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VA Portland Health Care System

Surgical Site Infection Reduction Through Povidone-Iodine Nasal Decolonization Prior to Surgery

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Keeping the PROMISE Magnet Hospital for Nursing Excellence



Introduction

- Surgical site infections (SSIs) increase pain and lower quality of life of patients (Andersson, Bergh, Karlsson, & Nilsson, 2010)
- The cost of treating a SSI ranges from \$26,000-\$250,000, with direct hospital costs averaging \$117,411 per infection (Courville et al., 2012)

Problem

- In 2012, a spike in MRSA SSI's at the Portland VA Health Care System triggered surgeons, infection control and infectious disease professionals to examine processes.
- In 2014 the first intervention targeted high risk patients (CABG and orthopedic joint cases). Although SSI was reduced in targeted patients, overall MRSA SSI incidence remained stagnant.
- In Summer 2016, rising MRSA SSI's were identified as an opportunity to adopt new evidence-based methods to decrease MRSA SSI's:
 - Decolonization protocol of oral chlorhexidine rinse, intra-nasal povidone-iodine (PI), and chlorhexidine washcloths had been found effective in reducing SSI's by 50% (Bebko, Green & Awad, 2015).
 - Addition of Vancomycin to first line prophylactic antibiotic agents for patients with current MRSA colonization per CREATE initiative (Schweizer, M. L., et al., 2015).

Objectives

- To implement a practical decolonization protocol to reduce or eliminate MRSA SSI

Measures

- Process metric:** Decolonize > 90% of patients prior to surgery
- Outcome metric:** Reduce MRSA SSIs by 10% per fiscal year

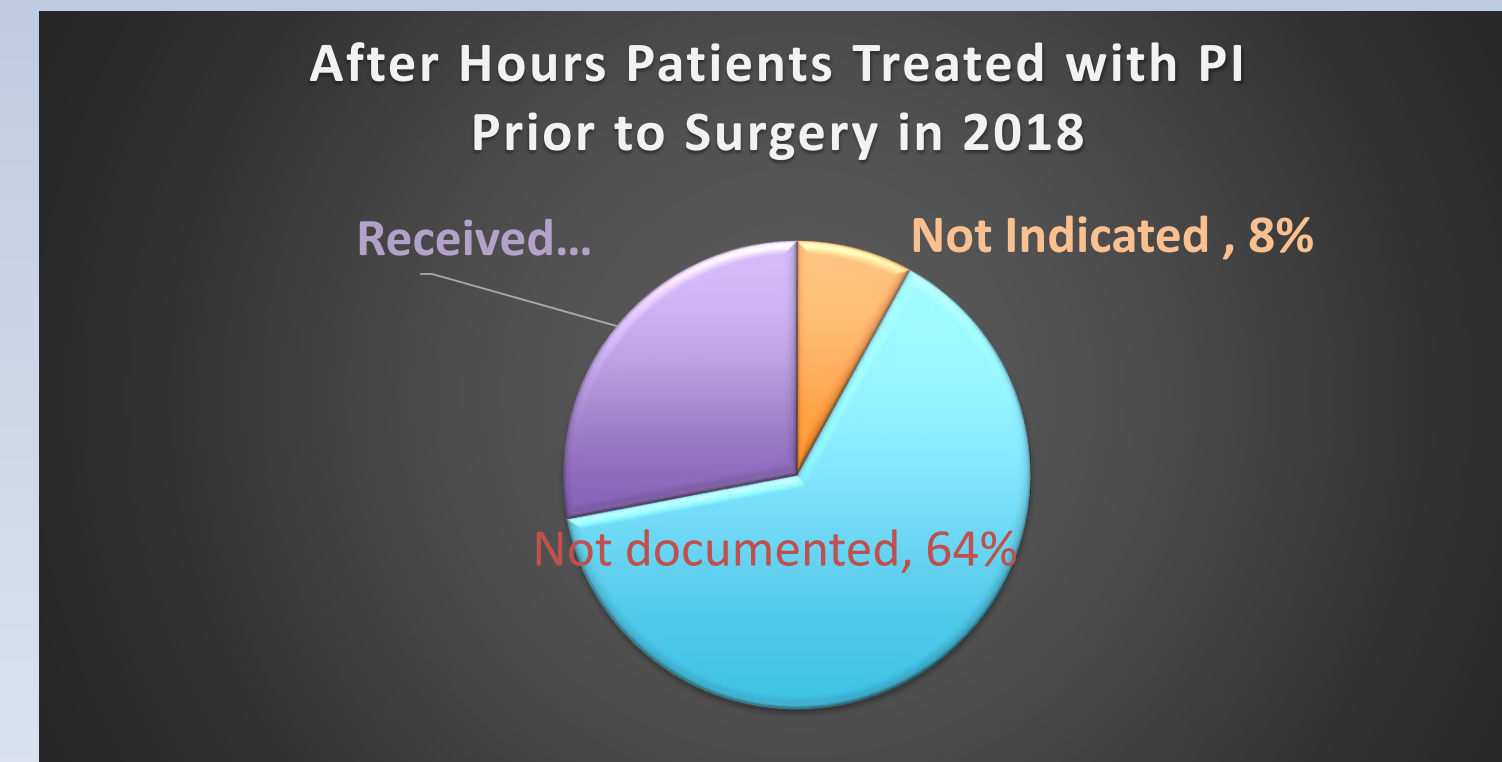
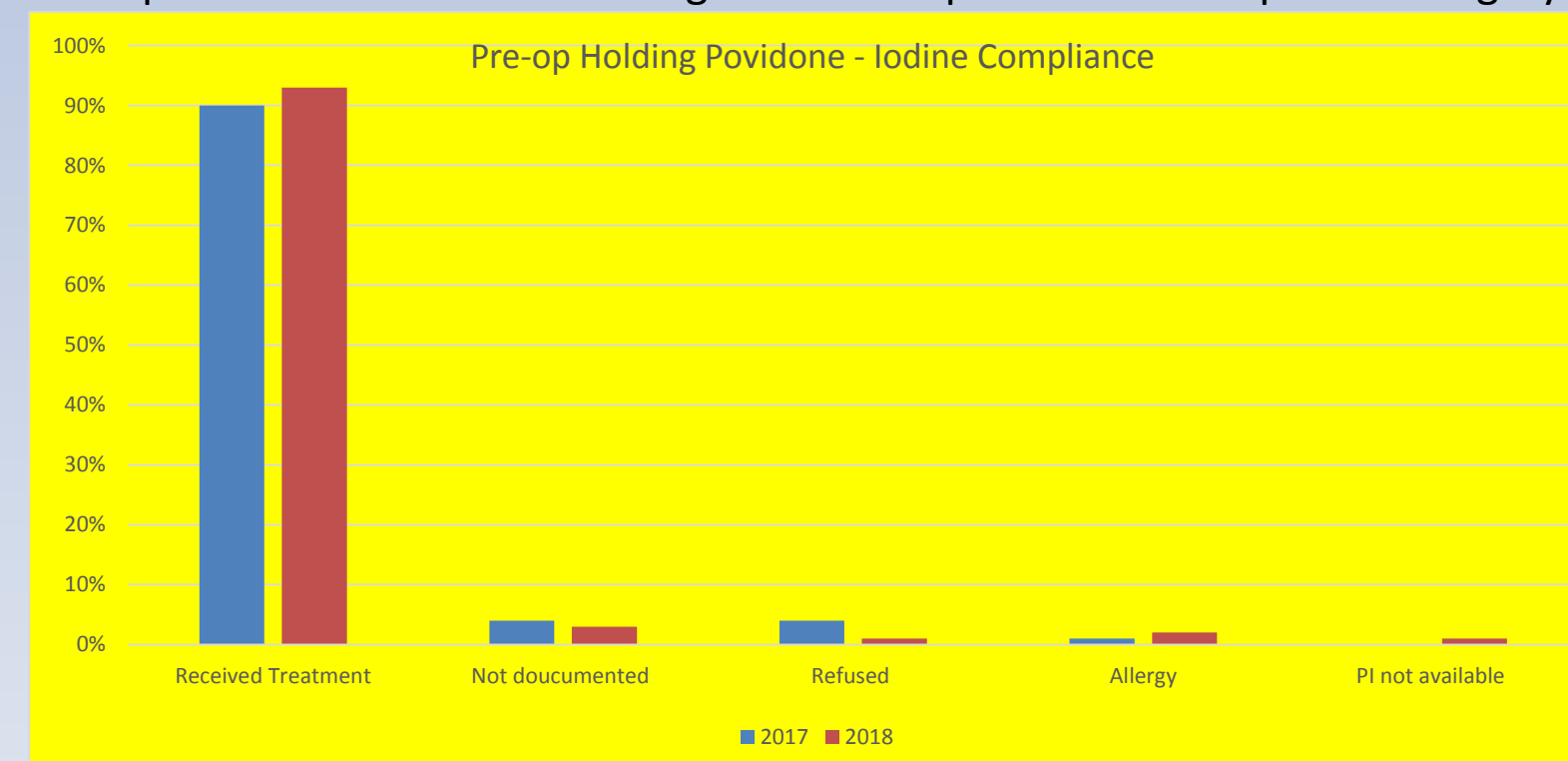
Methods

- Implementation of the single intervention of nasal decolonization was prompted due to limitations at the medical center (with the intention to revisit SSI rates and need to implement the full evidence-based bundle 1 year later).
- Pre-operative clinic nurses completed MRSA nasal screening and provided detailed pre-operative showering instructions, including need to prevent recontamination of the skin after showers.
- Beginning May 15, 2017 - All patients received PI nasal swab decolonization in the Surgery Holding area just before surgery (excluding GI endoscopy, and eye or sinus surgery).
- Surgery pharmacist ensured CREATE initiative recommendations were followed by confirming MRSA positive patients had pre-operative vancomycin and cefazolin ordered if antibiotics were indicated for surgery.
- On August 1, 2017 - Operating Room RN's began providing PI nasal swab decolonization before surgery to patients who bypass pre-op holding.
- Infection Prevention monitored new MRSA SSI occurrence and reported on quarterly basis.
- After auditing compliance for the first 6 weeks, discussed ways to improve documentation in electronic health record with staff

Results

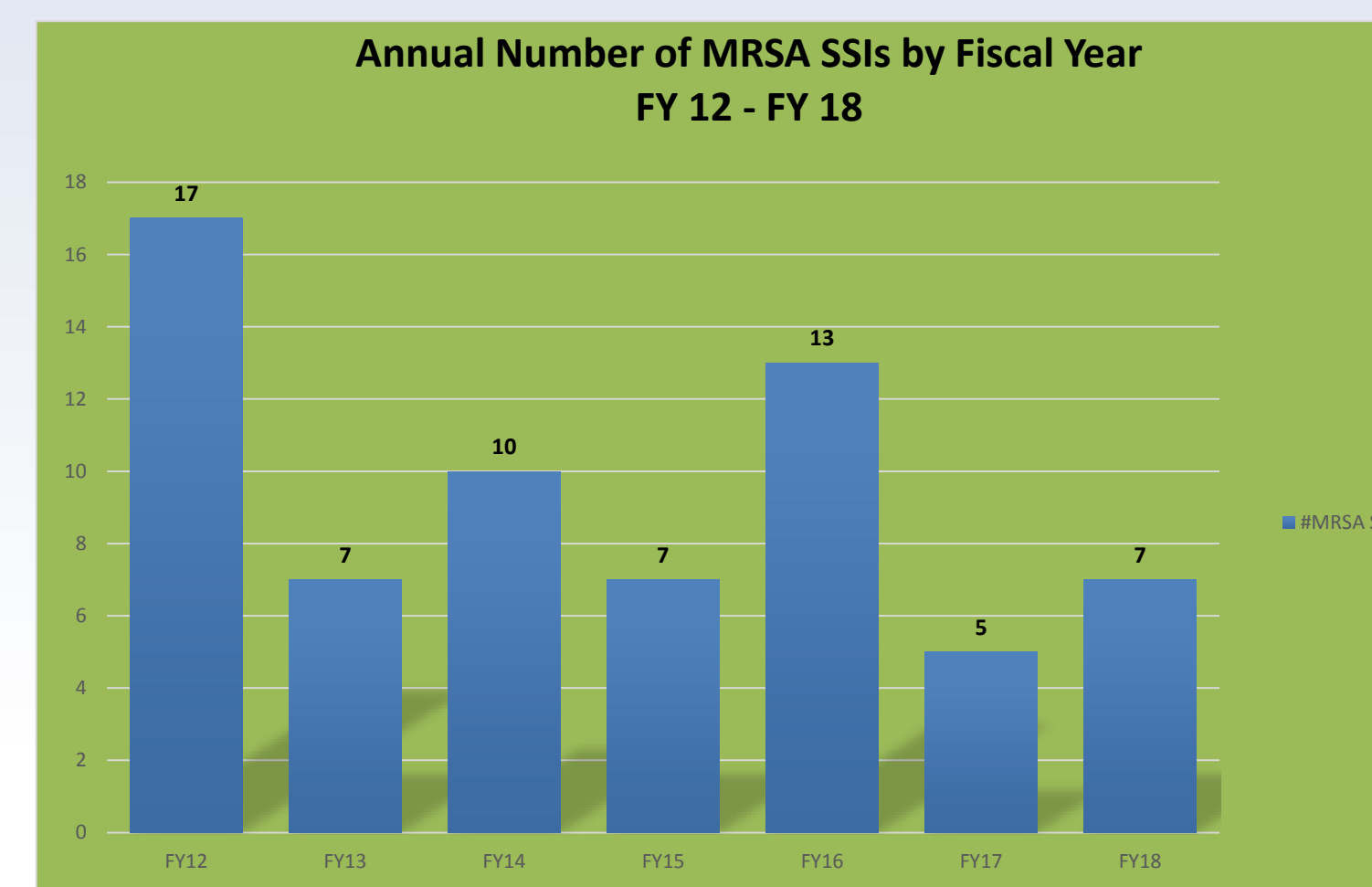
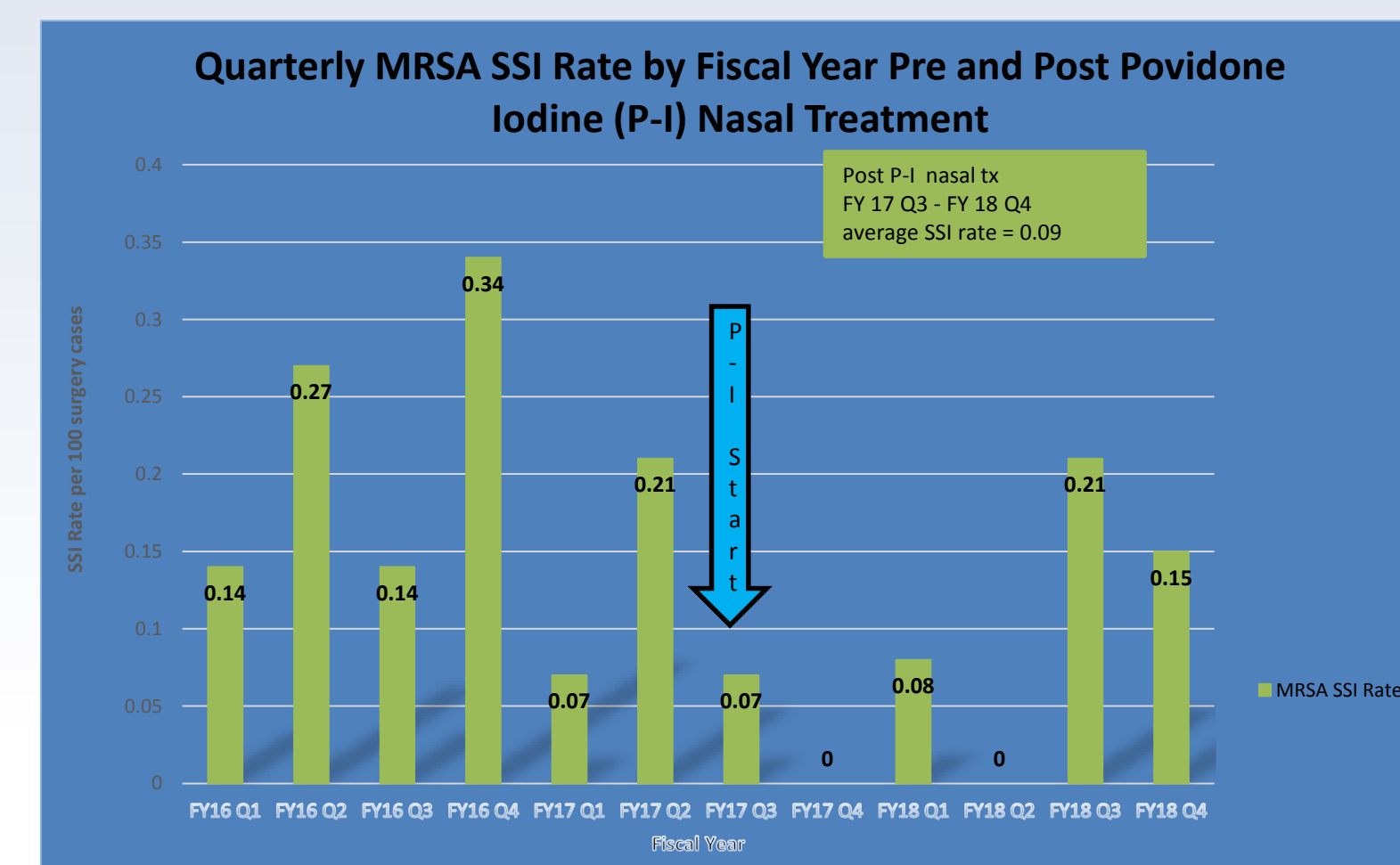
Process Metrics

- Quarterly compliance in Holding Area was >93%, with compliance dropping in Spring 2018 due to shortage of product for several weeks
- Compliance of OR staff in treating after hours patients with PI prior to surgery was 28%



Outcome Metrics

- Zero MRSA SSIs occurred in FY17 Quarter 3, lowering FY17 SSI rate to 0.09 SSIs per 100 surgery cases.



Next Steps

- Continue quarterly compliance chart review for next fiscal year
- Operative Care Division staff member participate in daily call with Supply Chain to prevent product shortages
- Share results with interdisciplinary staff involved in process
- Designate OR champion to support increased compliance for patients who bypass holding
- Share process with other VA's looking to improve MRSA SSI rates
- Evaluate results quarterly

References

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