

Improving the Quality of the Steam Sterilization Process with Appropriate Monitoring Policies and Procedures

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KEYWORDS

- Perioperative registered nurse • Steam sterilization
- Biological indicators • Chemical indicators

The Association for Perioperative Registered Nurses (AORN) states in the Purpose of the *Recommended Practice for Sterilization in the Perioperative Practice Setting* that “A major responsibility of the perioperative registered nurse is to minimize patient risk for surgical site infection.”¹ This goal coincides with the one published on the Association for Professionals in Infection Control and Epidemiology (APIC) Web site, “that every healthcare institution should be working toward a goal of zero healthcare-associated infections.”²

How does a preoperative registered nurse minimize the risk for surgical site infections when monitoring the steam sterilization process? The answer is by following the recommended practices of the Association for the Advancement of Medical Instrumentation (AAMI), AORN, and Centers for Disease Control and Prevention (CDC), which establish clinical practice.

The *Guideline for Prevention of Surgical Site Infection*, published in 1999 by the CDC states that “Inadequate sterilization of surgical instruments has resulted in SSI outbreaks” and “The importance of routinely monitoring the quality of sterilization procedures has been established.”³ The CDC says this can be accomplished using a biological indicator (BI). The first step is to obtain copies of all of these recommended practices. The next step is to understand the nurse’s role in monitoring the

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Perioperative Nursing Clinics 5 (2010) 327–345

doi:10.1016/j.cpen.2010.04.005

periopnursing.theclinics.com

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effectiveness of the steam sterilization process and how it will prevent health care–associated infections.

DEVELOP POLICIES, PROCEDURES, AND STAFF TRAINING

Develop policies and procedures to provide guidelines for maintaining control and determining methods for improvement of the product and process.⁴ These policies and procedures should be reviewed and audited for compliance. The written policies and procedures should be based on federal, state, and local recommendations; CDC recommendations; national voluntary standards and recommended practices, such as those of the AAMI and AORN; and device/equipment manufacturer's recommendations.⁵

AORN states that regulatory and accrediting agencies requirements should be included in the policy statement along with the activities that must be completed.⁶

The Joint Commission addresses clinical practice guidelines in the Leadership section of the Hospital Accreditation Standard. The Joint Commission says:

“The hospital considers clinical practice guidelines when designing or improving processes.” (LD.04.04.07)⁷

“The hospital provides care, treatment, and services in accordance with licensure requirements, laws and rules, and regulations.” (LD.04.01.01)⁷

“Patients with comparable needs receive the same standard of care, treatment, and services throughout the hospital.” (LD.04.03.07)⁷

The importance of following evidence-based standards and professional organization guidelines is also stated in the National Patient Safety Goals of the Joint Commission (NPSG.07.05.01) for January 1, 2010 which is to reduce the risk of surgical site infections by aligning policies and practices with evidence-based standards and/or professional organization guidelines.⁷

The AAMI *Comprehensive Guide to Steam Sterilization and Sterility Assurance in Health Care Facilities*, ANSI/AAMI ST79:2006, A1:2008, and A2:2009 states “Education and training decrease the possibility of operator error during preparation and sterilization processing and help ensure that personnel are conversant with the latest data and techniques.”⁸ Personnel should be trained and monitored to ensure they are following policies and procedures. Critical thinking skills are necessary to understand the science behind the policies and procedures, avoid human errors, and improve the outcome of the sterilization process.

Continuous training and competency assessments help minimize or eliminate operator errors, which are the major contributor to sterilization process failures. Every peri-operative registered nurse must recognize the importance of their role in improving patient safety by following policies and procedures and properly performing the steps of the sterilization process. They need to have the knowledge to understand what steps need to be performed and why. Up-to-date policies and procedures, training, competency testing, and ongoing education are essential to eliminating operator errors.

KNOW YOUR STEAM STERILIZER

Operator errors can also be eliminated by knowing what type of sterilizer cycles are available so you can choose the correct monitoring procedure and products and the correct cycle for the load contents. Two types of sterilizer cycles are available: gravity-displacement and dynamic-air-removal.

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