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# Reduction of Cesarean Section Surgical Site Infections (SSI): Progression and Implementation of Evidence Based Practice

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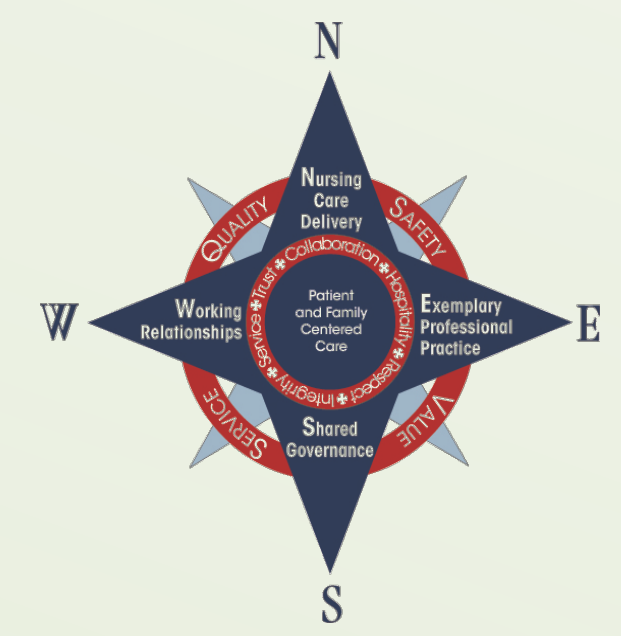
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# Reduction of Cesarean Section Surgical Site Infections (SSI): Progression and Implementation of Evidence Based Practice



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## Background

- A cesarean section SSI may affect a woman physically, mentally, and/or emotionally while adding to increased healthcare costs and effecting the bonding of mother and child.
- CentraCare Health is committed to patient experience; providing the highest quality of care and resources to improve health, cost, patient safety, and equity of care for all.
- Beginning July 2012, identified increase in overall incidence of SSIs following cesarean sections.
- To decrease the incidence rate of SSIs following a cesarean section, hospitals need to assess current infection prevention practices and implement recommended best practices.

## Purpose Statement

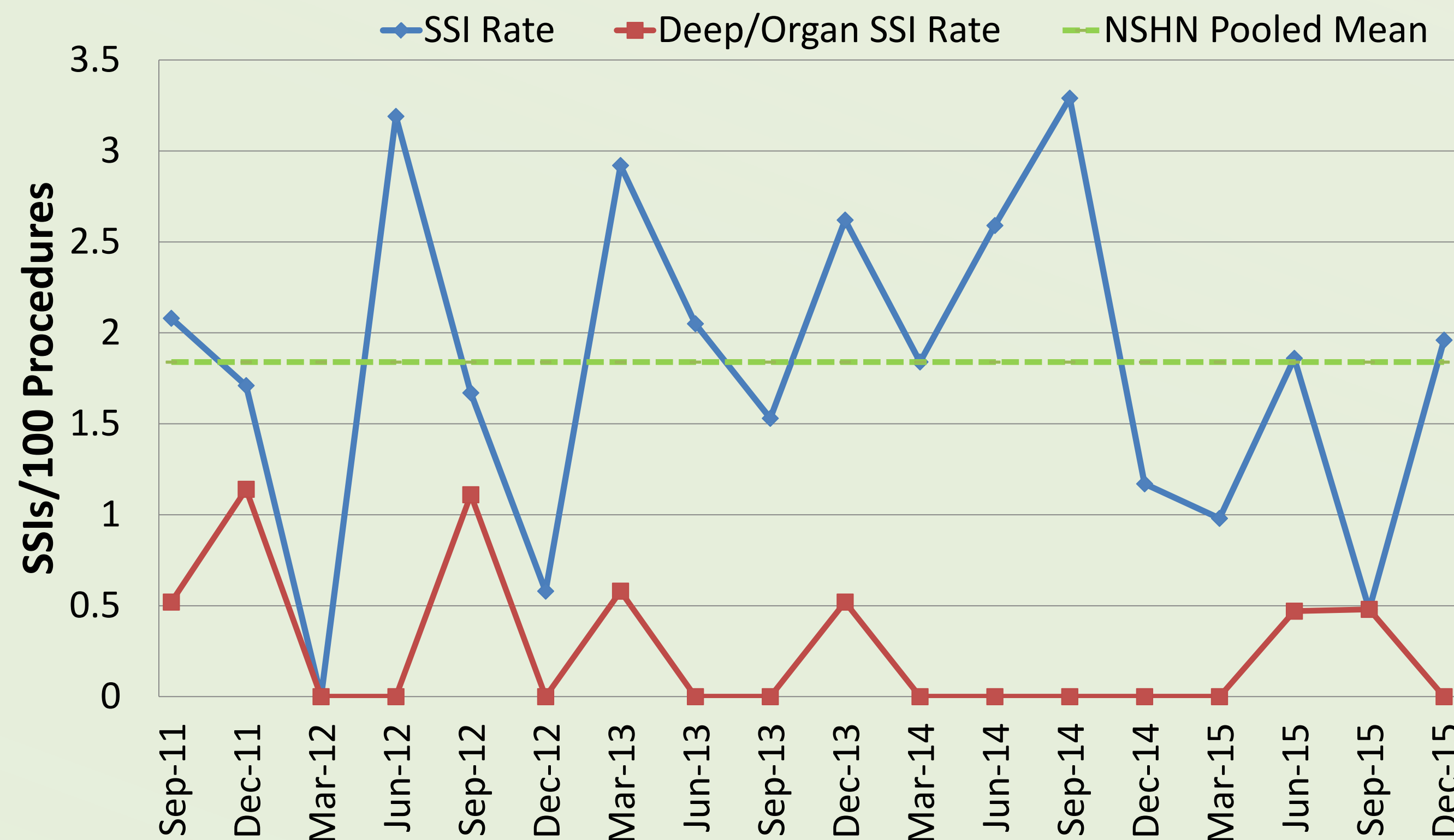
To improve cesarean section patient experience by reduction of postoperative SSI

## Synthesis of Evidence

- “SSIs are serious operative complications that occur in approximately 2% of surgical procedures and account for some 20% of health care-associated infections” (De Lissoy et al., 2009, p. 387).
- Ancef 3g recommended for weight >120kg (American College of Obstetricians & Gynecologists, 2011).
- Chlorhexidine gluconate (CHG) effective for reduction in number bacteria on the skin. Standardized patient education helps improve compliance and efficacy of CHG product.
- Silver silicone foam boarder re-sealable dressing (foam Ag dressing) provides extended broad-spectrum antimicrobial activity, along with bacterial and viral barrier.
- Mayo Clinic Collaborative evidence indicated 50% reduction in SSIs following implementation of closing protocol (Robbins & Bakkum-Gamez, 2014).

## Evidence Based Practice Change

### Total CSEC SSI Rate



- 2012**
  - Spring: Reduction in OR traffic (traffic control)
  - September: Implement preoperative use of CHG wipes in the home for scheduled and before all cesarean sections within the hospital
  - Fall: Antibiotic dosing at cord clamping
- 2013**
  - Standardize OR environmental cleaning
  - Multidisciplinary team meeting case reviews
- 2014**
  - Emphasis on proper OR attire and traffic control
  - February: Weight based dosing of pre-procedure antibiotics
  - October: Standardize wound care; criteria for foam Ag dressing use
- 2015**
  - April-May: CHG Prep use in the OR (formally used Iodine paint)
  - May 2015: CHG showering and wipe use for unplanned cesarean sections
  - May: Foam Ag dressing standard for all cesarean sections
  - June: Exclusive use of iodine infused drape
  - July: Trial closing trays via Plan-Do-Study-Act (PDSA) model
  - August: Re-dosing of antibiotics if blood loss ≥ 1500mL or case longer than half life of pre-operative antibiotics
- 2016 →**
  - Glucose control non-diabetic patient
  - Pre and post surgical multidisciplinary briefings (April 2016)
  - Yeast and skin moisture
  - Panniculus retractors
  - OR environmental cleaning (Time and Technique)

## Discussion/Conclusion

- Surgical Care Improvement Project (SCIP) measures >90%.
- Consideration of changing from CHG wipes to CHG liquid due to cost of wipes at \$4.66/patient ; a department expense. CHG liquid is available over the counter costing \$4-\$7.
- Pre procedure call made to scheduled cesarean section patient to educate on use of CHG and prevention measures prior to arrival at hospital, 90% compliance identified with CHG wipe use.
- Learned that CHG and the fenestrated drape do not adhere; lead to standardization of iodine infused drape.
- Costs of foam Ag dressing \$18K (all patients) compared to average infection cost of \$20K/one patient.
- Standardized patient education developed for CHG bathing and foam Ag dressing.
- Time for implementation of closing trays adds 60 to 120 seconds to each case.
- Review of FY2015 superficial infections identified concerns with antibiotic dosing post procedure, patient education related to wound dressings and cultural barriers, and pannus yeast development driving future EBP initiatives.

## Acknowledgments/ Funding

- Grant funding from Minnesota Hospital Association (MHA).
- Mayo Collaborative/ Mayo Clinic Health System for sharing their work and allowing a site visit.
- Collaborative HealthCare Associated Infection Network (CHAIN) best practice recommendations.
- Supporting Departments/Teams: Obstetrics and Gynecology (medical providers and staff), Surgery, Perioperative Services, Environmental Services, Infection Prevention and Control, Pharmacy, Certified Wound, Ostomy, Continence, and Contracting, Products and Procurement.

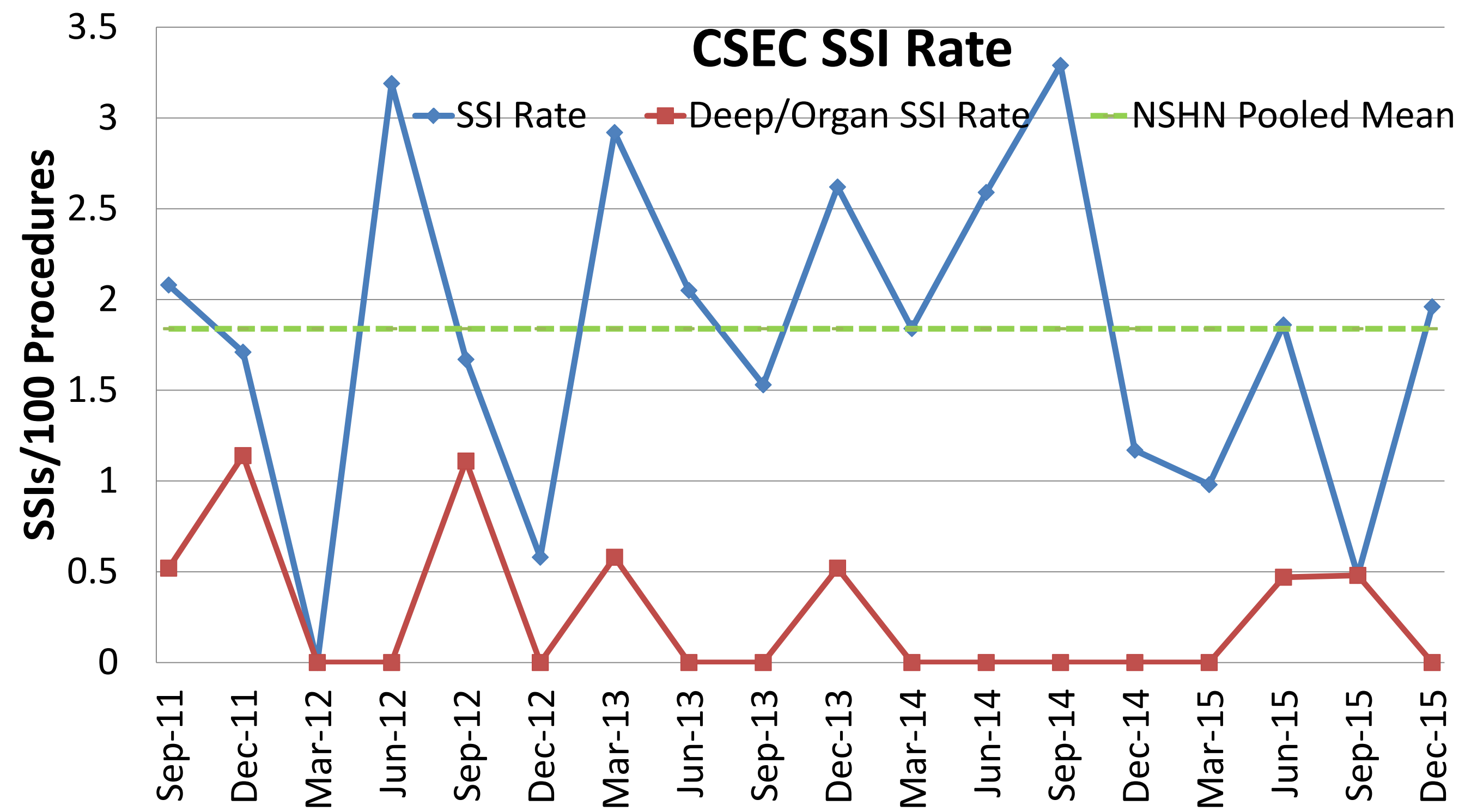
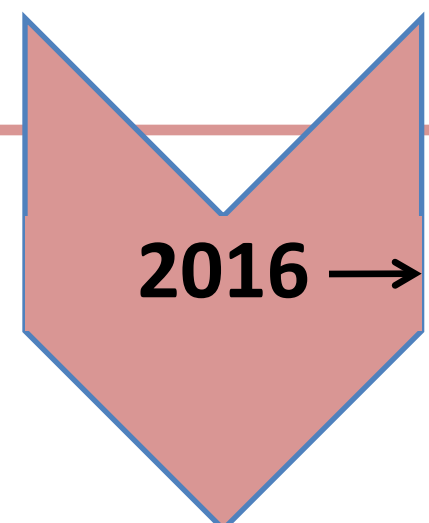
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- Spring: OR traffic control
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- OR attire

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- Glucose control non-diabetic patient
- Yeast and skin moisture
- Panculus retractors



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