Surgical Skin Antisepsis: The information you need to know, the questions you need to ask

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1. Introduction
Surgical skin antisepsis (skin prepping) is an important surgical site infection (SSI) prevention measure. The choice is more complicated than ever before and the decisions made can have serious implications regarding your patient outcomes and the organization's bottom line. Conversations regarding skin antisepsic products can get confusing when companies compete for your attention and dollars. How do you choose skin antisptic products that meet all of the criteria that will ultimately help prevent a surgical site infection? The following information will assist administrators with determining what is “The Scoop” and how to apply this to your organization.

Knowing six important questions to ask will get you to the right conversations quickly and enable you to make the right decisions that will save you time and money while providing the best outcomes for your patients.

**Out of Scope**

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2. Out of Scope Discussions

A. Current standards

The CDC Guideline for the Prevention of Surgical Site Infection, 1999 published by the CDC is considered the “gold standard” as a reference for SSI prevention measures, and the guidelines Category IIB recommendations states “Use an appropriate antiseptic skin agent for preparation.” I feel the recommendation is vague because the authors recognize there is insufficient evidence to choose one antiseptic over another. In addition, the uniqueness of patients and procedures must be taken into consideration. Likewise, the Association for PeriOperative Registered Nurses (AORN) 2009 Recommended Practices for Patient Skin Antisepsis contains and end note that standards do not provide specific product recommendations.

B. FDA Approval

The FDA has proposed specific testing criteria for surgical skin prepping. The most common methods used available meet the criteria. Therefore, any discussion regarding skin antisepsics and scrubbing is unnecessary.

C. Standardization

Although standardizing surgical antisepsic products is tempting from a supply chain point of view, there is no one size fits all product because patient and procedures are unique and this must be taken into account. Safety is also an issue as some body sites such as the eyes and ears, as well as mucous membranes require different antiseptic solutions and therefore, should not be scrubbed. The way in which a product is applied to the skin surface can impact the quality of the product is dependent on four factors: quality, safety, and cost considerations.

D. Non-Surgical Literature

Companies will often cite numerous studies to support the superiority of a particular product. The truth is, there is very little research data available on the comparative effects of surgical skin antisepsics and patient outcome literature is almost non-existent. Literature published on skin antisepsis that is unrelated to surgical procedures should not be used as a surrogate for surgical preparation in order to achieve the maximum efficacy. Although the product that may save time and cost may prevent the patient from achieving this important result.

2. Surgical skin antisepsics differ from central line insertions in many ways:

1. A surgical procedure usually involves a much larger skin incision as compared to the small puncture wound made during a line insertion.
2. The surgical procedure may compromise the antimicrobial properties of the surgical antisepsic by wiping or washing it away during the operation.
3. Surgical procedures take significantly longer to perform when compared to a central line insertion that typically takes 15 minutes.

B. Coverage

Skin antisepsic products differ in the amount of skin coverage that will be achieved by the product. This is an important characteristic because the amount of skin coverage will be a surrogacy for the time of preparation in order to achieve the maximum efficacy. The product too thin may save time and cost but may prevent the product from achieving this important result.

Conversely, does an expensive product justify the cost? The quality of the product is dependent on many variables. The following six questions will quickly get you to the desired outcome. This information should be readily available for cost benefit analyses. When changes in skin antisepsic are made in response to SSI data, this data should be reviewed to demonstrate improved outcome that insured the money invested in the prevention strategy demonstrated the intended outcome. This is in alignment with the 2009 Joint Commission Patient Safety Goal 07.05.01 which challenges organizations to “implement evidence-based practices for preventing SSI.” The expected effect of the intervention should be a reduction in the SSI rate after a reasonable amount of time thereby justifying the cost of the program through cost avoidance. If this outcome has not been achieved, perhaps other strategies should be considered.

**The Six Important Questions**

1. What is the procedure this product is intended for?
2. What is the application methodology?
3. What is the coverage per unit?
4. What is the overall cost?
5. What are your patient outcomes?

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**References**

1. CDC guidelines for the prevention of surgical site infection, Centers for Disease Control and Prevention, National Center for Infectious Diseases, 2002; 76(5): 821-828.

**3M DuraPrep Surgical Solution**

- **Coverage**
  - 140 mL: 100 ft²
  - 26 mL: 45 ft²
  - 12 mL: 22 ft²

- **Use in Cardiac Procedures**

- **Chemical Composition**
  - 70% isopropyl alcohol
  - Drug facts
  - Each bottle contains 140 mL

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