

The Q-Net™ Monthly

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What's News?

As mentioned last month, this newsletter can now be downloaded from the Internet in PDF format. Q-Net's current web site address is: www.geocities.com/Athens/Troy/2249. Also, if you receive this newsletter via the US Postal Service, please ensure that your name, address and zip code are accurate and up-to-date.

Is there a topic you would like to see researched and published in this newsletter? Send your questions and comments to the address provided on this newsletter's back page. Q-Net's e-mail is: q-net@email.msn.com

Editor-in-Chief

Lawrence F Muscarella, PhD
Chief, Infection Control
Custom Ultrasonics, Inc.
Ivyland, PA 18974

What is 'Q-Net'?

Q-Net is a technology-assessment network of questions and answers. Its newsletter is *The Q-Net™ Monthly*.

Q-Net's main goal is to encourage the infection control and endoscopy communities to not only ask good questions but to also demand succinct and well referenced responses.

Q-Net addresses the needs of both the health care provider whose goal is to provide the best care possible, and the patient who deserves affordable quality health care.

Disinfecting in the morning?

Question: "Does reprocessing the endoscope before the first patient of the day reduce the risk of patient infection, or is it merely superfluous and without clinical benefit?"

Few practices in endoscope reprocessing are as deliberated as disinfecting endoscopes in the morning *before* the first patient of the day.

Background: In two recent issues of the *AORN Journal*, the topic of disinfecting endoscopes *before* the first patient of the day was discussed.^{1,2} While some health care staff may find this practice "unnecessary," others stress its importance and "insist" that all endoscopes be disinfected in the morning before use.¹

Two factors in particular may provide insight and support for health care staff who favor this practice. First, several reports of patient infections and fatalities, due to the colonization of waterborne microorganisms in the internal channels of improperly dried endoscopes, have been published.³⁻⁶ Disinfecting the endoscope in the morning would presumably minimize the risk of contaminating the first patient of the day with these opportunistic microorganisms. (*Note: This discussion addresses the reprocessing of endoscopes using a liquid sterilant, and is not necessarily germane to other reprocessing methods, such as ethylene oxide gas.*)

Second, this practice quells understandable concerns that the endoscope

used on the first patient of the day could be of a different "quality" than endoscopes used on subsequent patients throughout the day. Disinfecting the endoscope before the first patient would arguably provide greater assurance that each patient is receiving the same standard of care. (*Refer to the October-November 1998 issue of this newsletter.*)

Moreover, confusion over the definitions of tap water, filtered water labeled as "bacteria-free" or "sterile," and bottled sterile water - as well as the extent to which each of these types of rinse water is prone to microbial contamination - has further clouded this debate.

Because flexible endoscopes are classified as *semi-critical* instruments, high-level disinfection is recommended to prevent patient infection. According to the *Association of periOperative Registered Nurses (AORN)*, this recommendation refers not only to disinfecting endoscopes between patient procedures but also before the first patient of the day: "... the safest practice is to terminally disinfect at the end of each day's use, and again before the first and each subsequent use throughout the next day." ¹ Complying with this recommendation can be challenging.

Literature review: AORN is well known for its expertise, advice, and dedication to improving patient care. Therefore, to better understand the rationale for AORN's position and place it in perspective, the medical literature was reviewed.

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This review revealed that AORN's advice to disinfect endoscopes before the first patient is not unprecedented: This practice is also espoused by several European organizations.

The *British Society of Gastroenterology* recommends that even if the endoscope has been cleaned and disinfected at the end of the previous day, it should again be disinfected before the first patient of the day^{7,8} (as well as, of course, between patient procedures). (This society, however, does not deem cleaning before the first patient necessary - only disinfection.) Similarly, the *World Congress of Gastroenterology* and the *British Thoracic Society* recommend that gastrointestinal endoscopes and bronchoscopes, respectively, be disinfected before use on the first patient of the day.^{9,10}

To be clear, not every endoscopy and infection control organization necessarily is in favor of disinfecting endoscopes before the first patient. Several consider this practice unnecessary and without clinical benefit:

✓ *Published data demonstrating that this practice reduces the risk of patient infection are lacking.*

These organizations include the *Society of Gastroenterology Nurses and Associates*,¹¹ the *American Society for Gastrointestinal Endoscopy*,¹² and the *Association for Professionals in Infection Control and Epidemiology*.¹³

Recommendations: Indeed, the cost and time associated with disinfecting each endoscope before its first use of the day can be significant. For a small endoscopy unit equipped with only a few endoscopes, disinfecting each before the first patient, though inconvenient, may be manageable. But for those centers that might use more than a dozen different endoscopes each day, performing this practice may be impractical.

So what's a facility to do? Provided that at the end of each day the endoscope is reprocessed in strict accordance with published guidelines,¹¹⁻¹³ then disinfecting the endoscope, including the side-viewing ERCP endoscope, before the first patient of the day is reported to be unnecessary.¹¹⁻¹³ The essential reprocessing steps include: (1) cleaning, disinfecting and rinsing the endoscope with bacteria-free water (or its equivalent), (2) drying the endoscope using 70% alcohol followed by forced-air, and (3) proper handling and storage of the endoscope at the end of the day. Establishing a logbook or other form of documentation that can be easily referenced in the morning demonstrating that at the end of the previous day each of these reprocessing steps was performed by trained staff may be advantageous. Documenting each endoscope's model and serial number in this logbook may be appropriate.

Disinfecting (and possibly cleaning) the endoscope before the first patient may be warranted, however, if:

- ⇒ there is confusion or doubt that at the end of the previous day the endoscope was properly reprocessed and dried, according to published guidelines;¹¹⁻¹³
- ⇒ significant numbers of opportunistic microorganisms have been identified in the facility's rinse water (*refer to this newsletter's February-March 2000 issue*); and
- ⇒ the endoscope is removed from storage and found to be wet or otherwise stored improperly.²

Because it is often performed manually, standardizing the drying process can be difficult, unless it is a prescribed step incorporated into the cycle of an automated device. Too often the importance of drying the endoscope, as well as properly handling and storing it, is overlooked (even though a moist endoscope channel provides the ideal environment for bacterial colonization). Adhering to published guidelines that emphasize the importance of proper drying and storage (ie, hanging the endoscope vertically in a clean and well ventilated environment, with its control valves and biopsy inlet cap removed to facilitate air movement) is essential.¹¹⁻¹³

Finally, every health care practice that lacks demonstrated clinical benefit warrants discussion and debate. Studies designed to determine whether disinfecting endoscopes before the first patient of the day reduces the risk of patient infection are encouraged.

References

1. Clinical Issues. *AORN J* 2000 Feb;71(2).
2. Clinical Issues. *AORN J* 2000 May;71(5).
3. Spach DH, et al. *Ann Intern Med* 1993;118(2):117-28.
4. Struelens MJ, et al. *Am J Med* 1993 Nov;95(5):489-98.
5. Allen JI, et al. *Gastroenterology* 1987 Mar;92(3):759-63.
6. Alvarado CJ, et al. *Am J Med* 1991 Sep;91(suppl 3B):272S-280S.
7. British Society of Gastroenterology. *Gut* 1998;42:585-93.
8. Weller IVD, et al. *Gut* 1988;29:1134-51.
9. Axon ATR. *J Gastroenterol Hepatol* 1991;6:23-4.
10. Woodcock A, et al. *Lancet* 1989 Jul 29;2(8657):270-1.
11. SGNA. Standards for infection control and reprocessing of flexible gastrointestinal endoscope. Monograph Series, 1997.
12. ASGE. *Gastrointest Endosc* 1996 May;43(5):540-5.
13. APIC. *AJIC Am J Infect Control* 2000;28(2):138-155.

Thank you for your interest in this newsletter. *I have addressed each issue to the best of my ability. Respectfully, the Publisher: Lawrence F. Muscarella, PhD.* Please direct all correspondence to:

Lawrence F Muscarella, PhD
Director, Research and Development
Chief, Infection Control



Custom Ultrasonics, Inc.
144 Railroad Drive Ivyland, PA 18974
Tele: 215.364.8577; Fax: 561.258.8051

E-mail: q-net@email.msn.com



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