



New Study: Reusable Bronchoscopes cost more than Sterile Single-use Bronchoscopes

Study urges hospitals to consider obtaining sterile single-use bronchoscopes for routine procedures to improve hospital economy and patient safety.

Bronchoscopes – one of the most commonly used instruments in hospitals – not only put patients at risk of infection if they are not cleaned properly but can come with a heavy price tag for institutions that reprocess them for use on other patients.

A new study¹ shows that hospitals that disinfect and reuse bronchoscopes pay more per instrument than if they had purchased a sterile single-use bronchoscope. The extra cost is \$150 per use on average across the hospitals in the study and up to \$500 per use at the hospital with the highest reported expenses for reusable bronchoscopes.

The study also found that:

- Reprocessing bronchoscopes was most often done by personnel who “lacked certification or adequate training.”
- Reprocessing practices in the field “do not meet current standards and guidelines.”
- “Substantial resources were spent re-reprocessing bronchoscopes that reached hang time limits.”

The study recommends that facilities obtain sterile single-use bronchoscopes for their routine procedures, for after hours and for emergency situations.

The study reports that “Site coordinators [at the hospitals in the study] identified suboptimal equipment and practices at all sites, and the study sparked assessments and quality improvements that will hopefully improve patient safety.”

A real-world study at four US hospitals

The study was conducted by Cori L. Ofstead and her team and focused on four accredited US hospitals – two in the Midwest and two on the West Coast – ranging from 110 to 500 beds.

The findings build on a related study by Dr. Ofstead, published last year in Chest Journal², that examined the effectiveness of the cleaning processes for reusable bronchoscopes. In that study, researchers found that most of the reusable bronchoscopes deemed ready for patient use at three large hospitals were contaminated and damaged even when adhering to high-level disinfection reprocessing guidelines. The researchers recommended that those hospitals consider using sterilization or single-use bronchoscopes to prevent spreading infection to patients through contaminated bronchoscopes.

The new study was conducted to determine whether reprocessing was financially feasible based on the time and cost of acquiring and maintaining bronchoscopes. “The two studies, viewed together, demonstrate that single-use bronchoscopes

¹ “Managing Bronchoscope Quality and Cost: Results of a Real-world Study”. Cori L. Ofstead, MSPH, Krystina M. Hopkins, MPH; John E. Eiland, RN, MS; Harry P. Wetzler, MD, MSPH. Process, March/April 2019, p. 62-71.

² “Effectiveness of Reprocessing for Flexible Bronchoscopes and Endobronchial Ultrasound Bronchoscopes”. Ofstead et al. Chest. 2018.

can not only save hospitals money and create efficiency, but most importantly improve patient safety,” says Lars Marcher, President and CEO at Ambu, a medical device maker that has pioneered the disposable bronchoscope. “These are important studies that beg a poignant question: Why would a hospital risk infecting a patient with a bronchoscope that has not been properly cleaned and costs more than the single-use alternative?”

Reusable bronchoscopes and associated expenses

Bronchoscopes are delicate instruments that enable practitioners to see the airways to the lungs and perform necessary interventions. Bronchoscopes must be available to use in different areas of the hospitals 24 hours a day. Because of that, hospitals stock large inventories and assign reprocessing duties to numerous staff members.

Most bronchoscopes can be used multiple times. But reusing them requires resources and time to reprocess them so that they are clean prior to each procedure. And because they are fragile, reusable bronchoscopes need to be maintained and repaired. All of those associated expenses add up.

Dr. Ofstead and her team examined costs of acquisition, maintenance and repair, cleaning and other consumable reprocessing supplies, personnel time and wages for reprocessing bronchoscopes, as well as costs of having to reprocess cleaned bronchoscopes.

The researchers found that the “real-world cost” for procedures with reusable bronchoscopes ranged from \$281 to \$803 for each bronchoscope and was comparable or higher than the cost of sterile single-use bronchoscopes, which have a list price of \$300. In addition, the study notes that its figures “*greatly underestimate the total because we did not include any costs associated with essential equipment such as leak testers, irrigation systems, AERs [Automated Endoscope Reprocessors] and drying cabinets.*”

Time-consuming to reprocess

Reprocessing turn-around time varied among the four sites from 41 to 109 minutes per reusable bronchoscope. A closer examination of the site with the fastest turn-around time uncovered shortcuts that violated Occupational Safety and Health Administration regulations as well as reprocessing standards.

Most of the sites had already acquired single-use bronchoscopes to help manage costs and ensure availability for after hours and emergency procedures. During the study, two of the sites reassessed inventory and began to retire some bronchoscopes, avoiding maintenance and reprocessing costs.

“Evaluating bronchoscopy programs and making the appropriate changes is critically important. Recent research shows that current reprocessing methods (generally with high-level disinfection) are not effective enough to ensure that bronchoscopes are free of contamination after reprocessing therefore, alternatives are not only economical but critical to improving quality and ensuring patient safety,” the study concludes.

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About Ambu

Since 1937, breakthrough ideas have fuelled our work on bringing efficient healthcare solutions to life. This is what we create within our fields of excellence – Visualisation, Anaesthesia, and Patient Monitoring & Diagnostics. Millions of patients and healthcare professionals worldwide depend on the functionality and performance of our products. We are dedicated to improve patient safety and determined to advance single-use devices. The manifestations of our efforts range from early inventions like the Ambu Bag™ resuscitator and the legendary BlueSensor™ electrodes to our newest landmark solutions like the Ambu@aScope™ – the world’s first single-use flexible endoscope. Our commitment to bringing new ideas and superior service to our customers has made Ambu one of the most recognized medtech companies in the world. Headquartered near Copenhagen in Denmark, Ambu employs approximately 2,700 people in Europe, North America and the Asia Pacific. For more information, please visit www.ambu.com.