

# Surgical Site Infection – the role of a spinal surgery infection bundle in reducing rates of surgical site infection.

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## Introduction

Surgical site infection (SSI) after spinal surgery can have substantial medical, social, and financial impacts on patients. Prevention of SSI after spine surgery is a major area of interest as surgical complications may negatively impact reimbursements to hospitals under the current and future regulatory environment. The Centers for Disease Control (CDC) has published specific definitions for SSIs. Hospitals are required to report their incident rate of SSI to Medicare on a quarterly basis. The National Healthcare Safety Network records this data and allows institutions across the country to track and compare infection rates.

The authors at a single institution in New England undertook an effort to reduce surgical site infections with the implementation of a spine surgical site infection bundle.

### The Spine Surgery Bundle

- 1) Ensure uniform cleanliness of operative site.
  - a) Use of antibacterial soap to wash body prior to surgery.
    - o Patient reports shower the evening before and morning of surgery.
  - b) Cleaning of the surgical site/debridement prior to incision.
    - o Surgeon ensures antiseptic body wash, iodine, or alcohol scrub prior to incision around the surgical site.
  - c) Use ChloroPrep or DuraPrep for skin preparation (with specific exceptions) per the MMC Op Z Bundle.
- 2) Ensure skin blade is used once for incision; then replaced with fresh #10 blade (or bovie) before completing case.
- 3) Ensure cleanliness of surgical loupes, lights, and face by application of standard precautions by (surgeon) between cases.
- 4) Prior to closing of incision, surgeon will:
  - a) Clean area around incision (remove debris/wipe down area).
  - b) Change outer gloves.
  - c) Ensure generous anti-biotic irrigation of the incision.
- 5) Use DermaFlex (glue) for incision closure, as appropriate.
- 6) Ensure proper use of IOBan; leave in place & intact as possible during closing of incision.
- 7) Hair removal from surgical site discouraged, but clipping ONLY if felt necessary.
- 8) Ensure no more than a 24 hour course of antibiotics post surgery for inpatients with implants.
- 9) Ensure all persons scrubbed into the case are gloved and gowned by a member of the scrub team.

## Methods

The authors prospectively identified nine elements for the spinal surgery infection bundle were identified by the surgeons, reviewed with the operating room staff, and amended based on feedback.

## Results

For spinal fusion, the first quarter following implementation revealed a 0.76% reduction in our rate of infection, when compared to the prior calendar year.

Our year to date SSI averages for the first three quarters of 2013 are 1.13% for fusion, and .62% for laminectomy/otomy. These averages represent a reduction compared to our calendar 2012 rates for both procedures.



## Conclusions

The authors developed a specific SSI bundle to be used with patients having spinal surgery, educated our surgeons and OR staff, and observed and gave feedback to surgeons on compliance. Initial data reveals a reduction in surgical site infection rates for spinal surgery. Longitudinal experience with the bundle will allow us to understand the durability of this intervention.

## Learning Objectives

By the conclusion of the session, participants should be able to: 1) appreciate the use of a surgical site infection bundle in reducing infection, 2) understand the process for developing a surgical site infection bundle with a group of surgeons, providers, and OR staff, 3) appreciate the ongoing monitoring and reporting of compliance to the bundle, 4) review of initial data regarding the impact of the bundle on our infection rate, 5) provide feedback and suggestions with respect to the surgical site infection bundle.

## References

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