

## Review of the New CDC Guidelines for the Prevention of Surgical Site Infections

### Background

Surgical site infections (SSI) are the most common healthcare associated infection (HAI) in community hospitals.<sup>1</sup> The cost and challenge of treating SSI continues to increase as the complexity of patient cases and the emergence of antimicrobial-resistant pathogens increase.<sup>2-4</sup> Fortunately, it has been estimated that nearly half of all SSI are preventable by application of evidence-based strategies.<sup>5</sup> Both the World Health Organization and the American College of Surgeons recently published guidelines for the prevention of SSI (see [January 2017 DICON newsletter](#)).<sup>6-8</sup> More recently, the Centers for Disease Control and Prevention (CDC) published its updated recommendations for the prevention of SSI.<sup>9</sup> This newsletter will review the CDC's updated evidence-based recommendations and discuss implementation strategies for community hospitals.

### Guideline Contents Updates

The CDC's updated SSI prevention guidelines provide evidence-based recommendations for the prevention of SSI that should be incorporated into comprehensive surgical quality improvement programs to improve patient safety. Updates to the 2017 guidelines are listed below.

### Recommended

- Before surgery, patients should shower or bathe (full body) with soap (antimicrobial or nonantimicrobial) or an antiseptic agent on at least the night before the operative day.
- Antimicrobial prophylaxis should be administered only when indicated based on published clinical practice guidelines and timed such that a bactericidal concentration of the

agents is established in the serum and tissues with the incision is made.

- In cesarean section procedures, antimicrobial prophylaxis should be administered before skin incision as opposed to after the umbilical cord is clamped.
- Skin preparation in the operating room should be performed using an alcohol-based agent unless contraindicated.
- During surgery, glycemic control should be implemented using blood glucose target levels less than 200 mg/dL.
- Normothermia should be maintained in all patients.
- Increased FiO<sub>2</sub> should be administered during surgery and after extubation in the immediate postoperative period for patients with normal pulmonary function undergoing general anesthesia with endotracheal intubation.
- Transfusion of blood products should not be withheld from surgical patients as a means to prevent SSIs.

### Not Recommended

- For clean and clean-contaminated procedures, additional prophylactic antimicrobial agent doses should not be administered after the surgical incision is closed in the operating room, even in the presence of a drain.
- Topical antimicrobial agents should not be applied to the surgical incision.
- Transfusion of blood products should not be withheld from surgical patients as a means to prevent SSIs.

### Unresolved Issues

Unfortunately, the authors felt there was not enough quality evidence to make a

recommendation one way or another for a number of proposed interventions. Examples of unresolved issues include further refinement of timing or weight-adjusted dosing of antimicrobial prophylaxis, administration of intraoperative antimicrobial irrigation, use of antimicrobial impregnated dressings, soaking prosthetic devices in antiseptic solutions, and use and timing of intra-articular corticosteroids, to name a few. Overall, the number of unresolved issues in this guideline exceeds the number of recommendations and further emphasizes the need for further research related to SSI prevention.

### **Summary and Key Points**

Although many of the key recommendations were not “new” recommendations, we recommend hospitals take this opportunity to review standard practices at their institution. For example, we have found that surgeons are not uniformly using alcohol-containing skin antiseptic agents despite this being a recommended practice for many years. Additionally, continuation of perioperative antibiotic prophylaxis beyond the time of skin closure is an extremely common practice.

If you find that your hospital is not already implementing any of these core evidence-based practices, we recommend you convene a group of key stakeholders to discuss potential opportunities and strategies to improve patient care. We anticipate that discontinuing an established practice, particularly one that is perceived to provide benefit without considerable risk (e.g., continuing antibiotic prophylaxis while drains remain in place) will be more challenging for hospitals to implement than adding a new practice or standardizing an existing practice. Successful programs typically require multidisciplinary teams, clinical champions, data collection, and feedback. Your DASON and DICON liaisons can serve as helpful

resources when implementing new quality improvement initiatives.

### **Other DASON/DICON Newsletters on the Topic**

The Role of Topical Antibiotics in Surgical Site Infection Prevention – [December 2013](#)

SHEA/IDSA Surgical Site Infection Prevention Practice Recommendation Update – [June 2014](#)

Ambulatory Surgery and Surgical Site Infection – [July 2014](#)

SHEA/IDSA Surgical Site Infection Prevention Practice Recommendation Update – [January 2017](#)

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## References

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