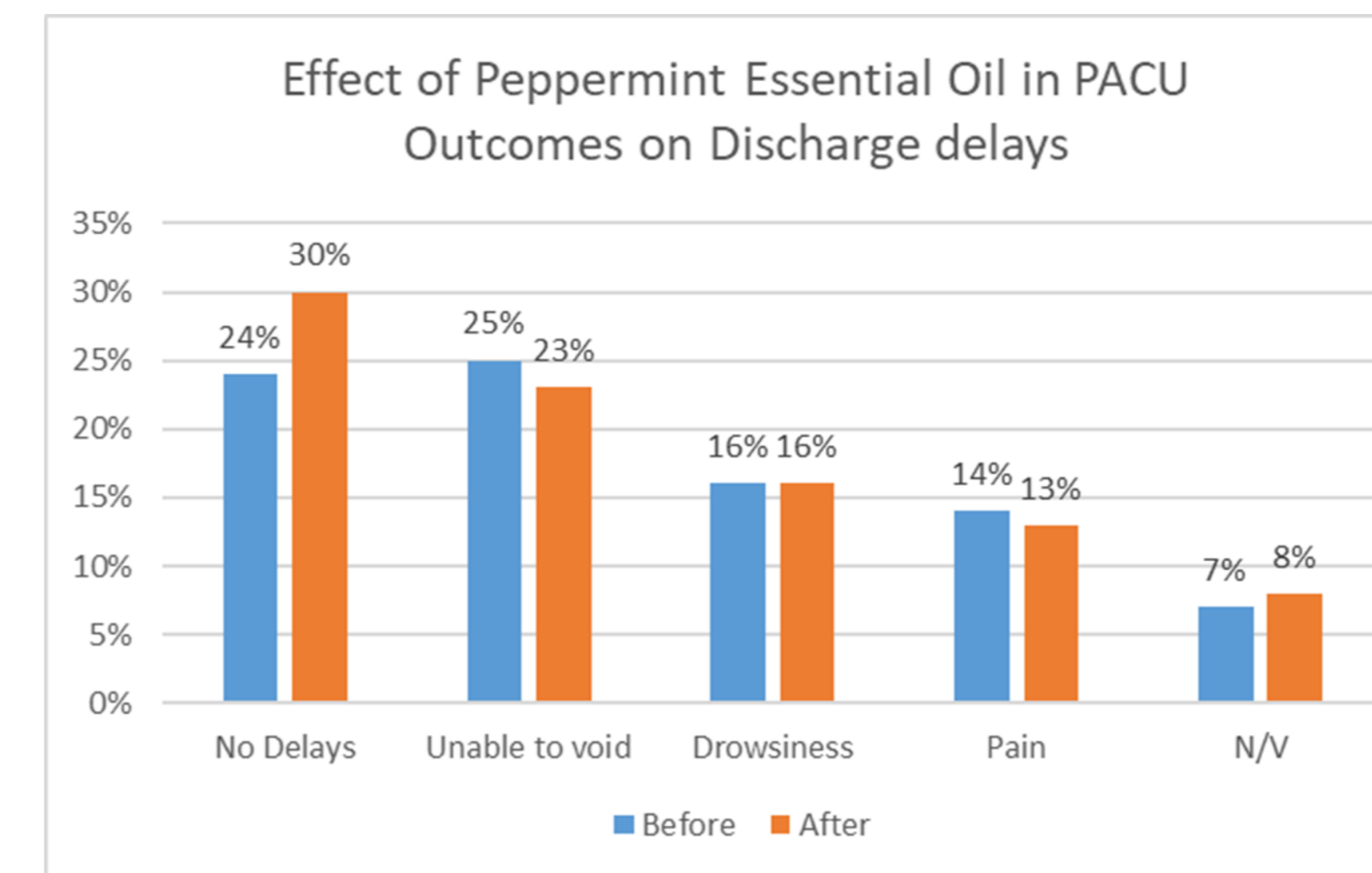
The patients are offered and informed of the use of PEO after an hour in recovery. After verbal consent is obtained, the patient is encouraged to void, assisted to the toilet then nurse places 3 drops of PEO on the hat and instructed the patient to void as usual, encouraging to relax and slowly inhale the rising vapors of PEO. If voiding is unsuccessful, a second or third attempt with PEO is tried.

Peppermint Essential Oil (PEO) for Postop Voiding PACU Workflow

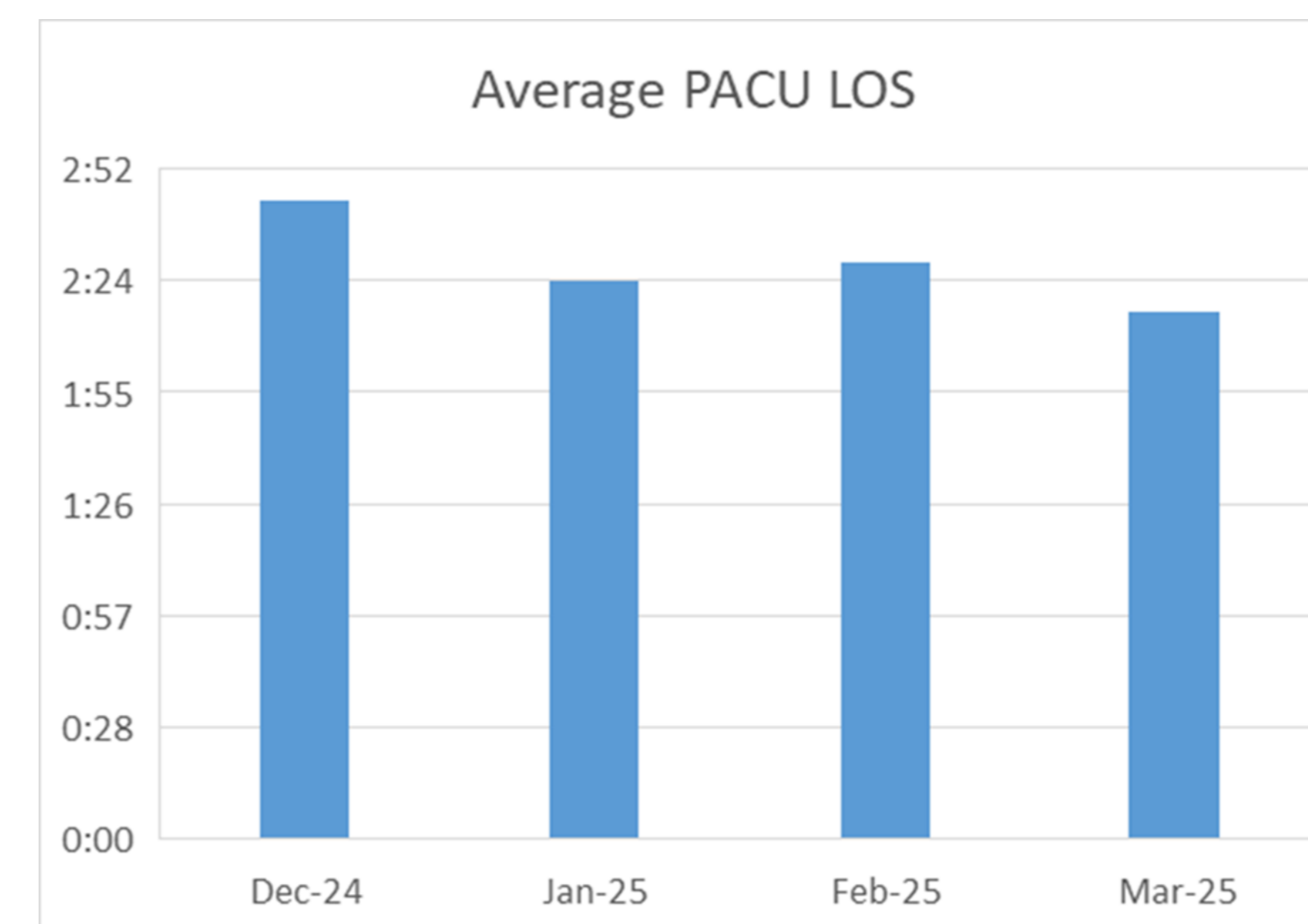
- Patient arrives in PACU.
 - Determine if patient meets inclusion criteria for study:
 - Gynecologic surgery scheduled for same-day discharge?
 - No allergy to peppermint?
 - No history of cardiac fibrillation (atrial fibrillation, atrial flutter)?
 - No history of G6PD deficiency?
 - Patient/Guardian agrees to use of PEO?
 - Ensure the patient attempts to void no later than 90 minutes after arrival in the PACU.
 - Place PEO
 - Wear gloves while handling PEO
 - Obtain PEO from locked cabinet.
 - Place 2x2 gauze in commode hat or bedpan.
 - Place 3 (three) drops of PEO on gauze.
 - Return PEO to locked cabinet. Ensure bottle is completely closed.
 - Assist patient to toilet, bedside commode or place bedpan.
 - Instruct patient to relax and slowly inhale PEO vapors, allowing themselves to void when ready.
 - Measure and record urine volume.
 - Dispose of 2x2 in regular trash.
 - Repeat steps 4-9 for subsequent attempts.
 - Complete tracking sheet and return to the black bin outside AI's office door.
 - Please include adverse reactions, personal observations, and patient comments on tracking sheet.
- Note: For spills of PEO on the skin, immediately wash the area thoroughly with mild soap and cool water.

Results

Data collection in December 2024-March 2025 yielded 718 patients. Retrospective chart review shows 258 patients prior to implementation and 360 during the implementation of PEO use. Outcome results show that NO DELAYS in PACU discharge was 30% during PEO implementation compared to 24% without PEO use.



Top 4 causes of discharge delays from the PACU prior to and during implementation on the use of PEO from December 2024 to March 2025.



Average PACU LOS from December 2024 to March 2025 showing the duration of the PEO QI project.

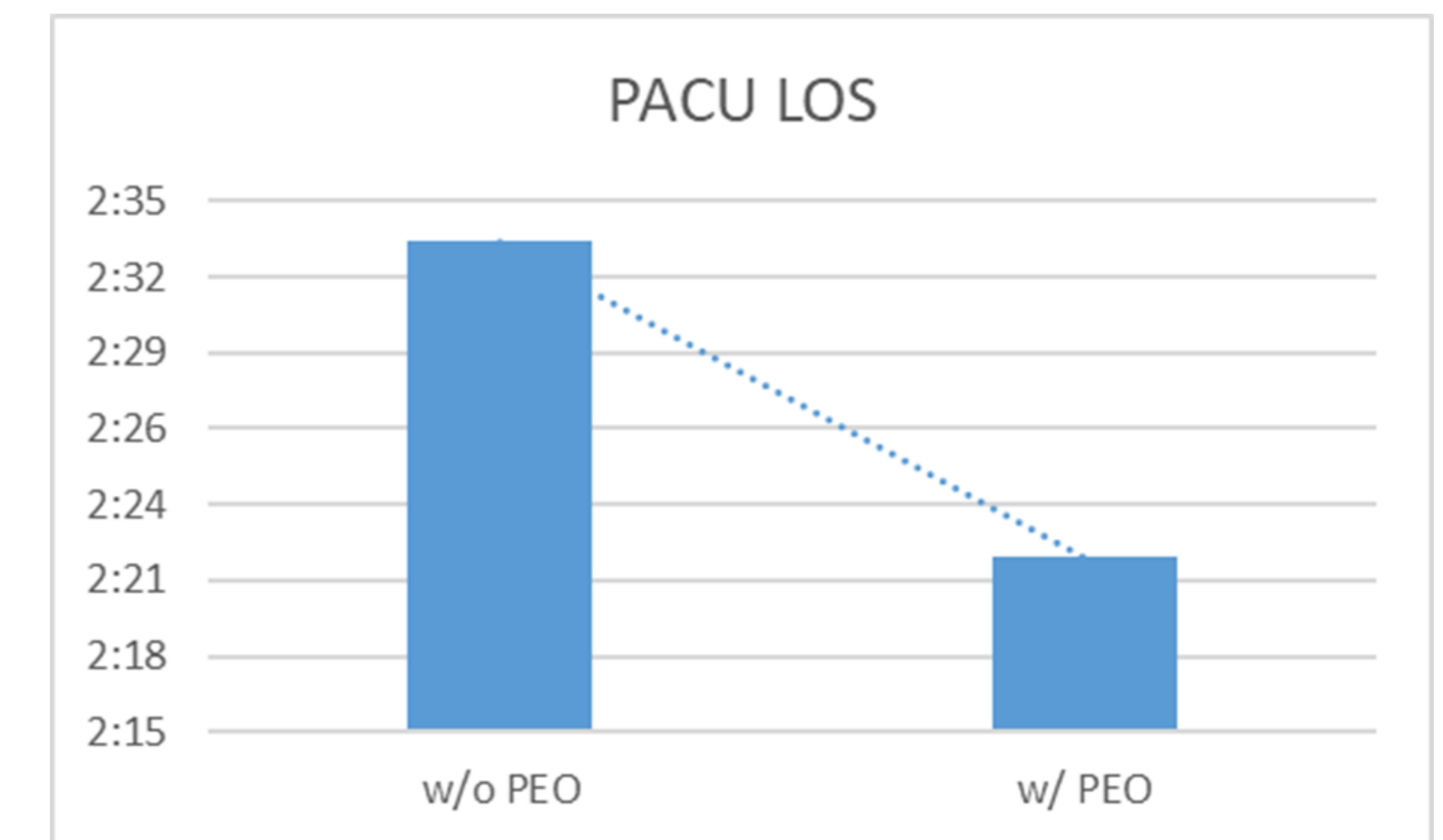
Discussion

Retrospective chart review and data collection shows 6% improvement in NO DELAYS in PACU discharges and 2% reduction in delayed voiding.

Conclusion:

The use of PEO may facilitate voiding in post-op gynecological day surgery patients to meet discharge criteria and reduce PACU LOS.

Further research is necessary to study the correlation between PEO, post-op voiding and quality outcomes in the PACU.



PACU LOS decreased with the use of PEO.

References:

Geller, E. J. (2014). Prevention and management of postoperative urinary retention after urogynecologic surgery. *International Journal of Women's Health*, 829. <https://doi.org/10.2147/ijw.s55383>

Ghoshal, I. (2023, April 13). Urinary retention after catheter removal. *Clinicspots*. Retrieved July 5, 2024, from <https://www.clinicspots.com/blog/urinary-retention-after-catheter-removal>

Jackson, J., Davies, P., Leggett, N., Nugawela, M.D., Scott, L. J., Leach, V., Richards, A., Blacker, A., Abrams, P., Sharma, J., Donovan, J., & Whiting, P. (2018). Systematic review of interventions for the prevention and treatment of postoperative urinary retention. *BJs Open*, 3(1), 11-23. <https://doi.org/10.1002/bjs.5.50114>