Are Your Manually Cleaned Devices "Safe to be Handled"?

Healthmark Industries
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Study

- A study was done to evaluate if the hand washed medical devices are as safe to handle as the machine washed devices.
- In the study, 14 manually cleaned and 49 mechanically cleaned medical devices were obtained from local area hospitals.
- Manually cleaned instruments included devices like video cameras, arthroscopes, hysteroscopes and laparoscopes. Mechanically cleaned instruments included stainless steel devices like retractors, hemostats, needle holders, forceps and clamps.

Design of the experiment

The design of the experiment was to obtain an aerobic plate count of bacteria growing on the medical devices from both the manually and mechanically cleaned device sets.

Observations

From the plate cultures, it was evident that the hand washed items had a higher bacterial count than the machine washed ones.

Novel concept

In Central Sterile departments, would sanitizing hand washed instruments using 'Ultraviolet light', at the pass through window, before sending these to the clean side, render them safer to handle?

UV Radiation: A disinfection method

UV-C radiation penetrates the microbial cells and breaks the molecular bonds inside their DNA.

With UV light technology it is possible to destroy a large number of harmful microorganisms inexpensively and with high efficiency, without the addition of chemicals and without harmful side effects.

Passing the hand washed medical devices through a UV disinfection system, at the pass through window, would thus provide an added level of safety.

Mechanism

Place a UV disinfector at the pass through window
Door in the front and at the back
Put manually cleaned instruments in the chamber, close the doors
Stick the UV dosage indicator in the chamber
UV light illuminated, cycle time of 1 min.
Devices going to the clean side are further sanitized
No touch technology- Does NOT replace manual cleaning, supplements it.

UV Dosage Indicator

- UV sensitive chemical indicators are used to help ensure that the inside chamber of the UV disinfector is indeed exposed to the 254 nm wavelength.
- These indicators are specifically designed to monitor the UV radiation dosage in UV-C disinfection systems.
- When exposed to a UV radiation of 254nm for an extended period of time, the indicators demonstrate a distinct color shift that provides a simple visual confirmation of the UV dosage.

Summary

- The study demonstrated that the manually cleaned devices did have a higher bacterial colony-forming units (CFU) count than the machine-washed items.
- The UV radiation did result in significant reduction of the CFU counts, thereby improving the safety of handling these instruments.

UV Disinfector in Pass-through Windows

To help 'level' the safety differential
Pass through window UV Disinfector at Pass through window

Test Results: Bacterial plate count on both the manually and mechanically cleaned medical device sets, pre and post UV exposure.