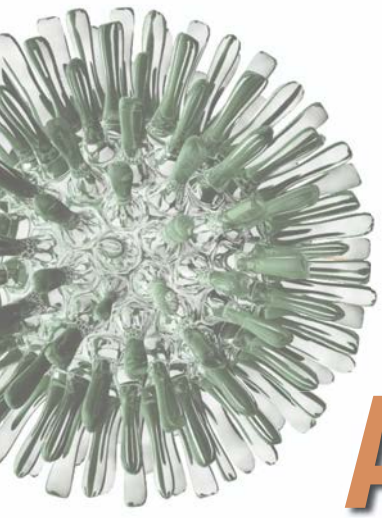
$7.00

March 2023 • Vol. 47 No. 3

HEALTHCARE PURCHASING NEWS®

CLINICAL INTELLIGENCE FOR SUPPLY CHAIN LEADERSHIP

www.hpnonline.com



Air & Surface Disinfection

Infection prevention challenges require new solutions

Surgical Care/Supply Chain Alliances

RTLS & Supply Chain Automation

Reprocessing Workflow & ST 91

Gloves

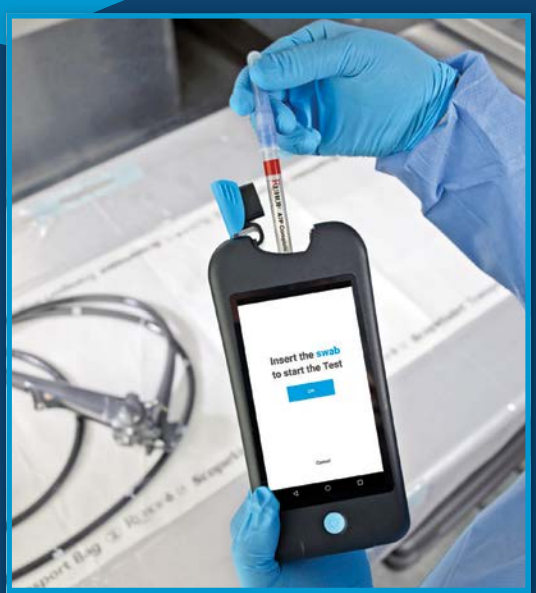
CLEAN CONFIDENTLY

INTRODUCING

The Next Generation Of Contamination Monitoring Technology

ATP COMPLETE 2

BY RUHOF

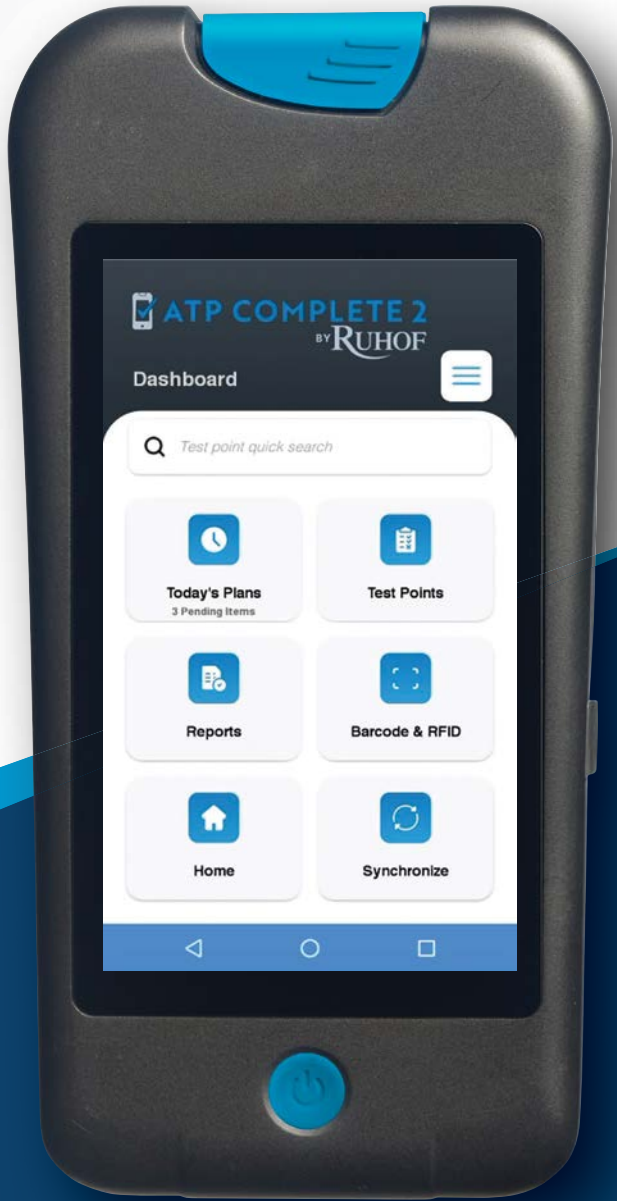


For the cleaning verification of surgical instruments, endoscopes, and surfaces, **ATP Complete 2 by Ruhof** is a cloud-based cleaning monitoring system used to help hospitals and other healthcare organizations achieve optimal standardized cleaning levels.

ATP COMPLETE 2
BY RUHOF

ADVANCED FEATURES

- SMART HANDHELD MOBILE PLATFORM
- CLOUD-BASED
- WI-FI CONNECTIVITY
- INFINITE USERS & TEST POINTS
- CUSTOMIZABLE DASHBOARD
- RFID READER
- USER FRIENDLY INTERFACE



ACHIEVE CONTINUOUS IMPROVEMENT IN EVERY DEPARTMENT

- ENDOSCOPY
- STERILE PROCESSING
- OPERATING ROOM
- ENVIRONMENTAL SERVICES, etc.

393 Sagamore Ave. Mineola, NY 11501 • 1 (800) 537-8463
(516) 294-5888 • Fax (516) 248-6456
E-Mail: ruhof@ruhof.com • www.ruhof.com

RUHOF

AD-070 Rev0 122022

IN THIS ISSUE...

March 2023 • Vol. 47 No. 3

HEALTHCARE PURCHASING NEWS

Photo 213508042 © BiancoBlue | Dreamstime.com

Photo 101474788 © Ammentorp | Dreamstime.com

Photo 93535091 / Care © Monkey Business Images
Illustration 29359048 © Ingridneumann
Dreamstime.com

ID 153303524 © Chernetskaya | Dreamstime.com
ST91 cover courtesy ANSI

Photo credit: adragan | stock.adobe.com

STRATEGIC SOURCING & LOGISTICS

SURGICAL/CRITICAL CARE

INFECTION PREVENTION

STERILE PROCESSING

PRODUCT & SERVICE LINE REPORTS

EXPERT EXCLUSIVES

OPERATE WITH GREATER PRECISION

Meet our newest

STERILIZATION POWERHOUSE.

AESCULAP Aicon™ Sterile Container System

Unwrap the future of sterile supply management. With features that help streamline processes and reduce the possibility of wet sets, Aesculap's next generation rigid container is everything you'd expect from the market leader.

Visit **aesculapusa.com/aicon** to learn more about how this breakthrough technology can help your SPD Operate With Greater Precision.

AESCULAP®

Aesculap, Inc. - a B. Braun company

BUYLINE

Calling time out

Rick Dana Barlow
Senior Editor

Fallout from the 1986 Space Shuttle Challenger disaster motivated the publication of a popular political cartoon sporting the caption, "The O-Ring Committee," a reference to the uncovered and underlying cause of the midair explosion nearly two minutes after liftoff (O-rings that failed to withstand intense heat).

"The O-Ring Committee" was meant to be a paean to the proverbial blame game. The cartoon depicted a group of people lined up in a circle, each pointing the index finger of blame to the person next to him or her. This seemingly indicated no end in determining a culprit to take the fall for NASA's space program to save face and rebound in the public eye.

We know – if not believe – that time remains a linear concept. Forget about all the sci-fi films, super-hero movies and television shows that postulate the ability to travel to alternate dimensions, realities, times and universes. For us, it's past then present then future.

To an extent, many classify the supply chain as linear, too. You start with gathering raw materials to be used in manufacturing products, then move to the manufacturing of products, then likely to distribution (for those manufacturers that prefer not to go direct to customers) with group purchasing organizations (GPOs) in the contracting mix linking providers to suppliers and vendors.

While it may be convenient for the supply chain industry to establish its own circular "O-Ring Committee" when things go south, more often than not the squabbles show up as finger-pointing to the left or to the right, whichever direction makes sense for the accuser(s).

Arguably and conceptually, supply chain may not be a linear function. Never has been. Likely never will.

In fact, perhaps the supply chain technically resembles one of those old-time Cecil B. DeMille films that rely on the mass action of hundreds, if not thousands, of extras in the cast and on the set. Think "The Ten Commandments" in 1956 or "Ben-Hur" three years later.

Pandemic-inflamed demand surges reinforced that notion now as supply chain professionals scrambled to outrun, keep pace or not lag too far behind the logistics channels moving product from one place to another. Should supply chain pros – particularly in healthcare – have anticipated the disruption?

If anything, the pandemic forced healthcare supply chain pros to do what actor Matthew Broderick did in his 1986 movie, "Ferris Bueller's Day Off." He frequently "broke the Fourth Wall" to talk to the camera and face movie goers sitting in theaters. Similarly, pandemic-stricken supply chain leaders creatively (or desperately?) reached outside their comfort zone, their linear feed, so to speak, to accomplish their missions and do their jobs.

When you cannot get what you need from upstream in the chain you branch out and venture over to alternatives; when you cannot send out what you need downstream in the chain, you branch out and venture over to alternatives.

Outside of healthcare and with the meteoric adoption and implementation of automation and computer technology, organizations recognized nearly a decade before the pandemic that the traditionally acknowledged borders of supply chain operations were no longer relevant – or applicable.

The development helped motivate the experts at MHI to study the process and title its 2016 annual industry report, "Accelerating change: How innovation is driving digital, always-on supply chains."

Outside of healthcare, the descriptor "digital, always-on" applied to supply chain makes as much sense as it should in healthcare, which is expected to be "always on," just as the supply chain that fortifies it continually.

Maybe all of this is more like the string theory depicted in the 1989-1993 NBC-TV show, "Quantum Leap" ("Oh, boy.") or the chaos theory posited in the 1996 film, "Independence Day" ("Don't say oops.").

On second thought, gazing back at the last two years, perhaps Jeff Goldblum's satellite technician character "David Levinson" aptly represents the plight of Supply Chain leaders today.

Senior Editor Rick Dana Barlow can be reached at rickdanabarlow@wingfootmedia.biz.

PUBLISHER

Group Publisher *Matthew Raynor*
mraynor@endeavorb2b.com
Admin Services Director *Jessica Oldfather*
joldfather@endeavorb2b.com

EDITORIAL

Senior Editor *Rick Dana Barlow*
rickdanabarlow@hpnonline.com
Managing Editor *Scott Tomko*
stomko@hpnonline.com
(941) 259-0834
Senior Contributing Editor *Brenda Silva*
bsilva@endeavorb2b.com
Senior Contributing Editor *Kara Nadeau*
knadeau@hpnonline.com

ADVERTISING SALES

East & West Coast *Blake and Michelle Holton*
(407) 971-6286
Midwest & Central *April Bruffy*
(713) 936-5076

ADVERTISING & ART PRODUCTION

Ad Contracts Manager *Norma Machado (941) 259-0856*
Art Director *Tracy Arendt*
Audience Development *Laura Moulton (941) 259-0859*

Healthcare Purchasing News USPS Permit 362710, ISSN 1098-3716 print, ISSN 2771-6716 online is published 12 times annually with an additional issue in November - Jan, Feb, Mar, Apr, May, Jun, Jul, Aug, Sep, Oct, Nov, Nov IBG, Dec, by Endeavor Business Media, LLC. 1233 Janesville Ave., Fort Atkinson, WI 53538. Periodical postage paid at Fort Atkinson, WI, and additional mailing offices. **POSTMASTER**: Send address changes to Healthcare Purchasing News, PO Box 3257, Northbrook, IL 60065-3257. **SUBSCRIPTIONS**: Publisher reserves the right to reject non-qualified subscriptions. Subscription prices: U.S. $160.00 per year; Canada/Mexico $193.75 per year; All other countries $276.25 per year. All subscriptions are payable in U.S. funds. Send subscription inquiries to Healthcare Purchasing News, PO Box 3257, Northbrook, IL 60065-3257. Customer service can be reached toll-free at 877-382-9187 or at HPN@omeda.com for magazine subscription assistance or questions.

When it comes to Endoscope Care, Medtrica's got you covered!

Disposable Endoscope Tip Protectors

- Available in Sterile and Non-Sterile
- Provides Protection during Transport, Cleaning and Storage
- Firm mesh design reduces moisture & occurrence of microbial growth
- Fits instruments sized 2mm - 15mm wide

For free samples call 1.877.703.1079

All sterile tip protectors are individually packaged

Paper Based Disposable Scope Sleeves

For free samples call 1.877.703.1079

- Prevents moisture build up by wicking away moisture from insertion tube
- Prevents direct surface contact, providing protection during drying, storage & transport
- Place labels directly on sleeve to document detailed scope cleaning information

Flexible Scope Sleeves Sizes

Small – 200 Sleeves - 36" sleeves

Large – 100 Sleeves - 78" sleeves

For more Information Call: 1.877.703.1079 or visit www.medtrica.com

FAST STATS

The health of healthcare

Just how scary a place is the modern hospital? Well, the statistics don't lie. The places that we rely on to heal and receive top medical care can be potential breeding grounds for infections and a host of other complications. One of the primary culprits is cleanliness, or, for that matter, a lack there of.

- According to the U.S. Centers for Disease Control and Prevention, it's reported that **1.7 million** infections occur every year in hospitals.
- Hospital acquired infections are one of the leading causes of preventable death in the world today; according to the WHO, in the U.S. alone over **100,000** people die every year from illnesses that they contract in the hospital.
- Of all the major complications that occur during hospitalization, hospital acquired infections (also referred to as nosocomial infections) account for more than **50%**.
- According to an article published by CBS, it was reported that of all hospitals, more than **75%** have been cited for serious cleanliness and sanitation violations.
- In a survey conducted by the *Journal of Hospital Infection* evaluating healthcare facility cleaning practices, nearly half of respondents (**47%**) relied solely on just daily visual monitoring for the assessment of environment cleanliness and cleaning needs.
- In rankings published by *Consumer Reports* of which U.S. hospitals do best and worst at fighting bacteria that cause infections, only **6%** of hospitals scored well against both MRSA and *C. diff.*

Statistics courtesy of Sparkle and Shine Cleaning Company: https://sparkleshinecc.com/medical-facility-cleaning-scary-truth-10-statistics/

NEWSWIRE

Premier data survey predicts impending shortages in healthcare supplies

Commonly used hospital supplies across 120 categories are likely to experience shortages in the near future, a new PINC AI data analysis finds. Most of the affected supplies are necessary to provide routine patient care and shortages may force providers to either identify product alternatives or delay certain procedures.

PINC AI data shows the majority of shortages will last a few weeks, moving across products and vendors within a category. PINC AI data defines a shortage as products exhibiting lead times of 8-24 days and abnormally high fulfillment times and/or order cancellations. This is roughly the same overall level of shortages that hospitals are currently experiencing, yet the rotation of shortages across individual products, driven by rolling backorders and sporadic delays, can mean new product category issues each week.

Of the top categories with predicted shortages, many have at least some exposure to energy restrictions in Europe, suggesting shortages in these areas could worsen as the crisis unfurls. PINC AI analysts identified 300 product categories where at least one primary manufacturer has production in the European Union (EU) and Western Europe – the main regions reliant on Russian gas imports that have been cut off since early September.

Read on: https://hpnonline.com/21293257

Newly discovered illness affects over 15,000 in U.S.

About 13,200 men and another 2,300 women in the United States over age 50 are estimated to have VEXAS syndrome, according to a new study led by researchers at NYU Grossman School of Medicine. VEXAS was long considered a mystery illness until its genetic basis was identified in 2020, and the latest findings offer the first indication of how common the illness is domestically.

The rare syndrome carries a high mortality rate, with up to half of people, mostly men, dying within five years of diagnosis. The syndrome most often involves unexplained fevers and low blood oxygen levels in people diagnosed with other diseases, such as rheumatoid arthritis, lupus, and blood cancer such as leukemia. Some of the symptoms have been linked to an overactive immune system—which can cause inflammation—making the syndrome an autoimmune condition.

Researchers hope their findings will raise awareness of the disorder among physicians, particularly because high-dose steroids, JANUS kinase inhibitors, and bone marrow transplants have proven effective in controlling some symptoms.

Read on: https://hpnonline.com/21293579

Rx pass from Amazon Pharmacy saves time, money

Prime members can now receive all of their eligible generic medications for just $5 a month and have them delivered free to their door. Medications that treat more than 80 common conditions, such as high blood pressure, anxiety, and acid reflux, are included in the RxPass subscription.

RxPass is a new Prime membership benefit from Amazon Pharmacy that provides patients with affordable access to generic medications that treat more than 80 common health conditions for just $5 a month. With RxPass, Prime members can get as many eligible medications as they need for one flat, low fee of $5 and have them conveniently delivered free to their door. It's estimated that more than 150 million Americans take one or more of the medications available through the RxPass monthly subscription. RxPass is our latest effort to help patients save time, save money, and stay healthy. It's available now to customers in most U.S. states.

Nearly half of adults take two or more medications each day, and one quarter of adults say they find it difficult to afford the medications they need. Amazon Pharmacy is tackling these challenges by making medications more accessible, affordable, and convenient.

Read on: https://hpnonline.com/21293425

Real-time stroke detection available from smartphone app

Preliminary research shows that an app called FAST.AI, owned by Neuronics Medical, was able to detect stroke-related facial symptoms and arm weakness in people diagnosed with acute stroke.

Smartphone apps are fast becoming more than just entertainment or productivity tools — some can even monitor health and wellbeing. Now, a new app called FAST.AI may be able to determine if someone is having a stroke as it's happening. Moreover, researchers suggest that the app may be as accurate as a neurologist at diagnosing stroke.

The app, owned by Neuronics Medical, detects severe strokes with algorithms that recognize arm weakness, speech changes, and facial asymmetry — a stroke symptom characterized by drooping of the face muscles. It works by using a facial video that looks at 68 facial landmark points. It also uses sensors to measure arm movement and orientation, and voice recordings to detect changes in speech.

Read on: https://hpnonline.com/21294608

Introducing carts you can customize like your latte order

Over a million configurations possible and a thousand standard models.

Let's see your favorite coffee shop top that.

DETECTO®

www.Detecto.com

DETECTO • 102 East Daugherty St. • Webb City, MO 64870 • (800) 441-4237 • detecto@cardet.com • detecto.com

Immune response to COVID-19 strengthens over time, according to research

Immunity from COVID-19 appears to gather strength with more time between vaccination and infection, a new laboratory study from researchers at Oregon Health & Science University (OHSU) suggests. The findings carry implications for vaccine recommendations as the pandemic transitions to an endemic state.

Researchers measured the antibody response in blood samples for a group of people who gained so-called "hybrid immunity" through two means: either vaccination followed by a breakthrough infection, or by getting vaccinated after contracting COVID-19. They measured the immune response in blood samples of 96 generally healthy OHSU employees, and found that the immune response was uniformly stronger the longer the time period between vaccination and infection. The longest interval measured was 404 days.

Their findings suggest that vaccine boosters should be spaced no more frequently than a year apart, at least among healthy people.

"Longer intervals between natural infection and vaccination appear to strengthen immune response for otherwise healthy people," said co-senior author Fikadu Tafesse, Ph.D., associate professor of molecular microbiology and immunology in the OHSU School of Medicine.

Read on: https://hpnonline.com/21294127

ECRI report highlights safety issues in health technology

ECRI, the nation's largest non-profit patient safety organization, names communications gaps with recalls of home-use medical devices as the nation's most pressing health technology safety issue for 2023.

Recall notices for home-use products often do not reach users, placing patients at serious risk of harm, according to the independent nonprofit safety leader in its just-released Top 10 Health Technology Hazards report.

As the home healthcare trend accelerates, ECRI is concerned about home care patients not receiving safety notices that warn of problems with the medical devices they are using. Device manufacturers seldom have direct communication with home care patients, and healthcare providers may not proactively contact patients about recalls. Patients with affected products may learn about a recall long after it was issued, and potentially from an unreliable source.

"Even if patients do receive notifications, the language may be jargon-heavy and perplexing, and patients may have difficulty determining whether their device is affected or what to do about it," cautions Marcus Schabacker, MD, PhD, president and CEO of ECRI. "Without clear, understandable information about a product recall, patients cannot accurately assess the health risks and may harm themselves by continuing to use an unsafe device, or by inappropriately stopping use of a device."

Read on: https://hpnonline.com/21292988

International Women's Day – March 8

by Brenda Silva

Healthcare Purchasing News would like to invite our readers, advertisers, and subscribers to join us as we celebrate International Women's Day on March 8. This annual celebration is intended to acknowledge and applaud the achievements of women that occur everyday worldwide.

The theme for International Women's Day 2023 is "Embrace Equality," a concept of inclusivity that allows us to collectively look past societal limitations that are based on antiquated bias. As a call to action for the healthcare industry, equality serves to support the current and future professional achievements of all women in healthcare.

In hospitals and healthcare facilities located around the globe, women continue to advance the fields of science and medicine, holding positions that range from entry-level to executive, on-site to online. As traditional science and medicine have welcomed technology as an integral part of the future, women have kept pace with advances in healthcare, gaining well-deserved success and accolades along the way.

On International Women's Day this year, join *Healthcare Purchasing News* as we embrace equality and celebrate women among their industry peers and colleagues. In doing so, we'll have even more reasons to celebrate women in healthcare in 2024.

Women Illustration 82712380 © Zeynur Babayev | Dreamstime.com • Globe Illustration 19088256 © Doffdog | Dreamstime.com

No matter the task at hand, you deserve PPE you can trust

Healthmark offers a variety of utility gloves & face shields to suit your needs

1

3

1 Ultra-Long Decontam Gloves

- 16" Long
- Powder-Free Nitrile
- 9 Mil

2 Face Shield with Drape

- 13" High x 9" Wide with 12" Drape
- 1" Brow Foam
- 7 Mil PET

2

3 Lined Sleeve Gloves

- 28" Long
- 4 Mil Protective Sleeve
- 15 Mil Nitrile Glove

4 Face Shield

- 13" High x 9" Wide
- 1" Brow Foam
- 7 Mil PET

4

healthmark

Intelligent Solutions for
Instrument Care & Infection Control

HMARK.COM | 800.521.6224

For more PPE solutions such as device covers, gowns, jump suits, shoe covers & more, visit **hmark.com**

Advanced tech may turn heads, not hearts

by Rick Dana Barlow

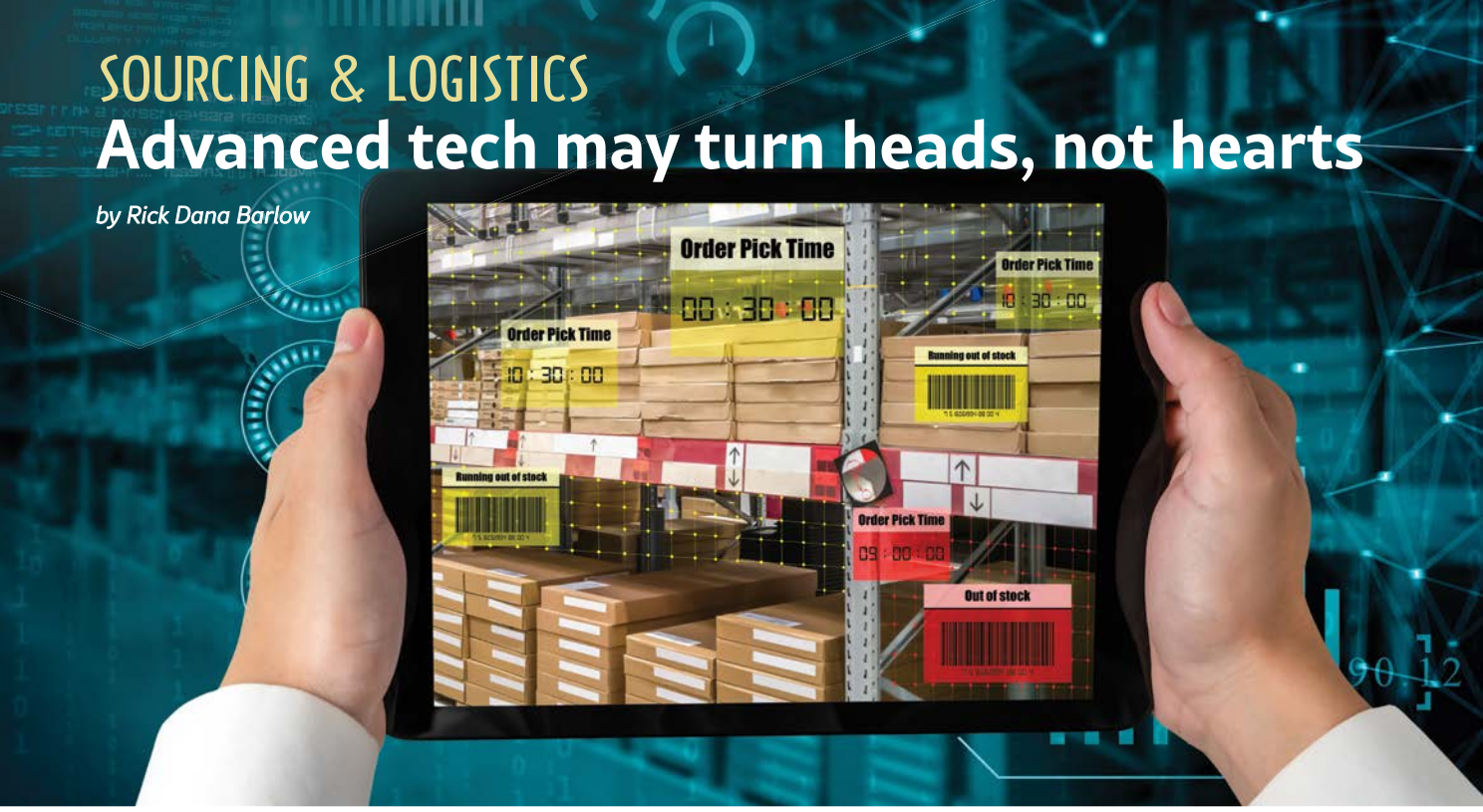


Photo 213508042 © BiancoBlue | Dreamstime.com

Not every healthcare organization's consolidated service center, warehouse or storeroom can be rigged to function as a teched-out assembly line, anchored with automated guided vehicles, conveyor belts, interoperative software, mobile robots and robotic arms moving stuff around as supply chain staffers, sporting eyewear with heads-up display capabilities, wielding smart phones and wearing swanky wrist computers, calmly traverse the floor.

Those who may be outfitted with some of the latest tools and toys can juggle multiple demands and emergency needs with aplomb, efficiency, and effectiveness because they already know about backorders and anticipated clinical procedure requests as they're plugged into production schedules outside the organization and surgical schedules inside. They're connected to artificial intelligence (AI), blockchain, crosslinked item master-to-charge data master systems, enterprise resource planning (ERP) modules, radiofrequency identification (RFID), real-time location systems (RTLS), robotic process automation (RPA) or other automation technologies.

Few may be more tech-decked than most, but many yearn to adopt and implement as much as possible, hinging on budgets and business cases provided, as well as the skills – latent and learned – that staffers possess, supply chain tech experts indicate.

Healthcare organizations, by and large, rely on RTLS and other supply chain automation tools to manage, track, and trace three primary areas within and without supply chain: Process and workflow, product and service usage and the safety of patients, staff and visitors on campus or within a facility.

Where some might be able to construct new or retrofit existing buildings fully equipped with the latest technology applications, others approach improvements on an incremental basis, adding technological capabilities under a longer-term plan as resources allow, according to supply chain tech experts.

Based on the diversity of circumstances and available resources, healthcare facilities appeared to be on a tech-adoption trajectory until the global COVID-19 pandemic emerged in early 2020 in the United States, and disrupted worldwide supply channels for much of the next three years.

Although some question the rate of operational recovery from the seemingly receding pandemic, others widely acknowledge that facilities are pumping the brakes on implementing much of the tech that tickled fancies and tempted eyes for the last decade or so. Instead, they're returning to the fundamentals, dependent on facility size and location, limited resources and speed to results.

Basic package deal

At this point, slowing the momentum of technological implementation progress may be beneficial, experts tell *Healthcare Purchasing News.*

"As with any investment in technology, healthcare organizations must start with the business objective or challenge they are trying to solve and then pick the best technology to address that need," said Keith Lohkamp, senior director, Industry Strategy, Workday. "I do believe, however, that most organizations need to start by laying a strong foundation by either investing in ERP technology or, at a minimum, MMIS technology, to create a unified view and set of processes for inventory and procurement. And frankly, almost every other technology on the 'supply chain automation technology' list on page 12 is either dependent on or would benefit from having this foundation because of the underlying process or the need for data."

Keith Lohkamp

Lohkamp further contends that many of these technologies may even be included in that foundational investment. Workday Supply Chain Management users, for example, already have the option to use mobile devices and barcode scanning, he explains. Further, built-in AI features for Natural Language processes allow for the use of company chatbot Workday Assistant to check on the status of requisitions, while other AI/ML functionalities automate transactions or make recommendations during requisition creation. Processes can be integrated into a WMS or a carousel to support additional options for managing

inventory within and outside the hospital, he adds.

Nathan Wicks, vice president, Commercial Technologies and Engineering, Cardinal Health WaveMark Solutions, hesitates to categorize technology options according to demographics, development, and fiscal and operational processes. Instead, he argues that healthcare organizations embrace a broader approach that focuses on two areas:


Nathan Wicks

1. Recognizing the shared challenges across the healthcare landscape and spanning all types of institutions
2. Focusing on where they are at along the technology-adoption journey and if they have the foundation – people, process, and foundational technologies – in place to support more advanced tech solutions.

"Building the foundation – ORIS, ERP, MMIS – is key before layering on other tech solutions to support supply chain automation," Wicks noted. "In addition, when health systems are looking to invest in more advanced clinical supply chain technologies, focusing on partners that offer one platform with flexibility on integration capabilities, as well as usage of different data capture devices to support the institution's different needs (e.g., barcode, RFID, Kanban, mobile, etc.), will provide institutions the necessary enterprise visibility across their institution to deliver on improved financial performance, improve staff efficiency, and ultimately, enhanced patient safety."

Laying and fortifying the technology foundation is key, according to Melissa Amell, senior director, Healthcare Strategy, Supply Chain, Infor.

"Most organizations' lowest-hanging fruit is ongoing metadata management required to gather meaningful insights," Amell said. "Those insights would inform what areas have the largest opportunities, and then would warrant investigation of the proposed technologies.

"I personally think there is a natural progression of improvement and growth when it comes to buying and utilizing technology," she continued. "Organizations, regardless of size or scope of service, need to understand their current state and put those foundational technologies in place like an MMIS, ERP or WMS. Some of these technologies are in such early adopter phases that until they are successfully used in industry over a period of time they are likely not worth the investment to the majority of organizations." Amell points to augmented reality/virtual reality (AR/VR) products as examples, especially if organizations are not using current technologies with proven results like mobile technology, barcoding and RFID/RTLS, she added.

Ashok Muttin, founder and CEO, SupplyCopia, laments that the healthcare supply chain "has consistently under-invested in data, technology and analytics.


Ashok Muttin

"There needs to be a solid foundation from which complicated services can be launched," he observed. "They will need to invest in building this foundation first. Once the foundation is built and tested properly, the sky is the limit in deploying cutting-edge technology solutions.

Assuming that a health system already has an ERP and EHR/EMR system in place, then Muttin urges an organization to invest in MMIS and RFID, as well as demand-management/predictive-analytics software. "This demand management should go beyond the traditional use case for demand management and include the integration of preference card/bill of material information to predict the demand and hence, inventory management," he added.

But Muttin recognizes the looming storm clouds this year.

"Health systems are facing significant headwinds, and this situation will likely continue for the rest of 2023," he forecasted. "Supply chain leadership will be required to find cost savings in the next six-to-nine months. Hence, they will need to concentrate more on 'blocking and tackling.' This requires investing in solutions that will deliver the results."

While technologies such as blockchain, AI, wearables, augmented reality, etc., likely will have a huge role to play in transforming the supply chain landscape, according to Muttin, implementing them will require significant new resources, such as dollars and talent. "CFOs are unwilling to sign off on such investments at the current time, [so] it's prudent for supply chain to invest in technologies that are guaranteed to generate results in a six-to-nine-month period," he added.

Resource limitations

One of the major impediments to investigating, investing in, and implementing supply chain automation technology hinges on available resources – whether that amounts to budgets, cash-on-hand, credit for financing or labor, talent, and training.

Cardinal WaveMark's Wicks offers a panoramic picture of future operations that technology will impact.

"All healthcare providers, regardless of their size, are facing similar challenges: Labor challenges with shortages expecting to continue through 2025, supply chain disruptions leading to lower-than-average fill rates into the 80%-90% [range], and increased revenue and cost pressures," he told *HPN*. "Therefore, it's more important to assess where you are along the technology-adoption journey to ensure you've invested first in foundational elements to support the layering of more advanced technology solutions."

Foundationally, healthcare organizations should pursue ERP, MMIS and ORIS implementation first and foremost to ensure maximum utilization, according to Wicks. "These systems are core to capturing the key data elements of the health system related to patient information and resource planning," he said. "These are often necessary integration components for other advanced automated supply chain technologies.

"Once these components are in place and functioning, more advanced solutions can be layered in to offer enhanced product visibility across the enterprise, and provide the data and insights to support strategic decision-making and bring together the clinical and supply- chain teams," Wicks continued. "Even for an organization with limited resources, selecting a technology partner that offers flexibility in integration with multiple data capture technologies – barcode, RFID, Kanban, automated cabinets, etc. – as well as integration capability with your foundational tech systems – ERPs and EMRs – will offer the ability to support your organization's needs today and adapt to more advanced solutions as your needs change."

Wicks recommends that any technology partner should offer three elements:

1. Flexibility with the type of data capture technologies to meet your different clinical supply chain needs now, as well as in the future
2. Proven integration with existing technologies
3. Roadmap to grow into the new technologies


Marlin Doner

Healthcare organizations first must understand the scope and size of their supply chain needs and challenges before investing in any technology, according to Marlin Doner, vice president, Data Analytics and Product Strategy, Prodigo Solutions.

"Too often, technology is implemented as a 'silver bullet' without a clear understanding of the problem it's being asked

to solve or a clear set of success metrics," Doner noted. "As a result, the impact from the latest technology rarely aligns to the return-on-investment goals or the end users' expectations. Taking a data-first approach both informs your decisions about technology investment, as well as lays a strong foundation for building an agnostic technology ecosystem."

Doner acknowledges the factors that influence technology investment decisions, including size, geography, and supply chain strategy.

"Every technology has its purpose," he said. "However, that does not mean every technology is the right fit for every health system. Your supply chain strategy will determine how you need to predict and capture demand signals, manage inventory, service your customers, and control costs to deliver the right clinical, operational, and financial outcomes."

Ceasing milk runs

Scott Hondros

Scott Hondros, MHA, SCPM, vice president, Professional Services, CenTrak Inc.,recognizes the challenges, too.

"Due to the pandemic, the last few years have caused significant disruption and constraint of budgets, manpower, and resources all throughout healthcare facilities, from the bedside to the back office," he observed. "As such, healthcare professionals and administrative employees are asked to do more with less. Providing the necessary support is key to achieving high-quality patient care, staff satisfaction, and overall retention, along with increasing an organization's bottom line."

As a result, Hondros firmly recommends RTLS, RFID and RPA as providing the "support, visibility, and return on investment (ROI)" for a "near-immediate positive impact" for professionals and their organizations.

"Through enterprise visibility, healthcare professionals can gain better insights into the needs and safety of their patients and coworkers, the location of required mobile medical equipment, and the status of supplies," he said. "By being able to remotely visualize what assets are in a given location, staff members can be saved from making a 'milk run' to check on items, and can reallocate that time back to patient care."

The absence of technology can generate a deleterious outcome, according to Hondros.

"Manual documentation is often ineffective, time-consuming, and can be inaccurate due to human error," he said. "In real-time, RTLS shows what is in each location, the status of those items, and if the medical equipment is soiled, in-use, being repaired or available. Predictive analytics then informs staff members of what equipment is or will be needed in specific areas, allowing teams to look ahead and properly prepare based on the anticipated demand to meet patient needs. Alternatively, instead of waiting for an order to be put in, automated offerings can create an order to replenish necessary items once an asset or item has been removed from its current location. This ensures that clinical staff can have what they need before they need it.

"Monitoring expensive, mobile medical equipment is best achieved with RTLS, while RFID is best for consumable goods," Hondros added.

Managing critical inventory with a measured approach to process investment can be complex, particularly if organizations seek the right balance to satisfy their mission and want to design relevant solutions, according to David Lefkowitz, director of Market Strategy, Terso Solutions.

"This is not a 'one-size-fits-all' approach, and it's imperative that individual solutions can be designed and implemented to exceed the needs of the hospital and fit within budgetary constraints of the organization," he said. "It's always a balancing act, but we utilize a sound approach that ultimately yields great things for our customers."

Organizations should start with their end game in mind, Lefkowitz says. "For example, are you looking to better manage orthopedic implants, cardiac catheters and stents, tissue and biologics, or do you want visibility and automation for your med/surg inventory? Once this is understood, then there are multiple RAIN RFID hardware – open and closed systems – in conjunction with our partners' cloud-based software options – that can be utilized and tailored to meet specific budgetary constraints.

"When evaluating RTLS technologies, it's important to understand the organizational goals and then balance it with cost, reliability, accuracy and timeline of getting the solution up and running," Lefkowitz continued. "As RTLS continues to evolve, it makes sense to evaluate newer technologies, such as WiFi, UWB, BLE, and others. Once your supply chain challenges are fully understood, then you can move forward with the right technology and develop the right solution for your organization."

Leftkowitz advocates more of a deliberate approach.

"We've found that it works well to start small and then expand into adjacent areas as we prove our value to the hospital system," he said. "So, if you start by managing tissue and biologics, and clinicians and Materials Management staff are happy with the outcome, then expanding into managing other clinical inventory like the Cath Lab space is fairly easy and welcomed by the hospital staff. In combination with great channel partners, we like to prove ourselves along the way and this type of approach allows hospitals to recognize our value and expand our technology as they see fit." HPN

Back to basics for supply chain automation technologies as pandemic ebbs

Healthcare organizations must learn to 'walk before they run,' hesitate on 'bright, shiny objects'

What are the key automation technologies that will drive supply chain operations within hospitals, regardless of facility location, size or type? Supply chain technology experts center on 10 that represent the more practical and less fantastical as the world slides into a post-pandemic industry revision.

1. Enterprise Resource Planning (ERP) system (interconnected modules that link administrative to clinical to financial to operational throughout the enterprise/organization)
2. Materials Management Information System (MMIS) (for contracting, distribution, inventory, ordering, etc.)
3. Mobile devices/technology (e.g., multifunctional smartphones for operational tasks)
4. Radiofrequency identification (RFID)
5. Barcoding/QR coding
6. Demand-management/predictive-analytics software (for tracking deliveries to the dock and dispensing to the clinical areas)
7. Warehouse Management System (WMS)(for footprints larger than storerooms)
8. Internet of Things (IoT)/Machine-to-machine (M2M) interoperability
9. Robotic Process Automation (RPA) (including advanced dashboards and using "bots" to accomplish basic, mundane and routine tasks and automatic reorder points)
10. Real-time location systems (RTLS)

While experts regard the previous 10 as "must-haves" going forward, they group the rest of the list as "nice-to-haves."

- Artificial intelligence (AI)
- Eyewear equipped with augmented reality (AR) (e.g., for directions, instructions, locating, mapping, teaching, training, etc.), and/or

with virtual reality (VR) (e.g., for demonstrations, designing, in-service training and education, etc.)
- Automated guided vehicles (AGVs) (including remote-control tugs and roving delivery carts)
- Automated product dispensaries (e.g., closed cabinetry/carts, open/weight-based cabinetry/carts)
- Blockchain
- Carousels
- Drones (e.g., for aerial views of high shelves and short-range transport to various buildings on campus)
- Robotics (including "co"botic arms, exoskeleton harnesses, mobile robots for deliveries, disinfection/sterilization, etc.)
- Wearable computing/sensors (e.g., wearable and wireless sensors, watches, wristbands, badges, pins, neckware)

Tools over toys

Instead of filling a toy chest full of the latest tools, Marlin Doner, vice president, Data Analytics and Product Strategy, Prodigo Solutions, advocates for something more structurally driven.

"Rather than focus on the latest 'bright shiny object' that technology vendors often package themselves as, your focus should be to build your technology ecosystem," Doner insisted. "With the move toward cloud computing, modernization strategies are moving away from the ERP 'system' as the monolithic center of the information management universe to a virtual collection of services that make up the ERP 'ecosystem.' These purpose-built microservices [apps] deliver specific business capabilities and are interconnected through well-defined APIs within the ecosystem.

"Architecting your supply chain through a microservice strategy keeps your technology agnostic, while allowing you to deliver best-of-breed capabilities inside a modern user experience [mobile, desktop, API] that is served up on a harmonized data platform," Doner continued. "With this design, you can rapidly scale technology adoption while maintaining independence from the individual technologies that you choose to deploy, while also gaining visibility to the data required to monitor the impact you hope to achieve."


Arnold Chazal

Arnold Chazal, CEO and co-founder, VUEMED, cautions against the allure of tech flashes that can lead to process-improvement blindness.

"Many technologies in this list are exciting new developments in the realm of solutions that can apply to healthcare, but many are quite sophisticated 'bright shiny objects' that are more likely to distract, rather than assist," he said. "The focus must be, first and foremost, on bringing healthcare supply chain and inventory management to the level of technology adoption that other industries have already achieved, having understood long ago the strategic value of using modern technologies to optimize their supply chain."

Chazal contends that AI, AR/VR-equipped eyewear, AGVs, drones, RPA, robotics, and wearable computing/sensors represent "cutting-edge technologies that do not address the fundamental issues of supply chain and inventory management in healthcare today, where technologies – if they exist at all – and processes are often archaic and barely capable of performing. I do not believe that the great majority of hospitals of any size or location will be in a position – in terms of competency, infrastructure and/or finance – to leapfrog to sexier technologies today or in the immediate future while the basics are still elusive and not in place. They need to learn to walk before they can run."

Consequently, Chazal foresees a cost-effective pathway toward technology investment and implementation that can lead to efficient outcomes.

"The biggest bang for the buck is going to come from managing the inventory as part of the supply chain which, in so many cases, is often done manually, using inadequate and fragmented methods and technologies (if any) and where the stakes are very high in terms of financial impact (shrinkage, cost avoidance, revenue capture) and the core mission of quality and safety of patient care (expiration and recall management, backorders handling, etc.)," he said. "As a result, I think that barcoding and RFID are the technologies that can provide the quickest and highest benefits across the board and with a substantial ROI. Inventory management and improvements to the supply chain are the low-hanging fruits in the majority of hospitals in terms of opportunity, size, readiness, and impact on the rest of the organization."

Plan in phases

When it comes to assessing and implementing technology, quantity gives way to quality in terms of applications, according to supply chain technology experts.

"The goal of any technology is to standardize, streamline, and automate business process, ultimately reducing an FTE's [full-time equivalent's] steps to complete a task or perform their work," said Melissa Amell, senior director, Healthcare Strategy, Supply Chain, Infor.

Whether an organization has limited resources or looks to make the biggest impact on operations to include improving the visibility of data, maximize efficiencies of core supply chain business operations and automating and reducing manual intervention in those processes, Amell recommends the following three technologies "at a bare minimum" as foundational:
- ERP (with MMIS functionality contained within to support Supply Chain Operations) or MMIS (on its own)
- Mobile devices/technology
- Barcoding/QR coding

Specific options depend on the scope and maturity of the supply chain organization, as well as what technology is already in place, according to Amell. "The more mature organizations that have a solid technology foundation would be looking at some of the more advanced functionality like AI, RPA, and demand-planning and predictive-analytics software to take their operations to the next level," she added.

Healthcare systems that seek to assist staff quickly with patient care, improve morale, and increase revenue following the impacts of the pandemic should pursue three technologies, recommends Scott Hondros, MHA, SCPM, vice president of Professional Services, CenTrak Inc. They are ERP system integration, RFID and/or RTLS.

"These technologies provide significant ROI, and will achieve quicker results in both the short and long term to assist healthcare staff and facility leadership in reaching their goals," he indicated. "These solutions can provide complete enterprise visibility, and by integrating an ERP with other solutions like RTLS or the Computerized Maintenance Management System (CMMS), the system can share equipment quantities and data that are automatically updated in real-time. This level of insight is crucial to benefit the supply chain, increase staff efficiency, ensure patients receive care in a timely manner, and make a positive and significant impact on the bottom line."

Hondros acknowledges that it often isn't cost-effective or practical to gain visibility into every tool or mobile medical equipment all at once. "To guarantee a better price for these technologies, decision-makers can prioritize and narrow down the locations that require deeper insight," he recommended. "This will not paint a full picture of enterprise visibility, but it will provide a lower cost to entry, and showcase the value of implementing the technology. In the end, ROI and stakeholder buy-in will benefit, and future expansion to other areas of the facility will be easily justified."

Finally, Hondros outlines a workable blueprint for decision-making.

1. Select the top five assets the team is looking to locate and secure consensus from departments such as the equipment distribution, supply chain, nursing, etc.

2. Make sure that the collective group agrees that the selected equipment focuses on items in the highest demand, ones that can be a struggle to keep it in stock, and constantly run low or have an adverse impact on patient care.
3. This approach enables facilities to focus on the clinical assets and locations that make the most sense for a "Phase 1," and outfit the key areas in the equipment workflow at a lower price point.
4. This also allows the implementation and use cases to be up and running quicker and, as teams recognize the value, the solutions can be expanded in a seamless manner to the larger organization as desired in the future.
5. Facility teams can also talk with their solutions partner and consider if they require RTLS or RFID tags based on the passive or active status of the items in which they wish to have visibility.

Decision support for supply chain technology assessment

Clean data vs. access to single source of truth should be top-of-mind

Just as the case in the Sterile Processing and Distribution (SPD) department where science, standards, and regulations dictate that a device not cleaned properly also cannot be disinfected or sterilized effectively, in Supply Chain and other departments, data that aren't accurate and clean should not be shared or transmitted for analysis and trends.

One of the underlying caveats of investing in Real-Time Location Systems (RTLS) and other supply chain automation technologies involves the accuracy of an organization's data in such systems as the item master (IM) and charge data master/chargemaster (CDM).

Supply chain technology experts, by and large, agree that data should be clean and correct before investing in basic and advanced automation technology, but that gaining access to a single source of truth may be enough to justify and not delay supply chain technology investment.

"Yes, the cleaner the data, the better results with the technology. Layering on technology without cleaning the data can set the health system up for disappointment and not able to achieve goals.

"Having clean item master data is critical – and selecting the proper technology and vendor can help with the cleanup. With Cardinal Health WaveMark Solutions, this is a key success pillar for us whenever we onboard a new customer, and one of our first steps to ensure a clean item master list as that is the foundation for ensuring the rest of the data that will be layering on top is high quality and providing the right insights."

Nathan Wicks, vice president, Commercial Technologies and Engineering, Cardinal Health WaveMark Solutions

"'Teching up' has never solved the data quality conundrum of healthcare. In fact, as technology adoption proliferates within a health system, the lack of data standards and data quality (accuracy and completeness) significantly degrades the anticipated benefits of technology modernization and digitization of the supply chain.

"Data is the foundation for the modern digital supply chain. The adoption of data standards – like those from GS1 – create a common language for data integration between systems and trading partners. Modern technology platforms must enforce a standards-based company identifiers (GLNs) and item identifiers (GTINs). It seems simple enough; however, in a healthcare context supply chain master data has not achieved a level of standardization and interoperability that we see in other industries like grocery and retail. It was likely a long time ago that you were in the checkout line and an item did not scan or the price did not match. Yet in healthcare, the inability to scan a barcode or accurately document the cost on a case at the point of care leads to inefficiency for the clinician, incomplete cost capture, and lost revenue for the hospital.

"The first step, prior to implementing the next great technology, should be to clean up item master and chargemaster data. This is not a 'one-and-done' effort. Healthcare, more than other industries, faces a unique data maintenance challenge given the number of items under management, the scope of item attributes needed to inform clinical value analysis, revenue cycle, as well as the variability of pricing. It can be an overwhelming obstacle to technology adoption and success without a robust data enablement platform to create a virtual single source of truth that connects master data across multiple sources.

"Critical components of a data-enablement platform to streamline data maintenance include:

- Data governance – ability to harmonize multiple data streams into a single source of truth connected to finance, supply chain, and clinical workstreams.
- Data management – ability to standardize, enrich, and maintain your master data for both transactional, operational, and clinical compliance.
- Data integration – ability to automate and orchestrate data flow from upstream data sources to downstream financial, operational, clinical, and analytics workflows.

"Data quality improves efficiency of supply chain.

- Data standards help systems and trading partners speak the same language.
- Tighter item formulary control improves compliance of both supply chain and the clinical practice.
- Integration automates data flow across the ecosystem, connecting the accurate data to financial, operational and clinical workstreams (ERP, inventory management, EHR, chargemaster, revenue cycle), and external trading partners throughout the transaction lifecycle (Request to Pay)."

Marlin Doner, vice president, Data Analytics and Product Strategy, Prodigo Solutions

"For a healthcare supply chain organization to transform its operations, the item master and charge master must be integrated. Leadership must believe that cost and revenue are two sides of the same coin. How clean the data is must depend on the extent of the integration between cost and revenue. For any large organization to benefit from the integration, the data must be at least an 8/10.

"Unfortunately, there is no magic bullet for cleaning, classifying, enhancing, and integrating the data. Healthcare systems are better off leveraging various providers' software and solutions. It has become obvious that the health systems need the necessary talent, budgets, and willingness to maintain this data."

Ashok Muttin, founder and CEO, SupplyCopia

"In a perfect world, a clean data set would be ideal and provide an excellent start to implement your RTLS; however, this is rarely the case in the real world. Often, the reality is that there are tens of thousands of assets being used, and there just isn't clean data available in a single source. This is not abnormal and absolutely shouldn't stop healthcare facilities from considering RTLS, and they don't need to – and shouldn't – wait until they have exclusively clean data sets.

"What end-to-end solution providers truly need for the implementation to be successful is a single source of truth, where the data is stored and where updates are going to take place. This is key. For our team, as they go in, locate items and physically tag assets, they

only need to know and have access to this single source of truth to move forward and update with accurate information obtained during the 'Asset Sweep.'

"Decision-makers can also leverage an ERP system with their RTLS technology to document assets that are leaving a facility for additional insights and accuracy. The technology and sensors at the loading dock pick up on the item's location, and send automatic alerts if a tagged asset leaves a facility. This will allow further accuracy in equipment data sets. There are also emergency management use cases that can be beneficial to monitor assets in the case of an emergent event (natural disaster or outbreak). This can be especially worthwhile when it comes to crucial and expensive medical assets that sit in a warehouse, sometimes forgotten until there is an emergent event.

"Over time, and even as soon as two months later, you will see that your system has a cleaner data set that will lead to a more reliable master data set that can be used for other purposes. This process will continue and improve with time. It's by no means a hard and fast requirement that the data sets start out clean. As an experienced partner works through it with you and implements the proper [standard operating procedures], it will work itself out.

"I recommend working with a trusted, strategic partner who understands the complexity of the task and has an appreciation for the quantity and quality of the data, as well as the operational processes that take place for the best success. This will ensure that the data element is reliable, leveraged fully, and trusted."

Scott Hondros, MHA, SCPM, vice president of Professional Services, CenTrak Inc.

"Yes, good clean data is the foundation of everything – operations, reporting, and maximizing technology. Technology can help with identifying opportunities to clean and standardize organizations' data, but internally you have to have the right FTE skill set in order to execute.

"The more common approach is to pay a third-party data service who is typically an expert and has a dedicated focus in this space. To be truly successful you need a mechanism (integrations, APIs etc.) to keep the data updated and maintained, and even before that, an agreed-upon data management and governance process."

Melissa Amell, senior director, Healthcare Strategy, Supply Chain, Infor.

"In general, implementing a new technology that is transformative (groundbreaking or not) requires a realignment of roles and responsibilities, a streamlining and redesign of processes, often a reconfiguration of the physical space, and the sourcing of new skilled labor, etc., to not only reap the greatest benefits of the technology acquisition or upgrade, but also to make it work at the most basic level. Without that all-encompassing approach to transformation anchored around a technology such as RTLS, the project will fail completely or not deliver the expected outcome.

"A critical component to the success of a data-dependent technology that is designed to capture and process data, as well as feed it to other systems and so on, lies in the completeness and accuracy of the core database of products that fuel its engine and allow it to run smoothly. This enables the proper identification and ordering of items (MMIS, ERP), accurate charge capture and billing, total inventory visibility and tracking, and the error-free documentation of products used for patient care (EHR, EMR), including expiration dates, and lot and serial numbers.

"A successful RTLS implementation depends on a clean and accurate item master from the get-go to avoid duplicates, erroneous records, redundancies and incomplete datasets, and to allow for effective item tracking, documentation, and seamless integration with other IT systems. The technology implementation can help with the data cleanup by eliminating the items that are no longer in scope, used or purchased, and also by completing missing or incorrect data fields for those that will be tracked with RTLS."

Arnold Chazal, CEO and co-founder, VUEMED

Scoping out supply chain automation technology by facility demographics, type

How much does it matter whether your healthcare organization represents a larger or smaller facility, or multiple facilities, near a big city or out in the country or even across county or state lines? And with healthcare services extending beyond acute-care hospital walls and into more remote-care facilities, such as ambulatory surgery centers, clinics, physician offices, retail outlets and even patient homes, how might technology implementation impact clinical service expansion.

Investment in specific technologies is not as much about organization size and location as it is about where they are in their technology-adoption journey and the appropriate infrastructure and resources in place to support more advanced technology solutions," said Nathan Wicks, vice president, Commercial Technologies and Engineering, Cardinal Health WaveMark Solutions. "Therefore, it's not a 'one-size-fits-all' kind of approach to which technologies are best suited for the different types of institutions, as their adoption of technology can vary widely."

Three other supply chain technology experts remain mixed, insisting that any standardized, utilitarian approach likely would face challenges.

Larger, urban hospital and non-hospital facilities

"Demand-management, predictive-analytics software, and Robotic Process Automation (RPA) make the most sense within larger hospitals and non-hospital facilities. These facilities have a larger number of people and a greater range of locations throughout the enterprise. The complexity of tasks and the variety of people crossing paths with equipment are more significant, and supply chain managers are responsible for knowing what is in each area, when it will be required, and when it will need to be replenished.

"Predictive analytics and RPA provide more visibility, which is vital for efficiency in larger facilities. For these spaces, key areas like the supply room and other storage options around the facility are spread out, meaning more equipment changeover, which requires the supply- chain team to cover a larger geographical space for inventory checks. In larger facilities, there's also a greater ability to leverage automation aspects with these tools to accomplish more basic, routine tasks."

Scott Hondros, MHA, SCPM, vice president of Professional Services, CenTrak Inc.

"In larger, urban hospitals and large hospital systems, it's imperative to have visibility and control of your high-dollar PPI [physician preference items] and med/surg inventory across the IDN. Not only within individual supply rooms in a single facility, but across many facilities and system-wide. This is not an easy task but can be accomplished through a layered approach using a combination of RAIN RFID technology (open and closed architecture) coupled with cloud-based inventory management software. Every hospital is unique and a tailored approach using the right technology for managing the right type of inventory is vital. It all starts with understanding the needs of the hospital system. Once priorities are understood and

an assessment has been performed, then the right solution can be developed and put in place.

"At Terso, we work with great channel partners that combine leading inventory-management software in the perioperative space with our RAIN RFID hardware to enable hospitals and larger health systems to ultimately gain better control, visibility, and efficiency with their clinical inventory. Not only does this technology allow for greater visibility and control, but perhaps more importantly, allows clinicians to focus on patient care and not on inventory-management tasks. In the current healthcare environment where labor shortages are a real issue, supply chain automation through technology enables greater productivity and doing more with fewer people. This has never been more important than now.

"Our solutions utilize IoT sensors in a variety of ways, combined with cloud-based software to automate inventory-management processes throughout hospitals and hospital systems. We advocate a 'walk before you run' approach and don't prescribe a solution before we fully understand the needs of the hospital system and the desired outcome. Depending on needs and budgetary constraints, the right solution can be designed and implemented in a straightforward, timely, and cost-effective manner."

David Lefkowitz, director of Market Strategy, Terso Solutions

"MMIS and ERP systems are essential tools for managing the basics of supply chain and inventory management in any size organization. But the larger the organization, the more supplies, vendors, and SKUs are needed, thus making these systems even more essential.

"Both barcoding and RFID technologies suit large, urban hospitals because of the sheer volume and diversity of supplies being managed, the great number of storage locations, and the fact that it is challenging to ensure consistency in supplies management when so many users 'touch' the supplies throughout their lifecycle. As a result, automating the management of supplies is vital for keeping track of medical supplies and devices in a manner that prevents mistakes and mitigates risks such as expirations and recalls. Barcode scanning and RFID are essential automated systems for managing supplies from the point of entry or receipt to the point of care.

"Demand-management/predictive-analytics software could be a nice addition for optimizing the ordering of supplies, as well as the on-hand inventory that can vary greatly with the seasons and various cycles in patient volume and can fluctuate or be affected by back-orders or shortages."

Arnold Chazal, CEO and co-founder, VUEMED

Mid-sized suburban hospital and non-hospital facilities

"In mid-sized facilities, predictive-analytics software and RPA/automatic reorders remain crucial. These facilities aren't as large, but it remains essential that employees have visibility into the deliveries entering the dock and know where essential medical equipment and supplies are located throughout its journey to clinical areas. Through enhanced visibility, employees at these facilities can save significant quantifiable time, ensure each department has the equipment required, and have accurate knowledge of supply status. These solutions enable a smoother, more accurate process, which is especially beneficial when facilities are short-staffed and resource-constrained."

Scott Hondros, MHA, SCPM, vice president of Professional Services, CenTrak Inc.

"As Terso advocates taking an individualized approach depending on the needs and budgetary constraints of the organization, the size of the hospital is not a limiting factor. We recommend the same initial process regardless of size, and would start by understanding the needs and priorities of the organization and then move forward with a walk-through and assessment of current supply chain processes. At that point, we'll work with our partners to make preliminary recommendations and scope out the project, cost, and timeline.

"Terso has been in this space for almost two decades and we pride ourselves on doing what's right for the customer. In conjunction with our channel partners, we can bring a great deal of value by automating the clinical supply chain at facilities large or small. So again, it just depends on the needs and priorities of the customer, and we'll endeavor to design and implement solutions that meet these parameters and exceed expectations."

David Lefkowitz, director of Market Strategy, Terso Solutions

"Same as [for larger hospitals], except that demand-management software may not be as critical and barcoding may be preferred over RFID because everything is typically easier to manage at a smaller scale and with fewer users involved. Mobile devices could be a good, more flexible substitute, especially when it comes to inventory management and auditing and is less costly than RFID."

Arnold Chazal, CEO and co-founder, VUEMED

Smaller, rural hospital and non-hospital facilities

"Predictive analytics aren't as beneficial or cost-effective in smaller facilities as they are when applied to mid-sized and large facilities. Smaller, rural hospitals and non-hospital facilities are unique and therefore, require unique solutions. The layouts of these facilities aren't as complex as in larger facilities, and there aren't as many people moving in and around the building. When considering the best technology for the environment, daily needs, and the most cost-effective option, I recommend passing on predictive analytics and pursuing mobile devices, like smartphones. Mobile equipment allows staff to take it on the go and conduct an asset status analysis, while physically in the storage location to gain the most accurate and real-time update on equipment and to better use the facility's budget."

Scott Hondros, MHA, SCPM, vice president of Professional Services, CenTrak Inc.

"I would argue that automation is just as important at small, rural hospitals as it is at mid-sized or even larger hospital systems. While the scale may be different, the need for automation is just as important. In many smaller hospitals, much of the materials management is often done manually. The pandemic exposed many of the weaknesses of the healthcare supply chain and I would argue that many smaller, rural hospitals have been impacted more than others. Not only is it tougher to manage clinical and non-clinical products manually, but many hospitals are also having to do this with fewer people as labor shortages continue to affect hospitals nationally.

"With this in mind, technology can help bring efficiencies and automate the process. Not surprisingly, Terso recommends the same initial method regardless of size of hospital and would start by understanding the needs and priorities of the organization, and then move forward with a walk-through and assessment of current supply chain processes. Then we can make preliminary recommendations and scope out the project, cost, and timeline."

David Lefkowitz, director of Market Strategy, Terso Solutions

"Same as above, with an emphasis on the value of barcoding and mobile device technologies because they are excellent automation

tools that perform well in more controlled, smaller environments that typically have better oversight because fewer users are involved in the supply chain process. In these smaller, rural settings, staying consistent doesn't require the highest degree of automation that both RFID and RTLS provide."

Arnold Chazal, CEO and co-founder, VUEMED

Remote care facilities (e.g., ASCs, clinics, physician offices/practices, retail outlets)

"From my experience, remote-care facilities are similar to large and medium healthcare buildings, which means demand-management/predictive-analytics software and RPA make the most sense. While remote-care facilities often have small storage spaces, there are usually multiple locations spread across a large geographic footprint. Remote-care facilities can benefit the most from an implementation of Real-Time Location Systems (RTLS) or Radiofrequency Identification (RFID) that remotely informs a staff-facing dashboard or analytics tools about real-time inventory and what replenishment should look like without a staff member having to physically visit each supply area. These systems will best audit what's in the storage rooms, what is still needed, and what is being restocked, freeing up staff members to focus on their patients."

Scott Hondros, MHA, SCPM, vice president of Professional Services, CenTrak Inc.

"In remote-care facilities, managing inventory can be a very manual and time-consuming process. Using the right software and automated inventory-management technology, such as RAIN RFID, ASCs can realize real-time visibility to the consignment inventory at all ASCs from anywhere. This information is then accessible to sales reps, hospital administrators, and ASC staff. One can ensure necessary items for procedures are in inventory, optimize the inventory levels at each ASC, manage expiry of products, and automate replenishment. While the scale and needs may be specialized, remote-care facilities can ultimately improve supply chain efficiencies through the right technology."

David Lefkowitz, director of Market Strategy, Terso Solutions

"It is difficult to justify ERP and MMIS systems when the scale is so small, although a system of some sort would be helpful. Many such facilities manage with more basic Microsoft-based tools or less complex software-management tools. Again, barcoding may be the technology that is best adapted to provide the highest level of control in inventory management and supply chain at the lowest cost, with ease of use and a low-level investment."

Arnold Chazal, CEO and co-founder, VUEMED

Communication, effort, time ignite OR quick wins

by Rick Dana Barlow

Photo 101474788 © Ammentorp | Dreamstime.com

For some hospital supply chain teams, working with the Operating Room or Surgical Services department can be a chore or depending on personalities, a necessary evil. But for one Midwestern multi-hospital system, it actually represents a mission, and the feeling is mutual between the two departmental teams.

Together, they digitally transformed the OR and procedural area supply chain inventory processes using industry best practices and focusing on improving clinical workflow.

"While there are many collaborations in the healthcare setting, one of the most important to the success of our department is the relationship with supply chain," said one OR director who declined to be identified, along with the naming of her organization. "As one of the larger departments within [the hospital], we fully rely on the supply chain team to ensure we have the adequate supplies needed to facilitate procedures.

"In my tenure [here], we have encountered at least three different once-in-a-lifetime disasters, all of which greatly impacted our department, as well as the supply chain field," the OR director continued. "Through each problem, the supply chain team walked together with us to identify solutions, access products, communicate changes, and ultimately allow us to continue delivering exceptional patient care. It is evident that customer service is a top priority for this team, and they make our department and [the organization] overall better."

Assisting the OR

They established a lean concept representing the process of managing daily improvement within and between either department. They review goals and metrics, identify challenges, and generate solutions together as part of a culture of continuous improvement, creativity, and innovation to develop, engage, and empower team members.

They also created dashboards depicting data from multiple sources, including the electronic medical records system (EMR), materials management information system (MMIS), enterprise resource planning system (ERP), and other supply chain automation technology and programs for financial systems. They also implemented a bill-only process and technology to give teams and supply vendor partners visibility into what products are being used, enabling efficient downstream billing.

"Adopting a digital supply chain has enabled [the OR] to pivot away from 'analysis paralysis,' giving teams opportunities to solve potential problems proactively," said the Supply Chain manager. "[The OR] can now work smarter and minimize care costs."

From these joint efforts, they've been able to reduce supply costs per case, inventory on-hand within the OR and procedure rooms, product expiry date on shelves, product waste rate, and billing cycle times, while increasing the charge-to-cost percent ratio.

While the outcomes look fine, achieving the results took time, both indicate.

Of course, not every healthcare organization has or wants to take the time until the clinical, fiscal, and operational pain becomes too great. Further, not every healthcare organization sees its Supply Chain and OR/Surgical Services teams collaborating and working together on a routine basis.

Successful relationships between Supply Chain and OR tend to begin with an intentionally friendly meeting, collaborative ongoing planning, and open communications that spark a quick win, clinical supply chain experts agree. This fluid process develops trust and sows the seeds for longer-term cooperation, they indicate.

How can Supply Chain nurture a collaborative relationship with the OR that nets a quick fiscal and/or operational win – whether it be cost-cutting or revenue-generating exercises akin to that Midwestern facility? Seven experts share their ideas.

Cory Turner, CMRP, senior director, Healthcare Strategy, Tecsys, Inc.

"We are so often working in silos that we can't see the forest for the trees. Quick wins can sometimes be as simple as getting together in the same room to begin conversations around one another's processes to find gains. Nurturing these kinds of cross-functional teams can often unearth more long-view optimization opportunities as well. One example could be to introduce a process that monitors expiration dates, since some supply chain management systems don't track this automatically.

"Product standardization is a fairly reliable exercise to help health systems reduce costs and gain operational efficiency. With access to the right data insights, giving some proper attention to this routine practice can reduce waste and improve supply availability, while enabling supply chain to streamline its operations.

"OR/Surgical Services could consider optimizing preference cards with a data-driven analysis. This would involve using data analytics to analyze the usage and costs of supplies and equipment for specific procedures, and then using this information to optimize the preference cards. This translates into cost savings by reducing the amount of unnecessary or duplicate supplies and equipment being ordered. Additionally, it can also improve the efficiency and quality of care by ensuring that the right supplies and equipment are readily available for each procedure.

"Consider investing time and energy today in order to build your 'quick win' engine for years to come. For example, the Sterile Processing and OR departments at a North Dakota hospital embarked on a joint venture to digitize their preference cards so they could leverage data analytics to optimize them on a regular cadence, rooting out inefficiencies each time. This data enabled them to identify and remove duplicate items from preference cards, as well as standardize products across different procedures. Furthermore, this approach helped the hospital improve their inventory management, reduce waste, and enhance the overall patient experience.

"To date, they have seen nearly $4 million in one-time inventory savings and surgical supply optimization across disciplines, and improved the accuracy of their preference cards to over 90%. Add to that, they have recovered countless resource hours in supply chain from resolving the constant flow of unused items."

Tom Redding, senior managing director, Healthcare Services, St. Onge Co.

"A quick win is to complete a physical inventory in the OR/SPD to document the number of stocking locations for each product and the associated inventory dollars. Supply Chain can assist with reviewing historical demand patterns and flag potential opportunities for excess inventory. Supply Chain can develop a plan to return excess inventory to each vendor and/or determine the best way to bleed down inventories to the appropriate levels. Making a one-time inventory purge can reduce short-term expenses but it does not fix the underlying causes of excess inventory. It is imperative for health systems to continually assess their ordering processes, frequency/timing of ordering, supply unit-of-measures, and source of supply to determine if changes can be implemented to better manage their ordering frequencies and quantities."

Ash Crowe, senior project manager, Healthcare, St. Onge Co.

"One of the most meaningful quick wins can be in making sure Supply Chain and Patient Billing are communicating, particularly on high-dollar items. If Supply Chain has purchased 10 of an item that costs over $1,000 in the last two months, can all 10 of that item be traced to a patient bill? These two departments often sit pretty far away from each other. Lack of visibility makes assumptions, and opportunities for missed billings often occur."

Steve Suhrheinrich, chief customer officer & co-founder, Curvo Labs

"Finding a quick win in OR/Surgical Services: The concept of a 'quick win' is relative, and dependent on the strength of relationships and shared goals and intentions. Let's assume that the OR/Surgical Services and Supply Chain teams work well together and are eager to collaborate on shared cost-savings initiatives. I recommend focusing on utilization projects where simply sharing historical practice pattern data can shine a light on savings opportunities and bring surgeons along for change.

"Successful use of data and analysis for quick wins: Bone cement utilization in total knee procedures is one example of a relatively quick win. There are at least two ways to look at bone cement utilization: 1. The number of units used per procedure and 2. Antibiotic bone cement versus non-antibiotic bone cement usage per case.

"'Orthopedic Network News' [A Curvo Labs-owned newsletter] reports that 45% of total knee cases use only one unit of 40g bone cement per case and 52% of cases use two units. This is equivalent to 1.4 to 1.6 units per case on average. How many units do your surgeons use? Even if your average utilization across the organization is equal to this benchmark, do you have outlier surgeons? The best way to show this practice pattern is through bar- or line-graph visualization. Plot each surgeon on the x-axis and the average units used per case on the y-axis. You can also plot the average cost of bone cement per case using a line graph on a secondary y-axis. You will likely find outliers.

"'Orthopedic Network News' also reports that only 25% of total knee replacement procedures use antibiotic bone cement. Antibiotic bone cement costs two to five times the price of non-antibiotic bone cement. There are clinical reasons to use antibiotic bone cement, so you're not going to debate that. I recommend that you create a visual with the surgeon's name on the x-axis and the number of cases where bone cement is used on the y-axis. Group by antibiotic and non-antibiotic bone cement utilization per case. Use the secondary y-axis to plot the average cost per case of bone cement. Again, you will likely find outliers.

"Use practice patterns to drive conversations: The point of these exercises is to show practice pattern differences between surgeons and let them discuss. Once you feel confident in your data and visualizations, host a meeting with the surgeons to share your findings. With defensible data and good visuals, you won't need to say much. Just report the facts, which are national benchmarks and your organization's per-surgeon utilization. For the best effect, don't hide the surgeons' names on the graph. This strategy has proven to work over and over. I bet you'll see change and cost savings right away."

Angie Haggard, CEO, RDA Healthcare

"When organizations are looking for a quick win in the OR, collaborating with Supply Chain is critical. One solution that consistently delivers increased efficiencies and, at times, reduced labor requirements, is a Rapid Improvement Event (RIE). Where there are broken processes across multiple roles and/or groups of people, a Rapid Improvement Event quickly identifies the problem and uses real-time collaboration to identify the solution. An unexpected outcome of RIEs is a higher-performing and more collaborative environment for post-RIE individuals.

"A Rapid Improvement Event is like an archaeological dig — on the surface, it doesn't appear to be of great value. However, as we have experienced many times before, when you dig into the details and everyone walks through the process together with a common goal, discoveries of hidden treasures abound. Typically, the solution to achieve the improvement is quite simple. One of my favorite examples is a hospital OR that wanted to decrease their OR room turnover time by 20%. RDA facilitated a Rapid Improvement Event that included OR leadership, clinicians, Environmental Services (EVS) and Supply Chain. Over the course of two days, the current flow was mapped and the gaps to close for an optimal future state were defined. In short, there were two root issues causing the repeated OR room turnover delays:

1. Post-case, it was unclear who was to remove the trash from the OR suite. EVS had been told that nurses were to remove the trash. Nurses were waiting on EVS to take out the trash. Solution: It was agreed that EVS would take out the trash moving forward.
2. EVS did not know when an OR suite was ready for cleaning. The intercom system nor the wearable communication devices would always work in the facility. Solution: Supply Chain recommended an interim solution of a walkie-talkie in each OR suite, and one for EVS leads to carry so they could receive communication that an OR suite was ready and send communication once the rooms were completed.

"The result: 21% decrease in OR room turnover time."

Karen Niven, senior director, Clinical Value Analysis, Premier

"An evidence-based, value-analysis process can balance issues related to quality, patient and staff safety, revenue enhancement, and reimbursement optimization across the care continuum via:

- Appropriate utilization and standardization;
- Pricing optimization;
- Implementation of cost-savings and cost-avoidance initiatives;
- Identification and elimination of waste, redundancy, and inefficiency.

"In short, it enables standardization and reduced supply chain costs without sacrificing quality.

"Premier's 2022 Value Analysis Guidebook provides the following recommendations to support a lean approach:

- Include all involved team members across departments at the table for discussion for identifying need(s);
- Determine inventory management strategy and supplier capacity;
- Understand clinical requirements, areas of use, and current outcomes;
- Determine the need for process improvement vs. a new product;
- If considering a conversion, evaluate the cost of conversion as part of the total cost of ownership."

Estucia De Verteuil-Brathwaite, consulting director, Vizient Inc.

"A relatively quick way for healthcare organizations to improve efficiencies and achieve cost savings in surgical services is through standardization of non-complex/non-sensitive commodity items. A major healthcare system in the southeast successfully implemented this supply chain efficiency through standardization of medical tape and equipment covers, and found immediate savings with minimal operational impact.

"Standardization of medical tape allowed for a reduction in waste and created more efficient and leaner practices. And from a clinical perspective, the single-use rolls (versus the multi-use rolls) improved infection control measures by reducing hospital-acquired infections (HAIs) caused by cross-contamination. This effort generated immediate and long-term savings with reimbursement by reducing the financial impact to the healthcare system's bottom line.

"Another successful example involved sourcing clinically equivalent equipment covers. The organization achieved the same clinical value and cost-savings by reducing the number of suppliers and reducing product variation and SKUs. This allowed for the establishment of reasonable PAR levels and additional shelf space, a lean process." HPN

To aid the top revenue-generating department, start early and often

'There is no small idea that can't result in large dividends'

Short of the OR/Surgical Services leader directly reaching out to Supply Chain for financial/operational assistance, Supply Chain likely may be recruited through C-suite concerns or may spot economic issues via information systems data triggered by the CFO.

Regardless, should the C-suite — comprising the CEO, CFO, COO, CMO and CNO — discover budgetary issues that can affect the number and quality of healthcare services to be provided to the community, they turn to external consultants and suppliers or to internal consultants and facilitators, which typically involve Supply Chain for project management. Seven clinical supply- chain experts offer their tips targeting costs.

"Start with lunch. It's sad to think of the Supply Chain leader wondering if the OR/Surgical Services could use the supply chain's help. If this relationship hasn't already been established or it's not flourishing, it's time to mend some fences. Start with lunch and get to know your partner on the OR/Surgical-Services team.

"Start with clinical category teams. I'm a big believer in cross-functional teams. This leverages the expertise inside the organization and creates collaboration. Start by setting up a clinical category team with supply chain, informatics, finance, and surgical services participation. Choose one of the highest-profile implant categories like orthopedics, spine, or CRM. Bonus points if you get a physician on this team.

"Bring data and insights. Supply Chain needs to come to these meetings armed with data and insights. Share practice pattern differences and pricing differences. Track and share product and price creep. The clinicians on this team can be your translators to the surgeons. Before you know it, surgeons and the OR/Surgical-Services teams will be coming to Supply Chain for insights and new ideas. You'll truly be strategic partners, and that's where the fun is."

Steve Suhrheinrich, Curvo Labs

"Supply Chain leaders should meet with the OR/Surgical Services leader on a frequent basis to proactively determine the needs and/or potential opportunities. For organizations that have an effective value-analysis structure, the monthly value-analysis meetings are a good forum to uncover the OR pain-points and needs. In addition, this same forum will be a place to not only identify the problem but to identify the solution and track the implementation progress of the solution. Some Supply-Chain leaders proactively schedule a 1:1 monthly meeting with the OR director, even if they do have an effective value-analysis structure.

"A monthly meeting helps to establish and/or maintain lines of proactive two-way communication between the OR and Supply Chain leaders. OR leaders have valuable insights that can benefit Supply Chain (e.g., physician changes, practice changes, forecasted case volumes, etc.). Supply Chain leaders also have valuable insights that benefit OR leadership (e.g., initiative updates, logistics insights, staffing updates, etc.). The OR is the highest revenue-generating department in the hospital. Monthly meetings via value analysis or one-on-one are not only critical, but necessary.

"There are many technology and benchmarking tools that exist to analyze cost, quality, and outcomes, and identify potential opportunities for the OR. If your organization has these tools, great! Review the reports and/or have someone on your team review the reports as they will uncover potential opportunities.

"Look for the low-hanging fruit (e.g., highest-spend, non-contract spend, expired contracts, etc.). Note: Before sharing any data with the OR or clinical leaders, double-check the data to ensure it is accurate! Data can be your best friend or your worst enemy. Once you have verified the accuracy of the data, share the information with OR leadership to initiate opportunity discussions. If your organization does not have these analytics or benchmarking tools (e.g., ECRI), it is worth the investment to evaluate potential analytics and benchmarking technologies."

Angie Haggard, RDA Healthcare

"Communication between the departments is a crucial part of any organization's success. The key is not to wait until there's a problem, but to proactively establish rapport. Having standing meetings between departmental leadership can foster enough transparency where, when adverse situations arise, there is a culture of collaboration that allows them to more easily identify issues and pivot to make adjustments, resulting in potential savings to the organization. Those savings may surface in contract renewals, new product additions, trunk stock or even where to stage supplies in the OR. There is no small idea that can't result in large dividends."

Cory Turner, Tecsys Inc.

"Supply Chain leaders can assess the inventory replenishment requests for OR/Surgical Services through their ERP system to identify potential improvement opportunities. The potential opportunities could include: Misalignment between demand and available product unit-of-measure, excess order frequency, excess expedited shipping, misalignment of consignment, and bill-only activities versus charged to the patient, and demand with multiple clinically equivalent products. Supply Chain has a bird's-eye view to understand the transactional activities that occur within the OR/Surgical Services. Supply Chain leaders can create the financial case that existing supply management practices are not working effectively, and build the case to conduct an operational assessment."

Tom Redding, St. Onge Co.

"Supply Chain has so much data they could use to propose a project to OR/SS. Has one service line started using new products or new vendors? If so, is there a possibility to consolidate, to work toward contract compliance, renegotiate contracts or make a bulk buy? Are there products that aren't being ordered anymore? If so, could they have their PAR levels reduced or be removed entirely, freeing up much needed space?

"There are so many questions that Supply Chain can start to investigate with the data available to them; this preparation before going to the OR/SS allows them to have smarter questions and get more direct assistance from the clinical team."

Ash Crowe, St. Onge Co.

"Creating a multidisciplinary team of stakeholders, including supply chain, clinical, finance and other individuals – and with strong communication – is key to success. Today, clinicians and supply chain leaders are working more closely across departmental lines to understand the broader impact of opportunities and reduce siloed decision-making.

"As one tangible example, a clinically integrated supply chain team could look at the return on investment (ROI) for the use of corner guards and instrument tip protectors, as a way to reduce rework required if the instrument set is contaminated due to the perforations in blue wrap. While these products move cost from consumable to reusable instrument containers, they can also help reduce overall cost caused by the re-sterilization of instruments, which can lead to delayed procedures and employee rework.

"There is also an opportunity for organizations to complete a value-analysis maturity scoring matrix to determine opportunities for overall enhancements of processes and cost savings."

Karen Niven, Premier

"Supply Chain plays an integral role in the sourcing of commodities and implants, and acquiring clinical products at a reduced and competitive cost. The Supply-Chain department conducts contract and pricing reviews/audits to ensure suppliers remain current and in compliance with their contract, and thus, avoids price increases, off-contract utilization, and unnecessary spend.

"A clinically integrated supply chain is paramount to achieve optimal quality, operational efficiencies, and cost savings. The expertise of Supply Chain comes into play through management and oversight of spend and budgeting within the OR/Surgical-Services space, as well as in assistance with product standardization and reducing product cost variation."

Olander Pilson, Vizient

Photo 93535091 / Care © Monkey Business Images | Dreamstime.com
Illustration 29359048 © Ingridneumann | Dreamstime.com

INFECTION PREVENTION *sponsored by* STERAMIST DISINFECTION & DECONTAMINATION

Infection prevention challenges require new solutions

Effective information, training, and staffing remain keys to successful cleaning and disinfection.

by Brenda Silva

As hospitals and healthcare facilities look to meet the daily demands of infection prevention (IP) protocols, many face the additional challenges of inadequate information, incomplete training, and insufficient staff. Unfortunately, one side-effect of these challenges is often a decreased efficacy of cleaning practices, which can potentially lead to an increase in hospital-acquired infections (HAIs). By all assessments, the medical industry needs improved options to overcome the challenges of air/surface cleaning and disinfection.

In response to the need for improved IP solutions, many industry experts agree that the most effective product currently available for ridding facilities of bacterial and viral microbes is a solution made up of 100% education.

Increased education and decreased infections

In order to meet established infection prevention protocols, hospitals and healthcare facilities must first understand that not all cleaning and disinfection products are equal. There is no one-size-fits-all when it comes to disinfecting air and surface locations, and different areas often require different cleaning products. This is where product education for C-suite executives and decision-makers is most vital. Products purchased without thorough

VIDASHIELD™ UV24

WHAT IS IN YOUR AIR?

Vidashield UV24 is an active UV-C Air Purification system that is proven to reduce airborne pathogens. The innovative design allows for 24/7 operation in occupied spaces and each unit can treat a volume of air equivalent to 10'x10'x8' room 4 time per hour. To learn more about how Vidashield UV 24 can help keep your building healthy visit vidashield.com, nuvosurgical.com or call (800) 831-1222

SCAN FOR MOR

nuvo

sales@nuvosurgical.com | (814) 899-4220
www.nuvosurgical.com | www.vidashield.com

knowledge of their intended use can lead to ineffective cleaning practices, and an increased opportunity for microbes to thrive.

At Xenex Disinfection Services—a San Antonio, TX-based company known for their LightStrike robots, which feature patented pulsed xenon UV disinfection technology—Dr. Mark Stibich, chief scientific officer and co-founder, pointed out how the lack of necessary tools can be detrimental to a hospital or healthcare facility.

Mark Stibich

"One of the biggest challenges facing hospitals today is that environmental services (EVS) team members don't have the right tools to accomplish their job. Harmful pathogens remain on commonly touched surfaces, even after the best liquid chemical cleaning efforts. Studies show that less than half the surfaces in a hospital room are properly disinfected after manual cleaning when the room is being prepared for the next patient."

Dr. Halden Shane, CEO at SteraMist, who promotes their TOMI SteraMist solution and equipment combination fogger from their location in Frederick, MD, added, "Building on the many options for disinfection on the market today, infection preventionists (IPs) and healthcare staff have their hands full considering everything from schedules and room turnover to lingering dangers that some harsher chemicals leave behind when it comes to picking the ideal solution. Sometimes they settle for a disinfection that seems 'good enough,' or maybe multiple chemicals that can do the job but compound the dangers."

Halden Shane

He continued, "With the growing number of HAIs, resistant pathogens, viral variants from our last pandemic, and potential future pandemics including Ebola that can and will hit healthcare facilities worldwide, facilities are turning towards a wider variety of chemicals and methods to find a solution, and often with damaging results. It can prove to be a minefield at times – some disinfectants achieve the kill, but corrode and damage expensive surfaces. Others seem gentle on surfaces, but either need to stay wet for hours or compromise on the results. Either way, healthcare facilities are gambling with their ratings, budgets, funding, patient and personnel health, and so much more."

Echoing the importance of product education prior to use is Tom Rodenberg, director of global sales at Parker Laboratories, located in Fairfield, NJ. Among the company's cleaners and disinfectants are the Protex product line, as well as Transeptic, and Tristel DUO products.

Tom Rodenberg

"I think one of the biggest problems facilities have with surface disinfection is knowing the cleaning instructions for all of the equipment in the facility. A lot of facilities want to use one product that kills everything; however, some of these disinfectants are very harsh, and destroy sensitive equipment and vinyl surfaces as well. There are many products out there that will work for most surfaces, but there is not one product on the market that will work for all surfaces."

In New Castle, DE, Halosil International is home to HaloMist, a hydrogen peroxide-based disinfectant. Addressing the challenges facing providers and suppliers in their efforts to remove harmful microbes from facilities, Halosil CEO Maryalice St. Clair summed

up the need for product education that begins with executives, and continues with all staff members.

"I see a great challenge in continuously educating decision-makers to ensure that they are selecting the appropriate solution for infection control, and training staff to implement a disinfection protocol, as well as use the product correctly. For example, using a disinfectant product or system that does not have a 6-log kill of spores in a *C. diff* isolation room will not achieve effective disinfection of that space."

Maryalice St. Clair

Insufficient staff and incomplete training

Along with thorough infection prevention product knowledge for all staff members, lies the equally troubling challenge of simply not having enough staff to train. Without the necessary staff to properly clean and disinfect microbe-laden areas of a hospital or healthcare facility, existing staff and teams become stretched thin through added duties that cover multiple areas. The lack of staff also means that the length of product education and usage training can become shortened, resulting in "just the basics" instruction that often leads to ineffective cleaning and disinfection of vital areas, as well as patient safety concerns.

In agreement is Doe Kley, principal infection preventionist at Clorox Healthcare, located in Pleasanton, CA, who reiterated the critical need for thorough education and training.

"Healthcare providers continue to face a number of challenges that impact their ability to effectively and efficiently execute cleaning and disinfecting protocols to help prevent the spread of pathogens that can cause illness, particularly healthcare-associated infections (HAIs). One challenge that continues to persist is staffing burnout and/or shortages, as well as high employee turnover. High employee turnover, coupled with staffing shortages, result in heightened concern around patient safety, including HAI-prevention, as well as a training gap because facilities have limited time to provide adequate and effective training to new employees."

Doe Kley

She continued, "Training is essential for ensuring cleaning and disinfecting protocols are executed efficiently, effectively, and safely to help combat the spread of pathogens including HAIs. To ensure new staff receive the knowledge and skills needed, as well as help previous staff remain current with their education, facilities should look to leverage online, on-demand education solutions that take the guesswork out of training, such as the CloroxPro HealthyClean online learning platform."

Accredited by American National Standards Institute National Accreditation Board (ANAB), HealthyClean is the only industry-wide certificate course designed for the commercial cleaning industry.

Within the infection prevention industry, many experts would agree that with the proper amount of time spent on education and training prior to product use, cleaning and disinfection products can be as effective as they are intended.

Parker Labs' Rodenberg suggested, "Infection control should check with the manufacturers of equipment on recommendations for disinfectants, so as to minimize damage to expensive equipment due to the wrong choice in a disinfectant. The instructions

for use (IFUs) for the disinfectants vary, and the users should know the application instructions and required time. Additionally, high-alcohol wipes may not apply enough liquid to wet the surface for long enough without multiple applications."

Infection prevention and industry prognosis

Along with challenges of infection prevention product education and staff training, the issue of high patient throughput is also having an impact on cleaning and disinfection protocols. The increased patient throughput has placed increased demands on disinfection turnaround times in both patient rooms and surgery-related areas. Infection prevention and EVS teams are under heightened pressure to get rooms cleaned, disinfected, and ready for the next patient's use much faster than in the past. The result of these increased demands is ineffective infection prevention, which, once again, can lead to issues of patient and staff safety.

Looking to a prognosis for infection prevention best practices, industry experts are quick to suggest solutions that may help streamline cleaning and disinfection procedures, while meeting EPA-dictated and established protocols.

SteraMist's Dr. Shane acknowledged, "The healthcare industry has been doing its best to leave manual cleaning behind, while trending towards proven no-touch solutions for a wide variety of reasons. There will always be a need to address pathogens on surfaces, but when it comes to fighting the invisible, facilities are turning to disinfection such as ultraviolet (UV) lights, electrostatic sprayers, types of disinfecting waters, and foggers like SteraMist."

He continued, "Cleaning and preparedness protocols are advancing rapidly, and IPs are becoming keenly aware that something more is needed. UV has increasingly come under scrutiny for lackluster results, destruction of plastics, line of sight, and skyrocketing maintenance costs. Electrostatic sprayers are falling short as well, with many vaguely defined quat solutions on the market introducing unnecessary dangers into the facility environment."

He summed up, "As far as a solution for disinfection, the answer lies in how hospitals are becoming more aware of what to look for to suit their unique needs, rather than simply changing technologies on the market. As a result, technologies should be as adaptable as they are innovative. The future is in technology and I can see hospitals building ionized hydrogen peroxide (iHP) technology into their facilities, enabling the building, room or area to be disinfected with the push of a button."

Extolling the benefits of UV as a pathogen-killing option, Xenex's Stibich reported, "A common challenge we hear is about hospital throughput. Censuses are high and the EVS team faces incredible pressure to get rooms cleaned and ready for the next patient. That's why quick disinfection cycle times are important."

Within the UV space, Xenex's LightStrike robots feature two-to-five-minute disinfection cycles (depending on the pathogen being targeted), allowing hospitals and healthcare facilities to disinfect dozens of rooms per day, per robot.

Stibich added, "As hospitals recover from the pandemic and the incredible stresses they faced, they are refocusing on known pathogens (like *C.diff* and MRSA), as well as being on alert for pathogens we'll face in the future. Antimicrobial resistance (AMR) is a real threat, and destroying the pathogens before they develop resistance is an incredibly important step."

Also in the UV industry is UltraViolet Devices, Inc. (UVDI), based in Santa Clarita, CA, where the challenges of air/surface cleaning and disinfection are acknowledged, and UV lamp solutions are geared toward increased effectiveness in room disinfection, purification, and sterilization.

Will Gerard, director of global marketing and product strategy at UVDI, said, "Financial, labor, and staffing challenges persist across healthcare systems, and yet the battle against high-risk microorganisms – *C.difficile*, *Candida auris*, MRSA – remains. So, the challenge is to do more with less. Products that can help healthcare professionals and team execute efficiently and effectively are paramount."

Will Gerard

He explained, "For UV room disinfection devices, key criteria to consider are: (1) is a device's effectiveness against high-risk microorganisms *independently proven* at real-world times and distances; (2) Can it disinfect an average-sized room quickly enabling fast room turnover across entire units; (3) is it easy to operate with simple on-and-off device controls; and (4) does it contain advanced features like smart communications technology for automatic device data transmission and health notifications (which is a labor-saver in itself)?"

Even with increased patient turnover rates and heightened demands for faster room disinfection, there still remains a need for regulatory guidance on which disinfectants are the most effective for existing and emerging pathogens. Halosil's St. Clair detailed recent EPA regulations and methodology for communicating guidance for disinfectant efficacy.

"Several months ago, the EPA (the U.S. regulator of antimicrobial disinfectants) updated their methodology for communicating their guidance for which disinfectants are effective for use against rarely encountered and emerging (new) pathogens (EVP). This new list format differs from other lists previously published by EPA, which address individual pathogens. List Q facilitates the search of all products eligible for use against any of the three main categories of EVPs grouped by their difficulty to inactivate — Tier 1: enveloped viruses (easiest to inactivate), Tier 2: large, nonenveloped viruses (more difficult to inactivate), and Tier 3: small, nonenveloped viruses (hardest to inactivate)."

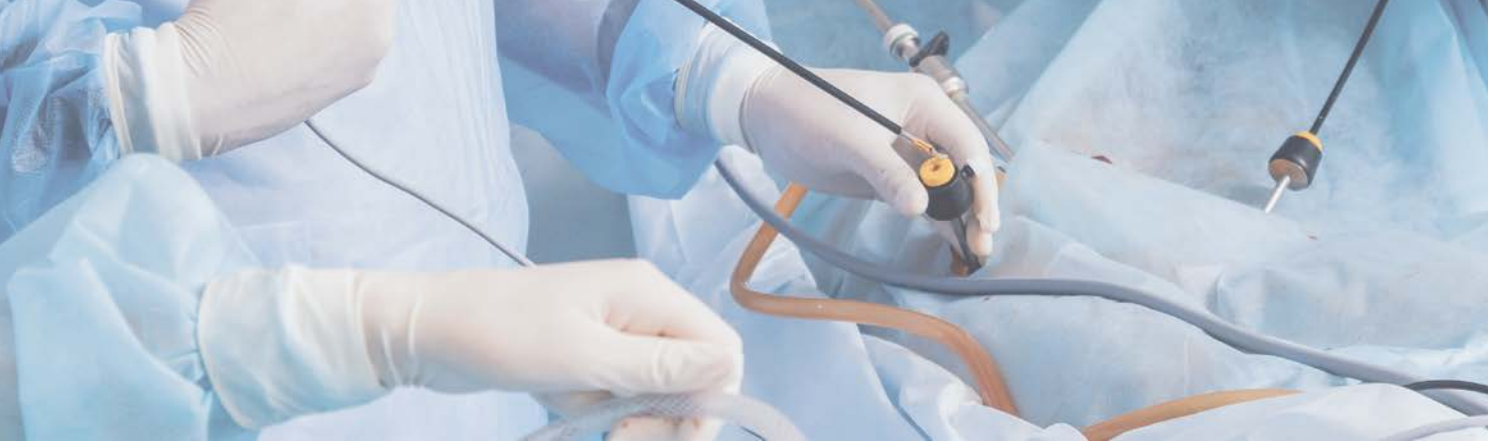
She continued, "This methodology simplifies the information, and obviates the need to continuously create new lists as pathogens emerge. In the future, environmental service managers and infection preventionists can select disinfectants accordingly."

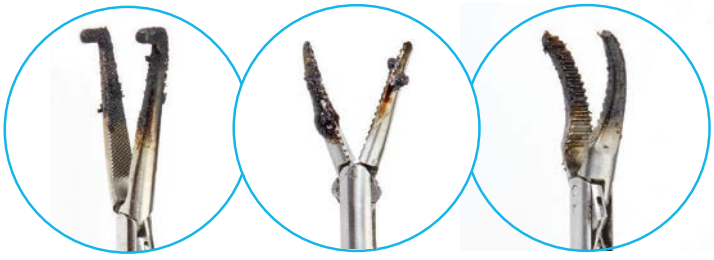
Halosil's HaloMist hydrogen peroxide-based disinfectant has been listed as a fogging formulation on EPA's List Q and meets the guidance for effective use against all three tiers of viruses when applied with the HaloFogger following the use instructions for *Clostridioides difficile,* a spore-forming organism.

Another option for effective infection prevention is the employment of ready-to-use (RTU) products, which can help streamline cleaning and disinfection procedures.

Clorox's Kley elaborated, "Amidst staffing shortages and burnout, optimization is key. Healthcare facilities should also look to the type of products they are using to streamline efforts. For example, ready-to-use (RTU), one-step cleaner disinfectants can not only save staff time, but can also eliminate the risk of dilution errors that can potentially lead to the spread of HAIs. Ready-to-use products also help reduce cross-contamination risks, quality control (QC) issues, and low compliance, leading to overall increases in efficacy and efficiency."

She summed up, "Through proper training and the use of efficient strategies, like ready-to-use disinfectants, I believe facilities can successfully improve HAI prevention protocols to effectively remove the environment as a source of infection, despite current staffing challenges." HPN





TWO WORDS, ONE BOTTLE.

SOLVE THE PROBLEM OF ESCHAR BUILDUP

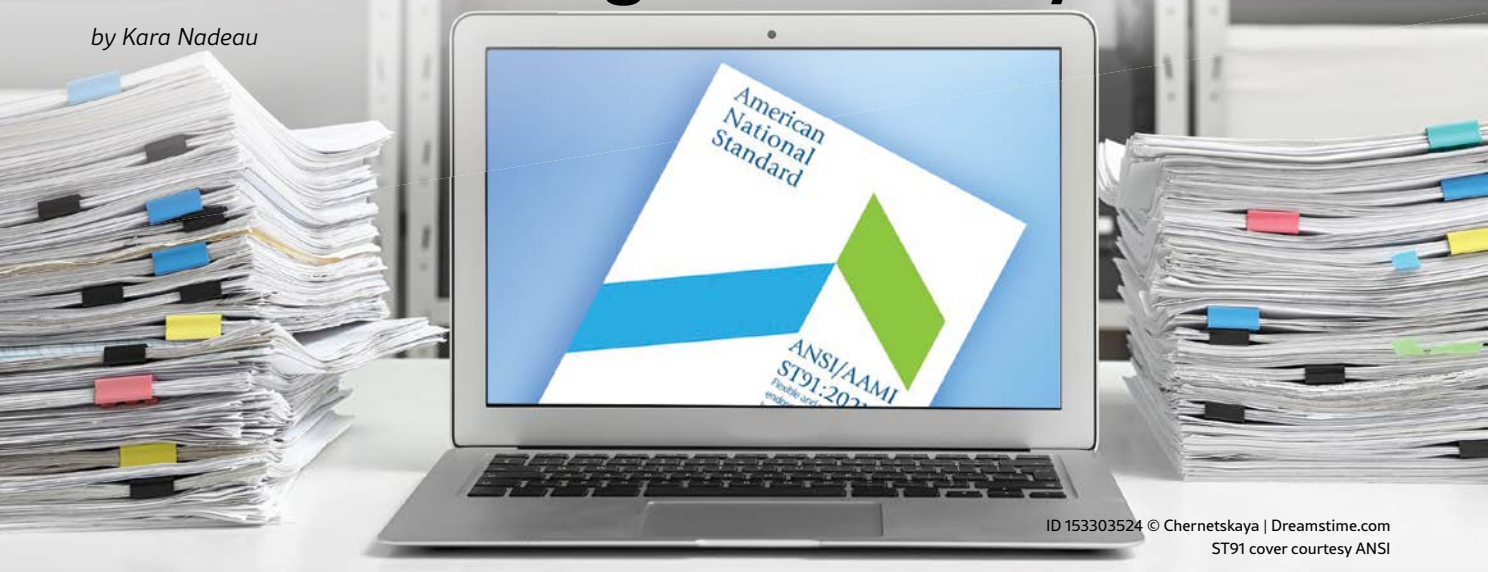
VIDEO

Electro Lube® anti-stick solution is clinically demonstrated to keep tissue from sticking to electrosurgical instrumentation during use, leading to less time spent on handbacks to remove eschar during the procedure. Electro Lube is non-toxic, packaged sterile, and ready to use. To learn more and obtain free product samples for your facility, visit www.keysurgical.com.

STERIS

Updated ANSI/AAMI ST91: progress to date and challenges faced one year later

by Kara Nadeau



ID 153303524 © Chernetskaya | Dreamstime.com
ST91 cover courtesy ANSI

March 2023 marks one year since the final ANSI/AAMI ST91:2021, flexible and semi-rigid endoscope processing in healthcare facilities was published. The updated standard is intended to serve as a "comprehensive guidance to achieve best practice for each stage of processing flexible endoscopes, as well for competency and education of staff."

HPN reached out to the Association for the Advancement of Medical Instrumentation (AAMI), Healthcare Sterile Processing Association (HSPA), Central Sterile Supply Department (CSSD) professionals, and reprocessing product and solutions providers to gain their insights on whether scope-processing teams have made progress in meeting the ANSI/AAMI ST91:2021 standard over the past 12 months, and if not, factors holding them back.

A look back: shaping the standards

This standard was developed by the AAMI Endoscope Reprocessing Working Group under the auspices of the AAMI Sterilization Standards Committee. The Group included 150+ main and alternate members representing healthcare organizations, industry associations, and product and service/solutions suppliers, among others.

Damien Berg, BA, BS, CRCST, AAMIF, Vice President of Strategic Initiatives for the HSPA, who was a participant in AAMI Endoscope Reprocessing Working Group, commented HSPA's role in shaping the standards over time.

Damien Berg

"Since ANSI/AAMI ST91 was first published in 2015, HSPA has been at the table with all the stakeholders from industry partners, regulatory agencies, clinical end users, and experts in reprocessing these complex devices. Both Susan (Sue) Klacik, HSPA clinical educator, and I were active participants with the main goal of not only representing the association, but also giving valued input on the real-world workflows and conditions in our departments around the country."

Workflows and physical space

ANSI/AAMI ST91:2021 section 4.2 offers recommendations around the physical space for scope-processing workflows, including how facilities should have two separate rooms for processing endoscopes.

The standards' authors acknowledge the challenge of this recommendation given not all facilities can immediately proceed with a renovation or rebuild. In these cases, the facilities should put into place strict unidirectional processing procedures to reduce cross-contamination risks.

"The most difficult challenge I am seeing out there, particularly in older, smaller facilities, is finding the space to make changes, particularly to expand reprocessing areas to allow for a barrier between dirty and clean," said Doug Brown, director of sales & marketing, Torvan Medical. "The other is finding the space to install the cabinets for endoscope storage, which can no longer be placed in procedure rooms and other open areas. The other age-old challenge is finding the budget dollars to make these changes."

Doug Brown

Bryan Potratz, BA, CRCST, CFER, CIS, sterile processing technician, is one of three full-time employees (FTEs) in his sterile-processing department (SPD), and the only Certified Flexible Endoscope Reprocessor (CFER) staff member in the two small, rural Wyoming hospitals he serves: one an 86-bed and the other a 70-bed facility, each with an endo suite. Between the two facilities, they have eight colonoscopes, five gastroscopes, one dedicated enteroscope, and two tabletop, liquid-chemical sterilizers in each reprocessing area.

Bryan Potratz

"Our scope reprocessing space is the size of a galley kitchen in a motorhome," Potratz explained.

He noted the challenges of adding additional equipment to such a small space.

"We do have a good HEPA storage cabinet outside of the endo suite, but no room for a drying cabinet within our endo suite reprocessing space. If we were to purchase a borescope, I'm not sure where I would use it. We have a small, but deep,

THE ART OF INNOVATION, THE SCIENCE OF CARE.

eDrain

eSink

TORVAN MEDICAL offers a wide range of height-adjustable reprocessing sinks to meet all your Sterile Processing Department's needs. **eDrain** electronic pushbutton drains, overflow protection and bottom fill faucets reduce splashing. Backsplash pegboards with overhead LED lighting, electro-mechanical height adjustment and wrist-comfort edges increase ergonomics and make for easier, more efficient workflow. Our unique touchscreen **eSink** technology adds autofill, temperature monitoring and control, and enzymatic dosing.

With a complete range of configurations and accessories, trust Torvan to provide your perfect reprocessing sink solution.

ENDO CABINETS

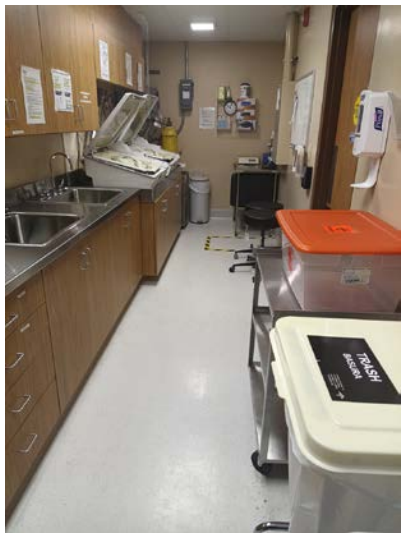
CASEWORK

torvan medical

DRYING

WORKSTATIONS

torvanmedical.com • 1.888.832.0355 • Mississauga, ON, Canada, L4Z 1X2



Bryan Potratz's "galley kitchen" scope reprocessing space

kitchen-sized pair of sinks. I would have to take the scope out of the sink and put it on a table (which I don't have) to inspect it with the borescope."

"There is no scalability in healthcare," he added. "A tiny hospital can't use the same standards as the Mayo clinic. But with our current equipment and processes, following the scope-manufacturer instructions for use (IFUs), our scopes come out clean and sterilized and pass the verification tests."

"It's been challenging for customers who are not undergoing renovations, but simply upgrading their department, to 'reconfigure' their equipment and workflow to accommodate the physical separation requirements where space constraints are evident," said Randalyn Walters, national clinical education manager, Belimed. "Incorporating traffic-control patterns into your training, policies/procedures, and even standard work instructions, can help reprocessors navigate these changes and adhere to best practices."

Randalyn Walters

Walters consulted on a recent project where a customer had incorporated pass-through automated endoscope reprocessors (AER) into the design of their new scope-reprocessing space but did not account for manual disinfection practices outside of decontamination.

She commented on the solution, "We were able to revamp their design to incorporate an additional sink for rinsing and manual practices, support a fully uni-directional workflow, incorporate a pass-through workflow for automated reprocessing and a dedicated drying area, something they never had before."

Froedtert Lutheran in Milwaukee had the good fortune to be drafting blueprints for a new endoscopy department, with the help of Pure Processing, that would include flexible scope reprocessing at the time when ANSI/AAMI ST91:2021 was published.

Hannah Schroeder, BSHA, CRCST, CIS, CHL, CER, the hospital's sterile processing education coordinator, said she and her team asked for "a pause" on the new department design when the updated standard was released to ensure what they were planning with regards to space, workflows, and equipment aligned with recommendations.

Hannah Schroeder

"We had known the standard was coming, so upon its release, I called our director right away," said Schroeder. "We purchased the standard and took about a week to read and interpret it. Then, we met with our sister hospitals to get their impressions. We had the opportunity to say, 'this is what we are capable of doing now, and this is what we will be able to do moving forward.'"

Froedtert clinical team: Tim Tobakos, endoscopy trainer; Kandice Miller, clinical team lead; Patrice Hughes, clinical team lead, and Hannah Schroeder, sterile processing education coordinator

Visual inspection

ANSI/AAMI ST91:2021 section 7.8 on visual inspection recommends lighted magnification be used to inspect endoscopes and accessories, noting how "a borescope can be used periodically to inspect the accessible channels of flexible endoscopes at a frequency determined by the facility."

Borescope inspection was a hot-button issue among those interviewed for this article, particularly the cost of the device, its effectiveness, and the time inspection adds to scope-reprocessing times.

Jake McHugh

"A borescope is a great tool, but it does makes things a little more complex," said Jake McHugh, CRCST, CIS, CHL, CER, process improvement auditor, Agiliti. "And they can be very expensive to purchase."

"If we had borescopes, the issues would be where to put the visualization station, and keeping up with the GI doc's workflow," said Potratz. "I agree they are a very useful product, but the way they are described as being used between every patient is not going to work, not unless you have more scopes and more employees so you can keep your turnaround time down."

Potratz did the math on adding borescope inspection to his current workflow. "We currently process 12 scopes at 30 minutes per case for a total of six hours. Now, add an additional amount of time to borescope between each case, and suddenly getting done with 12 scopes in eight hours becomes an issue."

"The borescope is so new that people really haven't found the best way to utilize it in their current processes," McHugh commented. "The question is: at what stage do you use the borescope to do your flexible-endoscope inspection? You can use it on the dirty side [in decontamination], but if your scope is still wet, it can be hard to see through it. If you inspect a flexible scope after it has been through high-level disinfection (HLD) and dried, you are contaminating your scope. You can use it on a rotational basis, but then you need to reprocess the flexible scope you just checked."

Froedtert Lutheran's new endoscopy department will have a designated space for scope inspection using borescopes to minimize the risk for cross contamination.

Schroeder explained, "That way we are not dealing with a technician using a borescope and then grabbing another soiled scope to inspect. We will have someone set aside to do that inspection and cleaning verification testing. That will also help us keep that workflow going without bottle-necking."

Cleaning verification

ANSI/AAMI ST91:2021 section 7.8 recommends cleaning verification of high-risk endoscopes after each use. Endoscopes not determined to be high-risk should undergo cleaning verification tests at intervals established by the facility.

While some voiced the challenges to adding this level of cleaning verification to the endoscope reprocessing workflow, Adventist HealthCare Shady Grove Medical Center Sterile Processing Manager, Sharon

Greene-Golden, CRCST, CER, SME, FCS, who is the keynote speaker at the 2023 HSPA Annual Conference in Nashville, emphasized why this time and effort are well-spent.


Sharon Greene-Golden

"The verification doesn't take that long, and when you look at the quality it brings to your cleaning process, it's priceless. Do you want the scope they didn't clean going down your throat? The ATP verification allows us to know the scope was cleaned at the end of the manual process. So, we feel confident about our scopes being clean and then high-level disinfected (because they were clean when we put them into the machine)."

Kelly Swails, MAOL, CRCST, CHL, CIS, CER, ST, clinical business manager, Censis Technologies, believes verification fails are more important to document than passes because they bring to light actionable information.


Kelly Swails

"Technicians will tell me, 'If the scope fails, then it needs to be cleaned again, and we don't have the time and staff to do that.' I explain how consistent documentation of verification fails holds tremendous value to guide improvements because they allow you to uncover patterns and trends in cleaning failures. Is it a tech that needs more training or education? Or is a specific model of a scope or a specific scope that can't be adequately cleaned?"

For CSSD teams that lack staff resources for compliance with the ANSI/AAMI ST91:2021 recommendations, Swails encourages them to leverage documented data on scope use and processing to make the case for additional investments in their departments.

She stated, "If it takes longer to process scopes with the new recommended dry times and cleaning verification—for instance you can only process 25 scopes per day when you used to be able to process 30—there is your proof to leadership that you need more staff."

Sterilization

ANSI/AAMI ST91:2021 section 8.3 states, "Evidence supports sterilization (instead of HLD) of all flexible endoscopes, including those used in both semi-critical and critical procedures."

"Successfully sterilized endoscopes can provide an increased safety margin over high-level disinfected endoscopes," noted Stacy Johnson, APRN, CNS, CNOR, CCSVP, clinical education consultant, ASP. "Terminally sterilized endoscopes are rendered completely dry, packaged (which reduces the chance of contamination for longer periods of time), and are patient-ready. Packaged endoscopes have tamper-evident seals that clearly distinguish 'used' endoscopes from "patient ready" endoscopes."


Stacy Johnson

"Increasingly, specialty services such as urology are considering transition to sterilization," Johnson added. "One manufacturer's voluntary recall, urgent field safety notice, and subsequent FDA instruction to discontinue all high-level disinfection methods for affected urological endoscopes, created immediate attention to this practice transition for some providers."

"CSSD staff should review the IFUs to determine which of their scopes can be sterilized instead of disinfected, as FDA is moving the industry from disinfection to sterilization for safer outcomes," said Case

Medical Marketing Director, Richard Riley. "They can post wall charts, even use software to guide them through each critical step."


Richard Riley

But transitioning from HLD to sterilization is not a change that can happen overnight.

"We are still transitioning some of those high-risk scopes to sterilization," said Schroeder. "It is not a fast process. It must be done systematically, and we must prove we have the sterilizer capacity to support the increased volume."

To help facilitate the transition, Johnson recommends the facility perform a risk assessment to help identify processing methods. She noted how the Association of periOperative Registered Nurses (AORN) updated "Guideline for Processing Flexible Endoscopes" provides new recommendations on important considerations for processing method selection.

"One new recommendation identifies that endoscopes should be processed using the same approach in all locations and on all shifts," said Johnson. "Changing processing method from high-level disinfection to terminal sterilization may require allocation of space for a new sterilizer, implementation and storage of sterilization packaging, chemical indicators, and training staff to new procedures."

10-minute dry time

ANSI/AAMI ST91:2021 section 8.2.5 recommends flexible endoscopes with channels should be dried for a minimum of 10-minutes with pressure-regulated forced instrument air or a minimum of HEPA-filtered air.

"A lot of facilities think their automated endoscope reprocessor (AER) has an air purge or extended drying phase. While those help, they don't meet the new standards," said McHugh. "You need to apply 10 minutes of manual or instrument HEPA filtered air, or you can use drying cabinets that include all the necessary channel hookups. Those cabinets are expensive, but they are nice because they save so much time. You just need to wipe the excess water off the exterior of the scope, pop it in the drying cabinet, and walk away."

"In our specific areas of interest, endoscope storage and reprocessing, there were a lot of facilities already making changes prior to the release of ST91-2021," Brown noted. "Many hospitals had already upgraded their endoscope storage cabinets to HEPA ventilated and channel-purge drying. The same can be said for endoscope reprocessing, for those facilities who were doing it in the same room."

In her visits to 50-75 facilities each year across the U.S. and Canada, Swails has seen scope-processing teams employ various methodologies to achieve the 10-minute scope drying time.

"I have seen CSSDs bring in tanks with instrument air, but I warn them to carefully control the PSI, and dry according to the manufacturer's IFU so they don't blow the scope because different scopes have different PSI limits. Other facilities are working to get air piped in, which is even better, but keep in mind how many hook-ups you need, based on the number of AERs you have."

McHugh said he has seen retrofitted systems that bolt onto the back of older-style cabinets with connected hoses turning the conventional cabinet into a channel-drying cabinet. He has also seen tabletop units with circulated air flowing through them that technicians can use to dry the scope channels.

POU handling and communication

ANSI/AAMI ST91:2021 section 7.2 cites the importance of point of use (POU) treatment in the prevention of bioburden build-up, biofilm development, and drying of secretions.

McHugh commented on the changes to POU cleaning in the updated standard. "The terminology has been changed from 'precleaning' to 'POU treatment,' which covers precleaning the scope, disposal of all single-use items, and documenting handoff information. This helps the scope-cleaning technician identify not only where, when, and which patient the flexible scope was used on, but also when the pretreatment happened. If there is a delay or failure in POU treatment, the endoscope should be processed using delayed-processing protocols described in the device manufacturer's instructions for use (IFU)."

"Although delayed-processing protocols existed before, they are really being emphasized now," he added.

In her experience working with healthcare facilities, Swails said this information related to time of POU treatment doesn't always get communicated to the decontamination team. "I have seen procedural staff write the time of POU on a sticky note or on a disposable scope container, but sometimes you can't read the writing or they forget to write it or the sticky note gets lost as the scope is transported to decontam."

"When it comes to documentation, 'If it isn't documented, it didn't happen,'" she added. "If the decontam staff doesn't know that the scope sat there uncleaned, they will process it normally, as opposed to the required delayed-processing protocols in accordance with the manufacturer's IFU and ANSI/AAMI ST91. With an electronic documentation system, it takes the procedural staff only five seconds to document POU cleaning. In turn, the CSSD can reference this information upon the scope's arrival in decontam, and proceed with the proper protocols."

A look ahead: tips for navigating change

"What ST91-2021 has done is validate the decision by those facilities that upgraded prior to its release," Brown commented. "It has also made those facilities that have not made changes to start looking to do so, of which a large number have already done or are now planning."

Brown and others offer their advice on how to navigate the path forward.

Make education the priority

"Some of these key changes will impact the real-time processing with updates to leak testing, borescope inspection, visual inspection, cleaning verification, and drying, to name a few, and what is a 'should' requirement versus a 'shall' requirement," said Berg. "The big takeaway from the new standard is that all training is key to success, and performing a risk assessment prior to purchasing or implementing new practices so that the end user fully understands the impact and workflow."

There appears to be some confusion regarding which elements are required for conforming to the voluntary consensus standard and which are recommendations. This is centered around the terms "shall" and "should" respectively. ANSI/AAMI ST91:2021 describes this distinction for readers, along with other related language in the published standard:

- "shall" and "shall not" are used to express requirements
- "should" and "should not" are used to express recommendations
- "may" and "may not" are used to express permission
- "can" and "cannot" are used as statements of possibility or capability
- "might" and "might not" are used to express possibility
- "must" is used for external constraints or obligations defined outside the document
- "must" is not an alternative for "shall"

For example, some of the language surrounding borescopes, is "can," recognizing that not every facility needs such a device.

"Some of the recommendations are not clear, and most are difficult to implement without in-depth training," said Case Medical's Clinical Educator, Dewey Barker. "The standard can be too detailed in some sections or vague in others. For example,

the correct amount of pre-treatment solution is not specified. Many scopes are now sterilized that were formerly disinfected. This is not clearly addressed in the guidelines. Also, while it is stated that endoscopes are to be transported separately from other items per the standards, many users are still transporting forceps and other instruments in the same container with the scopes, so they can 'keep everything together.'"

Dewey Barker

Barker said the endo suite technicians he consults with currently have "limited to no access" to ANSI/AAMI ST91:2021. This presents a much larger, more important issue for the industry—gaps in flexible-endoscope reprocessing education and training. Berg commented on HSPA's efforts to make improvement in these areas.

"HSPA will continue to advocate for our members by participating in these standards, and as new standards are released or updated, we will inform our members through our publications, and we will continue to present at local, state and national meetings so we can help the SP professionals adjust to these important changes."

"Take every opportunity to increase knowledge by attending educational programs and reading industry publications that provide an even more-efficient way of processing flexible endoscopes," advised Barker.

Greene-Golden commented on how certification should be the top priority. "Instead of being worried about whether you have a borescope, start with the first rule: getting your people certified. Because if they are certified, at least they understand the process, and you can perhaps depend on them to ensure they follow it, and the scopes are clean."

Greene-Golden updated the job descriptions for those reprocessing flexible scopes in her facility to include the requirement of not only Certified Registered Central Service Technician (CRCST) certification, but also Certified Endoscope Reprocessor (CFER) certification. She purchased CFER exam books and gave the current scope reprocessors six months to study and take the certification exam.

As a facility that uses high-risk endoscopes, Froedtert Lutheran in Milwaukee has prioritized technician training, as Schroeder explained.

"We stepped up training so technicians would better understand how scope processing is not a one-size-fits-all. We specifically called out high-risk scopes and what is required of them. We are developing written instruction on how to be ST91-compliant in the working environment, which helps to maintain consistency and ease uncertainty about practices. And we have had to revise current and develop new standard operating procedures (SOP) to help bring our team up to speed."

Advocate for change with facts, not fiction

"When I hear 'they won't buy it for me' my question back is 'did you ask?'", questioned Greene-Golden, when it comes to securing resources from leadership for new equipment to align with the updated standard. "Did you go to the C-suite with facts not fiction? It is all in how you present it. If you present it as garbage, they receive it as garbage. He who fails to plan, plans to fail."

She described her approach, "I came back from the 2022 HSPA Annual Conference, read ANSI/AAMI ST91:2021, and commenced to ask my C-suite and director, 'Are we a standard-complying hospital?' They said, 'Yes, we follow the rules, we do the right thing.' So, I showed them the changes in the ST91:2021, which I highlighted in the standard and told them what we needed."

"Read the standard, understand it, be ready to answer questions," Greene-Golden advised. "When I approached the C-suite to make the case for resources to support the standard, I had already played the scenario of 10,000-questions and was ready to answer them."

Greene-Golden also enlisted the support of her facility's infection control practitioner, and leveraged published studies from researchers, including Cori Ofstead.

She explained, "Take some of Cori's statistics and data to show how just one patient infection justifies the expense for new equipment. Go in prepared and say, 'We want to do the right thing. I don't want to be the reason any patient had a bad outcome because we didn't want to spend money to follow the standard.'"

Start small and share your successes

It is unrealistic to think facilities can make all the changes overnight, especially those with limited space, funding and staff resources. As Schroeder pointed out, more significant and costly change—such as purchasing additional sterilizers—requires a greater amount of advocating and planning to gain buy-in from the C-suite. So, start small instead. "Focus on those smaller things you can do now, in a month's time, in two months' time, to start getting some of that compliance rolled out." As they wait for their new endoscopy department to open, Schroeder and her team have looked for things they can change immediately in their current reprocessing area to demonstrate compliance with the new standard. For example, they transitioned leak testing from 30 seconds to 60 seconds, implementing a tester that features a timer to help technicians comply. Schroeder recommends facilities develop talking points for The Joint Commission (TJC), so they are prepared to share their progress, no matter how small in scope, during a survey. "When we meet with surveyors and they ask what we have done to comply, we can share with them some of those smaller accomplishments," she said. "Then we can tell them our plans for achieving those bigger tasks over time."

Greene-Golden said, "Even if you are not a rich hospital system, if you can get the C-suite to understand why they wouldn't want to undergo an endoscopic procedure in a facility that doesn't comply with the standard they will get you what you need. But that doesn't mean you will get everything you want on day one. What's important is to work toward the standard. Be a part of the change team, not the complaint team." The first piece of equipment Greene-Golden acquired for her team was an ATP system, supported by the supplier through in-servicing and training. Next, she went "borescope shopping" to find one they could afford, and worked out arrangements to pay for it. She noted how her facility did not have drying cabinets when they first began implementation of the new standard, so they did the best they could with the equipment they had in place. "When the surveyors come, we can explain to them how we are waiting for a drying cabinet, but in the meantime, we are doing X, Y, and Z to thoroughly dry scopes in lieu of it (e.g., alcohol purge, air blown in, etc.)," said Greene-Golden. She added how preparing for an accreditation survey also provides an opportunity to advocate to the C-suite what is needed to comply with ANSI/AAMI ST91:2021. "My advice is to take the standard questions that will be asked by TJC, DNV or whoever is performing the survey and present those to leadership. For example, when are you planning on purchasing and implementing a borescope? If the answer to the surveyor is within 12 months, emphasize to the C-suite how it would look if the surveyor came back in three years and you still don't have it. You may not get your borescope this month, but you will get it when faced with being written up." HPN

References:

1. AAMI website, https://www.aami.org/ST91#:~:text=The%20objective%20of%20ST91%20is%20to%20provide%20comprehensive,they%20are%20rendered%20safe%20for%20subsequent%20patient%20use

2. The U.S. Food and Drug Administration (FDA). UPDATE: Change in Reprocessing Methods with Certain Karl Storz Urological Endoscopes – Letter to Health Care Providers. https://www.fda.gov/medical-devices/letters-health-care-providers/update-change-reprocessing-methods-certain-karl-storz-urological-endoscopes-letter-health-care (2022)

3. AORN website, https://aornguidelines.org/guidelines/content?sectionId=173735349

4. Croke, L. (2022), Guideline for Processing Flexible Endoscopes. AORN Journal, 116: P5-P7. https://doi.org/10.1002/aorn.13773

A dedicated team for HLD gets the job done

Frank Daniels, MSHA, CFER, CER, AGTS, CSPDT, CSPM, director high-level disinfection & sterilization for VCU Health in Richmond, Va., described the success his facility has had by establishing a separate department (high-level disinfection) that reprocesses all flexible scopes for the hospital.

"A team trained to do a specific task will perform better than someone doing everything," said Daniels. "Therefore, we centralized high-level disinfection (HLD) to ensure everything was being done correctly. There are many different models and manufacturers of flexible scopes that require different ways to reprocess them correctly. It takes dedicated resources to have a centralized HLD department."

"Some places have nurses or endoscopy technicians that reprocess the scopes and tend to the patients," Daniels continued. "However, if a flexible scope isn't processed in time (identified in the IFUs), it takes even longer to reprocess it correctly. So, the main question is: can the current people responsible for reprocessing a flexible scope have the time to do it correctly? I can say having a dedicated department we can."

According to Daniels, his department had been complying with most of the ANSI/AAMI ST91:2021 recommendations in the past four or five years, except for testing the high-risk scopes (they were testing a random sample of scopes and did all scopes once per month). They are now using a borescope to inspect every scope after use, and protein-test all high-risk scopes. He noted how their inventory has over 500 flexible scopes, which seems to help them keep up with the demand.

VCU Health HLD Team

CONTRIBUTED BY MOBILE ASPECTS

Modernizing Endoscope Management

How Mobile Aspects Modernizes Workflows for ST91

A gastroenterologist begins her day by performing a pair of colonoscopies, using her preferred endoscopes to complete the successful procedures, but the work is far from done. In fact, as she takes a much-needed sip of coffee, the schedule shows four times as many procedures on the schedule, with another beginning in just 10 minutes.

Now, where are those scopes?

A quick query to the nursing staff reveals one is only just beginning the channel-drying process, and another is being used in a separate department. What's worse, the department's next best option is being used by a colleague. The doctor can wait, causing a slowdown, or use an older scope with a finicky camera, bogging down her next procedure.

At Mobile Aspects, we recognize this is an all-too-familiar scenario for specialists who regularly perform endoscopies, and that new and revised rules for ST91, an ANSI/AAMI guidance aimed at providing more structure around flexible and semi-rigid endoscope reprocessing, create new hurdles for busy health care facilities.

WHAT ST91 DOES

Developed by a working group that incorporated input from a range of clinical professionals and endoscope experts, ST91 includes classification for high-risk scope types, recommendations against manual disinfection, guidance for testing water in automated endoscope reprocessors, and guidance for determining the length of storage, or "hang time," that a scope can withstand before needing to be reprocessed.

Another crucial update — one that can seriously impact workflow, depending on a hospital's reprocessing infrastructure — concerns the guidelines for drying endoscopes, particularly their inner channels. The new guidance recommends scope channels be dried for a minimum of 10 minutes by pressure-regulated forced instrument air, and if moisture is still observed following the cycle, drying should continue until no moisture is visible.

Over the past year, we've seen hospitals and sterilization professionals taking ST91 seriously, but departments may struggle with implementation and documentation, creating delays that impact overall performance and, ultimately, a hospital's bottom line.

WHAT IRISCOPE DOES

Managing an endoscope reprocessing workflow to be speedy *and* safe can be difficult, and the addition of ST91's guidelines — well-intentioned and thought-out as they may be — adds a new layer of complexity. However, Mobile Aspects' care delivery platforms help providers work efficiently while administrators identify and act on cost-saving insights.

IRIScope, our endoscope management system, is far more than a storage cabinet. It is the only such system to incorporate both channel-drying and RFID-tracking technologies. Among the advantages it provides to help hospitals implement ST91:

- **The 10-minute advantage:** IRIScope fully dries scope channels in 10 minutes flat — meeting the ST91 recommendation while not bogging down reprocessing — whereas other channel-drying cabinets can take at least 45 minutes. We achieve this with an internal compressor that generates six times as much airflow as other systems and eliminates the need for costly external infrastructure or hookups to hospital air.
- **Tag and track:** RFID tags provide "round-trip" data and analysis on scope usage and tracking, from storage to the floor and reprocessing — and back again. The in-depth reporting and revelations from that data empower decision-makers to optimize and modernize department procedures.
- **Data that works for you:** Our software seamlessly syncs with a hospital's EMR, easily documenting and monitoring the real-time location and status of an individual scope. This eliminates old, fallible tracking and documentation processes, and reduces findings by the Joint Commission, all while meeting documentation requirements. At the same time, the data consistently reveals trends and opportunities to optimize the scope fleet, reduce turnaround times and further enhance operations.

SCOPING OUT A NEW ERA

ST91, ultimately, will create safer environments for patients, and its guidelines do not need to compromise the workflow efficiency for providers and their teams. Now is the time for hospitals to modernize processes to not only implement these recommendations and others like it successfully, but to seize on new ways to solve old problems. Mobile Aspects' highly engineered platforms like IRIScope, supported by forward-facing software and a responsive customer care team, ensure our partners meet those goals. HPN

Mobile Aspects, a healthcare logistics platform provider, pioneers new methods for optimizing care delivery processes in major health systems. A Pittsburgh-based private entity backed by patented technologies, Mobile Aspects eliminates manual and fallible practices to make hospitals safer and less at risk for sentinel events. For more information, visit www.mobileaspects.com.

Proven to decrease scope turnaround time by 15%

HEALTHCARE PURCHASING NEWS

SELF-STUDY SERIES Sponsored by STERIS

Washer-Disinfector and Cart Washer Racks

Using the right rack; choosing the right cycle; and servicing the washer-disinfector are critical to the success of cleaning.

by Manon Laflamme, Angela Ritchey

March 2023
The self-study lesson on this central service topic was developed by STERIS. The lessons are administered by Endeavor Healthcare Media.

Earn CEUs

After careful study of the lesson, complete the examination at the end of this section. Mail the completed test and scoring fee to Healthcare Purchasing News for grading. We will notify you if you have a passing score of 70% or higher, and you will receive a certificate of completion within 30 days. Previous lessons are available at www.hpnonline.com.

Certification

The CBSPD (Certification Board for Sterile Processing and Distribution) has pre-approved this in-service for one (1) contact hour for a period of five (5) years from the date of original publication. Successful completion of the lesson and post-test must be documented by facility management and those records maintained by the individual until recertification is required. DO NOT SEND LESSON OR TEST TO CBSPD. For additional information regarding certification, contact CBSPD - 148 Main Street, Suite C-1, Lebanon, NJ 08833 • www.cbspd.net.

HSPA (Healthcare Sterile Processing Association, https://myhspa.org)) has pre-approved this in-service for 1.0 Continuing Education Credits for a period of three years, until February 9, 2026. The approval number for this lesson is **STERIS-HPN 230902.**

For more information, direct any questions to *Healthcare Purchasing News* (941) 259-0832.

LEARNING OBJECTIVES

1. *Describe the role of washer-disinfector racks*
2. *List common and specialty racks used in healthcare*
3. *Identify ways to maintain washer-disinfector rack performance*

Sponsored by: STERIS

Automated washer-disinfectors and cart washers are staples of every sterile processing department. Their high-volume cleaning throughput allows sterile processing departments to keep up with the growing volumes of medical instrumentation that healthcare facilities need. What was once a straightforward way to clean multiple instruments simultaneously has become a complex process driven by the complexity of the medical instrumentation processed through the department. Using the right rack; choosing the right cycle; and servicing the washer-disinfector are critical to the success of cleaning.

Washer racks promote cleaning.

The goal of mechanical cleaning is to supply cleaning action to all surfaces of reusable medical instrumentation for enough time to remove soils. How quickly the cleaning process removes soils depends on the cleaning chemistry formulation, temperature of the solution, and the force at which it is delivered.

Mechanical washer-disinfectors and cart washers require the use of accessory racks to contain and hold reusable medical devices and surgical instruments through cleaning, rinsing, thermal disinfection, and drying. They support the mechanical cleaning action, flow lumens with cleaning solution, aid in drying instrumentation, and are designed to withstand thermal disinfection.

The most common rack is the multi-level or multi-manifold rack. The multi-level rack allows high volume processing of general instrumentation. Racks have 2 to 5 shelves each equipped with rotating spray arms that allow several trays of instruments to be processed simultaneously. The number of shelves dictates the height of the items that can be processed. For example, one 2-level rack design offers a 15 ¾" clearance on the bottom level that can accommodate bowls, basins, and surgical trays. Conversely, a 5-level rack for the same washer disinfector would have a 3" clearance for each shelf accommodating 10 standard trays but not bowls or basins.

Some multi-level racks are equipped with lumen flushing connectors used to process suctions or other cannulated devices. Designs range from individual flushing ports that connect to a single instrument to adapters that connect to specialized trays allowing flow through multiple instruments at once.

General purpose and multifunctional racks are single level racks that hold higher profile items. They may have dividers for separation and positioning of items. These types of racks typically hold container system bases, lids, and large procedural basins and bowls.

Complex surgical instruments, such as minimally invasive surgical (MIS) instruments, anesthesia and respiratory equipment, and robotic-assisted surgical instruments require specialty washer racks designed to properly position and flow lumens and cannulated instrumentation. In addition to the racks' distinctive design features, specialty racks often use a unique washer-disinfector cycle. Some may require a specific cleaning chemistry validated to work with the rack, washer-disinfector cycle, and instrumentation.

Collaboration between the instrument manufacturers and washer-disinfector manufactures has led to the development of several specialty racks and cycles that maximize the cleaning performance and provide the highest degree of reliable,

repeatable, and dependable cleaning results. Validated cycles have also been shown to shorten cleaning time and decrease turnaround time of robotic-assisted surgical instrumentation.

Cart washers may also have instrument and container system racks. Like washer-disinfectors racks, cart washer racks have rotating spray arms to maximize cleaning efficacy of all items on each shelf. It is important to use the appropriate cart washer cycle for the selected rack.

Proper rack loading is more than instrument stringers.

The proper placement of items contained in the load allows for maximum exposure to the cleaning, rinsing, disinfection, and drying phases during the cycle. Use trays with mesh bottoms and sides to allow fluid to reach all surfaces and drain away. Instruments should be placed in such a way that all surfaces are accessible to the solutions. Instruments with hinges should be opened to give access to the box lock. Accessories, such as instrument stringers, help keep the open position of the instruments. Some instruments may require disassembly before mechanical washing. Be sure to follow all cleaning instructions provided by the instrument manufacturer's instructions for use.

Instrumentation with cannulas or lumens should be flushed during processing. Ensure that lumen devices are appropriately connected. Devices requiring specialty racks may have added instructions for positioning and placement. Be sure to review the rack instructions for use in addition to the instrument's instructions for use.

Shadowing occurs when something comes between the instrument and the spray arms. Shadowing prevents good cleaning and rinsing. Avoid stacking trays or instruments. Disassemble multi-layer instrument sets so that placing each layer on the rack. Avoid placing bowls, basins, and procedural trays directly over items on the same rack level.

Some devices, such as reusable anesthesia or respiratory care instrumentation, do not require further decontamination after the washer disinfector cycle. They may go directly from the mechanical washers to drying cabinets, be reassembled, and sent to be used for patient care. These types of devices can be difficult to position given the length of tubing and oddly shaped cavernous components. Specialty racks help

Robotic Assisted Surgical Instrument Rack

ensure proper positioning and contact with all internal surfaces during processing. Be sure to follow the instrument manufacturer's instructions for use for cleaning and the rack's instructions for use for positioning.

Racks may have weight restrictions. Weight restrictions ensure safe usage of the rack and effectiveness of thermal processes. Overloading the racks or not using the correct rack can lead to residual soils or cleaning chemistries that can harm patients.

It is important to remember that racks must not be altered or modified by facilities to accommodate instrumentation. Modifying racks can change flow dynamics, manifold water pressures, and fluid distribution that can affect the cleaning efficacy of the rack placing instruments at risk for residual soil and chemistries which could harm patients. Instead of modifying a rack, plan to buy a rack that is suited for the facility's instrumentation needs.

Is it necessary to use the validated cleaning chemistry?

As mentioned previously, specialty racks address specific cleaning challenges for complex instrumentation. With the same considerations in mind, specialty cycles were developed to address cleaning challenges. Refer to the rack's IFU for the recommended cycle. Selecting the right cycle is critical for cleaning efficacy.

It is also important to use the validated cleaning chemistry. Cleaning chemistry formulations vary greatly and with it their performance. When a cleaning cycle indicates a specific cleaning chemistry, it usually means that the cycle and chemistry formulation have been fine tuned for optimal cleaning performance of the specialty rack and listed instrumentation. Validation testing with a specific cycle and chemistry provides additional assurance to achieve optimal cleaning results; rigorous testing has been done to account for multiple scenarios and worst-case conditions. Using a non-validated cleaning chemistry can alter the efficacy of the system resulting in residual soils.

Maintain washer racks for best performance.

Washer racks require maintenance to ensure optimal cleaning performance. The operator's manual has recommendations for routine rack maintenance and decontamination, as well as a list of replacement parts and proper positioning for those parts. Sterile processing departments should establish a policy for rack cleaning and maintenance, including frequency and how the process is documented. In addition to establishing routine cleaning and maintenance for racks, it is best practice to check the rack each time it is used for possible defects or debris which may impede the cleaning action.

Inspect spray arms at least daily for free rotation and foreign material protruding from the spray arm holes. It is also good practice to confirm spray arm rotation after loading to check for items on the rack that might impede rotation. If either debris or poor rotation exists, the spray arm should be serviced prior to use. Many operator manuals describe the proper way to remove debris and service poorly rotating spray arms.

Take a moment during the processing cycle to watch the spray arms. Spray arms that do not rotate or rotate slower than others will not effectively clean. The spray arm may be stuck or the connection between the rack and wash-disinfector could be faulty both requiring service and/or repair.

Flexible tubing and hoses used to connect to lumens should be regularly inspected for damage. Manufacturer operator manuals should indicate the frequency at which these should be replaced. Ensure that tubing, hosing and any other components requiring replacement at regular intervals is part of the preventative maintenance schedule.

Many standards recommend testing washer-disinfectors and cart washers daily with cleaning indicators to ensure effective cleaning. The cleaning indicators confirm that the washer-disinfector, cleaning chemistries, and spray arms are delivering the necessary efficacy. But have you thought

Self-Study Test Answers: 1. A, 2. C, 3. D, 4. E, 5. C, 6. D, 7. C, 8. A, 9. A, 10. D

about the racks? Each rack design may have specified requirements for washer indicator placement. All facilities have more racks than washer disinfectors. Daily testing of washer disinfectors requires a small part of these racks. Consider rotating the rack used in the test to ensure testing of every rack within a reasonable time.

At regular intervals as defined by the rack's operator manual, disinfection and descaling may be needed. Ensure that every rack is on a preventative maintenance schedule as defined by the manufacturer's preventative maintenance instructions.

Establishing a method for keeping track of each rack can be helpful particularly for racks which are used infrequently. Having maintenance records allows everyone to know which rack is next in line to receive maintenance. A sterile processing department should also keep extra parts for often used racks, such as the pieces of the spray arms, to keep racks in service. Failure to maintain racks could create backlogs in decontamination, which can alter the ability to prepare, package, and sterilize instruments in a timely manner, and ultimately can impact patient care if the affected instruments are not available for use when needed.

Conclusion

Washer racks have evolved. There are more options available to efficiently reprocess complex reusable medical devices and surgical instruments that will save time and supply reliable, repeatable, and dependable results. Sterile Processing departments can benefit from new washer rack technologies and options that improve workflow efficiency and reprocessing capabilities if they are used as intended and maintained for optimal cleaning performance. HPN

References:

1. Association for the Advancement of Medical Instrumentation (2020) ANSI/AAMI ST79:2017 & 2020 Amendments A1, A2, A3, A4 (Consolidated Text) Comprehensive guide to steam sterilization and sterility assurance in healthcare facilities. Author. Arlington, Va.

2. Standards Council of Canada. (2018). CSA Z314-18 National Standard of Canada Canadian Medical device reprocessing. Author. Toronto, ON.

3. STERIS (2022). Intuitive and STERIS COLLABORATION Achieve 510(k) Clearance for Automated Cleaning Process for Select da Vinci Instruments. Retrieved 1/9/2023 from https://www.steris.com/healthcare/knowledge-center/sterile-processing/automated-cleaning-for-select-da-vinci-instruments

About the Authors

Manon Laflamme *joined the STERIS team in 2017 as the Clinical Education Specialist for Eastern Canada and covers the Ontario, Québec, Nova Scotia, New Brunswick, Prince Edward Island, Newfoundland, and Labrador regions. Manon began her career in 1988 at the Ottawa Hospital as a medical device reprocessing technician. Over the 35 years of working in the medical device reprocessing field she thrived as a technician, supervisor, training coordinator, manager, and educator. She worked in a small community hospital and a major healthcare facility. She is MDRT certified through HSPA she is certified Quality Improvement Associate and is certified as a Yellow Belt Six Sigma. Manon is a member of MDRAO and HSPA.*

Angela Ritchey *joined the STERIS team in 2022 as the Clinical Education Specialist for Nebraska, North Dakota, South Dakota, Wyoming, and Montana. Angela worked in the Sterile Processing Department for more than 14 years as a Tech, Lead, Associate Manager, and most recently as a Market Manager for eight hospitals in the Midwest. She is also an adjunct instructor in the Graduate Nursing program at a healthcare college where she teaches the Essentials of Scholarly Writing. Angela holds a Bachelor of Arts in English from the University of Nebraska-Lincoln and a Master of Arts in English from the University of Nebraska at Omaha. She is certified as a CRCST and CIS and is a member of HSPA, ASQ, SGNA, AORN, and APIC.*

CONTINUING EDUCATION TEST • MARCH 2023

Washer-Disinfector and Cart Washer Racks

Circle the one correct answer:

1. **Why do multitier racks come in a variety of shelf numbers?**
   A. To accommodate different tray and medical device heights
   B. To process complex instrumentation
   C. To accommodate low volume facilities
   D. To accommodate spray arms

2. **Which is an example of a specialty rack?**
   A. Five tier multi-level rack
   B. General purpose rack
   C. Robotic-assisted surgical instrument rack
   D. Multi-manifold rack

3. **Which is true of specialty racks?**
   A. Provide irrigation or flushing
   B. Have specific washer cycles
   C. May require specific cleaning chemistries
   D. All the above

4. **Some cart washer/disinfector racks can be used to reprocess.**
   A. Sterilization containers
   B. Wheelchairs
   C. Surgical instruments
   D. All of the above
   E. A and C

5. **Which method can prevent shadowing?**
   A. Stacking trays
   B. Placing lids on trays
   C. Disassembling multi-level instrument sets
   D. Connecting cannulas to flushing tubes

6. **When loading racks during high volume times you should.**
   A. Skip manual washing
   B. Stack easy to clean instruments on top of each other
   C. Keep multi-level sets fully assembled
   D. Require proper loading and preparation of contents

7. **How can facilities benefit from using validated racks, cycles, and cleaning chemistries?**
   A. Clean simple instrumentation
   B. Reduce chemistry usage
   C. Maximize cleaning performance for complex instruments
   D. None of the above

8. **When should spray arms be inspected?**
   A. Prior to each use
   B. Once a day
   C. Once a week
   D. Never

9. **What should be considered when using washer indicator tests?**
   A. Rotation of racks
   B. The time of day
   C. The technician
   D. Age of the rack

10. **Routine rack maintenance requires**
    A. Keeping maintenance records
    B. Inspection
    C. Keep a frequent part replacement inventory
    D. All of the above

CONTINUING EDUCATION TEST SCORING

HEALTHCARE PURCHASING NEWS EDUCATION HUB

HSPA HEALTHCARE STERILE PROCESSING ASSOCIATION

CBSPD

The approval number for this lesson is **STERIS-HPN 230902.**

HPN is thrilled to now offer all CEU quizzes online by scanning the QR code on the right or visiting: https://educationhub.hpnonline.com.
The cost to take the quiz online remains at $10.

Due to rising costs if you would like to mail in your completed quiz using the method below the price is now $50 for each test taken.

Request for Scoring

❑ I have enclosed the scoring fee of **$50 for EACH test taken** — payable to **Endeavor Business Media**. We regret that no refunds can be given. (It is not neccessary to submit multiple tests separately.)

Detach exam and return to:
Continuing Education Division
Healthcare Purchasing News
2477 Stickney Point Road, Suite 221B
Sarasota, FL 34231

FLOWCODE PRIVACY.FLOWCODE.COM

SUBMIT YOUR QUESTIONS:
editor@hpnonline.com

Water quality and hardness: to spot, or not to spot?

by Stephen M. Kovach

Q "We have what I call a 'white film' on the inside of our washer. What are your thoughts?"

A I have seen inside washer disinfectors (WD) in many departments (Figure 1) that fit the description in your question. Before we get into my response, I first want to pose four important questions of concern:

- Do you have a process for descaling your washer?
- How often are you checking your water quality?
- What type of final rinses are you using in your WD?
- What is your cleaning solution dilution set at?

As you can see, the causes could be one, or a combination of factors on why you have this "white film," or "scum," as I say.

First, a sterile-processing department (SPD) usually has and uses two types of water as defined by Advancement of Medical Instrumentation (AAMI) TIR30—Utility (used in all stages of cleaning, except the final rinse) and Critical (for the final rinse).[1]

Let's first investigate water hardness to address this concern. Water hardness is the concentration of calcium and magnesium ions expressed in terms of calcium carbonate (CaCO3). Hard water might leave a white/gray-colored residue on all types of surfaces like the walls of your washer. This might also shorten the life span of your medical instrumentation.[2,3]

Next is concentration of your cleaning agent(s). You did not mention foaming inside your washer, but if you have foaming, you also are having possible cleaning-agent dilution issues. This could also add to the "white film" or "scum" you are seeing. Remember, a basic rule with cleaning agents is that they are typically low-foaming. If you have foaming, it could be another cause of the "white film" or "scum" on the WD chamber walls.

Let us explore how water hardness affects the cleaning action of your chosen cleaning agent.

Cleaning agents can lose effectiveness when used in hard water (hardness). Hardness in water is mostly caused by the presence of the mineral salts calcium (Ca) and magnesium (Mg). Iron (Fe) and manganese (Mn) can also be culprits.

Figure 1: White film on washer wall

The mineral salts react with the cleaning agent to form an insoluble precipitate known as film or scum. This cleaning-agent film does not rinse away easily. It tends to remain behind and produces visible deposits. (Figure 1). In the cleaning process, some cleaning agent is used up by reacting with hard water minerals to form the film. This reduces the amount of cleaning agent available for cleaning. Thus, you use more cleaning agent, and this can cause foaming issues. (Figure 2).

Ever turned on a faucet and "yuck" came out? Remember, often the water that comes out of your sink faucet is the same water going into your WD. Water quality can change even within a facility's delivery system. This could be because of the condition of pipes, construction taking place in other parts of the facility, and other factors. SPD should monitor the quality of water periodically. Water that originally enters the facility could travel a long path amid diverse types of piping, and by the time it reaches your department the quality of water can change.

Because water quality plays such a significant role in the proper operation of a modern hospital, the physical plant departments of most healthcare facilities test the water quality at least daily. In fact, many do so on an hourly or even on a constant real-time basis. This information is available, and sterile processing departments should request a copy of these results.

Figure 2: Too much cleaning agent, thus foam is created.

It is this author's opinion, based on years of observation, that if you see something on the walls of your WD it will eventually appear on your medical devices. The WD is not using the proper final rinse (Critical Water), and not properly drying the medical devices once completing the last stage.

One article makes the following statements on why water spots might appear after the items come out of a WD. The article states that, "even though the parts appear 'dry and visually clean,' [you still] find spots are from water," left on the device. "If even a few drops of rinse water are left on the parts, then when water evaporates, it concentrates the trace salts and leaves calcium, magnesium, and iron deposits. These often appear in characteristic sets of white ring shapes, i.e., water spots. This often happens because of a less than optimal blowing [/drying] process after rinsing."[4]

Next are the instructions for use (IFU) of the medical device. Most WD companies recommend the use of Critical Water as the final rinse. This rinse helps remove any residual detergent that could be left on the medical device before the drying process. Depending on the type of system you use to produce Critical Water final rinse, you need to monitor that system. I have been in departments that have great systems; however, they do not monitor, and their systems do not work properly.

Some WD(s) have a cycle specifically used for descaling the equipment. Depending on your model, it could be weekly, monthly, or used as needed.[5,6,7] The frequency of descaling might be a warning sign of water quality issues.

Last, read the operators manual for your WD and the cleaning agent's IFU. These will help in making sure you are using the right dilution and water quality.

As you can see, finding the source producing this "white film" or "scum" is not simple. It requires critical thinking and involving many partners to resolve this issue. I hope I have given you a road map to start solving your challenge. **HPN**

Visit https://hpnonline.com/21294817 for references.

2023 HSPA Conference Brings Top SP Education to Nashville

by Julie E. Williamson

HSPA's Annual Conference is the Sterile Processing (SP) profession's leading in-person educational and networking event, drawing more than 1,000 attendees across all SP titles and experience levels who are eager to learn from some of the industry's most prominent and respected speakers and meet with leading suppliers in the SP space. The 2023 Conference will take place May 6–10 in Nashville, Tennessee, with all educational sessions, social events, exhibits and sleeping accommodations conveniently located under the roof of the Gaylord Opryland Resort and Convention Center.

Attendees from across the globe will have access to dozens of educational sessions, all worth valuable continuing education (CE) credits. The Conference also provides participants with countless opportunities to network with peers, share best practices, and engage in effective problem-solving—all while building valuable knowledge that can be shared with teammates upon returning to the department.

What follows is a summarized schedule of events, including preconference workshops that are worth additional CE credits. To review the full conference schedule, including preconference sessions taking place Saturday, May 6, and to register, visit www.myhspa.org. HPN

SUNDAY, MAY 7

8:30–9 a.m.: Opening remarks

9–10 a.m. (Keynote address): *The Sterile Processing Profession Past, Present and Future: The View from My Window* (Sharon Greene-Golden)

10:30–11:30 a.m.: Real-World Evidence of Splashes in Decontam—Now What? (Cori Ofstead, Frank Daniels, Marie Brewer)

1–1:45 p.m. (Concurrent sessions): *Findings of an Internal Auditing Study of Insulation Testing Practices to Improve Healthcare Facility Testing Practices and Patient Outcomes* (Cheron Rojo); *Residual Moisture Management During Medical Device Reprocessing* (Jimmy Do); *Single-Use or Reusable Endoscopes … What's the Deal?* (Amber Wood, Garland-Rhea Grisby)

2–2:45 p.m. (Concurrent sessions): *Calculating Productivity: How Many Techs Do You Need?* (Monique Jelks); *Career Fatigue: Reinvigorate Professional Development* (Sarah B. Cruz); *The Science of Cleaning* (Michael Polozani, Dewey Barker)

3–3:45 p.m. (Concurrent sessions): *How Are State Legislatures Different from Congress?* (Josephine Colacci); *Value Proposition: Tools to Justify Sterile Processing Needs* (Jean Sargent); *When Your SPD Is Taken out of Commission* (Delores O'Connell)

6 p.m.: Opening Reception

MONDAY, MAY 8

7–7:45 a.m.: *Say It Loud: Successful Leadership with English as a Second Language* (M. Angie Holland)

8–9 a.m.: *Biofilm: An Unseen Concern When Reprocessing Medical Devices* (Cheri Ackert-Burr)

9:15 a.m.–10:15 a.m.: *Utility Requirements for Sterile Processing as Recommended in ST79* (Walter Deacon)

10:30–11:30 a.m.: *2023 Update to Sterilization Best Practices* (Susan Klacik, Amanda Benedict, Amber Wood)

12:30–5 p.m.: Expo Hall Open

TUESDAY, MAY 9

7–7:45 a.m.: *Sterile Processing Workflow Failures and Corrective Actions* (Pete Butler)

8 a.m.–12:30 p.m.: Expo Hall Open

1:45–2:45 p.m.: *What's up in Low-Temperature Sterilization: Standards, Technology and Quality Assurance Monitoring* (Larry Talapa)

3–3:45 p.m.(Concurrent sessions): *Bye, Felicia: Letting Go of Negativity and Cultivating an Optimistic Work Environment* (Jamie Shelosky); *New Standards and Guidelines: Getting the Support You Need for Process Improvements* (Cori Ofstead, Marie Brewer); *Water Management in Sterile Processing: Preparing for a New Standard* (Brian Flannigan)

WEDNESDAY, MAY 10

8:30–9:30 a.m.: *Keep It Clean!* (Eric Smith)

9:45–10:45 a.m.: *Sterile Processing Beyond the Operating Room* (Jill Holdsworth)

11–11:30 a.m.: Closing remarks

11:30 a.m.–12:30 p.m. (Closing keynote): *Preventive Maintenance for People Surviving (and Thriving) in Sterile Processing Today* (Natalie Lind)

Let's give gloves a hand

by Scott Tomko

Flag Photo 85709882 © Somartin | Dreamstime.com
Gloves Photo 114249826 © Maxroje | Dreamstime.com
USA Photo 39320039 / Abstract © Goldghost | Dreamstime.com

The production of superior gloves within the medical field continues to expand and evolve.

As we enter in to 2023, gloves have become a booming, billion-dollar industry that has expanded well beyond healthcare. The COVID-19 pandemic has undoubtedly exacerbated the demand for gloves, and this is on top of a demand that has been increasing exponentially over the last three decades, as overall protection from HAIs and bloodborne pathogens has made glove usage mandatory across many realms.

Let's get things covered

Stephen M Kovach is the Educator Emeritus at Healthmark Industry, a well-known company that provides autoclave gloves, decontam gloves, lined sleeve gloves, silicone heat gloves, and ultra-long decontam gloves, just to name a few.

Stephen M Kovach

Well, according to Kovach, it wasn't all that long ago where glove usage, particularly that concerning a wide range of advanced, protective gloves, was far from common.

"When I think back 5 to 15 years ago about glove practice, I have to stop and think, what was the selection of gloves for use in the decontamination area? My memory is that almost everyone used simple exam gloves to the cuff line (wrist area) or the simple yellow-latex gloves purchased from the dollar store, which provided a little more protection but water still leaked in over the cuff."

Thankfully, staff members soon came to realize that certain types of simpler gloves were simply not getting the job done.

Kovach continued, "What has changed is input from the staff raising awareness that those types of gloves do not provide protection past the cuff line. Healthmark was one of the first companies supporting the longer impervious sleeve glove to prove protection all the way up to the elbow area.

Another reason for improvement is that the industry standards' wording has evolved. For example, in AAMI ST91, it is stated that processing personnel should use a style of glove that prevents contact with contaminated water. Thus, exam gloves should not be used for decontamination. General-purpose utility gloves fitted at the wrist or above should utilized instead. Also, the recent "Splash" study by the Ofstead group has shown the importance of proper glove selection due to the high-risk of exposure to aerosols and moisture generated during decontamination processes.

It is each facility's responsibility to provide staff with the proper PPE—gloves with protection up to the elbow is part of that responsibility."

Introducing our new Biogel® gloves manufacturing facility

Mölnlycke is investing in manufacturing resiliency to ensure we can help you deliver more for your patients.

Last fall, Mölnlycke opened our new state-of-the-art factory in Kulim, Malaysia. The innovative plant design will produce millions of gloves every year in a less energy intensive way without compromising product quality. We expect our new site to deliver:

- 50% increased capacity
- 100% renewable energy and solar panel generated electricity
- 50% recycling of the process water

When it comes to patient care, you never compromise and nor will we.

Acting today to meet the healthcare challenges of tomorrow.
This is one way Biogel delivers Total Value.

Zero manufacturing waste will go to landfill.

To learn more about how Biogel gloves are made, visit www.molnlycke.us/biogel

Mölnlycke®

Medline's Smart BoX technology

Cardinal Health's Protexis PI Surgical Glove

AliMed's AliGuard gloves

Molnlycke glove production

Ocean Pacific NeoNatural Polychloroprene Medical Examination Gloves from Medicom

PRODUCTS & SERVICES

Turn back the clock

Supply and demand issues with vital materials such as gloves and PPE are not occurrences that suddenly came over the horizon with the COVID-19 pandemic; in fact, nothing could be further from the truth. In fact, if we turn back the clock not even 40 years ago, widespread coverage of shortages in protective wear for healthcare workers was as newsworthy as it is today.

The AIDS pandemic, which took off in the 1980's, made it commonplace for hospitals and facilities around the country to encounter shortages of the latex rubber gloves that were regularly used to protect health workers from potential exposure to HIV.

Well, as we all know, history tends to repeat itself, as here we are in 2023 trying to emerge from another health crisis that has disrupted production, supplies, and distribution of healthcare supplies on a global scale.

However, the overarching goal remains the same: we must do everything we can to ensure our healthcare workers and patients are properly protected. One company that has been fighting this battle nearly all that time has been Medicom, which was founded in 1988 in response to the urgent need of medical gloves for healthcare professionals during the global HIV crisis. Since then, the company has continued to drive innovation in glove production, material, and design features such as chemical resistance and the reduction of skin sensitization.

Guillaume Laverdure

"At Medicom, we believe that true innovation must include vertical integration and supply chain resiliency. For this reason, we have embarked on different initiatives to secure the supply of products made in compliance with the highest labor and environmental standards, to healthcare systems. We believe that the future is in end-to-end sustainable practices and products with the lowest environmental impact," says Guillaume Laverdure, CEO, Medicom Group.

American Ingenuity

Exam gloves remain an industry wherein production and manufacturing largely takes place overseas; in fact, according to the U.S. International Trade Commission, the country of Malaysia accounted for approximately 60 percent of the world's nitrile gloves, as well as 75 percent by quantity of non-hard rubber medical gloves that were imported into the U.S. in 2020.

Although domestic production has been increasing, Asia continues to have a stronghold on the glove market, not only regarding Malaysia's huge presence, but also a recent surge from China, ewho has dramatically increased its PPE and glove production since the pandemic began.

United Safety Technology (UST) is slated to be one of the newest competitors in the domestic manufacturing of medical-grade nitrile exam gloves. Aided by a Department of Defense contract to significantly enhance glove production capabilities, the company is revitalizing a former Bethlehem Steel facility in the greater Baltimore area to serve as its primary plant. When asked about their focus on the community, sustainability and innovation, Will Benton, UST's Chief Commercial Officer, shared the following point of view:

"Most conversations around innovation jump straight to "the product" and what the next-generation benefits will be. While that is understandable, we believe we must take a more holistic view of innovation, especially as we – and other groups – are working to bring critical, medical product manufacturing back to the U.S. At UST, our team is hyper-focused

United Safety Technology site

Cardinal Health™ Protexis™ Surgical Gloves

Improving and investing **for you**

We're investing in our manufacturing and supply chain to get market-leading Cardinal Health™ Protexis™ Surgical Gloves onto the hands of your clinicians faster so they can focus on what matters most: life-saving care.

To learn about our initiatives, contact your Cardinal Health sales representative at **800.321.0591** or visit **cardinalhealth.com/surgicalgloves**

CardinalHealth™
Protexis™

on driving innovation and improvement on multiple levels – and this goes beyond just our product attributes. We're proud of the innovative approach we're taking with our expansive building reclamation and material reuse efforts. Innovation is also the foundation for our proprietary production design and integrated automation we're using to create a best-in-class medical-grade glove produced here in the U.S. within a progressive worker-friendly environment.

Will Benton

Innovation is woven into the framework of our business model, from how we create resilience through our raw material sourcing all the way to the recycled packaging materials we select. Most importantly, innovation should be an enabler for growth and improvement within the community we serve. Supporting domestic manufacturing is now considered an innovative approach. What's old is new again."

Brotherly glove

Another new American company that commenced operations in 2020 is Isikel, which is located on the outskirts of Houston, Texas, where they focus on providing top of the line PPE, including gloves. The company is positioning itself to be a key supplier to medical and industrial facilities throughout Texas and the surrounding states.

Bill Williams

According to Vice President Bill Williams, "Isikel Manufacturing is uniquely skilled in the development of nitrile gloves. We follow a combination of ISO 9001:2015 Product Realization practices and Stage Gate processes to ensure new products developed are profitable, meet our customers' needs, and are within our process capabilities."

The company was born on a commitment to boost domestic production of products that are (and continue to be) most readily available via foreign markets. Isikel's nitrile glove factory has multiple dip lines and the capability to produce nearly 500 million nitrile gloves annually. At present, the Isikel team is gearing up to begin operation of our new multi dip machine glove and saline facility in early 2024.

"Isikel protects the nature of our innovations but works closely with our suppliers to stay current on the latest raw material and technological developments. We use the voice of our customers to drive our strategic new product road map. Our Chemists and engineers use this data to develop a pipeline of new products to support our customers' current and future market growth," added Williams. "Our team is proud of our ability to creatively integrate technologies from multiple industries to produce world class nitrile gloves. This provides us with a decisive advantage over foreign and domestic competitors which is critical in today's economic climate."

Around the world

One company with an international stamp on its products is Mölnlycke, who operates sites in over 40 countries across the globe. The Swedish company recently opened a brand new factory in Malaysia, which will enable the company to greatly increase their production capacity, while at the same time making great strides in attempts to reduce their carbon footprint.

"In September 2022, Mölnlycke announced the inauguration of a new surgical glove factory in Kulim, Malaysia," said Chris Puricelli, VP Commercial, Americas. "The new facility is a major milestone in Mölnlycke's sustainability roadmap, 'WeCare,' and the company is investing in solutions that will lower its CO2 emissions in this plant. In the long term, Mölnlycke is turning its commitment to net zero greenhouse (GHG) emissions by 2050 into reality by running its operations in a less resource intensive way."

Chris Puricelli

Mölnlycke's Biogel product line comprises an expansive line of surgical gloves that offers users advanced protection and comfort, detecting and withstanding perforations.

Puricelli continued, "We know our Biogel surgical gloves protect clinical staff and enable them to work at their best. To support our customers, Mölnlycke is pursuing sustainable growth and investment to meet future demand for supply and sustainability.

With sustainability as a key aspect of the company's strategy, Mölnlycke is setting out to build a sustainable healthcare manufacturing ecosystem that will effectively meet the industry's demand for high-quality surgical gloves, with minimal environment impact."

Staying a glove ahead

Today, PPE waste is climbing at an alarming rate. For example, when clinicians dispense exam gloves, they often pull more gloves than they need; the excess gloves then fall on the floor or are thrown in the garbage. As a way to help combat this phenomenon, Medline has developed its SmartBoX Technology, a packaging enhancement that automatically propels gloves

toward the box opening, helping clinicians dispense the appropriate number of gloves with each pull, thereby reducing waste significantly.

Moreover, to support caregiver readiness and efficiency, Medline has developed its Glide-On powder-free vinyl exam glove. The Glide-On coating allows for easier donning and less tearing, even with damp hands. This product is making it easier for staff, already faced with time and resource constraints, to follow hand hygiene protocols while also helping reduce waste.

Paul Lishnevsky

According to Paul Lishnevsky, Group President, Medline Industries, LP,"Healthcare providers have always looked for resilient, well-diversified supply chains, and following the pandemic, that has never been truer. It is critical that healthcare institutions have the products they need at the time they need them to provide seamless, quality patient care. Medline has continued to take steps to help healthcare run better despite continued industry-wide global supply chain challenges.

At present, Medline is the only surgical glove manufacturer to produce its own synthetic polyisoprene raw material right here in the US, which further illustrates the company's commitment to providing resiliency amid supply chain problems and protect their customers in the face of future pandemics."

If the glove fits….

Across the past five decades, there have certainly been few companies that can lay claim to such a vast range of industry leading gloves as Cardinal Health. The company's extensive offering of glove products, whether of the surgical, exam, or cleanroom variety, continue to set standards for excellence not only in America, but around the world.

Even in light of the tough economic times and supply chain burdens, Cardinal Health has made recent investments in excess of $185M in surgical glove manufacturing expansion, supply chain inventory, and warehouse space, resulting in an overall doubling of their current surgical glove manufacturing capacity.

Candace Underhill

Candace Underhill, Vice President, US Product Marketing, highlighted some of Cardinal Health's pillars to success, which serve as a testament to the company's continual commitment to remaining at the forefront of the industry:

- Driving the shift to non-latex materials to decrease occurrence of latex allergies; being one of the first to provide a comfortable, non-latex glove made of polyisoprene material
- Allowing for comfort and natural movement in the fingers, thumb, and palms with our proprietary hand mold with an independent thumb design
- Optimizing space in the storeroom with our specifically designed packaging
- Reducing cuff roll down at the gown interface with a unique interlocking, beaded cuff design
- Promoting skin health by moisturizing and soothing the hands with emollient-coated Neu-thera gloves
- Indicating breaches with our distinct blue color double gloving indicator system
- Designing gloves for specific specialties, such as Protexis PI Ortho and Orthopedic, and targeted texture surfaces that allow for enhanced grip, such as Protexis PI Textured

"The market today is trending toward surgical glove solutions that address the continuum of usage and help make the lives of healthcare providers easier so that they can focus on what matters most – caring for their patients," added Underhill.

How about a hand for radiation protection

Although not receiving the same attention as gloves used for surgery or examination, there is an increased need in the medical industry for specialized gloves that protect from radiation.

Samantha Chmura, OTR/L, is the Product Manager for AliMed, a Massachusetts-based company that offers a wide range of gloves, including a series that is dedicated to radiation protection.

Samantha Chmura

"As higher radiation-dose fluoroscopic procedures become the norm today for certain exams and guided surgeries, clinicians are paying greater attention to ways they can mitigate their exposure risk, especially when it comes to more vulnerable and often overlooked areas such as the hands. Historically, compliance rates for wearing radiation attenuation gloves have been lower than other protective gear, often due to decreased tactile sensitivity or dexterity, which some clinicians feel may adversely affect performance.

So, to counteract compliance issues, today's gloves need to perform equally as well as they protect. With that need in mind, AliMed has worked to bring our AliGuard glove to market—a more advanced glove that marries high attenuation with enhanced tactile sensitivity. Its thinner, more finely textured construction allows surgeons and radiologists to really grip and feel their instruments without compromising dexterity or the health of their most valuable tool, their hands." HPN

Artificial intelligence and fake news: imagining the potential for AI chatbots

by Karen Conway

If you are like me, you are intrigued by the recent hype around ChatGPT, and its potential applications in healthcare and the supply chain. I have started using the AI chatbot to learn more about the tool itself, the potential risks and opportunities, and whether it could go beyond just informing to reinventing how the healthcare supply chain operates. Here is what I have learned (or surmised) so far, through reading about the experience of others and my own direct "conversations" with ChatGPT, and by doing a bit of creative visioning on my own.

It's impressive

What is most intriguing to me was the experience of Jeremy Faust, MD, editor-in-chief of *MedPage Today*. In a recent video,[1] he described how he provided ChatGPT with some clinical factors about a hypothetical patient, and asked it to provide the most likely, as well as possible, diagnoses. Even when he used medical jargon, Dr. Faust says the tool provided him with what he also considers to be the most likely (and common) diagnosis, costochrondritis. ChatGPT also offered a number of other possible (and Faust adds accurate) diagnoses, despite the minimal information provided.

It's concerning

Dr. Faust's experience also discovered a flaw related to the likely diagnosis. In its readout, ChatGPT said that costochrondritis is made worse by oral contraceptives (OCPs), which Dr. Faust had noted the patient was taking. When he asked for the evidence regarding the impact of the OCPs, ChatGPT first provided what appeared to be a reference to a peer-reviewed article that Dr. Faust discovered did not exist. ChatGPT made it up, using the name of a real journal and even names of authors who had published in it.

Given that some earlier iterations of AI chatbots, by Microsoft and Meta, had allowed the proliferation of racist, anti-semitic and/or false information, Dr. Faust's experience raises some real concerns about the potential for the technology to proliferate inaccurate and even life-threatening recommendations, which, as we saw during the pandemic, can go viral and prove deadly.

It's self-aware, sometimes

When Dr. Faust challenged ChatGPT about the reference, he says it "stood its ground." But when another researcher asked about ethics and AI, ChatGPT explained that it its "ethical behavior" is based on the values "built into the algorithms and decision-making processes it uses." Problems with algorithmic bias have plagued healthcare before. A commonly used algorithm for care decisions was found to have reduced the amount of care Black patients receive compared to equally sick White patients.[2] The algorithm was built in a manner that based health status on the amount of money spent on care; the problem is that the amount of money spent on care for Black patients has historically been lower, more as a result of access and affordability issues than as to health status. The ethics of AI algorithms, including those used by tools such as ChatGPT, is dependent upon the ethics, values and/or (unconscious) bias of the humans who program it. That begs the question as to the implications of ChatGPT's other ability—to generate Phython computer code—but that's a topic for another day, and another column.

It's got info, not new ideas

Dr. Faust's example provides a clear example of how—when crafted carefully—ChatGPT can satisfy a long-held request of physicians – to have access to the most relevant information when and where they need it. As just one example, think how something like ChatGPT could provide real-time access in the middle of the case to information often buried in text-heavy instructions for use; or how might this change physician reliance on the manufacturer representative in the OR.

When I asked ChatGPT about how AI could improve the healthcare supply chain or the selection of the best products for patient care, it gave me some very valid responses, such as the ability to identify and mitigate potential supply chain disruptions, or to gather data on product efficacy, cost effectiveness, and clinician and patient satisfaction. I was most interested in its stated ability to analyze large amounts of data to predict demand and supply patterns, but it failed to make the link (at least in the answer I received) to corresponding advancements in AI to predict the future healthcare needs of patients. What's intriguing to me is how that data, when available for large enough populations of patients, could support advancements in supply-chain forecasting, production, and fulfillment.

It's working on it

Finally, when I asked if ChatGPT could generate new ideas or concepts, it explained that "would require a fundamental shift in the way AI systems are designed and trained ...[and] a better understanding of how the human mind generates new ideas and concepts." Currently, ChatGPT is trained on large amounts of data, but interestingly, nothing since 2021. Given just how much new information has been generated in medical science in that time, ChatGPT clearly has a lot of learning to do—as do I on the risks and opportunities of this game changing technology. HPN

References

1. https://www.medpagetoday.com/opinion/faustfiles/102723
2. https://www.science.org/doi/10.1126/science.aax2342

Karen Conway works to advance the role of the supply chain as a critical enabler in the pursuit of a value-based healthcare system. As Vice President, Healthcare Value for Global Healthcare Exchange (GHX), Conway explores how the supply chain and improved data quality and visibility can support understanding of what increases value for patients and to those organizations that develop and deliver healthcare products and services.

ADVERTISER INDEX

Advertiser	Page	Web
Aesculap	3	aesculapusa.com/aicon
AHRMM	33	ahrmm.org
Atlantic Ultraviolet	25	AtlanticUltraviolet.com
Cardinal Health	45	cardinalhealth.com/surgicalgloves
Cygnus Medical	31	cygnusmedical.com
Dale Medical Products	BC	dalemed.com/samples
DETECTO	7	Detecto.com
Healthmark Industries	9	hmark.com
Hubscrub	IBC	Hubscrub.com
Key Surgical	27	keysurgical.com
Medical Illumination (Nuvo)	23	nuvosurgical.com
Medtrica	5	medtrica.com
Mobile Aspects	35	mobileaspects.com
MolnIycke Health Care	43	molnlycke.us/biogel
Parker Labs	24	parkerlabs.com
Prodigo Solutions	17	prodigosolutions.com/highreliability
Ruhof Corporation	IFC	ruhof.com
Torvan Medical	29	torvanmedical.com
TRONEX COMPANY	47	tronexcompany.com
Uline	46	uline.com
Viscot Medical	21	viscot.com

This index is provided as a service. The publisher does not assume liability for errors or omissions.

HEALTHCARE PURCHASING NEWS

Classified Marketplace

CLASSIFIED ADS

Norma Machado
Healthcare Purchasing News
2477 Stickney Point Road, Suite 221B
Sarasota, FL 34231
Phone: (941) 259-0856
Fax: (941) 927-9588
Email: *nmachado@endeavorb2b.com*

WHY CHOOSE Dale®
Medical Products

The Dale ACE Connector® 485 with ENFit® Connection

- Guards clinicians against potentially infectious gastric splashback
- Shields patient from external contamination
- ENFit styles to improve patient safety and reduce misconnections
- In-line feeding, suctioning, irrigation, gastric residual sampling and medication delivery with no need to disconnect
- Simple on/off handle that is easy to operate

QUALITY YOU CAN COUNT ON

For a free sample call 800-343-3980
or visit dalemed.com/samples

Represented Nationally by:
MTMC