

Reducing surgical site infections by distributing chlorhexidine wipes to patients before elective surgery

Ammar Joudeh & Carolyn Rennels
UCSF School of Medicine

Timothy Wong, RN MSN CNL
ZSFG Operating Room

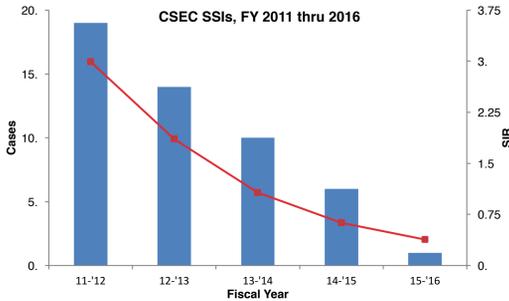
Laura Lang, MD, Candace Woo, FNP-C
ZSFG Pre-op Anesthesia Clinic

Background

Surgical site infections (SSI) are a major cause of morbidity and mortality associated with surgical procedures. They occur in 2%-5% of patients undergoing inpatient surgery in the US.¹ Patients with SSI have a 2-11 times higher risk of death compared with operative patients without an SSI.² SSIs are associated with 7-11 additional postoperative hospital days and may be responsible for 3.5-10 billion dollars in additional healthcare expenditures annually.³

At ZSFGH, SSI rates for many procedures are above the California statewide average, with an SIR of 0.96.*

After CHG was made available for planned C-sections at ZSFG, SSI rates decreased:



Intervention: Chlorhexidine (CHG) wipes were distributed in pre-op anesthesia clinic to patients scheduled for elective, incisional procedures from the neck down.

*SIR = infection count / expected number of infections

Project Goals

The eventual goal of the project is a 50 percent reduction in SIR for indicated procedures by 2018, as measured by the ZSFG SSI surveillance team. The mechanism of achieving this goal will be CHG wipe distribution and patient use.

We collected the following metrics to track progress toward this goal:

1) Implementation in pre-op clinic:

- Proportion of indicated patients provided with CHG wipes (Goal: 100%)
- Indicated patients determined by chart review.
- Wipe distribution noted in chart by pre-op clinic nurses.

2) Patient adherence after clinic and prior to procedure:

- Proportion of patients provided with CHG wipes who used wipes correctly the night before and morning of surgery (Goal: 100%)

3) Patient-reported adverse events due to use of CHG wipes

Project Plan and Intervention

For patients with elective, incisional procedures from the neck down, excluding C-sections, patients will be provided with CHG wipes and instructions for use in pre-op anesthesia clinic prior to surgery.

Pre-op Clinic

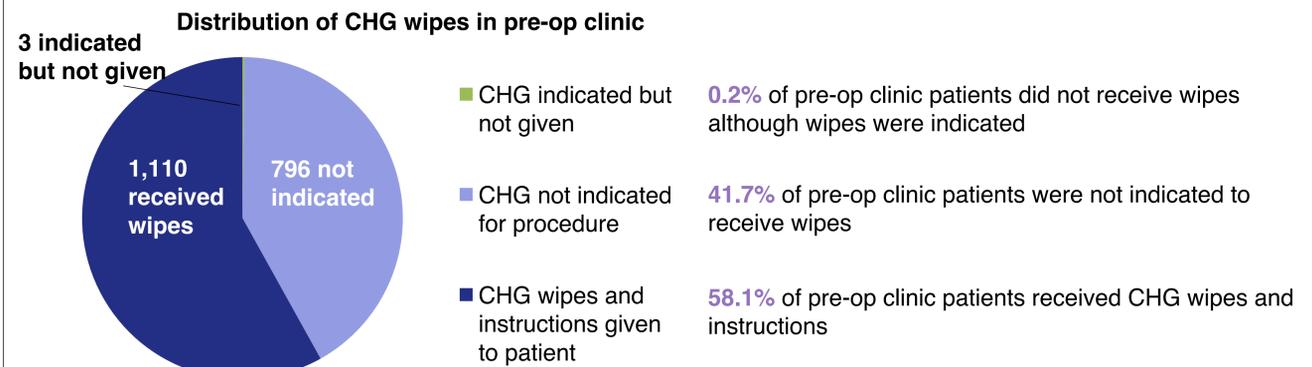
- Scheduling nurse in pre-op clinic marks CHG-indicated patients on schedule sheets (*implemented Jan. 2017*)
- Provider gives patient wipes and discusses their proper use (*implemented Jan. 2017*)
- Pre-op phone call by pre-op nurse includes reminder about wipe use (*implemented Mar. 2017*)

Day of Surgery

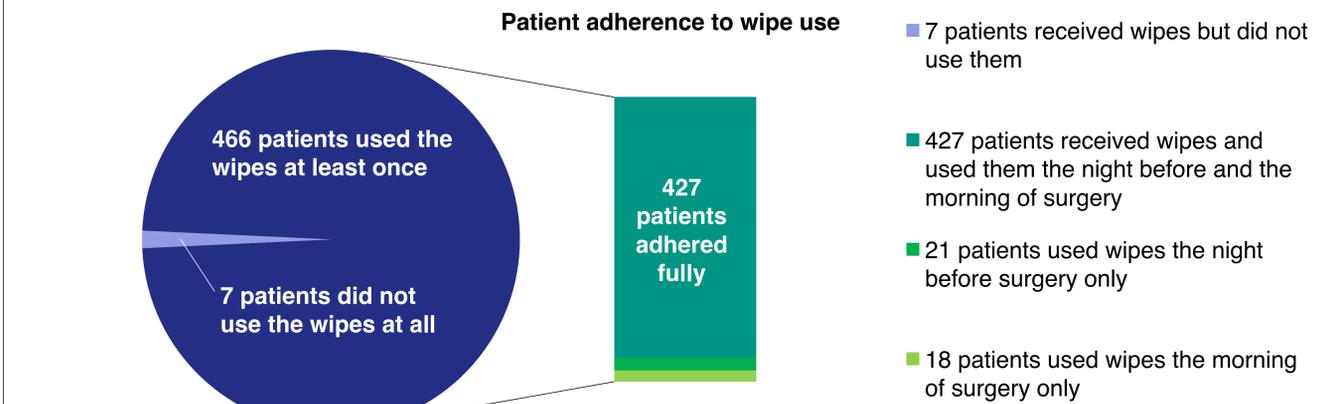
- Pre-op nurses ask about wipe use on day of surgery (*implemented Mar. 2017*)
- If non-adherent, patient uses wipes on morning of surgery, with nurse assistance if necessary (*implemented Mar. 2017*)

Project Evaluation & Impact

1) Data on appropriate distribution is pending, due to incomplete data on indications for surgery. We collected the overall percentage of **1,909 pre-op clinic patients** who received wipes from **Jan. 20-Sep. 6, 2017**.



2) **98.5%** of patients who received wipes used them at least once. **90.3%** reported full adherence: wiping themselves once the night before surgery and once the morning of surgery.



3) **5.3% of users (30 patients)** reported rash, itching, or burning after using the wipes.

Next Steps, Dissemination & Lessons Learned

Next Steps:

Measure proportion of indicated patients who were correctly provided with CHG wipes and proportion of patients who were incorrectly provided with wipes. When sample size increases enough to detect sufficient SSIs, SSI rates before and after the intervention can be compared.

Dissemination:

Results will be shared with the pre-op anesthesia team, the pre-op nursing team, and the infection control team in order to decide next steps for program implementation.

Lessons Learned:

Difficulty of extracting and merging datasets from electronic health records can complicate efforts to evaluate PDSA cycles in real-time. In our case, despite extensive piloting of our data collection tool in SIS, it was a tedious and time-consuming process to link cases from pre-op anesthesia clinic to cases on the day of surgery in order to evaluate adherence.