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- ✓ is not understaffed. An adequate number of healthcare staff members is required to provide quality care;
- ✓ is not overcrowded with neonatal patients, which, along with understaffing, has been linked to an increased risk of disease transmission;^{1-4,13,19,41,43} and
- ✓ has in inventory a sufficient number of reusable medical instruments—including rigid laryngoscope blades and handles—to permit ample time for each to be thoroughly reprocessed between uses. An inadequate inventory of available instruments has been linked to outbreaks of *Serratia* and other types of microorganisms.^{8,9,13,14} *The purchase of additional reusable medical instruments may be necessary.* (Refer to the article about *flash sterilization* on p. 19 of this newsletter).

5. Reprocessing Endoscopes, Incubators:

A. Properly clean and disinfect rigid laryngoscopes,

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~ Flash sterilization ~ A Q-Net position statement

Also known as “flashing,” flash sterilization is a rapid, thermally-based sterilization process originally used only for *emergency situations* as instructed by *The Joint Commission on Accreditation of Healthcare Organizations* (JCAHO) and others⁴⁶⁻⁵⁴—for example, to quickly *re-sterilize* an instrument that accidentally dropped on the operating room floor prior to use.⁴⁶⁻⁴⁹ Primarily because of the significantly shorter time of its cycle, however, flash sterilization has evolved for many applications and healthcare facilities from a rare, controlled practice into a replacement for traditional, or conventional, steam sterilization. Flash sterilization is now routinely used, or arguably misused, to sterilize instruments, not only for emergency situations, but also for immediate use.^{49,50} The popularity of flashing has grown in many medical fields, including orthopedic surgery and ophthalmology.^{46,47,51-54}

The time savings and convenience associated with flashing can be significant. Whereas a traditional steam sterilization cycle may require as long as 30 minutes at 121° C to process pre-washed, wrapped instruments followed by time for instrument drying and cooling, a flash sterilization cycle may require only 3 minutes at 134° C, with no drying time. And, with shorter cycle times typically comes lower costs. Deciding whether to flash instruments may be reduced to the following choice: contraindicate its routine use and purchase additional expensive instrument sets to meet patient demand and accommodate the longer cycle times associated with traditional steam sterilization processes; or, expand the applica-

tions of flash sterilization and limit purchase of additional instrument sets, reducing costs and patient turnaround times.

Like with several other aspects of medicine, however, potential risks may accompany such types of shortcuts, and flash sterilization is no exception. Although it is bactericidal, flash sterilization requires close monitoring and is associated with an inherently narrower margin of safety compared to traditional steam sterilization. Although its methodology has some limitations, one study found a statistically significant higher incidence of nosocomial infection associated with flash sterilization.⁴⁶

Flash sterilization is also associated with several additional potential shortcomings that may call into doubt the quality of care it provides. First, unlike cleaned instruments processed by a traditional steam sterilizer, flashed instruments are unwrapped, typically have not been first washed or inspected, and often are wet when transported to and handled in the operating room, posing an increased risk of re-contamination and nosocomial infection.⁵⁵ Second, whereas traditional steam sterilization is typically performed by experienced reprocessing staff members in a dedicated centralized department, flash sterilization is instead performed near (or in) the operating room by staff whose primary focus is patient care—not instrument sterilization.⁴⁶ Third, wet, unwrapped flashed instruments may be used more frequently during one time of the day (e.g., morning) than dry, wrapped instruments processed by a traditional steam sterilizer, raising additional concerns about whether flashing introduces two different standards of patient care.

Fourth, the documentation and records associated with flashed instruments—unlike instruments processed using traditional steam sterilization cycles—are typically incomplete, if not entirely lacking, preventing adequate tracking of flashed instruments. Flashing may also encourage the preoperative administration of prophylactic antibiotics.⁴⁶

Finally, some manufacturers of surgical instruments (and implants) contraindicate flash sterilization.⁵⁶ The rapid heating and cooling of its rapid, high-temperature cycle can cause chipping, flaking, and other types of damage to some types of surgical instruments.⁵⁷ Whether flash sterilization might be damaging ophthalmic instruments causing pieces of the instrument’s surface to be introduced into the eye during cataract surgery, increasing the risk for toxic anterior segment syndrome (TASS), is unclear. (Refer to this newsletter’s *January-February 2007 issue for a discussion of TASS.*)

Position statement: Q-Net recommends that flash sterilization be performed *only* in emergency situations. Admittedly, compliance with this recommendation may require a healthcare facility to purchase additional instrument sets to ensure an adequate inventory of instruments and accommodate the longer reprocessing times associated with traditional steam sterilization cycles. But, doing so will establish one safe standard of patient care, minimize potential legal exposure, and demonstrate that reducing costs at the potential expense of patient safety is not acceptable. *The End* ● LFM