

# The Right Thing

Whether it's in-house washing, cleaning and sterilizing, or third-party reprocessing, there are options available for hospitals to be environmentally-conscious in their instrument care processes.

by Amanda Hankel

According to Cheryl Schwanke, Senior Marketing Manager at SterilMed, Inc., a third-party reprocessor of single-use surgical instruments, U.S. hospitals produce over 12 million pounds of waste each day.

One way to help reduce the impact of medical waste on the environment is to reprocess single-use surgical instruments. Schwanke explains that reprocessing saves over six million pounds of medical waste from being sent to landfills each year. A typical 300-bed hospital can divert approximately 35,000 pounds of medical waste from landfills through instrument reprocessing.

"Recycling metal and plastic from used devices, rather than discarding, saves energy, reduces pollution and conserves water resources,"

Schwanke says. "For example, reprocessing electrophysiology catheters saves approximately 20 times the energy used to produce platinum from ore<sup>1</sup>. Meanwhile, medical waste incinerators are the fourth largest known producers of mercury released into the environment and recycling medical devices can help decrease mercury emissions<sup>2</sup>."

## How it works

As Jason Wandersee,

CEO of MEDISS, another third-party reprocessor in the U.S., explains, the reprocessing of surgical instruments typically begins as soon as the instrument has been used in the OR. After use, the instrument is usually pre-cleaned on-site in the sterile processing department to rid the device of blood and other proteins.

"Our whole goal is to maximize the amount of savings that a facility can drive," Wandersee says. "If the devices sit with blood, proteins and deposits from surgery, it tends to corrode and pit metals/plastics so less devices can successfully be reprocessed."

The instruments are then placed in the reprocessor's bins at the hospital. The bins get shipped to the reprocessing facility where they go through a multi-step process of reprocessing that might go something like this:

1. **Cleaning/decontamination** to remove any debris that could have been on the device prior to entering the facility.
2. **Identification**, to look for gross cracks or breaks — obvious damage to devices that cannot be fixed. Wandersee explains reprocessors will also look for their specific mark as they are required to mark devices in order to keep track of how many cycles the instrument has been reprocessed.
3. **Refurbishment**. In this stage, the instrument will go through a series of inspections, such as sharpness testing or electrical testing. "Depending upon the device, we develop refurbishing, testing and repair functions so when the device comes out of the refurbishment process, it functions the same as a new device," Wandersee says. "We can't make a device better than new. We can only make it as good as was when it was new. That's our goal, so that when a surgeon uses our device, he/she can't tell the difference."
4. **Final wash**. Another series of washing and cleaning is done to remove any debris on the device by virtue of handling in the refurbishment process, as well as to take off any of the cleaning agents that may have been on the device.

5. **Inspection/testing and packaging/shipment**. The instruments are inspected, tested and sterilized, then packaged for shipment back out to the hospitals.

Pushback to instrument reprocessing has historically been from the belief that reprocessed instruments are not as clean, sterile or safe as new, single-use devices. However, since the establishment of FDA regulation for the reprocessing industry in 2001, Wandersee says reprocessors undergo the same, if not greater, regulatory scrutiny as original manufacturers, including inspections and 510k premarket clearance.

An instrument goes through multiple steps of inspection and testing when being reprocessed to ensure functionality.

# OPEN MIC: What SPECTRUM'S customers are

Advertisement

"I am writing this recommendation of the outstanding educational initiatives that Spectrum has made. Spectrum Surgical has responded to every educational hurdle encountered with surgical instrumentation. The professional manner in which Spectrum presents educational products is unparalleled. I know that no matter the scope of the educational challenge, Spectrum will have the right answer."

- Major, USAF

"I wanted to thank you for devoting your time to our Sterile Processing group. We have had nothing but rave reviews and such excitement from the staff that I never expected. You are truly inspirational to the staff and I appreciate your sincere dedication. It has lifted their spirits and their value as employees in Sterile Processing."

- Manager, Clinical Operations

"Spectrum has delivered on every promise they made and go out of their way to accommodate each of our needs. We have seen a great reduction in our repairs due to the on site teaching and continuing education that Spectrum offers. We were able to realize a 47% reduction in cost and 57% reduction in the number of repair orders. Spectrums on-site lab has allowed us to maximize our savings dollars as they perform PM and repairs on all instruments in a day or two instead of doing the scheduled visits."

- S.L., Materials Management, Team Lead

"The before and after pictures were astounding. One hospital sent a recently 'repaired/maintained' instrument from their current service provider to Spectrum for comparison and it looked like a new instrument when it was returned. Our members have been extremely pleased with the service and value they've received from Spectrum. One of the members realized savings of 50 percent!"

- Managing Executive

"Spectrum presented to us a wonderful Power-Point reflecting the preventative maintenance and repairs of our instrumentation and I was pretty amazed. I wasn't expecting anything so formalized and it was great! They accommodate our needs in a most timely fashion, sometimes pulling off the unthinkable for us. Your staff is more than attentive to our needs and have become family. They work very closely with us and I don't want to forget the "education" piece! Anytime we need small in-service in the department, Spectrum is there to provide it. Thanks again, for the great service Spectrum provides to us."

- Manager CS, Anesthesia Dept., Surgical Services

and instrument accessories. Spectrum is also dedicated to providing instrument education to OR and CS personnel around the country.

Spectrum's full range of repair capabilities helps hospitals maintain equipment and contain their budget.

Spectrum is your one source for:

- German-made Surgical Instruments
- Cleaning Brushes
- Certified Pre-Owned Equipment
- Instrument Education Products
- Instrument Accessories
- Middleline® and Economy/Floorgrade Instruments

- General Instrument Repair
- Rigid Scope Repair
- Flexible Scope Repair
- On-Location Case Cart Repair
- Power Equipment Repair
- Battery Repair
- Instrument Color-Coding and more

Spectrum's outstanding service and low prices have become industry standards. For more information, please call a Spectrum Customer Care Representative today at 800-444-5644 or visit [www.spectrumsurgical.com](http://www.spectrumsurgical.com)

Experience the Difference

NEW!

From



SPECTRUM  
Surgical Instruments, Repairs, Instrument Accessories

## Power Equipment Cleaning Hose

- The ideal solution to prevent cleaning detergent and water from damaging the internal components of handpieces
- Offers a more convenient approach to cleaning
- Simple, safe, fast, and easy to use!

Order # 80-6000 Call to order today!

ONLY \$99.00

## Power Equipment Cleaning Brush

- Large brush head with wide plastic handle is perfect for cleaning power equipment
- Long-lasting, anti-microbial nylon bristles
- Package of 3

Order # 45-7000 Call to order today!

ONLY \$15.99 Pkg of 3

## Surgical Instrument Inspection Mat

Spectra-Mat™

- Learn proper names and inspection points
- Over 30 detailed photographs
- Reduces noise and work-surface impact
- Also includes bright, LED, 2.5x magnifier

Order # 10-0224 Call to order today!

ON \$6

We Make Patients Safer™

800-444-5644



Extension # 1284  
[www.spectrumsurgical.com](http://www.spectrumsurgical.com)

Schwanke adds FDA-regulated reprocessors have shipped nearly 70 million reprocessed devices with no evidence, from any source, of an increased risk to patient safety. A 2008 Government Accountability Office (GAO) report found no evidence to indicate that reprocessed devices present an elevated health risk to patients and no evidence linking usage of reprocessed devices to hospital acquired infections<sup>3</sup>. In addition, a FDA post-market surveillance study of over 350 facilities found a zero increase in infection rates when the facilities used reprocessed devices<sup>4</sup>.

**Saving more than the environment**

Aside from the positive environmental impact, instrument reprocessing has shown to be beneficial for hospital financials as well. According to Schwanke, a typical 300-bed hospital can reduce device purchase costs by up to 50 percent with savings of



**Regulation by the FDA has standardized instrument reprocessing to help ensure quality and safety.**

over \$400 per bed through instrument reprocessing. Additionally, there are cost savings with reduced biohazard waste.

“If a 300-bed hospital diverted 35,000 pounds of medical waste from landfills and their disposal costs were \$0.50 per pound, the facility would save nearly \$18,000 in waste disposal costs,” Schwanke explains.

Wandersee says he’s seen surgery centers save as much as \$25,000 to \$50,000 through instrument reprocessing, while large hospitals have saved over \$1 million.

“There are significant dollar contributions, so much so that it’s typically one of the top initiatives reviewed and looked at by surgery centers and hospitals across the country,” he says, “because of the environmental aspect, but also because of the significant financial pressures that facilities are seeing these days with the ever increasing costs and the continued decline in reimbursement rates.”

Still, the underlying component of instrument reprocessing is sustainability and

environment-consciousness — and it can be seen throughout the entire process.

“Green initiatives are inherent to everything we do. It’s an underlying component of everything,” Wandersee says.

In a new addition to the MEDISISS building, ultra-high efficiency heating/ventilating systems were installed that are 85 percent more efficient than a standard HVAC system, Wandersee says.

“We’re always working to figure out how we can recycle material fluids and make sure our footprint is responsible,” he says. “We continuously ask ourselves, ‘how do we do the right thing?’”

At SterilMed, Schwanke says the mission is all about reducing the impact to the environment by keeping medical devices from landfills. All rejected devices and components are shipped on a regular basis to recycling and reclamation companies to recover the metal and plastic materials. The company recycles over 4,000 yards of cardboard, corrugate, glass, plastic, aluminum and paper annually.

**Getting started**

Schwanke says the number of hospitals using reprocessed devices has increased and is expected to continue to grow. Over 3,000 U.S. hospitals have adopted reprocessing as a standard of care, including all facilities from small, or the physician-employed, to those in the top 100 hospitals as ranked by *US News & World Report*.

Many surgical facilities use reprocessing as part of their Practice Greenhealth efforts to move the health care industry toward more environmentally-conscious and sustainable practices, Schwanke says. Practice Greenhealth annually awards facilities with Environmental Excellence Awards, and past winners have frequently included their reprocessing program as part of their sustainability efforts.

“I think people are really starting to ask themselves ‘what am I responsible for?’” Wandersee says about the increase in hospitals reprocessing instruments. “Environmental responsibility tends to be at a more core level with a lot of people.

“Let’s face it, a lot of the employees in the hospital will never see the direct financial impact, but they’re very passionate about making sure that they can reprocess as many devices as they can because of the impact on the environment and on landfills,” he adds. “It just comes down to convictions — their way of looking at ‘how can we do the right thing?’” **SP**

**References:**

- <sup>1</sup> Pehnt, H. (2000) Life Cycle Assessment of Fuel Cell Stacks, Fuel Cell 2000, 10 July 2000 Lucerne, Switzerland.
- <sup>2</sup> Sharon I. Sarvey. *Bariatric Nursing and Surgical Patient Care*. March 2009, 4(1) 67-69. doi:10.1089/bar.2009.9987.
- <sup>3</sup> U.S. Government Accountability Office (GAO) January 2008 report entitled “Reprocessed Single-Use Medical Devices --- FDA Oversight Has Increased, and Available Information Does Not Indicate That Use Presents an Elevated Health Risk.” The report was made public on March 3.
- <sup>4</sup> Excerpts from Statement of Daniel Schultz, M.D., Director, Center for Devices and Radiological Health, FDA before Committee on Government Reform, House of Representatives on September 26, 2006.

**Being Green In-House**

For Eric Willman, PhD, Research, Development and Engineering Director, Healthcare at Ecolab, sustainability in the sterile processing department (SPD) means reducing water, energy and waste, all while maximizing efficiency. While it sounds like a pretty tall order, new technology solutions are helping hospitals achieve various forms of efficiency in their SPDs.

“An interesting aspect of sustainability is in the automated washer, which uses water, energy in the form of heat and time,” Willman says. “All of these can be optimized with detergents to minimize water and energy waste.”

Over the last decade, advancements have been made in enzymatic detergents to allow washer operation at lower temperatures with less corrosive chemistries, Willman says. Reducing the heat in a wash cycle directly translates to cost and environmental sustainability.

There are also opportunities to be green in the delivery and packaging of detergents. Willman says traditionally, products have been supplied in liquids, which are mostly water, and in a large container — as large as a 30 gallon drum.

“You can imagine in the supply chain of a 30 gallon drum, there is a lot of waste in the form of packaging and in the form of energy to deliver 30 gallons of liquid,” Willman says. “By taking those liquids and concentrating them into a solid block, energy consumption and plastic packaging waste is reduced.”

This strategy does require additional products to ensure safety and reliability in the chemistries. Willman says the solid block chemistries are shape- and color- coded so personnel can identify the block and avoid confusion or crossing of chemistries. Dispensers are used to ensure the right mixture of detergent. All of this, he says, contributes to the overall sustain-

ability of the SPD.

In fact, automation itself in the SPD can result in operational efficiency and overall sustainability in terms of the environment, as well as cost and time. Automated instrument washers and irrigators can help increase efficiency and decrease the total amount of time required for an instrument. This decreased time, then, could also translate to savings in water and energy.

“If you can think about the process where the instruments come in dirty to a decontamination area. They’re soaked. They’re flushed/brushed. They’re put into a regular sonic. Each one of those steps is taking a certain amount of time to complete,” says Gary Jordan, President of Medisafe America. “Then, the instruments are put into a washer/disinfector where they are processed for an additional 45-minute cycle before they can be wrapped and sterilized. Now, a single, automated process can perform lumen flushing, enzyme injection, sonication and thermal disinfection, all in about 45 minutes.”

Jordan explains that the efficient, repeatable, reliable process of an automated system offers not only many sustainability benefits, but safety as well. It helps eliminate repetitive routine cleaning tasks, increases productivity and creates a safer process for staff.

“The fewer contaminated surgical instruments a staff member handles, the safer it is for the worker,” Jordan says. “It is estimated that approximately 60 percent of exposure to bloodborne contaminants comes from ‘splash and splatter’ to the eyes.”

In the end, achieving green initiatives in the SPD is often more than just environmental — it’s about being efficient in all instrument care processes.

“It starts as a traditional green approach and branches out to operational efficiency,” Willman says. “That is what we consider to be ‘sustainable.’”

*Keep Sealed Instruments Moist with Humipak*

Instrument manufacturers, AAMI, AORN and others generally recommend that decontamination of instruments begin within 30 minutes of use so that organic soils, particularly blood, do not dry. But often this is not possible. Is there a solution to extended holding time of soiled instruments? Yes - Humipak. The Humipak consists of a layer of highly absorbent material sandwiched between two layers of water proof film.



To use, place individual instruments, or an entire instrument tray inside the Humipak, add the specified amount of water to the absorbent layer, and seal with the peel away adhesive strip.

This creates a water tight, moist atmosphere that will prevent organics from drying over an extended period of time. Further, the transparent film allows observation of the contents and a list of contents and/instructions can be written directly onto the film.

Testing has demonstrated that soils will remain moist for up to 3 days, depending upon the type of instruments, and the exact composition of the residue.

Keep instruments moist and ready for effective cleaning with Humipak!

**healthmark**  
INDUSTRIES CO.  
health care products  
800-521-6224  
www.hmark.com