



# Keeping Cool In The Decontamination Area

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by Ralph Basile, Vice President at Healthmark

## Infection Control

Hospitals have long been concerned with temperature and humidity levels in the decontamination area. That concern extends to the way those levels impact staff comfort.

Recently published updates to relevant standards have endeavored to address these issues more directly.

## Worker Comfort

Worker comfort in the decontamination area of hospitals and other healthcare facilities has long been an issue. The challenge is threefold.

First, equipment that generate heat are located in these departments. In particular, temperature is impacted by large instrument washers that utilize heated water as part of their cleaning and disinfection process. Other equipment that can also generate heat include sonics, manual cleaning baths, and even sterilizers, depending upon the configuration of the department.

The second contributing factor is that the work requires significant physical exertion. This includes lifting heavy trays and equipment, manually cleaning devices that often are a challenge to clean, and constant movement of supplies, equipment, and people as the decontamination area often gets crowded with each during peak production times.

The third contributing factor is the protective clothing required to work in the decontamination



area. Needless to say, the items that arrive in the decontamination area carry a very high level of bioburden. These items include reusable sharps that, if not handled properly, can lead to injury and even life threatening infections.

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This level of physical danger requires that decontamination staff wear completely impervious clothing, including waterproof gowns, face shields, head coverings, long, thick gloves, and shoe covers.

Staff must also wear clothing that limits the evaporation of body heat. This group of healthcare professionals — the decontaminators — must “dress to protect” for their daily duties of reducing infections by properly cleaning medical devices.

The combination of all these factors means that decontamination staff are typically hot and uncomfortable when working.

## Organizations Align

In 2013, ANSI/ASHRAE/ASHE published an update to Standard 170-2013: Ventilation of Health Care Facilities. This standard established minimum HVAC design parameters in health care facilities.

Subsequently — and for the first time — the Facility Guidelines Institute (FGI) published the FGI 2014 Guidelines for Design and Construction of Hospitals and Outpatient Facilities, which includes minimum engineering design criteria for heating, ventilation, and air-conditioning (HVAC) systems by incorporating ANSI/ASHRAE/ASHE Standard 170-2013.

AORN and AAMI standards have often been cited by health care facility reviewers (such as The Joint Commission) when conducting audits. Until recently, these practice documents did not align with the ASHRAE recommendations, and with changes in those recommendations, the deviations became more acute.

For that reason, in 2015, AAMI, AORN, APIC along with ASHRAE and ASHE and FGI issued a Joint Interim Statement. The key upshot of that document was to make two critical points:

1. Specifications for design (as provided by ASHRAE/ASHE and FGI) set standards for the capability of the installed equipment. So, for instance, if the acceptable temperature range for a decontamination area is 65F – 75 F, then the installed equipment needs to be able to achieve that.
2. Specifications provided by AORN and AAMI are recommendations for clinical practice and are not the same as design specifications.

Concern then is that reviewers were evaluating and citing the design specifications of HVAC systems to AORN/AAMI practice recommendations and not to the design specifications.

With the publication in 2017 of the updated version of AAMI/ANSI ST79: Comprehensive Guide to Steam Sterilization and Sterility Assurance in Health Care Facilities, the AAMI Sterilization Standards Committee took a different tack. Rather than make specific recommendations for temperature and humidity conditions in decontamination areas, ST79 directs the reader to the ASHRAE/ASHE design specifications document.

Recognizing the unique challenges of achieving and maintaining a comfortable core body temperature in decontamination areas, ST79 now includes an informative annex

on Managing Employee Core Body Temperature.

Annex Q in the recently published, updated version of AAMI/ANSI ST79 provides some useful guidance to healthcare facilities to help decontamination staff to manage their core body temperature and mitigate the inevitable discomfort in those areas.

Recommendations include:

- Frequent breaks
- Staying hydrated
- Gowns manufactured of innovative fabrics that both provide protection from liquid contaminations, but allow evaporation of body heat.
- Use of body cooling devices, including evaporative neck and headwear and active cooling devices utilizing phase change packs

## Achievable Solutions

Recognition of the challenges related to controlling core body temperature has naturally lead to product innovations — and are sure to lead to more.

Already, easy to use and affordable evaporative cooling products, that only require a brief dunk in cool water, can deliver hours of cooling, when worn as directed.

Vests and other garments are also available that provide active cooling, utilizing phase change technology that deliver constant cooling to the body for extended periods, after exposure to refrigerator or freezer temperatures.



*Healthmark's Cool Aids can provide hours of comfort to healthcare staff. (Image credit: Healthmark Industries)*

Another area of rapid development focuses on high tech garment designs utilizing advanced fabrics that simultaneously provide protection from liquids while allowing evaporation of heat from the body.

Workers in the decontamination areas of healthcare facility are certainly among the unsung heroes of society. They are asked to be experts in the proper handling and cleaning of literally thousands of devices, with an incomparable range of designs and constructions. Their jobs require the handling highly contaminated — and often sharp — instruments that pose a constant risk to their personal safety and health. To mitigate those dangers, they wear clothing that looks more like a space suit, limiting dexterity and also personal comfort.

We owe these folks a great deal of gratitude, yet their compensation certainly does not reflect that. It is incumbent upon us in the industry to try and make that situation better. Addressing the personal comfort of these unsung heroes is a start.

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