The SIR decreased from 3.66 to 0.97 from baseline to postintervention periods at the bedside. SIR were compared by exact binomial test.

Background. MRSA bacteremia is a major concern for hospitalized patients in the United States. Hospital-Onset (HO) MRSA bacteremia is used as a proxy measurement of MRSA healthcare acquisition, exposure, and infection burden. HO MRSA bacteremia standardized infection ratio (SIR) is used by several national agencies as a quality report metric. Our institution had more than expected HO MRSA bacteremia cases despite several interventions. We describe the impact of a bundle of interventions aimed to decrease HO MRSA bacteremia in an acute care facility.

Methods. This quality improvement project was implemented in a 380-bed community hospital in Miami, FL from January 2015 to March 2019. HO MRSA bacteremia was defined as non-duplicate MRSA isolated from a blood culture collected >3 days after admission. SIR was calculated dividing the number of observed events by the number of predicted events; predicted events were obtained from the NHSN report. During baseline period (Figure 1) January 2015–August 2016 all adult patients in the intensive care unit (ICU) were screened for MRSA nasal colonization on admission and weekly thereafter. ICU patients received daily Chlorhexidine (CHG) bathing, and colonized/infected patients with MRSA were placed in contact precautions. In Phase 2 (September 2016–June 2017) daily CHG bathing was switched from 2% wipes to 4% soap foam and expanded to all adult patients; ICU patients also received nasal decolonization with mupirocin. Nasal mupirocin in ICU was replaced with alcohol-based nasal sanitizer for all adult units in July 2017 (Phase 3). In April 2017 we discontinued using contact precautions for MRSA patients; nasal surveillance cultures were discontinued in October 2017. In May 2018 (Phase 4) we introduced alcohol-based wipes for patient hand hygiene at the bedside. SIR were compared by exact binomial test.

Results. We observed 48 HO MRSA bacteremia cases during the study period. The SIR decreased from 3.66 to 0.97 from baseline to postintervention period ($P = 0.003$). The largest decrease in cases and SIR was attained using combined hospital-wide daily CHG bathing, alcohol-based nasal sanitizer, and alcohol wipes for patient hand hygiene during Phase 4 (Table 1).

Conclusions. Our bundle of interventions for universal decolonization was successful in decreasing HO MRSA bacteremia.

Table 1. HO-MSRA Bacteremia SIR by Phase of the Intervention Bundle

| Months observed | Number of cases | SIR | P1 (p < 0.05) | P2 (p < 0.05) | P3 (p < 0.05) | P4 (p < 0.05) |
|-----------------|----------------|-----|---------------|---------------|---------------|---------------|
| P1              | 30            | 1.00 | 1.23          | 1.07          | 0.84          | 0.87          |
| P2              | 30            | 1.00 | 1.63          | 1.13          | 0.70          | 0.53          |
| P3              | 30            | 1.00 | 2.07          | 2.58          | 0.63          | 0.65          |
| P4              | 30            | 1.00 | 2.07          | 2.58          | 0.63          | 0.65          |

Disclosures. All authors: No reported disclosures.

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

Amiti Abbo, RN, BSN; AdventHealth North; Pinellas, Tarpon Springs, Florida

Session: 62. HAI: MRSA Prevention
Thursday, October 3, 2019: 12:15 PM

Background. Nasal decolonization with mupirocin to reduce infection risk, has been associated with mupirocin-resistant Staphylococcus aureus (SA). A community hospital identified two patients colonized with methicillin and mupirocin-resistant SA (MRSAs), one scheduled for surgery, one for inpatient IV antibiotic therapy. Instead of mupirocin, an alcohol-based nasal antiseptic was applied to these patients twice daily for 5 days, resulting in a negative MRSAs nasal screening test in both patients. Neither patient developed an infection during or after treatment. Building on this success, a plan was made to assess the impact of universal nasal decolonization to replace screening and contact precautions for MRSAs colonized patients, and to reduce surgical site infections (SSI).

Methods. A 12-month project using a before and after design, was initiated in April 2018. The project involved twice daily application of alcohol-based nasal antiseptic for all inpatients, and preoperatively for all surgical patients in addition to existing screening and contact precautions. No other practice change was made during this period. Assessment of impact was planned by comparing the incidence of MRSA bacteremia and SSI at baseline (2017) and after project implementation, in addition to costs avoided with reduction of nasal screening and CP.

Results. Compared with baseline, April 2018 and March 2019, there was a decrease in MRSAs bacteremia from 3/1,000 patient-days to 0/1,000 patient-days, a reduction in CP from 3.78 to 1.53, 1/1,000 patient-days, a reduction in nasal screens from 3,674 to 605, and a reduction of all-cause (Gram-negative and Gram-positive) SSI from all surgical procedures from 3.13 to 0.87 per 100 admissions. Accounting for the cost of the nasal antiseptic, the reduction in gowns, gloves, and nasal screening tests resulted in $140,099 91 costs avoided.

Conclusions. House-wide application of alcohol-based nasal antiseptic in place of screening and contact precautions, resulted in a reduced incidence of both MRSAs bacteremia and SSI for all types of surgical procedures, in addition to significant costs avoided.

Disclosures. All authors: No reported disclosures.

568. A Randomized, Double-Bound, Placebo-Controlled Trial of Retapamulin for Nasal and Rectal Decolonization of Mupirocin-Resistant Methicillin-Resistant Staphylococcus aureus Among Children

Ami Patel, MD, MPH; Bo Shopsin, MD, PhD; Anna Stachel, MPH and Jennifer Lighter, MD, NYU Langone Health, New York, New York

Session: 62. HAI: MRSA Prevention
Thursday, October 3, 2019: 12:15 PM

Background. Colonization with Staphylococcus aureus, particularly MRSAs, is a crucial risk factor for subsequent infection. Decolonization measures are often undertaken to prevent recurrent MRSA infection and transmission; however, increasing resistance of the gold standard mupirocin has been noted globally. At our institution, there is >85% high-level resistance to mupirocin among strains from a geographically defined genotypic cluster of CA-MRSA in children from Orthodox communities in Brooklyn. Retapamulin is a topical bactericidal pleuromutilin antibiotic that has demonstrated excellent in vitro activity against mupirocin-resistant isolates from pediatric patients with MRSA infection presenting to our institution suggesting that it may be a promising alternative decolonization therapy. We sought to determine the efficacy of retapamulin as a topical decolonizing agent against mupirocin-resistant MRSA among the identified high-risk Brooklyn cluster via a randomized, placebo-controlled, double-blinded phase three trial.

Methods. Children aged 9 months-17 years who resided in high-risk zip codes as a proxy for Orthodox Jewish predominant neighborhoods were recruited either from inpatient units at NYU Langone or at a partnered community clinic. Participants were screened via nasal and rectal culture to detect MRSA colonization. Enrolled participants were randomized to receive either retapamulin or placebo and instructed to apply the ointment nasally and rectally twice a day for 5 days. Repeat nasal and rectal swabs were collected every one month and after completion of topical therapy to assess MRSA colonization status. The change in colonization rates was assessed via Fisher’s exact test.

Results. 173 participants were screened from December 2017 to March 2019 in which 47 ultimately underwent randomization (23 in the retapamulin group and 24 in the placebo group). The median age was 3.9 years (SD 3.5 years). Children in the placebo group were 15.2 times more likely to be colonized with MRSA after one week of the decolonization protocol compared with the retapamulin group (OR 15.2, CI...