

HEALTHCARE PURCHASING NEWS

CLINICAL INTELLIGENCE FOR SUPPLY CHAIN LEADERSHIP

SURGICAL/CRITICAL CARE

Maintaining air, steam, water quality simply elemental

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By air, steam or water, microbes and contaminants can spread throughout healthcare facilities, including those areas that play a key role in patient care and safety. This includes the Central Service/Sterile Processing & Distribution (CS/SPD) department, where instruments are reprocessed, and the operating room (OR) and other procedural areas where patient care is delivered.

Solutions/tools for better air, water and steam quality

With greater recognition for the impacts of air, water and steam quality on patient/staff safety, infection prevention and effective instrument sterilization, manufacturers have developed solutions for proactive treatment, monitoring and contamination remediation in healthcare environments.

Aircuity: Aircuity's centralized, multi-parameter demand control ventilation system continuously measures and adjusts ventilation rates using science-based IAQ parameters, so ventilation levels are based on current conditions. This can be used not only in OR suites, but also in medical research buildings, vivariums and other variable population areas, such as a lobby or waiting room. Users can monitor analytics on ventilation rates using the solution's dashboard, helping facilitate compliance with external regulatory reporting.

In the OR, a solution called Clean Standby Mode continually measures dry bulb temperature, dewpoint/humidity and optimizes unoccupied ventilation for energy savings during times when the OR suite is not in use. When any IAQ “event” is detected and when the OR is in use, ventilation rates run at full occupied flow. This solution provides clean air while helping to address hospital sustainability goals and utility budgets.

Airthings: The Airthings for Business solution provides healthcare organizations the ability to continuously monitor a very wide range of air quality levels in as many rooms, buildings or campuses as they desire, including procedural areas and the CS/SPD. Armed with detailed air quality information, facility managers can optimize HVAC settings and ensure optimum air quality conditions. The Airthings Dashboard allows facility managers remote access to live air quality data across all monitored locations at once.

Through Airthings API, a healthcare facility can also integrate with building management systems to automatically trigger HVAC systems to turn on/off based on actual air quality data, ensuring that people are kept in a healthy environment while also reducing energy usage in buildings.

American Ultraviolet (AUV): AUV’s Fixed Mounted UVC packages deliver disinfection energy from multiple points on the ceiling, which limits or eliminates shadowed areas. The system is always available at the “push of a button”, offers fast cycle times and eliminates having to track down and move a mobile UVC robot. The daily auto-disinfection cycle can be scheduled to run when needed, such as one hour before treatment/surgical suites are opened, or on a prescheduled 30-, 45-, or 60-minute cycle. All disinfection cycles and operational data reports can easily be downloaded and shared with staff on a daily, weekly or monthly basis.

Barclay Water Management: As a water treatment company, rinse water and steam treatment is one area of Barclay Water Management’s expertise using pretreatment equipment and chemicals as its tools to provide solutions. Other services/solutions include:

- Chemical treatment programs for cooling towers, boilers, closed loops, specialty systems and wastewater
- Water management plans and consulting
- Water hygiene products and services for minimizing the risk associated with Legionella bacteria, the bacterium responsible for Legionnaires’ disease, in building potable water systems with an emphasis in healthcare
- Environmental cleaning services such as cleaning services for cooling tower, ice machines, hot and cold water storage tanks, decorative fountains and air handlers
- SAFE system storage and feed systems designed to eliminate operator handling of water treatment formulations, eliminating problems associated with handling and dispensing of treatment chemicals and the disposal of empty water treatment containers

Service Tracking and Reporting Program (STAR) Internet-based application through which customers can access water test results and state-of-the-art software packages for data logging and remote communication with water treatment feed and control equipment

Nuvo Surgical: The Nuvo Surgical Vidashield UV24 adjunct air purification system uses ultraviolet germicidal irradiation (UVGI) to deactivate airborne bacteria and other organic pollutants, like mold and certain viruses. The Vidashield UV24 system can be incorporated seamlessly into existing overhead lighting or new construction and operates automatically by individual control decreasing the many issues with free standing floor units. The system pulls contaminated air directionally up to the ceiling as opposed to wall or floor HEPA /UV portable units that pull contaminated air across the room potentially exposing individuals in the pathway.

Improved ventilation using an adjunct UVGI system, like the Vidashield UV24, has demonstrated other benefits for healthcare workers, including improving the overall smell in the area and decreasing respiratory irritants and allergens that come from patient care procedures and enclosed environments.⁷

Pall: Pall Kleenpak capsule filters with intrinsically hydrophilic positive zeta potential Posidyne membrane are rugged, self-contained sanitary filters designed for small-batch sterile filtration of aqueous pharmaceutical solutions. With a net positive charge in most aqueous solutions from pH 3 to 10, Kleenpak Capsules with Posidyne Membrane Assemblies can be effective in removing contaminants, such as cell debris and endotoxin smaller than the filter rating.

RGF: RGF offers a variety of tools for air quality monitoring and management, including:

- Rapid Recovery Unit air purification and odor control system for non-occupied spaces
- Lucidium CUV system for HVAC coil sanitation and germicidal UV-C air purification (eliminates mold and yeast on coils, bacteria and viruses in the air)
- Lucidium Polaris upper room UV system, in accordance with CDC COVID-19 guidance
- Proprietary PHI-Cell in-duct whole building air purifiers for continuous, no-touch air treatment with low level, airborne gaseous hydrogen peroxide
- U.S. Food and Drug Administration (FDA) 510(k) approved medical devices Microcon MAP and ExC7 units for airborne pathogen control and creation of negative or positive isolation rooms (pair with Accustat room pressure monitors)

R-Zero: The R-Zero Arc UV system enables hospital-grade efficacy while emitting 109% more light at a lower cost than competitors. Due to Arc's powerful lighting array and overall design, the device can disinfect the air and surfaces in a 1,000 square foot room in just 7 minutes. Arc also has LTE-M connectivity to R-Zero Connect, our dashboard that allows users to track

disinfection cycles, thereby making the traditionally unseen disinfection process visible and auditable.

STERIS: The STERIS CLEANSUITE ceiling system helps mitigate the risk of airborne particles and prevents gaps within the room air unlike traditional laminar airflow systems. It is a true gapless laminar flow ceiling system, designed to minimize turbulence and gently guide particles away from the surgical site, bathing the patient and staff in ultra-clean air. At 100 particles per cubic foot, it delivers air quality aligned with the ISO Class 5 Cleanroom specification, surpassing the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) 170 standard for patient safety.

The flexible, modular design of the CLEANSUITE Ceiling System integrates structure, air delivery and room lighting. Internal and external truss systems allow for seamless mounting of surgical lights, booms, monitors, and c-arms. Prefabricated structural steel frame installs six times faster than traditional site-built ceilings to help maximize OR uptime. According to recent data provided by a national design and construction firm, CLEANSUITE is up to 40% less expensive than a traditional site-built ceiling.

General healthcare environments:

- American Society for Health Care Engineering (ASHE): <https://www.ashe.org>
- Centers for Disease Control and Prevention (CDC): <https://www.cdc.gov>
- Environmental Protection Agency (EPA): <https://www.epa.gov>
- The Joint Commission: <https://www.jointcommission.org>

CS/SPD department specific:

- Association for the Advancement of Medical Instrumentation (AAMI): <https://www.aami.org>
- International Association of Healthcare Central Service Materiel Management (IAHCSMM) <https://www.iahcsmm.org>

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