HEALTHCARE PURCHASING NEWS
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March Cover Story

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CS Solutions

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Names and hospital identification will be withheld upon request.

Water quality; staining of sterile packaging; soil detection devices

by Ray Taurasi

Q I work in a small rural hospital in New Hampshire. We only have one OR and one sterilizer and no automated washers. All of our instruments and other reprocessable items are manually cleaned. I have noticed at times, especially during the winter months, our tap water has a cloudy color. Since we use tap water to clean our instruments and to mix with our chemical disinfectants, I was wondering if the water is safe to use or if it can damage our instruments.

A In the winter time in cold regions such as New Hampshire, the water coming into the hospital is extremely colder than the inside temperature and your water may have a milky or cloudy appearance. The reason for this is that cold water holds more oxygen than warmer water does. As a result, when the cold water from the outside comes into the warmer inside temperatures the water begins to warm and the oxygen needs to escape and does so by bubbling out in tiny air bubbles which makes your water look cloudy. To determine if this is the cause of your cloudy water you can fill a clear container with the cold tap water and allow it to stand for a few minutes. If you observe the water begin to clear from the bottom up to the top then the phenomenon I described is occurring. As the bubbles rise from the bottom to the top they escape into the open atmosphere. If your water remains cloudy or discolored than you will need to have an analysis conducted to determine the cause. The quality of water is critical to the cleaning and sterilization process. Sediments or other impurities in the water can stain and damage surgical instruments, processing equipment and other medical devices. Impure water can adversely affect the efficacy of chemicals and cleaning agents and impede the sterilization process. There are simple and inexpensive test strips available that can test your water quality for hardness, softness, PH, and alkalinity; these factors are important to monitor as they can have a significant impact on the outcome and quality of your cleaning process.

Q We have been encountering problems with some brown staining on our

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paper tray liners, some peel pouches, autoclave rack liners, etc. I don't believe this is anything more than water marks and I feel it doesn't affect the sterility of the packaged items. The OR feels differently and rejects any set or item with these spots. I am not sure what I can do about this. Do you have any suggestions on how I might resolve this issue?

A Staining of sterile packaging is not acceptable and your end users have a right to be concerned as they have no way of knowing what the stains are or when they may have occurred. So of course they are concerned about the sterile integrity of the packages and their contents. There are many possible causes for staining of packaging materials. You will need to assess your specific situation and address the following:

- Are items being cleaned in accordance with manufacturers' recommendations?
- Are you monitoring the performance of your washers with a challenge device?
- Are you using appropriate chemicals at the proper concentration?
- Are items being rinsed thoroughly to remove all residual chemical agents?
- Are you verifying the cleanliness of complex devices, which could be harboring soil?
- Are instruments, accessories and utensils completely dry prior to packaging?
- Are you monitoring your water quality?
- Is the staining occurring in any pattern, e.g. certain sets, materials, devices, times or days? Contact manufacturers of the products which are staining, provide samples, lot numbers and the like — they can assess their products' performance to determine or confirm it is not a product issue.
- Are your sterilizers and other processing equipment on a PM program — has Biomed assessed them in relation to your staining problem?

If your staining problems continue following your assessment of the aforementioned bullet points and addressing your findings, you will need to take further actions. In severe situations finding the cause of and addressing steam quality issues may be beyond the scope of the hospital's biomed department and may require the expertise of an outside engineering consultant who specializes in sterilizer steam quality issues. They can conduct a steam quality assessment, which measures the dryness, superheat, and non-condensable gases in your steam. Using advanced and traditional means of analytical chemistry, they can determine the content of the stains on your packaging materials and devices which usually identifies the source of the problem. For brown stains, the problem usually is iron in the steam or too much boiler descaler additive, especially when added to the steam flow after the boiler. Knowing the source and nature of the problems leads to the development of an action plan of corrective measures which can be initiated to resolve the staining issues.

It is important that you do not become complacent regarding the staining of sterile packages as the cause may be of a serious problem which could affect the quality of your sterilization process and condition of your medical devices.

Q We have high powered optical inspection devices at every work station and all of our instruments are visually inspected prior to being packaged to be certain that they are free from any soil or defect. Our infection control officer wants us to do random testing using soil detection devices to verify the devices are clean. I think this is an unnecessary step and I feel confident with our current QA practice. What are your thoughts?

A Visual inspection is a critical and essential step in the reprocessing cycle and I want to applaud you for your efforts in that regard. As you know the goal of effective cleaning is the removal of both visible and invisible soil. There are many invisible soils, such as fats, oils and bio films, that can't be detected even with the use of high powered optical devices. Due to the composition and complexity, many medical devices have difficult parts that cannot easily be visibly inspected such as cannulated instruments and those with movable parts.

Seal Shield
Solaris Paper/Nvi
Spartan Chemical Co.
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STERIS
STERIS
Teleflex Medical Group
Tuttnauer USA Co. Ltd.
VHA
Viscot Medical
Xpedx

These instruments are the ones that pose the greatest challenge to the cleaning process and it makes sound sense to verify their cleanliness utilizing soil detection devices that can detect specific soil residuals such as protein, blood and carbohydrates. HPN

Ray Taurasi is Eastern Regional Director of Clinical Sales and Services for Healthmark Industries. His healthcare career spans over three decades as an Administrator, Educator, Technologist and Consultant. He is a member of AORN, AHA, SGNA, AAMI and a past president of IAHCSMM and has served on and contributed to many national committees with a myriad of professional organizations, manufacturers, corporations and prestigious healthcare networks. Taurasi has been a faculty member of numerous colleges teaching in the divisions of business administration and health sciences. In addition to this column he has authored several articles and has been a featured speaker on the international scene.