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## Endoscope Reprocessing: Avoiding Complacency

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The risk of infection from gastrointestinal endoscopy in the United States is very low. Reported cases of infection transmission are typically associated with a breach in accepted reprocessing protocols or the use of defective equipment. When technicians diligently follow industry-accepted reprocessing guidelines, the risk of transmitting infection is virtually eliminated.

This is comforting news for patients. However, reprocessing procedures place a great deal of responsibility on nurses and technicians to clean and disinfect consistently, procedure after procedure, day after day. Reprocessing can become a monotonous task, and, over time, shortcuts can creep in taking the place of important steps in order to accelerate turnaround time.

To reduce the risk of human error and to minimize the number of infection transmissions, facilities must evaluate endoscope reprocessing methods repeatedly, identify inconsistencies and potential problems, and implement improvements as appropriate.

How can facilities ensure endoscopes are adequately reprocessed?

Here are three suggestions:

### **1. Establish a strict procedure for monitoring endoscope reprocessing if your facility does not already have one.**

Designate someone to take the lead in verifying that monitoring is completed per the facility's policy. Endoscope reprocessing policies should include a procedure for monitoring the quality of endoscope reprocessing on a regular basis—whether per procedure, daily, weekly or even by random sampling.

While visual inspection is the required method, many facilities have begun to implement some type of additional reprocessing verification testing. Why? Because visual inspection alone is unable to detect microorganisms or bioburden remaining within endoscope channels.

There are limits to the usefulness of culture surveillance. It is not a practical real-time verification of reprocessing efficacy. Strict aseptic sampling technique is required in order to not introduce false positive results. Microbiological cultures take a minimum of 24-to-48 hours to incubate—and some longer.

The clinical demand for reuse of endoscopes means the results will likely not be available until after the endoscope is used on the next patient, rendering the monitoring method ineffective for use between patients.

Because of this, it is more practical to focus on the quality of your cleaning. Two common ways to monitor cleaning efficacy between procedures include the use of test strips and ATP systems.

Test strips can detect the presence of very low levels of protein, carbohydrate and hemoglobin residues—common residues left in or on an endoscope if it has not been cleaned properly.

Within 90 seconds of being dipped into sterile water previously flushed through the endoscope channel following manual cleaning, the strip will demonstrate through a color change on the test-strip pad if residues are present.

ATP systems identify the amount of organic matter remaining after cleaning by detecting the ATP enzyme present in living cells. A special sponge is passed through the scope's channel(s) and is then immersed into a luciferase/luciferin reagent.

Within 15 seconds, light is emitted in direct proportion to the amount of ATP present, indicating where the endoscope needs to be cleaned further.

Although studies show that ATP correlates well with the amount of residual protein, it is not a direct indicator of the level of microbial contamination. In fact, some studies have demonstrated that high levels of pathogenic organisms could be present in or on an endoscope before you would receive a positive ATP result.

In addition to having a process for monitoring cleanliness, identifying steps to take when results are positive is just as important. What would your facility do with a positive culture result or positive ATP test?

To help your unit respond quickly to unexpected positive results, follow these guidelines: Have a procedure in place to investigate the result, a plan on what to do with the endoscope, and a method available to determine the significance of the result.

## **2. Eliminate or minimize delayed reprocessing.**

As the clinical demand for endoscopy continues to grow, it can be tempting to set aside endoscopes waiting for reprocessing to assist with the demands associated with increased patient volume. While sometimes unavoidable, delayed reprocessing is not recommended. If reprocessing is delayed, patient fluid or debris can begin to dry onto the surface of the endoscope and within the channels and render the standard reprocessing procedure less effective.

Consider delayed reprocessing similar to cleaning a bowl of oatmeal sitting in the kitchen sink. The longer the bowl sits, the harder it is to clean off the caked-on oatmeal. Additional soaking time and additional scrubbing will now be required to remove the dried on debris. The same applies to endoscopes.

Delayed reprocessing requires longer soaking periods in detergent to allow the debris to loosen so it can be removed by brushing the channel(s) and wiping the exterior. For maximum effect, the extended soak in detergent could last up to 10 hours for flexible GI endoscopes and up to one hour for surgical flexible endoscopes, including bronchoscopes.

Extended soaking is not meant to be performed routinely, but only in instances where reprocessing has been delayed. Routine, long-term submersions can lead to a build-up of internal humidity within the endoscope, which could damage the tool.

Additionally, while delayed reprocessing may seem to facilitate more time for staff to spend with patients up front, delaying the reprocessing will add, at a minimum, one to several hours to the reprocessing procedure.

Instituting a policy that states the maximum length of time between reprocessing steps will alleviate delays and, therefore, the requirement for extended soaks.

## **3. Pay attention to how endoscopes are stored.**

Task someone with closely monitoring how endoscopes are stored and with identifying opportunities for improvement. How endoscopes are stored will affect their life expectancy and the endoscopes' cleanliness between uses. Consider the following:

- Are endoscopes hung out in the open versus being hung in a closed cabinet?
- Are they unmarked, or are they tagged with the date and time entered into storage?
- Are endoscopes touching the floor or the bottom of the storage cabinet, or are the distal tips elevated off the bottom of the cabinet?
- Is there HEPA-filtered air flow in the storage cabinet or is the cabinet unvented?
- Are all detachable parts such as valves and caps removed from the endoscope to ensure adequate airflow through the channels to facilitate drying?

Review the endoscope manufacturer's instructions regarding storage and consult the recommendations of professional societies' (such as SGNA and AORN) to help determine if your storage space and set-up are adequate.

Improving reprocessing procedures requires close examination of a rather habitual process. Establishing effective monitoring practices, paying attention to the maximum amount of time you allow an endoscope to sit unprocessed, and reviewing your endoscope storage procedures will all contribute to ensuring patient safety.

But overall, the reward is worth the scrutiny. Achieving low infection transmission rates year-after-year is a noteworthy accomplishment—an accomplishment of which healthcare professionals can be proud.

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This article can be found online at: <http://www.endonurse.com/articles/2014/08/endoscope-reprocessing-avoiding-complacency.aspx>.