

Infection Prevention with Intranasal Povidone-Iodine for Vascular Surgery: A Quality Improvement Project

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Introduction: Staphylococcus aureus (S. aureus) is a leading cause of surgical site infections (SSIs), with methicillin-resistant strains (MRSA) posing a significant risk, particularly in vascular surgeries. These infections result in prolonged hospital stays and higher healthcare costs, with a rise in community-transmitted MRSA.

Identification of the Problem: There is inconsistent nasal decolonization practices for adult vascular surgical patients due to the lack of standardized infection prevention policies at the University of Maryland Medical Center (UMMC).

QI Question/Purpose of the Study: This study aims to promote the use of a universal decolonization bundle and decrease S.aureus related SSIs in adult vascular patients over 21 years old in UMMC's perioperative department by implementing a standardized education program for registered nurses (RNs) on intranasal Povidone-Iodine (PI). Other objectives include: increasing nursing knowledge, attitude, confidence, and compliance with PI use; preventing/reducing SSIs; and revision of the existing MRSA decolonization protocol to include PI.

Methods: This pre-post quality improvement study uses the Plan-Do-Study-Act (PDSA) method to educate pre-operative RNs (N = 30) on pre-operative intranasal decolonization with PI for adult vascular patients (N = 50) from September to December 2024. The intervention includes educational brochures, a YouTube tutorial, and in-service training by a 3M representative. Outcomes measured at baseline and one month post-implementation include RN knowledge, attitude, and confidence using validated scales (via Likert surveys) analyzed via Wilcoxon signed-rank test. Compliance will be measured via completion of the pre-operative checklist utilizing descriptive statistics. SSIs will be measured by pre/post-test data collection (#SSI Event/50 surgeries) and quarterly Standardized Infection Ratio (SIR) reports utilizing Chi-square test.

Outcomes/Results: The intervention is expected to improve RN knowledge, confidence, and attitude about PI. In addition, with >90% compliance in PI use, reduction in SSI rates by 1-2 cases, and a lower hospital MRSA bacteremia rate (SIR < 0.504) is anticipated within 90 days of surgery.

Discussion: Outcomes in progress.

Conclusion: We anticipate to see that the educational intervention will promote a more universal decolonization bundle to prevent SSIs related to S.aureus for patients prior to vascular surgery.

Implications for perianesthesia nurses and future research: This project supports national guidelines and highlights PI as an effective alternative to Mupirocin, contributing to antibiotic stewardship with no evidence of resistance.