high morbidity, mortality, and associated costs. These infections are frequently caused by multidrug-resistant ESKAPE pathogens (Enterococcus, Staphylococcus, Klebsiella, Acinetobacter, Pseudomonas, and Enterobacter), which are known for their antibiotic resistance.
Heater wires used in mechanical ventilators regulate air humidity and temperature which prevents complications when the upper airway is bypassed. However, because these are in direct contact with the air supplied to patients, they can become sources of infection and reservoirs for antimicrobial-resistant organisms.
At a hospital in New Mexico, we transitioned from using low-level disinfectant wipes to sterile processing for heater wires. The dry climate in New Mexico accelerates the evaporation of disinfectants, reducing their effectiveness by shortening their contact time. Additionally, achieving full surface coverage with disinfectant wipes is difficult, compromising sterilization effectiveness.
To address these challenges, we implemented a protocol to send heater wire probes to sterile processing for sterilization. We evaluated the impact of this change by comparing the prescence of bacteria on the probes before and after sterilization. Swabs from heater wire prongs were cultured and sequenced using Oxford Nanopore Technology. Metagenomic sequencing and analysis was also performed.
Before the new protocol, we swabbed 19 clean probes and 11 used probes. Bacterial DNA was detected on all clean probes and bacterial growth found on 42% of clean probe cultures. Of these, 63% were positive for ESKAPE pathogens, with five out of eight probes showing all ESKAPE species, and three probes lacking only Enterobacter. Additionally, all of the clean probe cultures were positive for Stenotrophomonas, another well known multi-drug resistant pathogen. After the autoclaving protocol was implemented, no bacterial growth was observed cultures (72 hours) of freshly sterilized probes.
In conclusion, sterilization significantly improved the cleanliness of heater wires over use of disinfectant wipes. This improved sterilization protocol is expected to reduce the risk of infection transmission and the incidence of VAEs, thereby improving patient safety and outcomes.

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**Presentation Type:**
Oral Presentation
**Subject Category:** SSI

**Results From The AHRQ Safety Program for MRSA Prevention: Targeting SSI in High-Risk Surgical Services- Process Measures and Outcomes**

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**Background:** The Agency for Healthcare Research and Quality Safety Program for MRSA Prevention Surgical Services cohort aimed to reduce surgical site infections (SSIs) and prevent methicillin-resistant Staphylococcus aureus (MRSA) in teams performing surgeries at high risk for infection with and high morbidity due to MRSA (cardiac, knee or hip replacement, and spinal fusion) using evidence-based infection prevention interventions and the Comprehensive Unit-based Safety Program (CUSP) framework. We report process and outcome measures associated with program participation. **Methods:** The Surgical Services Safety Program for MRSA Prevention was implemented from January 2023 to June 2024. The aim was to increase teamwork and collaboration, reinforce safety culture, implement evidence-based infection prevention practices, and decrease SSIs and MRSA. The project team provided 22 live webinars, supporting materials, and other tools to assist surgical teams (Table 1). Teams were also assigned an implementation advisor who provided support through monthly coaching calls.

**Table 1. Educational Toolkit Content for the AHRQ Safety Program for MRSA and SSI Prevention**

| |
|---|
| **Webinars** |
| Introduction to the AHRQ Safety Program for MRSA Prevention: Targeting SSI |
| Onboarding Webinar |
| The Comprehensive Unit-Based Safety Program (CUSP) |
| Importance of MRSA and SSI Prevention |
| CUSP: Learning from Defects |
| The Evidence for MRSA Decolonization |
| Decolonization Strategies |
| Decolonization Implementation |
| Use of Pre-Operative Chlorhexidine |
| MRSA Surveillance |
| Review of SSI Program Tools |
| Decolonization Implementation: A Peer-to-Peer Perspective |
| Antimicrobial Prophylaxis: Part 1 |
| Antimicrobial Prophylaxis: Part 2 Beyond the Basics |
| Hand Hygiene in the Perioperative Setting |
| Infection Prevention Potpourri: Hair Removal, Skin Prep for Incision, Normothermia, Glycemic Control, Supplemental Oxygen |
| Environmental Cleaning, and Normothermia: A Peer-to-Peer Perspective |
| Contact Precautions and OR Traffic |
| Optimizing Environmental Cleaning |
| Revisit and Review Topics and Interventions Covered in the Program: JeoPARODY |
| Revisit and Review: Peer Presentations |
| Sustainability |
| Glycemic Control for Infection Control |
| Hair Removal and Skin Prep Prior to Incision |
| Normothermia and Supplemental Oxygen for Infection Prevention |
| Operating Room Traffic |
| Science of Safety |
| Psychological Safety |
| **Implementation Resources** |
| Action Chart for Implementing Decolonization Program |
| Decision-Making and Readiness for Implementation |
| Pre-Launch Activities |
| Nursing Practice Guide |
| Selection of Decolonization Agent |
| Who Should Take on the Task of EVC Monitoring |
| Environmental Cleaning Monitoring Methods |
| Assessing EVC Essential Aspects and Steps |
| How to Randomly Order List of Rooms and High Toch Surfaces |
| Evaluating Environmental Cleaning Data Collection Tool |
| Sin Preparation Prior to Incision |
| Supplemental Oxygen |
| Antimicrobial Prophylaxis Duration |
| CUSP Learning from Defects Worksheet |
| Surgical Site Infection Investigation Tool |
| CUSP Meeting Pre-Work |
| CUSP Monthly Meeting Agenda Template |
| MRSA and SSI Prevention Strategies Worksheet |
| Roles and Responsibilities Tool |
| Premortem Tool |
| CUSP Tip Sheet: Assembling the CUSP Team |
| CUSP Tip Sheet: Engaging Senior Leaders in MRSA Prevention |
| CUSP Tip Sheet: Engaging Staff in MRSA Prevention |
| CUSP Tip Sheet: Engaging Surgeons in MRSA Prevention |
| CUSP Tip Sheet: Celebrating Success and Spreading MRSA and SSI Prevention |
| **Data Collection** |
| Monthly Team Checkup Tool for MRSA and SSI Prevention |
| Hospital-Level Gap Analysis Template and Instructions |
| Service-Level Gap Analysis Template and Instructions |
| Service-Level Clinical Data Collection Templates and Instructions |
| Hospital Survey on Patient Safety Culture and Instructions |

*Each webinar has an associated recording, slide set, and script

Teams submitted baseline and endline information on patient safety culture and on infrastructure at the team- and hospital-level, as well as monthly data regarding process measures and SSIs. Teams submitted SSI data from 12 months prior to the start of the program and for 18 months after program implementation. Changes were assessed using

Figure 1. Percentage of Surgical Teams with Recommended Practice or Protocol and System in Place to Monitor at Baseline and Endline.

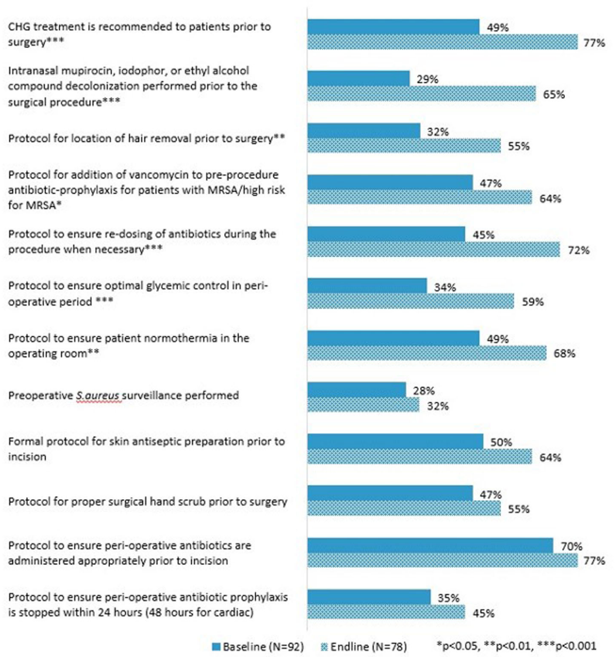
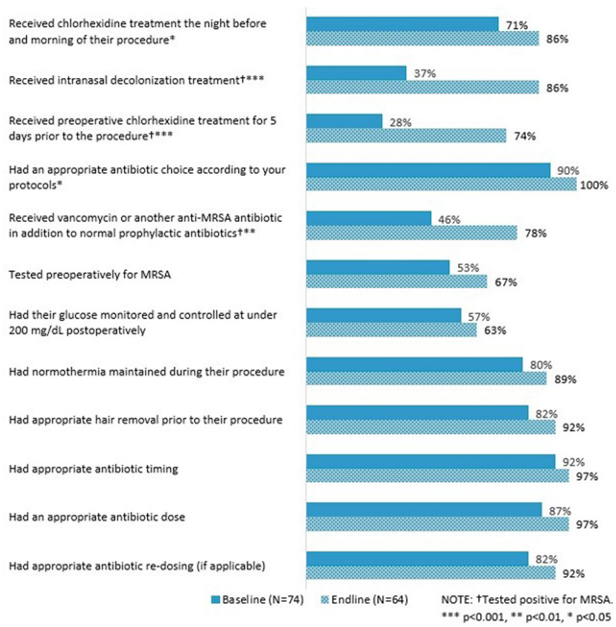



Figure 2. Percentage of Surgical Teams Reporting ≥75% of Patients Undergoing Procedures Received Recommended Safety Practices at Baseline and Endline.




pre-post comparisons with Chi-squared test and linear mixed effect models with random intercept. **Results:** 104 surgical teams (18 cardiac, 19 neurosurgical spinal fusion, 16 orthopedic spinal fusion, 51 knee/hip replacement) from 63 hospitals completed the program. Significant improvements in team-based process measures of surgical team infrastructure (Figure 1) and in teams' reporting that patients received evidence-based practices (Figure 2) were observed across several areas from baseline to endline, including preoperative decolonization, appropriate antibiotic prophylaxis, and intraoperative infection prevention procedures. While

Table 2. Average Total SSI Rate Before and After Implementation

| Total SSI per 100 procedures (# facilities) | Average monthly rate during retrospective period | Average monthly rate during implementation period | Change from retrospective to implementation period‡ | p-value |
|---|---|---|---|---|
| Entire cohort (N=61) | 1.43 (1.15, 1.70) | 1.32 (1.08, 1.57) | -0.10 (-0.40, 0.20), -7.2% | 0.513 |
| Hip joint replacement (N=45) | 1.47 (0.95, 1.99) | 1.45 (1.00, 1.90) | -0.02 (-0.63, 0.59), -1.2% | 0.949 |
| Knee joint replacement (N=46) | 0.81 (0.47, 1.16) | 0.92 (0.63, 1.21) | 0.11 (-0.32, 0.54), 13.2% | 0.618 |
| Spine fusion (N=26) | 1.80 (1.26, 2.34) | 1.71 (1.23, 2.19) | -0.09 (-0.67, 0.49), -5.0% | 0.760 |
| CABG with sternotomy† (N=18) | 2.30 (1.22, 3.39) | 1.69 (0.66, 2.72) | -0.61 (-1.55, 0.33), -26.6% | 0.204 |
| Other cardiac surgeries with sternotomy (N=13) | 1.52 (0.24, 2.80) | 0.98 (-0.17, 2.13) | -0.54 (-2.03, 0.95), -35.6% | 0.478 |

NOTE: †CABG with sternotomy used STS data as the primary source (16 teams), and NHSN data as supplemental source for teams that did not submit data to STS (2 teams). ‡Estimates were generated from linear mixed model using monthly data per facility-procedure, with pre/post indicator as the primary predictor and clustering effect within facility-procedure (entire cohort) or facility (individual procedure). Absolute change was calculated from the contrast of estimates between retrospective and implementation period. % change was calculated as the absolute change in relative to average monthly rate during retrospective period.

Table 3. Average SSI Rate Before and After Implementation by Depth of Infection for Entire Cohort

| SSI events per 100 procedures | Average monthly rate during retrospective period | Average monthly rate during implementation period | Change and % change from retrospective to implementation period | p-value |
|---|---|---|---|---|
| Total SSI | 1.43 (1.15, 1.70) | 1.32 (1.08, 1.57) | -0.10 (-0.40, 0.20), -7.2% | 0.513 |
| Superficial SSI | 0.36 (0.20, 0.52) | 0.52 (0.38, 0.66) | 0.16 (-0.01, 0.33), 43.3% | 0.066 |
| Deep or Organ/Space SSI | 0.98 (0.78, 1.17) | 0.75 (0.59, 0.92) | -0.23 (-0.46, 0.01), -23.2% | 0.054 |
| SSI caused by MRSA† | 0.15 (0.09, 0.20) | 0.10 (0.05, 0.15) | -0.04 (-0.11, 0.02), -30.5% | 0.255 |
| SSI caused by MRSA or MSSA† | 0.35 (0.25, 0.45) | 0.40 (0.31, 0.48) | 0.05 (-0.07, 0.17), 13.9% | 0.409 |

NOTE: Estimates were generated from linear mixed model using monthly data per facility-procedure, with pre/post indicator as the primary predictor and clustering effect within facility-procedure. Absolute change was calculated from the contrast of estimates between retrospective and implementation period. % change was calculated as the absolute change in relative to average monthly rate during retrospective period. †SSI caused by MRSA, and SSI caused by MRSA or MSSA were collected for non-cardiac procedures only, where NHSN is the major data source.

SSI rates did not significantly change, the observed 23% decrease in overall deep or organ space SSI rates approached statistical significance (95% CI -0.46, 0.01) (Table 2 and Table 3). **Conclusions:** The AHRQ Safety Program for MRSA Prevention supported implementation of evidence-based infection prevention practices to prevent MRSA and SSIs in high-risk surgeries. Participating teams showed improvements in team-based process measures and observed a reduction in deep or organ space SSI rates.

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Oral Presentation
**Subject Category:** Surveillance

**From Data to Decision: A Community-Engaged Respiratory Viral Surveillance and Forecasting Dashboard to Inform Public Health Measures**

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**Background:** Public health communications during the COVID-19 pandemic demonstrated the value of web-based dashboards displaying trends in viral transmission to help inform individual and public health decision-making. However, these dashboards were often created without direct public engagement and lacked community-level data. We sought to bridge this gap by leveraging the data and resources of a large academic health center to create an extensible, dynamic respiratory viral trends dashboard incorporating feedback from community stakeholders. **Method:** Data on COVID-19, influenza and respiratory syncytial virus (RSV) testing and hospitalizations were programmatically collected from multiple sources, including the North Carolina Department of Health and Human Services, Centers for Disease Control and Prevention, and the healthcare