



# Protecting instruments from heat, humidity and organisms

by Ray Taurasi, Principal, Healthcare CS Solutions.

**Q** Over the past year our surgery center underwent a major renovation, including expanding the sterile processing. As a result of the renovation, some of the HVAC ducts were extended or redirected to better accommodate the redesigned space. We are now encountering some problematic air flow issues affecting staff comfort. I am also concerned about humidity and temperature in the decontamination and sterilization areas. AAMI standards always provided specific information on temperature and humidity levels that should be maintained in these areas. I recently obtained a copy of the ST79 AAMI standards published in 2017 and was puzzled to learn there are no longer any specific temperature or humidity ranges provided. I need some guidance or documentation that I can provide to our HVAC engineers and administration to get the temperature, humidity and staff comfort issues addressed. What temperature and humidity ranges do you suggest for the sterile processing area?

**A** You are correct, the current AAMI ST79 document does not contain a specific temperature or humidity range. The document now requires healthcare facilities to refer to the ANSI/ASHRAE/ASHE 170 recommendations that were in place at the time the HVAC system was installed or renovated. Facilities then must implement processes for monitoring and maintenance of the HVAC system and address any variances needed.

You also need to consult with various manufacturers of your equipment, products, packaging materials, chemicals and the like to ascertain if their IFUs (instructions for use) specify any temperature or humidity conditions for use and or storage.

I would recommend that you establish a taskforce consisting of a facility engineer, an infection preventionist, a risk manager and a sterile processing manager to conduct a risk assessment of your HVAC concerns.

If you discover any variance you will need to identify any associated risk factors and initiate necessary process and/or environmental resolutions. ANSI/ASHRAE/ASHE

170 identifies the sterile processing department as a critical area and should serve as a support reference when you are requesting the financial resources to obtain necessary materials, equipment and environmental modifications.

I believe that the decontamination area will always present challenges to employee comfort even with the newest HVAC systems. The processing equipment can throw off a lot of heat, and decontamination attire and PPE can also be a cause for discomfort.

Individuals have different levels of tolerance for heat and humidity. The AAMI Annex Q document recognizes this and

provides alternatives for keeping cool in the decontamination area, such as appropriate rest periods, wise use of PPE (based on task risk) and wearing cooling devices, such as vests, caps and scarfs. Other options might include workstation rotations and use of personal warming apparel, such as vests, jackets, and warming packs.

**Q** I am an instrument technician in the OR and responsible for cleaning and sterilizing all the sets. I attended a staff in-service with all the nurses, and the representative talked about Colistin Resistant MCR. I had no idea what that is, and being the only non-nurse there, I felt embarrassed to ask. It also sounded really hard to clean. I read this article all the time and thought you might answer my question.

**A** Thank you for asking this question. You have a very important job and your work is so important to a patient's safety. I'm sorry that you felt uncomfortable to ask your question during the in-service. I wouldn't be too surprised if you were not the only one in that room who didn't know what the rep was talking about.

Colistin is an antibiotic used as a last-resort for multidrug-resistant gram-negative infections such as pneumonia. *mcr-1* is a new gene that can make bacteria resistant to colistin. As a result of Colistin Resistance (*mcr-1*) there has been a significant rise in transmission of gram-negative infections, especially in the endoscopy procedures.

This is an example of how bacteria can mutate and become resistant to powerful antibiotics. That is why it is critical to use antibiotics wisely, the prolific and inappropriate use of antibiotics can allow bacteria to change composition and become resistant to antibodies. In recent years, we have seen the re-emergence of organisms and diseases which were once extinct.

Louis Pasteur, one of our great pioneers in infection control once said, "*Messieurs, c'est les microbes qui auront le dernier mot.*" (Gentlemen, it is the microbes who will have the last word.)"

The best practice is therefore the prevention of infections. Sterile processing holds the key to infection control, which is proper care handling of surgical instruments and other medical devices. There can be no short cut to reprocessing, every single step must be precisely performed, including cleaning, decontamination, disinfection and sterilization. **HPN**

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