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HEALTHCARE PURCHASING NEWS®

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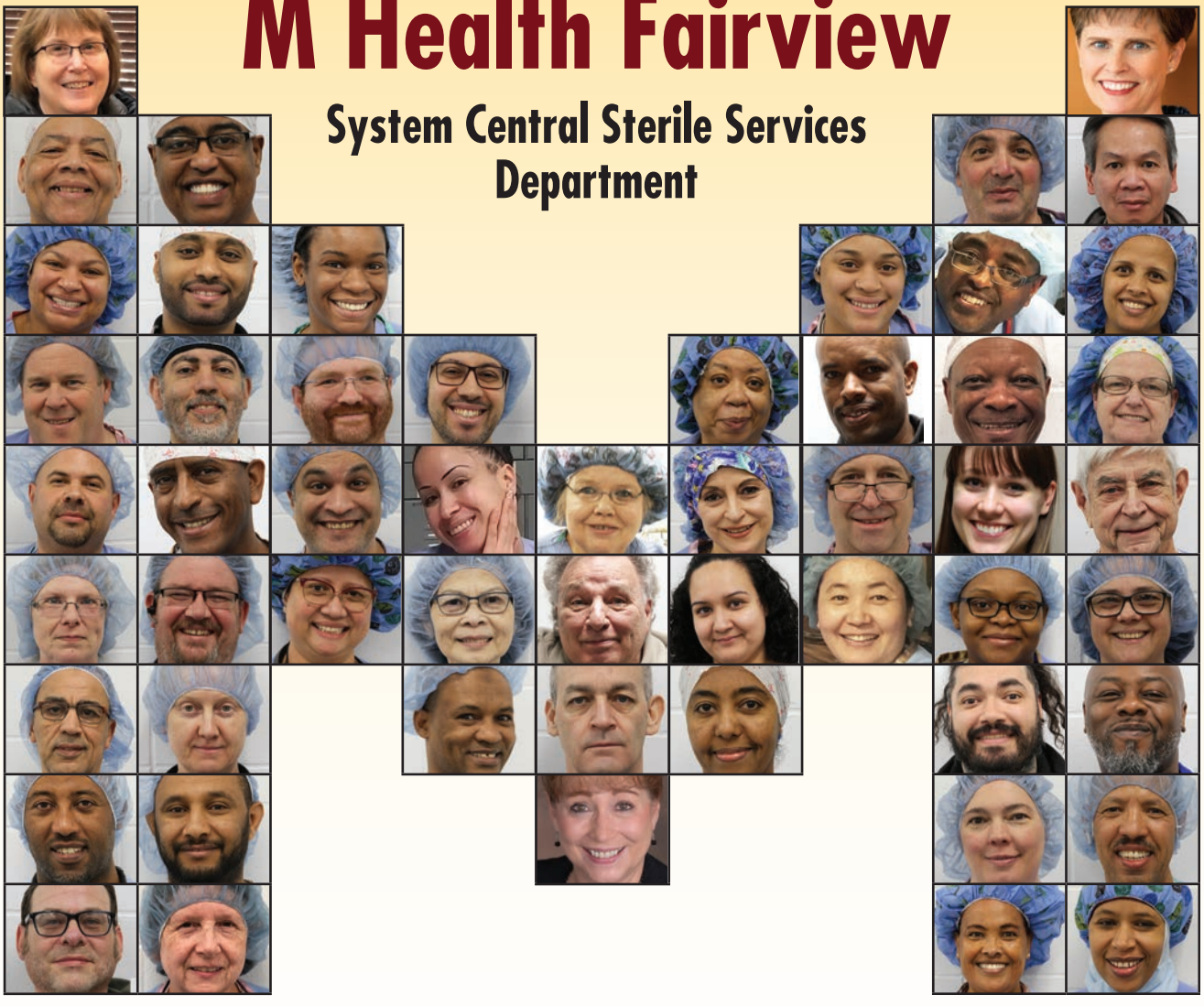
M Health Fairview

System Central Sterile Services Department



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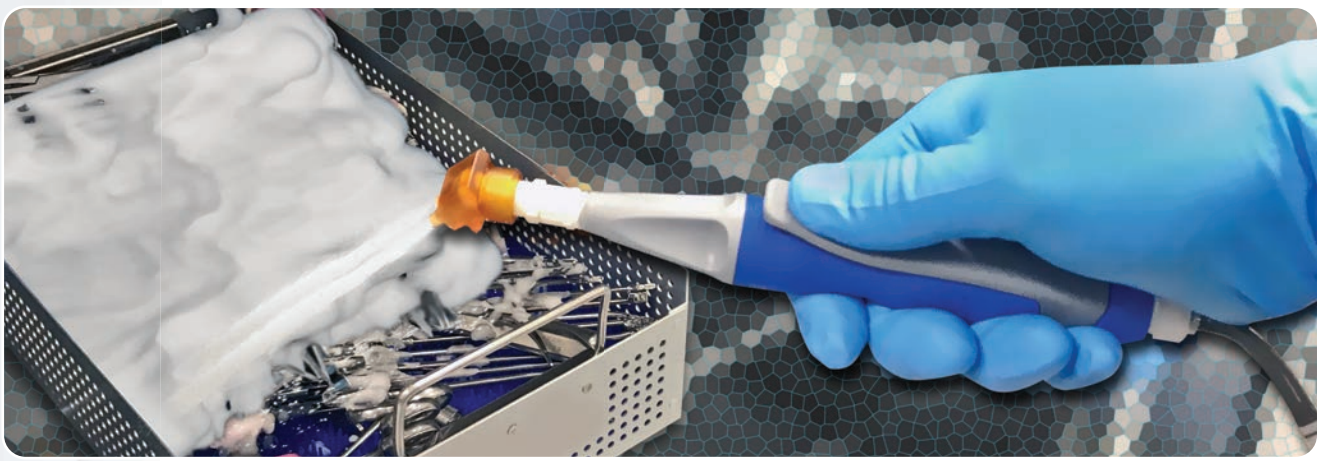

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HEALTHCARE PURCHASING NEWS

SPECIAL FOCUS

Mike Festa, Program Manager - High-Level Disinfection Practice
Lori Ferrer, System CSSD-CPC Director
LeAnn Born, Vice President Supply Chain

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Supply Chain's Catch-22

The Egyptian Pharaoh, clearly angst-ridden about his bizarre dreams, summoned someone from prison that he had heard possessed a gift of interpreting dreams.

Brought before the monarch as told in Genesis 41, Joseph listened to him recite his two troubling dreams. The first involved seven hale and hearty cows that emerged from the Nile River to feed on the nearby grass. They were followed by seven sickly and thin cows that ate the first seven. The second involved a stalk on which grew seven full ears of grain. They were followed by seven thin and withered ears of grain "blighted by the east wind." The seven thin ears devoured the seven full ears.

The Pharaoh, consumed by worry, asked Joseph what they meant.

Joseph responded by saying God was forewarning the Pharaoh that seven years of bounty and plenty will come to Egypt, followed by seven years of famine and severe need. In perhaps one of the earliest lessons in effective supply chain management, Joseph advised the Pharaoh to appoint a "discerning and wise man" to oversee the process of gathering one-fifth of all the produce grown and harvested during the seven bountiful years, and under the authority of the Pharaoh, store it as a reserve for distribution during the seven lean years to follow so the people will be saved.

You likely know the outcome of this famous Bible story. The Pharaoh appoints Joseph as Prime Minister or Vizier of Egypt to carry out this massive supply chain operation, which ultimately succeeds.

Imagine a Supply Chain Executive today being hailed as the No. 2 behind a CEO.

Besides divine guidance, what did Joseph, the great Old Testament Supply Chain Leader, possess that helped him succeed? Information by precognition.

Supply Chain Leaders today fall immensely short of possessing precognition. They come as close as humanly possible via computer-generated models and expert forecasting based on mental deduction. They rely on data about purchasing patterns, sifted through algorithms designed to predict behaviors. They also participate in crisis/disaster planning meetings that largely outline how to react and respond to as many "What if?" scenarios as possible.

As healthcare organizations, cities, states and nations around the world grapple with the spread of the novel coronavirus COVID-19, they bemoan the shortages of surgical masks, respirators, and other protective products designed to prevent the spread of the virus.

They point to a deficient, mismanaged supply chain as a reason.

Supply chain, by its very nature, is a reactive process. Supply chain reacts to satisfy demand. So in order for someone to know what to produce and distribute he or she has to know what customers demand.

Besides divine precognition, what other benefit did Joseph enjoy more than 3,500 years ago? CEO support and real estate budgeted to stockpile 14 years of grain.

So far this century, we've experienced at least half-dozen life-threatening viruses that reached epidemic and pandemic classification. We've also experienced significant shortages of product needed to combat these viruses and protect people.

Short of equipping everyone with a Star Trek replicator (essentially what we might call a 3-D printer with near instantaneous output), all of the players in the supply chain need ample time to plan for production and distribution, storage and consumption.

Since 1983, managed care, however, has tried to bridle supply chain through myriad cost containment strategies that eliminate the ability to have quick access to ample product – even when you don't need it. For example, just-in-time and stockless distribution alleviates the need to maintain costly real estate that could otherwise be used for more patient-care or revenue-generating exercises.

Nothing can be delivered that hasn't been made. Nothing can be made that hasn't been ordered. Nothing can be ordered that hasn't been forecast accurately and demanded realistically. Nothing can be forecast accurately and demanded realistically if you're navigating through darkness.

You can't complain about the high costs of manufacturing, logistics and storage of products that we'll supposedly never use and then complain when stringent cost-cutting measures under the guise of efficiency slash the availability of all these products we're now supposed to have because we need them yesterday!

The supply chain may be playing catch-up and scape goat in the race against COVID-19 simply because of short-sighted reimbursement policies.

EDITORIAL

Publisher/Executive Editor *Kristine Russell*
krussell@hpnonline.com
Senior Editor *Rick Dana Barlow*
rickdanabarlow@hpnonline.com
Managing Editor *Ebony Smith*
esmith@hpnonline.com
(941) 259-0839
Contributing Editors *Kara Nadeau*
knadeau@hpnonline.com
Susan Cantrell
susan_cantrell@bellsouth.net

ADVERTISING SALES

East Coast *Blake and Michelle Holton*
(407) 971-6286
Midwest *Randy Knotts*
(312) 933-4700
West Coast *Blake and Michelle Holton*
(407) 971-6286

ADVERTISING & ART PRODUCTION

Ad Contracts Manager *Tiffany Coffman*
(941) 259-0842
Graphic Design *Tracy Arendt*
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Current Issue
U.S.: $15.00 **Canada/Mexico/Foreign A/O:** $20.00
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U.S.: $17.60 **Canada/Mexico/Foreign A/O:** $22.00

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Healthcare Purchasing News (ISSN: 1098-3716) is published monthly by Endeavor Business Media, 2477 Stickney Point Road, Suite 315B, Sarasota, FL 34231, Phone: (941) 927-9345, Fax: (941) 927-9588, *www.hpnonline.com*, Business hours: 8:00 a.m.-5:00 p.m. EST.

Office of publication: Periodicals Postage Paid at Nashville, TN 37209 and at additional mailing offices.

Postmaster: Send address changes to: *Omeda (Healthcare Purchasing News)*, PO Box 3257, Northbrook, IL 60065-3257.

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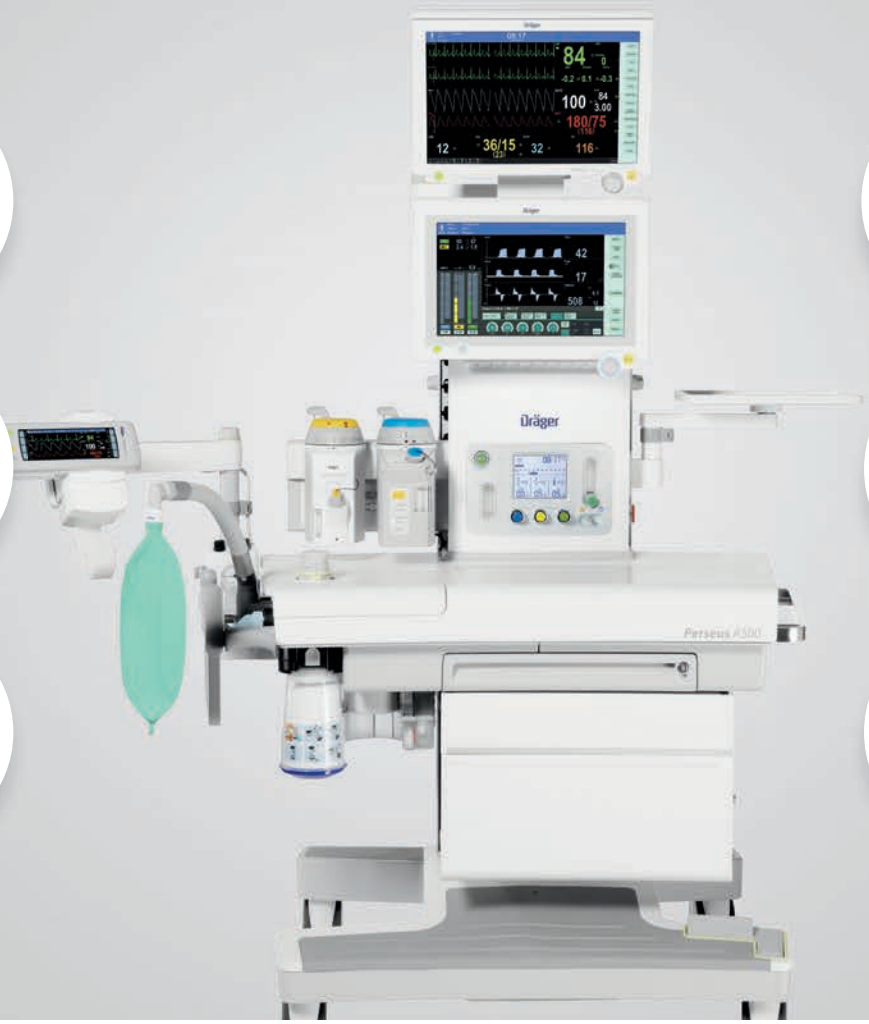

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FAST STATS

Supply chains and their pandemic readiness plan

Resilinc conducted a Pandemic Readiness Assessment of global manufacturers. The results underscore the importance of preparing your Supply Chain for pandemics.

27%
of suppliers admit to not having a pandemic readiness program

42%
of supply chains have never tested their pandemic plan in the last three years

75%
of manufacturers reported part shortages in February and March

70%
of manufacturers reported transportation disruptions

45%
reported not being able to deliver products to customers in February and March

6%
of companies were not monitoring the COVID-19 situation as of February 15, 2020; 97% of the companies were monitoring COVID-19 as of March 25.

48%
of supplier regions reported employees with COVID-19 at their sites

35%
of suppliers had employees out as much as two weeks; 16% of suppliers expect employees to be out two weeks and beyond

3.25
weeks was the average disruption impact reported on manufacturing operations, with some manufacturers reporting expected disruptions for a staggering 16 weeks

Source: Resilinc maps the supply chain multiple tiers deep, all the way down to part, supplier and site levels, and exposes hidden failure points deep in sub-tier suppliers. www.resilinc.com

NEWSWIRE

HPN salutes healthcare personnel on the front lines of COVID-19

As the world continues to deal with the COVID-19 global pandemic, we're reminded every day of the heroic measures healthcare professionals are providing. Our entire staff at *HPN* says Thank You to the nurses, doctors, infection preventionists, sterile processing specialists, surgical and ICU services, EMTs, environmental services and the supply chain and C-suite supporters in healthcare facilities, who all continue to battle the COVID-19 pandemic.

As we head into our fifth month of COVID-19 coverage and the ongoing global pandemic, we wonder who could have foreseen that when *HPN* ran our first story in early January that we'd still be in the midst of extensive coverage almost five months later.

Our first reports were of a mysterious pneumonia sickening dozens of people in Wuhan, China, but that report said there was no evidence of the virus spreading from person to person. Just a week later the first death in Wuhan was reported. Then on January 21, the first case was found in the United States in Washington. Next in early Febuary, to everyone's surprise we discovered how rapidly it spread from person to person. Since then, this virus has continued to deliver surprises, including patients sharing virus with no symptoms and many standard medical treatment practices being challenged.

We've been reminded by many sources that this is not going to be a short battle. We're also reminded to pay attention to the hurdles that we've overcome and hopefully lessons learned to prevent the struggles we've dealt with from happening again.

And we'll continue to say thank you for the sacrifices you'll continue to endure and that all of us are enduring in this world family.

Our ongoing coverage will continue to be posted on our website https://www.hpnonline.com/infection-prevention/article/21126453/hpns-coverage-of-covid19

FEMA launchs Pandemic Supply Chain Stabilization Task Force

Closing the gap between what the private sector is able to provide to healthcare end-users and what is needed for the fight against COVID-19 is a key priority for the White House Coronavirus Task Force. In support of the task force, FEMA and the U.S. Department of Health and Human Services created a Supply Chain Stabilization Task Force, one of eight COVID-19-focused task forces under the National Response Coordination Center (NRCC). This task force is taking a whole-of-America approach to address limited supply of critical protective and life-saving equipment.

The task force's primary effort is the sourcing of personal protective equipment (PPE), ventilators and other critical resources requested by states, tribes and territories.

By using the structure of FEMA's NRCC, the task force is finding and executing solutions to meet urgent demand and enable the U.S. Government to surge support to COVID-19 "hot spots" as they arise.

The Supply Chain Stabilization Task Force is executing a four-pronged approach to rapidly increase supply and expand domestic production of critical resources to increase supply long-term.

Preservation

Preservation to extend the life of PPE and other supplies is necessary. Developing guidance to prioritize the allocation and the most appropriate use of supplies for specific needs are critical components of this strategy.

- The task force is in the process of developing and verifying techniques to clean and recycle products.
- This line of effort also includes developing guidance to prioritize the allocation and the most appropriate use of supplies for specific needs, critical components of this strategy.

The task force is also working to expand equipment resources through the Preservation line of effort. The FDA issued an Emergency Use Authorization (EUA) for ventilators on March 24, which allows anesthesia gas machines and positive pressure breathing devices to be modified for use as ventilators. The new guidance will also assist healthcare personnel on how to use other ventilators, like CPAP devices for sleep apnea, with COVID-19 patients in respiratory distress, as well as on shelf life of existing ventilators.

Acceleration

Acceleration of the commercial market is required to help meet the urgent demand. Manufacturers are ramping up production and shipment of critical resources and have extended operating hours to increase production well above pre-COVID-19 levels.

To expedite purchasing, FEMA issued a request for quotation for vendors who have needed medical equipment and supplies to sell to the agency.

FEMA is also expediting movement of critical supplies from the global market to medical distributors in various locations across the U.S.

As an example of this effort, Project Airbridge was created to shorten the amount of time it takes for U.S. medical supply

Page 8

Extend the Usability
of Compatible N95 Respirators

STERRAD® Sterilization Systems received Emergency Use Authorization (EUA)[1] to decontaminate compatible N95 respirators[2] up to two times, to potentially **triple** the life span of the single-use respirators.

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*Per 24 hour period on models with cycle times less than 30 minutes.

[1]The ASP STERRAD Sterilization Systems have neither been cleared or approved for the prevention of the COVID-19 infection; the ASP STERRAD Sterilization Systems have been authorized by FDA under an EUA; the ASP STERRAD Sterilization Systems are authorized only for the duration of the declaration that circumstances exist justifying the authorization of the emergency use of the ASP STERRAD Sterilization Systems under section 564(b)(1) of the Act, 21 U.S.C. § 360bbb-3(b)(1), unless the authorization is terminated or revoked sooner.

[2]For purposes of the EUA, "compatible N95 respirators" means any N95 or N95-equivalent respirator that does not contain cellulose-based materials. Respirators containing cellulose-based materials are incompatible with the ASP STERRAD Sterilization Systems.

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AP-2000039-1

distributors to get PPE and other critical supplies into the country and to their respective customers.

FEMA is doing this by covering the cost to fly supplies into the U.S. from overseas factories, cutting the amount of time it takes to ship supplies from months to days. Each flight contains critical PPE (gloves, gowns, goggles, and masks) in varying quantities.

As part of the current agreement with distributors, 50 percent of the supplies on each plane are targeted by the distributors to customers in areas of greatest need. These areas are determined by HHS and FEMA based on CDC data.

The remainder is being infused into the broader U.S. supply chain. Prioritization is given to hospitals, healthcare facilities, and nursing homes around the country.

In some cases, the federal government may purchase some of the supplies to provide to states with any identified and unmet needs.

To address the anticipated ventilator shortage across the nation, the task force has also implemented a strategy to leverage the strengths of the commercial industry including numerous vendors, such as General Electric, Phillips, Medtronic, Hamilton, Zoll, ResMed, Hillrom and Vyair, to produce 20,000 ventilators over the next two months with the potential to add 100,000 by end of June. This represents a significant increase in velocity as the normal annual market is 30,000 per year.

Expansion

Expansion of the industry is also taking place. Manufacturers are enhancing production capacity with additional machinery, and in some cases re-tooling assembly lines to produce new products needed.

As an example of this work, the FDA is providing information for manufacturers on adding production lines or alternative sites, like automobile manufacturers, for making more ventilators during the COVID-19 public health emergency.

In addition, the task force is working through over 350 leads to match American businesses that have excess raw materials, workforce or factory production capacity combined with an overwhelming desire to provide their support to the national response effort.

Task force members are actively working to facilitate the creation of private sector partnerships to pair companies that have volunteered excess factory production capacity, the talents of their workforce and access to their raw material supply chains with critical supply manufacturers that have the expertise in producing PPE, ventilator and other needed equipment.

The creation of these partnerships to align capacity with know-how will unleash the potential engine of our national private sector and help overcome the supply shortfalls.

Allocation

Allocation of critical resources based on data-informed decisions to get the right quantities of supplies to the right place, at the right time is imperative.

Because FEMA owns very little medical supplies and the commercial marketplace supports the healthcare and first responder communities today, there is a need to provide commercial supply chain data to FEMA.

To more effectively adjudicate resources throughout the nation and private industry, a National Resource Prioritization Cell was established to unify government and private industry prioritization recommendations which will inform federal, state and private sector operations.

The Supply Chain Task Force is working with the major commercial distributors to facilitate the rapid distribution of critical resources in short supply to locations where they are needed most.

This partnership enables FEMA and its federal partners to take a whole-of-America approach to combatting COVID-19. FEMA, in coordination with other federal agencies, is providing distributors with up-to-date information on the locations across the country hardest hit by COVID-19 or in most need of resources now and in the future.

The distributors have agreed to focus portions of their distributions on these areas in order to alleviate the suffering of the American people.

FEMA says that by working together, they will be able to efficiently distribute these vital resources to hospitals, nursing homes, long-term care facilities, prehospital medical services, state and local governments, and other facilities critical to caring for the American people during this pandemic.

NIH begins study to quantify undetected cases of COVID-19

A new study has begun recruiting at the National Institutes of Health (NIH) in Bethesda, MD, to determine how many adults in the United States without a confirmed history of infection with SARS-CoV-2, the virus that causes coronavirus disease 2019 (COVID-19), have antibodies to the virus. The presence of antibodies in the blood indicates a prior infection.

In this "serosurvey," researchers will collect and analyze blood samples from as many as 10,000 volunteers to provide critical data for epidemiological models. The results will help illuminate the extent to which the novel coronavirus has spread undetected in the United States and provide insights into which communities and populations are most affected.

The study will be conducted by researchers at the National Institute of Allergy and Infectious Diseases (NIAID) and the National Institute of Biomedical Imaging and Bioengineering (NIBIB), with additional support from the National Center for Advancing Translational Sciences (NCATS) and the National Cancer Institute (NCI), all parts of NIH.

"This study will give us a clearer picture of the true magnitude of the COVID-19 pandemic in the United States by telling us how many people in different communities have been infected without knowing it, because they had a very mild, undocumented illness or did not access testing while they were sick," said Anthony S. Fauci, M.D., NIAID director. "These crucial data will help us measure the impact of our public health efforts now and guide our COVID-19 response moving forward."

Investigators will test participants' blood samples for the presence of SARS-CoV-2 antibodies, proteins the immune system produces to fight a specific infectious agent. A positive test result indicates previous infection. To date, reporting of U.S. cases of COVID-19 has mostly relied on molecular tests that determine the presence of the virus in a person's airways using a noninvasive cotton swab. While these cotton swab-based tests rapidly and effectively identify active infection, they do not determine whether a person was previously infected with SARS-CoV-2 and recovered.

Investigators will analyze blood samples for two types of antibodies, anti-SARS-CoV-2 S protein IgG and IgM, using an ELISA (enzyme-linked immunosorbent assay) developed by researchers at NIAID and NIBIB. In blood samples found to contain antibodies against SARS-CoV-2, researchers may perform additional tests to evaluate the volunteers' immune responses to the virus. These data may provide insight as to why these cases were less severe than those that lead to hospitalization.

Healthy volunteers over the age of 18 from anywhere in the United States can participate and will be asked to consent to enrollment over the telephone. Individuals with a confirmed history of COVID-19 or current symptoms consistent with COVID-19 are not eligible to participate.

After enrollment, study participants will attend a virtual clinic visit, complete a health assessment questionnaire and provide basic demographic information—including race, ethnicity, sex, age and occupation—before submitting samples in one of two ways. HPN

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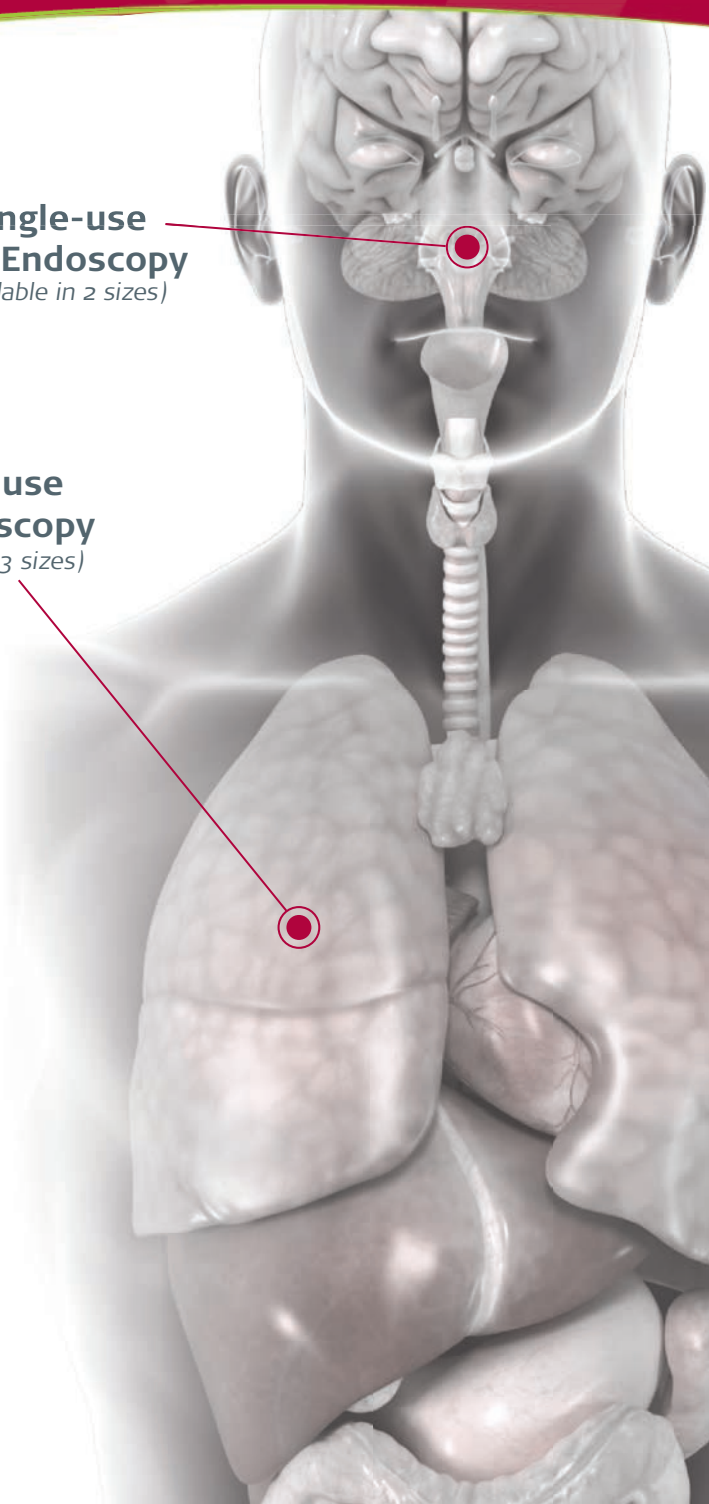

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M Health Fairview carries torch for pioneering performance

System CSSD team sees growth in numbers that operate as one

by Rick Dana Barlow

Back in the late 1980s, Richard Huntley, System Director, Central Processing, Minneapolis-based Fairview Hospitals and Healthcare Services, mentally harbored a novel idea. Instead of overseeing sterile processing of surgical instruments at multiple hospitals, why not centralize the process for all of them at one facility?

By early 1991, Fairview launched the radical endeavor, ultimately investing $6.2 million into the project and anticipating a 21 percent return on investment, according to Huntley at the time. They remodeled an 8,000-square-foot vacated laundry footprint at one of the hospital campuses to accommodate a new decontamination, assembly/inspection and sterilization area, which became the Fairview Central Processing Center (CPC). "The emphasis from day one was on improving quality and service, not cutting costs," he told *Healthcare Purchasing News* in the May 1994 edition. *(Editor's Note: For a blast from the past read the full story online https://hpnonline.com/21133896)*

Fairview's new venture motivated one prominent consultant to declare with seeming prescience: "I think this is going to be the way most of us do business within the next 10 years."

During the next quarter-century, the CPC at Fairview, recently rebranded as M Health Fairview as a nod to its relationship with the University of Minnesota Hospitals and Clinics in 1997 and its affiliation with the University of Minnesota, expanded to serve six acute-care hospitals and a growing number of clinics and surgery centers under the leadership of two professionals. Huntley was able to witness first-hand the growth of the CPC vision until his passing in September 2012. Even so, he had charged his successor, Lori Ferrer, CST, CRCST, to take the baton and run with it, encouraging her to propel the CPC team to higher levels of success and eventually nominate the team for consideration for *Healthcare Purchasing News*' Sterile Processing Department of the Year.

Under Ferrer's leadership, 2020 became their year.

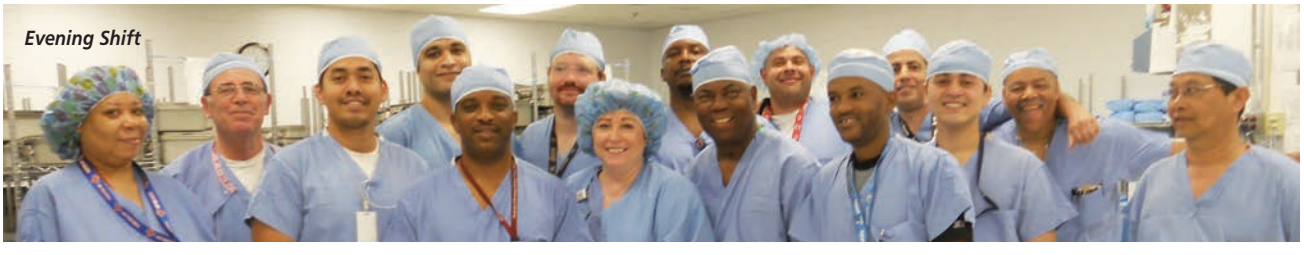
Ferrer, who joined M Health Fairview in January 2012, marvels at the CPC's foundation and roots. "This required a significant investment in people, space, equipment, inventory and the creation of processes that could efficiently and effectively handle the surgery and delivery volumes of the time," she recalled. *(Editor's Note: For the list of suppliers that helped along the way, read the sidebar, "M Health Fairview System CSSD team salutes supplier partners as instrumental in success" on page 14)*

Since the onset of the 21st century, the CPC added processing capacities to handle the volume growth and service expansion to more facilities, which added complexity to the organization's processing model, according to Ferrer. In 2006, they added "turn centers" at each of the Fairview sites as a way to respond to escalating customer requirements stemming from a variety of issues, Ferrer indicated. They include the growth in number, volume, diversity and complexity of surgical procedures, including minimally invasive and bariatric procedures; the growth in number and complexity of orthopedic instruments; increased requests for on-site processing capabilities to decrease turnaround time and respond to rapidly changing schedules; the lengthy processing cycle time for heat-sensitive instrumentation and the "ever-increasing desire to improve patient safety," she added.

Ferrer's team continues to build out their centralized processing expertise to bring in more departments and facilities into the centralized instrument processing; and surgical set process, including onboarding at least 50 additional offsite Fairview Medical Group clinics.

For the continued growth and development of the System Central Sterile Services Department, formerly known as the CPC; for

Day Shift



Evening Shift

the system-wide standardization and ongoing care and detailed tracking of instruments and surgical sets; for its continuing collaboration and partnership with surgical services and supply chain; and for the internal and external educational, informational and training tours it conducts to spread its operational efficiency gospel, **M Health Fairview System Central Sterile Services Department** earned the **2020 SPD Department of the Year Award** from *HPN*.

M Health Fairview is the first organization to earn both the SPD Department of the Year (2020) and the Supply Chain Management Department of the Year (2017) awards by *HPN*.

Read the story at https://www.hpnonline.com/13000722

HEALTH FAIRVIEW

Fast Facts on M Health Fairview's System CSSD team

SPD FTEs	60	**% FTEs certified**			92%*
Acute care facilities serviced	12	**Hospital admissions**			73,188
Nonacute care facilities serviced	56+	**Outpatient visits**			913,431
OR suites	102**	**Surgeries**			61,093
Number of beds (operating)	1,473	**Births**			8,873
Annual Performance and Production		**2017**	**2018**	**2019**	**2020 YTD**
Number of surgical cases supported		80,230	79,970	78,115	7,273
Number of sets/trays processed/sterilized		111,305	113,574	108,543	16,257
Instruments processed		4.1M	4M	3.8M	568,000
Sterilizer loads* **		15,664	13,455	12,535	1,926
Error-free rates		N/a	99.68%	99.63%	99.78%

** 92 percent of SCSS team members required to have certification are CRCST-certified with three individuals working toward certification within their first 12 months of employment.*

** 102 at press time with service to additional 22 suites anticipated

*** Steam sterilizers replaced July 2018. In 2016-2017 SCSS processed on average 12.5 containers per load. Today, that average is up to 15.8, a 25.8 percent increase in capacity in steam loads.*

Growing pains

As with any projects or processes that push people out of their comfort zones, M Health Fairview's System CSSD team has navigated and negotiated through considerable growing pains.

"There were many good processes implemented for quality instrument processing," Ferrer noted, "[but] great process improvements are only as good as the surveillance and efforts that follow to maintain best practices."

For example, in 2004, the OR areas agreed to participate in a post-case handling project where instruments were to be soaked in an enzymatic solution, rinsed to remove all of the gross soil and to remain wet until their processing, according to Ferrer. They added automatic enzymatic soap dispensers at all sites, conducted post-case audits at all sites and recorded findings as incident reports to share. A system sterilization liaison group meets monthly to review all recorded errors and discusses options for resolutions, she added.

Along the way, Ferrer acknowledges they have faced some challenges even after decades of an established system in place.

"[There are] surgeons who want sole use of the instruments they regularly use," she said. "We are communicating with the surgical teams about the advantages of using standard surgical sets. One of our surgeons has agreed to help initiate conversations with the surgeon groups about the importance of using the centralized standard surgical instrument sets." *[Editor's Note: See Ferrer recognizes several helpful surgeons in the sidebar, UpClose with M Health Fairview's SCSS leader at https://hpnonline.com/21132736].*

Back in 1993, three Fairview facilities started the set standardization process by identifying commonalities between each hospital's preferences and creating sets to meet everyone's needs, according to Ferrer. She highlighted that one team member – Mari Jo Williams – worked on the set standardization project 27 years ago and continued participating on the team in 2019! Fairview standardized to 81 instrument sets from 464 sets in 1993, Ferrer noted.

"Through the years and as sites were added to the centralized model of surgical sets, minor changes were made to the sets," she said. "Sets were added throughout the years, and at one point we distributed 101 various standard sets." Then in 2018 and 2019 they assembled a group to begin looking at "modernizing" the sets, which were classified by service and changes discussed by the appropriate clinical and administrative experts. The Surgical Set Revision (Modernization) Workgroup met for a total of 64 hours in 2018 and 27 hours in 2019, she added. Excess instruments either were repurposed in other sets, retained as back-up stock or shared with site CSSD teams, according to Ferrer. Those that were no longer used were sent to the missions, she added.

Improving communication and collaboration with OR teams remains an ongoing exercise that involves site visits or rounding with the sterile processing and OR teams on a frequent basis and providing tours to the

October 17, 2019 - CS Week Crossover Huddle

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Remembering, saluting a notable pioneer

M Health Fairview's System Central Sterile Services Department (CSSD) dedicates its 2020 SPD Department of the Year Award to Richard "Dick/Chet" Huntley for his mission, vision and work to create, develop and improve the organization's Central Processing Center for nearly two decades. Huntley served as Executive Director, Central Processing Center (CPC), Fairview Health Services from 1994 through 2012. Huntley's devotion, direction and leadership was both valuable and valued and as such is as deserving of the award as a continued member of the team.

Lori Ferrer, CST, CRCST, Director, System CSSD, interviewed for the position of CPC Operations Manager in September 2011, and started in January 2012, reporting to Huntley.

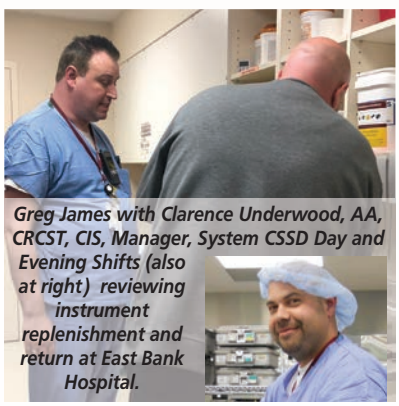
"During the next seven months we worked together as Dick mentored me in my new role," Ferrer recalled. "He was a great teacher in educating and introducing me to the business and logistics of our department, as well as our role in Supply Chain and our hospital system. At one point Dick had asked me if I'd ever consider nominating our department to *HPN* for the SPD Department of the Year Award. As a new leader, I smiled and said I would. Dick felt the team deserved such an honor.

"Unfortunately, in July 2012, Dick shared with me that he was ill," she said. "In September 2012, he passed away. Dick worked at Fairview for 42 years within the Supply Chain department and has been greatly missed by everyone who knew him."

Mari Jo Williams and LeAnn Born

Mostafa Azzouzi reviewing Decontamonation equipment testing

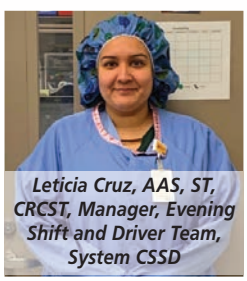
LeAnn Born and Patti Laliberte



Greg James with Clarence Underwood, AA, CRCST, CIS, Manager, System CSSD Day and Evening Shifts (also at right) reviewing instrument replenishment and return at East Bank Hospital.

Cindy Krebs, CRCST, Instrument Technician

Stacey Nystul, AAS, ST, Central Processing Facilitator, performs set review



Leticia Cruz, AAS, ST, CRCST, Manager, Evening Shift and Driver Team, System CSSD

OR staffs and site CSSD team members to better understand the workflow. While System CSSD reports to Supply Chain, the site CSSD teams report to their respective facility ORs, according to Ferrer. System CSSD collaborates with the individual site CSSDs that focus on minimally invasive surgical devices and related technologies.

One benefit of this is the frontline processing team members observe the set-up and use of the instruments they process for surgical patients, according to Ferrer.

System CSSD also strives to ensure that OR areas continue to perform point-of-use cleaning, and that sites carry out the required enzymatic soak before returning instruments to System CSSD. Ferrer's team accomplishes this through frequent auditing and quality reporting. They also work to identify any challenges and hurdles that surface in processes and workflow via automated tracking systems with user-friendly programming.

"We continue to work on standard work practices to streamline all steps in our processing cycle," Ferrer noted. "Audits are continually updated and performed on our processing steps to ensure accurate quality instrument sets for our patient's clinic and surgical procedural needs."

Tour de force

The System CSSD recognizes that its reach and responsibilities extend beyond instruments and surgical sets.

"It's easy to get consumed in the everyday whirlwind of our work," Ferrer noted. "What's important to remember is how we are meeting our customer needs and concerns who receive the services that we provide. Everything moves at warp speed in our industry, and each day is filled with variables and new challenges. As healthcare systems combine and the sum of the whole enterprise keeps expanding, it is harder and harder to be able to put a face with a name and feel the urgency of what our customers need to successfully complete their tasks – tasks that are imperative to the quality care of our patients."

During the past year alone, 83 percent of the System CSSD team attended site CSSD tours and surgical case observations, "allowing them to see the importance of their work," Ferrer indicated. "Going to the Gemba, the actual place where the work happens, we as CSSD leadership tour our customer areas to be better informed of the process of instrument distribution and retrieval from the end users."

Working with OR leadership, System CSSD had set a goal in 2019 to have 80 percent of the frontline team observe a surgical procedure – rotating one frontline person from each shift with a manager or the director at one of five

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hospital sites within the system, according to Ferrer. Each of the team members was given a worksheet to help better understand the workflow, she added.

"The more that we know about each other's work, the better we can serve each other's needs," she said.

Ferrer also welcomes and appreciates customer experience rounding. "System CSSD always encourages staff from surgical sites to tour our area to help them understand our process," she said. "Leadership from other areas of the hospital tour our CSSD and are fascinated to learn about sterile processing. We recognize the incredible importance in understanding our customer's needs and inviting them to understand and tour our process. Team members from our System CSSD team and our customer team members have been enlightened on the whys and the hows of particular shortages. Working together we are able to improve our workflow and decrease shortages."

Ferrer's System CSSD team works closely with Supply Chain in that Supply Chain retrieves used instruments from the designated soiled utility areas in the clinics, ancillary areas and on the patient floors, according to Ferrer. They place the used instruments on a closed cart and send to System CSSD for reprocessing. System CSSD returns the instruments to Supply Chain to stock the user areas throughout the facility, according to Ferrer.

Together, the two departments have honed the process to both an art and science.

"The managers, supervisors and our department facilitator are meeting our customers in the user areas to understand the flow of the instrumentation to better meet their needs," Ferrer said. "Additional communication is shared with the user areas regarding the appropriate levels of stock on hand, disposable versus reusable instruments, instrument care, handling and education.

"Working together and walking through the process with our Supply Chain partners and with our customer user areas has improved the understanding for everyone involved in the process," Ferrer continued. "A clearer understanding has enabled all of us to communicate more frequently and troubleshoot our hot spots of missing instruments and the delayed return of instruments as it impacts the needs tomorrow in our clinics and the hospital ancillary areas."

Next on the docket: Distributing requested instruments to M Health Fairview's eye clinics directly from the System CSSD to eliminate the need of maintaining inventory in the site Supply Chain CS areas, according to Ferrer. This should help improve instrument inventory management and fill rates as well as free up valuable space to be used

Aaron Foster loads Belimed steam sterilizer

Instrument Technician Lang Son, CRCST, and Instrument Aide Sonam Namgyal near Hänel Rotomat

M Health Fairview SCSS team salutes supplier partners as instrumental in success

Who supports an award-winning organization? Fairview Health's System Central Sterile Services Department appreciates the product and service companies that have helped the team develop and improve their operations and performance during the last several decades. The team shines a spotlight on 12 below.

3M Health Care supports our department with six 8XL EO Sterilizers, quality assurance products, technical expertise and education for our department.

ASP provides great preventive maintenance and education and training for our low-temperature gas plasma sterilization process.

We have used MicroScientific chemicals distributed by **BD**'s **V. Mueller** for several years with our decontamination equipment. MicroScientific has been extremely valuable providing training and expertise in the use of their chemicals.

For the last five years, **Belimed** has worked with us to update all of our sterile processing equipment. The equipment design utilizes less of a footprint in our available 10,000 square feet. We've installed four washer disinfectors and a cart washer in 2016 and will be adding an additional four washers and another cart washer this year. In 2017 five floor-loading pass-through sterilizers were installed with room for expansion to add two additional sterilizers in the future.

Censis Technologies' CensiTrac Surgical Instrument Management System enables us to gather data and statistics to evaluate the usage, surgical volume, sterile return of unused sets, safety levels of sets at the sites and the instrument set counts, reduction and location of the sets.

ChemDAQ provides the Steri-Trac Sterilant Gas Monitoring System that is used for safety measures in our System CSSD.

Hänel provides us with instrument storage units – rotating carousel of bins as part of an automated shelving system – that help us improve the way we store and track the instruments we use.

Healthmark Industries provides products for our instrument processing needs. We use the wash cradles, autoclave gloves and test supplies. Healthmark provides online education and has been supportive participants in our local IAHCSMM chapter conferences.

Key Surgical provides what we need in instrument tip protectors as well as disposable and reusable cleaning brushes.

Northfield Medical provides preventive checks and on-site instrument repair for our department as well as for the entire M Health Fairview system.

RST Automation, which for the last three years, has integrated its AIM Automated Instrument Management equipment into our workflow. Data show that there is a reduced per instrument time to 9.7 seconds per instrument from 15.2 seconds per instrument in the sets processed using this device. Efficiency is one benefit but in addition correct instrument set counts aids in the completeness of sets in preventing delays for surgical procedures.

STERIS supports our preventive maintenance needs for our STERIS equipment and has provided exceptional educational inservices to all shifts.

M Health Fairview also high-fives the many other companies that support the conferences, meetings, inservices and other training sessions for the members of the Minnesota Chapter of IAHCSMM.

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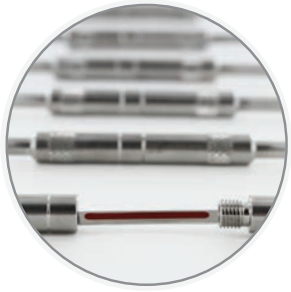

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Set ReviewModernization Workgroup-CV


Set Review Modernization Workgroup-General

Construction continually reshapes M Health Fairview System CSSD operations

As a leading and pioneering sterile processing organization expands its reach and grows its operations to serve an increasing number of customers it invariably needs to rearrange its footprint to improve workflow and upgrade or replace equipment. M Health Fairview's award-winning System Central Sterile Services team is no exception.


Lori Ferrer

Since the inception of its heritage Central Processing Center in 1994, the team has fortified its development with equipment changes expected to continue through 2021. Here's a roadmap of their journey.

"Construction has been the norm for the past 10 years," said Lori Ferrer, CST, CRCST, System Director.

2008: They implemented **Censis Technology**'s CensiTrac Surgical Instrument Management System, which currently interfaces with the **EPIC** surgical information system and they are working to develop an interface with Supply Chain's **PeopleSoft** system from **Oracle**.

2010-2011: They remodeled the decontamination area with three **STERIS** Vision washer-decontaminators.

2012: They replaced and installed six new **3M Health Care** 8XL ETO sterilizers.

2013: They installed the **ChemDAQ** monitoring system for six ETO sterilizers and one ASP Sterrad sterilizer.

2014: They replaced the air-handling system via Facilities with a local contractor. They also installed two new ultrasonic cleaners from **STERIS**.

2015: They replaced two tunnel washers with four Belimed washer-decontaminators and a **Belimed** cart washer to expand processing capability for future growth. They also added two new adjustable sink bays. Facilities replaced the flooring and lighting with local contractors.

2016: They implemented **RST Automation**'s AIM Automated Instrument Management system to scan instruments for the tray assembly process, including identification, counting, sorting and stringing, and enabling the technicians to focus on quality testing.

2017: They installed a new NX100 H2O2 sterilizer from **ASP**.

2017-2018: They replaced seven of their "aged" sterilizers with five **Belimed** floor-loading pass-through sterilizers that have increased steam sterilization throughput by 25 percent.

2018: They installed two **Hänel** storage systems for surgical sets and clinic tray instrumentation. They also were given a room by our Supply Chain linen area that gave us the additional 2,000 square feet. They are working with their Censitrac Instrument Tracking support team to develop and interface with the Hänel Rotomat from the instrument technician's workstation.

2021: They plan to replace three washer decontaminators with four, adding a cart washer and an additional ultrasonic cleaner. They anticipate more utilities will need to be upgraded, and they also will be increasing the size of their reverse osmosis water tank.

"Throughout all of our construction over the past years, we had some time to enjoy our new spaces before the next construction began," Ferrer admitted. "Front-line team members were included in the planning and were kept informed every step of the process. The workflow was condensed and although uncomfortable during construction was well worth the benefits of the functionality, aesthetics and workflow in our space."

for other purposes, she added. Ferrer's team will use this experience to determine how and when to expand System CSSD-direct services to other areas.

Setting a standard

Ferrer's team continues to push for productivity improvements. In fact, during the last two years, the team has been working on keeping the numbers of sets to assemble below 200, according to Ferrer.

"Priority list of need plus what backup we incurred resulted in a delay of the sites receiving sets at least eight hours before the scheduled surgery procedure for case cart assembly," she said. "We decided as a team [during the last six months of 2018] our clean average was at 418 with a peak of 664 sets to be assembled. In 2017 we had set a goal of less than 300 and accomplished this in our first month. Then we set our new goal of less than 200 sets average clean-hold per month. At the end of 2017 we were at an average for the 12 months at 233 sets."

System CSSD includes a team of drivers that operate temperature-controlled trucks to deliver and pick up instruments on five routes for all hospitals and non-acute care centers, Ferrer noted. They also have in-house driver assignments for supply replenishment and delivery to on-site customers.

Not surprisingly, Ferrer and System CSSD leaders stress the benefits and value of ongoing education, including inservices, online programing, podcasts, rotations and rounding and tours as well as monthly team meetings where they explore "hot topics" and departmental and organizational updates. Since 2017 all new employees hired must achieve their CRCST certification within a year of hire, she noted. Ninety-two percent of our team members required to have certification are CRCST-certified with three individuals awaiting their accomplishment of certification within their first 12 months of employment, she added. **HPN**

Editor's Note: Find these related stories exclusively at https://hpnonline.com/21132736:

- M Health Fairview System CSSD team stats and roster
- M Health Fairview's System Central Sterile Services team leader on making a difference
- Fairview breaks new ground with central processing facility (May 1994 *HPN*)
- Fairview puts the 'I' in teamwork: Investment (July 2017 *HPN*) https://www.hpnonline.com/13000722
- Profile on Stony Brook (NY) University Hospital, which earned Honorable Mention

Photos courtesy of Lori Ferrer and Paul McCollum, Instrument Tracking Manager.

Congratulations to M Health Fairview!

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Critical care in critical times

COVID-19 proves Supply Chain partnership pivotal during pandemic

by Kara Nadeau

Most U.S. healthcare organizations have disaster preparedness plans in place to address infectious disease outbreaks, man-made or natural disasters, bioterrorism or other events that result in a surge in demand for patient care. But COVID-19 aka "Coronavirus" has unleashed an epidemic that has left the U.S. healthcare industry reeling. Surging cases and supply shortages are necessitating close collaboration among critical care clinicians and supply chain teams to direct supplies, capital equipment and services to where they are most needed.

In this article, *HPN* presents perspectives from clinicians, supply chain professionals, manufacturers and technology providers on the importance of critical care/supply chain collaboration to combat COVID-19.

Recognize and address potential shortages now

Mike Schiller, Senior Director of Supply Chain, Association for Health Care Resource & Materials Management (AHRMM), acknowledges how hospitals are currently facing respiratory equipment shortages, including N95 respirators, ventilators and accessories. He says personal protective equipment (PPE) including gowns, gloves and respirator masks, ventilation and other drugs, and blood supplies are the most affected supply categories.

Mike Schiller

"AHRMM is actively working with healthcare leaders, associations, suppliers and distributors from across the healthcare field, sharing information and solutions around resource allocation conservation, supply continuity and availability," said Schiller. "Healthcare organizations are encouraged to work with their suppliers, understand product shortages and allocations they may be facing or expect to face, and identify and implement conservation measures, as well as work with their state and local emergency management agencies."

Schiller recommends that healthcare organizations visit the Centers for Disease Control and Prevention (CDC) and Food and Drug Administration (FDA) COVID-19 websites, which offer a variety of resources and information. This includes CDC's Healthcare Supply of Personal Protective Equipment, and Strategies to Optimize the Supply of PPE and Equipment, and the FDA's Emergency Use Authorizations website pages. AHRMM also has a comprehensive COVID-19 resource page, which includes links to numerous agency resources and information, vetted and approved non-traditional suppliers, and collaborator associations and organizations.

Karen Conway, former chair of AHRMM and Vice President, Healthcare Value with GHX, commends supply chain procurement leaders who are actively seeking qualified alternative products and suppliers as their usual sources are unable to fully support their needs. In her April 2020 *Healthcare Purchasing News* article, "How standards support supply continuity," she notes that unique device identifiers and classification systems can facilitate identification of alternative products, but she adds, collaboration with clinicians is key. Conway recommends making sure clinical leaders have access to evidence about alternatives so they have confidence that unfamiliar products are both safe and suitable for purpose.

Karen Conway

Suppliers ramping up

Healthcare suppliers, particularly those that produce respiratory and PPE products, are increasing their manufacturing capabilities to meet growing demand worldwide. For example, Dräger has already significantly expanded its production capacities and is working to expand them even further as demand continues to grow.

According to a recent press release, the company's production facilities for respiratory masks in Sweden and South Africa are working at full capacity and are running around the clock. In medical technology, for example, they are currently producing almost twice as many ventilators as before. Dräger has also implemented an innovative work organization and working time models with employees, which provides necessary flexibility to react to the high volume of orders.

"Our technology for life is needed now more than ever," said President and CEO for Dräger in North America, Lothar Thielen. "We are seeing a significant increase in global demand for our ventilators, the corresponding accessories and personal protective equipment. We are doing everything in our power to fulfill our social responsibility to provide for society - worldwide. The fact that we invested in a future-oriented factory with state-of-the-art industrial production methods several years ago is bolstering the success of our efforts."

Lothar Thielen

Stefan Dräger, Chairman of the Executive Board of Drägerwerk Verwaltungs AG, stated in the press release: "I am aware that despite all our efforts we can only partially meet the current demand in the world. And believe me, we would like to do even more. But I can assure you: We do what we can. Our thoughts are with the doctors, nurses and rescue workers who are currently doing a great job for patients and society at large."

Stefan Dräger

Changes in clinical mindset

John Cherf, MD, MPH, MBA, Chief Medical Officer, Lumere and CIOO of Chicago Institute of Orthopedics, says COVID-19 is requiring clinicians to have a change in mindset better aligned with how supply chain allocates limited resources.

John Cherf

"Physicians are taught to do everything they can for every patient, but the current situation requires a much higher degree of deliberation on how we deploy limited resources," said Dr. Cherf. "That is not

easy for physicians to do but it is imperative given supply restraints. When there is only X amount of this supply or drug, the healthcare system must employ a great deal of discretion.

"This requires an entirely different approach - it's about prioritizing societal needs," Dr. Cherf added. "In order to be successful, caregivers must be equipped with the right information and tools. We must improve how clinicians and supply chain teams are collaborating in real-time. I believe in the end this public health crisis will accelerate positive system-wide change."

Build trust and foster collaboration


Rosie Lyles

Rosie Lyles, MD, MHA, MSc, is the Director of Clinical Affairs at Medline and has over a decade of experience investigating healthcare associated infections. She says one of the best practices for clinicians (e.g. frontline staff) and supply chain staff during the COVID-19 outbreak, or any infectious disease outbreak, is to work together to create champions on an interdisciplinary team that can collaborate cross functionally.

"We are seeing a shift where more supply chain leaders have a medical background (e.g. RN)," said Dr. Lyles. "This has enabled them to build credibility and bridge effective strategies between clinicians and supply chain groups. Another best practice would be to have alignment from leadership (the c-suite). While it's hard to predict an outbreak or the type of infectious pathogens (e.g. bacteria or virus), engaging everyone can help identify ways of cost saving and preparing for some level of disruption during an outbreak."

Medline recently talked to experts to reveal how good infection prevention protocols, products and emergency preparedness help hospitals tackle today's new norm. The video can be found here: https://www.youtube.com/watch?v=zbQ6hUzVymQ.


Bob Boswell

Bob Boswell, President and Chief Executive Officer, LeeSar/CSF, urges clinicians to trust that their supply chain teams will provide them with the supplies that they need. He acknowledges that there is a supply shortage but asks clinicians not to hoard supplies because that could result in another department or facility not having what it needs for patient care.

"Clinicians need to understand that no one is holding supplies back, there is a true shortage in the country on these supplies," said Boswell. "Hospital executives know the hot spots where supplies are urgently needed and their supply chain is working to get products to those locations. We have calls with our members every day to see how we can reallocate where necessary."

Conway adds that supply chain professionals can leverage their experience to predict and plan ahead for upcoming spikes in demand for other products, such as filtration supplies that will be needed to support extended ventilator use. As the disease progresses, close coordination with clinical leaders tracking the surge in patient demand can also help supply chain predict the types and quantity of products that will be required and where.


Caitlin Stowe

Caitlin Stowe, Clinical Affairs Research Manager for PDI Healthcare, points out how COVID-19 is "a marathon, not a sprint," explaining how it will be around for the foreseeable future and may eventually become a common respiratory illness similar to respiratory syncytial virus (RSV) or influenza.

"Be cautious, but calm," said Stowe. "Ensure judicious use of supplies. Don't hoard wipes, masks, etc. Make sure you have frequent communication amongst the hospital leadership to maintain adequate supply levels. Make sure you know the protocols for emergency preparedness and surge capacity and/or where to find them."

"Also, listen to your infection prevention team, especially when it comes to the appropriate personal protective equipment to wear and when," said Alice Brewer, Director of Clinical Affairs for Tru-D SmartUVC. "Surface and equipment disinfection is also key so ensure that you're cleaning the surfaces when visibly soiled, in between patients and at regular intervals if needed. This was especially key in the Ebola situation, when cleaning and good hand hygiene really made a difference."


Alice Brewer

Brewer notes how on March 10, 2020, the CDC updated its recommendations to refer to List N on the EPA website for EPA-registered disinfectants that have qualified under EPA's emerging viral pathogens program for use against SARS-CoV-2. Many PDI products can be found on List N, including Super Sani-Cloth Wipes, Sani-Cloth AF3 Wipes, Sani-Cloth Bleach Wipes, Sani-Cloth Prime Wipes, Sani-Prime Spray, Sani-HyPerCide Spray and Sani-24 Spray.

"Tru-D does not claim that its technology will treat COVID-19 or eliminate COVID-19 because there's not enough data at this point. However, in the past, Tru-D has been shown to be very effective against other coronavirus strains," Brewer added.

Enhance communication

With the rapid spread of COVID-19 and pressure on health systems and hospitals to stock supplies and properly allocate them to where they are most needed, healthcare supply chain teams and clinicians must find ways to better communicate.

"When effective communication methodologies are established, everyone benefits from improved operational efficiency and increased patient capacity management," said Zebra Technologies Chief Nursing Informatics Officer (CNIO) Rikki Jennings. "Asset tracking solutions also help keep track of critical items within the clinical care environment including tracking, cleaning, calibration and other maintenance tasks. Using these solutions to develop best practice strategies is crucial during times of crisis."


Rikki Jennings

"One best practice is the utilization of purpose-built mobile devices featuring healthcare-grade plastic material designed to reduce the spread of infections, sturdy exterior shells, long battery life and industrial-strength scanning for data capture accuracy for bringing real-time data to the point of care," Jennings added. "These devices need enterprise-class security and manageability options to facilitate quicker, more seamless communication between caregiver team members, the caregiver community and patients themselves. These staff communications tools can help clinicians, pharmacists and supply chains coordinate and prioritize activities."

Resiliency mapping

The availability of supplies is impacted by not only what is happening within a healthcare facility but also the environment in which the supplies – and/or their components - are manufactured. For example, when Hurricane Maria devastated Puerto Rico's pharmaceutical manufacturing industry this resulted in a national shortage of IV solution bags in the U.S. for months following the natural disaster.

To address these issues, Dartmouth-Hitchcock Health has employed a resiliency mapping technology (Resilinc) that enables the health system to map out where its suppliers manufacture products across the world, right down to the exact

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manufacturing sites. Through the mapping solution, they have identified that Dartmouth-Hitchcock Health relies on 628 suppliers (323 Tier I and 282 Tier II and 23 Tier I & Tier II), covering 3,663 unique sites in 73 countries. They are in the process of fully mapping their item master to where supplies are manufactured.

"We have a heat map that shows all of the different manufacturing locations across the world and this solution provides us with event alerts impacting those sites," said Curtis Lancaster, Vice President of Supply Chain, Dartmouth-Hitchcock Health. "You would be surprised how many events go on across the world, from a cargo ship sinking to a volcano erupting. All of these disruptions, whether caused by weather, geopolitical upheaval or something else, have an impact or potential impact to the supply chain."

Curtis Lancaster

"With COVID-19 these alerts give us a slight head start on addressing potential supply issues - a pre-warning of what could be a disruption," said Lancaster. "For example, if we know that a certain region where our suppliers manufacture their products is going on lockdown and people cannot leave their houses to work in the manufacturing plants we can take steps to identify new supply sources."

Going forward, Conway hopes hospitals consider how manufacturers are mitigating upstream supply chain risk when sourcing and contracting for products. "This current crisis highlights the risk of over-prioritizing acquisition price, which has contributed in part to manufacturers moving production capacity offshore and/or relying on single and often the same upstream suppliers as their competitors," she said.

Inventory tracking

Supply chain's ability to track inventory is important for patient care and safety in any situation, but it is critical during an infectious disease outbreak when healthcare organizations must supply life-saving products where they are most needed.

"The technology and software used to support supply chain operations needs to be able to respond quickly to a disaster situation," said Nancy L. Pakieser, Sr. Director, Industry Development, Tecsys. "The time for preparation is prior to an emerging event. Most healthcare systems have disaster preparedness plans in place that they are now deploying."

Nancy L. Pakieser

"At a minimum, supply chain technology needs to support lot and serial number tracking, which is of heightened concern in an infectious disease outbreak," Pakieser added. "It needs to provide end-to-end visibility and track the movement of supplies, vaccines and medications so the deployment – or reallocation – is seamless and efficient. It really is about how you can leverage your supply chain processes and technology tools to accommodate a changing situation while delivering the utmost care to the areas in greatest need."

Equipment maintenance, repairs and availability

Lancaster calls attention to a secondary issue related to medical equipment availability, having the parts and personnel to keep existing assets up and running. For example, in the treatment of viruses that can cause respiratory issues, such as COVID-19, ventilators are a critical, but limited asset. Therefore, hospitals must properly maintain capital equip-

ment such as this to avoid patient care disruptions.

"Dartmouth-Hitchcock Health is preparing for another wave of challenges related to the global COVID-19 outbreak; the availability of clinical engineering supplies and repair parts for critical medical equipment," said Lancaster. "Let's say a factory that manufactures chips and other parts for large imaging equipment shuts down. Fast forward three months and all of the parts in the pipeline have been consumed, no new parts are being manufactured and hospitals have no way to repair the imaging equipment."

"Therefore, we are preparing for a bulk buy of products that we know are routinely used in maintenance and repair to avoid potential shortages and keep our equipment up and running for clinicians and patients," Lancaster added.

Wolfgang Hares, Director Scientific Affairs and Global Breathing, Pall Medical, explains how a respiratory virus, such as COVID-19, has the potential to contaminate respirator machines, rendering them useless.

"Once a virus, bacterium or fungus enters a ventilator it then can potentially infect every patient on which it is used from then on," said Hares. "Once it is deemed a ventilator is contaminated, the time needed to sanitize the machine is time away from treating patients. In extreme cases that may even be a $40k/$50k loss if that machine can never be cleaned. Therefore, hospitals must use the proper filtration to protect not only patient but also long-term supply of machinery for this outbreak."

"Clinicians in the U.S. might be faced with situations where they have very limited access to ventilators, yet have many patients who desperately need a ventilator in order to survive," Hares added. "How do you choose which patient to treat? If a hospital doesn't have enough machines available, then clinicians might be forced to consider using a contaminated machine just to keep a patient alive. Nobody wants to be in that situation so healthcare providers must act now to protect their equipment."

Impact on future supply chain

Dr. Cherf believes COVID-19 will have a significant, permanent impact on healthcare supply chain in the years ahead.

"When you think of other infectious outbreaks, such as SARS, Ebola and MERS, they were somewhat localized," said Dr. Cherf. "COVID-19 is infecting people on a much broader scale, placing intense pressure internationally on the supply chain. I would venture to say that when all of the dust settles and this infection subsides it will be an indisputable fact that supply chain is an integral part of the health of global healthcare.

"This is probably the most pressure on our healthcare system in living history and I think we can manage it - provided we rally around information and best practice sharing," Dr. Cherf added. "One thing we are finding with this crisis is that it is inspiring ingenuity, creativity and entrepreneurship in our country. For example, hospitals are using new algorithms and workflows for improved utilization of supplies to determine who truly needs to be tested and treated. I believe healthcare will be much smarter in how it stratifies patient populations in the future. We will be much more creative in the way we deliver care, plan for supply shortages, and source critical supplies in the future than we have been in the past." **HPN**

2020 Infection Preventionist Salary Survey

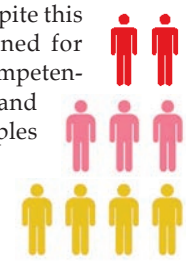
Need for IPs outpacing facility efforts to meet benchmarks

by Kara Nadeau

With the COVID-19 pandemic dominating headlines, there is no doubt about the critical role that infection prevention/control professionals play in patient care and safety. The 2020 *Healthcare Purchasing News* Infection Prevention Salary Survey was conducted just prior to the pandemic hitting the U.S. and reveals how infection preventionist (IP) salaries are not keeping pace with increasing demands and expanding roles. Although it will be interesting to see how the COVID-19 crisis impacts this profession in the months and years ahead.

"During this pandemic, IPs will be key in assisting to operationalize processes to combat COVID-19 within the healthcare setting," said Chaz Rhone, MPH, CIC, FAPIC, Division Manager, Infection Prevention, HCA Healthcare - North Florida Division. "Despite this rapidly changing situation, IPs are trained for outbreak scenarios as part of their core competencies, so their expertise will be in high demand during this time. The foundational principles of infection prevention still apply whether it is a novel virus, such as COVID-19, or a more common organism like MRSA. To prevent the spread of any organism, we focus on breaking the chain of infection by early identification and isolation of infected hosts, environmental disinfection, hand hygiene and proper use of personal protective equipment (PPE)."

Chaz Rhone



Average IP salary up slightly, more expecting bonuses

In 2020, the IP average annual salary grew marginally, at $86,052 compared with $85,623 in 2019. Fewer IP professionals reported pay increases in 2020 (68 percent) compared with 2019 (72 percent), with the majority (85 percent) reporting raises between 1-4 percent. One positive trend is an increase in bonuses, with 18 percent of those surveyed expecting bonuses in 2020, compared with 13 percent in 2019.

This year's composite IP is female and she is 52 years old. She is a registered nurse (RN), certified by the Certification Board of Infection Control and Epidemiology (CBIC) and her title is Infection Preventionist. She reports to the VP/Director, Quality/Risk Management/Chief Quality Officer. She has been in infection prevention an average of 12 years and has worked at her current facility for nine years. She is employed at a nonprofit, standalone facility with 234 beds. There are four employees in her department.

Some IP roles see sharp pay increases, others decreases

Among those surveyed, significant pay increases over 2019 were reported among those holding titles in Employee

AVERAGE PAY BY GENDER

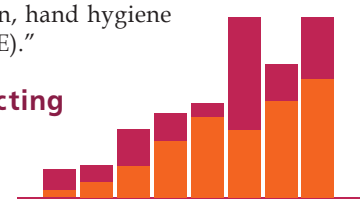
FEMALE - $86,320 MALE - $90,267

Survey respondents who chose not to disclose their gender are excluded in the averages above

SALARY BY TITLE

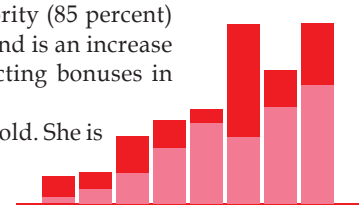
Quality, Risk Manager	$104,182
Infection Prevention/Control Manager	$98,880
Infection Prevention/Control Director	$97,463
Educator	$89,375
Infection Prevention/Control Practitioner	$82,100
Infection Prevention/Control Nurse	$79,614
Infection Preventionist	$75,512
Infection Prevention/Control Coordinator	$74,444
Employee Health	$57,500

SALARY BY TIME IN IP



Less than 2	$71,250
2 - 4	$73,017
5 - 9	$82,545
10 - 14	$86,271
15 - 19	$95,227
20 - 24	$88,500
more than 25	$100,294

SALARY BY TIME AT FACILITY



Less than 2	$77,094
2 - 4	$82,845
5 - 9	$83,295
10 - 14	$90,978
15 - 19	$95,571
20 - 24	$77,500
more than 25	$94,333

AVERAGE ANNUAL BASE SALARY: $86,052

INCREASE OF BASE SALARY SINCE LAST YEAR?

68%	Yes, it increased
29%	It remained the same
3%	No, it decreased

PERCENTAGE INCREASE OVER LAST YEAR

3%	Less than 1%	3%	5 - 5.99%
25%	1 - 1.99%	0%	6 - 6.99%
36%	2 - 2.99%	2%	8 - 8.99%
24%	3 - 3.99%	4%	9-9.99%
3%	4 - 4.99%	0%	Over 10%

EXPECTING A BONUS THIS YEAR?

66%	No
18%	Yes
17%	Don't know

2019 AVERAGE BASE SALARY: $85,623

2010 AVERAGE BASE SALARY: $69,419

SALARY BY TYPE OF FACILITY

IDN/Alliance/Multi-group health system/VHA	$90,736
Behavioral/Psychiatric Health Facility	$88,375
Hospital, standalone	$85,047
Rehabilitation facility	$80,000
Long-term acute care facility (LTAC)	$76,333

URBAN	SUBURBAN	RURAL
$87,061	$94,689	$78,694

SALARY BY BEDS

0-25 beds	$76,458
26-49 beds	$80,789
50-99 beds	$80,119
100-199 beds	$86,683
200-299 beds	$102,706
300-399 beds	$90,265
400-499 beds	$73,643
500-749 beds	$90,091
750-999 beds	$99,750
over 1,000 beds	$100,375

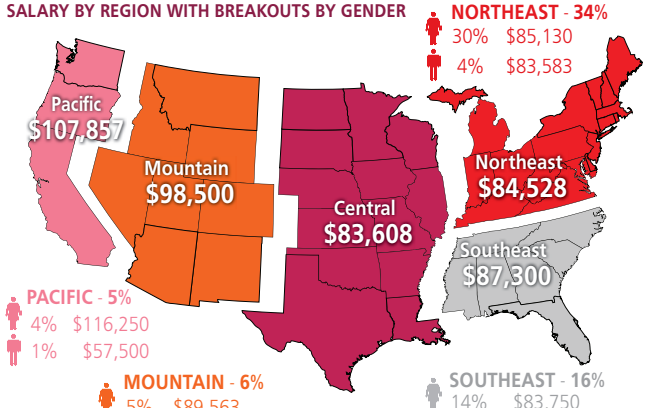
SALARY BY EDUCATION

High School	$48,125
Associate's Degree(s)	$83,063
Bachelor's Degree(s)	$83,358
Post-Graduate Degree(s)	$100,179

SALARY BY EDUCATION/GENDER

	FEMALE	MALE
High School	$42,500	N/A
Associate	$83,087	N/A
Bachelor	$83,439	$80,313
Post-Graduate	$102,303	$101,643

SALARY BY REGION WITH BREAKOUTS BY GENDER



8% of survey respondents chose not to disclose their gender

Health (77 percent increase), Infection Prevention/Control Nurse (26 percent increase) and Quality/Risk Manager (19 percent increase). The average annual salary of IP/IC Practitioners dropped by 25 percent, and the average IP/IC Director salary was down by 10 percent.

Job security and recognition

Among those surveyed, less than half (47 percent) said they felt "very secure" in their jobs, down 7 percent compared with 2019. IP professionals who believe their facility's C-Suite appreciates and understands their role in providing good patient care while managing costs was also slightly lower compared with last year, from 55 percent in 2019 down to 51 percent in 2020.

"Many times, the IP is seen as someone who harasses everyone to wash their hands or someone who is always telling healthcare providers what they are doing wrong," said Luci Perri, RN, BSN, MSN, MPH, CIC, FAPIC, CSPDT, Infection Control Results. "With the pandemic, IPs are in the forefront as a resource and are now seen as the people trying to get healthcare personnel the resources needed to keep them and patients safe. For example, the IP does the research to determine which disinfectants are effective against SARS-CoV-2 and assists with donning/doffing PPE training."


Luci Perri

When asked if their facility's IP-per-patient ratio is aligned with current Centers for Disease Control and Prevention (CDC) recommendations (1:100), only 35 percent of those IPs surveyed said they were in alignment, which is down for the second year in a row. This is in contrast to recent research which has shown that actual IP labor needs are on the rise.

One study published in the *American Journal of Infection Control* (AJIC), the journal of the Association for Professionals in Infection Control and Epidemiology (APIC), revealed that actual IP labor needs were 31 to 66 percent higher than the current benchmarks. The revised benchmark, 1.0 IP full-time equivalent (FTE) per 69 beds, considers IP oversight for all physical locations including ambulatory, long-term care and home care settings.[1]

"I would think the pandemic cements the need for knowledgeable IPs in every type of healthcare facility," Perri added.

Education and location matter

The majority of this year's survey respondents hold Bachelor's degrees (52 percent), followed by post-graduate degrees (27 percent), Associate's degrees (15 percent) and high school diplomas (5 percent). As in past years, the level of higher education correlated with salary levels, with those holding post-graduate degrees earning the most ($100,179), and those with high school diplomas earning the least ($48,125).

With regards to facility type, IPs working in IDN/alliance/multi-group health facilities earned the most ($90,736/year), followed by those working in behavioral/psychiatric health facilities ($88,375/year). IPs employed by long-term acute care facilities (LTAC) reported the lowest pay level ($76,333/year).

IP professionals working in suburban areas reported the highest annual salaries ($94,689 average). IPs in the Pacific region of the U.S. earn the highest pay on average ($107,857), as in previous years.

Certification and training

The percentage of IPs surveyed who are certified by the CBIC was down compared with last year, from 54 percent in 2019

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to 35 percent in 2020. There were also fewer IPs who are registered nurses, down 75 percent in 2019 to 49 percent in 2020.

The results of a CBIC marketing research study found those IPs who were certified "demonstrated professional competency and increased career growth." Those surveyed also reported that "certification improved the practice of IPC, as well as improved patient care and patient safety." On the other hand, respondents "were less positive as to whether certification would lead to monetary compensation and an increase in organizational recognition." [2]

Roles and responsibilities

The majority of IPs surveyed (33 percent) said they report directly to the VP/Director, Quality/Risk Management/Chief Quality Officer, followed by VP/Director/Manager/Chief Nursing Officer (CNO) (21 percent), CEO/COO/CFO/Hospital Administration (15 percent) and Director/Manager Infection Prevention (12 percent).

Fewer IPs reported spending 100 percent of their work time in infection prevention, which could indicate that the IP's role is expanding. In 2020, only 32 percent of those surveyed said all of their time was spent in IP, compared with 46 percent in 2019. The most reported work categories for IPs outside of infection prevention are: National Healthcare Safety Network (NHSN) (27 percent), employee/occupational health (23 percent), education/compliance (18 percent), quality performance management (15 percent), disaster/bioterrorism preparedness (13 percent) and patient safety (12 percent).

With the shift to value-based purchasing and payments, including payment reductions under the Centers for Medicare & Medicaid Services (CMS) Hospital-Acquired Condition (HAC) Reduction Program, healthcare organizations need IPs to take an active role in product selection. The majority of IPs surveyed (63 percent) said they are members of product evaluation committees.

With regards to their role in product evaluation, the highest response percentages were determining the need for a product (56 percent), product safety evaluation (50 percent), process improvement (45 percent) and product testing (42 percent).

Trends and Technologies

Each year *Healthcare Purchasing News* surveys IPs on some of the latest trends and technologies impacting their role in patient care and safety. Below is a summary of this year's findings.

Antimicrobial stewardship and prescription safety

On September 30, 2019, CMS published a final rule that requires all critical access hospitals (CAH) that participate in Medicare or Medicaid to develop and implement an antibiotic stewardship program. The rule states:

"The CAH must have active facility-wide programs, for the surveillance, prevention, and control of HAIs and other infectious diseases and for the optimization of antibiotic use through stewardship. The programs must demonstrate adherence to nationally recognized infection prevention and control guidelines, as well as to best practices for improving antibiotic use where applicable, and for reducing the development and transmission of HAIs and antibiotic-resistant organisms. Infection prevention and control problems and antibiotic use issues identified in the programs must be

addressed in coordination with the facility-wide quality assessment and performance improvement (QAPI) program."[3]

Among those that took part in the 2020 *Healthcare Purchasing News* Infection Prevention Salary Survey, 89 percent said their facilities had established an antimicrobial stewardship program, and 61 percent said the program has been effective in reducing infection rates, up from 49 percent in 2019. The majority of IPs surveyed also said their facilities follow a safe prescription program (80 percent).

Handwashing and disinfection trends

The COVID-19 outbreak has demonstrated the critical importance of good hand hygiene like never before, in healthcare settings all the way down to individuals in their homes. A higher number of IPs reported that their facilities have instituted or planned to adopt a hand-washing surveillance program compared with last year, from 45 percent in 2019 to 54 percent in 2020. Future surveys will reveal whether COVID-19 will spur more healthcare facilities to adopt hand-washing surveillance programs given the critical nature of effective hand hygiene in reducing spread of the virus.

Nearly half of those surveyed (48 percent) said their facilities are using a data mining software program to track, report and analyze infection trends, down slightly from last year (54 percent).

Fewer respondents this year said their facility used or was planning to use a room disinfection system (27 percent in 2020 versus 32 percent in 2019). While only 11 percent of respondents said their facility instituted or planned to adopt a program aimed at disinfecting electronics (tablets, smartphone, laptops), an additional 33 percent said they were considering such a program, with both figures similar to last year's survey findings.

Conclusion

While the roles and responsibilities of IPs are expanding and salaries are growing within some of the profession's categories, overall compensation, recognition and job security have not kept pace. This could change significantly with the COVID-19 pandemic, as healthcare organizations, regulatory bodies, government agencies, professional associations, manufacturers, consumers and other stakeholders are confronted straight on with the rapid spread of this highly contagious and deadly virus. Right now, IPs throughout the U.S. are on the frontlines of battling the epidemic, which could lead to greater respect for the profession, and higher compensation commensurate to the value they bring to healthcare delivery. **HPN**

References:

1. New studies illustrate need for rigorous review of infection preventionist staffing models across healthcare systems, APIC, June 26, 2018, https://apic.org/news/new-studies-illustrate-need-for-rigorous-review-of-infection-preventionist-staffing-models-across-healthcare-systems/

2. Value of certification in infection prevention and control, *American Journal of Infection Control* (AJIC), October 2019, https://www.ajicjournal.org/article/S0196-6553(19)30397-9/fulltext#sec0005

3. Medicare and Medicaid Programs; Regulatory Provisions To Promote Program Efficiency, Transparency, and Burden Reduction; Fire Safety Requirements for Certain Dialysis Facilities; Hospital and Critical Access Hospital (CAH) Changes To Promote Innovation, Flexibility, and Improvement in Patient Care, CMS, September 30, 2019, https://www.govinfo.gov/content/pkg/FR-2019-09-30/pdf/2019-20736.pdf

HEALTHCARE PURCHASING NEWS

May 2020

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

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For more information, direct any questions to *Healthcare Purchasing News* (941) 259-0837.

LEARNING OBJECTIVES

1. *Identify electronic workflow abilities that aid technicians*
2. *List ways that electronic workflow systems improve quality assurance*
3. *Specify reporting that helps SPD managers*

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SELF-STUDY SERIES

Sterile Processing information systems help SPDs shine

by Amanda Prussing

Instrument tracking software has evolved over time, from early basic applications that allowed you to identify the sterile status of a set and its location, to the newer, more sophisticated programs that help SPD professionals manage many different aspects of their instrument processing workflow. Today's tracking systems still help you to document your sterilizer loads and print out set barcodes during assembly, but now they can also help inform and improve the work you and your staff do.

Not every sterile processing department is taking full advantage of all the features and data their sterile processing information system can provide, and this may be because they are unaware of its full potential. In this module we'll discuss instrument tracking platform features that can:

- Assist you and your staff in conforming to industry standards and help you develop greater Joint Commission audit readiness
- Support better resource allocation and management
- Enhance your current quality assurance program
- Give you greater insights into your department data with reporting and decision-support tools

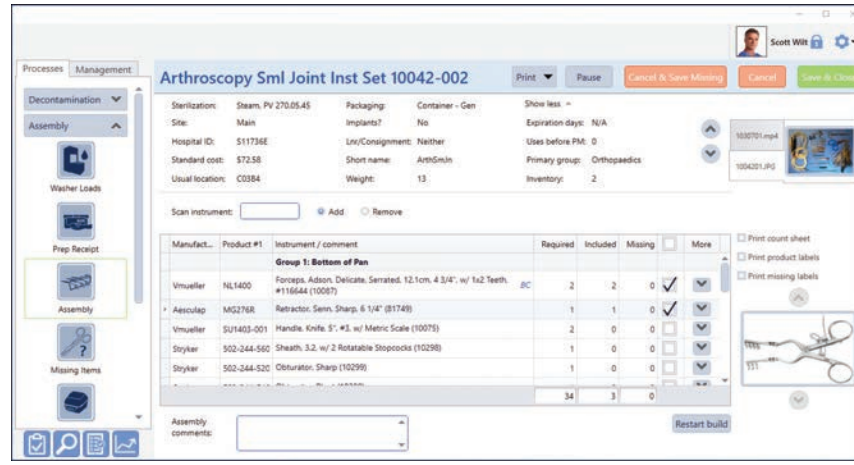
By utilizing these enhanced functions, departments can optimize their workflows and their reputations.

Tools for work conformance and documentation

Some of the most basic features of tracking systems involve allowing the conversion of former paper documentation into a digital format. You can document many processes in your department such as sterilizer load builds (including load contents and BI test results), the time a tray was decontaminated and assembled, and even when and how an endoscope was processed. However, many don't realize that a sterile processing information system not only documents the work you do; it can also help inform and guide your work.

Many systems include features that help to guide technicians through process steps and can be used to help a department maintain AAMI, AORN, and SGNA compliance. For example, many tracking systems give you the ability to document surgical case tray assemblies in an on-screen count sheet. These screens give users valuable information about the tray, like the primary sterilizer cycle used for that set and the total cost of the tray.

The software can also enable on-screen resources for staff such as attached device instructions for use, pictures of all included instruments in a specific surgical set, and videos and PowerPoint guides to demonstrate a specific assembly process.[1] Manual cleaning and decontamination can also be documented with the scan of a barcode, giv-



ing you an easy way to build this part of your sterility assurance documentation.

Some tracking systems also include guided sterilizer load building workflows, which lead staff through the process of building a load much like online retailers lead a customer through the steps needed to purchase an item (first enter your contact information, then your credit card, etc.). Guided workflows allow staff to see what they have completed and what they have left to do, which can eliminate guesswork.

Testing, weight and compatibility compliance

These types of systems also allow the user to create testing schedules so that staff are reminded and required to include biological tests and chemical indicator tests at certain times of the day. In the US, the software is designed to also require a biological test in every load containing implants.

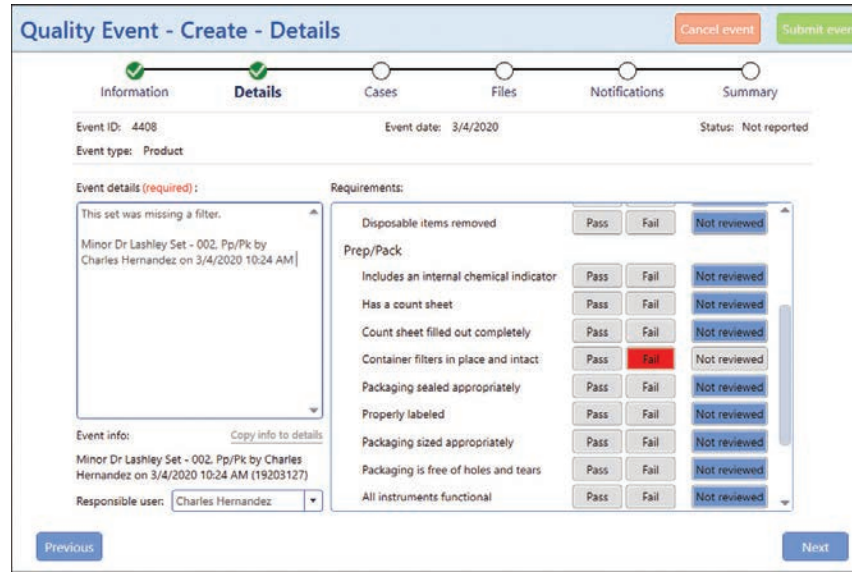
Some systems give you the ability to document tray weights for each set in your database, and the maximum weight for each sterilizer cycle. This feature gives you an easy way to tell if your sterilizer load is overweight.

Sterilizer compatibility checks can be added in, to alert staff if they are about to add a set to a load with a cycle or sterilization method that's incompatible with that tray. This helps assure that every tray is processed appropriately.

More advanced tracking systems include configurable or customizable workflows. These can be programmed to create a workflow for the requirements of specific sets and endoscopes. They can guide staff through more complex procedures like flexible endoscope reprocessing or intricate and detailed decontamination procedures for specific types of sets. Steps are configurable so that SPD and scope processing professionals can design workflows that conform to industry standards and facility-specific guidelines.

Some systems also allow you to configure each computer in your department for the work that is typically done at that computer. This workstation configuration allows a manager to specialize a computer for certain documentation, making the process of finding the appropriate documentation screen much more efficient.

As staff perform their guided work and progress through the screens, they are creating your sterility assurance documentation. When technicians build sterilizer loads, document loaner orders, and complete guided workflows, tracking systems are also capturing who is doing the work, the steps completed, test results and more. Tracking systems can help make the sterility assurance documentation process, which was historically a separate activity, into an integrated part of the completed work.



Quality assurance tools

Many of the same features of tracking systems that help to create conforming work and documentation also help with quality assurance. Guided workflows, features that document non-conforming quality, staff competency data, and sterility assurance documentation data provided by sterile processing systems all support continuous quality improvement efforts.

When a quality issue arises in your department, some sterile processing tracking systems allow you to identify the inferior event and which sets were affected. The program's guided workflows contain pieces of information about the event such as potentially affected cases, the ability to associate an image portraying the issue, and the ability to notify managers or IP professionals if needed. Managers can use these quality features to document follow-up tasks and support root cause investigations.

Some systems also include staff competency features that help ensure that only staff who are trained and competent to do work in certain areas of the software are able to complete that work. These features give managers the ability to create competency checklists they can use to review technician work. Tracking systems can require that, based on competency, a staff member is a) not allowed to perform the task (in the case of new staff still in training), b) supervised for a particular task, or c) free to perform that task without supervision. Competency features can help support the work requirements for quality outcomes.

Other quality assurance features include the ability to document a department's ambient temperature and humidity and to record the results of cleaning verification. Temperature and humidity monitoring provide environmental conditions data from various locations in the department. Managers can easily create reports of those readings to observe trends and perform corrective action before conditions move out of range. If readings are already out of range, some workflow software can help users identify which items in sterile storage are impacted and what actions to take. For example, if there is a humidity spike, your system might be able to tell you which trays might need to be processed again according to your HVAC and risk assessment requirements.

Cleaning verification testing, such as ATP tests and residual soil tests for instruments and endoscopes, can be documented in tracking systems as verification of the quality of cleaning processes. These types of tests could be added to a configurable workflow or be scanned into the database.

Resource management efficiency and effectiveness

Along with the quality of your processes and outcomes, sterile processing tracking systems can also help improve the efficiency and effectiveness of your staffing function. Departments are dealing with increasingly complex instrumentation, the demands of surgical case schedules, and maintaining efficient staffing, so it's important that sterile processing technicians be focused on the most urgently needed items. This can help prevent delays in the OR. As discussed in the *Healthcare Purchasing News* article, *Ready, set go: Staying on track with OR scheduling, turnover,*[2] products or services that can help

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

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to shorten turnover times and lead to better OR efficiency can potentially help strengthen the surgical revenue stream.

Tracking systems often allow you to flag instrument trays and devices that need to be expedited for upcoming surgical cases. A list of priority trays for the day's cases can be viewed on computer workstations or large screen displays in your department. Messages can be configured to alert staff of priority sets as they are scanned throughout the department.

More advanced tracking systems give you the ability to interface your solution with your facility's electronic medical record (EMR) system so that your list of needed items is automatically populated at the beginning of each day. This gives your staff the ability to more proactively manage the work they need to do. Many systems also include loaner order features that give you the ability to document loaner trays as they come into your department and give you the tools to help you to treat loaners more like your own instrumentation.

Instrument inclusion and maintenance

In addition to facilitating the expedited movement of priority trays, tracking systems can also help to ensure complete case sets. If an instrument is missing, on-screen assembly features can be configured to show equivalent or substitute instruments. Staff can use these lists to find facility-approved substitutes if a desired instrument is not present in the tray.

A required instrument can be flagged in the system, and if it is missing from the build, the tray cannot be completed. In contrast, when non-required instruments are missing, labels can be printed that list each instrument that is not included on the outside of the tray. This helps reduce guesswork in the OR and deters staff from opening a sterile tray if it will not meet the case need. Missing instruments also appear on reports so that they can be found or replaced more easily by management.

Preventive maintenance tracking and documentation is also supported by many tracking systems. Preventive maintenance can be documented in the system, and some systems also allow you to create maintenance reminder messages based on usage or time. Usage-based reminders allow you to set the maximum number of times a set can be used before required maintenance, and the tracking system counts how many times a tray is used. Timely maintenance can help prolong the useful life of an instrument or device, and thus can help save money and preserve department resources. Trays that are used more frequently will be serviced more often, while trays that are used less often can be maintained less frequently – only when they need it. Managers can document completed maintenance in the software, and this data can be used to create a complete maintenance history for department sets.

The case cart building feature in tracking systems can be the final checkpoint to assure complete sets before they are delivered to the surgical department. When a case pick list is reviewed as part of this step and a needed item is missing from sterile storage, staff can easily add that item to the expedite list to help other staff know that it's a priority item needed to complete the set.

If an EMR interfaces with a tracking system, known case requirements are automatically populated, providing a head start with processing known case needs. This proactive feature can help move a department away from less efficient first-in, first-out processing.

As a technician adds sets to the case cart for a procedure and documents it in the system, those items are automatically linked with that case. The sets become associated with a specific case and patient on a specific day and time. This linking gives you the ability to more easily trace devices and trays during a root cause investigation and can provide evidence that your facility is conforming to industry set tracing standards.[3]

Reporting and decision-support features

A root cause investigation is one example of a process that can be supported by tracking system reporting and decision-support features. In addition, audit reports can provide immediate indications of overall compliance for internal or Joint Commission audits, and they can also be reviewed daily to help ensure completeness of sterility assurance documentation.

There are also reports that can show all data connected to a particular case. Instrument sets are tied to specific case IDs in the software, which allows users to more easily trace those sets to an individual patient. And if there is concern about a case cart or tray in the OR, this same traceability can allow managers to work backwards/upstream in the process to demonstrate that the items used on a case were processed properly and that they met standards and policy requirements at every point in the reprocessing chain.

Some tracking systems include dashboard reporting features that can be configured to show specific key performance indicators on computer workstation screens or large displays. These dashboards and KPIs can display trends in departmental data such as the total sterilizer loads run each day for the last week. They can also show information about what is currently happening, like the number of users logged in, or how many add-on cases have been documented in the last few hours.

There are also functions available that allow you to better determine the total cost of ownership of your surgical sets. For example, these value-of-production features let you see the cost of reprocessing each tray in your department. They can also highlight the cost of quality issues and can help you to better discuss the value of your department in financial terms. These features' reports can help you to see the total cost of cases and provide evidence for right-sizing your device inventory.

Productivity monitoring functions provide reports on staff competencies and quality events to help identify areas where staff may need additional training. Productivity reports can also inform your scheduling process by helping to identify where staff are most needed. When combined with information from processing volume reports, the data can be used to build the case for additional FTEs.

Making the most of instrument management software

Your sterile processing information system can support much more than basic track and trace functions. The additional features can provide the information to help optimize reprocessing consistency, quality, productivity and compliance. By investigating the unused or underused features available to you, you can put your information system to work to help you achieve a shining reputation among your infection prevention stakeholders and hospital 'customers.'

To learn more about any features you are not currently using in your instrument tracking solution, review your software documentation and guides and talk with your software representative. Their experts can help you identify features to implement with department staff and can help you present the benefits to key stakeholders within your facility to gain support and cooperation. HPN

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Amanda Prussing, BS, CCSVP is the Manager of Education and Training for Sterile Processing Management at STERIS Corporation. She conducts all new and ongoing employee training for the SPM software, leads and helps to develop most SPM customer webinars, and can be heard in their training and marketing videos.

CONTINUING EDUCATION TEST • MAY 2020

Sterile Processing information systems help SPDs shine

Circle the one correct answer:

1. **Reporting and decision-support tools:**
   A. Make decisions for you, so you don't have to.
   B. Can only handle simple things like how many trays you process.
   C. Cannot help you understand the total cost of your inventory.
   D. Can be helpful during an audit to demonstrate the completeness of your documentation.

2. **Sterile processing information systems:**
   A. Provide reporting and decision support tools.
   B. Help you and your staff develop greater audit readiness.
   C. Support your current quality assurance programs.
   D. All of the above.
   E. None of the above.

3. **What is a benefit of usage-based preventive maintenance?**
   A. It makes you maintain a tray each time it is used.
   B. It can help to save money and make sure all trays are in working order.
   C. It is very difficult to set up.
   D. All of the above.

4. **What is a dashboard?**
   A. A screen that allows you to see historical graphs and current stats about your department.
   B. The screen in the software where trays are assembled.
   C. A feature that is not included in sterile processing information systems.
   D. None of the above.

5. **Case cart building functions help with the following:**
   A. Link sets to a case ID.
   B. Provide a final checkpoint in delivering complete tray to the OR.
   C. Allow staff to more easily identify items that need to be expedited.
   D. All of the above.
   E. None of the above.

6. **Guided workflows cannot:**
   A. Include configurable steps that are decided upon by the facility.
   B. Physically stop a technician from including a set in a non-compatible load.
   C. Show images and resources like excerpts from your IFUs.
   D. Capture critical documentation while leading users through the process.

7. **On-screen assembly features do NOT do which of the following:**
   A. Prevent users from doing work without washing their hands.
   B. Provide technicians with images and video resources.
   C. Show lists of possible substitutes when an instrument is missing.
   D. All of the above.
   E. None of the above.

8. **How can sterile processing tracking systems help your process be more efficient?**
   A. Set expedite features and messages.
   B. Interface with EMR to proactively show all case needs.
   C. Provide additional on-screen resources to help with assembly.
   D. All of the above.
   E. None of the above.

9. **Quality issues:**
   A. Are much easier to track, document, and report in paper form.
   B. Can be documented and reported by many sterile processing information systems.
   C. Are not that important to document and track.
   D. All of the above.
   E. None of the above.

10. **Staff competency features can benefit your department in the following way(s):**
    A. They provide a check to support only competent staff performing certain workflows.
    B. They give supervisors an on-screen checklist to document a passed or failed review.
    C. They can be set up so that a new user cannot complete certain workflows without supervision.
    D. All of the above.

IAHCSMM Instrumental to Patient Care

The approval number for this lesson is **STERIS-HPN 200304**.

CBSPD

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Beware these 5 common instrument use, inspection and testing myths

by Rick Schultz

Misinformation about surgical instruments and instrument processing is widespread across the healthcare industry. Many educators have not updated their knowledge and teaching techniques to stay current with the instrument manufacturer's knowledge and testing methods. As a result, outdated processing knowledge and inaccurate education may result in patient safety issues. Knowing the facts is essential.

What follows are some common myths that must be addressed:

Myth #1: It is safe and acceptable to use hemostats as tube clamps for intravenous tubing.

Fact: No. Using a hemostat to clamp the tube is not safe for the patient. Hemostats typically have finer jaws than a tube clamp, and the box lock of hemostats are not as strong. Because of this, hemostats are highly prone to cracking and, even worse, releasing/popping off the tube. Hemostats are designed to clamp vessels to control blood flow, which is achieved by both jaws closing fully. Furthermore, the serrations on a hemostat may damage the actual tubing. Common tube clamps, such as Presbyterian, come with smooth or serrated jaws to secure tubing. The other most popular tube clamp is the Vorse, which has a "guard" to support the jaws and box lock when clamping the tube. This pattern is called a Vorse with guard or Vorse Guardian.

Myth #2: To inspect a needle holder, it is necessary to click it on the first ratchet and hold it up to the light to visualize the center of the jaws.

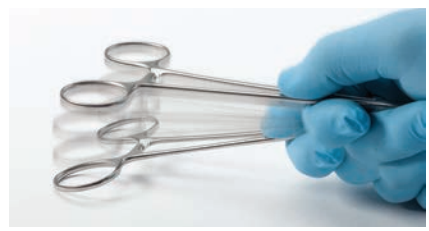
Fact: This technique is outdated, slow and reduces efficiency when inspecting surgical instruments. Because there are different teeth per square inch, depending on the pattern, the needle holder may be worn, even though light does not show through; however, this technique is effective for needle holders with smooth jaws, such as Webster, Halsey and Castroviejo, which have no tread in the jaws. The most recognized and efficient technique for inspecting needle holder jaws is to separate the rings and visually inspect the hinge area and the jaws for treadwear and bioburden.

Myth #3: Clamping aluminum foil is the preferred way to test needle holders for jaw wear.

Fact: Using aluminum foil to test tread wear is a slow, outdated technique. The most effective method is to separate the rings and inspect the jaws for treadwear and bioburden.

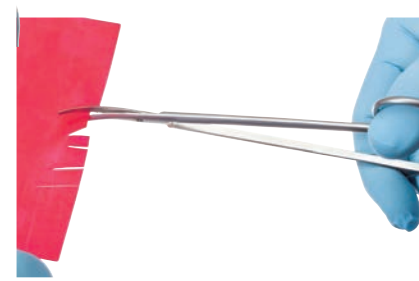
Myth #4: Ratchet testing is performed by tapping the instrument in the palm of the hand.

Fact: Tapping the instrument in the palm of the hand is not an accurate method to ensure the ratchets are properly aligned. The hand has a soft surface and is not completely flat. A completely flat surface must be used, such as tapping on a table/work surface. The purpose of tapping the instrument on a hard work surface is to simulate the instrument hitting another instrument, causing it to pop open. When performing this test, click the ratchet only once so it is in the first position. If the ratchet pops open, that indicates the ratchets need to be realigned, and the instrument should be removed from service and sent out for repair. This is a common and inexpensive repair. This technique should be used on all hemostats, needle holders and any other ratcheted instrument.



Myth #5: When testing rongeurs and scissors for sharpness, the entire jaw or front half of the jaw or blade should be tested.

Fact: Rongeurs should cut cleanly through one thickness of an index card or card stock. To perform this test, use only the top 1/3 of the jaw. The instrument should not tear or snag the testing card. The middle and back of the cup jaw are not used during the surgical procedure. When testing the sharpness of a scissor, either red or yellow scissor test material should be used. Scissors with an overall length longer than 4 ½" should cut cleanly through red scissor test material. Scissors with an overall length of 4 ½" and shorter should cut cleanly through yellow scissor test material. When testing the sharpness of a scissor, use only the distal 1/3 of the blade (it is incorrect to test the middle or back of the blade). If the testing material snags or is not cut cleanly, the scissors should be tagged and sent out for sharpening.



Conclusion

Although many of these myths, initially, may seem small and insignificant, they can have a major impact on the performance of the instrument and, more importantly, on the patient. Knowing the facts will improve patient safety. HPN

Rick Schultz is an author, inventor and lecturer, and the retired CEO of Spectrum Surgical Instruments Corp.

An extended version of this article was published in the Jan/Feb 2019 issue of PROCESS, IAHCSMM's bi-monthly magazine.

Instrument modification hazardous; needle holder magnetization unrecognized; instrument cleaning technique vs. capacity

by Ray Taurasi, Principal, Healthcare CS Solutions.

Q We have a surgeon who requested some modifications be made to a couple of his Weitlaner retractors. The modifications required removing a prong and shortening another. We found a local metal craftsman who was able to successfully do this.

Since doing this I have been getting requests to have modifications made to other instruments and needles. The craftsman does not provide any instructions for use (IFU) for the modified items. I am not sure this is something that we should continue to do. The surgical director has told me that the modifications are not major and that I should continue to do what the surgeons request. I have not been able to find any type of documentation to support my argument to discontinue the modification of instruments What do you say?

A I say NAY. The modification of any medical devices is a very dangerous practice and one that may place healthcare workers and patients in danger. When the modification to a surgical instrument, or any other medical device, is allowed by an organization, the organization assumes legal responsibilities. From a legal perspective, the party that performs or allows for the alterations of any medical device becomes the manufacturer of said device and must comply with the US Food and Drug Administration (FDA) Good Manufacturing Regulations (GMP).

GMP are the practices required in order to conform to the guidelines recommended by the agencies that control the authorization and licensing of the manufacture and sale of food and beverages, cosmetics, pharmaceutical products, dietary supplements, and medical devices. These guidelines provide minimum requirements that a manufacturer must meet to assure that its products are consistently high in quality, from batch to batch, for their intended use. The rules that govern each industry may differ significantly; however, the main purpose of GMP is always to prevent harm from occurring to the end user. Additional tenets include ensuring that the end product is free from contamination, that it is consistent in its manufacture, that its manufacture has been well documented, that personnel are well trained, and that the product has been checked for quality more than just at the end phase. GMP is typically ensured through the effective use of a quality management system (QMS).

Abiding by the FDA GMP involves very complex processes requiring specialized manufacturing as well as scientific and QMS expertise, which likely are beyond the scope of your hospital or the metal craftsman you are utilizing to modify your instruments.

I would suggest that you share this information with your director and consult with your risk management and/or legal department on this matter. I would also strongly recommend that you discontinue this practice immediately and that you remove any devices that have been modified from circulation and further use. Going forward, if a surgeon has an idea for a new design of an instrument, he or she should work with the instrument manufacturer.

Q I am a traveler nurse and currently work at a doctor-owned surgery center. I recently received a strange request from a surgeon who wanted his needle holders magnetized. I have never had such a request before. What is the standard for this?

A That is a rather unusual request. I have heard of magnetic holders for needles and demagnetizing an instrument but not the reverse. I have contacted a few instrument manufacturers and instrument specialists, none of whom heard of magnetizing an instrument or offered a magnetic holder. Perhaps a reader of the column can provide further insight.

Q One of my colleagues works at another hospital and said the staff were recently told by a Joint Commission inspector that no more than 50 instruments should be placed in a washer basket at any time. I have never heard of this before; is this a new standard? We could never get all our sets washed if this was true.

A I am not aware of any standard or recommendation that specifies the maximum number of instruments that can be placed in a washer basket. What's more important is that instruments must all be placed in the basket in a manner that will allow all surfaces, crevices, and parts to be fully exposed to the water spray and mechanical action. Improperly positioned instruments and over-loaded baskets cannot be cleaned effectively. (see figure 1) Instruments should be held opened in a manner that will permit contact with the cleaning agents. Instrument stringers, special racks, and spreaders to help facilitate proper positioning throughout the wash cycle should be used. (see figure 2) **HPN**

Figure 1

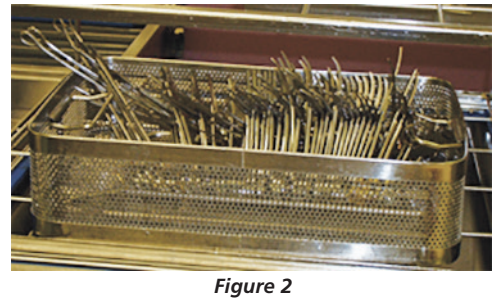


Figure 2

Ray Taurasi is Principal, Healthcare CS Solutions. His healthcare career spans over three decades as an Administrator, Educator, Technologist and Consultant. He is a member of AORN, AHA, SGNA, AAMI and a past president of IAHCSMM. Taurasi has been a faculty member of numerous colleges teaching in the divisions of business administration and health sciences.

Sharpening the focus on cleaning

Sterile processing and disinfection during COVID-19

by Ebony Smith

The novel coronavirus (COVID-19) pandemic has touched us all. We live and function in a much different world. Together we unite to stay home, social distance and take extra precautions to clean, disinfect and protect against infection.

Great appreciation is shown for frontline first responders, nurses, doctors and all other healthcare workers who sacrifice and risk their health to care for our communities. Perhaps one group of unsung healthcare heroes is the sterile processing department (SPD). The SPD leaders, staff and technicians work during routine and heightened periods of care to clean and disinfect surgical items and help prevent patient infections.

In this article we examine the current climate of COVID-19, healthcare and infection prevention, as well as the best practices, tools and technology used in the sterile processing field today.

Pathways of contamination and disease

Organisms, viruses and other pathogens can easily contact and spread through equipment, furniture, surfaces, people and other items in hospitals and other settings. COVID-19 was discovered to live for hours or even days in environments, laying the ground for infection.

"The virus that causes coronavirus disease 2019 (COVID-19) is stable for several hours to days in aerosols and on surfaces, according to a new study from National Institutes of Health, CDC, UCLA and Princeton University scientists in *The New England Journal of Medicine*. The scientists found that severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) was detectable in aerosols for up to three hours, up to four hours on copper, up to 24 hours on cardboard and up to two to three days on plastic and stainless steel. The results provide key information about the stability of SARS-CoV-2, which causes COVID-19 disease, and suggests that people may acquire the virus through the air and after touching contaminated objects," reported the Centers for Disease Control and Prevention (CDC).

The COVID-19 coronavirus is just the latest in a host of infectious diseases that are bringing focus and attention to disinfection and infection prevention. Now, more than ever, all healthcare providers need to be well equipped and expertly trained to handle sterilization and instrument processing in their practice, expresses Darwin Asa, Midmark Corporation.

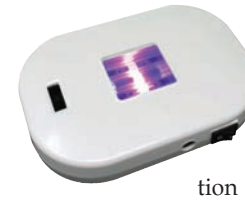
"As the COVID-19 pandemic and antimicrobial resistance "superbugs" loom ever larger in headlines, the need for infection control across health systems has reached a new urgency. Keeping patients and staff safe is at the heart of any effective infection control measure, so a better understanding and adherence to instrument processing best practices is truly essential for every facility. Midmark recommends the instrument processing best practices established by the CDC."

Midmark's instrument processing solutions include automatic cleaning, sterilization and medical-grade casework, notes Asa. "Our technologies are engineered for simplicity to help ensure compliance with applicable standards and best practices. For example, Midmark's updated line of tabletop sterilizers is designed to be safe and dependable with stainless-steel construction and third-party ASME certification that helps contain contamination and maximize the efficiency of instrument sterilization processes."

Midmark's Ritter M11 and M9 steam sterilizers

In an ideal world, Dr. Lucia Mokres, Chief Medical Officer**,** Far UV Technologies, Inc., hopes to work toward wiping out infectious outbreaks.

"Our ambitious goal is to rid the world of future pandemics or epidemics by creating autonomous persistent disinfection devices that can immediately assist in containing the inevitable emergence of disease that can be spread on surfaces or through the air. These could be situated alongside normal lighting in medical, elderly care, industrial, commercial, retail and consumer buildings to dramatically reduce or eliminate the incidence or spread of common colds and flus, chemically-resistant microbes (MRSA or *C Diff*) that can result in hospital-acquired infections or more virulent diseases, such as the coronavirus, SARS, MERS or Ebola."



Far UV's Krypton Disinfection Lighting

Excited about Far UV's new Krypton disinfection lighting for sanitation, Dr. Mokres shared, "We will be launching our first broadly applicable, generic use surface and air 222nm disinfection lighting solutions in early April 2020. With the emergence of COVID-19, we are seeing the status quo in the sanitation of medical facilities rapidly change. While daily and/or even more frequent conventional cleaning is still recommended whenever spaces are not occupied, Krypton disinfection lighting provides the first effective countermeasure for infectious disease and pathogens when those spaces are occupied to better protect healthcare workers and their patients."

Combatting infection

No doubt, COVID-19 has certainly changed healthcare as usual. A shortage of respirators, ventilators, hand sanitizers, masks and other medical care and personal protective equipment has left

many hospitals and healthcare workers without the supplies they need for safety and patient care. Several organizations set forth recommendations and guidelines for care, disinfection and sterile processing in facilities.

American College of Surgeons advised, "The College recommends hospitals, health systems, and surgeons enact plans to minimize, postpone, or cancel elective operations at the current time until we are confident that our health care infrastructure can support a potentially rapid and overwhelming uptick in critical patient care needs."

In regard to handling COVID-19-contaminated items and disinfection in healthcare settings, International Association of Healthcare Central Service Materiel Management (IAHCSMM) noted guidance from Occupational Safety and Health Administration (OSHA), including, "Follow standard practices for high-level disinfection and sterilization of semi-critical and critical medical devices contaminated with COVID-19, as described in the CDC Guideline for Disinfection and Sterilization in Healthcare Facilities, 2008."

Additionally, "At this time there is no EPA-approved list of disinfectants effective against COVID-19. COVID-19 is a coronavirus and highly susceptible to inactivation by many commonly used disinfectants. Currently, OSHA recommends following SARS disinfection practices for environmental areas contaminated with COVID-19."

This kind of guidance essentially helps SPDs perform their jobs to the best of their abilities and stay safe in the line of care, note Sam Watkins and Karen Owens of STERIS Corporation.

STERIS V-PRO maX

"Sterile Processing departments need to be informed in situations like these in order to understand if it is truly necessary to implement new processes and procedures. In most cases, continuing to consistently follow manufacturers' instructions for use will provide the best outcome. It is also important to be informed about proper use of PPE, not just during a pandemic, but always utilizing PPE that is appropriate for the task at hand, as well as appropriate removal of PPE to prevent self-contamination," Owens said.

Halyard's SmartFold blue wrap

Watkins called out STERIS' reprocessing sinks, ultrasonics, washers, accessories, and sterilizers for instrument cleaning, including the V-PRO sterilizer and maX processing line, saying, "STERIS covers the complete reprocessing journey of an instrument. Hands down, the V-PRO meets low temperature sterilization requirements like nothing else in the industry. maX Throughput processes 11 lbs. (5 Kg.) of non-lumen devices in 16 minutes or processes 50 lbs. of non-lumen devices in 28 minutes."

Halyard's sterile processing, reprocessing and PPE supplies, equipment and educational resources help protect the safety of SPD personnel and keep instruments clean, shared Joseph Hannibal, Marketing Director for Sterilization, Surgical and Infection Prevention, Halyard.

"In a recent Sterility Maintenance Study, HALYARD Sterilization Wrap was shown to maintain 100% sterility post-sterilization versus rigid sterilization containers. In addition, Halyard provides its Knowledge Network, a free dynamic collection of educational programs designed to provide the insights and information on relevant healthcare issues that healthcare professionals need to improve staff competency, safety, infection prevention and patient outcomes."

Alice Brewer, Tru-D SmartUVC, agrees SPDs must remain vigilant in their profession and practice to help curb the spread of infections, stating, "Sterile processing is the first link in the infection prevention chain. Improperly or inadequately cleaned, disinfected and sterilized instruments can introduce pathogens into the operating room, increasing the risk of a patient acquiring a surgical-site infection (SSI). Just as with patient rooms and ORs, the key to a successful infection prevention program, especially during a pandemic or outbreak, is to adhere to an integrated, layered approach. Combining stringent handwashing, manual cleaning and antibiotic stewardship along with enhanced disinfection technologies—such as UVC disinfection—can help provide the cleanest environment possible."

The Tru-D SmartUVC disinfection robot is used in hundreds of hospitals across the U.S. in patient rooms, ORs as well as Sterile Processing departments to ensure a clean, germ-free environment, highlighted Brewer.

Tru-D Smart UVC

"Tru-D delivers one automated, measured dose of UVC to consistently disinfect a room, resulting in the ability to document disinfection results after each Tru-D room treatment. Used in the first-ever randomized clinical trial on UVC disinfection, the *Benefits of Enhanced Terminal Room-Disinfection* (BETR-Disinfection) study, Tru-D has been shown to significantly reduce bioburden and epidemiologically-important pathogens, which can lead to a reduction in colonization and infections in hospital settings with 93% compliance of standard disinfection protocols."

Douglas J. MacKay, The Ruhof Corporation points to their RUHOF BIOCIDE DETERGENT DISINFECTANT PUMP SPRAY as another tool to fend off viruses and other pathogens.

"In light of today's COVID-19 pandemic, infectious diseases, antibiotic resistant super bugs and everyday contaminants, the Ruhof Corporation's product line has never been more important to teams working in hospitals, outpatient facilities, endoscopy centers, clinics and doctors' offices alike. Currently helping in the fight against the COVID-19 pandemic, RUHOF BIOCIDE DETERGENT DISINFECTANT PUMP SPRAY (an EPA Registered disinfectant #1839-83-39468) has demonstrated effectiveness against viruses similar to the 2019 novel coronavirus (SARS-CoV-2) when used in accordance with the directions for use against Hepatitis A virus on hard, non-porous surfaces (10-minute contact time). With the rapid global escalation of this virus the Ruhof Corporation is responding by increasing production of our RUHOF

RUHOF BIOCIDE Detergent Disinfectant Pump Spray

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BIOCIDE spray in pint size (500ml) as well as larger gallon size (4L)."

Following the IFU

A best practice for SPDs is to follow the manufacturers' instructions for use (IFU) to ensure proper cleaning, but Andy Petrovich, President & CEO, Petriss, sees that area lacking with facilities.

"Every hospital in America is falling short in following the validated OEM IFU every day. Data has shown and proved that sterile processing departments are non-compliant between 35%-70% on every tray being processed through the department. Instruments are simply not being cleaned and disinfected appropriately before sterilization. This clearly attributes to potential SSIs."

The Petriss BLUEfin decontamination intelligence software projects up-to-date information for managing the cleaning process of instruments.

Petriss BLUEfin decontam intelligence software

Petrovich described, "BLUEfin calculates, communicates and documents Real-Time IFU details to sterile processing professionals for all instruments, manufacturers and trays, 24/7. Imagine every staff member receiving the same timer, IFU details, instrument tray expectations, pictures and training video! By providing this powerful information to the end users, they will be able to produce consistent outcomes that not only impact patient safety, but also protect the sterile processing professionals."

Other resources for IFUs and instrument cleaning are oneSOURCE's Surgical Instrument and Equipment database and new COVID-19- database with IFUs related to ventilators, respirators, bypass machines and reusable surgical gowns, reports Heather Thomas, CMO & Executive Vice President of Sales & Marketing, oneSOURCE.

"Tools like oneSOURCE are imperative when it comes to providing healthcare workers with the resources to fight diseases like COVID-19," said Thomas. "We recognize the severity and struggle our world is facing and felt it was our responsibility to arm those on the frontlines of this medical crisis with ways to effectively sterilize, clean and execute their duties in the safest way possible."

oneSOURCE's COVID-19 database

Christian Berling, HEINE USA Ltd., urges manufacturers to play a role in educating SPDs on IFUs.

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Infection prevention is the cornerstone of patient safety.

Infection prevention is always important for maintaining the safety of healthcare workers and their patients.

Proper management of reusable medical devices is central in preventing transmission between patients and from patients to healthcare workers.

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"From the perspective of an instrument manufacturer, I believe that the best practices and standards would be to hold manufacturers accountable for better training and IFUs. Manufacturers need to be held to a higher standard, especially within SPD. Manufacturer representatives need to know their hygienic reprocessing information, equipment and cleaning solutions, and have information on process validation. Manufacturers should also be a resource for the hospital when they are being audited."

HEINE's EasyClean laryngoscope handle

HEINE's reusable laryngoscopes and parts, including their EasyClean laryngoscope handle, are used in ORs and reprocessed by SPDs.

"Our new EasyClean laryngoscope handle is the only LED handle on the market that can be sterilized without any disassembly. The handle is sealed and waterproof and can be sterilized without removing the batteries or illumination system. It is also the only handle on the market with a validated low-level surface disinfection process," Berling stated.

The work of SPDs during COVID-19 and every day should be guided by IFUs and the latest healthcare regulations, addressed Melinda Benedict, MS, CIC, CFER and Lynn Burbank, Olympus Corporations of the Americas.

"The best practice for reprocessing during the COVID-19 pandemic is to maintain evidence-based practice (EBP) that has been validated by regulatory agencies and product manufacturers. In reprocessing, staff should consider that all surfaces are contaminated or have the potential to be contaminated and maintain universal precautions. The type of micro-organism does not change the need to: don PPE, manually clean instruments and devices inclusive of pre-cleaning within one hour of the procedure, utilize compatible reprocessing methods and adhere to the product IFU in order to ensure patient safety."

OER Mini and OER Pro from Olympus

Olympus' medical devices, such as their Olympus OER-Pro or OER-Mini automated endoscope reprocessors, are used across therapeutic practice areas.

Benedict and Burbank highlighted, "Automation in reprocessing has greatly impacted how efficiently and effectively infections are eliminated on endoscope surfaces. The Olympus OER-Pro or OER-Mini are intended for use in cleaning and high-level disinfection of heat-sensitive Olympus flexible endoscopes and their accessories. The OER units offer several automated features designed to prevent transmission of microbes."

Helping keep surgical instruments and equipment clean and in working order and rotation is Northfield Medical.

"We service stainless steel instruments, rigid endoscopes, power tools, video cameras, flexible endoscopes, TEE probes, and so much more. We even clean autoclaves and OR tables and repair casters and case carts. We focus on providing repairs that

return devices to their original form, fit and functionality while also providing education and tools to prevent devices from breaking in the first place. Physicians and care-providers depend on their tools functioning correctly to be able to do their jobs well, " explained Michael Matthews, Director, Clinical Education & Training, Northfield Medical.

Northfield Medical mobile service van interior

Instrument classification, tracking and storage

Another important step for SPDs is maintaining instructions and identification of instruments for optimal tracking, preferably in an online system, which can help reduce hospital inventory, prevent infection and reduce labor costs, raises Dana Curtis, DGSHAPE Corporation.

DGSHAPE's Eirthemis system

"Best practices for healthcare facilities include Universal Device Identification (UDI) part marking of each surgical tool or medical device and a thoroughly documented procedures manual. Tribal knowledge is dangerous in any organization, but especially when there is threat of danger to the patient's health. The best method for maintaining standards is to publish the steps of the sterile process in a central location. Making that process digital increases efficiency and productivity exponentially."

He continued, "Eirthemis is a complete traceability system for all devices in the facility. Tracing can be done by photo or QR code. The software logs location, usage/maintenance/repair history, and tracks reprocessing per employee, surgical procedure, and department. MPX-95 permanently marks metal instruments without removing material or altering device function. MR-1 scanner is touchless and ultra-high resolution."

Ken Shaw, President of the Americas, Nanosonics, Inc., agrees that standardized classification of instruments benefits care, noting, "The need for standardized reprocessing based on the Spaulding classification has never been more important to protect patients. Notably, the Ultrasound IP Toolkit brings together the principles from our national standards and federal guidelines to help facilities manage the safe reprocessing and use of ultrasound."

Nanosonic's Ultrasound IP Toolkit with trophon technology

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He added, "trophon technology is the global standard of care for ultrasound probe reprocessing. It's a fully enclosed automated high-level disinfection solution that uses sonicated hydrogen peroxide to disinfect ultrasound probes. Globally, more than 22,500 trophons are being used in over 7,000 facilities to help protect approximately 75,000 patients daily from the risk of cross-contamination."

Another critical part of SPDs is safe storage of sterilized instruments to decrease chances of contamination, expresses David Phillips, Marketing Manager, Hänel Storage Systems.

"The best practice of all is to ensure that as few people as possible come into contact with supplies that have been sterilized. Sterile trays and supplies should be protected from risk of contamination by stringently adhering to AAMI ST79 Sterile Storage standards, in particular the three-touch rule, as well as be available at an ergonomically-correct pick point for all product regardless of size and weight, and follow a logically-organized methodology for all products in storage."

With Hänel's Rotomat automated vertical carousel, he explained, "These machines condense the storage capabilities of four or more racks into a much smaller footprint, making unprecedented use of vertical space. Items are brought to the user, and Hänel's inventory management software ensures that supplies are used in a timely manner, without the risk of shortages or expired items. Within the fully-enclosed cabinet of a Rotomat, sterile supplies are not only protected from overhandling and contaminants, but also from unauthorized access."

Hänel's Rotomat storage system

COVID-19 and other health crises reinforce the need for accuracy and efficiency in instrument identification and delivery. Kevin Anderson, BSN, RN, CNOR, CSSM, CRCST, CHL, CIS, CER, Clinical Education Coordinator, Healthmark Industries, points to Healthmark's cleaning verification, container, labeling and cleaning products.

He stated, "Our customers are responsible for delivering safe, ready-to-use medical devices to the patient. Our products help them do that. We are experiencing extraordinary challenges right now with the COVID-19 pandemic. I know, from my years of working for a major healthcare system, one of the greatest challenges during a crisis is communication. Healthmark produces a complete line of labeling and signage products. These products can help communication with coworkers, patients and the public." HPN

Healthmark's Proformance and SST

Visit https://hpnonline.com/21133817 for Vendor Listings

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Walking on safe grounds

Sponsored: Stepping up floor disinfection in hospitals and healthcare facilities

A clean environment is the foundation for keeping patients, visitors, and healthcare staff safe and breaking the chain of infection in hospitals and healthcare facilities. Floors are some of the most exposed surfaces. They endure daily foot traffic, equipment movement, object placement, and contamination from dirt, debris, and bacteria, yet may only be cleaned on a regular basis, but not disinfected.

Evidence shows that floors carry harmful pathogens spread from people, wheelchairs and other objects, increasing the risk of infection for patients and everyone on site. Still, some people may perceive floor disinfection as labor-intensive, high-cost, and low-impact. Should facilities spend time, money, and resources to shut down rooms and disinfect floors? Is it a necessary and beneficial measure?

The short answer is, yes. Hospitals open the door to infection transmission by not disinfecting floors and ridding those surfaces of dangerous pathogens. A best practice is to incorporate floor disinfection into regular cleaning and disinfection routines. Leadership and staff from facility maintenance, infection prevention and control, environmental services, and clinical departments should all be educated on disinfection products, procedures, as well as the importance of these efforts. A well-maintained and -disinfected floor can last longer, create a healthier space and aid in infection prevention.

One easy solution to add to a floor cleaning regimen is 3M's floor disinfection system. This system can be added solely or as a complementary solution to 3M's dusting and cleaning products. "We see our solutions being used in hospitals, long-term care facilities, ambulatory surgery centers, clinics, or anywhere else that care is provided," says Benjamin Oberle, Healthcare Marketing Specialist at 3M. "We are hearing from customers that this is an efficient way to disinfect the floors, by combining all of the products into an easy-to-understand and simple-to-use process."

The 3M floor disinfection system is a three-step process that uses a two-in-one mop tool with a trigger to apply diluted disinfectant for mopping and cleaning needs.

The system features:

1. 3M™ Scotch-Brite™ Professional 2-In-1 Flat Mop
2. 3M™ MBS™ Disinfectant Cleaner
3. 3M™ Neutral Quat Disinfectant Cleaner
4. 3M™ C. Diff Solution Tablets

3M disinfectants have short dwell times and can be used any time contaminants land on floors. "We would recommend using a disinfectant when pathogens, bodily fluids, or other spills happen. We have seen in studies, from Desphande, for example, that once a pathogen makes its way to the floor, it tends to spread quickly throughout the facility. The focus of 3M floor disinfection solutions is to provide the most efficient tools and processes to be used to protect patients, visitors, and healthcare staff."

Due to the novel Coronavirus (COVID-19) being a newly emerging pathogen there is no US EPA registered disinfectant currently available on the market with the COVID-19 efficacy claim specifically listed on its container label. However, there are multiple 3M disinfectant cleaners that were identified as meeting the criteria as defined in the US EPA's Emerging Pathogen Policy. The products can be used against COVID-19 when used in accordance with the directions for use against the respective supporting viral claims on non-critical, hard, non-porous surfaces.

"3M has many disinfectant solutions that have been determined to meet the criteria as defined by the US EPA's Emerging Pathogen Policy," says Zach Doebler, Senior Application Engineer at 3M. "Of the 3M disinfectants included under the Emerging Pathogen Policy, we have disinfectant solutions which have either a neutral or close to neutral pH or have demonstrated compatible on many types of floors. We see floor disinfection as a process that could assist with disinfecting efforts for COVID-19 as well as offer solutions that can kill other pathogens that can pose a threat to patient safety."

The path to cleaner and safer hospital and healthcare settings starts and ends with the disinfection of every surface. When facilities move forward with implementing floor disinfection, they lead the way to a better standard of care and safety for all.

Visit 3m.com/disinfection to learn more about 3M floor disinfection solutions or speak with a 3M representative about building a disinfection program.

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SPECIAL REPORT

Considerations for closing then re-opening endoscope, processing operations

by John Whelan BSN, RN, Clinical Education Coordinator, Healthmark Industries

We all know we are in uncharted territory dealing with the ramifications of the COVID-19 pandemic. The associated reprioritization within healthcare facilities has resulted in temporary closures for part or all of endoscopy operations. Many ambulatory surgery centers (ASCs) are closed, and larger health systems have seriously limited the number of sites performing endoscopy – whether it be GI, Pulmonary, ENT, OR, or other clinical domains. As these temporary closures occur, it will be paramount to critically evaluate processes to ensure patient safety when the sites reopen.

Considerations include the management of endoscopes, storage areas, supplies, processing equipment, and spaces. This goes well beyond anything we have commonly experienced before. Endoscopy clinics are familiar with managing opening after a long holiday weekend, or after temporary power outages to provide a couple of examples. Those situations involve being closed for a few days. With the current pandemic, clinics are facing shutdown for weeks or even months. How long will this current state exist? That uncertainty alone creates the need for a measured and deliberate response.

Risk assessment plan

Imperative is a complete risk assessment and implementation plan using a multidisciplinary team with representation from Infection Prevention, Safety, Facilities, Supply Chain, and Environmental Services, as well as management and staff representatives from affected clinical sites and processing areas.

Prudent planning should include consulting the manufacturers' instructions for use (IFUs) for all endoscopes and equipment. Likewise, it will be essential to review current established standards and guidelines from the clinical professional societies and standards organizations that direct endoscope use and processing.

Additionally, it will be incumbent upon team members to keep abreast of the frequent updates - especially the direction provided by the FDA (https://www.fda.gov/emergency-preparedness-and-response/counterterrorism-and-emerging-threats/coronavirus-disease-2019-covid-19) and the Coronavirus Taskforce (https://www.coronavirus.gov/). And the recently published multi-societies document: "Management of endoscopes, endoscope reprocessing, and storage areas during the COVID-19 Pandemic" https://www.asge.org/docs/default-source/default-document-library/gi-society-management-of-endoscope-fleet.pdf.

Also, and if current resources and restrictions allow, we can consider making use of any closures/downtime to establish and/or review various processes and quality control measures. This is not an all-inclusive list, but offers some opportunities for consideration:

- Inventories – endoscopes, accessories, supplies.
- Policies - reviewed and updated.
- Training – more and more remote learning options exist.
- Documentation reviews, including competencies – gap analysis assessment and planning for addressing this as the unit reopens.
- Process changes that didn't already exist - can now be developed (e.g., cleaning verification, active drying post-AER, ventilated storage, and/or active drying in storage).
- Equipment PMs - that typically are a challenge to schedule around.
- Develop, update, and enhance standard practice references and lists.
- Review existing and develop new process and quality metrics.

As your facility adjusts to the new normal, your vendors can provide valuable resources to help make productive use of the down time. Below is a partial list of what trusted vendors can provide:

- Continuing education
- Access to an existing and growing library of free online CE opportunities and
- Webinars.

PPE

As the headlines reminds us, personal protective equipment (PPE) is in short supply. But as studies have demonstrated COVID-19 survives and thrives in the GI tract. So, the use of proper PPE is more important than ever to protect healthcare workers. This includes:

- Face shields, gowns, and gloves
- Covered transport carts and containers
- Protective covers for equipment, including personal electronic devices, such as smart phones.

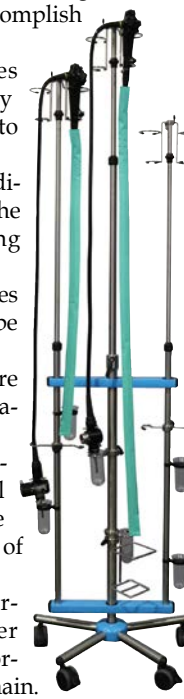
Storage

With endoscopes and other equipment and accessories in extended storage, it is more important than ever that they be stored in an appropriate state for extended hibernation.

Contaminated endoscopes in storage are an excellent environment for biofilm formation. This is true even when storing just overnight. The problem is multiplied many-fold, when stored for an extended period. It is critical that they be clean and disinfected and that their cleanliness is verified by testing and by visual inspection.

Endoscopes with damage and scopes that are not dry are particularly vulnerable to such problems. Use the tools that vendors supply and thoroughly clean, disinfect, test and inspect each endoscope that is going into extended storage. If there is damage or other observed issues, send those scopes out for repair. The current down time is a chance to get your inventory of scopes in proper working condition. Relevant tools to accomplish this include:

- Use non-linting wipes and brushes to manually clean endoscopes prior to running in an AER.
- Use visual cue and indicator labels to record the details of reprocessing and of testing.
- Add protection for scopes in storage including scope sleeves.
- Test for residual moisture detection with humidicator tests.
- Use cleaning verification tests after manual cleaning to be sure there are no detectable levels of organic soil remaining.
- Conduct microbial surveillance testing after HLD to test for viable organisms that might remain.



° Visually inspect internal channels with a borescope and inspect externally with lighted magnification.

Of course, if any of these verification tests indicate an issue, thoroughly reprocess that scope and test again.

The overarching goal through these very difficult times – as always - is ensuring safe patient care, as well as safe and effective management of resources: staff, endoscopes, equipment, and supplies. HPN

Below are some key questions and considerations for risk assessment and implementation planning. Please note:

- This is not an all-inclusive or exhaustive list for every setting.
- Frequent references to "multidisciplinary determination" reflect both the variances between institutions' practices, as well as the uncertainty regarding the shutdown length.

CLOSING CONSIDERATIONS

Flexible endoscopes and storage

- NOTE: Flexible endoscopes that are sterilized and remain in their sterile packaging require only that the packaging remains protected and intact.
- Review/ensure that complete processing - including internal and external drying - occurred before storage. Consider use of residual moisture detection methods and/or borescopic inspection. If any doubt re: level of processing/drying that occurred - consider re-processing.
- Leave flexible endoscopes post-HLD in protected storage (i.e. endoscope storage cabinets).
- Ensure storage cabinet doors are shut and HEPA filter fans are functioning.
- Ensure security of storage – while limited or no staff are onsite.
- Multidisciplinary determination re: affect on institution's "hang time" requirements - versus reprocessing endoscopes when re-open (see re-opening considerations). This needs to be factored in before unit actually reopens (to allow for adequate time).

Endoscopy procedure areas

- Multidisciplinary determination and/or established institutional protocols re: cleaning requirements for endoscopy tower and procedure spaces.
- Catalog supplies repurposed to other clinical areas.

Endoscope processing equipment

- Prepare AER for long-term storage as described in AER manufacturer IFU. This may require running a disinfection cycle.
- Automated flushing pumps and attachments will require disinfection cycle – follow pump manufacturer IFU.
- Chemistries may need to be completely discharged/emptied from AERs - follow AER manufacturer IFU.
- Cycle off any/all automated equipment - as per equipment manufacturers' IFUs.
- Cycle off any/all lighted magnifiers.
- Cycle off any/all computers.

Processing areas

- Surface disinfection for all work surfaces.
- Multidisciplinary determination re: reprocessing versus disposal for reusable cleaning brushes before reopening (see re-opening considerations).
- Catalog supplies repurposed to other clinical areas.
- Manual disinfectant soak bins emptied, cleaned, and disinfected.

Processing chemistries (detergents and disinfectants)

- Multidisciplinary determination re: disposition for partially-used detergent containers.
- Ensure stored inventory for all chemistries meets local fire/safety requirements.

Documentation/Data

- Secure any/all processing documentation (electronic and/or paper).

IN ADVANCE OF RE-OPENING

Flexible endoscopes and storage

- Multidisciplinary determination re: re-processing flexible endoscopes before clinical use - taking into consideration institutional "hang time" policy.
- Disinfect storage cabinets - per established institutional protocol.
- Ensure storage cabinet HEPA filters have been replaced as per IFU.

Endoscopy procedure areas

- Focused disinfection for endoscopy tower and procedure spaces - to include reusable transport containers.
- Re-processing for any reusable endoscope buttons and valves left in procedure area.
- Evaluate/ensure adequate inventory/PAR for supplies.
- Review expiration dates for disposable precleaning supplies.

Endoscope processing equipment

- Multidisciplinary determination re: plumbing lines feeding AERs and decontam. sink lanes - whether needs to be disinfected after lying unused ("dead legs"). Consult with Infection Prevention and Facilities.
- Filters and pre-filters will need to be changed – for any/all applicable equipment - as per applicable IFU and institutional policy. NOTE: Filters may require changing sooner than normal due to plumbing sitting idle.
- Follow AER manufacturer IFUs for how to take out of long-term storage - may require disinfection after extended downtime.
- Multidisciplinary determination re: whether to perform microbial surveillance on rinse water in AER. Consult AER IFU and Infection Prevention.
- Perform standard QC for manual and automated leak testers - before first use.
- Perform standard QC and disinfection cycle for automated flushing pumps and attachments - follow pump manufacturer IFU.

Processing areas

- Multidisciplinary determination and institutional protocols assessment re: cleaning requirements for processing areas before re-opening.
- Surface disinfection for all work surfaces.
- Multidisciplinary determination re: reprocessing reusable cleaning brushes before first use.
- Evaluate/ensure adequate inventory/PAR for supplies.
- Check expiration dates on all cleaning supplies.
- Check expiration date of cycle test strips - for manual and automated processes.
- Disinfection for all reusable transport containers.

Processing chemistries (detergents and disinfectants)

- Check expiration dates on all chemistries.
- Evaluate adequate inventory/PAR for chemistries.

Documentation/Data

- Ensure processing documentation processes are reinstituted as per protocol.

Expanding beyond acute care walls

How do distribution, logistics processes adapt to more patients receiving care outside of the hospital?

by Rick Dana Barlow

Logistics services may concentrate on the journey of products and technology moving from manufacturer to consumer, but the heart of the matter remains the destination – products and technology at the point of use when needed regardless of location.

Over the years, the debate and discussion around deliveries and distribution to facilities and locations outside of the acute care hospitals has centered, by and large, on two primary issues – finance and operations.

Distributors of products and technology (including equipment) acknowledge that delivering supplies in lower units of measure to more facilities that may also operate in remote areas can be staff- and vehicle-intensive, which also translates into higher costs that can eat into revenues and drain profits. As a result, distributors tend to mark up the prices to those products that can be sold more cost-effectively in bulk and in greater number to hospitals, fomenting an industry outcry about price differentiation among the same products for different classes of trade.

Those in supply chain understand that it costs more to deliver fewer products to far-flung locations, but they also acknowledge that such awareness may not make the pricing justification acceptable.

Yet a number of industry developments may be unshackling this sacred cow of a practice.

First, healthcare reform, driven in part by payer reimbursement, is forcing more patient care to be delivered outside of the hospital and into ambulatory surgery centers, clinics, diagnostic imaging centers, doctors' offices, urgent care facilities, retail outlets and even more so to the patients' homes.

Second, more hospitals, in part as a reaction to healthcare reform, have coalesced into integrated health networks and multi-facility systems, acquiring these non-acute care facilities under their own corporate umbrellas. They may be horizontally, vertically or centrally managed by a corporate office.

Third, more third-party logistics (3PL) companies and services have entered the arena to compete alongside mainline distributors, specialty product distributors and durable medical equipment (DME) suppliers.

As a result, new rules, new processes and new players are reshaping the distribution service landscape for non-acute care facilities.

As patient care continues to migrate and spread out from acute care hospitals to the plethora of non-acute care sites – including the patients' homes – how are suppliers pivoting with the shifts? A half-dozen corporate executives immersed in the non-acute care segment offered their take on the current state of logistics outside of the hospital walls and how they saw it progressing during the next decade.

Reshaping logistics outlook

Experts agree that there's a fine line between distribution to hospitals and distribution to non-hospital entities represented by functional similarities done somewhat differently. To some this requires fresh thinking rather than applying the obvious on a smaller scale.

"It's still healthcare, but everything is different," muses Greg Colizzi, Vice President, Marketing: Health Systems, McKesson Medical-Surgical. "The migration of care to non-acute facilities, primarily driven by new reimbursement models and consumerism, requires rethinking the entire supply chain, from the sourcing of products to the logistical requirements of reaching hundreds or even thousands of delivery locations within a single provider network or health system. Providers and distributors have to juggle a diverse product portfolio, which can vary greatly by clinical specialty and require different licensure and a completely different operational model. Almost all of these care settings require low units of measure (LUM) for all the products they purchase, including home care where the packaging may need to address privacy concern. For the distributor, this means highly specialized pick, pack and shipping technologies and a more nimble delivery model."

Greg Colizzi

Bonni Kaplan DeWoskin, Vice President, Marketing and Strategic Partnerships, MedSpeed, points to non-acute care as part of a much larger picture rather than the end game.

"[This] represents the broader transformation healthcare has undergone over the past several years as we try to provide more holistic care to communities," DeWoskin indicated. "Accordingly, to effectively leverage their scale, nearly every health system we encounter is trying to unlock the secret of working as a single entity instead of a collection of disparate facilities."

Bonni Kaplan DeWoskin

Logistically, the shift to "systemness" represents a wealth of untapped value, according to DeWoskin.

"Before this COVID-19 outbreak, physically connecting acute locations with non-acute sites allows healthcare organizations to share inventory and reduce the cost of goods to the non-acute environment – not to mention a number of other potential efficiencies," she noted. "While that remains true, it feels even bigger and more important today. Healthcare organizations with solid, strategically-built logistics networks that are agile enough to quickly add sites of care – such as the new care tents we are seeing amidst this pandemic – are much better prepared to get supplies to where they need to be quickly and orderly."

The primary hurdle for distributor models, as DeWoskin views it, is that they historically have been built to serve hospitals.

"Many distributors have been re-thinking distribution strategies to better and more cost-effectively accommodate the non-acute care sites," she said. "For some, this includes partnering with third-party logistics (3PL) experts, such as MedSpeed. We certainly believe that this approach is the right way to leverage the final mile of low unit of measure distribution to non-acute sites. By using the existing network for these deliveries, distributors save costs and it unbundles transportation from the cost of goods sold for the health system."

Jeff Lawrence

To service either segment, a distributor or third-party logistics company must be able to pivot quickly and find a balance, emphasized Jeff Lawrence, Vice President, Business Development, Inventory Optimization Solutions (IOS).

"There are some that play in the acute care space that have pushed services down to

the non-acute, and those that focus on low-unit-of-measure (LUM) non-acute service," Lawrence said. "The acute care players are used to dealing at lower margins and are ready to pass along savings, especially when they also manufacturer their own products. But their capabilities to deliver to a single physician office or standalone clinic might not be cost effective or fit their logistics strategy and capabilities. The non-acute care-focused distributors have built their business delivering to small offices, but their cost structure to deliver those services can't align with the low mark-ups offered by acute care leaders, who may just want to squeeze out these suppliers. Their biggest hurdle becomes adequately demonstrating the value of LUM delivery with higher touch service."

The variety of demands and needs can complicate distribution to the breadth of non-acute care providers that span physician practices to surgery centers, imaging centers to urgent care centers, long-term care to home care, according to Richard Peters, Associate Vice President, Non-Acute, Vizient Inc.


Richard Peters

For example, long-term care facilities focus on culinary services or food, which makes up a large portion of their spending, while physicians need to make sure that they have supplies to see patients and deliver services related to their specialty, Peters noted. Surgery centers need commodities, surgical equipment, and high-cost implantable devices, and home care agencies need wound care and ostomy products.

"In those diverse sets of circumstances, traditional health system logistics have limitations but could work well in some non-acute settings," he observed. "However, we often find that there is a significant strain on resources and/or a high-level of non-acute provider dissatisfaction. The model generally works best when there are non-acute services conducted on the campus of a hospital and that organization leverages bulk delivery at the warehouse and then distributes products via self-distribution or courier services across the campus. However, even in these scenarios, we find many health systems are still working with a non-acute distributor to handle specific needs."

Collective continuity

Peters acknowledges that non-acute care providers are becoming more community-based and geographically dispersed, motivating health systems to evaluate alternatives that address non-acute logistical challenges. Peters recommends providers focus on six elements:

1. Identify the critical elements for each non-acute segment under the health system's care delivery network. What services are imperative for smooth supply chain operations?
2. Evaluate current distribution partners. Do your current distribution channels or partners have the capabilities and services that your non-acute providers require? Support services related to supply chain are key to success outside of the hospital environment.
3. Evaluate non-acute specific distribution. Non-acute focused distributors specialize in the unique needs of the various non-acute provider markets. As an example, does your home care agency need a distributor that can send products directly to a patient's home for treatment by their home care provider? Can they also send trunk stock to the nurses?
4. Understand the value and cost of low unit of measure (LUM) distribution in the context of non-acute provider needs and limitations. If you have product in a warehouse, how much are you spending to pick and package product and then get it out to your non-acute providers? Include expenses related to staff, vehicles, insurance, etc., into your consideration of non-acute distribution or 3PL services.
5. Asses the geographical footprint of your non-acute provider base. Does your current distribution model offer a cost-effective way to reach a geographically dispersed provider base?
6. Review your supply chain technology infrastructure. Is it financially feasible to implement the health system's central enterprise resource planning (ERP) system for visibility and control of supply chain ordering or would a non-acute supply chain solution that integrates with the health system's ERP system offer a better option? Does the central ERP system have the features and functionality to support non-acute provider need and satisfaction?

Even then distributors and 3PL companies face four key hurdles they must address, Peters insists.

- **Price parity.** "Many systems request that they pay the same contract price across all venues of care, which is challenging from a contract administration perspective.
- **Contract management.** "Related to price parity, the distributors must make sure that they can access the health system's contracts from any source (group purchasing, aggregation networks, local contracts, etc.)."
- **Ordering.** "Some non-acute providers may leverage the health system's technologies for ordering while others are buying on their own and directly through distributors' websites. Regardless of the technology, health systems are asking distributors to help control the purchases so that they align with clinical preferences and standards."
- **Provision of services under compressed margins.** "Health systems are seasoned negotiators and their wholesaler relationships have a lower cost than the non-acute LUM distribution model. However, non-acute providers still need more services, such as ordering or product shelving, to make sure they are optimizing their supply chain function."

Non-acute care settings call for changes in technology, logistics techniques and labor redirects to satisfy a service-intensive segment, according to Peter Saviola, Vice President, Sales Operations for Acute Care Sales, Medline Industries Inc. Saviola leads Medline's customer logistics team, providing consultative and logistical support to prime vendor distribution customers.


Peter Saviola

"As end-to-end service across the continuum of care evolves, with the goal of standardization regardless of care setting, service requirements into the non-acute space typically require a different order processing, inventory management and logistical infrastructure," Saviola said. "The main drivers are legacy ordering platforms, accuracy and cost.

"Non-acute facilities, and certainly patient homes, with limited space and lower inventories, rely on the distributor or partner to deliver the right item at the right time," he continued. To achieve a very high order accuracy rate, distributors must put in place more efficient systems with built-in order checking methods such as voice confirmation or weight verification system. Smaller orders, with smaller quantities of lower unit of measure items require far more efficient, lower cost, logistics. Items in lower units of measure each versus case goods require breakdown and repackaging for shipment and generally in smaller vehicles for delivery."

Labor costs to process LUM orders must be reduced through process improvement, Saviola insisted. "It's the same cost per hour to pick an each as it is to pick an entire case, therefore lower-unit-of-measure picking needs to be several times faster," he said. "For traditional distributors to stay competitive in the non-acute area, they should focus on highly efficient low-unit-of-measure distribution and delivery methods, such as robotics technology."

Think scale, according to Kenneth Cyr, Senior Director, Supply Chain Consulting, Intalere.


Kenneth Cyr

Hospitals have adopted the distribution and logistics strategies and tactics of their industrial and retail counterparts by leveraging cost savings through

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volume purchases and operational efficiencies through ready access to commonly used items, which historically has generated incremental improvements, Cyr indicated. But limited space and resources in non-acute care settings reduce access to these opportunities.

"Although some non-acute care facilities can retain some of these benefits by redirecting overall consumption to a reduced number of services provided, the volume-generated savings incentives normally offered to full-service acute care facilities are not readily attainable," Cyr said. "The loss of rebates, discounts and other volume-pricing incentives result in an overall increase in the costs of goods and services."

Shifting to LUM from case lot may sacrifice volume incentives but that tends to be offset by overall consumption decreases and the corresponding drop in inventory carrying costs, he noted.

Distributors justify higher per-unit item pricing to protect their margins, according to Cyr. "The cost of manually picking a specific number of items for distribution to the non-acute care setting erases the operational efficiency needed to lower overall distribution costs. These increased costs are passed to the healthcare facility to protect the operating margin of the distributor."

Access to product also affects costs.

"Unlike the standardized bill of materials (BOM) used to create manufactured items or the inventory mapping strategies based on consumer consumption in retail, the BOM for healthcare (the physician/surgeon preference card) for the same procedure can vary by user," he said. "In the acute care setting, this variation is accommodated through the development and maintenance of specialized inventory locations in close proximity to the point of care (the Core). Items delivered to the Core require additional processing designed to protect the sterility of the operating theater.

"In a non-acute care environment, space allocated to the Core could be reduced to optimize patient care areas," Cyr continued. "The corresponding reduction in inventory capacity increases the pressure on the distribution/logistics arm of the healthcare supply chain to adapt to unanticipated fluctuation in demand. Failure to deliver all items requested for a case at a moment's notice could impact the standard of care delivered to the patient or cause the cancellation of the case."

Stepping up

Process and service improvements can and should be adopted and implemented during the next decade, experts agree.

IOS' Lawrence predicts an alignment of supply chain best practices and supplier services.

"Provider organizations need help adopting processes that will make them more efficient and help drive down costs," he said. "The provider organizations that are growing their non-acute footprint usually have supply chain leaders who have worked in the acute space and can bring in best practices from those acute care organizations. Many supply chain best practices, like building process automation and creating enterprise-wide visibility, transfer easily from the acute to non-acute setting, and deliver value in any organization."

McKesson's Colizzi foresees two C's: Convenience-driven care by consumerism will continue to grow. "For McKesson this means there will be an increased need for automating processes that allow providers to focus on patients and a delivery model that supports a care-anywhere approach," he added.

"Most non-acute care locations do not meet the volume threshold to warrant a dedicated supply chain resource," lamented MedSpeed's DeWoskin. "Clinical and administrative staff at these locations are burdened with the extra function of tracking inventory and placing orders. Not only does this disrupt their core job, but it can also lead to mismanagement of inventory and non-standard ordering.Additionally, since the transportation expenses are bundled into the cost of goods, they are more expensive. A great improvement would be to create a better system for non-acute inventory that lowers costs and allows clinical and administrative staff to focus on patient care."

For Vizient's Peters, distributor transparency remains a must.

"It's the biggest challenge in the non-acute health care supply chain market, and it includes the availability of data, pricing and the cost of services," he said. "Let me clarify this further: Pricing can be determined by contracts from several sources, and it fluctuates a lot in some product segments. Pharmacy is an example. It is very hard for non-acute providers or health systems to gather and assess the mass of data for so many venues of care."

Real-time integration between clinical events and supply chain must be established for supply chain to measure and quantify utilization for fulfillment, according to Intalere's Cyr.

"Driving the supply chain as a byproduct of clinical activity is the first and most critical step in creating a proactive, patient-centered strategic supply chain resource for the organization," Cyr said. "By having the clinical event share supply utilization seamlessly across the entire continuum of the patient experience, the supply chain is not trapped in a reactive tactical approach to replenishment. Such data can be analyzed to identify trends, quantify supply spend as a component of clinical outcomes and streamline the clinical architecture by identifying utilization outliers and ineffective use of clinical resources.

Data should be used to formulate a "proactive procurement method" so that demand can be forecast, Cyr insists. "Do we really need to have the healthcare provider to order more burn kits in late June and early July before suppliers and distributors ramp up to meet this annual demand? I wonder what would have happened if such a network of interconnected clinical, financial and logistic key indicators were in place when the number of COVID-19 cases in China began to spike?" he asked.

Cyr calls for a system of dynamic checks and balances designed to manage operational oversight and seamless procurement models.

"As futuristic connection between clinical, financial and supply chain information systems impacts the need for human intervention in the procurement, logistic and financial systems and sub-systems, the need for systematic oversight increases," Cyr observed. "Oversight must be flexible to facilitate the efficient procurement of commonly used items while providing the framework for effective review and approval of other items when needed. The system must also track items to the most discrete level to support recalls and expired product proactively. Finally, the system must provide easy or even seamless recovery processes when mistakes are identified."

To drive costs downward and support the continuum of care, non-acute care facilities must strive for internal discipline while distributors get savvy, according to Medline's Saviola.

Providers must develop and adhere strictly to a formulary that involves standardization of product, he noted. Meanwhile, distributors should bundle deliveries by geography.

"Having multiple delivery vehicles in close proximity to each other that are less than full is not optimal," he said. "It's possible that deliveries to patient homes [could] turn into some mini 'hub and spoke' model utilizing some traditional distribution method tied into the local postal service for the last mile." HPN

Editor's Note: Find these related stories exclusively at https://hpnonline.com/21132374:

- *Should 3PL firms concentrate on non-acute care segment?*
- *Envisioning non-acute care distribution in 2030*
- *COVID-19 will reshape non-acute care distribution, logistics*

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AHRMM Is Here to Help

How COVID-19 fosters collaboration and creativity

by Karen Conway

When I sat down in early March to write the April edition of *Standard Practices* on the role of standards to support supply continuity, I knew we were facing serious shortages, but admittedly, I did not yet fully appreciate the enormity of the problem, nor the level of innovation it would generate. The world - and my thinking - have evolved considerably in a month's time and no doubt will again by the time you read these words in print. With that caveat in mind, here are some thoughts on how "necessity" as the "mother of invention" may have lasting implications for what will become new standard operating procedures in the healthcare supply chain.

As the guidelines for the use of personal protective equipment (PPE) and now ventilators continue to evolve to address ongoing shortages, there is understandable concern among healthcare workers on the frontlines of the fight against COVID-19. They want to know that the new guidelines are based on evidence, and not just shrinking inventories. Changes are particularly challenging for those of us whose mantra has been: reduce variation, in both products and process, to improve both quality and cost.

Faced with a global pandemic that has dramatically and simultaneously increased worldwide demand, while also straining underlying supply chain processes, both procurement and clinical leaders have been forced to look beyond the products, vendors and manufacturers they know well. This is not about switching from Product A to Product B, or from Vendor A to Vendor B; this is more often about finding completely new supply sources, and changing how products are used and even how they are made.

Here are a few lessons learned to date, along with some ideas to take forward after the worst of the crisis is over.

Create clear and constant lines of communication

As hospitals deploy new and often unfamiliar types of PPE to clinicians on the front lines and/or implement guidelines for the extended use or reuse of PPE, constant communication between procurement and clinicians is essential. Such communication is essential in the sourcing process to ensure clinicians have access to evidence about the clinically relevant attributes of products and the rapidly expanding knowledge around effective reprocessing of equipment such as N95 respirators. Clinicians, too, can play an important role in generating evidence from their real-world experience.

Some hospitals are realizing the benefits of having shared scenario-based contingency plans with clinical staff in advance. Others are rapidly deploying a multitude of communications vehicles to keep clinicians apprised of the changes. Whatever the process, standardizing how information is shared can make it easier for clinicians to absorb the information in high stress environments.

Beyond providing physical products for clinicians, supply chain professionals play an important role in delivering information that helps ensure frontline healthcare workers feel confident they have what they need to safely and effectively perform their jobs.

Don't source non-traditional vendors alone

The one thing that has not been in short supply during this crisis are vendors who claim to have qualifying products for sale. While some of these organizations are well-intentioned and legitimate, many other vendors and their business practices have been called into question. Vetting these potential suppliers is a critical step but also time consuming for overtaxed hospital sourcing and procurement teams to perform on their own. The Association for Healthcare Resource and Materials Management (AHRMM) and the American Hospital Association (AHA) are partnering with GHX, which is voluntarily screening these new players using its Vendormate compliance tools. Vendors passing the initial assessment are then posted on the AHRMM COVID-19 page.

Leverage a worldwide revolution in 3D printing

The COVID-19 pandemic has unleashed a truly global movement of manufacturing, from large automakers retooling production lines to manufacture masks and ventilators to organizations with 3D printing capabilities collaborating to produce testing swabs and cassettes, face shields, safety goggles, quarantine booths and parts to increase ventilator capacity. Even traditional manufacturers are getting involved. Medtronic is providing the plastic material to 3D printing company Stratysys to support its production of more than 15,000 face shields per week.

In addition to rapidly producing products in short supply, 3D printing is fast tracking new product innovations to meet critical needs. A design for a hands-free door opener from Materialise has already been downloaded 50,000 times, while a Saudi Arabian engineer has created a 3D printable wrist clasp that enables a user to dispense antiseptic gel without ever touching the bottle. Providers, too, are playing an important role. Prisma Health, the largest not-for-profit health system in South Carolina, collaborated with engineers at the University of South Carolina to use 3D printing capabilities to create a prototype of a device that will enable two patients to use the same ventilator. Prisma has received emergency use authorization from the FDA for the device, which is being produced by a major manufacturer for distribution to areas likely to exceed their ventilator capacity in the near future.

STANDARD PRACTICES

The COVID-19 pandemic has raised awareness of the importance of a resilient healthcare supply chain, as well as the highly complex nature of global manufacturing and the frailties of a system that has grown to depend upon a limited number of suppliers for both components and finished products. While exactly what will be done to shore up the supply chain by the myriad stakeholders remains to be seen, there is no doubt that the healthcare supply chain will undergo dramatic change. And based on new levels of collaboration and expanded use of technology, I am confident that we have what it takes to make the supply chain better for all involved. HPN

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.

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Healthcare Purchasing News
2477 Stickney Point Road, Suite 315B
Sarasota, FL 34231
Phone: (941) 259-0854
Fax: (941) 927-9588
Email: *krussell@hpnonline.com*

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Healthcare Purchasing News
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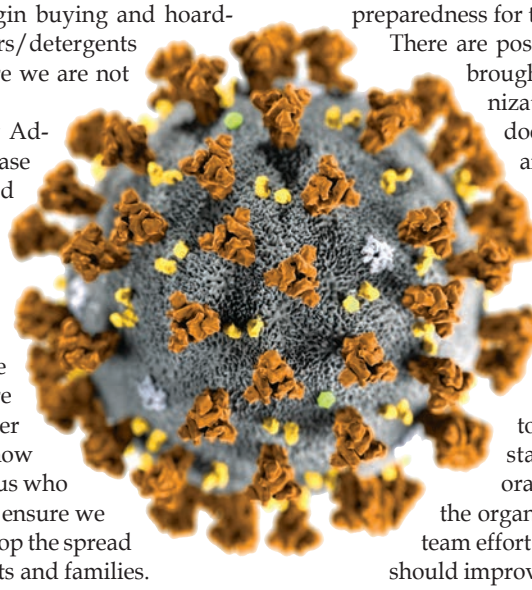
How is your SPD "quaranteam" faring amidst COVID-19?

by Jean Sargent

Media traced the novel coronavirus, known as COVID-19, to an outbreak that reportedly stemmed from a market in Wuhan, China in December 2019. Where were you when you heard about it? What was your reaction? I, like many others, thought, "oh no, look what is happening in China!" As we followed the news and watched people with the virus being forcefully pulled from their homes, we never thought the U.S., let alone the rest of the world, would be dealing with the virus and all of the disruption it has caused in our lives.

During the next few months, the speed at which the virus spread seemed like a tsunami pounding the coastline so quickly that we were unable to prepare for the rapidly rising floodwaters. How is the virus spread? How long does it last? How do we test for it? What kind of personal protective equipment (PPE) do we need? Do we need a different type of cleaner and detergent? What does the Environmental Protection Agency (EPA) suggest?

What happens when we do not have all – or as many of – the facts? Oftentimes we panic and begin buying and hoarding everything from PPE to cleaners/detergents to household items just to make sure we are not caught before any shortage emerges.



Experts from the Food and Drug Administration (FDA), Centers for Disease Control and Prevention (CDC), World Health Organization (WHO), Occupational Safety and Health Administration (OSHA) and the Department of Homeland Security, among others, have access and permission to release supplies in the national stockpile. The staff with direct patient contact were most afraid of not knowing whether they would contract the virus and how it would impact their lives. Those of us who support the frontline staff wanted to ensure we were doing everything we could to stop the spread of the virus to our colleagues, patients and families.

Questions abound

Some of the questions raised in SPD involved PPE: Do we need to wear N95 masks? The answer was no. Save them for the staff making direct patient contact. How often do we need to change attire? Same as always. Do I need to be notified if equipment returned is from a COVID-19 patient? No, we need to follow universal precautions. Do we need to use different cleaning agents and detergents? The manager should validate the cleaners/detergents in use kill viruses like the flu, chickenpox, Hepatitis B and C and HIV.

This downtime due to the reduced number of procedures provided many opportunities to update the department policies, etc. This was a great time to ensure your Instructions for Use (IFU) for products are up to date. Are you following the IFUs? Do you have the correct tools to clean, such as brushes, and appropriate packaging for the items? This was a great opportunity to take the time to clean the department, look for outdated supplies, update the PAR lists and acquire appropriate items to ensure the IFUs are being followed. Verify the department has a copy of each of the IAHCSMM, AAMI ST79 and TIR 68 manuals and that your policies and procedures follow the guidelines. This is also an important time for staff to engage in performing these types of assignments for which they do not normally get involved. This includes training and education on how the epidemic was felt, what changes occurred, what steps should have been taken earlier, how the information was acquired? All represent an opportunity to fill time as procedural cases are down and support preparedness for the next disaster that occurs.

There are positive ramifications in all of this. It has brought together all departments within organizations to have conversations about who does what – in detail – understanding how any changes in use of approved cleaning products, protocols, use of non-FDA-approved/cleared products, such as masks, proper use and reuse of PPE, and acquiring PPE masks from many vendors/lay people who are making masks that may not be FDA-approved/cleared. Do we accept this? And what functions are allowed to use these products – SPD or frontline staff? These decisions are made collaboratively. The importance of every role in the organization has now been highlighted. The team effort and the support from each department should improve future communications as long as we all continue to understand the different perspectives and needs by function and respect them. HPN

Jean Sargent, CMRP, FAHRMM, FCS, has nearly 30 years in leadership positions that span central service/materials and supply chain management in hospitals and healthcare systems, GPOs, service companies and consulting firms. Since 1998 Sargent also has been providing CS/SPD and Supply Chain education. She currently serves as Principal, Sargent Healthcare Strategies, is a member of Healthcare Purchasing News' Editorial Advisory Board and can be reached at jean@sargenthealthcarestrategies.com.

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