

Patient Safety: **It's everyone's job**

Who foots the bill for medical mistakes?

A Heart-to-Heart Talk

Back to Basics:

**Wrong Site, Wrong Procedure,
Wrong Person Surgery**

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DE CON TAM INATION



Keep it Consistent

By Tim Brooks

The decontamination process is without a doubt becoming the most focused service area in hospitals. With today's advanced automated washers and numerous choices in cleaning aids, along with highly developed sonic washers, one would believe that we have everything under control.

What's the problem?

However, as we move forward, we find an abundance of information regarding biofilms and prions, including the increased risk posed by the breakdown of the passivation layer on surgical instruments, which can lead to the formation of corrosion and rust, giving way to hidden microbial growth. It's been well documented that surface corrosion can harbor microorganisms that can be reanimated after sterilization and lead to healthcare-acquired infections.

In today's hospitals, there are considerable inconsistencies in the decontamination of surgical instruments prior to sterilization. No one process is followed from state to state or hospital to hospital. Annual conferences are a great forum to discuss standardization. Recommendations have been made by the Association for the Advancement of Medical Instrumentation (AAMI), the American National Standards Institute (ANSI), the Association of periOperative Registered Nurses (AORN) and the Occupational Safety and Health Administration (OSHA), but these recommendations can be interpreted in many ways.

When reading OSHA recommendations, for example, some might come to the conclusion that you should limit or not even touch contaminated instruments, whether you are wearing appropriate personal protective equipment (PPE) or not. This one misinterpretation might lead a central sterile (CS) manager to believe that, regardless of how the contaminated instruments are configured after use, they should go into the automated washer decontaminator "as is." In some cases, complete contaminated instrument sets are taken from the operating room to the decontamination area, placed in a sonic for a period of time and then taken to the washer decontaminator to complete the process.

Moreover, there are some departments that add phosphoric acid rust and stain removers by the gallon to their sonic washers with little understanding as to the damage this can cause to the passivation layer on stainless-steel surgical instruments. Sonic washers are not designed to handle these types of processes, and neither are surgical instruments.

Too often the focus in instrument decontamination is on getting them washed as fast as possible. Quality tends to take a back seat when the pressure is on and the results can be understandably disastrous. We need to stay focused on patient care and avoid this "factory production" mentality.

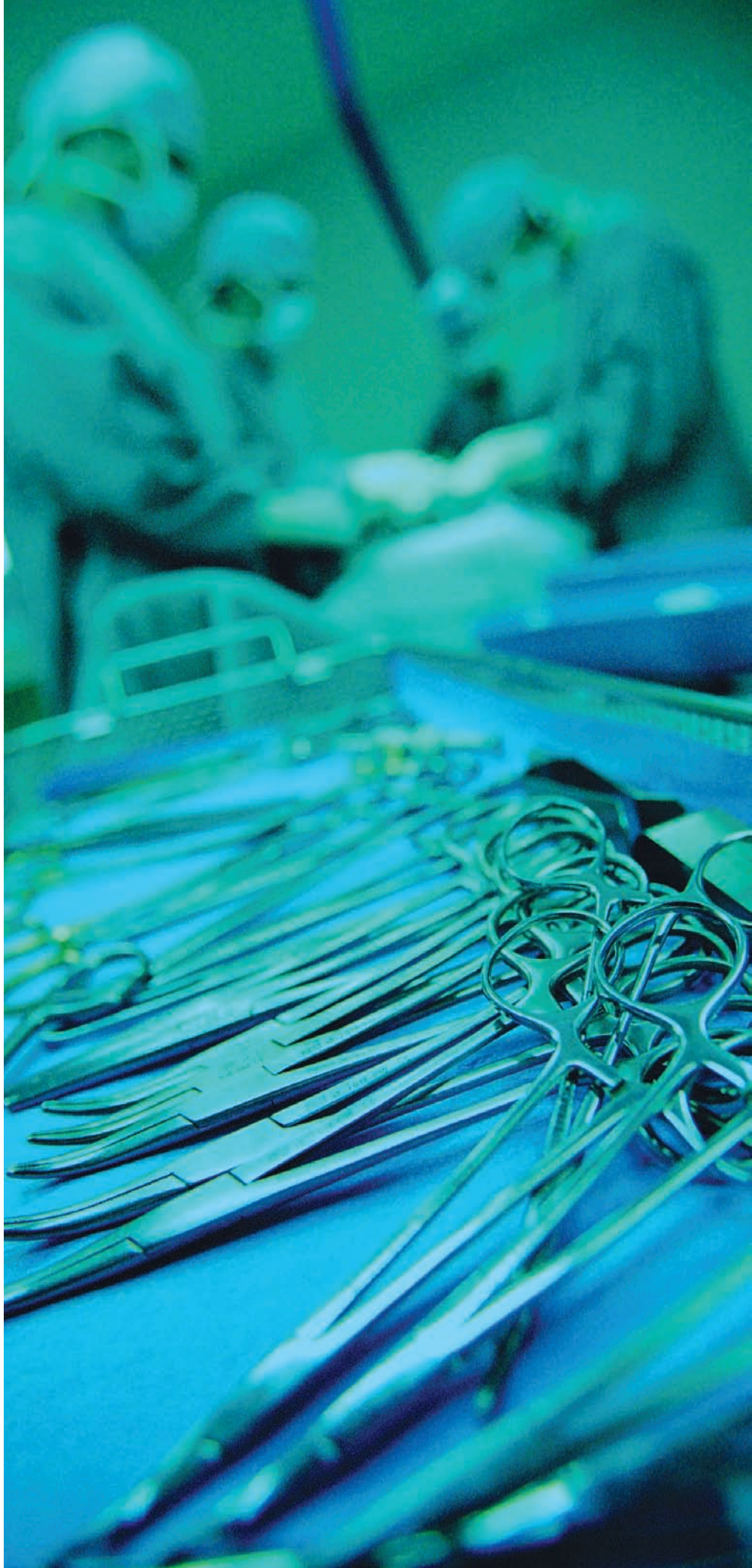
Strategies for improvement

Oftentimes the problem never leaves sterilization, thanks to diligence on the part of CS staff members assembling instrument trays. Every now and then the discussion between decontamination and prep-and-pack gets a little heated because there is something left on an instrument even though it went through a washer decontaminator.

Generally, the problem is addressed and we move on. It's when it makes it to the sterile field that things get very costly. "Is that stain rust or dried blood?" has been asked by OR staff and even surgeons. This guessing game needs to be eliminated to assure OR staff and surgeons that every possible step has been taken to ensure that instruments are safe to use on patients.

Surgeons aren't always aware of the stress caused by overbooking cases and the short-cuts that take place to keep up. Too often the OR scheduling office skips over equipment and instrument conflicts to keep surgeons happy, not knowing the effect this has on the sterilization process. Overbooking and poor utilization of block scheduling, along with a mismanaged instrument inventory and the belief that low-level disinfection prior to flash sterilization is safe for the patient, leads to disaster.

We are dealing with known microorganisms that require consistent processes that should not be altered. Central sterile, supply processing and distribution (CSSPD) professionals must ensure that all instruments are decontaminated and sterilized, without question, 100 percent of the time. The days of passing off manually washed instruments through a window or door to the "clean side" must come to an end. Low-level hand washing of complete instrument sets between surgical cases in preparation for flash sterilization simply should not be allowed.



Device manufacturers are providing instructions for processing more now than ever before. This is partially due to FDA requirements that manufacturers complete sterilization validation of reusable devices and instrument containers. CSSPDs that do not follow a manufacturer's processing instructions place their hospital in a difficult situation that could also become costly.

The consignment question

Independent contracted sterilization providers have reported the validation of more than 100 different sterilization exposure cycles with various containers and orthopedic consignment instrument sets. One area that has not been thoroughly validated is the washing and disinfecting of the many different trays and instrument configurations that consignment vendors provide. There are no instructions or studies showing that microbial levels have been reduced so that they can be effectively sterilized.

There is also the issue of consignment instruments traveling from hospital to hospital. Should they only receive low-level disinfection prior to leaving the hospital, or should they be sterilized? Too often these trays receive a low-level manual wash and are then packed up to be shipped or placed in the trunk of a sales rep's car for delivery to the next hospital.

Developing a process

The need to establish an enforceable process that incorporates the fundamentals of sorting, disassembly, soaking, manual washing to remove visible bio burden and high-level washer decontamination prior to sterilization has never been more essential. Sterilizers must be validated to prove a level of sterility, but there are few if any studies that follow instruments through soaking, manual washing and washer decontamination and address microbial reductions.

There are a number of points to consider with a manual process, starting with chemical-

to-water ratios. Does decontamination staff know how much water their sinks hold at a measured level? Are they using chemicals that will not harm the passivation layers of stainless steel surgical instruments? Do they have a clear understanding of bio burden and microbial reduction as it relates to the level of disinfection?

Examining risk factors

A review of risk factors might be a good start in clearing up inconsistencies. Let's start with the Spaulding Classification System, developed in 1968 by Earle Spaulding of Temple University in Philadelphia. The Spaulding classification system categorizes medical devices by the risk of infection involved in their use. The three levels to the Spaulding classifications are critical, semi-critical and non-critical.¹ The CDC guidelines on disinfection are based on the Spaulding Classification System.²

The Spaulding Classification System places surgical instruments in the "critical" category. Unfortunately, the level of disinfection is not addressed. By defining either steps or levels for surgical instrument disinfection, we could create recommended process standards and procedures for CSSPD to adhere to, regardless of facility.

The AAMI ST35 guidelines address levels of disinfection according to microorganism type.³ There would also be value in creating a third risk factor assessment that would define a required process for the disinfection of surgical instruments prior to sterilization.

Washer decontamination

Knowledgeable CSSPD staff recognize that low-level disinfection starts with soaking and moves forward to a manual process prior to automated washer disinfection. They also know that sonic washers are limited to low-level cleaning (not disinfection or sterilization) and require frequent water changes, along with de-gassing. Additionally, not all metals can be mixed in a sonic washer and



thorough rinsing is needed to remove dislodged bioburden.

Washer decontaminators are limited by design, but their benefits can be maximized by properly positioning instruments in the washer. The manual process of opening up instruments and placing them in an orderly upright position to maximize water impingement needs to be taught and followed. Think about your dishwasher at home. Are your plates, cups, forks, spoons and knives lying down or standing up? They're upright and organized. Washer decontaminators should be loaded with the same attention and in the same manner.

There is a need to not only have a well-designed process for surgical instrument disinfection, but also to develop and/or utilize devices that support instrument washing. The introduction of the five-inch-wide stringer improved the task somewhat, but added additional time to the process because all ring-handled instruments had to be strung before they were placed in the washer. The wide stringers did help keep ring-handled instruments open, but they were often still laid on top of each other, thus hindering full water impingement in a washer decontaminator. It also took additional time to de-string, allowing for routine testing of scissors, needle holders, etc. and then re-stringing to complete the assembly verification of the set.

Recently, an instrument cradle that should replace the five-inch stringer method was introduced. This product should solve several issues regarding ring-handled instruments, which make up the bulk of any surgical instrument inventory.

The cradle utilizes a coil design that separates the instruments, allowing for full

water/chemical impingement in the washer. It speeds up post-washer cooling, water drainage and instrument lubrication and also allows the sterilization staff to see the instruments much better, reducing assembly time.

Rethinking sinks

Sink systems in hospital decontamination departments are in desperate need of design changes. Most, if not all, designs position the sink against a wall and do not allow for adequate counter space. The ergonomics associated with this design do not exactly create a desire to work in the area. Changing the design to an island counter with triple sinks, additional spray arms and counter space on both sides of the sinks allows staff to improve their view of the department while also allowing for better ventilation and lighting.

Spread out

There are serious inconsistencies in CSSPD departments' sizes from hospital to hospital. The need to develop a department square footage standard that allows for growth would greatly improve our ability to support additional services. Currently the American Institute of Architects (AIA) does not maintain a square foot-to-bed ratio that addresses the needs of the hospital service industries.

This inconsistency squeezes the support service departments into corners that create production problems and stifle future growth. A number of off-site sterilization services have recently hit the industry. They started understanding the problem of limited space and are profiting from it.

In review

The inconsistencies in the industry today affect how we do our jobs as well as the bottom line for surgical services – revenue. CSSPD professionals, along with

hospital administrators, need to realize that CSSPD is part of the largest revenue-generating division in hospitals today. A poorly designed and poorly operating decontamination department affects the entire surgical process. This will certainly lead to breakdowns that impact patient care and physician satisfaction. By working together, we can establish the proper policies, procedures, guidelines and equipment to make a difference.



About the author

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that in central sterile, decontamination, supply and equipment processing.

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