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## **AST Guidelines for Best Practices in Sterile Wrapped Items Dropped on the Floor**

### **Introduction**

The following Guidelines for Best Practices were researched and authored by the AST Education and Professional Standards Committee, and are AST approved.

AST developed the Guidelines to support healthcare delivery organizations (HDO) reinforce best practices in sterile wrapped items dropped on the floor as related to the role and duties of the Certified Surgical Technologist (CST®), the credential conferred by the National Board of Surgical Technology and Surgical Assisting (NBSTSA). The purpose of the Guidelines is to provide information OR supervisors, risk management, and surgical team members can use in the development and implementation of policies and procedures for sterile wrapped items dropped on the floor in the surgery department. The Guidelines are presented with the understanding that it is the responsibility of the HDO to develop, approve, and establish policies and procedures for the surgery department regarding sterile wrapped items dropped on the floor per HDO protocols.

### **Rationale**

The following Guidelines address the proper handling of sterile wrapped item(s) that are dropped on the floor. The sterility of items is event-related, except for commercially packaged items containing chemicals or drugs, or what is commonly referred to as *event-related sterility (ERS)*. The shelf life of a package is determined if an event occurred that compromises the package and the contents. In other words, ERS is based on the items within a package are sterile until an event causes the items to be considered contaminated.<sup>1,2,3</sup> Events that can cause contamination include moisture penetration, tear(s) or puncture(s) in the wrapper, multiple handling of the package that leads to tearing of the seal, and airborne contamination.

### **Evidence-based Research and Key Terms**

The research and review of articles, letters, nonrandomized trials, and randomized prospective studies and trials that analyzed data are conducted using the Cochrane Database of Systematic Reviews and MEDLINE®, the U.S. National Library of Medicine® database of indexed citations and abstracts to medical and healthcare journal articles.

The key terms used for the research of this Guideline include: event-related sterility; impervious; pervious; sterile; strike-through contamination. Key terms used in the Guideline are italicized and included in the glossary.

**Guideline I**

**A dropped package sterilized in *pervious* reusable woven fabric materials must be considered unsterile and not transferred to the sterile field.<sup>4</sup>**

1. The pervious reusable woven fabric material allows the implosion of airborne contaminants and dust into the package.<sup>2,3,4</sup>
2. The package should be opened and the enclosed item(s) returned to the decontamination area for reprocessing and sterilization.<sup>5,6</sup>

**Guideline II**

**A dropped package sterilized in *impervious* wrapping material can be considered sterile and safe for immediate use if the packaging is intact.<sup>4</sup>**

1. The package must be opened for immediate use if the integrity of the package has not been compromised, e.g., abrasion(s), puncture(s), signs of *strike-through contamination*, tear(s).<sup>2,3,4,7</sup>
  - A. The package must be carefully inspected before opening to confirm the packaging material is intact and the area of contact is dry.<sup>8</sup>
  - B. If the packaging material is compromised, the package must not be opened and the contents transferred to the sterile field. If the contents are reusable, they should be returned to the decontamination area for reprocessing and sterilization.<sup>9</sup>
2. The package should not be stored/placed on the shelf for future use.<sup>4</sup>

**Guideline III**

**The surgery department should review the policies and procedures (P&P) regarding event-related sterility on an annual basis.**

1. The surgery department should include members of the surgical team and administration when reviewing the P&Ps, including CSTs, surgeons, RNs, risk management, and infection control officer.
  - A. The surgery department should document when the P&Ps were reviewed, revision completed (if necessary), and who participated in the review process.
2. CSTs should be familiar with the P&Ps for event-related sterility. The orientation of new employees should include reviewing the P&Ps for event-related sterility.
  - A. The surgery department should establish standardized methods for applying the principles of event-related sterility for all surgical personnel to follow. Consistent, standardized methods are important to reducing patient-acquired surgical site infections (SSI).

**Guideline IV**

**CSTs should complete continuing education and training to remain current in their knowledge of event-related sterility in the OR.<sup>10</sup> The orientation of new employees should include completing continuing education in the methods of event-related sterility.**

1. Surgery department continuing education on event-related sterility is essential to preventing patient-acquired SSIs, and emphasizing the principles of asepsis and methods of sterile technique.
  - A. The continuing education should be based upon the concepts of adult learning, referred to as andragogy. Adults learn best when the information is relevant to their work experience; the information is practical, rather than academic; and the learner is actively involved in the learning process.<sup>11</sup>
  - B. It is recommended surgery departments use various methods of education and training to facilitate the learning process of CSTs.
    - 1) If the continuing education is primarily lecture, methods to engage learners include presentation of case studies for discussion, and audience discussion providing suggestions for reinforcing the practice of event-related sterility.
    - 2) Other proven educational methods include interactive training videos, and computerized training modules and teleconferences.
2. The surgery department should maintain education and training records for a minimum of three years that include dates of training; names and job titles of employees that completed the continuing education; synopsis of each continuing education session provided; names, credentials, and experience of instructors.

## Competency Statements

| Competency Statements  | Measurable Criteria   |
|--|---|
| <ol style="list-style-type: none"> <li>1. CSTs have the knowledge and skills for preventing the microbial contamination of the sterile field.</li> <li>2. CSTs are knowledgeable of the principles of asepsis and methods of sterile technique.</li> <li>3. CSTs are experts in the application of the principles of asepsis to prevent contamination of the sterile field and patient-acquired SSIs.</li> </ol> | <ol style="list-style-type: none"> <li>1. Educational standards as established by the <i>Core Curriculum for Surgical Technology</i>.<sup>1</sup></li> <li>2. The didactic subject of the principles of asepsis, methods of sterile technique, and creation of the sterile field is included in a CAAHEP accredited surgical technology program.</li> <li>3. Students demonstrate knowledge of the principles of asepsis, sterile technique, and creation and maintenance of the sterile field in the lab/mock OR and during clinical rotation.</li> <li>4. As practitioner's CSTs apply the principles of asepsis, methods of sterile technique, and perioperative case management to prevent contamination of the sterile field and patient-acquired SSIs.</li> <li>5. CSTs complete continuing education to remain current in their knowledge of sterile technique and methods to prevent contamination of the sterile field to prevent patient-acquired SSIs.<sup>10</sup></li> </ol> |

*CST® is a registered trademark of the National Board of Surgical Technology and Surgical Assisting (NBSTSA).*

## Glossary

*Event-related sterility:* Sterility is determined by how a package is handled rather than the time that has elapsed. The package is considered sterile until an event occurs such as the integrity of the packaging material is damaged or the package is opened.

*Impervious:* Not allowing fluid to penetrate; impermeable.

*Pervious:* Allows fluid to pass through; permeable.

*Sterile:* Absence of microorganisms.

*Strike-through contamination*: Contamination of a sterile field or package that occurs when fluid penetrates the barrier material or a puncture in the barrier material, allowing the passage of microbes.

## References

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