

Standardized Nurse Education to Promote a Universal Decolonization Bundle with Intranasal Povidone-Iodine for Vascular Surgery: A Quality Improvement Project

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BACKGROUND

- Staphylococcus aureus* (*S.aureus*) is the leading cause of most surgical site infections (SSIs), increasing morbidity, mortality (death rate 15-75%), and healthcare costs.
- Over 80% of *S. aureus* SSIs originate from a patients' own nares, with *Methicillin Susceptible* and *Methicillin Resistant* (MSSA/MRSA) carriers more likely to have invasive infections.
 - Major amputation rates of up to 70%
- Universal decolonization with intranasal Povidone-Iodine (PI) reduces SSI risk, but inconsistent implementation and lack of education for nurses hinder compliance and effectiveness.

PURPOSE

- The purpose of this pre-test, post-test quality improvement (QI) pilot study was to engage perioperative nurses in promoting the use of a universal decolonization bundle to prevent *S.aureus* related SSIs in adult vascular surgery patients over 21 years of age by implementing a standardized education program for RNs on intranasal PI.

METHODS

Peer-reviewed publications from the following databases:

- PubMed, CINAHL, Embase, Cochrane Library, Google Scholar, National organizations (ASA, AORN, CDC)
- Total 12 articles identified after inclusion and exclusion criteria.
- Plan-Do-Study-Act (PDSA) method used for continual re-evaluation and refinement of project goals, deliverables, and issues to ensure project success.

PRACTICE RECOMMENDATION

- Decolonization bundles significantly reduces SSI rates and associated complications from infection (i.e., prolonged length of stay due to infection, potential for sepsis).
- Povidone-Iodine is recommended; however, more research is needed for generalizability.
- Video podcasts and simulations are effective teaching tools for nurse learners and promotes self-confidence and efficacy in achieving skills.

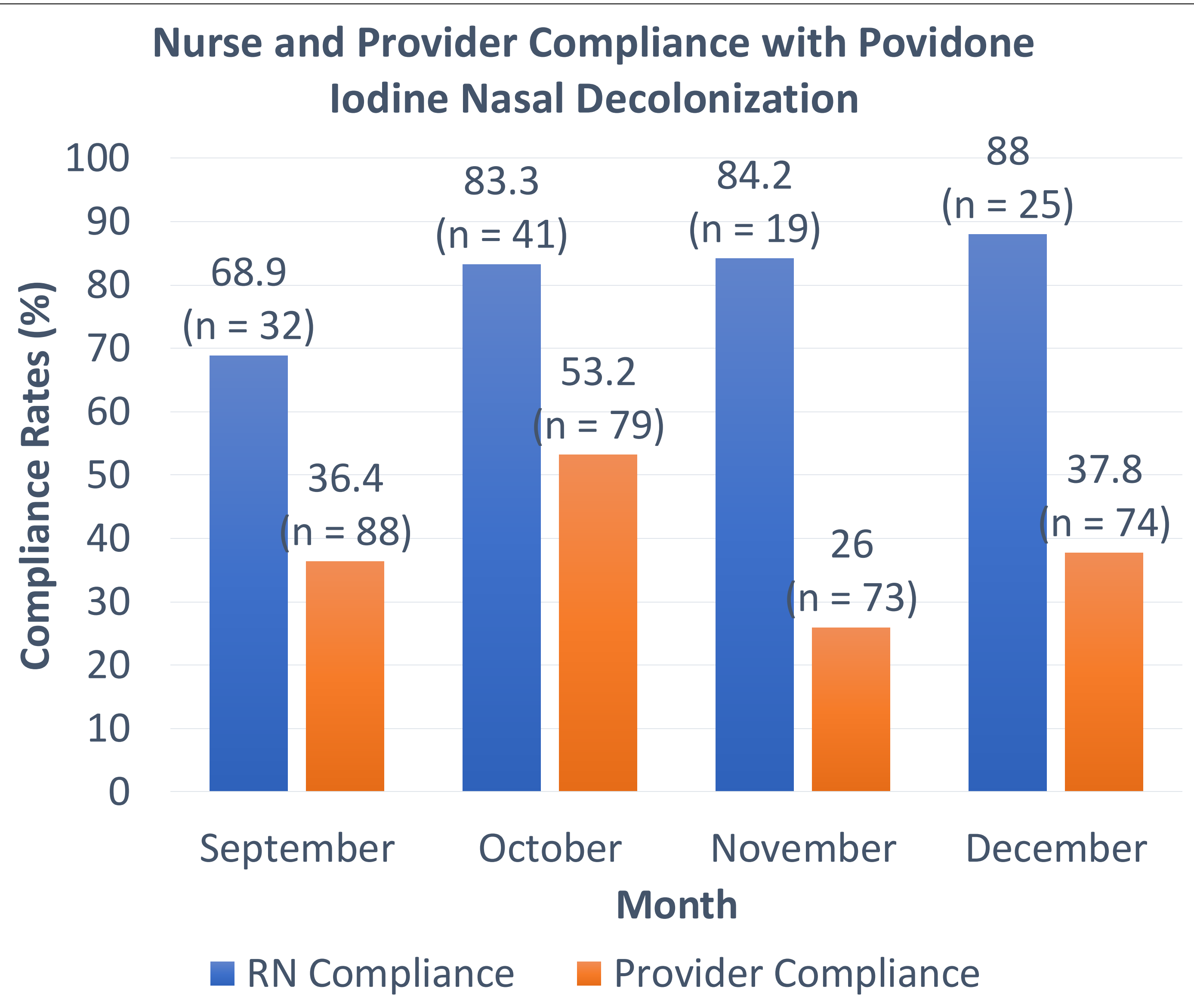
IMPLEMENTATION

- A two-week standardized RN education bundle on intranasal PI was delivered to RNs in the pre-operative department. *Scan QR Code for Appendix A - Education Intervention.*



EVALUATION & OUTCOMES

- All RNs achieved perfect, high competency scores (100%) on 3M Skills Checklist.
- RNs showed improved knowledge, attitude, and confidence in implementing a new evidence-based practice with intranasal PI as measured by post-test surveys.
- RN compliance rates rose from 68.% (September) to 88% (December 2024)
- Overall incidence at a single center for 4 months will not allow an accurate analysis of SSI reduction over time; however, it is notable that none of the patients who received PI in September and October were readmitted 90 days for an *S.aureus* SSI.

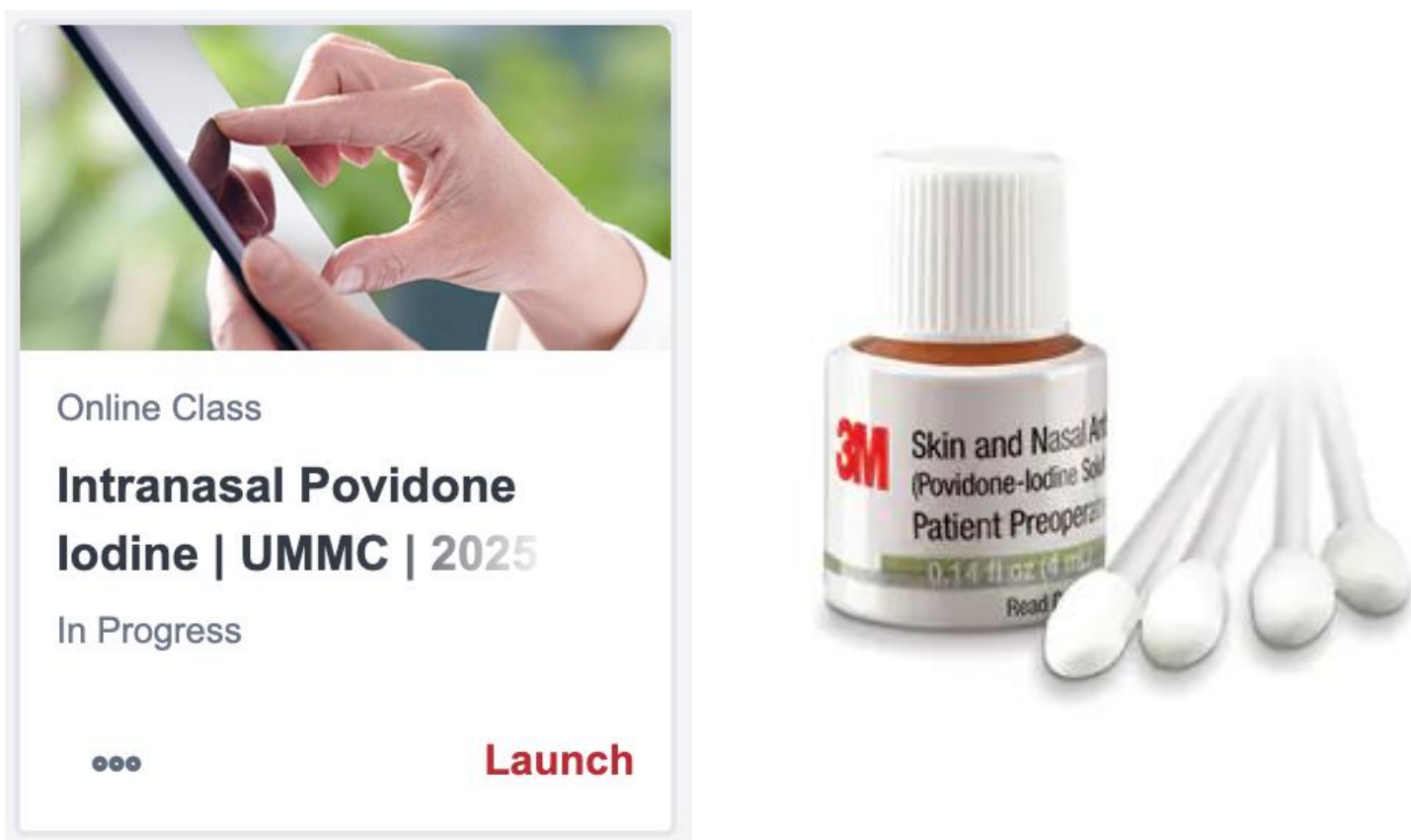


IMPLICATIONS FOR PRACTICE

- Evidence-based teaching methods, including simulations and instructional videos, can improve RN compliance with new evidence-based practices.
- Creation of a physician order specific to PI decolonization helped improve RN compliance.
- Physician preference and dependence for orders has an impact on bundle compliance.
- Further research is needed to assess effectiveness of intranasal PI in the acute pre-operative setting in the prevention of SSIs.

NEXT STEPS

- This pilot has been incorporated as standard of care for vascular surgery patients.
 - An ERAS protocol incorporating intranasal PI into a pre-op order set is under development.
 - Online version of education bundle created and now incorporated into hospital's online module platform.
- Addendum to MRSA decolonization policy underway.



REFERENCES

- Scan QR code for references.

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