PREVENT SURGICAL SITE INFECTIONS

safer healthcare now!

Goal

PREVENT SURGICAL SITE INFECTION (SSI) AND DEATHS BY RELIABLY IMPLEMENTING IDEAL PERIOPERATIVE CARE FOR ALL SURGICAL PATIENTS.

Background

- Surgical site infection is the most common healthcare associated infection among surgical patients, with 77 per cent of patient deaths reported to be related to infection.[1]

- In Western countries, between two to five per cent of patients undergoing clean surgical procedures and up to 20 per cent of patients having intra-abdominal surgical procedures will develop a surgical site infection.[2] Infected surgical patients are twice as likely to die, spend 60 per cent more time in the intensive care unit, and are five times more likely to be readmitted to hospital after initial discharge.[3] Such infections result in 3.7 million excess hospital days and US $1.6-3 billion in excess hospital costs per year.[3,4]

- *Safer Healthcare Now!* first introduced the SSI Getting Started Kit in 2005 and since then, data has been captured on SSI prevention processes (four major components) that has been self-reported by 145 organizations throughout Canada. However, only 43 per cent (63/145) of the organizations reported data from September 2012 until August 2013. Although not reported, we recognize that data are still captured in some organizations and reported locally and/or provincially.

- According to the data captured, *Safer Healthcare Now!* has contributed to the improvement of surgical care safety. There has been a 60 per cent decrease in the surgical site infection rate in clean and clean-contaminated surgeries from 2005 to 2010 (Figure 1). The four process indicators over time included:
  - Per cent of Patients with Timely Prophylactic Antibiotic Administration
  - Per cent of Patients with Appropriate Prophylactic Antibiotic Discontinuation
  - Per cent of Surgical Patients with Appropriate Hair Removal
  - Per cent of All Surgical Patients with Normothermia in PACU

Intervention

Four key components of reliable perioperative care:

1. Perioperative antimicrobial coverage[4]
2. Appropriate hair removal[5]
3. Maintenance of perioperative glucose control[6]
4. Perioperative normothermia[7]

Measures

1. Timely prophylactic antibiotic administration
2. Appropriate prophylactic antibiotic discontinuation
3. Surgical infection identified through post discharge surveillance at <= 30 days or 31 -90 days post operatively
4. Appropriate hair removal
5. All diabetic or surgical patients at risk of high blood glucose with controlled post-operative serum glucose POD 0,1, and 2
6. Normothermia at time of arrival in PACU
7. Appropriate selection of prophylactic antibiotic
8. Timely prophylactic antibiotic administration for C-Section
9. Pre-op Wash with soap or antiseptic agent

10. Appropriate intra-op skin cleansing on intact skin
11. Receiving 2 g of Cefazolin as prophylactic antibiotic
12. Receiving appropriate prophylactic antibiotic re-dosing
13. Surgical infection at time of discharge

Success Story: BC Patient Safety & Quality Council

The SSI Getting Started Kit is making a huge impact on safe surgical care. Surgical teams can take the information from the kit and run with it. Implementing safe surgical care varies from setting to setting and the surgical team has to decide how to do it and who does what. "The Getting Started Kit provides the evidence, but the how is what we leave up to the frontline teams, because that is where the wisdom is," says Marlies van Dijk, Director, Clinical Improvement (BC Patient Safety & Quality Council).

Preventing surgical site infections is a priority across British Columbia and culture is considered an essential factor to reduce harm. Marlies is coordinating the National Surgical Quality Improvement Program (NSQIP) – a surgeon-led initiative where 24 hospitals are using a rigorous measurement tool to look at risk-adjusted surgical outcomes to help foster that culture change. The initiative focuses on the hospital or unit as a learning system and continually looks at process and outcome data to drive improvement.

As most infections appear post-discharge, the cornerstone of the program is a 30-day post-operative chart review and follow-up with surgical patients. The NSQIP analysis of 19 out of 24 hospital sites in British Columbia identified areas for improvement and indicated there was a potential for saving between 7,700 to 31,000 patient days per year across the province.

The BC Patient Safety & Quality Council is building a reliability culture to reduce SSI. The successful strategies focus on frontline and clinical ownership. Shifting ownership and decision-making to the frontline is essential to improving results.

"By looking at the adaptive side of clinical care we can bring our SSI rates under control," says Marlies. We need to talk about safe surgical care differently and focus on culture, leadership and engagement. We have an obligation to our patients to ensure that best practices are being provided and this approach is very doable."

References

1. Cataife G, Weinberg DA, Wong HH, et al. The effect of Surgical Care Improvement Project (SCIP) compliance on surgical site infection (SSI). Med Care 2014;52(suppl1):S66-73.
2. Auerbach A. Prevention of surgical site infections. In: Shojania K, Duncan B, McDonnald K, et al, eds. Making Health Care Safer: A critical Analysis of Patient Safety Practices Evidence report/technology assessment no 43. Rockville, MD: Agency for Healthcare Research and Quality;2001:221-44.
3. Kirkland K, Briggs J, Trivette S, Wilkinson W, Sexton D. The impact of surgical-site infections on the 1990s: Attributable mortality, excess length of hospitalization, and extra costs. Infect Control Hosp Epidemiol 1999;20:725-30.
4. Please see references numbered 1, 5-58,60-67,73-106,191-193,201,204-212,228,231,238 in the reference list of the Surgical Site Infection Getting Started Kit, September 2014.
5. Please see references numbered 1,37, 74, 82, 107-120 in the reference list of the Surgical Site Infection Getting Started Kit, September 2014.
6. Please see references numbered 1, 2, 121-132 in the reference list of the Surgical Site Infection Getting Started Kit, September 2014
7. Please see references numbered 132-139 in the reference list of the Surgical Site Infection Getting Started Kit, September 2014.