



# ORTHOPEDIC SURGERY HOSPITAL RAISES THE BAR WITH SA/MRSA ERADICATION PROGRAM



## IMPACT BRIEF

### Implementation of a Better Way

*"The goal of New England Baptist Hospital (NEBH) is to have no surgical site infections in postoperative orthopedic patients. While a surgical site infection (SSI) is damaging for any patient, orthopedic patients have an additional risk of losing a joint through this complication. NEBH has worked tirelessly to improve patient safety in a variety of ways, including reducing SSI, hospital-acquired infections, and community-acquired Staph aureus/Methicillian Resistant Staph aureus (SA/MRSA). Their efforts to eliminate SSI are paying off. Their SA/MRSA Elimination Program, for example, has significantly lowered surgical infection rates which are one-third of the national average."*

Maureen Spencer, RN, M.Ed, CIC  
Former Infection Control Manager, New England Baptist Hospital

**In 2006, an elimination program for SA/MRSA was initiated. In year one, SSI were reduced by 59%.**

#### > A Commitment from the Top

Diane Gulczynski RN, MS, CNOR, Senior Vice President of Clinical Services, is passionate about patient care. She advocated the challenge of a Zero Infection Rate Eradication Program to the NEBH Board of Trustees. She cited two critically urgent reasons for a program:

- The rising prevalence of MRSA in the community at large
- The fact that if not controlled in the patient population, MRSA and SSI could lead to bacteremia and potential death

Early identification and treatment prior to surgery would ensure appropriate prophylactic antibiotic before surgery, lessening a patient risk for infection.



New England Baptist Hospital

#### Institution

New England Baptist Hospital  
Boston, Massachusetts

#### Challenge

Provide patients with the best opportunity to recover from an orthopedic surgery with minimal complications, specifically zero incidence of SSI from SA/MRSA.

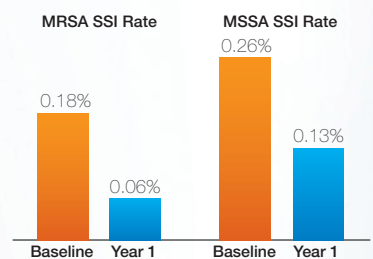
#### Solution

- Multidimensional Infection Prevention Initiative led by the Senior VP of Clinical Services with the sole purpose to define and implement a program to eliminate SSI from SA/MRSA.
- Board of Trustees adoption as key initiative resulted in significant resource allocation to achieve goal.

#### Results<sup>2</sup>

Since 2006, reduced rates:

- MRSA infection rates by 60%
- MSSA infection rates by 50%



#### Savings<sup>2</sup>

- Year 1 program costs \$400K (estimated)
- Year 1 # of SSIs vs baseline:
  - MSSA 5 less
  - MRSA 6 less

\$800,000	<b>AVOIDED COSTS OF 11 SSIs</b>
– \$400,000	<b>PROGRAM COSTS</b>
<b>\$400,000</b>	<b>HOSPITAL SAVINGS</b>

**The Challenge:** In late 2005, despite the modest 0.5% NEBH average SSI rate (49 of 9216 orthopedic surgeries) versus a national average of 1.5%, the NEBH staff were concerned about the growing prevalence of MRSA in the community. The financial impact on healthcare costs is an estimated \$25-\$50K per MRSA case, and there is also a high risk of mortality from SSI. The challenge would require the support of surgeons and staff to maintain their exceptional record in patient safety and leadership in funding a program not covered (at that time) by third-party payers.

**The Results:** In 2006, the NEBH Board of Trustees approved and funded a full year. The hospital reduced SSI by 60% from 0.45% to a 0.18% infection rate in year one, which improved outcomes for patients, reduced readmissions associated with an infected joint, and reduced healthcare costs. Early identification through pre-procedure screening provided the outcome NEBH was looking for.

### Integrating the Xpert® MRSA Test

As part of NEBH's patient safety strategy, all surgical candidates were screened for risk prior to surgery. Positive patients were identified with the Xpert MRSA test. Secondly, on the day of surgery, a second test was conducted to determine if a culture was still positive after de-colonization. If positive, a patient would be placed on precaution starting the OR — rapid turnaround of test results was critical. While Xpert MRSA costs \$92K more per year than a three-day culture test, its rapid 90-minute turnaround time from sample collection to reporting was vital for the program's success. The opportunity to eradicate

infection prior to scheduled surgery justified the purchase. The ease of implementation of the Xpert MRSA test by trained non-technical staff allowed for screening test availability on three shifts 24/7 — a critical component to maintaining excellent safety standards.

### Keys to Success

What were the hospital's keys to success?

- Education — Patient education during the pre-admission screening was initiated at the first visit with a nurse practitioner reinforcing the importance of the test, the meaning of a positive result, and treatment. Patient brochures were given to both patients and families explaining MRSA infection and the NEBH treatment protocol.
- Hospital Communication — A MRSA coordinator position was created to manage colonized patients and the decolonization treatment program to ensure program compliance, patient isolation, and real-time communication to all departments.

NEBH saw only one MRSA surgical site infection in 2010 and today is focused on having ZERO cases in the future. In 2010, US News and World Reports<sup>3</sup> reported an impressive 99% of NEBH patients will recommend the hospital to a family or friend — compared to a national average of 68%. Due to the quality of care and excellence, NEBH is also the official team hospital of the 17-time world champion Boston Celtics.

#### References:

1. Kim D, et al. Institutional Prescreening for Detection and Eradication of Methicillin-Resistant Staphylococcus aureus in Patients Undergoing Elective Orthopaedic Surgery. J Bone Joint Surg Am. 2010;92:1820-1826. Published Jul 7, 2010; doi:10.2106/JBJS.I.01050.
2. Kim D, et al. Reducing Surgical Site Infections: A Multidisciplinary Approach to Work Toward Zero. Cepheid sponsored symposium on Dec 8, 2010.
3. <http://health.usnews.com/best-hospitals/new-england-baptist-hospital-6140460>

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