

Spinal-Induced Hypotension Prophylaxis Using Ondansetron in Non-Obstetric Adult Surgical Patients

Lesley Corbin, RN-BSN, SRNA
Johnny Gayden, DNP, CRNA
University of Maryland School of Nursing

Problem

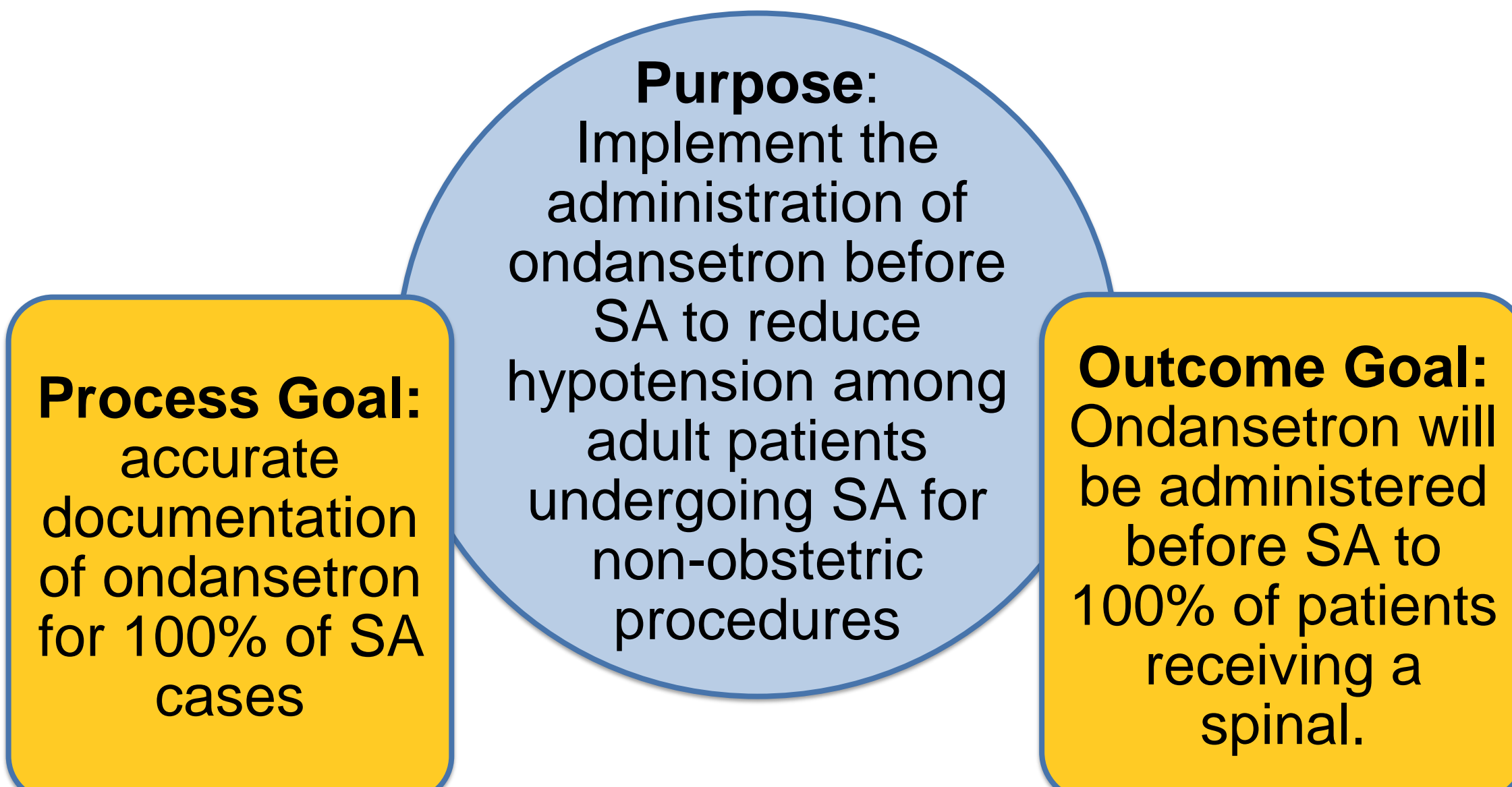
Spinal-induced hypotension (SIH) is a common side effect of spinal anesthesia (SA) that can lead to:

- Stroke
- Acute kidney injury
- Myocardial injury

Significance: 70% of patients undergoing SA for non-obstetric surgical procedures experience spinal-induced hypotension (SIH).

Evidence: Medications that block the 5HT-3 serotonin receptors such as ondansetron have demonstrated efficacy in reducing the incidence of SIH when administered before SA induction

Purpose & Goals



Methods

Setting/Population: Anesthesia department at an academic hospital in Maryland with 8 operating rooms

- 5 Anesthesiologists, 13 Certified Registered Nurse Anesthetists (CRNAs)
- Adult patients undergoing spinal anesthesia for non-obstetric surgical procedures

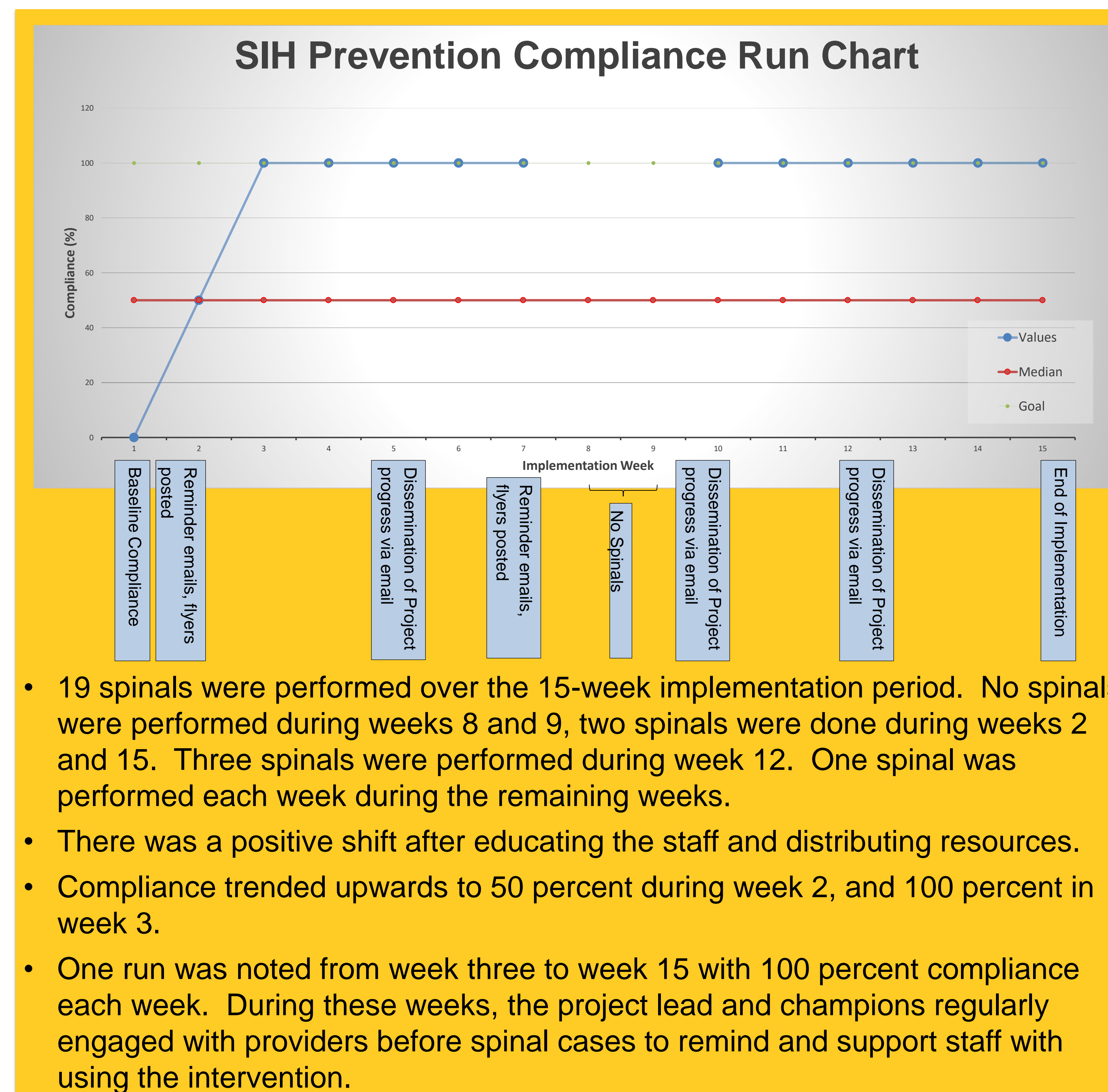
Intervention: Administration of 4mg ondansetron IV within 5 to 15 minutes before spinal anesthesia

Implementation Strategies:

- Educated providers through various methods and distributed supplemental resources
- Project champions used to support providers
- A clinical reminder incorporated into documentation system

Measures: Compliance data was collected through weekly chart reviews to monitor the progress of the process and outcome goals over 15 weeks.

Results



Discussion

The process and outcome goals were successfully implemented among anesthesia providers.

- Provider education improved compliance early in the implementation
- Frequent communication with providers, the electronic reminder, ease of use of the intervention, and providers recognizing effectiveness of intervention contributed to sustained high compliance
- Anesthesia providers subjectively reported an overall decrease in SIH incidence after applying the intervention to their practice, consistent with findings from the literature

Limitations:

- Limited participation of anesthesia providers in the initial education session
- Possible missed education of new/temporary providers
- No hemodynamic data collected to demonstrate a change in SIH incidence from baseline

Conclusion

Contribution to the Profession: Anesthesia providers demonstrated increased knowledge and awareness of SIH and increased initiative to prevent SIH through compliance with the intervention

- Utilizing implementation strategies that were tailored to the culture of the clinical site significantly enhanced the adoption of the evidence-based practice change

Promoting Sustainability:

- Project champions will continue to engage stakeholders and encourage them to share experiences with the intervention
- The clinical reminder will remain as part of the electronic documentation system
- Education materials provided to the department head for distribution as needed.

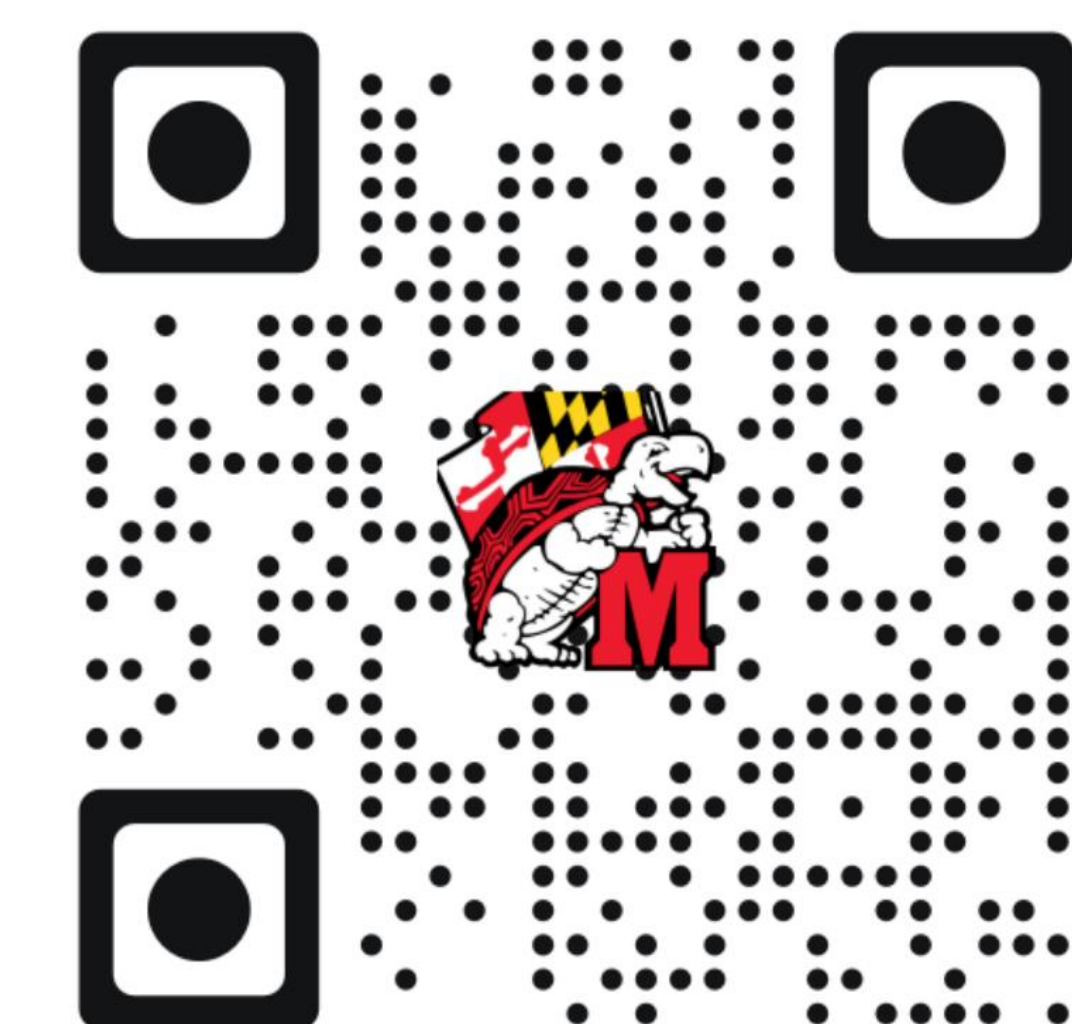
Return on Investment:

- 4mg ondansetron 5-15 minutes before SA is a feasible, cost-effective intervention, requiring no additional resources

Recommendations for the Future:

- Implementing other evidence-based SIH prevention interventions or a bundle of interventions to further decrease the incidence of SIH.
- Incorporating education for SIH prevention using this evidence-based intervention for new hires

References



Acknowledgements

Special thanks to Boaz Leung, CRNA for his contributions, support, and guidance that made this quality improvement project possible.