



# Improving Outcomes with Revised Preoperative Universal Decolonization Protocol

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## Abstract 909881:

**Title:** Improving outcomes with revised preoperative universal decolonization protocol

**Conflict of interest:** None

**Statement of research and objectives:** In order to improve outcomes, including reduced surgical infection rate and costs, a revised universal preoperative decolonization protocol was implemented on a trial basis.

**Methods:** In a 12 month before and after study at a public teaching hospital in southern California, an alcohol based nasal antiseptic was introduced in place of nasal povidone iodine (PVI) for all surgical patients pre-operatively, paired with chlorhexidine (CHG) bathing which was already in place. All surgical procedures were included, the most common being cholecystectomy, cesarean section and hip fracture. The alcohol nasal antiseptic was selected to replace the PVI nasal antiseptic based on efficacy, staff preference and cost. At the same time, surgical team members began self-application of the alcohol nasal antiseptic each day prior to surgical procedures. This was not mandatory and compliance was not tracked, though informal feedback and observation revealed most surgical team members were applying the nasal antiseptic prior to cases daily.

**Results:** In comparison to the 6 month baseline period where there were 27 SSI in 1188 procedures, during the 6 month study period there were 10 SSI in 1253 procedures, representing a 63% reduction (p=.0162) for all types of procedures. We have observed a reduction of 17 SSIs in 2019, compared to the previous year, during the 6 months period. That means a saving of \$589,420 during the same period.

**Conclusions:** Preoperative universal decolonization with alcohol based nasal antiseptic in place of nasal PVI, paired with CHG bathing, was effective in reducing SSI rate and associated costs. Further study is needed to measure and assess the impact of surgical team member nasal decolonization on patient infection risk and rate.

## Statement of Research and Objectives:

In order to improve outcomes including reduced surgical infection rate and associated costs, a revised universal preoperative decolonization protocol was implemented on a trial basis, replacing povidone iodine-based nasal antiseptic with alcohol-based nasal antiseptic. The nasal antiseptic was paired with preoperative chlorhexidine bathing (already in place). Alcohol-based nasal antiseptic was also provided to surgical team for application prior to each shift.

## Methods:

In a 12 month before and after study at a public teaching hospital in southern California, an alcohol based nasal antiseptic was introduced in place of nasal povidone iodine (PVI) for all surgical patients pre-operatively. The nasal antiseptic was paired with chlorhexidine (CHG) bathing, which was already in place. All surgical procedures were included, the most common being cholecystectomy, cesarean section and hip fracture. The alcohol based nasal antiseptic was selected to replace the PVI nasal antiseptic based on efficacy, staff preference and cost. At the same time, surgical team members began self-application of the alcohol based nasal antiseptic each day prior to surgical procedures. This was not mandatory and compliance was not tracked, although informal feedback and observation revealed most surgical team members were applying the nasal antiseptic prior to cases daily.



## Implementation Tips:

Compliance with daily CHG bathing and twice daily alcohol based nasal antiseptic was assessed by a dedicated nurse through direct observations two times a week. In order to track and document the application of the nasal antiseptic a field was added in the EPIC EMR. The optimal location for the nasal antiseptic ampules was determined by the nursing staff to be next to the hand scrub sink. Staff received training regarding application of the nasal antiseptic daily prior to applying mask and performing surgical hand scrub.

## Results:

The results of the 12 month before and after study include a reduction in surgical site infections after all types of surgical procedures, as well as a reduction in associated costs. During the 6 month baseline period there were 27 SSI in 1188 procedures. During the 6 month study period there were 10 SSI in 1253 procedures. This is a 63% reduction (p=.0162) in SSI for all types of surgical procedures. The avoidance of 17 SSIs represents a saving of \$589,420 during the same period.

**63%  
REDUCTION**  
of surgical site infections (SSI)

**SAVING OF  
\$589,420**  
during a six month period

## Conclusions:

Introduction of preoperative universal decolonization with alcohol based nasal antiseptic in place of nasal povidone iodine (PVI), paired with CHG bathing, was effective in reducing the SSI rate for all surgical procedures, as well as reducing costs associated with the prevented infections, and the reduced cost of the nasal antiseptic. Further study is needed to measure and assess the impact of surgical team member nasal decolonization on patient infection risk and rate.