11) TITLE: **Eradication of Methicillin Sensitive *Staphylococcus aureus* and Methicillin Resistant *Staphylococcus aureus* Before Inpatient Orthopedic Surgery**

AUTHORS: *Maureen P Spencer, RN, MEd, CIC, *Diane Gulcyznski, RN,MS,CNOR, *Susan Davidson, MD, *Susan Cohen, MT, ASCP, *John Richmond, MD

*New England Baptist Hospital, Boston, Massachusetts

INTRODUCTION: Asymptomatic colonization with methicillin-resistant *Staphylococcus aureus* (MRSA) and Methicillin-sensitive *Staphylococcus aureus* (MSSA) has been described as a risk factor for subsequent surgical site infection. Identifying *Staphylococcus aureus* colonization in the pre-surgical screening process is important in reducing subsequent surgical site infection.

OBJECTIVE: The objective of the study was to determine if a decolonization protocol and adjusted antibiotic prophylaxis aimed at eliminating MRSA and Staph aureus in the prescreening process would decrease the rate of surgical site infections after orthopedic surgery.

METHODS: Patients being admitted for orthopedic surgery had a nasal screen obtained in the prescreening unit and were provided with a specific educational protocol to be followed if positive for Staph aureus or MRSA. The Microbiology Laboratory used molecular diagnostic PCR technology to provide rapid turnaround for results. The eradication protocol included a 5-day application of intranasal mupirocin 2% applied twice daily and a daily body cleansing with chlorhexidine 2%. Patients were called by PASU after initial positive result and again to document compliance with the treatment protocol. MRSA positive screens were required to be re-screened prior to surgery. Contact precautions were implemented if the second screen was positive. All initial MRSA positives received vancomycin for surgical prophylaxis. A special screen was developed to flag the patients in Meditech as MRSA-SCR.

RESULTS: From July 17, 2006 through September 30, 2007, 7019 patients were screened; 1588 (23%) were Staph aureus positive and 309 (4%) were MRSA positive. Repeat nasal screens were obtained from MRSA patients prior to surgery and revealed 78% eradication. In the cohort of positive screens, there were 3 Staph aureus infections (0.19%) and 3 MRSA infections (0.97%). In the 5122 negative screens there were 7 infections (0.14%) with 1 MRSA and 6 Staph aureus. Therefore, the overall Staph aureus and MRSA surgical site infection rate (13/7019) was 0.18%. In an equivalent group of 5293 patients who underwent inpatient orthopedic surgery from October 1, 2005 through July 16, 2006 there were 24 infections (10 MRSA and 14 Staph aureus) with an infection rate of 0.46%. Of the 309 positive MRSA patients, 241 (78%) were negative on the second screen indicating elimination of nasal carriage.

CONCLUSION: We have successfully implemented an Staph aureus and MRSA eradication program for all inpatient surgeries during the prescreening process. It has allowed for early identification of patients with Staph aureus and MRSA, decolonization treatment, and adjustment of surgical prophylaxis for MRSA. Since implementation we have documented a significant reduction in infections due to Staph aureus and MRSA. A multidisciplinary approach with strong administrative support and consistent communication was vital to the implementation of the program.

SPONSOR: none

DICLOSURE STATEMENT: none

ACKNOWLEDGMENT: Prescreening Unit, Surgical Services, Microbiology Laboratory at New England Baptist Hospital

CORRESPONDENCE CONTACT INFORMATION:
Name: Maureen Spencer, RN, M.Ed.
E-mail: Mpspence@nebh.org
Phone: 617 754-5332
Institution: NEBH

PARTICIPATION: ☐ Poster ☒ Presentation