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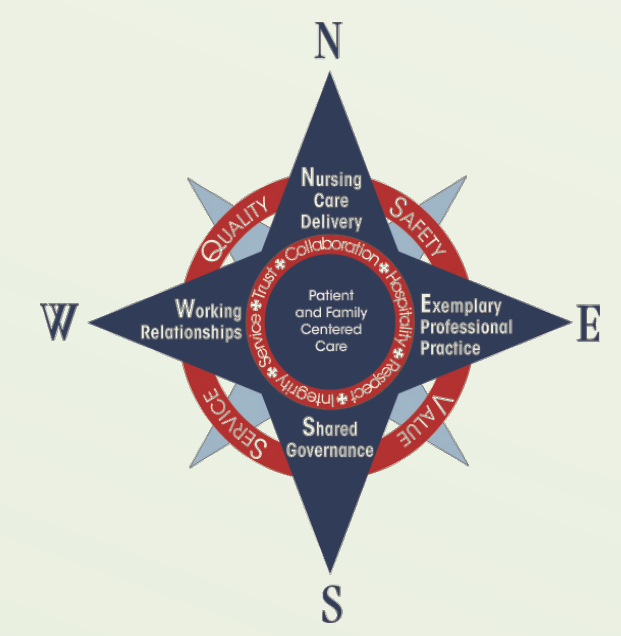
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Reduction of Cesarean Section Surgical Site Infections (SSI): Progression and Implementation of Evidence Based Practice



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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

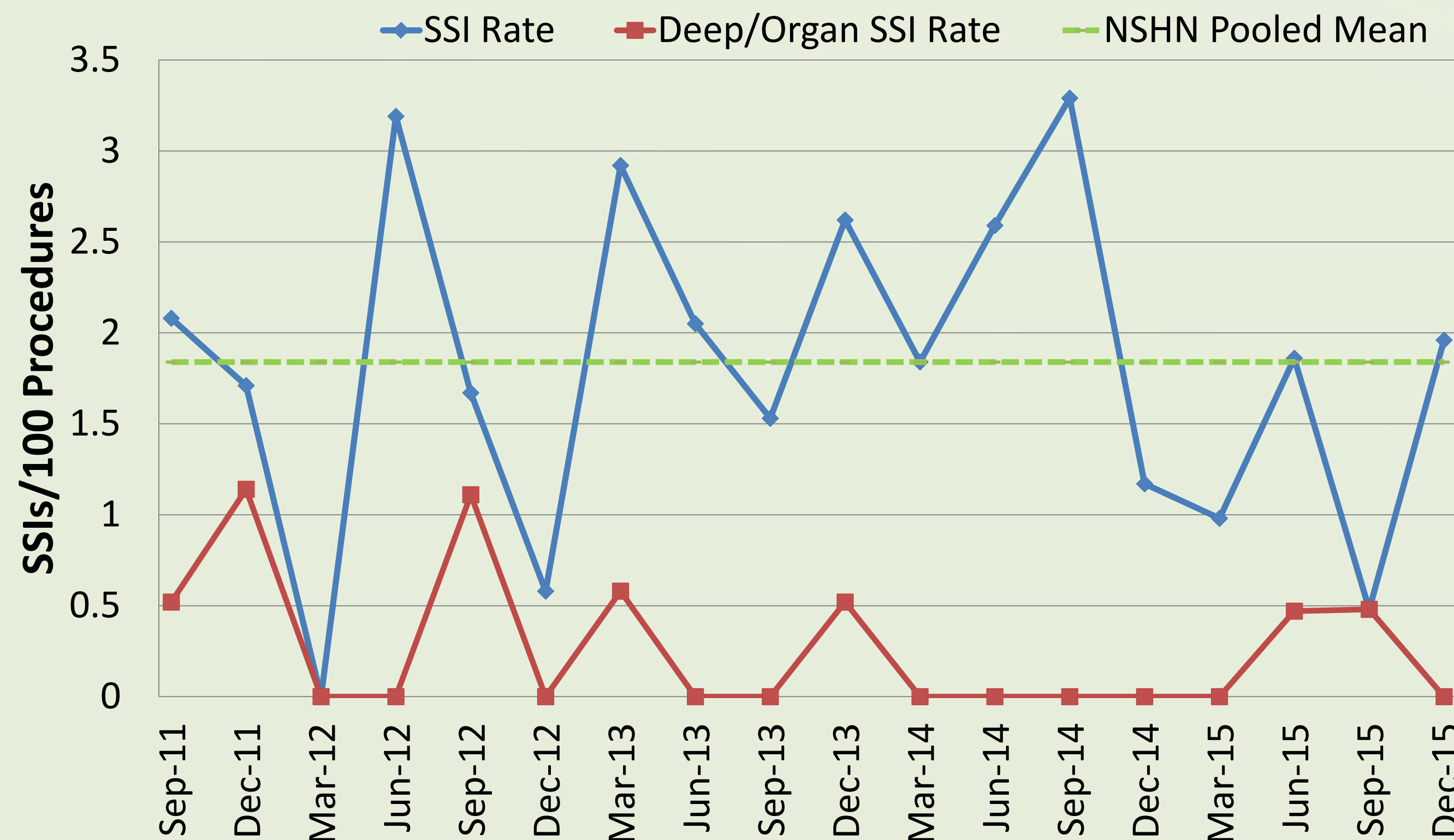
To improve cesarean section patient experience by reduction of postoperative SSI

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.

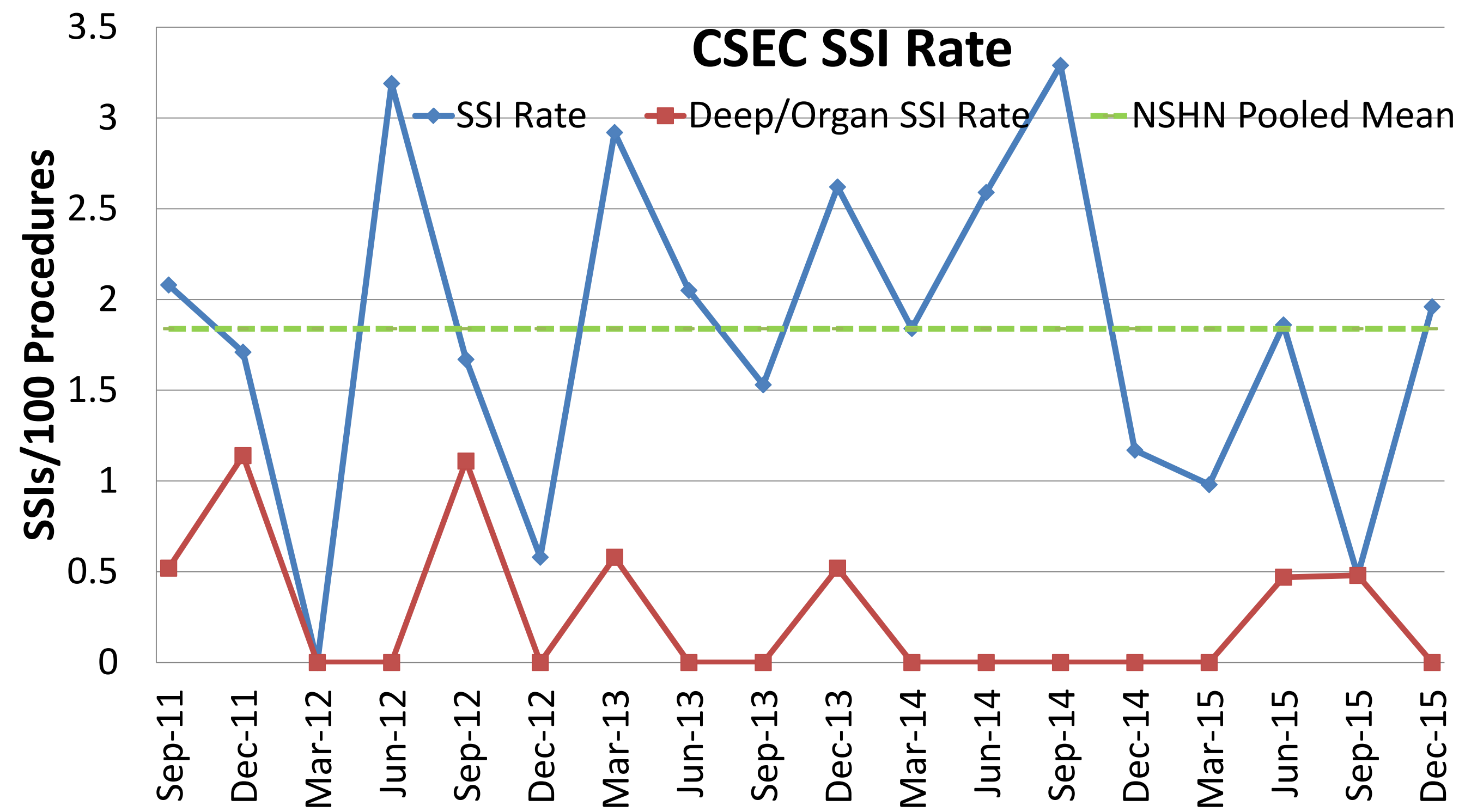
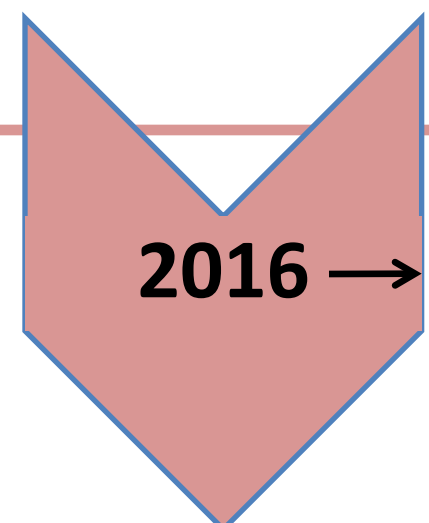
References: (Full list available as handout)
 American College of Obstetricians and Gynecologists. (2011). ACOG Practice Bulletin No. 120: Use of prophylactic antibiotics in labor and delivery. *Obstetrics and gynecology*, 117(6), 1472. doi: 10.1097/AOG.0b013e3182238c31
 De Lissoy, G., Fraeman, K., Hutchins, V., Murphy, D., Song D., Vaughn, B. (June 2009). Surgical site infection: incidence and impact on hospital utilization and treatment costs. *American Journal of Infection Control*, 37(5):387-97. doi: 10.1016/j.ajic.2008.12.010
 Robbins, R & Bakkum-Gamez, J. (2014, October 14) *The MN slashing SSI bundle: Raising the bar to lower the rate* [Powerpoint slides]. Retrieved from: <http://www.mnhospitals.org/LinkClick.aspx?fileticket=B1puRh2lcGs%3d&portalid=0>

- Spring: OR traffic control
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- October: Standardized post-operative incision care
- OR attire

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- August: Re-dosing of antibiotics if blood loss $\geq 1500\text{mL}$ or case longer than half life of pre-operative antibiotics

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



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