



**Universal Nasal Decolonization
An Unexpected Solution to Hospital Staffing and Financial Concerns**

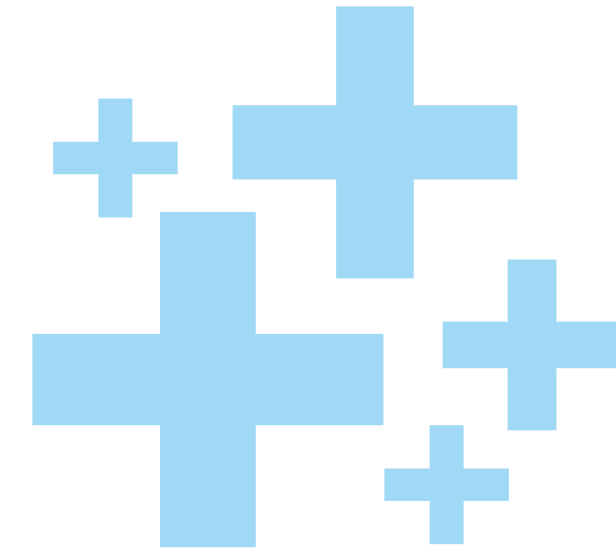
Table of Contents

- I. Webinar Presentation
- II. Independently conducted studies using Nozin® Nasal Sanitizer® antiseptic

This Webinar Sponsored By:



Universal Nasal Decolonization:



An Unexpected Solution to Hospital Staffing and Financial Concerns



PRESENTED BY:

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MSN, RN, CIC, FAPIC

Meet The Presenters



Karen Hoffmann

MS, BSN, RN, CIC, FSHEA, FAPIC



Connie Steed

MSN, RN, CIC, FAPIC

Disclosure: Consultants for Global Life Technologies Corp.

Learning Objectives

- 01.** Identify a strategy your hospital can use to improve operational and financial performance through better, innovative patient care.
- 02.** Demonstrate how a well-designed/high-impact infection prevention program can help address problems senior leadership are most concerned about.
- 03.** Explain how to translate clinical success into performance metrics that match organizational goals.



**Meet
Angela**

Staffing

Penalties

**Leapfrog
Scores**

GMLOS

Merger?

Finances





**New
Software?**

**Service
Lines?**

HCW

A.I.?

**More
Software?**

**More Software
and A.I.?**

consultants?

Databases

Acquisition?

Integration

Wait!

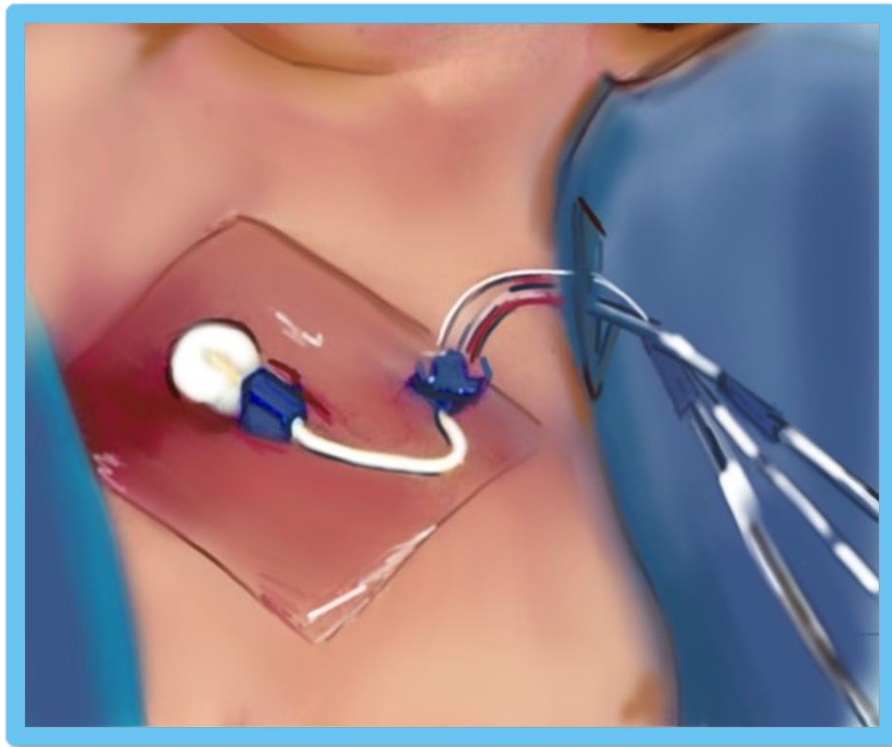
Could safer patient care –
provided by the HCWs you already
have - be a solution?

**Maybe the answer
is right under
your nose?**



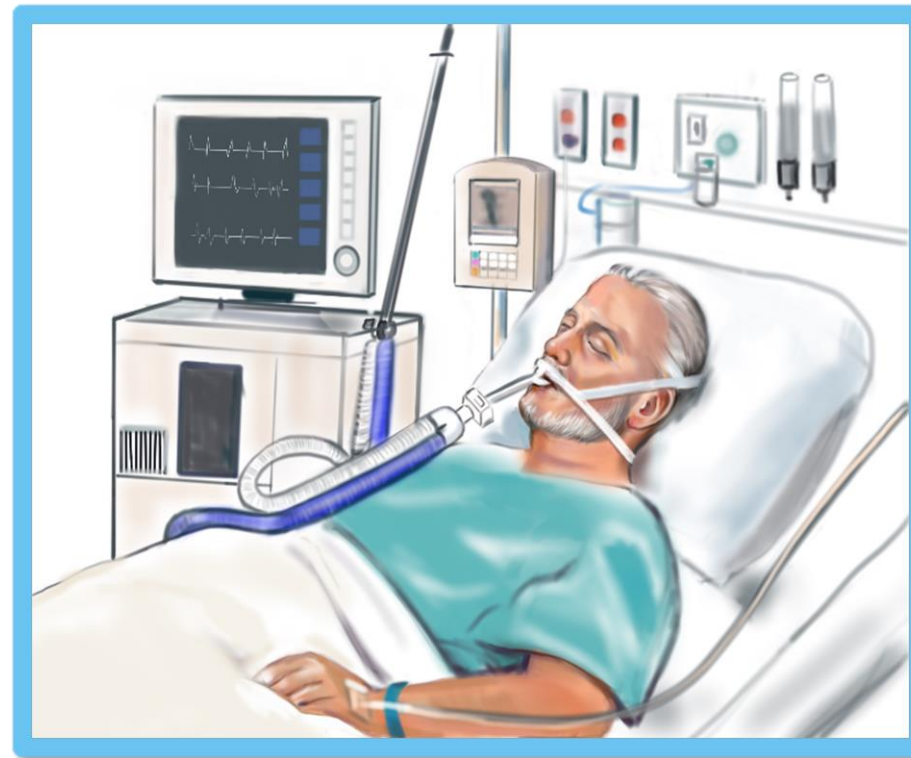
HAIs Cost \$35–45 Billion Each Year

Staph aureus is the leading cause of infections in US healthcare facilities



#1 CLABSI

PATHOGEN IN HOSPITAL WARDS



#1 PVAP

PATHOGEN IN ICUS



#1 SSI

PATHOGEN FOR ALL SURGERIES

Estimated Impact of Universal Nasal Decolonization*



190K

HAIS AVOIDED



\$0

CAPITAL INVESTMENT
REQUIRED



\$6B

HAI TREATMENT
COSTS AVOIDED



30M

HCW HOURS
SAVED

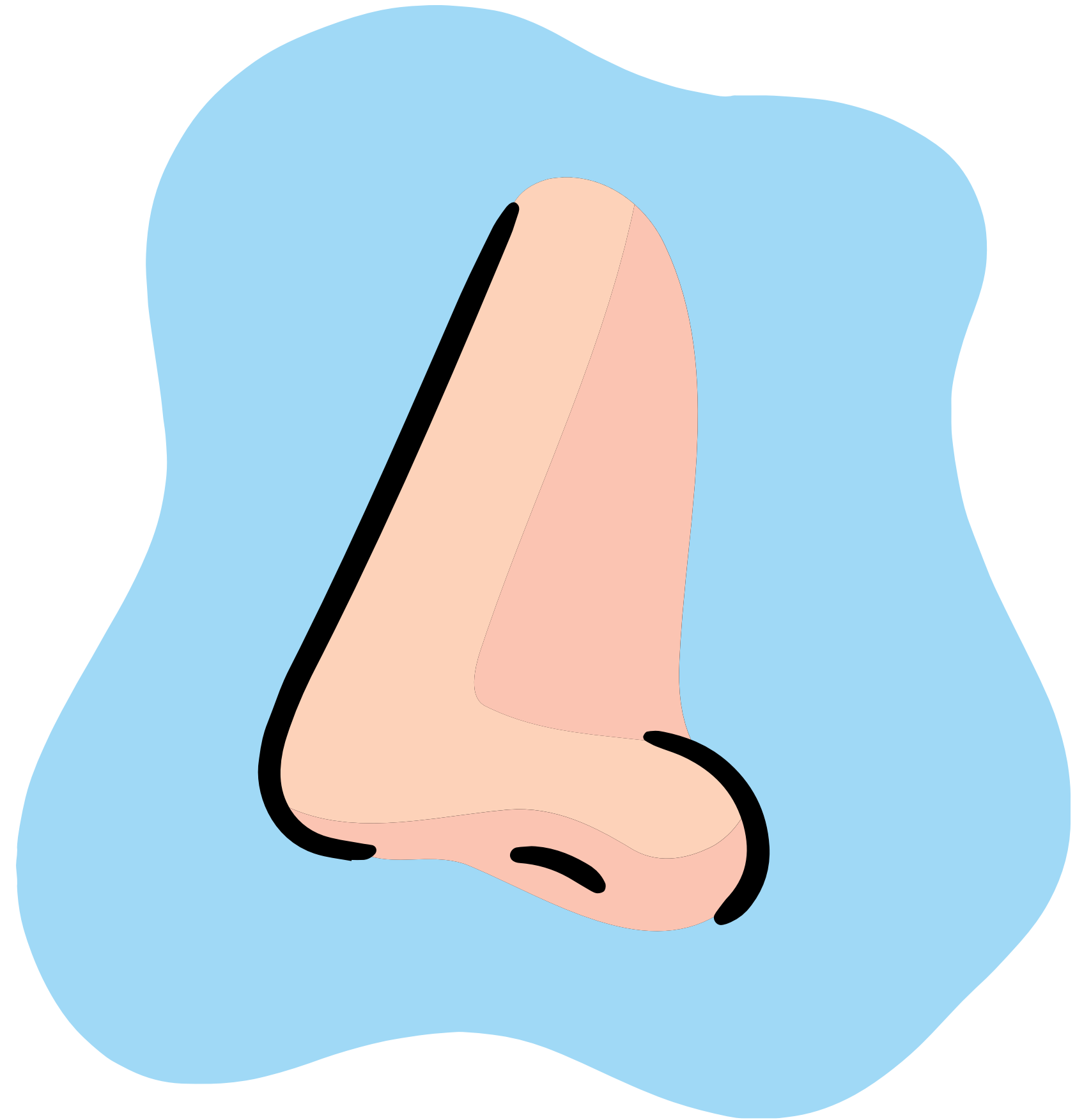
*Speaker estimates

How?

Simple concept

The nose is the main reservoir for *Staph aureus* and other pathogens that cause HAIs.

If the reservoir is drained, colonization pressures goes down – and so does infection risk.



What is Making This Possible?



#1

Understanding the power of universal nasal decolonization

#2

Intro of decolonization tools suitable for long term daily use

Why Decolonize All Patients?

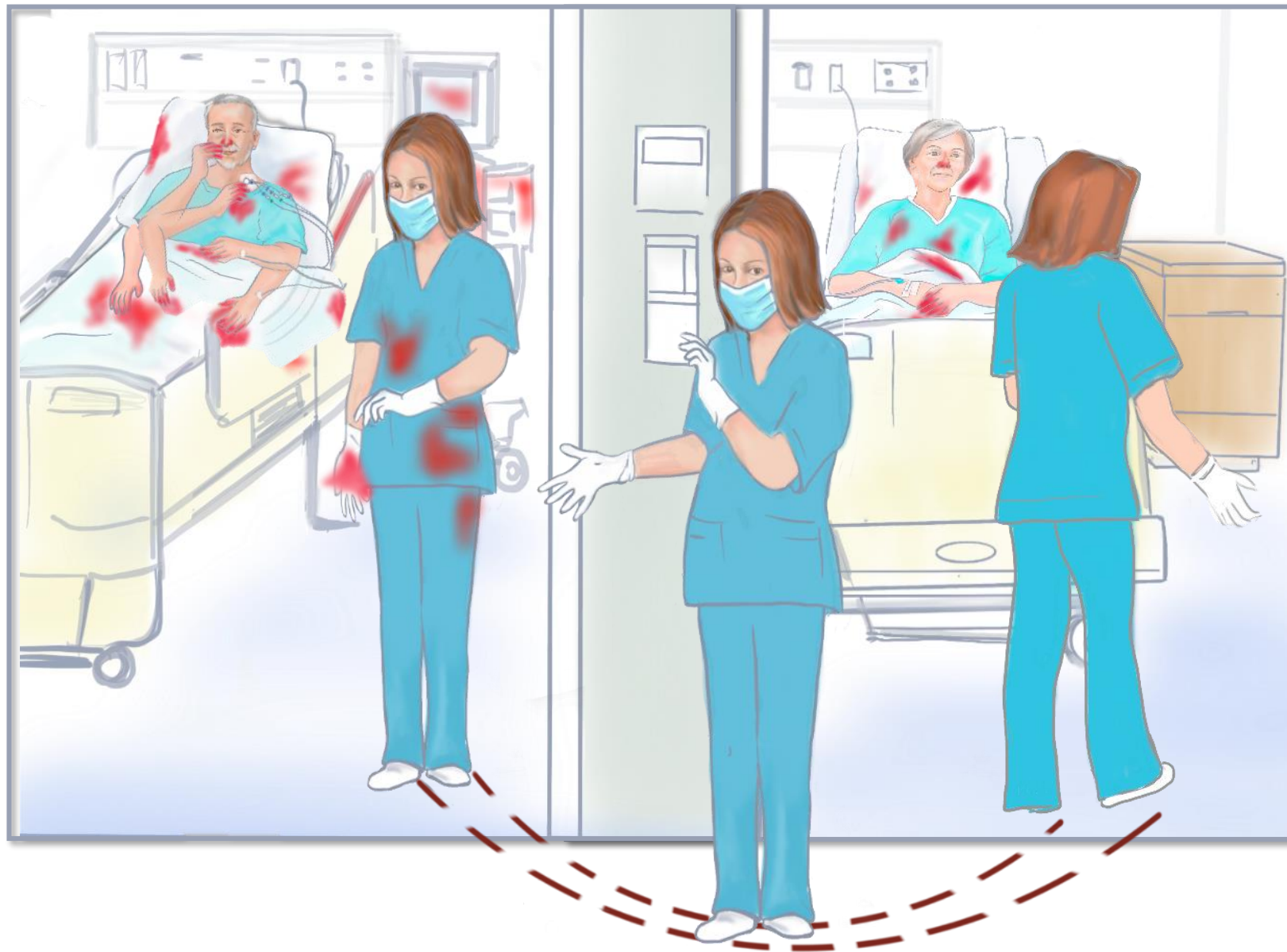


30%

Which patients
of all patients are
colonized with
Staph aureus

Why Decolonize All Patients

Self-inoculation



Transmission-related



Universal Nasal Decolonization

Universal Nasal Decolonization Reinforces Other IP Programs

When colonization pressure is reduced, all current and future IP programs ***will work better***, as they are being performed in a lower pathogen environment, including:

- **Hand hygiene programs**
- **Environmental cleaning**
- **UV light robots, filtration, etc.**
- **Targeted bundles**

Nasal Decolonization Evolution

An Ongoing Journey



**TARGETED PRE-OP
PATIENTS**

MRSA (+) Ortho/spine

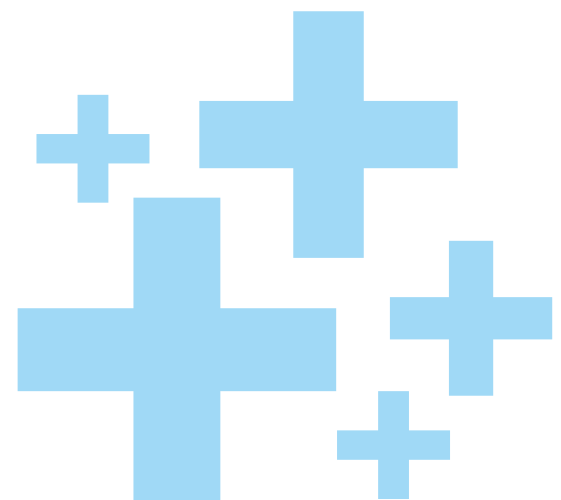
**ALL ORTHO/SPINE
PRE-OP
PATIENTS**

**TARGETED
ICU PATIENTS**

**ALL ICU
PATIENTS**

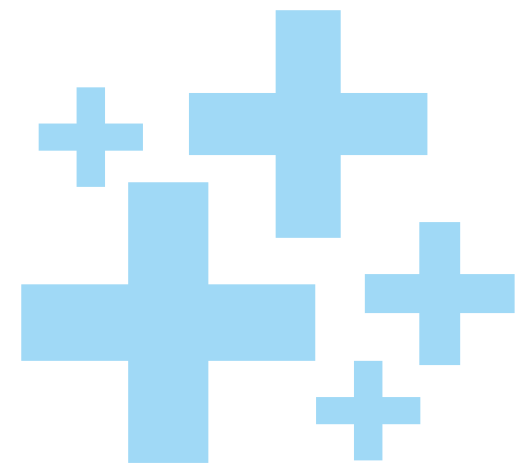
**ALL ICU AND
HIGH-RISK
PATIENTS**

**ALL
PATIENTS**



Product Evolution

Product evolution over the last 20 years is providing the capabilities required to execute the new programs



	ANTIBIOTIC (MUPIROCIN)	POVIDONE IODINE	ALCOHOL-BASED ANTISEPTIC
Long term daily use	X	X	✓
Does not create resistance	X	✓	✓
Broad spectrum action	X	✓	✓
Effective same day	X	✓	✓
Suitability for use	X	X	✓
Easy and pleasant to use	X	X	✓
Low cost	✓	X	✓

Real World Example

HOSPITAL A

- 365 beds
- 39 adult ICU beds
- Community hospital



Hospital A: Financial Benefits

ACTUAL HAI TREATMENT COSTS AVOIDED

- **12 CLABSI Infections Avoided**
(\$48,108 each est.) **\$577,296**
- **8 VAP Infections Avoided**
(\$47,237 each est.) **\$377,896**
- **70 MRSA-Related Readmissions Avoided**
(\$12,000 each est.) **\$876,000**

\$1,831,192
HAI Treatment Costs Avoided

Hospital A: Financial Benefits

ADDITIONAL SAVINGS

- Total Excess LOS Days Avoided (est.) 211 Days
- Est. Net Patient Revenue Gained by Decreasing Excess LOS Days **\$952,500**
- Total HCW Hours Saved (est.) 2,405 hours

\$367,000

Nasal Decolonization Cost

\$2,784,292

Total Value Experienced

Real World Example

HOSPITAL B

- **136 beds**
- **24 adult ICU beds**
- **Community hospital**



Hospital B: Financial Benefits

ACTUAL COST AND REVENUE IMPACT

- Direct costs avoided (testing/PPE) **\$191,197**
- HAI treatment costs avoided **\$546,000**
- Est. net patient revenue gained **\$2,359,000**
- HCW hours saved (est.) **3,842 hours**

\$130,097

Nasal Decolonization Cost

\$3,096,197

Total Value Experienced

Independent Clinical Studies

REAL WORLD OUTCOMES



AdventHealth North Pinellas, FL

96%
DECREASE
in MRSA bacteremia
hospital-wide

Applied universal nasal decolonization to all inpatients and preoperatively to all surgical patients. Reached zero incidents of all Gram (+) and Gram (-) SSI after all surgical procedures. Saved \$104k.

eventscribe.com/2019/posters/IDWEEK/SplitViewer.asp?PID=NTI4ODgwNDAzNzY

12 mo.



AdventHealth Wesley Chapel, FL

98%
REDUCTION
in total hip SSI

Applied universal nasal decolonization to all high-risk patients, replacing targeted screen and isolate programs. Also instituted universal pre and post-op nasal decolonization for all orthopedic surgeries. Maintained rate of zero SSI in total knee replacement for patients. Reduced use of contact precautions. Saved \$200k.

eventscribe.com/2019/posters/IDWEEK/SplitViewer.asp?PID=NTIzMzkzNzMyODQ

12 mo.



AdventHealth Tampa, FL

\$1.4m
SAVINGS

Applied universal nasal decolonization to all inpatients, replacing targeted screening, isolation and decolonization with mupirocin for MRSA colonized patients. Retained low MRSA bacteremia rate and reduced contact precautions. Saved \$1.4m.

ncbi.nlm.nih.gov/pmc/articles/PMC6809439/

12 mo.



Jackson Health System, FL

74%
DECLINE
in MRSA bacteremia

Compared to screen and isolate in the ICU only, a universal decolonization bundle hospital-wide reduced bacteremia by 74%. There was a significant decrease in the SIR after the introduction of Nozin.

eventscribe.com/2019/posters/IDWEEK/SplitViewer.asp?PID=NTIzNDE3OTU4NDQ

30 mo.



Frederick Memorial Hospital, MD

51%
REDUCTION
in *S aureus* SSI
replacing PVP-I

Implemented a hospital-wide universal nasal decolonization program to all adult inpatients. Also replaced pre-op povidone iodine with Nozin and applied Nozin post-op. Maintained 96% compliance rate. Reduced use of contact precautions. Saved \$223k.

[ajicjournal.org/article/S0196-6553\(19\)30319-0/fulltext](https://ajicjournal.org/article/S0196-6553(19)30319-0/fulltext)

17 mo.



Medical University of SC Hospital, SC

99%
REDUCTION
in *S aureus* SSI
colony forming units

Applied a nonantibiotic, alcohol-based nasal antiseptic to healthcare professionals.

Reduced Gram (+) pathogens including MRSA and MSSA by 99%.

[ajicjournal.org/article/S0196-6553\(14\)00651-8/fulltext](https://ajicjournal.org/article/S0196-6553(14)00651-8/fulltext)



WV University School of Medicine, WV

79%
REDUCTION
in SSI

Instituted alcohol-based nasal antiseptic to total joint arthroplasty patients pre and post-op. Realized 79% reduction in SSI. Exceeded 75% compliance rate.



Marshall Medical Center, CA

\$64k
SAVINGS
maintaining
low MRSA rates

Applied daily nasal decolonization to MRSA patients (history, colonized or active). Reduced the use of contact precautions. Maintained low MRSA infection rates throughout the study.

[www.ajicjournal.org/article/S0196-6553\(16\)30102-X/fulltext](https://www.ajicjournal.org/article/S0196-6553(16)30102-X/fulltext)

12 mo.



Baylor Scott & White Orthopedic and Spine Hospital – Arlington, TX

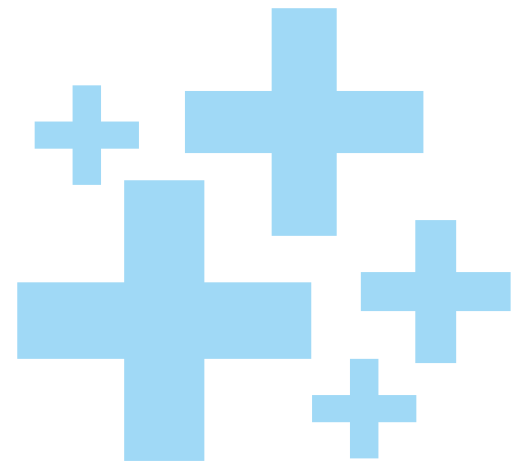
81%
REDUCTION
in *S aureus* SSI

Implemented universal nasal decolonization across spine surgeries. Achieved reduction in *S aureus* SSI for spine patients from 1.76 to 0.33 per 100 surgeries.

ncbi.nlm.nih.gov/pubmed/28189415

15 mo.

Partner Services and Support



Manufacturers today offer analytical tools and expert program design help, as well as on site in-service support. Take advantage of these services.

Analytical Tools

Customized
colonization risk
profile and analysis

Value
proposition/ROI
business case
development

Expert Help

Clinical support
Program design
help

Internal buy-in
support

Implementation Support

Policy/procedure
help

IT consultation

On-site team of
educators to help
train your staff

Post Implementation

Continued support
after your go-live
date

Follow-up and
quarterly audits

If Every Hospital Adopted This Strategy

- **\$6 Billion:** HAI treatment costs avoided
- **30 Million:** Healthcare worker hours (HCW) saved



If Every Hospital Adopted This Strategy

~190,000

infections avoided



Real World Perspective



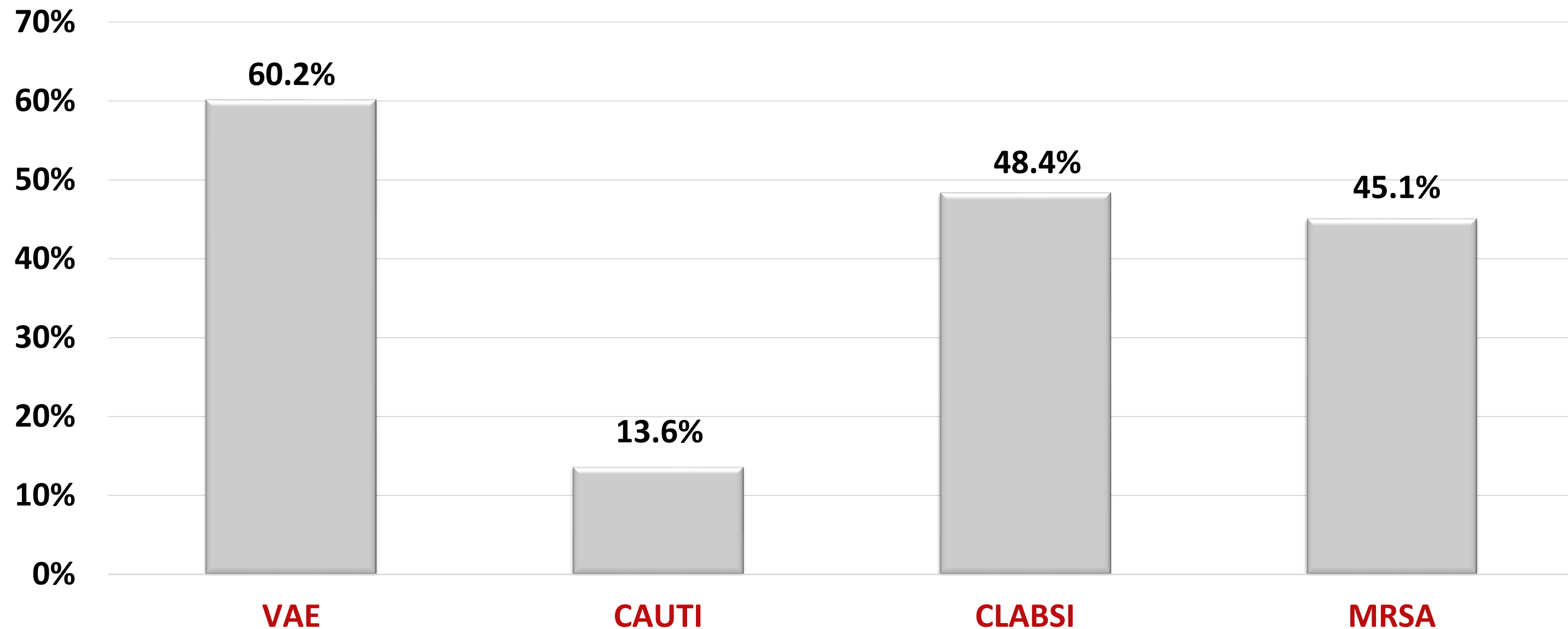
CONNIE STEED

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- Quality patient care
- Cost and process efficient
- Sustainability challenge-healthcare must sustain established standard of practice

Urgent Need to Respond to Increased Healthcare-Associated Infections (HAIs)

CDC NHSN increase in rates comparing Q3 2021 to Q3 2019



Translating Infection Prevention Impact into Key Metrics Senior Leadership Manages

WHAT ARE WE INVESTING?

- No capital investment
- No software to buy/implement
- No additional staff required
- Can modify program based on performance at any time with no penalty



Return on Investment: What am I Getting?

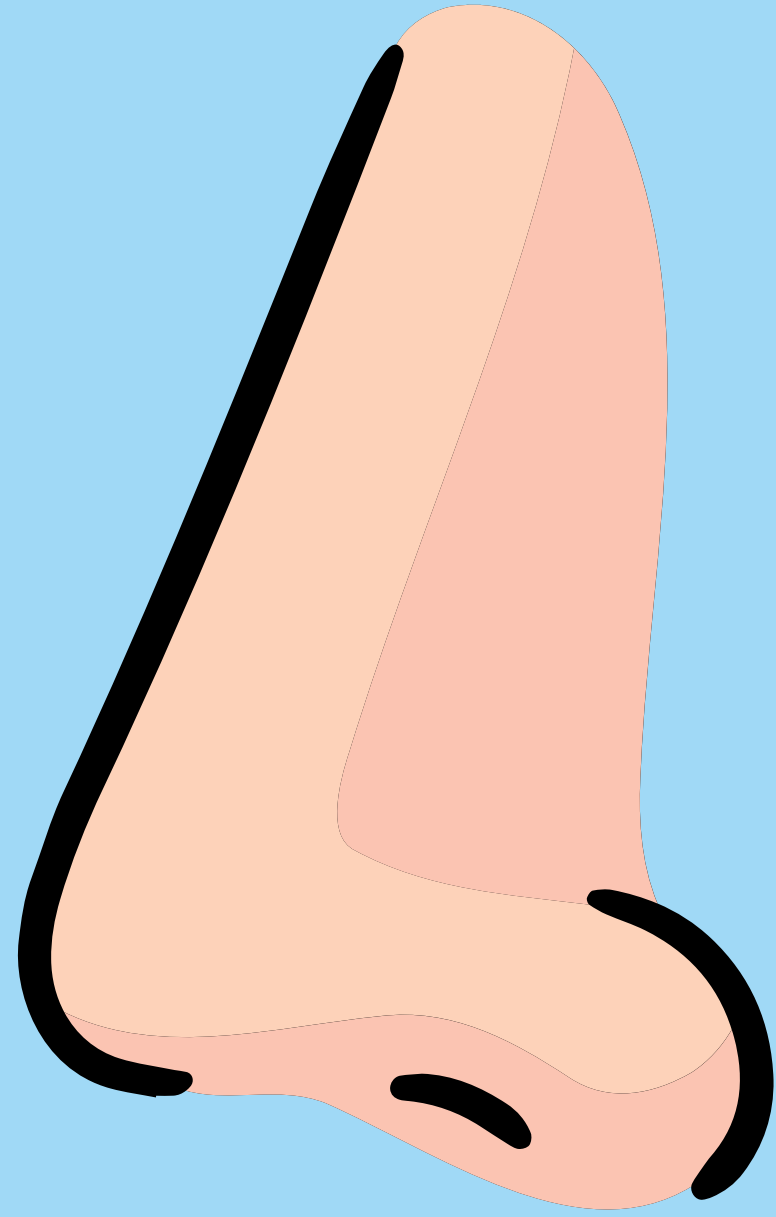
- Patient Safety/Care improvement
 - Reduced infections & readmissions
 - Reduced patient length of stay
- Improved throughput
- Additional revenue potential
- Improved reputation
- Reduced risk of financial penalties resulting from hospital associated infections



Return on Investment:

What is the Risk?

- To the patient?
 - Minimal - millions of patients safely and successfully treated
- To the organization?
 - Results do not meet expectations



**Maybe the answer
is right under
your nose?**

Safer, better patient care
is good for business!

Question & Answer



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Thank you!

Sponsored By



Independently conducted studies

using Nozin[®] Nasal Sanitizer[®] antiseptic



Table of Contents

STUDY # STUDY		PROGRAM / PROTOCOL					
		DAILY INPATIENT	PERIOPERATIVE				
			PRE	POST	PRODUCT REPLACED	EXISTING CHG USE	PAGE #
1	Steed L et al. Am. J. Infect. Control. 2014. 42(8), 841-846						1
2	Deatherage N. Am. J. Infect. Control. 2016. 44(S6), S101-S102	✓					1
3	Mullen A et al. Am. J. Infect. Control. 2017. 45(5), 554-556		✓	✓	mupirocin	✓	2
4	Bostian P et al. Poster AAOS Annual Conference. 2018		✓	✓		✓	2
5	Arden S. Op Forum Infect. Dis. 2019. 6(S2), S268	✓	✓	✓		✓	3
6	Jimenez A et al. Op Forum Infect. Dis. 2019. 6(S2), S268	✓			mupirocin	✓	4
7	Landis-Bogus K and Belani A. Am. J. Infect. Control. 2019. 47(S6), S39	✓	✓	✓	iodophor	✓	4
8	Stegmeier H. Op Forum Infect. Dis. 2019. 6(S2), S446	✓	✓	✓	mupirocin	✓	5
9	Whitaker J. Op Forum Infect. Dis. 2019. 6(S2), S25	✓					6
10	Candray K. Open Forum Infect Dis. 2020. 7(S1), S479		✓		iodophor	✓	6
11	Cernich C. Am J Infect Control. 2020. 48(S8), S50		✓			✓	7
12	Christie J et al. Am. J. Infect. Control. 2020. 48(8), 922-924	✓					7
13	Franklin S. Am. J. Infect. Control. 2020. 48(12), 1501-1503		✓			✓	8
14	Gnass S. Open Forum Infect Dis. 2020. 7(S1), S479		✓		iodophor	✓	9

Table of Contents - Continued

STUDY # STUDY		PROGRAM / PROTOCOL					
		DAILY INPATIENT	PERIOPERATIVE				
			PRE	POST	PRODUCT REPLACED	EXISTING CHG USE	PAGE #
15	Reeves L et al. Infect Control Hosp Epidemiol. 2020. 41(S1)	✓					9
16	Pratt N et al. Am. J. Infect. Control. 2022. 50(7S), S31	✓	✓				10
17	Montalvo G et al. Am J. Infect. Control. 2023. 53(7), S54	✓					11
18	Schroeder, J et al. Am J. Infect. Control. 2023. 51(7), S14	✓					12

Reduction of nasal Staphylococcus aureus carriage in health care professionals by treatment with a nonantibiotic, alcohol-based nasal antiseptic.

Steed, L. L., Costello, J., Lohia, S., Jones, T., Spannhake, E. W., & Nguyen, S. (2014). American Journal of Infection Control, 42(8), 841-846. <https://doi.org/10.1016/j.ajic.2014.04.008>

- Randomized double-blind, placebo-controlled study tested the effectiveness of a nonantibiotic, alcoholbased antiseptic in reducing nasal bacterial carriage in health care professionals (HCPs) at an urban hospital center.
- HCPs testing positive for vestibular S aureus colonization were treated with topical antiseptic or control preparations.
- Nasal S aureus and total bacterial colonization levels were determined before and at the end of a 10-hour workday.
- Antiseptic treatment produced a uniform reduction in colony forming units (CFUs) at 99% (median) for S aureus and 91% (median) for total bacteria.
- Nasal application of a nonantibiotic, alcohol-based antiseptic was effective in reducing S aureus and total bacterial carriage, suggesting the usefulness of this approach as a safe, effective, and convenient alternative to antibiotic treatment.

DAILY INPATIENT	PERIOPERATIVE		PRODUCT REPLACED	EXISTING CHG USE
	PRE	POST		

Impact of Reduced Isolation and Contact Precaution Procedures on Infection Rates and Facility Costs at a Non-Profit Acute Care Hospital.

Deatherage, N. (2016). American Journal of Infection Control, 44(S6), S101–S102. <https://doi.org/10.1016/j.ajic.2016.04.091>

- Replaced contact precautions and isolation with daily nasal decolonization with alcohol-based nasal antiseptic for all MRSA patients (history, colonized or active). (12-month trial)
- Additionally, did daily bathing with chlorhexidine gluconate cloths for all Intensive Care Unit patients.
- Low MRSA HAI rates/1000 patient days were maintained during the trial despite the change in CP Procedures. (Averages 0.152, 0.122, and 0.126 pre-intervention, versus 0.124 post-intervention)
- CP-related PPE costs were reduced by \$64,350 annually.

DAILY INPATIENT	PERIOPERATIVE		PRODUCT REPLACED	EXISTING CHG USE
	PRE	POST		
✓				

Perioperative participation of orthopedic patients and surgical staff in a nasal decolonization intervention to reduce Staphylococcus spp surgical site infections.

Mullen, A., Wieland, H. J., Wieser, E. S., Spannhake, E. W., & Marinos, R. S. (2017). American Journal of Infection Control, 45(5), 554-556. <https://doi.org/10.1016/j.ajic.2016.12.021>

- Implementation of alcohol-based antiseptic nasal decolonization program for spine surgery patients: combined pre-operative nasal decolonization with existing chlorhexidine bath or wipes, plus post-operative nasal decolonization daily for 5 to 7 days.
- High level of adherence: Patient nasal decolonization rates averaged 95% over the 15-month trial period.
- To address transmission risk, voluntary self-decolonization by preoperative staff was actively encouraged.
- S aureus SSI rates were significantly decreased by 81% from 1.76 to 0.33 per 100 surgeries.
- The reduction in aureus SSIs observed in the spine surgical group during the intervention was not experienced by other surgical groups at the facility during that time, suggesting the strength of the association between nasal antiseptic use and the reduced infection rates is high.

DAILY INPATIENT	PERIOPERATIVE		PRODUCT REPLACED	EXISTING CHG USE
	PRE	POST		
	✓	✓	mupirocin	✓

A Novel Protocol for Nasal Decolonization Using Prolonged Application of an Alcohol Based Nasal Antiseptic Reduces Surgical Site Infections.

Bostian, P., Murphy, T. R., Klein, A., Frye, B., Dietz, M., & Lindsey, B. (2018). Presented at American Association of Orthopedic Surgeons (AAOS) Annual Conference 2018. https://bit.ly/AAOS_2018_Bostian

- Total joint arthroplasty patients underwent nasal sanitization using an alcohol-based agent. (7-month trial)
- Applied pre-operatively and daily for two weeks post-operatively.
- Decolonization with the alcohol-based antiseptic was associated with a 78.5% reduction in surgical site infection (1/293 vs 7/527, p = 0.045, odds ratio = 4.5)
- Compliance was greater than 75% throughout the course of prolonged treatment.
- This low-cost intervention with high compliance rate significantly reduced our infection rate when introduced to the hospital system.

DAILY INPATIENT	PERIOPERATIVE		PRODUCT REPLACED	EXISTING CHG USE
	PRE	POST		
	✓	✓		✓

Does Universal Nasal Decolonization with an Alcohol-Based Nasal Antiseptic Reduce Infection Risk and Cost?

Arden, S. (2019). Open Forum Infectious Diseases, 6(S2), S268 <https://doi.org/10.1093/ofid/ofz360.636>

- House-wide application of alcohol-based nasal antiseptic in place of screening and contact precautions (CP) for MRSA colonized patients. (12-month trial)
- Preoperative application of alcohol-based nasal antiseptic to all surgical patients in addition to existing preoperative chlorhexidine bathing.
- Reduced incidence of MRSA bacteremia from 3/1,000 patient-days to 0/1,00 patient-days.
- Reduced incidence of all-cause surgical site infection (SSI) for all types of surgical procedures – from 3/4,313 procedures to 0/4,872 procedures.
- Reduction in CP from 3.79 to 1.53/1,000 patient-days.
- Significant costs avoided—after accounting for the cost of the nasal antiseptic, the reductions in gowns, gloves and nasal screening resulted in \$104,099 costs avoided in 12-months.

DAILY INPATIENT	PERIOPERATIVE		PRODUCT REPLACED	EXISTING CHG USE
	PRE	POST		
✓	✓	✓		✓

Reduction of Hospital-Onset Methicillin-Resistant Staphylococcus aureus (MRSA) Bacteremia in an Acute Care Hospital: Impact of Bundles and Universal Decolonization.

Jimenez, A., Sposato, K., De Leon Sanchez, A., Williams, R., & Francois, R. (2019). Open Forum Infectious Diseases, 6(S2), S268. <https://doi.org/10.1093/ofid/ofz360.635>

- Screen and isolate in ICU plus CHG bathing for all ICU patients was replaced by universal decolonization bundle hospital-wide (alcohol-based nasal antiseptic, CHG bathing and alcohol-based wipes for patient hand hygiene).
- Four phase quality improvement project, with 20-month intervention period.
- There was a significant decrease in the SIR after the introduction of alcohol-based nasal antiseptic (Phase 3).
- The largest decrease in cases and SIR was observed during Phase 4 when hospital-wide alcohol-based nasal sanitizer together with alcohol-wipes for patient hand hygiene were added to daily CHG bathing.
- Nasal surveillance cultures and contact precautions (CP) for methicillin-resistant Staphylococcus aureus (MRSA)-colonized patients were discontinued.
- The Hospital-Onset MRSA bacteremia standardized infection ratio (SIR) decreased from 3.66 to 0.97 from baseline to post-intervention periods—a 74% reduction.

DAILY INPATIENT	PERIOPERATIVE		PRODUCT REPLACED	EXISTING CHG USE
	PRE	POST		
✓			mupirocin	✓

Impacts of Coordinated, Hospital-wide Use of Alcohol-based Nasal Decolonization on Infection Rates, Patient Care and Cost Savings.

Landis-Bogush, K., & Belani, A. (2019). American Journal of Infection Control, 47(S6), S39. <https://doi.org/10.1016/j.ajic.2019.04.091>

- Pre-operative iodine was replaced by pre-/post-operative alcohol-based nasal decolonization. (17-month trial)
- All adult inpatients received daily nasal decolonization. (19-month trial)
- Contact precautions (CP) for methicillin-resistant Staphylococcus aureus (MRSA)-colonized patients were discontinued.

- Staphylococcus aureus surgical site infection (SSI) rates decreased by 50.7% from 0.148/100 to 0.073/100 beyond the prior iodine-based protocol.
- CP use decreased by 39%, while maintaining low rates of MRSA bacteremia.
- Annualized savings of \$223,150, net of decolonization costs, were estimated from CP, screening and SSI cost reductions.
- Improved nursing-care patient accessibility and cost-savings through reduction in CP use.
- Compliance rates with nasal antiseptic 96%.

DAILY INPATIENT	PERIOPERATIVE		PRODUCT REPLACED	EXISTING CHG USE
	PRE	POST		
✓	✓	✓	iodophor	✓

STUDY 8

Alcohol-Based Nasal Antiseptic as Part of a Bundle to Reduce the Incidence of Contact Precautions and Surgical Site Infections.

Stegmeier, H. (2019). Open Forum Infectious Diseases, 6(S2), S446. <https://doi.org/10.1093/ofid/ofz360.1101>

- All high-risk patients received daily alcohol-based nasal antiseptic and chlorhexidine (CHG) bath, in place of targeted screening and CP. (12-month study)
- All orthopedic surgical patients received nasal alcohol-based antiseptic in place of screening and decolonization with mupirocin. Preoperative CHG bathing was already in place and was continued. Patients who remained in the hospital post-operatively received daily nasal antiseptic and CHG bathing.
- There was a reduction in the incidence of CP from 16% to 10% per day, while maintaining a rate of zero MRSA bacteremia.
- Reduction of gloves, gowns and nasal PCR tests, resulted in an estimated total cost reduction of \$200,000.
- A statistically significant reduction in total hip SSI from a baseline of 1.15 infections per 100 procedures to 0.017 infections per 100 procedures (98% reduction, P = 0.014.), and the rate of zero SSI in total knee replacement patients was maintained.

DAILY INPATIENT	PERIOPERATIVE		PRODUCT REPLACED	EXISTING CHG USE
	PRE	POST		
✓	✓	✓	mupirocin	✓

A Safe, More Cost-Effective Protocol: Universal Decolonization vs. MRSA Screening and Contact Precautions.

Whitaker, J. (2019). Open Forum Infectious Disease, 6(S2), S25. <https://doi.org/10.1093/ofid/ofz359.055>

- Universal decolonization (alcohol-based nasal antiseptic plus chlorhexidine gluconate bathing) for all inpatients was instituted as a replacement for targeted nasal screening, contact precautions (CP) and decolonization with mupirocin of methicillin-resistant Staphylococcus aureus (MRSA)-colonized patients. (12-month trial)
- 42% reduction in isolation days (\$118/day), a 74% reduction in nasal PCR tests (\$36/each), and an 11% decrease in the monthly use of gowns (\$12/each).
- The total cost avoidance (after accounting for the cost of the alcohol-based nasal antiseptic and CHG soap) was \$1,394,685.
- There was no statistical change in the MRSA bacteremia rate (0.067 to 0.070) per 1,000 patient-days.

DAILY INPATIENT	PERIOPERATIVE		PRODUCT REPLACED	EXISTING CHG USE
	PRE	POST		
✓				

Improving patient compliance with preoperative universal decolonization to reduce surgical infection rate and costs.

Candray, K. (2020). Open Forum Infectious Diseases. 7(S1), S479 <https://doi.org/10.1093/ofid/ofaa439.1077>

- To address spine patient non-compliance with preoperative nasal decolonization, replaced nasal povidone iodine (PVI) with alcohol based nasal antiseptic, paired with already in place preoperative bathing with chlorhexidine (CHG) foam soap, for all spine fusion and laminectomy patients. (3-month trial)
- Reduction in surgical site infections (SSI) of 64% from 0.58 to 0.21/100 spine fusion procedures and a reduction in SSI of 100% from 0.46 to 0.00/100 laminectomy procedures.
- Estimated cost avoidance of \$127K associated with infections prevented.
- \$37K per year cost savings resulting from switching from nasal povidone-iodine to alcohol based nasal antiseptic.

DAILY INPATIENT	PERIOPERATIVE		PRODUCT REPLACED	EXISTING CHG USE
	PRE	POST		
	✓		iodophor	✓

Universal Preoperative Antiseptic Nasal and Skin Decolonization for Reduction in SSI and Associated Costs.

Cernich, C. (2020). American Journal of Infection Control, 48(S8), S50. <https://doi.org/10.1016/j.ajic.2020.06.065>

- Alcohol based nasal antiseptic was applied to all pre-operative patients in addition to chlorhexidine bathing already in place. (6-month trial)
- Resulted in a 59% reduction in all cause surgical site infections (SSI) for all procedures, from an average monthly baseline rate of 0.61 to an average monthly rate of 0.25.
- This reduction represents 22 fewer SSI with an associated estimated cost avoidance of \$457,270 (\$20,785/infection).
- This nasal antiseptic was selected over other nasal decolonizing agents in support of staff satisfaction and antibiotic stewardship goals.
- The staff survey revealed that 86% of respondents were very or extremely satisfied with efficacy and ease of use of the product, and >80% preferred the nasal antiseptic over mupirocin.

DAILY INPATIENT	PERIOPERATIVE		PRODUCT REPLACED	EXISTING CHG USE
	PRE	POST		
	✓			✓

Can a nasal and skin decolonization protocol safely replace contact precautions for MRSA-colonized patients?

Christie, J., Wright, D., Liebowitz, J., & Stefanacci, P. (2020). American Journal of Infection Control, 48(8), 922–924. <https://doi.org/10.1016/j.ajic.2019.12.016>

- 7 network hospitals replaced contact precautions (CP) for high-risk MRSA-colonized patients with targeted nasal and body decolonization, leading to significant cost savings and staff satisfaction without any increase in MRSA transmission.
- Alcohol-based nasal antiseptic was selected for enhanced effects when compared to PVI and mupirocin: it does not stain, is clean and well tolerated by patients, has a pleasant citrus odor, is suitable for selfapplication, is effective after a single application and has no known current mechanisms that contribute to microbial resistance.
- The impact of intervention was measured by comparing isolation day rates for MRSA-colonized patients and the associated costs of CP (disposable gloves and gowns), both at baseline (10-month preintervention) and for the 10-month decolonization study.

- Analysis of all 7 hospitals combined resulted in an overall decrease in isolation days of 88.33% (P = .000), and a reduction of glove and gown use with an associated net cost savings of \$430,604 for the 10-month study (\$42.32 average daily cost of contact precautions, \$6.25 daily cost of Nozin plus CHG).
- There was no increase in the overall MRSA bacteremia SIR (P = .916, 95% confidence interval 0.606, 1.598).
- The majority of nurses/health care workers surveyed (89%) would recommend the alcohol-based nasal antiseptic to colleagues, and 94% of respondents who had previous experience with mupirocin preferred the alcohol-based nasal antiseptic.

DAILY INPATIENT	PERIOPERATIVE		PRODUCT REPLACED	EXISTING CHG USE
	PRE	POST		
✓				

STUDY 13

A safer, less costly SSI prevention protocol—Universal versus targeted preoperative decolonization.

Franklin, S. (2020). American Journal of Infection Control, 48, 1501–1503. <https://doi.org/10.1016/j.ajic.2020.02.012>

- Added nasal decolonization with alcohol-based nasal antiseptic to the existing preoperative CHG bath for total joint patients (total hip and knee replacements). 12 month trial.
- Nasal decolonization was continued daily post-operatively while the patient was hospitalized.
- Resulted in a reduction in the total hip SSI rate from 0.91 to 0.00 per 100 procedures, and a reduction in the total knee SSI rate from 0.36 to 0.00 per 100 procedures.
- This represents a reduction of 4 total joint infections every 12 months, with an estimated associated total cost of more than \$400,000 annually.
- Staff satisfaction survey showed >90% were satisfied with the ease of use with the alcohol-based nasal antiseptic and would recommend it to colleagues in other departments and hospitals.
- Increased patient satisfaction: comments included an appreciation of the decolonization protocol as an extra step to make them safer, and they liked the mild, pleasant scent.

DAILY INPATIENT	PERIOPERATIVE		PRODUCT REPLACED	EXISTING CHG USE
	PRE	POST		
	✓			✓

Improving outcomes with revised preoperative universal decolonization protocol.

Gnass, S. (2020). Open Forum Infectious Diseases. 7(S1), S479 <https://doi.org/10.1093/ofid/ofaa439.1076>

- Universal preoperative decolonization protocol was implemented, replacing povidone iodine based nasal antiseptic with alcohol-based nasal antiseptic. (6-month trial)
- The nasal antiseptic was paired with preoperative chlorhexidine bathing (already in place).
- 63% reduction (p=.0162) in all-cause SSI for all types of surgical procedures
- Savings of \$589,420 during 6-month period (from avoidance of 17 SSIs during that same period)
- Alcohol-based nasal antiseptic was also provided to surgical team for application prior to each shift (not mandatory and compliance was not tracked; informal feedback/observation revealed most surgical team members were applying the nasal antiseptic prior to cases daily).

DAILY INPATIENT	PERIOPERATIVE		PRODUCT REPLACED	EXISTING CHG USE
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Effectiveness of an Alcohol-Based Nasal Antiseptic in Reducing MRSA Bacteremia in an Adult Intensive Care Population.

Reeves, L., Barton, L., Williams, J., Don Guimera, Williams, B., Hysmith, N., & Morton, J. (2020). Infection Control & Hospital Epidemiology, 41(S1), s206. <https://doi.org/10.1017/ice.2020.748>

- Universal alcohol-based nasal antiseptic daily in adult intensive care setting. (7-month trial)
- 100% reduction in MRSA bacteremia: The rate of MRSA bacteremia declined from baseline at 0.2404 to 0. (12,475 patient-days in the retrospective group vs 12,733 in the prospective group).
- The alcohol-based nasal antiseptic was effective in reducing healthcare-onset MRSA bacteremia in intensive care population.
- This approach may be a safe and effective alternative to nasal antibiotic ointment that avoids antibiotic resistance risks.

DAILY INPATIENT	PERIOPERATIVE		PRODUCT REPLACED	EXISTING CHG USE
	PRE	POST		
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Alcohol-based Nasal Decolonization and Chlorhexidine Bathing to Reduce Methicillin-resistant Staphylococcus Aureus Hospital-acquired Infections in Critical Patients.

Pratt, N., Heishman, C., Blizard, K., & Cissell, J. (2022). American Journal of Infection Control, 50, 7(S7), S31. <https://doi.org/10.1016/j.ajic.2022.03.048>

- Implemented a universal decolonization protocol within the critical care population of a large academic medical facility.
- Protocol: alcohol-based nasal decolonization plus chlorhexidine gluconate (CHG) bathing daily for length of stay.
- Inclusion criteria:
 - adult patients admitted to critical care
 - patients undergoing a procedure involving a surgical incision
- Study duration: 6-month baseline and 6-month intervention.
- Outcome: **62.5% reduction in hospital-associated LabID MRSA BSIs.**
- While not deemed statistically significant for this short study period as indicated by a two-tailed t-test (p-value 0.19, CI 95% [-0.56,2.23]), the overall reduction in HAI should be considered relevant to patient outcomes and overall infection prevention considerations.
- Implications for practice:
 - Decolonization protocols have shown to reduce HAI events.
 - This could contribute to decreased length of stay, decreased morbidity and mortality, and decreased financial burden.

DAILY INPATIENT	PERIOPERATIVE		PRODUCT REPLACED	EXISTING CHG USE
	PRE	POST		
✓	✓			

Increasing Compliance with Hospital-Wide Universal Decolonization Protocol Decreases Methicillin-resistant Staphylococcus Aureus (MRSA) Bacteremia.

Montalvo Gonzalez, L., Macedo-Rea, M., Manos, O., et al. American Journal of Infection Control, Volume 51, Issue 7, S54 <https://doi.org/10.1016/j.ajic.2023.04.111>

- The study evaluated the impact of improved compliance with an existing universal decolonization protocol on reducing MRSA bacteremia. The decolonization protocol consisted of a daily chlorhexidine gluconate (CHG) bath and twice daily nasal antiseptic application universally.
- To reduce MRSA bacteremia rate, the facility implemented a multidisciplinary approach to increase universal decolonization compliance, coordinating interventions by infection prevention, data analytics, nursing, and leadership.
- By improving the compliance rate for nasal antiseptic (Nozin Nasal Sanitizer) application from 84% to 94% and for chlorhexidine gluconate (CHG) bathing from 53% to 81%, the hospital was able to reduce MRSA bacteremia cases by almost 50% over a 12-month period.
 - Pre-intervention: MRSA bacteremia incidence rate: 1.27 infections per 1,000 patient days
 - Post-intervention: MRSA bacteremia incidence rate: 0.63 infections per 1,000 patient days
- This study supports decolonization protocols as an effective intervention in reducing MRSA bacteremia rates.

DAILY INPATIENT	PERIOPERATIVE		PRODUCT REPLACED	EXISTING CHG USE
	PRE	POST		
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Effects of Decolonization Protocols in Pediatric Critical Care Populations.

Schroeder, J., Schieffelin, J., Marney, E. American Journal of Infection Control, Volume 51, Issue 7, S14
DOI:<https://doi.org/10.1016/j.ajic.2023.04.153>

- This study aimed to implement a decolonization protocol previously utilized for adult populations in the pediatric critical care (CC) setting (CICU, NICU, and PICU) of an academic pediatric medical center and analyze its impact on patient outcomes.
- Nasal decolonization protocols were developed for children ages two and older (alcohol-based nasal antiseptic) and children younger than 2 (mupirocin). The protocol also included daily CHG bathing for all patients.
- MRSA bacteremia and MRSA rates were analyzed before and after the intervention, using NSHN criteria for identification.
 - Compared to the pre-intervention period, the hospital-onset MRSA rate/1000 patient days dropped 41%, from 1.459 to 0.867.
 - The hospital-onset MRSA bacteremia rate/1000 patient days decreased 54%, from 0.381 to 0.173.
 - MRSA reduction was even more significant in individual units. The cardiac ICU saw an 86% reduction in hospital-onset MRSA cases post-intervention and no MRSA bacteremia cases.
- Decolonization protocols led to a 41% reduction in hospital-onset MRSA rates and a 54% reduction in hospital-onset MRSA bacteremia rates in pediatric CC populations.
- Implementing decolonization protocols in pediatric CC units improves patient outcomes, including a significant reduction in length of stay (from 6.8 days to 6.2 days).
- The decolonization protocol proved cost-effective, with potential savings compared to the cost of treating MRSA infections.

DAILY INPATIENT	PERIOPERATIVE		PRODUCT REPLACED	EXISTING CHG USE
	PRE	POST		
✓				

About Nozin

Nozin is the leading brand in nasal decolonization. Nozin NOVA programs are a clinically proven infection prevention solution shown to significantly reduce MRSA and MSSA infections. Designed to improve care, lower infection risk and reduce healthcare costs, Nozin NOVA programs utilize Nozin® Nasal Sanitizer® antiseptic with clinically supported infection prevention solutions for hundreds of healthcare facilities nationwide. Learn more at nozin.com.

