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Q: How does the $100 upgrade credit work?

A: For every new TAT-5000 thermometer purchased, Exergen will credit the hospital $100 each for every hospital grade ear or electronic thermometer taken out of service and sent to Exergen.

Q: Can I purchase through a distributor and still qualify for the $100 upgrade credit?

A: **Yes.** If the TAT-5000's are purchased through an authorized Exergen distributor, proof of purchase needs to be sent to Exergen to qualify for the $100 upgrade credit (or direct payment) to the hospital.

Q: What thermometers will be accepted for the $100 trade in credit?

A: Any hospital grade ear or oral/rectal electronic thermometer that is in currently in use at the hospital.

Q: What does a 1 year payback mean?

A: Since ear and electronic thermometers have operating costs of $300 or more per year per thermometer, and a TAT-5000 with the $100 upgrade credit will cost much less than $300 to purchase, payback on the Exergen purchase will be well under 1 year.

Q: What does the 100% reduction in waste mean?

A: Studies show that each staffed bed produces more than 30 pounds of waste per day. Included in that total are thermometer probe covers, broken probes/cables, and discarded thermometers.

Exergen requires zero disposables. If the TAT-5000's are returned for replacements, the returned units are recycled into refurbished units. The refurbished units are also covered by the Lifetime Warranty. The hospital has zero costs and zero waste after purchasing the Exergen TAT-5000.

Q: What does 100% reduction in operating costs mean?

A: Ear and electronic thermometers have annual operating costs to use, including probe covers necessary for each use, probe replacements from breakage, repair charges from limited warranties, user abuse, and significant biomed costs for in house service. This can run about $300 per year or more per thermometer in use.

Exergen TAT-5000 thermometers have zero operating costs. Disposables are optional and can be reused on the same patient. Under the Lifetime Warranty, Exergen will repair or replace at no charge.

Q: How often are the optional disposable probe caps used?

A: On average, the optional disposable covers are used on about 5% of temperatures taken. This is a negligible cost and waste compared to ear and electronic thermometers.

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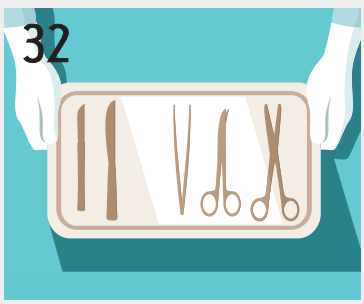

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DECISIVE

Pivot point

Not only kids say the darndest things. Sometimes even adults – besides H.L. Mencken, Will Rogers and Yogi Berra – can utter a clever bon mot in a curious way that makes you think.

One dual-degreed, highly intelligent physician executive was quoted in the healthcare trades encapsulating the industry as "riddled with mindless variation." If the "present progressive tense" verb in that phrase evokes "Bonnie & Clyde" imagery, you're not alone. The link between "riddled" and "variation" may be coincidence but no less creative.

However, what if variation really isn't the issue but the descriptor? Perhaps the real emphasis falls on the "mindless" adjective – akin to "unbridled."

Back in the 1990s healthcare reform movement, administrators and clinicians verbally dueled and sparred over the concept of clinical/critical pathways that critics and skeptics lambasted as "cookbook medicine" and "treat by numbers." The inherent flaw in such standardized methodology, of course, is that each patient's physiology is unique, reacting in different ways to myriad and sundry decisions and processes that can lead to varying outcomes – or even to "Happy Meal Healthcare packages."

Does that make the mindset wrong? Not necessarily. Does that make variability wrong then? Again, not necessarily. Technically, variability should be fine so long as you and your team remain intelligent and nimble enough to pivot while never truly "losing control." In effect, against the backdrop of a crisis like the recent pandemic, that should be the mantra of supply chain, arguably the engine of a healthcare organization.

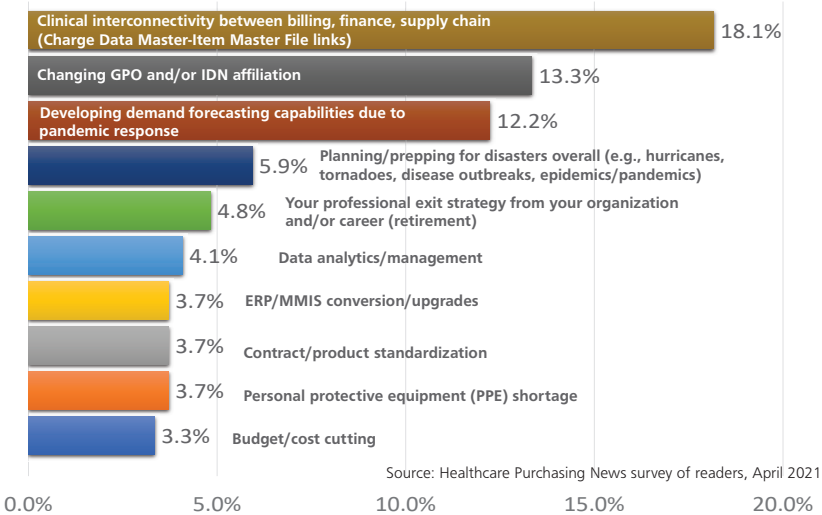
Imagine if real-life race cars operated like toy slot cars directed by a hand-held controller. As a kid, slot-car racing was fun because of the crazy wipeouts from squeezing the controller handle too hard, forcing the cars to fly too fast into the curves. For many adults, however, slot-car-style racing at the Indianapolis Motor Speedway or Daytona Speedway would be nothing more than a high-speed parade. And *really* expensive for all involved.

Hopefully, "mindless variation" doesn't breed "endless strategizing" to combat it. Nothing seems to bug Hall of Famer Doug Bowen more than "analysis paralysis." Bowen, who was inducted into Bellwether League Foundation's Hall of Fame for Healthcare Supply Chain Leadership in 2020, represents Phoenix-based **Banner Health, the 2021 Supply Chain Department of the Year**. Bowen, Vice President, Supply Chain Services, and his award-winning team, comprise an active group of doers who make things happen because they already had planned for them – including adapting for any detours and pivoting for variations.

Bottom line: On the surface, digging a groove may get you somewhere in the short term but nowhere in the long term way too quickly.

DATA BANK

What is your most pressing issue(s) to tackle for the rest of 2021 and into 2022? Here are the top 10 cited:



Source: Healthcare Purchasing News survey of readers, April 2021

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FAST STATS

An analysis of long-term trends in cancer death rates in this year's report shows that death rate declines accelerated in both males and females from 2001 to 2018

2.3%

was the highest rate of increase reported for liver cancer in females, however, this is a slower rate of increase than in previous years.

2.0%

was the largest rate of decrease for thyroid cancers in females.

2.2%

was the largest rate of increase reported for melanoma cancers in males.

2.5%

was the largest rate of decrease for lung cancers in males.

TWO-YEARS

was the relative survival time for advanced-stage melanoma cases diagnosed during 2001 to 2009, but it increased 3.1% per year for those diagnosed during 2009 to 2014.

<15 YEAR-OLD

cancer death rates in children continued to decrease and adolescents and young adults (aged 15-39 years) despite an increase in incidence rates from 2001 to 2017.

2.3%

was the decline per year in overall cancer rates for males during 2015-2018.

2.1%

was the decline per year in cancer rates for females during 2015-2018.

Source: NIH annual report to the Nation 2021: National trends in rates of new cancer cases, https://seer.cancer.gov/report_to_nation/infographics/trends_incidence.html

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NEWSWIRE

IAHCSMM announces name change to Healthcare Sterile Processing Association

Members of the International Association of Healthcare Central Service Materiel Management (IAHCSMM) cast their votes recently regarding a proposed name change from IAHCSMM to the Healthcare Sterile Processing Association (HSPA), with a tagline of "Professionals Instrumental to Patient Safety."

Upon reviewing the certified results from the third-party voting service provider Survey & Ballot Systems, the Association's Board of Directors announces that 82.3% of voting members voted in favor of the name change. A two-thirds "yes" vote by members who voted was needed for the name change to pass.

The switch from IAHCSMM to HSPA will officially take effect January 1, 2022. In the coming weeks and months, the Association will be updating its logo, corporate documents and marketing materials to reflect the new name and will continue communicating with membership throughout the process.

"For many years, discussions took place regarding a formal name change for the Association within the bylaws and articles of incorporation," said IAHCSMM Executive Director Susan Adams, BA, CAE. "We are excited to adopt a new name that more clearly reflects the profession and will help us better educate others about how Sterile Processing professionals impact patient safety. One thing that will not change is our organization's commitment to delivering the high level of support and services that our members and certification holders have come to expect over the past 63 years."

Three supply chain professionals to join Future Famers Class of 2021

Bellwether League Foundation's Hall of Fame for Healthcare Supply Chain Leadership announced it plans to recognize and welcome three professionals into the Future Famers Class of 2021 this fall. They join 30 earlier recipients of the honor.

The Hall of Fame's Future Famers recognition honors supply chain professionals making significant contributions to their organizations and industry during the first decade or so of their careers as "rising stars" in the profession. The Future Famers Class of 2021 includes the following individuals: Brian W. Murray, Assistant Vice President, Supply Chain Procurement, NorthShore University Health System, Evanston, IL; Pauline Oyer, CMRP, Strategic Sourcing & Operations Director, University Health, San Antonio, TX; and Bruce J. Radcliff, System Vice President, Supply Chain, Advocate Aurora Health Care, Milwaukee, WI.

All three represent archetypes of the next-generation supply chain leader, with deep ties in the clinical and information technology realms and who motivate colleagues to unite around common themes during a crisis. The Future Famers Class of 2021 will be saluted at the 14th Annual Bellwether League Foundation Induction & Recognition Event (BLFIRE), scheduled for Monday, October 4.

During a merger at the height of the pandemic in 2020, Brian W. Murray orchestrated and led an organizational merger of two distinct and prominent supply chain teams via communication, collaboration and coaching of internal staff, through assessing available resources and talent and fortifying partnerships with external organizations, all while navigating with extreme persistence and dedication through pandemic-driven supply demands, product shortages and operational disruptions.

When her organization was notified it had to upgrade its enterprise resource planning (ERP) system and then implementation and training started to go "sideways" Pauline Oyer took charge and responsibility, scoped out the mammoth migration task at hand, formulated a detailed plan, generated strategic support from major areas within the organization – including Supply Chain, Information Technology and the clinical areas that would use the system – and led a team to launch a successful conversion with another supplier.

Fortified with financial analytics experience at Disney Movie Club and U.S. Cellular, Bruce J. Radcliff brought those skills to healthcare to improve and streamline the strategic sourcing and acquisition of products, capital equipment and purchased services within service line silos. He developed clinician trust by serving as a physician mentor in leadership on supply chain operations and teaching about value-based purchasing and operations improvement at his organization's scientific research institute.

How immunity generated from COVID-19 vaccines differs from an infection

A key issue as we move closer to ending the pandemic is determining more precisely how long people exposed to SARS-CoV-2, the COVID-19 virus, will make neutralizing antibodies against this dangerous coronavirus, wrote Dr. Francis Collins in a post on the NIH Director's Blog. Finding the answer is also potentially complicated with new SARS-CoV-2 "variants of concern" appearing around the world that could find ways

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1. C. Trevellini, Connecting the dots: Pressure Ulcer Prevention and Safe Patient Handling. Poster presentation at National Pressure Ulcer Advisory Panel Biennial Conference, Orlando, Florida, United States of America, 2015
2. AHRQ – Preventing Pressure Ulcers in Hospitals. https://www.ahrq.gov/professionals/systems/hospital/pressureulcertoolkit/putool1.html
3. Cooper, M., et.al., Bundling for Change: Implementing Pressure Injury Prevention, Poster WOCN 2017 Conference

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to evade acquired immunity, increasing the chances of new outbreaks.

Dr. Colins said that a new NIH-supported study shows that the answer to this question will vary based on how an individual's antibodies against SARS-CoV-2 were generated: over the course of a naturally acquired infection or from a COVID-19 vaccine. The new evidence shows that protective antibodies generated in response to an mRNA vaccine will target a broader range of SARS-CoV-2 variants carrying "single letter" changes in a key portion of their spike protein compared to antibodies acquired from an infection.

These results add to evidence that people with acquired immunity may have differing levels of protection to emerging SARS-CoV-2 variants. More importantly, the data provide further documentation that those who've had and recovered from a COVID-19 infection still stand to benefit from getting vaccinated.

These latest findings come from Jesse Bloom, Allison Greaney, and their team at Fred Hutchinson Cancer Research Center, Seattle. In an earlier study, this same team focused on the receptor binding domain (RBD), a key region of the spike protein that studs SARS-CoV-2's outer surface. This RBD is especially important because the virus uses this part of its spike protein to anchor to another protein called ACE2 on human cells before infecting them. That makes RBD a prime target for both naturally acquired antibodies and those generated by vaccines. Using a method called deep mutational scanning, the Seattle group's previous study mapped out all possible mutations in the RBD that would change the ability of the virus to bind ACE2 and/or for RBD-directed antibodies to strike their targets.

In their new study, published in the journal *Science Translational Medicine, Bloom*, Greaney, and colleagues looked again to the thousands of possible RBD variants to understand how antibodies might be expected to hit their targets there. This time, they wanted to explore any differences between RBD-directed antibodies based on how they were acquired. First, they created libraries of all 3,800 possible RBD single amino acid mutants and exposed the libraries to samples taken from vaccinated individuals and unvaccinated individuals who'd been previously infected. All vaccinated individuals had received two doses of the Moderna mRNA vaccine.

This vaccine works by prompting a person's cells to produce the spike protein, thereby launching an immune response and the production of antibodies. By closely examining the results, the researchers uncovered important differences between acquired immunity in people who'd been vaccinated and unvaccinated people who'd been previously infected with SARS-CoV-2. Specifically, antibodies elicited by the mRNA vaccine were more focused on the RBD compared to antibodies elicited by an infection, which more often targeted other portions of the spike protein. Importantly, the vaccine-elicited antibodies targeted a broader range of places on the RBD than those elicited by natural infection.

These findings suggest that natural immunity and vaccine-generated immunity to SARS-CoV-2 will differ in how they recognize new viral variants. What's more, antibodies acquired with the help of a vaccine may be more likely to target new SARS-CoV-2 variants potently, even when the variants carry new mutations in the RBD.

It's not entirely clear why these differences in vaccine- and infection-elicited antibody responses exist. In both cases, RBD-directed antibodies are acquired from the immune system's recognition and response to viral spike proteins. The Seattle team suggests these differences may arise because the vaccine presents the viral protein in slightly different conformations.

Also, it's possible that mRNA delivery may change the way antigens are presented to the immune system, leading to differences in the antibodies that get produced. A third difference is that natural infection only exposes the body to the virus in the respiratory tract (unless the illness is very severe), while the vaccine is delivered to muscle, where the immune system may have an even better chance of seeing it and responding vigorously.

Whatever the underlying reasons turn out to be, it's important to consider that humans are routinely infected and re-infected with other common coronaviruses, which are responsible for the common cold. It's not at all unusual to catch a cold from seasonal coronaviruses year after year. That's at least in part because those viruses tend to evolve to escape acquired immunity, much as SARS-CoV-2 is now in the process of doing.

The evidence continues to suggest that acquired immunity from vaccines still offers substantial protection against the new variants now circulating around the globe.

The hope is that acquired immunity from the vaccines will indeed produce long-lasting protection against SARS-CoV-2 and bring an end to the pandemic. These new findings point encouragingly in that direction.

SHEA and others say COVID-19 vaccines should be required for healthcare personnel

Hospitals and other healthcare facilities should require employees to be vaccinated against COVID-19, according to a consensus statement by the Society for Healthcare Epidemiology of America (SHEA) and six other leading organizations representing medical professionals working in infectious diseases, infection prevention, pharmacy, pediatrics, and long-term care, announced the society.

The paper specifies exemption for those with medical contraindications and some others circumstances in compliance with federal and state laws.

"The COVID-19 vaccines in use in the United States have been shown to be safe and effective," said David J. Weber, a member of the SHEA Board of Trustees and lead author of the statement. "By requiring vaccination as a condition of employment we raise levels of vaccination for healthcare personnel, improve protection of our patients, and aid in reaching community protection."

SHEA convened a multiorganizational panel of experts in infectious disease prevention, law, and human resources, with representatives from The Society for Post-Acute and Long-Term Care Medicine (AMDA), The Association for Professionals in Infection Control and Epidemiology (APIC), the Infectious Diseases Society of America (IDSA), the HIV Medicine Association (HIVMA), the Pediatric Infectious Diseases Society (PIDS), and the Society of Infectious Diseases Pharmacists (SIDP). The panel conducted an eight-week review of evidence on the three vaccines authorized for use in the United States, vaccination rates, and employment law to develop the statement.

Research shows that prior to the pandemic, rates of routine vaccinations among healthcare providers were suboptimal. For flu vaccination, when healthcare employers instituted policies of influenza vaccination as a condition of employment, compliance rose to 94.4% compared to 69.6% in organizations without a requirement.

The statement explains what to consider in developing a policy of COVID-19 vaccination as a condition of employment, including a thorough overview of current vaccines' safety and efficacy, legal considerations, ways to engage stakeholders and improve vaccination rates before implementing a policy of vaccination as a condition of employment, and advantages to having a fully vaccinated workforce. HPN

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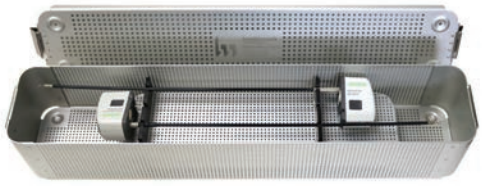

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2021 SUPPLY CHAIN DEPARTMENT OF THE YEAR

It's a Banner year for Supply Chain

Phoenix-based team pushes through pandemic with progressive operations that put patient first

by Rick Dana Barlow

If the Supply Chain Services team at Banner Health ever decided to bottle up, package and market a secret strategic and tactical formula for their clinical, financial and operational success – which they don't intend to do and won't because they don't believe in one anyway – the mindset would encapsulate a simple tenet.

Nothing earth-shattering or astoundingly profound: They never let process or product get in the way of patients and people.

Believe it or not, Banner Health's Supply Chain strategic plan can trace its roots back some two decades earlier, according to Doug Bowen, Vice President, Supply Chain Services. In fact, Bowen attributes the success of his award-winning team to "consistent, dedicated and purposeful work," the hallmarks of leadership and service to achieve a "highly effective supply chain." [Editor's Note: Learn more online, *"Banner Health's Supply Chain Services team shares mindsets, milestones that motivate success within their enterprise."*]

Bowen's team views much of what typically can be classified as "supply chain responsibilities," such as evaluating, contracting, purchasing, storing, moving, maintaining and replenishing equipment and supplies, as tactical outgrowths of a quartet of key strategies.

Perfecting the customer experience represents one of the four strategies, exemplified in part by a "digital front door" that enables customers – and patients – to use computers, smart phones and apps to access medical records, schedule appointments, check in for procedures, consult with clinicians and pay bills, among other functions. Although Information Technology may be responsible for such technology, Supply Chain engineered its own carve-out on which to focus.

Enter Sofia, the quintessential customer on whom Supply Chain concentrates all its activities and bases its overarching motivation and philosophy.

"Sofia is our customer, and we work to serve her and her extended family," Bowen said. "Supply chain is not just a department. It is a practice that extends beyond the designated supply chain department walls to serve Sofia and her family, whenever and wherever she needs healthcare. Banner Health's Supply Chain Services team champions supply chain practices and initiatives to better serve Sofia. Our focus is on quality, outcomes and cost." Bowen punctuates the distinct order of issues in his last sentence by emphasizing essential high-quality, cost-effective supplies.

Banner Health's winning Supply Chain team:
Row 1: Darcy Aafedt, Linda Wong, Heidi Collum, Denise Robson, Diana Zoreily, Samantha Allison-Greene and Stacy Wheeler
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Row 4: Chris Morris, Doug Bowen, Simeon Skavhaug, Drew Bailey, Paul Zahn, Troy Eckert, Mike McCoy, Michael Smith, Ricky Gammon, Manny Ornelas, Derek Milligan, Greg Moore, Austin Passarelli

All photos courtesy: Sean Logan, Banner Health PR

Bowen assures that Sofia is real, representative of the people that Banner Health serves, and not some archetypal or digital avatar/concept used to impact staff behavior and performance.

"Sofia is short of time and money, and coordinates care for herself and her extended family," he described. "Sofia asks the question, 'what can Banner Health do to make my life easier?' If we design care to make things easier for Sofia, we can make life better for the thousands of people who interact with us each day.

"Sofia is real and she is often invited to appear at our leadership meetings to remind us that everything we do revolves around a customer, and we must continually strive to design and provide care that meets and exceeds Sofia's expectations," he added.

"Banner Supply Chain indirectly perfects the customer experience by collaborating with our clinical team to ensure they have what they need to successfully care for Sofia and her family," Bowen continued. "We work to protect our team so that instead of worrying about supplies or worrying about being protected in caring for patients, they may focus on the care they need to provide our patients."

Helping customers be their healthiest represents another of the four strategies.

"We are change champions that collaborate, communicate and innovate to optimize network value for our patients, payers, providers and suppliers, using a fully integrated supply chain model," Bowen indicated. "Just like healthy living must be a continuous practice, supply chain must be a continuous practice. At Banner Health, supply chain is a way of operating. Selecting high-quality, cost-effective supplies, services and technology ensures our customers' experience the very best patient care."

Supply Chain Services embraces a "triple aim" as the vision driving the team, according to Bowen. The triple aim encompasses reducing the cost of care, improving the experience of care and improving population health. "Improving the experience of care is designed to have a positive impact on both the caregiver and the patient," he noted. "Providing products and services that make the caregiver's job easier is a force multiplier that enables a positive patient experience."

Engaging and inspiring its people and growing its reach and impact are the remaining two strategies, fueled by top-down communications from senior leadership as to objectives, progress and successes, according to Bowen. Supply Chain Services also recognizes and understands where it fits within the machinations of Banner Health's operational core.

"While we excel in supply chain practices, we know we need to collaborate and engage with frontline team members because they are the experts in their area," Bowen noted. "Working collaboratively creates additional support for our philosophy where supply chain is everyone's business. We openly encourage idea sharing to reduce supply expense and identify supplies with the best cost, quality and outcomes.

"We engage and inspire our team through frequent and repetitive communication that includes opportunity for dialogue, and by focusing on doing what is important to achieve our mission," he continued. "While workstreams are numerous and goals change over time, our focus on our higher strategy is what binds and engages our team to be 'one supply chain'."

Formed in 1999 from the merger of Samaritan Health System and Lutheran Health Systems, Banner Health spent the next two decades expanding and growing exponentially, Supply Chain Services being no exception. What's noteworthy is that Banner Health generated $1.5 billion in revenue during its first year in operation and grew that more than sevenfold to $11 billion last year. To put this growth in perspective, Banner Health now spends more on just supplies ($1.6 billion) than its entire first year's revenue stream ($1.5 billion).

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Banner Health

Fast Facts

Headquarters: Phoenix, AZ

Facilities: 32 hospitals and medical centers spanning six states – Arizona, California, Colorado, Nebraska, Nevada and Wyoming

Statistics	2020	2021 Annualized
Licensed beds	6,324	6,337
Staffed beds	5,800	5,800
Inpatient admissions	273,987	263,058
Surgical cases	140,789	148,038
Outpatient encounters	7,424,642	7,633,122
Emergency room visits	2,393,778	2,319,762
Clinic visits	5,361,482	5,711.130
Babies delivered	33,227	29,662
Total net revenue	$10.4 billion	$11.6 billion

Leadership

- CEO – Peter Fine
- CFO – Dennis Laraway
- COO – Becky Kuhn

Supply Chain Division

Vice President, Supply Chain: Doug Bowen

Joined organization: 2002

Previous position: Supply Chain Officer, HCA North Texas Division, Dallas TX

Started supply chain career: Started with HCA in 1985 as Assistant Materiel Manager, stocking shelves, delivering orders and discovering that caring for caregivers is very meaningful and fulfilling work!

Managers (at Banner Health): Vice President has 5 direct reports: Paul Oppat, Executive Director of Supply Chain Operations; Mike Halmrast, Executive Director of Supply Chain Contracting; Denise Robson, RN, Clinical Supply Senior Director; James Hutchinson, Senior Director, Supply Chain Information Systems; Gregg Lauder, Senior Director, Capital Equipment

Employees/FTEs (at Banner Health): More than 54,000 for Banner Health, 472 FTEs for Supply Chain

Conduit to CEO: Report to CFO, who reports to CEO

GPO affiliation(s): Supply Chain Value Network (SCVN) and Premier

Annual purchasing volume/supply expense FY2020: $1.6B in supplies; $580M in purchased services contracts; $2.1B cumulative.

Annual purchase order volume FY2020: 263,474

Percentage of purchase orders transmitted electronically: 65% EDI/85% EDI/Email

Percentage of requisitions processed electronically: 99.7%

Division functions: Supply Chain Operations, Strategic Sourcing, Clinical Supply Alignment, Capital Equipment, Supply Chain Information Systems Technology, Supply Chain Contracting, Inventory, Internal Medical Supply Distribution, Pharmacy Services, Procurement, Surgical Pack Manufacturing, Mail Services

Purchasing and contract management: Centralized

Total annual operating expenses FY2020: $10B

Total net revenue: $10.4B

Source: Banner Health, July 2021

2021 SUPPLY CHAIN DEPARTMENT OF THE YEAR

Banner Health Supply Chain team salutes supplier partners

Who supports an award-winning healthcare supply chain organization? Banner Health's Supply Chain team appreciates the product and service companies that have helped them develop and improve their operations and performance. The team shines a spotlight on 19 below that have motivated and fortified them to make a difference and succeed.

Above and Beyond came on board to help Banner with movement of critical equipment between our facilities at all hours of the day.

Ace Express assisted with countless urgent requests to transport critical supplies from our distribution center to many facilities across the state of Arizona.

Agiliti aided us in locating various pieces of rental equipment, such as beds, ventilators and infusion pumps.

American Contract Systems (ACS) supplied custom sterile kitting and sterilization packs that were critical to continue to meet our surgical needs, especially as surgical procedures opened back up and demand increased.

Arjo assisted in bringing in rental beds from various parts of the country so that we could make sure we had the quantity of beds needed to meet our surge capacity.

AZ Fashion Source pivoted quickly to manufacturing reusable isolation gowns.

Big AZ Tents supplied tents for the vaccination sites and triage centers. Many of our hospital Emergency Departments were so swamped that we set up triage tents to better handle the high volume. See http://bannerhealth.mediaroom.com/triagetents.

Cardinal Health's Optifreight coordinated and expedited the shipment of critical equipment as well as supplies.

Crothall worked 24/7 – including Christmas Day and New Year's Day – to provide clean reusable isolation gowns and patient linens.

Dirck's supplied overflow storage of critical PPE products to help assure Banner had the appropriate amount of supply to keep our staff safe.

Falcon Corp. pivoted quickly to manufacturing reusable isolation gowns.

Freedom Medical helped with locating various pieces of rental equipment, such as beds, ventilators and infusion pumps.

Halyard Health (part of the Owens & Minor family) came up with creative solutions for PPE supplies, such as masks and gloves, and ramped up products for surgical packs.

Hillrom listened to customer feedback and adapted to new challenges.

Intuitive Surgical created AMP, an innovative way to obtain and pay for robotic technology.

Med One supported Banner's early needs for renting respiratory equipment and IV pumps when our local rental companies were not able to support our usage.

Premier S2S offered nimble and expedited direct sourcing support that allowed Banner to quickly find PPE and other supplies that were just not available from conventional sources.

Prestige Ameritech became a domestic source for supplying procedure masks and N95 masks, both which were in short supply considering exponential increases in demand.

Standard Textile worked with Banner to locate prewashed linen to meet surge in linen utilization.

Since 1999, Supply Chain Services expanded its warehouse space to create a mammoth Consolidated Service Center (CSC) that also incorporates Accounts Payable, Biomedical Engineering and Pharmacy Services, among others. They added pharmacy robotics and mail-order prescription services, pharmacy distribution and compounding services, surgical kit packing manufacturing and sterilization operations, high-density pallet storage with automated shuttling and its own internal group purchasing organization (named Supply Chain Value Network) to support its growing number of facilities that are augmented by its membership in Premier.

While they used their clinically integrated model to support a patient-driven value network so that caregivers could concentrate on saving lives, according to Bowen, they remain "data-driven, disciplined in cost controls and results-oriented." Despite inflation and increasing industry cost trends, Supply Chain has produced year-over-year cost improvements, he added.

Last year, the Supply Chain Services team faced perhaps its most intense crisis yet with the onset of the COVID-19 pandemic – and it bobbed and weaved, but never buckled to justify its reputation within the C-suite as a "highly effective supply chain" that senior management moved quickly to leverage for financial health and liquidity and to establish crisis-command and operations bases for the community. In May 2020, the organization joined with Premier and 14 other Premier members to acquire a 20% investment stake in Prestige Ameritech to ensure availability of exceedingly high-demand N95 masks.

For these reasons, **Banner Health** has earned *Healthcare Purchasing News*' **"2021 Supply Chain Department of the Year"** honors.

[Editor's Note: Read more online, "*Banner Health leaders spotlight Supply Chain service expansion, fortification*" and "*Pandemic fuels pivot to sustainable process innovations for Banner Health.*"]

Crisis with confidence

While a crisis can make or break an individual or organization, in Banner Health's case – Supply Chain Services specifically – the pandemic crisis served to define them and reinforce their reputation as a highly effective operation.

"A highly effective supply chain is one that consistently produces the desired results for the patient and the enterprise," Bowen characterized. "A highly effective supply chain can quickly respond to critical needs and do it in a way the meets Sofia's needs while improving outcomes and reducing costs. A highly effective supply chain can also handle multiple complex challenges at the same time."

Banner Health's C-suite witnessed Supply Chain Services' transition and transformation from the start through two decades of progress, according to Paul Oppat, Executive Director, Supply Chain Services.

"Banner's Supply Chain continuously improves, innovates and demonstrates annual results," Oppat noted. "As 2020 hit, senior leaders were confident in the immediate response and reliable performance from our Supply Chain. We immediately took actions to leverage our existing strengths.

"With the growing threat of a pandemic, Supply Chain Services was part of the early and ongoing execution of our pandemic preparedness and response plan," he continued. "Our senior leaders understood the value of the supply chain and how our pandemic response would require extraordinary supply chain performance. Some of this was self-evident to all, but our preexisting and strong partnership with senior leaders made the response to the pandemic more effective."

Bowen recaps his team's progress during the last two decades as more evolutionary and organic.

"We are continuously looking to improve our operations," he said. "We started with what we knew and with each new development it was an opportunity to learn and grow and increase our ability to better serve our team members and patients. Our growth and ability to generate revenue ensures we are not just an overhead cost of doing business, but instead a resource to leverage. We discovered that our CSC was not just a location for doing business. It was actually a new business model for the supply chain."

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2021 SUPPLY CHAIN DEPARTMENT OF THE YEAR

Chance Redman picks an order from the pallet on the forklift.

Jose Aispuro speeds along to pick up another pallet to put away.

Jacob Taylor picks an order from the shelves.

Victor Carbone and Steve Salazar break down pallets.

Products brought into Banner Health's AZDC for COVID-19 response.

While Banner Health's Supply Chain Services team embraces clinical integration, Bowen acknowledges that the definition of the term can be easily customizable. But he knows what works for Banner Health clinicians and Supply Chain Services.

"A clinically integrated supply chain incorporates the contributions of all that it impacts – clinicians, physicians, vendors, end users, support operations, administration, tech management, etc.," he explained. "Integration is key to the definition. Banner clinicians are integrated into every facet of the decision-making process. From the initial request, review of product(s), approval and finally the outcome follow-up using a make-good analysis. It is common for many healthcare systems to neglect to complete the make-good analysis over time and thus continue using products and practices that are no longer clinically integrated and less than optimal."

Clinically integrated leadership

As much of the nation started recognizing COVID-19 as a pandemic in mid-to-late March 2020, implementing protective measures, such as quarantining and regulating availability of "non-essential services;" managing personal protective equipment (PPE) and sanitizing product access and consumption; and navigating policy waves, Banner Health already was two full months into its operational response. Think less acceleration and more cruise control.

Bowen credits Banner Health's Chief Medical Officer with the foresight. The organization activated a multi-disciplinary group, dubbed the "PPE Cabinet" in late January 2020 in anticipation of supply chain disruption and also to improve preparedness for future surges that may be unrelated to COVID-19.

"Dr. Marjie Bessell is very proactive, and her Magic 8 ball was right on target," Bowen asserted. "She was reading the early reports on the outbreak and immediately took action. She assembled the newly formed PPE Cabinet right away to begin scenario planning and discussions. At that point in time, in late January, we just called it 'the virus' as COVID-19 received its name on Feb. 11, 2020."

Bowen's team set five goals for itself:

1. Understand inventory availability and days-on-hand prior to and during hospital volume surges.
2. Act as a rapid approval source for alternative supplies and sources.
3. Clarify and expedite expected product delivery from direct sources and distributors.
4. Reallocate (rebalance) inventories between facilities to match patient volume and criticality.
5. Assure the full capabilities of Banner Health's Consolidated Service Center are enabled.

If anything, the pandemic drew clinical and business stakeholders closer together as they related to emergency preparedness, helped them balance risk analysis related to clinical preparedness and financial performance and gave them a better understanding of non-acute needs during a crisis, according to Bowen.

"The pandemic experience has provided us with two valuable lessons learned," he said. "Know what you are capable of and also know what your limitations are."

Tower that empowers

Taking a cue from air traffic controllers that require visibility of flight patterns, Banner Health instituted a "Supply Chain Control Tower" model to increase visibility over operations to pivot when necessary, according to James Hutchinson, Senior Director, Supply Chain Services.

"Faced with several natural disasters over the last several years [that] had a direct impact on our supply chain, we began

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Supply Chain team huddle: Paul Oppat, Carol Dean, Chris Box, John Candito, Drew Bailey, Paul Zahn, Doug Bowen, Troy Eckert and JD Stout

Supply Chain team working from home via Microsoft Teams:
Column 1 (top to bottom): Jackie Perea, Mark Abrams, Mike Halmrast
Column 2: Doug Bowen, James Hutchinson, Gregg Lauder
Column 3: Paul Oppat, Denise Robson, Paul Zahn, Ethan Donaldson
Column 4: Jessica Carrillo, Lyndsay Lynch, Kim Deyo, Heidi Collum

developing the control tower concept," Hutchinson said. "It has been a way for us to visualize potential failure points within the supply chain from manufacturer of supply to final patient consumption while developing mitigation strategies to overcome each while remaining focused on the end-to-end fulfillment cycle."

Because the pandemic further demonstrated the need for greater visibility and modeling of supply data, Supply Chain Services embarked on a multi-year initiative to institute "highly interdependent digital capabilities through 360-degree oversight across the supply chain continuum." This will enable them to minimize – if not eliminate – operational risk as local and globalized markets, and logistics are compromised, according to Hutchinson.

As customer demand becomes more volatile, and supplier and inventory status are disrupted, service providers must pursue a more dynamic and holistic response involving "supply management, smart automation, and advanced analytics utilizing a combination of digital technologies to bring visibility to and continuously improve upon value capture throughout the source-to-settle lifecycle," he added.

Hutchinson reveals they plan to implement a managed supply formulary, virtual procurement interface and digitally guided buying. "The intent is to use technology and data efficiently and reliably to allow for easier strategic pivots in an unpredictable time and environment," he added.

Might this represent the future and next wave of supply chain development? Maybe, Hutchinson says.

"Tech is moving fast, and our business model needs to stay current to keep up," he said. "Advances in digital technology, artificial intelligence and robotic process automation have and will continue to change the way that supply chain does business and interacts with customers. On-premise supply chain technologies of the past are making way for federated cloud-based digital technologies that can scale and move at the speed of business giving decision makers real time information to improve the business and magnify the impact of the supply chain."

Strategic blinking

Discussions with Bowen reinforce that he's a doer striving to get things done. The idea of spending less time creating strategy and more time executing the strategy represents an important teaching and learning element for him.

"When you do strategic analysis, you identify where you want to go or what you want to be," he told *HPN*. "At that time, you need to decide how you are going to get there and what you will need to get there. Once those resources are identified, you need to put a plan together that gets you on the road to achieving your objectives. At Banner, our CEO, Peter Fine, continually reminds us to 'plan the work, and then work the plan.' The secret is in 'working the plan.' In reality, working the plan is sometimes so difficult, so time consuming and so tedious that some leaders – and teams – are tempted to go back to the drawing board to create a new plan that might be easier work. When this bad cycle is repeated, you will find analysis paralysis."

To continually move forward, Bowen reminds himself of an old saw, "Stick to your task 'til it sticks to you; beginners are many, but enders are few." HPN

There's more to the story. Read on:

Banner Health's Supply Chain Services team shares mindsets, milestones that motivate success within their enterprise, https://hpnonline.com/21230066

Banner Health leaders spotlight Supply Chain service expansion, fortification, https://hpnonline.com/21230068

Pandemic fuels pivot to sustainable process innovations for Banner Health

by Rick Dana Barlow

Ask Doug Bowen, Vice President, Supply Chain Services, at Phoenix-based Banner Health about the foundational development and success of his award-winning team and he'll attribute it to three process changes that have since become permanent: Migrating toward reusable products from disposables, moving toward local sourcing from global sourcing and shifting to a "more balanced scorecard" from cost savings as the department's measure of success.

Bowen punctuates the decades-long industry debate about reusables versus disposables with data.

During the first pandemic surge in the Spring of 2020, Banner used an entire shipping container of disposable isolation gowns each week, which amounted to 1.3 million gowns per month. "We were at risk of running out, and we were determined to keep our customers, the caregivers, safe," he stated. "So we migrated from disposable to reusable isolation gowns to reduce dependence on single-use, globally sourced products. The project focused on implementing reusable isolation gowns as a permanent solution to safely protect the caregivers while also being sustainable."

In sourcing gowns and material, Banner faced a lack of product, long lead times and product quality not meeting the clinical attributes identified by the team. As a result, they sourced medical grade fabric and partnered with local fabricators to manufacture Banner's gowns, according to Bowen. They also purchased ready-made gowns and altered them to Banner's gown design to maintain consistency and customer trust.

"The reusable gown project team worked closely with end users to design and manufacture a product that met their specifications," Bowen said. "Then they stayed in close contact with the first pilot site hospital end users and leadership to get more feedback. The early feedback was very positive. The nurses felt better protected. So we were thinking at that time that if the rollout to the rest of the hospitals was also positive, we could make this a permanent solution.

"Unprecedented high demand for isolation gowns during the surge highlighted the importance of a solution in a time where inability to provide protection to our caregivers was not an option," he continued. "We saw the national news stories about the nurses in New York wearing trash bags and we were determined to avoid that situation. Pivoting from disposable to reusable provided a sustainable and long-term option. Caregivers acceptance and appreciation for the reusable gowns was shared openly and often with Supply Chain, Nursing Leaders and Senior Leaders. Feedback for Banner's reusable gowns showed the caregivers felt more protected than the variety of disposable gown options they experienced in the past."

Bowen acknowledges the skeptics who may say that switching to reusables and sustainability is just a cost shift from paying for disposables and waste because you have to invest in laundry operations and labor as well as price increases/surcharges for recycling and recycled products.

"I would encourage each decision-maker to evaluate the advantages of a reusable program," he insisted. "Even if you break even or spend more at the beginning, the reusable solution provides community benefit – more business to your local laundry provider – and environmental responsibility – less waste to your local landfill. The reusable isolation gowns are higher quality, better protection for the caregivers, better for the environment and – in our experience – a better value than disposables."

So far Banner Health uses 80% reusable isolation gowns and 20% disposable gowns, Bowen noted. "We have some hospitals outside of Arizona that do not have a laundry provider that can accommodate the reusable isolation gowns, so they remain with disposables," he said. "Also, we have some areas with low volumes that remain with the disposable gowns. We keep a backup supply of both reusable and disposable isolation gowns."

Bowen acknowledges the variability in dollar value between reusable and disposable gowns but appreciates the ROI they achieve. "The cost of disposable isolation gowns has moved up and down, while the cost per use of the reusables gowns has been steady," he added. "Banner has experienced an average cost savings of 35% with the reusable isolation gowns." In addition, the program extended Banner's days-on-hand inventory to more than 90 days supply from a low of 10 days.

Local versus global sourcing also carries with it considerable volatility in terms of product access, availability, price and security, but the short-term gains can be extended to long-term returns by moving away from a "cost-savings" model exclusively, Bowen emphasizes.

"If the only measure of success for the supply chain is cost savings, the supply chain will likely continue to chase pennies around the globe," he said. "However, if local sourcing, product access and availability, community benefit, agility and resiliency can be added as measures of success – along with cost savings – then the supply chain can succeed with a more balanced scorecard."

Of course, convincing the C-suite to move away from cost savings as the definitive barometer of supply chain success can amount to a major hurdle in and of itself, Bowen recognizes. But he emphasizes one key word – balance.

"I think the key is to promote the additional measures of success along with cost savings to create a new, more balanced scorecard for the supply chain," he asserted. "The additional measures can be added over time at deliberate speed to maintain efficient operations and be more effective by achieving the desired outcome of a more balanced supply chain scorecard."

The pandemic motivated everyone – from the C-suite through Supply Chain Services through the entire organization – to expand thinking beyond the convenient, obvious and typical, Bowen adds.

"During the pandemic, there was no discussion about saving cost," he insisted. "The discussion was all about saving lives. To save lives, we worked to find alternate solutions for products that were not available, and we focused on listening to and caring for our caregivers – and excelled at it. This experience opened our eyes to the need for a more balanced scorecard for supply chain. The journey to a more balanced scorecard is still in front of us. We will continue to promote a more balanced scorecard for supply chain, and it will take time to accomplish the transition."

Investing in Prestige Ameritech

Providers investing in a supplier may be more of a rarity than reality but sometimes it may be a necessity.

Banner Health considered the idea back in first quarter 2020 and joined with Premier and 14 other Premier members to acquire a 20% minority stake in Prestige Ameritech, a company that supports domestic manufacturing of much-needed N95 and procedure masks at the time that they could acquire at "pre-COVID-19 rates, not [at] 10-times markups," Bowen said. He declined to share a dollar figure expended by Banner or the entire group.

"We had extreme difficulties in buying enough N95 masks to meet the growing demand, so we began searching for solutions," he said. Until that point, approximately 80% of Banner's PPE products came from overseas, and the pandemic triggered widespread shortages.

"Banner's Colorado hospitals were an early warning alarm, and they started surging in February," Bowen recalled. "When we witnessed the high demand numbers for N95 masks at the Banner Colorado hospitals, we knew we were going to have difficulty buying enough N95 masks to meet the demand, so we immediately started searching for additional solutions. Premier heard the same call for help from Banner Health and from many other members. They quickly formed a task force and executed the Prestige Ameritech deal. This deal literally came to the rescue and saved the day."

Convincing the C-suite of such an investment "fortunately, was easy," according to Bowen.

"The C-Suite was given daily updates on the lack of availability of the N95 masks, and they were hearing about it on the national news," he said. "The senior leadership was very supportive of this timely solution."

Red alert for readiness and response

As pandemic appears to decline, crisis and disaster planning should not

by Ebony Smith

Photo credit: pjirawat | stock.adobe.com

Here it comes. The next storm, building collapse, infectious disease or other major disaster is breaking out. Are hospitals and healthcare organizations prepared? Do they have the people, resources, space and processes they need in place to provide patient care and save lives?

These critical medical care facilities must all plan ahead for such emergency events to be able to carry on care and safety for patients on-site or incoming. This requires members of several teams coming together to create a disaster or disease outbreak response plan, also referred to as an emergency operations plan[1].

This type of plan should address several facets of operations and care, such as staffing, infrastructure, inventory, communication, cleaning and infection control, in order to best prepare, respond and protect patients, staff and others during emergency events. To be effective, the plan must be communicated, understood and practiced with staff before an event occurs.

As Janet L. Lumbra, Director, Business Development, Mobile Medical International Corporation (MMIC), puts it, "A carefully crafted Disaster Plan, which is constantly reviewed and updated and is accompanied by ongoing regularly scheduled training and testing, is the key to a successful disaster response."

Plan preparation

Emergency operations planning involves a multi-faceted approach, including input from many individuals and departments within facilities.

"The administrative staff, supported by clinicians and facility planners, should be involved in disaster and outbreak planning,"[2] advised Lumbra. "Successful pre-planning and incorporating the skill sets of all who can contribute to the most carefully thought-out plan will achieve the best overall results."

Sharon Ward-Fore, MS, MT(ASCP), CIC, FAPIC, Infection Prevention Advisor, Metrex, calls for support from "all major stakeholders for planning, including administrative leaders, pharmacy, emergency department, laboratory, safety and security, nursing, physicians, patient throughput, EVS, escort services, dietary/food services, supply chain, materials management, surgical services, emergency management, communications, IT, morgue, facilities, just to name a few. All of these groups play a specific role in the day-to-day operations of a facility."

Some facilities may have dedicated support from an "'Incident Command System'[3], managed by an Emergency Management department," Ward-Fore noted. "They can use 'tabletop' or real-time events to help train and determine gaps in their planning. In these exercises, everyone has a specific role no matter the scenario. Training can be for incidents like mass casualties from radiation exposure, bombs, bioterrorism and events like active shooters, snowstorms or tornadoes."

She added that "if there is no formal incident command system, then having all the major departments in a healthcare facility get together and assess their major systems – electrical, water, food, staffing – would be a good place to start. They should discuss different scenarios and determine how long they could continue to operate."

Tapping the knowledge and information from subject matter experts (SMEs), taskforces and outside resources also can assist planning, points out Cole Stanton, Director of Education and AED Specification, ICP Group.

"There is the direct contingency planning task force, but where gears can start to grind is often at the level of the SME," Stanton said. "For example, whether transmissible via fomite or not, surface hygiene is a crucial strategy to prep for an outbreak. But, while the healthcare facility has top-notch infection control and housekeeping professionals, they can't specialize in translating what US EPA disinfectants do and don't do, nor can in-house staff know likely supply/pipeline dynamics when an epidemic hits."

Further, he recommends that, "every group should cultivate an on-call SME for disinfection associated with programs for SHEP (Surface Hygiene: Epidemic & Pandemic). Then consider what other SMEs the contingency planning group needs, make a list and start filling in the blanks. Call on your SMEs to participate in working groups, and this doesn't have to involve expense. Restoration companies and their manufacturer suppliers are a great place to recruit expertise freely shared."

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Stanton explained that "SHEP is a concept created at ICP to cut through the noise and teach best practices of surface disinfection that can be flexed to accommodate circumstances. Whether the emergency is a hurricane coming ashore or a breakout of infectious disease, information is crucial."

Power to care

Hospitals and healthcare facilities rely on essential utilities, technology and supplies to keep operations and care going. These all must be prepared for in advance of an emergency.

"Planning revolves around the components needed to keep the facility running, like in a power outage or caring for any causalities in the case of a mass casualty situation," emphasized Ward-Fore. "Emergency power, water and food are first and foremost for the hospital staff and patients. Determining how long you can function once you lose power is really important."

Lumbra also urges preparation for critical infrastructure and technology functions.

"Be sure to include contingencies in your plan in the event of power failure, lack of clean water or lack of computer access," she stressed. "There may be patients who need dialysis (reference: the Hurricane Katrina response, which encountered this issue and was unable to respond due to the unavailability of clean water) or other services for which you should plan and include contingencies for in the Disaster Plan."

Equipped to care

With regard to creating an emergency operations plan, Lumbra advises turning to the web and the knowledge of community emergency responders.

"There are many resources available to assist healthcare facilities in developing a disaster/outbreak plan that will best meet their needs," Lumbra said. "Take advantage of online resources and tailor those resources to meet your needs; there is no need to re-invent the wheel. Work with your administrative staff and local disaster planners, i.e., fire department, police department, ambulance service providers and other emergency responders for important input to the development of the best disaster plan to meet your needs. They will know what they can provide and will make recommendations regarding what you should plan to provide."

Lumbra outlines some of the many important considerations in preparing operations and care during a disaster or disease outbreak, including:

- The first step is to develop a Disaster Plan that includes inventory planning for the basic items, including personal protective equipment (PPE) for staff members who will be responding to the emergency.
- Have appropriate resources/medical supplies, including adequate blood supply, qualified staff available that are trained in the execution of the Disaster Plan and safe designated areas for patient care in the hospital or in a temporary facility.
- The Disaster Plan should include a list of medical equipment that is generally needed during an emergency situation (defibrillators, patient monitors, patient gurneys, exam lights, etc.), as well as medical supplies needed in an emergency (medical air, oxygen, oxygen masks, IV solutions, IV supplies, etc.). There should be considerations for proper storage of medications, some of which may require refrigeration.
- A staffing plan should be developed and put in place to ensure that staff is available throughout the emergency situation, without relying too heavily on just a few individuals who may 'burn out' if the emergency lasts for a prolonged period.
- In addition, you will need an ongoing plan to keep items stocked as the emergency progresses. Also needed are logistics of where items are stored and who has access to them, how prospective patients will be treated and how staff will be disseminated to provide the best possible coverage during the emergency. Determine if temporary onsite facilities will be required, i.e., trailer-based, tent-based, etc., and, if so, proper planning must be in place to acquire them quickly and efficiently.
- A critical aspect of any successful Disaster Plan is the ability to communicate. The use of technology, i.e., smart phones, computers, etc., should be utilized, if possible, but in the event the situation prevents the use of technology, the use of paper documentation should be an option that is included in the plan and is part of the training process.
- Above all, provide continuous training and testing in all aspects of the Disaster Plan to ensure that those expected to participate in the Disaster Plan are ready to respond when the need arises.

Mobile Sterile Processing System from Mobile Medical International Corp.

Controlling infections

In terms of disease outbreaks, Stanton highlights the cleaning and disinfection practices needed to maintain hygienic and safe healthcare settings.

"Touchable surfaces should be a focal point of consideration when addressing protection plans for your facility," Stanton advised. "Humans touch their face on average 20 or more times per hour, with contact mostly to the skin, mouth, nose and eyes. We also touch common objects or shared surfaces, such as buttons, door handles, etc., approximately 3.3 times per hour, so surfaces are a crucial cause for consideration and concern. Having realistic, clearly defined plans and key performance indicators to define your success is essential to every organization. The same principle applies when dealing with a pandemic or an epidemic, which are increasing in frequency and lethality."

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Stanton points to federal guidelines in planning for infectious events, such as epidemics and pandemics.

"To paraphrase joint guidance on SARS-CoV-2 in 2020 from the U.S. Environmental Protection Agency (EPA) and the U.S. Centers for Disease Control (CDC), every individual or group responsible for an indoor environment where our people live and work must engage in three fundamental steps: Make a Plan, Implement the Plan and Never Stop Revising the Plan.," he explained. "Plans are imperative in any facility and after the SARS-CoV-2 pandemic, we better appreciate the dangers of extraordinary outbreaks, as well as the cost of preventable, 'ordinary' occupant sickness."

Additionally, Stanton raises other questions that are "often forgotten in contingency planning, such as contact tracing for the subcontractors in healthcare facilities daily. How do we tighten up sign-in/sign-out procedures during an epidemic? How do we alter the chain of custody for externally introduced equipment and supplies when work is suspended due to rising community transmission? To respond quickly while maintaining CDC best practices, what should the procedure be for disinfecting larger areas with more complex geometry than housekeeping is used to addressing?"

Many measures and practices are needed for cleaning, disinfection and isolation to maintain healthy and safe medical environments during disasters and outbreaks, emphasizes Lumbra.

"Prepare for infection control by following the safety protocols in the Disaster Plan and having sufficient PPE, patient care supplies and cleaning supplies available, as well as following cleaning protocols supported by logistics to remove both normal and hazardous waste to keep areas infection-free and logistics allowing for deliveries of goods or services that may be required during the emergency," she recommended.

"If access to utilities is a concern, ensure that the Disaster Plan includes generators, auxiliary HVAC units (preferably with HEPA filtration for proper air filtration), a potable water supply (perhaps a bladder, which can be refilled with potable water on a regularly scheduled basis), water pumps, etc. If isolation of contagious patients is a concern, ensure your Disaster Plan includes areas for patient care that can be isolated in order to protect other people from exposure."

Response and reflection

Regarding response and support for COVID-19 and patient care, "Bridgeport Hospital recently received $3,818,190 in federal funds for emergency protective measures officials implemented to safeguard the health and safety of the public from COVID-19. FEMA provided funds through a grant from its Public Assistance Program to the hospital based in Bridgeport via the Connecticut Division of Emergency Management and Homeland Security. The grant reimbursed the non-profit hospital for eligible costs it submitted from Jan. 20 through Aug. 31, 2020,"[4] according to a press release from the Federal Emergency Management Agency (FEMA).

"Reimbursement for treatment and care of COVID-19 patients included providing equipment for testing, renting stretchers and beds, developing in-hospital surge areas, adding 36 isolation rooms, buying and transporting medical equipment and supplies, disinfecting facilities and purchasing personal protective equipment for hospital workers. Other costs included setting up and staffing a command center, two temporary triage tents and two specimens-collection sites," [4] the FEMA release continued.

Additionally, after several disasters, Mobile Medical International Corporation has supplied Mobile Surgery Units to facilities to continue care, notes Lumbra.

"In 2011, we responded with two Mobile Surgery Units to Joplin, Missouri's St. John's Regional Medical Center when their entire hospital was destroyed," she shared. "Our Mobile Surgery Units provided a year of on-site surgical space while they rebuilt their facility."

Medical supply access stands out as a lesson from COVID-19 for Ward-Fore.

"We learned that shortages can occur that can impede patient care, so we need to have a stockpile of critical items available or be flexible in what we have and how we use it."

Stanton observes room disinfection equipment access as another area of education.

"SARS-CoV-2 has shown us the limitations of electrostatic and ultraviolet, while introduced us to the efficiency of airless spray and foaming," he addressed. "How can we assure access to these delivery method devices without warehousing? Can we work with suppliers to conduct hands-on training in advance so that can then translate into train-the-trainer capability when an outbreak is looming?"

In the end, facilities must ultimately rely on their plan in place, no matter what event is on the horizon, shares Lumbra.

"You are never totally prepared because there is no way to predict the exact nature of the emergency until it actually occurs," she said. "Sometimes, the disaster is so totally unexpected and sudden that all you can do is use the disaster plan you have and adjust it as needed during the response. Review of the after action and lessons learned from other disasters can help you to identify the shortcomings that were identified in those Disaster Plans, which can help you to develop the best possible Disaster Plan for your area." **HPN**

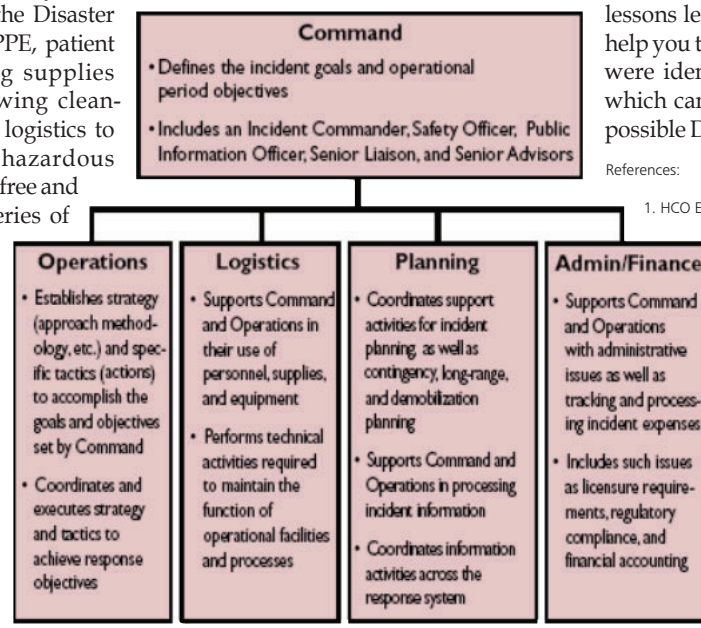

Photo courtesy: U.S. Department of Health & Human Services

Emergency Management and the Incident Command System

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OPERATING ROOM

ORs innovate, upgrade despite pandemic

Surgical tools, technology and care push through COVID-19 and beyond

by Ebony Smith

Photo credit: Gorodenkoff | stock.adobe.com

As the COVID-19 pandemic starts to subside in its second year and elective and backlogged surgical procedures begin to resume, surgeons need the right tools, technology and space on their floors and in their hands ramp up and return to service.

Consequently, when surgeons and clinical teams don't have the critical resources they need then they may experience staff and patient injuries and infections, increased costs or other harmful outcomes.

Making investments in operating room (ORs) and other surgical environments ultimately may improve surgical workflows, procedures and conditions and enhance patient care, safety and outcomes.

Current state of surgical care

The COVID-19 public health emergency, now in its second year, certainly has disrupted the flow and volume of care in many hospitals and healthcare facilities.

How are OR and surgical teams handling cases and ensuring efficiency, effectiveness and safety in procedures?

They are playing catch-up with fewer staff and less support in care, observes Anthony Fernando, President & CEO, Asensus.

Anthony Fernando

"After the reduction in elective procedures during the COVID-19 pandemic, hospitals have a backlog of procedures now," Fernando noted. "Remember, 'elective' doesn't mean unnecessary; patients still need care for serious conditions. Hospitals and surgeons are going to be stretched more thin than they already were. Because of this, it may be difficult for providers to go back to the way it was. We are seeing a cautious and prioritized approach to working down the backlog of cases.

"There are many pressures on hospitals, surgeons and OR teams:

- The first pressure is to reduce surgical variability. Technology needs to help reduce this variability. In terms of variability, surgical procedures are limited by human ability – surgery is an art that is influenced by experience and training. Skill variability and discrepancies across surgeons and facilities can lead to a wider gap in surgical outcomes.
- Second, is the rising pressure around cost. Value-based healthcare means delivering the best clinical outcomes relative to the optimal cost of care.
- Finally, hospital CEOs certainly lose sleep over the impending surgeon shortage. This is no small matter – the Association of American Medical Colleges forecasts that there will be a deficit of over 33,000 surgeons and specialists by 2030[1]."

Equipment that is non-modern or not properly maintained poses possible danger risks to staff and patients, explains Howard Higgins, Senior Marketing Manager, Dräger.

"If you picture the current status of many ORs across the country, they are still relying on mobile equipment carts and wall mounted electrical and gas outlets for providing services," Higgins pointed out. "This now antiquated approach can be fraught with problems, such as inconsistent medical equipment and supply placement among facility ORs negatively impacting work efficiency; staff fatigue from having to reach to connect sockets; staff trip hazards from floor run lines/hoses; and significant challenges with keeping surfaces disinfected to help prevent hospital-acquired infections."

Electrical instruments, in particular, come with their own sets of benefits and challenges, addresses Kevin Anderson, Clinical Coordinator, Clinical Affairs, Healthmark Industries.

"It is commonplace to use electrical instruments and devices in the operating room today," Anderson stated. "These electrical devices have made less invasive procedures possible all while limiting the amount of blood lost, which leads to better outcomes for the patients. But there is a potential threat with these electrical instruments that has become increasingly evident as time goes on."

"When there is a defect or breakage in the insulation layers of the instrument, this allows the electricity to escape the instrument from areas where it is not intended to. When this stray electrical activity occurs during surgery, the potential for adjacent organs and tissues can and have been burnt. Some burns have been so severe that they lead to surgical-site infections, prolonged hospital stays or even additional surgery. Sterile processing techs can help combat this problem by checking these insulated instruments for damage each time they are processed."

OR practice, workspace adapt

Even during such a catastrophic crisis like COVID-19, OR surgeons, surgical staff and facilities press on with innovation in care.

What new devices, technology, techniques and settings are teams using in order to achieve good surgical outcomes and prevent complications for patients?

Peter Veloz

Peter Veloz, CEO, UVDI, for example, observed, "In a time of great change, a constant is a continued focus on operational efficiency through innovation practices. A pioneering example of this is a new study from the University of Siena recently presented at SHEA 2021 confirming UV decontamination of operating rooms between surgeries in only six minutes. In addition, facilities are looking more than ever to standardize products and manufacturers across Infection Prevention practices, and especially now for both surface disinfection using UV devices and air disinfection with UV-C technology installed in HVAC systems."

OR workspaces, as another example, are moving forward with changes and improvements, adds Veloz.

"More broadly, we are on the cusp of a wave of new construction and retrofitting to 'future proof' the operating room – with a primary focus in creating modular operating room spaces to accommodate different procedures and patients, as well as for new technologies, robotics and equipment," he explained. "For UV room disinfection, devices that are easy to maneuver in tight or unique spaces – with a minimal footprint and is lightweight – can drive operational efficiency."

With regard to care and workflow improvements, Dräger's Higgins points to "hybrid operating rooms that enable the ability to conduct complex minimally invasive or open cavity surgical procedures guided with advanced imaging feedback to achieve precision and eliminate the critical time delay by having to image the patient in another department."

Fernando further highlights a shift toward guided and robotic surgery support.

"Through a new era in surgery called Performance-Guided Surgery, surgeons can achieve more control through digitization and tackle some of the biggest issues facing surgical outcomes," he observed. "Surgical robots not only improve the ergonomics of surgery, they can also reduce surgeons' cognitive load. What this means for our healthcare system is better outcomes and reduced surgical variability."

Additionally, telepresence is aiding surgical teamwork, education and procedures, notes Keith Griffis, Executive Director of Marketing for Surgical Endoscopy and Systems Integration, Olympus America Inc.

"One of the greatest needs is to limit the number of people in the OR while still being able to communicate and collaborate in real time with people outside of the procedural space," he explained. "Telepresence solutions are being used to further life-saving medical device innovation. Telepresence technology allows physicians to broadcast procedures to other clinicians, as well as to medical students, fellows and other trainees anywhere in the world for the purpose of proctoring, consultation and clinical education."

Technology, devices develop

Technology also continues to forge ahead to shape outcomes in surgical suites and care, says Higgins.

"There is constantly evolving medical technology being introduced to the OR to address new advanced therapies and medical technologies, while also minimizing the impact and damage to tissue allowing for much quicker recovery and hospital discharge," he stated. "In the recent period there is more focus than ever on flexible ceiling supply unit designs (booms) for the OR and the positive impact they can have on overall workflow. This pertains particularly to the areas of staff efficiency, ergonomics, patient and staff safety, and infection prevention."

Further, Higgins points to decreased size and increased visualization with surgical instruments.

"Laparoscopic surgical instruments, for example, keep shrinking in size and require fewer entry points via trocars (in some cases it's now down to one entry point)," he explained. "The use of flexible endoscopes allows lower impact visual diagnosis and surgical procedures utilizing the body's natural openings without requiring traditional open surgery."

Fernando additionally highlights precision of surgery and devices.

"Over the last three decades, surgery has evolved and patients have benefited from this evolution," he shared. "Open surgery was the 'go to' modality for most general and gynecologic procedures. Laparoscopy allowed surgeons to perform the same procedures, but with much smaller incisions; this allowed less pain, less scarring, and quicker recovery. Then laparoscopy was digitized; this allowed for the integration of augmented intelligence, the practical use of 3mm instruments, and force-sensing at the incision site. As a result, patients are leaving their procedures with a better overall experience. [For example], a recent study published in the *Journal of the Society of Laparoendoscopic Surgeons* showed that among a cohort of patients who received Senhance surgery, patient satisfaction with their procedure was 98%. Among this same group, patient satisfaction with scarring was 100%."

As Fernando sees it, "Next-level technology completely changes the idea of what's possible. As technology enhances and changes the world we live in, the OR can move beyond inefficiency, unpredictability and outdated technology. By digitizing surgery and building machine learning algorithms and AI, surgeries become smarter and more instinctive and result in better patient outcomes." HPN

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Advancing OR surgeries, outcomes and safety

As the COVID-19 crisis begins to wane this year, operating room (OR) surgeons and teams are busy performing procedures for patients. *HPN* spotlights some of the latest electronic and digital platforms, medical devices and surgical space expansions in ORs, hospitals and other medical care facilities.

Surgical observation

"COVID-19 brought digital collaboration to the forefront of surgical procedures. In response, Asensus launched a telemonitoring platform called Senhance Connect that brings surgical peers together. Senhance Connect allows surgical peers from around the world to remotely observe a surgical case being conducted on Asensus' Senhance Surgical System via cameras and communicate with an expert surgeon about the most advantageous practices. The Senhance Surgical System has an added layer of security for the patient – haptic feedback – which could reduce variability. Haptic feedback heightens the surgeon's sense of feel and tension by issuing alerts if the surgeon reaches the force threshold during a procedure.

"To provide a more ergonomic experience, the surgeon console of Senhance allows the surgeon to remain seated throughout the surgery. And robotic-assisted arms eliminate the need for a surgeon to maintain awkward instrument positions and static stances. Senhance also leverages augmented intelligence through the Intelligent Surgical Unit (ISU) to increase surgeon control. Among its benefits, the ISU provides the surgeon with the ability to control his or her visualization with an eye-tracking camera control that frees surgical staff's hands for other in-room activities. We're able to do all of this without adding significant per-procedure costs over traditional laparoscopy."

Anthony Fernando, Asensus

"The Olympus MedPresence platform facilitated the first use in the U.S. of a novel intracranial vascular implant for treatment of a brain aneurysm. A proctor in Canada with extensive experience placing the implant was able to remotely supervise the procedure taking place in

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the neuroangiography suite at a hospital in the U.S. MedPresence is valued for providing the highest quality imagery for use in procedure and case management, telepresence, training, teaching, and mentoring. Nearly 5,000 Olympus medical recording units are being used by physicians to capture procedural images and video, which are then routed to patient electronic medical records (EMRs)."

Keith Griffis, Olympus America Inc

Olympus MedPresence telecollaboration solution

Ceiling boom systems

"Standardization of the boom system allows duplication in each of the facility's ORs, helping improve staff efficiency by having equipment and supplies always in the same spot, reducing time and effort to locate what's needed regardless of which OR they're in. At Dräger, we offer boom designs that are scalable and flexible to adapt to changing needs over time. In addition, we collaborate with multiple imaging vendors to develop new room configurations that provide for optimal workflow in specialties like hybrid ORs.

"The ability to provide service outlets and fully customize the mounting of equipment attachments and work surfaces at optimal positions for the staff addresses ergonomic considerations, minimizing the need to bend, stretch or reach while performing the same or similar tasks repetitively. When it comes to staff safety, getting equipment and lines up off the floor eliminates the risk of accidental tripping, or unexpected impact with rolling carts or stands. For patient safety, booms allow equipment to be placed so it's ideally positioned and locked where it needs to be for the procedure yet can be quickly relocated around the patient in an emergency response situation. Of course, also impacting patient safety are boom designs that are easier to clean and disinfect, helping reduce the incident of hospital-acquired infections. A well-designed boom has minimal gaps, exposed screws, and device cabling."

Howard Higgins, Dräger

OR fitted with Dräger boom system

Robotic-assisted surgery

"Reston Hospital Center, a part of HCA Virginia Health System, announced...plans to invest nearly $20 million to expand and enhance its surgery department. The investment will bolster Reston Hospital's surgical service, which features one of the region's most comprehensive robotic-assisted surgery programs. The project will include construction of four new, larger operating rooms and modernization of existing suites to provide added capacity to Reston's robust surgical offering, which performs over 10,000 surgeries annually. In total, the surgical facility will undergo a major renovation of over 22,000 square feet.

"The new and upgraded operating suites will help improve patient outcomes through the adoption of emerging technologies and innovative surgical approaches to help reduce hospital stays and lessen recovery times. The added capacity will allow Reston Hospital's care teams to treat more patients needing complex spine care, orthopedic care, and minimally invasive surgery across a range of surgical specialty areas such as bariatric (weight loss), colorectal, general, hepatobiliary, gynecologic, thoracic (lung), and urologic surgery....The surgical expansion project design phase will kick-off this summer."[1]

Communication, privacy, safety

"Aiphone...has installed its IX Series intercom system, complete with a custom door station, at MarinHealth Medical Center, a state-of-the-art medical facility in Northern California. The 327-bed, independent medical facility serving the North Bay community, opened Oak Pavilion, a 260,000-square-foot, four-story cutting-edge facility focused on patient-centric care and sustainable building design.

"An integral part of the $535 million expansion included the addition of intercom systems through its medical and surgical rooms, waiting rooms, intensive care units (ICUs), and newborn intensive care units (NICUs). In addition, the facility installed customized door stations for 30 anterooms – an area that act as containment barriers, separating patient rooms from visitor walkways.

"In addition, each of the units in the new pavilion – including the emergency department, intensive care unit, maternity ward, surgical center and neonatal intensive care units – required a system allowing doctors, nurses and other staff to travel freely between patient areas and waiting areas. The intercom stations in these areas also provide video, which allows for additional monitoring in cases of suspicious activity, and the ability to make duress calls in the event of an emergency."[2]

AI-assisted hospital operations

"Since 2020, Hospital IQ has grown its customer base by 50% garnering 14-times adoption rates of its operations management platform among hospitals and health systems. Using artificial intelligence (AI) to anticipate and direct actions, the platform enables health systems to achieve and sustain peak operational performance to improve patient access, clinical outcomes and financial performance.

"Over the past year or so, Hospital IQ developed new collaborations to achieve improved levels of performance excellence with multiple provider organizations including Hospital for Special Surgery (HSS), PIH Health and Adventist Health. Hospital IQ also expanded its footprint across multiple hospitals including University Hospitals, Sarasota Memorial Hospital and Health First, driving peak operational performance to improve patient access, care delivery and staff productivity."[3]

Electrical instruments testing

"The McGann insulation tester is a great example of a simple technology that technicians can use to inspect these instruments, whether it is a laparoscopic dissector, a bipolar forcep, or even a cautery cord. This tester has all the accessories necessary to test all the various types of insulated instruments. The McGann insulation tester allows the technician to find breaks in the insulation that may not be detectable by the unaided eye. Instruments that fail this insulation test can be removed

from service and sent for repair. This is a way to proactively remove instruments from service that are a potential source of unintended harm to the patients."

Kevin Anderson, Healthmark Industries

Insulation Tester from McGann, courtesy Healthmark Industries.

Bipolar energy procedures

"Ethicon, part of the Johnson & Johnson Medical Devices Companies,...announced the launch of the ENSEAL X1 Curved Jaw Tissue Sealer, a new advanced bipolar energy device that increases procedural efficiency. The device is indicated for colorectal, gynecological, bariatric surgery and thoracic procedures.

"The ENSEAL X1 Curved Jaw is the first of several new advanced laparoscopic bipolar devices the company plans to launch in the coming months as it expands its extensive energy portfolio, which includes market-leading HARMONIC ultrasonic devices and MEGADYNE core electrosurgical tools.

"Among the ENSEAL X1 Curved Jaw's new features are separate seal and cut capabilities, a 360-degree continuous shaft rotation that enables easy access to targeted tissue and Ethicon's Adaptive Tissue Technology, which enables the device to continuously sense changes in the condition of tissue and respond accordingly with the optimal amount of energy to minimize lateral thermal spread. These features, including improved ergonomics and a one-handed operation, combine to offer precision, a secure seal and a more intuitive and simplified use that may deliver greater efficiency in the operating room."[4]

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HEALTHCARE PURCHASING NEWS

SELF-STUDY SERIES

Documentation do's and don'ts for SPD quality

by Alison Sonstelie

August 2021

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LEARNING OBJECTIVES

- *Review the importance of quality management to sterile processing technicians, the operating room (OR) team, surgeons and patients.*
- *Examine quality guidelines in evidence-based standards.*
- *Discuss policies for record keeping.*
- *Discuss key performance indicators for Sterile Processing's critical business functions and how to record them.*

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Discussing quality in Sterile Processing may seem vague and overwhelming. However, you do not have to be an industrial engineer to learn the ropes and jargon to develop, implement and participate in a successful quality management program.

Quality is an integral part of patient safety. In the surgical environment, it is important to have a system of checks and balances for each role or group of caregivers. For example, let's compare some checks and balances among Sterile Processing, the OR team, and the surgeon during a surgical procedure.

OR team and Sterile Processing:
The OR team inspects the instruments from Sterile Processing to check for bioburden, indicators and package integrity. In turn, the Sterile Processing team verifies that used instruments are returned safely and appropriately to the decontamination area.

Sterile Processing and surgeon:
The surgeon expects clear communication about turnover times and status updates for instruments. The Sterile Processing team needs accurate pick lists and instrumentation needs prior to the case.

Surgeon and OR team:
The OR team expects the surgeon to participate in time-outs. The surgeon expects that the OR team will be able to get the instruments and supplies they need when they need it.

These examples of checks and balances are tools and practices that are used to reduce the risk of harm to the patient during their procedure. Developing a quality management system can help identify critical processes and areas for improvement.

To further explain how processes and tools can help tighten corners and decrease the risk of patient harm, let's use Jim Reason's "Swiss cheese" model.

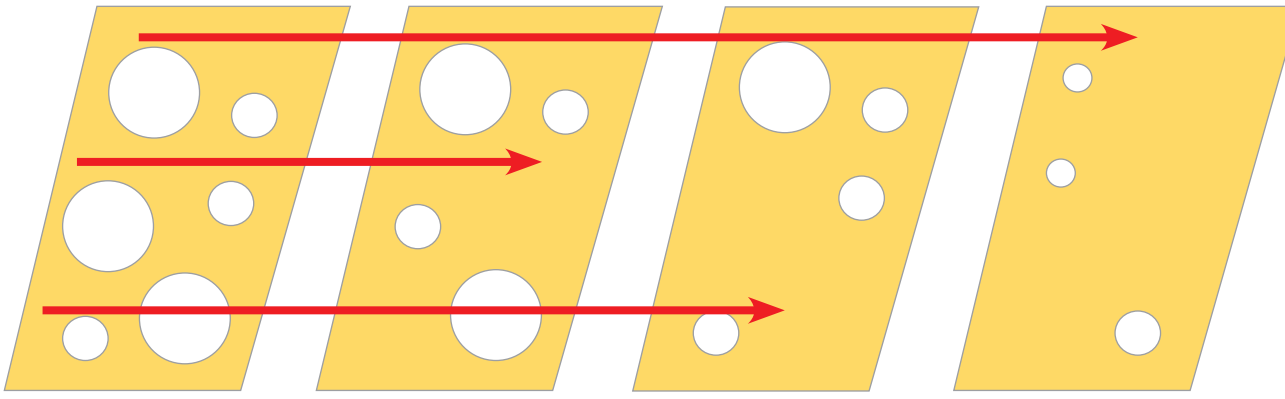
Swiss cheese model

Consider that each slice of Swiss cheese is a process, tool or practice that is put in place to prevent a mistake or safety event. Because no process is perfect or 100% error-proof, there are holes in the Swiss cheese that represent errors that may occur. A quality management system will help identify processes that need another slice of cheese.

A great example of the Swiss cheese in action is the set of recommended COVID precautions (which, frankly, we are all way too familiar with).

- The first precaution, or slice of cheese, is wearing a mask. We understand that it isn't possible to wear a mask 100% of the time. Masks must come off to eat or drink, some people can't medically wear them and some people refuse to wear them. Therefore, that process is not 100% reliable and there are "holes" that can lead to the risk of transmission.
- The second precaution is social distancing. Without some sort of force field surrounding you, it is impossible to maintain social distancing at all times, which can lead to the risk of transmission.
- The third precaution is cleaning and disinfection. Reducing the viral load on surfaces will help reduce the risk of transmission.
- The final precaution is hand washing, which helps prevent transferring and pathogens from your hands to your nose or mouth.

As you can see, none of these processes is perfect alone. But as you continue



stacking more risk-reducing processes, you greatly reduce the risk of harm.

Next, we'll look at the Sterile Processing-specific example of missing indicators. This mistake has plagued operating rooms for years. We all understand that each set and package need at least one indicator – but we're human and the mistake of not adding an indicator can and has happened! There are several strategies that Sterile Processing departments have tried to prevent this from occurring. Let's look at a combination of those in a Swiss Cheese model.

- The first strategy is adding indicators to the count sheet. We know that sometimes even instruments are missed on the count sheet, so this strategy is not 100% error-proof.
- The next strategy is delivering your assembled set to another technician, who adds indicators and wraps the set.
- The third strategy is having another technician do a "buddy check" to verify that indicators are in the set.

This may seem like overkill, and extra steps may seem like a waste of time to the team. However, you can see that using multiple strategies can help reduce the risk of a missing indicator.

Comparing processes to cheese makes them seem simple, but there are so many critical processes in Sterile Processing that can lead to mistakes and patient harm that it's hard to know where to start. You may also be hearing statements from the OR using words like "a lot," "never" and "always." What does it mean if you have "a lot" of missing indicators or dirty instruments? What is that relative to? This is where a quality management system comes into play.

A quality management system will help identify your most frequent mistakes and defects. It will give you a place to start for improvement work and you will be able to measure whether changes to your processes are working. It will also give you reportable performance information to share with the OR, infection prevention, risk, etc.

It may seem like an optional choice to begin developing a quality management system. However, our guidance in ANSI/AAMI ST79:2017 with Amendments A1, A2, A3 & A4:2020 Comprehensive guide to steam sterilization and sterility assurance in healthcare facilities says otherwise. Section 14 provides guidelines for a "Continuous Quality Improvement program," which includes a risk analysis of all aspects of steam sterilization that should be performed annually and a planned, systematic and ongoing process for verifying compliance with procedures. Accreditation surveyors will ask questions about improvement initiatives and department metrics, such

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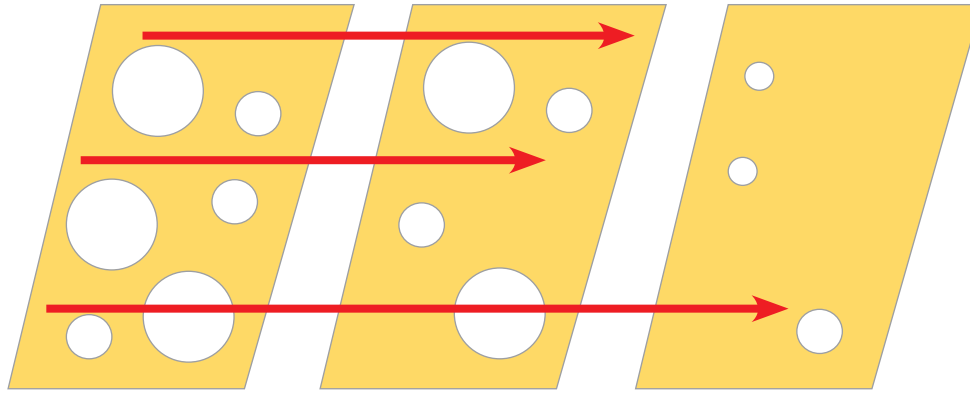

Strategy:
Adding indicators to count sheet.
Indicator on count sheet is skipped.

Strategy:
Set is passed to another tech to add indicator and wrap.
Busy tech forgets to add indicator

Strategy:
Another tech does a "buddy check."
Catches the missing indicator and adds it to the set.

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

as immediate-use steam sterilization (IUSS). Luckily, we have additional guidance documents from AAMI.

ANSI/AAMI ST90:2017 Processing of health care products—Quality management systems for processing in health care facilities is a guideline designed specifically for Sterile Processing departments. It is intended to promote quality processes and methods and to assist healthcare personnel in their proper application to achieve acceptable and reproducible results. ST90 covers several major elements in Sterile Processing, including:

- Documentation requirements
- Management responsibilities for policies and planning
- Managing resources like staff competency, infrastructure and work environment
- Performing product quality assurance testing, how to add new devices and traceability to patient
- How to effectively measure, analyze and improve department performance

For practical guidance, the annexes of ST90 include detailed information about performing the following work mentioned in ANSI/AAMI ST79:2017 with Amendments A1, A2, A3 & A4:2020:

- Performing risk assessments
- How to perform product quality assurance testing
- How to create and implement a Quality Management System or Continuous Quality Improvement plan

A cornerstone of any quality management system is tracking key performance indicators, or KPIs. A KPI is a quantifiable measure used to evaluate the success of an organization, employee, etc. in meeting objectives for performance. The following examples are KPIs that relate directly to Sterile Processing:

Safety

Track events and injuries caused by workplace hazards or poor ergonomics. This could include things like sticks from sharps or employee injuries from lifting, pushing or pulling. Record when disposable sharps are returned to the decontamination area from the OR. These have the potential to cause injury, so it's important to partner with the OR to share these safety concerns.

Quality

If you pick cases for the OR, case-picking accuracy is an excellent quality indicator to monitor. You can also review the rate of dirty or broken instruments sent to the OR and the amount of instrument repairs. In addition, the instances of instruments being sent to the decontamination area inappropriately (dry, not contained properly, delicate instruments being compromised, etc.) should be tracked and shared with the OR. Implementing a program to perform adenosine triphosphate (ATP) or soil testing and monitoring on flexible endoscopes will also help monitor cleaning and disinfection efficacy.

Production

The daily number of missing instruments can be tracked. In addition, it would be helpful to track the number of delays to procedure starts caused by missing instruments or supplies. Equipment repairs and downtime, like sterilizers and washers, can be documented to leverage performance issues with your equipment and repair vendors. The rate of complete sets versus incomplete sets is an important performance indicator that can be shared with your OR partners. And, one of the most important performance indicators, the IUSS rate, should be tracked and shared with the OR and infection prevention. Monitoring your IUSS rate by instrument or set can help justify purchases of additional instrumentation.

Once you know which KPIs you will track and how you will do it, you need to plan what you are going to do with the information. You should decide which information you are going to only use internally, and which indicators you will share with the OR, infection prevention, etc. If you are tracking information because of a state requirement, make sure your process to do so is robust. You should have a policy, competency testing for the specific process and, if necessary, a way to trace the information to the patient. The requirements for how long specific records must be kept is determined by state, so the policy should also outline how information will be archived.

Sharing specific KPIs with the Sterile Processing team is a fantastic way to garner engagement and generate ideas for fixing problems. Choosing to focus on one or two areas, like indicators or dirty instruments, will help get the team to keep those topics on their radar during their shift. This gets them actively involved in process improvement work.

There is no national benchmark for KPIs, like IUSS rate or assembly production. Once it's time to implement your quality management system, the following steps should be taken:

1. Identify critical business functions
2. Identify and document procedures for each business function
3. Identify and document records showing compliance to procedures – gather baseline data
4. Develop and communicate service expectations to customers
5. Set improvement goals based on current state and opportunities for improvement identified in steps 1 to 3, repeat.

In review, implementing or renovating a quality management system can seem overwhelming. Pick a few KPIs that make a big impact for your team and customers and start recording information. Work with infection prevention or risk to develop your system, share your information and ensure you're covering your bases from a liability standpoint. There is a wealth of resources out there, including AAMI ST79 and ST90, articles and your peers. Finally, the most important aspect of a quality management system is engaging the entire team to participate in process improvement work. Investing time into developing a quality management system is the best way to ensure we keep our patients safe. HPN

References:

- Reason, Jim. Human Error: Models and Management
- ANSI/AAMI ST79:2017 with Amendments A1, A2, A3 & A4:2020 Comprehensive Guide to Steam Sterilization and Sterility Assurance in Health Care Facilities
- AANSI/AAMI ST90:2017: Processing of Health Care Products – Quality Management Systems for Processing in Health Care Facilities

Alison Sonstelie is a Lead Sterile Processing Coordinator at Sanford Health in Fargo, ND. She has 10 years of experience in Sterile Processing and Supply Chain. Sonstelie is a voting member of several ANSI/AAMI standards workgroups, including ST90, ST81 and ST79. She is also a consultant on accreditation readiness assessments in Sterile Processing and an educational instructor.

CONTINUING EDUCATION TEST • AUGUST 2021

Documentation do's and don'ts for SPD quality

Circle the one correct answer:

1. **A Quality Management System can:**
   - A. Provide reportable performance information
   - B. Help identify where to start a process improvement project
   - C. Provide a way to measure whether process improvements are effective
   - d. All the above

2. **Which ANSI/AAMI Standard is "Quality Management Systems for Processing in Health Care Facilities"?**
   - a. ST90
   - B. ST81
   - C. ST79
   - D. ST58

3. **ANSI/AAMI ST79 recommends a risk analysis of all aspects of steam sterilization be performed how frequently?**
   - A. Monthly
   - B. Bi-annually
   - C. Every three years
   - d. Annually

4. **Which of the following are NOT included in ST90?**
   - a. National benchmarks for productivity
   - B. Documentation requirements
   - C. Performing product quality assurance testing
   - D. How to effectively measure department performance

5. **Accreditation body, like The Joint Commission, may ask questions about improvement initiatives and department metrics.**
   - a. True
   - B. False

6. **What does KPI stand for?**
   - A. Key process initiatives
   - b. Key performance indicators
   - C. Key perioperative instruments
   - D. Key pandemic infections

7. **Which KPIs can be used for tracking department safety?**
   - A. Sharps injuries
   - B. Ergonomics injuries from lifting
   - C. Instances of disposable sharps returned to the decontamination area
   - d. All the above

8. **ATP or soil testing can be used in a Quality Management System to monitor cleaning efficacy.**
   - a. True
   - B. False

9. **Which of the following steps should be taken when implementing a Quality Management System?**
   - A. Identify key business functions
   - B. Document procedures for each business function
   - C. Identify and document records showing compliance to procedures
   - D. **All the above**

10. **Who determines how long sterilization records must be kept?**
    - A. AAMI
    - B. Federal Regulations
    - c. State Regulations
    - D. Joint Commission

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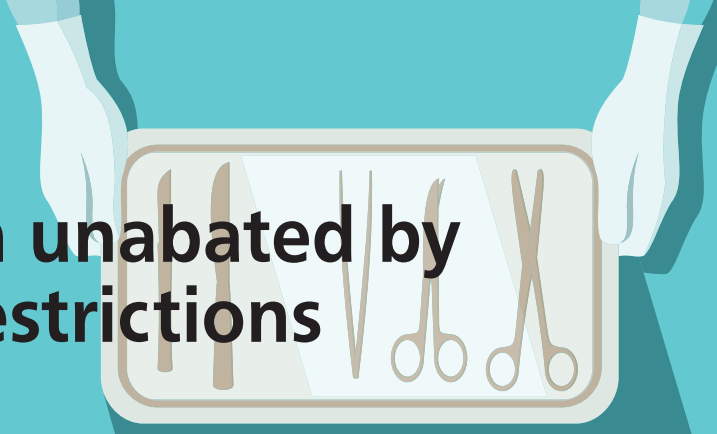
CS/SPD certification unabated by pandemic-related restrictions

by Kara Nadeau



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Are Central Service/Sterile Processing & Distribution (CS/SPD) department professionals keeping up with certification during the pandemic?

Based on insights gleaned from interviews with CS/SPD staff members and product, supply and service vendors the answer is a resounding "yes."

During the past 18 months, despite layoffs and furloughs of CS/SPD staff at some health systems and hospitals, many other healthcare organizations have made the smart decision to keep staff members on board and spend the downtime from lower surgical volumes focused on education.

CS/SPD department educators, leaders and the technicians themselves have certainly faced roadblocks along the way, most notably restrictions on in-person gatherings that put a halt to classroom education and supplier in-servicing. But a shift to virtual learning filled in the gaps in many cases, enabling teachers to teach and students to learn.

While the pandemic has presented challenges, it has also prompted innovation and change. An emerging trend has been for hospitals to recruit and train staff members from within, encouraging employees in other departments to switch to a career in sterile processing.

CS/SPD professionals are also taking education and training into their own hands, spurring the launch of companies aimed at helping colleagues get certified and advance in their careers.

The show must go on

Despite the pandemic-related pauses on elective surgeries, CS/SPD professionals continued to pursue certification and renewal both to meet state/employer certification requirements and further professional growth.

In fact, the need for certification and education increased over the past 18 months with greater awareness for the role that the CS/SPD plays in healthcare delivery, explains Damien Berg, CRCST, AAMIF. Berg served as Regional Sterile Processing Manager for UCHealth in Northern Colorado before joining the International Association of Healthcare Central Service Materiel Management (IAHCSMM) as Vice President of Strategic Initiatives in June 2021.

Damien Berg

"We have seen a focus on cleaning and disinfecting (for obvious reasons) more now than ever," said Berg. "Having certified and educated staff on the basics and some advanced principles of what we do has proven to be a value add for the healthcare team. With that said, Sterile Processing leadership must ensure they are communicating with hospital leadership and sharing the education and success stories so they have the needed support and funds."

Mary K. Lane

Mary K. Lane, CSPDM, CSPDS, CSPDT, MK Lane SPD Consulting, points out how it is less time-consuming and expensive for a CS/SPD professional to renew certification than it is to prepare and retake the exam, prompting many to keep up with their continuing education units (CEUs).

"A large majority of staff that were not certified used their time to attend online CEU presentations and/or webinars to gain a better grasp of concepts so they could prepare to take the certification exam as soon as possible," she added. "For the most part, SPD staff are committed to learning and advancing in the field."

The CS/SPD Educator

Ideally, every CS/SPD would have someone in the Educator role to train staff members, support certification efforts and offer professional development guidance.

Sinai Hospital, Lifebridge Health in Baltimore, MD has the benefit of a dedicated Educator, as well as a Quality Assurance (QA) Specialist, according to Steven J. Adams, CS/SPD Manager, Central Sterile, RN, CRCST, CIS, CHL, CER. Adams is also President of the Maryland Association of Sterile Processing Professionals (MASPP) and IAHCSMM Past President.

"This enables us to focus on issues and needed QA initiatives, then gear our educational efforts based on these focused needs. In addition, we routinely schedule two-to-three in-services per month, which involves bringing in vendors to explain their products and offer instruction on new equipment. We had recent renovations which involved replacing every piece of equipment in department - or our own internal needs by an Educator or Manager to explain new/improved processes and so on," Adams said.

In many other cases, CS/SPD Educators are a valuable but scarce resource in the field.

Linda Homan

"While some Sterile Processing departments have a dedicated Educator, most often, the Manager or Supervisor of the SPD is responsible for creating an education plan for their staff in addition to managing day-to-day operations, staffing and putting out fires," explained Linda Homan, RN, CIC, Senior Manager of Clinical Affairs, Ecolab Healthcare. "Vendor partners recognize the value of education and many offer courses related to their area of expertise that can help fill the need for ongoing education in this critical department."

Opportunity for improvement

While the volume of surgical trays coming from the operating room (OR) into the CS/SPD slowed, many departments took the opportunity to accelerate education for staff members in pursuit of certification.

Putting the CS in C-suite

Sarah B. Cruz

Sarah B. Cruz, CSPDT, CRCST, CHL, CS Education Program Development Coordinator for The Bone & Joint Institute at Hartford Hospital in Hartford, CT, joined the hospital at the beginning of the pandemic. She said the health network worked

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1 Data on file. 2 Data on file. 3 Data on file

Emerging CS/SPD trend: Hiring from within

Based on interviews with Central Service/Sterile Processing & Distribution (CS/SPD) professionals for this article, there seems to be a trend toward turning internally for new talent to help fill staff shortage gaps.

In 2020, Lexington Medical Center in West Columbia, SC created and implemented the first ever South Carolina Apprenticeship Program for Sterile Processing. Perioperative Educator/CS Instructor Randalyn Walters, CRCST, CIS, CHL, CER, CSPM, describes how her team recruits participants for the program from within the hospital.

"We promote internally to provide an opportunity for advancement, growth and learning. By providing them with on-site education, hands-on training and college courses, they are given a complete career change," said Walters. "We kickstarted the program in August 2020 with our first cohort. We went live with our second cohort on June 14, 2021 and accepted six students. We had more than 100 applicants between the two cohorts. After a student completes the 12-month program, they are a Certified Technician through IAHCSMM and we have a new FTE for the department."

Steven J. Adams, RN, CRCST, CIS, CHL, CER, Manager, Central Sterile, Sinai Hospital, Lifebridge Health in Baltimore, MD, and his team obtained approval from executive leaders to host their own internal CRCST classroom and clinical training program specifically for current in-house hospital staff.

They partnered with the Human Resources and Workforce Development departments, posted flyers to promote the program, then hosted a virtual general information session explaining the course, requirements and expectations. As a result of these efforts, they received over 30 applications from in-house candidates, who they screened based on set criteria (e.g., no corrective actions, passed TABE reading assessment, in-person interviews) and accepted 10 individuals into the program.

"My department Educator and I have both taught the CRCST program for many years – privately and in the community college setting, so we have the ability to do this well," indicated Adams. "I do not recommend that folks undertake this on their own with no prior experience. Be sure you have a strong mentor who has taught this program to properly guide you along the way."

diligently to keep all CS/SPD staff members employed full time, including travelers, and refrained from cutting their hours even through the pause in elective surgeries.

"We knew that when cases were on full blast again it would be like opening a fire hydrant rather than slowly turning on the faucet," said Cruz.

Under her leadership, they instead performed a "complete department overhaul," raising the profile of the CS/SPD among hospital leaders and establishing an institution of education.

"We put the CS in the C-Suite," said Cruz. "While our Chief Surgeon was already a huge fan of our department and served as our champion, we worked diligently to build rapport with other individuals at the director level and up. COVID allotted us a big opportunity to reposition Sterile Processing as a profession and not just a job in our facility."

One of Cruz's first major tasks was to create an onboarding pathway for new CS/SPD technicians to transition from orientation to working independently within six months of hire.

During the pandemic, The Bone & Joint Institute onboarded six new CS/SPD technicians with a variety of experience levels and directed them through this newly established pathway. Cruz also created a certification pathway for current department technicians to comply with Connecticut's requirement that technicians become certified within two years of hire.

To strengthen the relationship between the CS/SPD and OR staff, Cruz launched an "I Love Doctor" campaign where the CS/SPD chose a doctor each month and focused on his/her instrument issues. For example, in February 2021 they selected surgeon specific sets to address with the doctor, vender representatives, Sterile Processing system super users and OR staff.

Quantifying return on investment (ROI) from CS/SPD educational initiatives was a critical success factor, according to Cruz. For example, she and her team documented the success of their six-month onboarding program, tracking its impact on error and defect rates.

"We brought our work down to the qualitative level because we all know C-suite's language is graphs, tangible evidence and overall cost analysis," Cruz added.

Defining defects

HPN's 2021 SPD Department of the Year Bayhealth in Dover, DE, made tremendous cultural, performance and structural improvements during the pandemic. According to Bayhealth's Vice President, Resource Management Brian Dolan, the health system retained all of its full-time CS/SPD staff members and engaged them in quality control initiatives during the down times.

When a set error occurred prior to the pandemic, Dolan said the immediate response was to lay the blame at the feet of the CS/SPD. To truly get down to the root cause of issues, Dolan and his team instituted a process by which CS/SPD leaders investigate whether staff members had followed manufacturer instructions for use (IFU) when processing instruments and define whether an issue reported by the OR was truly a CS/SPD defect.

"In some cases, we have found the defect was the result of a system-related issue or another department outside of the CS/SPD contributed to its occurrence," said Dolan. "In other cases, the defects were related to lack of IFU understanding on the part of our customers. We have reeducated them on the importance of IFU adherence. While they want us to process an instrument one way, the IFU is the source of truth and our team follows that standard."

According to Dolan, much of their work has been around educating CS/SPD professionals so they feel empowered to ask the right questions, own their work and feel confident in their responses.

"A lot of it goes back to leadership's influence," said Dolan. "We not only empower our staff through education, we also back them up and serve as a support system. They are confident that leadership looks out for them."

Knowledge is power

Sharon Greene-Golden, oneSOURCE consultant and Manager Adventist Health Care Shady Grove Medical Center in Rockville, MD, says her CS/SPD team aggressively pursued CEUs in the past 18 months. They established Tuesdays, Wednesdays and Thursdays as their learning "knowledge is power hours," garnering over 50 CEUs from March 2020 through May 2021.

Sharon Greene-Golden

"In my 30-plus years of working in this field, I found the time during this pandemic to be the most educational across the board from what was offered in the hospital, from vendors and our associations," said Greene-Golden. "We took this opportunity to complete annual competencies while staying abreast of all information from oneSOURCE, *HPN*, 3M, STERIS, Case Medical and many other vendor companies. We were front-line essential workers determined to come out of the pandemic more educated and aware of our profession and the role we play each day."

According to Greene-Golden, her hospital system supported her team in these educational activities and was willing to pay for CEUs when they were not offered for free.

"What we did during the pandemic brought more awareness to our purpose and worth in the healthcare family as we showed the world what we do matters," she added.

Overcoming barriers

While many CS/SPD professionals and department leaders have taken the opportunity to advance their education and earn certification during these challenging times, their pursuit of professional advancement was not without barriers.


Crit Fisher

"Depending on their certifications, a certain number of continuing education (CE) credits are required for renewal. We found early that testing sites were not open, which led to delays in new SPD technicians obtaining their certifications," said Crit Fisher, CST, FAST, Director, Onsite Service and Operation, KARL STORZ Endoscopy – America. "That said, many credentialling bodies allowed for some extensions due to the inability to recertify."

Going virtual

Virtual education has been a key enabler to certification during the pandemic," according to Susan Harley, Marketing Director (US), Belimed.


Susan Harley

"Fortunately, use of virtual tools (Zoom, Microsoft Teams) has gained widespread acceptance, and much of this training has been/can be delivered virtually in the current environment," Harley stated.


Adam Okada

Adam Okada, CRCST, CIS, CHL, is Owner and Founder of Sterile Education, a mobile application dedicated to the education and technological integration of the Sterile Processing community, and President and Founder of the Central California Chapter of IAHCSMM.

In early 2020, Okada set up a classroom to conduct in-person training but had to quickly adapt his program to an online learning environment (Google Classroom) when the pandemic hit.

"Even though the online program was not what I originally intended it's going strong," said Okada. "Certification has become much more important in recent years. I've come across hospitals that won't even interview a candidate who is uncertified."

Linda Linton, Associate Product Manager, Central Sterile Products & Services, Aesculap, points to the success of the company's program with Pfiedler Education as evidence of the surge in virtual CS/SPD education.


Linda Linton

"In 2020, we recorded 33,405 program completions for our online programs with Pfiedler," said Linton. "The vast majority of the participants (more than 32,800) earned two CE credit hours for completing each online program. In addition, we delivered 317 live CE-accredited educational seminars to more than 3,300 OR and CSD staff members."

Kris Schlachter, Director of Marketing, ONE TRAY/IST, highlights her company's virtual programs to assist CS/SPD technicians with certification requirements.

"We offer FREE online educational CEUs, which can be accessed via our website and

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also through our social media channels. The courses are easily accessible and IAHCSMM and Certification Board for Sterile Processing and Distribution (CBSPD) certified."

Getting hands-on

While some elements of certification training can be done remotely, Okada points out how IAHCSMM requires students to complete 400 hours of hands-on experience in the CS/SPD to earn certification, which can't be done virtually.

"Getting students in for their hours has been a challenge. Hospitals are much more restrictive about letting students in and it is a lengthy process to gain permission. The school has to sign a contract with the hospital and only a certain number of students are allowed in at a time."

Berg said he and his team at UCHealth in Northern Colorado created train-the-trainer positions in the CS/SPD where these individuals help their colleagues gain hands-on training to meet certification requirements.

"We identified individuals within our department who were good mentors and subject matter experts," explained Berg. "They research and perform walk-up skills labs where staff can practice techniques anytime during the day. Staying flexible with time and giving new options have been very successful."

To help CS/SPD professionals continue their advancement during the pandemic, SpecialtyCare conducts Zoom classes for students to review course materials and attend lectures, then the company's Educators provide hands-on training at contracted hospitals.

Marcy Konja

"The virtual learning environment was a big learning experience for me, since I normally would be in the classroom teaching in person," said Marcy Konja CRCST, CSPDT, CIS, CER, CHL, CSPDM, Vice President, Sterile Processing Solutions, SpecialtyCare. "The interaction with the students was different but due to small class sizes and we were able to get to know each other well. Our hands-on instructor would then be with the students in the department."

Setting aside time to learn

Balancing work, life and continuing education is no easy task. CS/SPD leaders that want to help their staff members earn certification should provide time during work hours to learn. Patty Taylor, CRCST, CIS, CHL, CFER, Central Sterile Clinical Supervisor at MHP Medical Center in Shelbyville, IN, describes how she makes time for her team. Taylor is Secretary-Treasurer of the Central Indiana Chapter of IAHCSMM and on the IAHCSMM Board of Directors.

Patty Taylor

"I give them time to take quizzes while they are at work and schedule webinars for more learning on the job. I think it's important if you require them to be certified, you need to allow time to learn and keep up with what's new. They enjoy getting the time and I reap the benefits of them loving what they do — and they enjoy working here. It's a win-win."

CS/SPD professionals who want to earn CEUs outside of work should have that opportunity as well, explains Sharon Ward-Fore, MT(ASCP), CIC, FAPIC, Infection Prevention Advisor, Metrex Infection Prevention, Envista Holdings Corporation.

"There are lots of online learning opportunities with webinars, podcasts and course work. Learning off hours, where you can learn at your own pace, provides many more opportunities to achieve and maintain certification," she stated.

Career advancement resources

CS/SPD industry associations, schools, training programs and suppliers all offer ways for professionals to earn CEUs toward certification. Some are even free.

Adams and his team at Sinai Hospital leverages IAHCSMM's 8th Edition course materials for certification training, with the hospital covering the expense for textbooks, fee for the first time a technician takes the certification exam, and any work/overtime hours spent by its Educator to host this program. In exchange for these benefits, technicians must commit 12-months to working in the department.

"As a result, over 50% of our staff members have two or more certifications, and the rest are working on it," commented Adams. "For our staff that reprocess flexible endoscopes, we require that they obtain their certification as a CER as well."

Ward-Fore refers to IAHCSMM and CBSPD as two resources that every CS/SPD department should utilize.

"They both have a lot of resources that are beneficial to anyone in the CSS/SPD field," she said. "Having both IAHCSMM and CBSPD certifications demonstrates you are serious about your career, and you understand the important role you play in patient care."

While SpecialtyCare has its own training programs for CS/SPD professionals through their team of Sterile Processing Educators, Konja says the company also relies on vendor programs.

"Most vendors provide training on their products and can schedule an in-service for the staff," she stated. When purchasing products, the Sterile Processing Manager or Materials Manager should always request training."

"We provide this support as we understand that ongoing education, training and mentoring are critical to the success of any health system, especially a system challenged by the recent pandemic," said Noreen Costelloe, Director of Marketing, Ruhof, Corp..

Lane says utilizing suppliers and/or equipment manufacturers is a huge part of staff education and yearly competency sign-off.

"While equipment manufacturers and product suppliers vary from hospital to hospital, 3M, Beyond Clean, Healthmark, Getinge, ASP and STERIS have always been willing to provide as much education as needed for staff in the hospital or off-site at education seminars in some instances," she said. HPN

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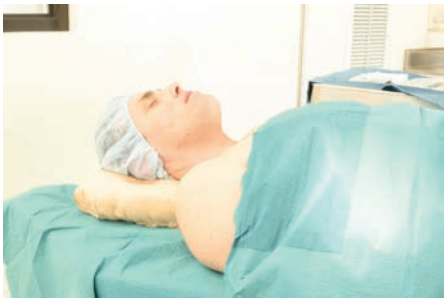

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Designed for daily testing of washer-disinfectors for cleaning efficacy, T-EZ Pro uses a true blood protein sample that gives an accurate representation of soil found on dirty instruments. The test plate, which can be easily removed for further testing or verification, is set inside a clear holder that can be placed (clipped or non-clipped) onto the tray for testing. The pass/fail results are easy to read, eliminating the guesswork that can be associated with other types of process challenge devices (PCDs). T-EZ Pro supports AAMI ST79 best practices, dedication to patient safety, and overall workflow.

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What's in your water? Testing for quality

by Stephen Kovach

Photo courtesy; Healthmark Industries

Q I am trying to find regulatory standards to determine what testing is required for water quality. How often should this be done in our Sterile Processing & Distribution (SPD) department (daily, weekly, monthly, etc.)?

A Great question!

Consider this. If you ever go to a resort/hotel that has a swimming pool, they check the water quality a few times a day. I believe SPD departments should have a daily water quality monitoring program also, and here is why.

We know your processes require specific water quality specifications that improve the outcomes of the process the water interacts with, such as cleaning and steam sterilization.

Here are some documents that are perfect for this topic:

- TIR34:2014 (the water document)
- ST79
- ST90
- ST91

Due to copyright laws, I can only highlight sections of these documents. However, you can buy copies of them from the Association for the Advancement of Medical Instrumentation (AAMI) bookstore online at www.aami.org.

TIR34:2014

- Table 6 suggests types of testing, along with frequency and who should handle testing
- Table 7 lists reprocessing equipment to be tested, what to test for and frequency of testing
- Annex B goes in-depth into what should be monitored and how frequently

ST79, ST90, and ST91

These documents stress the importance of having a quality system in place within your department.

Dirty pipes, yes, in your house, in your facility, old dirty pipes are everywhere. What's in those pipes?

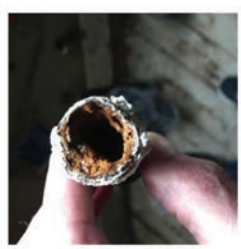

Photo courtesy: Stephen Kovach

- In ST79, sections 3.2.2.2, 3.3.4.5 and 11.2.3
- In ST90, the introduction says it all. "This standard specifies requirements for a quality management system that can be used by an organization that processes medical devices."
- Finally, in ST91, sections 5.7.3 and 5.7.4.2

These support documents help your department practice monitoring of water quality and daily testing of incoming water. Thus, you are ready for any potential problems.

One other document suggestion is your local Consumer Confidence Report (CCR). Each city must put out an annual drinking water quality report detailing where the water comes from (its source), what it contains, how it compares to the Environmental Protection Agency's (EPA's) and your specific state's standards.

Why mention this? My municipality's CCR warns yearly, "…when your water has been sitting for several hours, you can minimize the potential of lead exposure by flushing your tap for 30 seconds to two minutes before drinking or cooking. . . " This official document will tell you the quality of the water entering your facility and it should be used as some baseline to understand how the water quality may change as it travels through pipes to your department. See pictures of actual water pipes and notice a new one to a pipe that has been is use for many years. The picture alone should make you want to test your water in some time frame.

There is a saying, "Forewarned is forearmed." If you know about a problem or situation in advance, you will be able to better deal with it when you need to. Water quality is such a vital factor in our cleaning process. Daily monitoring of simple key factors like pH, hardness, alkalinity (and trending them over time), might be able to detect an issue before it becomes a problem.

Simple steps for monitoring water quality

- Assessment of water quality. Look at the instructions for use (IFU) for all your:
  - cleaning chemistries
  - cleaning equipment
  - instrumentation
  - Implementation of water treatment process
    - Assurance of proper water quality for the various stages in medical device reprocessing
    - Review the various standards and guidelines that support water quality monitoring
- Ongoing monitoring of water quality
- Put in a practical monitoring program
  - Work with your Facilities department
  - Cooperate with your various manufacturers that do water quality testing
  - Daily testing of key indicators of water quality (water coming into your department) is vital
  - Compare your tests to Facilities
    - They test the water daily coming into your facility
    - Issues could be found along the travel route of the water to your department
- Document your work, test results and actions

The main purpose of performing testing of water quality is to trend the values over time to help identify issues or process changes.

On a very positive closing note, TIR34 has not been updated since 2014 but the AAMI members realize water quality is an important factor. TIR34 will be replaced by AAMI ST108, which is presently being drafted. While unlikely to be published before next year, this new technical document will become the standard. Great news!

To "Keep Your Instruments Clean," know the water quality at each stage of your reprocessing and sterilization cycle. Daily monitoring will help you do that. **HPN**

References:

Grosse Pointe Woods 2020 Annual Drinking Water Quality Report (Consumer Confidence Report)

2017 Association for the Advancement of Medical Instrumentation • ANSI/AAMI ST79:2017

2017 Association for the Advancement of Medical Instrumentation • ANSI/AAMI ST90:2017

2015 Association for the Advancement of Medical Instrumentation • AAMI ST91:2015

Data, partnerships help SPDs secure deeper capital budgets

by Julie E. Williamson, IAHCSMM Communications Director/Senior Editor

The Sterile Processing department (SPD) may not be a revenue generator, but the work that takes place within its walls significantly impacts throughput and outcomes for the operating room and other direct patient care areas the SPD serves. That's why it's imperative for healthcare organizations to allocate adequate resources to the SPD to ensure it can function optimally, efficiently and safely.

Unfortunately, many SP professionals lament that year after year their available resources and capital budgets are woefully lacking, a reality that makes it difficult to keep up with procedural volume and ever-increasing demands of their healthcare customers. In fact, it's not uncommon to find SPDs with outdated, frequently malfunctioning equipment, inadequate instrument inventory, cramped and inefficient areas within the department, limited staffing and old or altogether absent industry standards and guidelines. With such shortcomings being an all too common reality, it's little wonder errors occur, inefficiencies abound and best practices aren't always followed.

"SPDs play a direct role in patient safety and infection prevention, so if they aren't getting the proper resources to effectively keep up with procedural volume, everything else can suffer as a result," said IAHCSMM's Director of Education Natalie Lind, CRCST, CHL, FCS. "Insufficient resources for the SPD are a problem that affects not just that department, but all the departments the SPD serves. And, of course, it potentially impacts the patients."

By the numbers

As virtually any healthcare manager can attest, simply stating a resource need or compiling a capital equipment wish list for the department isn't enough to manifest into healthier budgets. The key to getting what's needed lies in effective and ongoing use of data, documentation due diligence and strategic partnerships to help secure the necessary resources.

Facilities with automated tracking systems that log processing throughput and other pertinent task-related data can help managers more clearly demonstrate the amount of work taking place within the walls of the department—and across all shifts. As reports and analytics become increasingly advanced with today's tracking systems, SP leaders can pull down valuable data to identify quality defects, monitor productivity, track inventory and audit processes.[1]

Anthony Bondon, BSM, CRCST, Central Sterile Supply Manager at Sentara Lehigh Hospital in Norfolk, Virginia, has successfully used data from his department's instrument tracking system to identify instruments that are consistently used and needing to be reprocessed in the same day to keep up with case volume. He then uses the data to help justify the need for additional inventory and equipment. The organization also uses an operational improvement benchmarking solution that helps establish the proper volume-to-manpower ratio. The tool has helped Bondon more effectively track volume, capture the department's full function and ensure the department is adequately staffed.

Bondon then shares that information during budget meetings with the senior-level executives. Facilities without computer-based tracking systems can still effectively track manually, he assured, noting that SP leaders can use daily "needs lists" that can be saved and tallied at the end of each month to demonstrate trends and throughput.[2]

Whether an SP leader attains the data manually or through computer-based means, experts stress the importance of learning how to analyze the data, devise business plans and better speak the language of the organization's top executives. Attending a meeting with an executive and providing a detailed, well-constructed analysis that demonstrates workload changes and how inadequate staffing, instrument inventories and outdated and unreliable processing equipment can result in errors and negative outcomes will greatly up the odds for an SP leader to secure the resources they need for the SPD.

Align strong allies

When negotiating budgets and resource needs, SP leaders don't have to go it alone. In fact, aligning support from infection preventionists (IPs), risk managers, biomedical professionals and surgical services professionals can help build a strong case for needs-based resources in the SPD.

If a facility has added operating rooms and new procedures or specialties but the SPD is still running with aging processing equipment, cramped quarters and too few employees, for example, it's prudent for SP leaders to analyze and document what is needed to function optimally. As output increases, more waged labor hours are needed. The departmental assessment should also include tracking equipment age and the number of cycles each piece of equipment has run, along with repair history and anticipated life expectancy. Partnering with biomedical professionals can greatly assist SP managers in this area to identify bottlenecks and forecast future needs.

Building a better relationship with IPs and risk managers is also crucial because they typically look at the organization holistically and closely evaluate how to promote patient safety, infection prevention and compliance. IPs can help SPDs stay current with standards, guidelines and requirements—as well as surveyors' key focus areas. One Joint Commission standard that has proven challenging for many healthcare organizations in recent years is infection control standard IC.02.02.01, which requires facilities to reduce infection risks associated with medical equipment, instruments and supplies; therefore, partnering with the IP and risk manager can help SP leaders stay abreast of the latest evidence-based guidelines and standards and ensure that the SPD has what it needs to safely and efficiently keep up with customer demands, now and into the future. HPN

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Pushing through pandemic-poignant freight/shipping pain points

Supply Chain struggles to unclog transportation arteries

by Rick Dana Barlow

Photo credit: sittinan | stock.adobe.com

Navigating through the health crisis-addled economy, freight/shipping services has faced myriad challenges that have disrupted trade channels and business transactions with the aftershocks rippling through the various transportation modalities.

Overall, the confluence of events in such a short period of time, coupled with the lasting effects of the global pandemic during the last 18 months, seemed to reveal a sense of fragility to standard supply chain operations, largely because the industry didn't seem prepared to handle such an intense and lengthy crisis mode.

Hurdles have included cybersecurity attacks that impacted gas and meat purveyors; cargo/container ship reliability and port congestion that created accelerated demand for available space, driving up costs, prices and delays for optional air transport and trucking as well; and protectionist policies enacted to tamp down on global opportunism to encourage domestic trade promoting more localized vendor relationships.

As the world yearns to emerge from the pandemic miasma with eyes on the light at the end of the tunnel, Supply Chain professionals must look back with a sense of purpose and then return to looking ahead with a sense of resolve.

Enlightenment via great expectations

During the pandemic, the global supply chain seemed to be caught between a rock and a hard place – as in between ports, on the open seas, ensnarled within production, pressured by intensifying demand, wracked by shifting geopolitical interests and wavering tariffs.

From cybersecurity failures and ransomware attacks on meat packagers and producers and oil producers to errant clogs in seaports and waterways to a lack of available manpower to move materials, the COVID-19 pandemic not only wreaked havoc on human health and sensibilities but also on the product pipeline and service convenience.

In fact, vendors offering freight/shipping services either saw these pandemic-related challenges redefine their customer relationships and service parameters or they merely took them in stride as business-as-usual, pivoting when necessary, but striving to maintain expected service levels.

OptiFreight Logistics, a Cardinal Health company, straddled both options.

"Even before the pandemic, OptiFreight Logistics has been dedicated to helping health systems across the country evolve their supply chains to meet the needs of their patients and staff," noted Melissa Laber, Senior Vice President and General Manager at OptiFreight Logistics. "The pandemic environment shined a brighter light on the importance of a fully coordinated and digitally optimized supply chain – and logistics operation – to operate at peak performance."

Laber shares five examples that show how they supported and reinforced customer service operational needs via adaptation or creation in both urban and rural areas. OptiFreight Logistics:

- Added shipping locations to their programs for new or temporary points of care.
- Helped to coordinate STAT courier pickups of emergency ventilators for facilities around metropolitan areas.
- Quickly set up new same-day services for laboratories to keep up with the testing demand in rural locations.
- Managed a significant increase in large freight requests to move bulk supplies and equipment due to an influx of COVID-19 hospitalizations.
- Supported national and international shipments of urgently needed supplies and equipment, as well as critical blood donations.

For the past year many of VPL's customers have had to embrace outside-the-box strategies and outside-their-borders tactics leading to obscured viewpoints, according to Don Carroll, Vice President, Business Development.

"Many of our customers have been forced to source product from outside their traditional networks resulting in unforeseen process challenges and delays," Carroll said. "For example, a large health system customer in the Midwest came to us asking for help tracking vital PPE product through their supply chain. They were sourcing product from unfamiliar suppliers and found that they had very little visibility into their order and delivery statuses. A significant percentage of their deliveries were being delayed and, as a result, they were scrambling at the very last minute to find alternative product or were simply rescheduling procedures for a later day."

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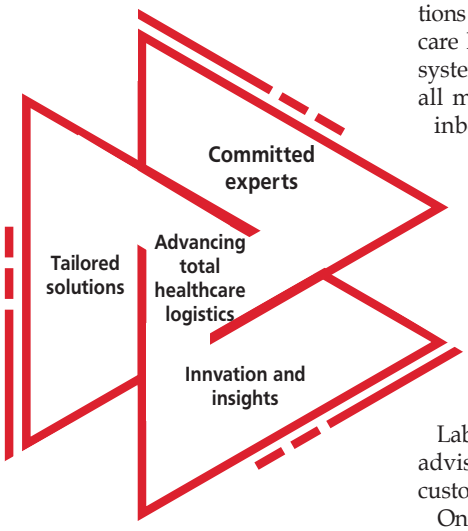
OptiFreight® Logistics – advancing total healthcare logistics

There's no question that the healthcare industry is defined by change and disruption. There's constant pressure to keep improving, especially as healthcare becomes more complex and the stakes keep getting higher. The need for logistics to perform at the highest possible level is essential.

In the past, logistics—such as inbound and outbound shipping—were typically viewed and managed separately. That traditional approach simply doesn't work anymore. The better approach today is to create a total healthcare logistics strategy that includes centralizing and optimizing carriers, couriers and even residential shipments sent direct to patients and employees.

To accomplish this, healthcare facilities partner with Cardinal Health OptiFreight® Logistics, an industry leader in comprehensive healthcare logistics management. OptiFreight® Logistics manages 20 million shipments each year from more than 7,000 suppliers to more than 22,000 shipping locations.* This past year alone, it saved customers $600 million on shipping spend.*

Based on years of focusing exclusively on healthcare, OptiFreight® Logistics uniquely delivers value to its customers through **tailored solutions, committed experts, and innovation and insights**.



Gain greater control of your healthcare shipping logistics and be prepared for what's ahead.

Tailored solutions

OptiFreight® Logistics offers a comprehensive suite of logistics management solutions focused on maximizing efficiencies and decreasing shipping spend.

"Our customers need a logistics provider that understands their business enough to tailor solutions that exactly fit their needs," said Melissa Laber, senior vice president and general manager, OptiFreight® Logistics. "For example, many of our customers need centralized management of same-day courier providers. They look to us to proactively optimize delivery networks and reduce complexities. We can analyze courier routes and service levels, as we did for one customer, for example, leading to a reduction in the percentage of STAT requests from 41 to 14% — resulting in increased savings and efficiencies."

Melissa Laber

OptiFreight® Logistics Advanced Solutions is another example of a total healthcare logistics strategy for large healthcare systems with complex needs. Looking at all modes of transportation – including inbound, outbound, multi-carrier and same-day services – Advanced Solutions aims to continually optimize efficiency and drive savings.

Committed experts

One way that OptiFreight® Logistics stands above any other logistics management provider is its people.

"This has been even more evident this last year than ever before," said Laber. "Our experts truly act as trusted advisors and strategic extensions of our customers' teams."

One example of the team of experts-in-action was demonstrated when a large health system needed 700 doses of the COVID-19 vaccine delivered with only 18 hours' notice. The problem was too complex for the health system's regional parcel carrier, so OptiFreight® Logistics stepped in and worked with the customer to quickly understand the challenges and how to overcome them, then tailored a same-day courier solution to deliver the doses on time.

"In our experience, the key to successfully executing a total healthcare logistics strategy is having a dedicated team of committed experts who continually focus on solving challenges while optimizing shipping spend," said Laber.

Innovation and insights

Healthcare is changing constantly and access to innovative technology and data-driven insights are needed to stay in control. OptiFreight® Logistics continues to invest in its business to evolve and help customers find advantages with access to the right technology, analytics, and critical insights.

OptiFreight® Logistics recently announced the launch of TotalVue™ Analytics – a data-driven approach to driving savings. This Tableau-based platform is self-serve, easy-to-use and provides full visibility and control over a customer's shipping spend with on-demand, customized reports.

"Insights from TotalVue™ Analytics help tell a full story of a customer's shipping spend and identify savings opportunities. Using predictive analytics, this tool tracks progress against key benchmarks and uncovers best practices. These analytics insights drive cost-reduction strategies and more efficient shipping practices," explained Laber.

"At OptiFreight® Logistics, our tailored solutions, team of committed experts, innovative technology, and data-driven insights help customers cut through the challenges of healthcare logistics and find greater advantages," Laber concluded. **HPN**

OptiFreight® Logistics serves healthcare facilities across the continuum of care. Learn more at cardinalhealth.com/optifreight or email optifreight@cardinalhealth.com.

**Based on internal OptiFreight® Logistics 2020 customer data*

Consequently, VPL quickly established a "one-off solution" to help them collect POA, ASN and tracking information for these orders, according to Carroll. "This information gave them a longer lead time to react to order delays resulting in fewer delayed procedures," he indicated.


Don Carroll

VPL used the situation to develop a new product to introduce.

"We discovered there was significant market demand for this type of advanced order tracking information, so we took what we learned and introduced it as our newest supply chain SaaS visibility product, VPL View, [which] lets our customers track vital product from the point of manufacturer all the way to the location of patient care," he indicated. "It not only offers an immediate ROI by reducing delayed procedures, it also reduces the long-term impact of disruptions to the supply chain. This helps to ensure our customers are able to maintain a supply of critical products and ultimately allows them to lower the cost of care and focus on delivering better patient outcomes."

Believe it or not, suppliers gaze warily at providers about their lack of preparation as much as providers worry about suppliers not being ready. And that can be costly, Dave Belter, Vice President & General Manager, Global Transportation Management, Ryder System Inc., warns.

"There are definitely staffing challenges with some customers, especially in the warehouse setting, which ultimately impacts the ability to have product ready on time and staged for carrier pickup and/or have unloading capacity to keep carriers moving," Belter observed. "At locations where carriers are delayed due to in-gating, out-gating, loading, unloading and products not ready, carriers are hesitant to go back to those locations and may charge a premium tied to the inefficiency of the pick-up or delivery operations."

If anything, the pandemic forced providers and suppliers alike to flex their capabilities at flexibility.

"Like the rest of healthcare, during the early days of the pandemic, our day-to-day operations changed significantly," recalled Jim Van Duyn, CIO, MedSpeed. "Our customers rapidly closed non-acute facilities and increased PPE, specimen and equipment movements. To support them, we leveraged our technology to dynamically alter our routes on the fly. Last summer, as non-acute facilities began re-opening, while various parts of the country continued to surge, we needed the ability to adjust again to accommodate peak capacity. More recently, vaccine distribution has also required dynamic routing. The investments we have made in tech, analytics and experienced personnel have allowed us to scale up and down in support of our customers. I think this is one of the most important things we could have done to help them over the past 18 months, and I am confident that it has strengthened our relationships."


Jim Van Duyn

Further, the pandemic steered more organizations to investigate and implement digital and virtual solutions as alternatives to standard operating procedures. "As long as customer expectations and demands continue to rise, customer service will be a top priority and driving force for corporations and companies in any industry," insisted Matt Motsick, CEO, RPA Labs. "Maintaining high-quality standards for customer service in logistics and supply chain management is critical for continued growth and success in these challenging times."


Matt Motsick

As a result, RPA Labs launched RPA Engage, which incorporates an advanced "chatbot" and "automated email responses" for transportation service providers in many industries to improve customer service and increase efficiency, according to Motsick. The "no-code" service can provide customers within seconds requests for spot quotes, shipping schedules, real-time tracking, on-demand customer service and reliable Q&A access all without human intervention, he adds.

For example, three key employees at SEACORP spent hours every day manually responding to customer quote inquiries until they implemented RPA Labs' new service featuring "Rippey," the artificial intelligence (AI) voice of RPA Engage.

"Since implementation, they automatically generate dozens of quotes every day for customer inquiries and now only need one employee managing exceptions, allowing their key staff members to reclaim time and shift their focus to high-level business initiatives," Motsick indicated.

Ken Fleming, President, Logistyx, highlights the global, international impact the pandemic wreaked on supply lines.


Ken Fleming

"Among the many challenges faced by Logistyx's clients in the last year, Brexit was a top concern for many," he indicated. "Britain's exit from the European Union (EU) created numerous complexities, including:

- Updated payment terms, product codes and customs codes to match the new numerical identity of each shipment's origin.
- Overwhelmed EU mainland European distribution centers.
- Shipments to Britain no longer considered domestic when shipping from within the EU.
- GDPR and DPA compliance shipping to/from the U.K. and EU.
- New fees, fines and penalties.
- Currency fluctuations.

"Shippers turned to Logistyx to ensure rapid compliance with the new trade policies and requirements," he continued. Logistyx worked well in advance to ensure we accounted for updated country codes, import and export taxes, customs paperwork and shipment consolidation, as well as ensuring clients could easily alter their shipping workflows to accommodate the new realities and complexities of international shipping to and from the U.K. In the midst of so much supply chain chaos, Logistyx helped many shippers that cater to this region maintain a great deal of normalcy."

Point, click, pivot, presto!

While the pandemic and its butterfly effect on supply chain tentacles around the globe may have initially disrupted the unprepared, it also reinforced and strengthened the nimbleness of those that were more ready than not.

"The past 18 months has really tested the resiliency of the entire healthcare supply chain and it has been found lacking in a number of critical areas," reflected VPL's Carroll. "As VPL has considered how we can positively impact some of these shortcomings we have discovered that many of the issues stem from a significant lack of visibility and transparency into the movement of vital product from suppliers to providers and then, in some instances, to the patients themselves.

"Supply chain data is often hidden or siloed or both," Carroll continued. "Capturing that unseen data, and unlocking the insights contained [inside], give supply chain leaders enhanced end-to-end visibility into movement of vital product, and delivers the transparency and resilience required to provide quality patient care."

VPL has fortified its cloud-based Healthcare Supply Chain Visibility Platform to give supply chain leaders the

ability to see clearly into order status and end-to-end movement of vital product, according to Carroll. "By offering crucial insights into oft hidden or siloed data, it improves operational efficiencies, mitigates risk, and increases transparency and resilience in the supply chain," he added.

Effectiveness and efficiency

OptiFreight Logistics maintained its customer commitments but recognized its customer base needed more than that – particularly now.


Melissa Laber

"Efficiency has always been a focus for OptiFreight Logistics, and during the past year, it has been a differentiator for us," Laber emphasized. "By looking into our internal analytics and data capabilities over the past few years, we built tools that allow our team to anticipate and proactively react to customers' needs. Based on those needs we created a customer-facing analytics platform called TotalVue Analytics, which gives our customers the ability to track their progress in real time through a cloud-enabled platform. Customers can view key benchmarks, identify best practices, leverage real-time analytics and implement ongoing cost-reduction strategies."

As an example, Laber refers to a prominent health system in the Midwest that sought a deeper dive into its logistics expense stream.

"The materials management team wanted to know 'everything about anything that's moving,'" Laber recalled. "That's a significant challenge for a health system as complex and growing as this one, with literally thousands of shipments moving at any given time. But taking on complex challenges is what we do every day. By leveraging our advanced technology, we synthesized more than three million lines of data to see what was being shipped, where it was going and how much the health system was paying. Thanks to our partnership, this health system has full logistics visibility and spending control – and continues to find opportunities to save."

Laber recognizes that while pandemic fatigue may be intensifying, she feels it's important for suppliers and providers to incorporate learnings from the last year into current and future plans for operation.

"We recently had the opportunity to work with a customer to coordinate the shipping of a donation of PPE and other critical supplies to India," she said. "The OptiFreight Logistics team and the customer worked together to ensure that these products were staged, packed, transported and flown to India in a time of great need. Throughout the pandemic, I've been floored by the way our teams partnered with our customers to make sure supplies reached their destination quickly, efficiently and in a cost-effective manner as we work to beat COVID-19 around the world."

Digital, virtual endeavors

MedSpeed's Van Duyn acknowledges the benefits that digital and virtual technology as well as cybersecurity fortification and protection bring to same-day logistics services – from within its own operations to share externally with its customer base.

"We deploy a proprietary technology platform to support everything from item tracking to route design to measurement of the system," Van Duyn noted. "While people are the heart of

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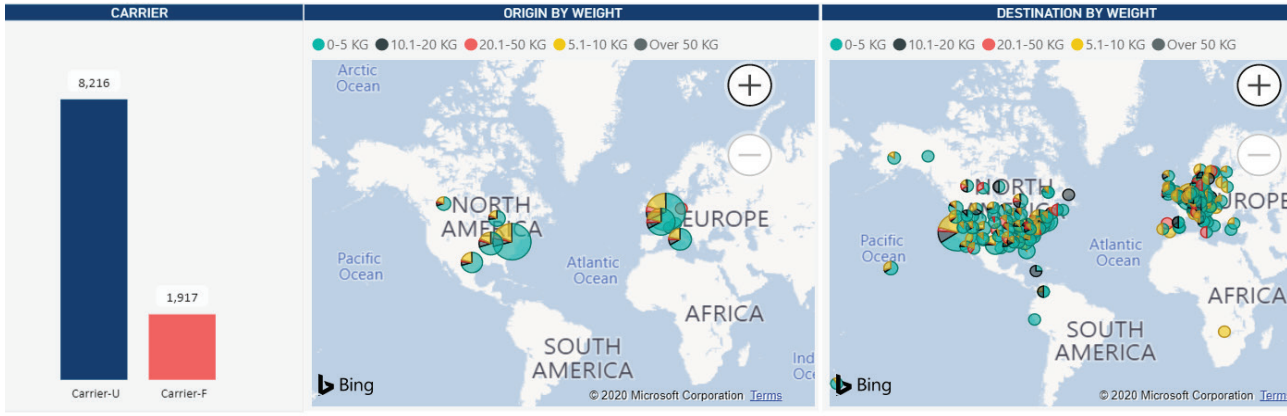

The Logistyx Control Tower provides visibility for all shipments, regardless of carrier, from the moment they leave the warehouse.

what we do, we rely heavily on technology and analytics to make our service as efficient and effective as possible – something that has been critical during the pandemic.

"Over the last several months, we have witnessed the issues ransomware and other cyberattacks have caused for our customers and partners," he continued. "A major initiative within MedSpeed has been to limit our exposure, which protects us and the customers we serve. We have approached this on two fronts. First, our IT team has made it a priority to shore up our system infrastructure against any potential intrusions. This includes systems security, penetration testing and active monitoring. I like to describe this as walling off a fort so that it is incredibly difficult for your enemy to get in."

Unfortunately, cyberattacks generally emerge from within an organization because they're enabled and invited by people, according to Van Duyn.

"But all of that work is for nothing if you have an employee who lowers the drawbridge for an intruder," he added. "Over 90% of attacks occur because an employee was tricked into providing information. This is why training about social engineering and testing the team regularly are critical."

Logistyx bolstered its carrier fleet to give customers ample choices and options.

"We drove carrier capacity management by continually on-boarding new carriers into our cloud-based system to ensure customers had access to the widest selection possible when determining which carriers and services best met the needs of each parcel shipment," Fleming noted. "This expanded carrier roster helped ensure that when one carrier lacked capacity, another was ready at hand to fill the void. We even worked with some omnichannel retailers to redefine the meaning of a carrier to include the emerging gig economy and offer their fastest fulfillment yet."

Further, Logistyx improved its data analytics offerings and business intelligence technology so that customers could "predict parcel shipping disruptions ahead of time, enabling them to move shipping volumes to maintain on-time-delivery rates," Fleming indicated. "By giving our customers better insights into the performance of their deliveries – in terms of cost, on-time-in-full, and customer satisfaction – they have unlocked new efficiencies in their shipping operations," he added.

Ryder's Belter emphasizes flexibility as being both a useful strategy and tactic for cementing ties between suppliers and customers.

"We encouraged 'shipper of choice' behavior with level loading, drop trailer privileges, increased tender lead time, and increased appointment times for loading and unloading across multiple shifts and expanded days of the week," he said. "This matters because carriers are more apt to keep their capacity commitments with these conditions in place. Flexibility is key, and carriers that are afforded that luxury will keep their capacity commitments. Internally, we are using the ongoing carrier management process – or scorecard review calls – to deepen our partnerships with carriers on behalf of our customers so that we can continue to keep freight moving within the supply chain. Facilitating carrier-shipper collaboration to advance operating efficiency and impro-ve service levels leads to deeper partnerships and sustainable improvements in both service and cost."

RPA Labs embraced the notion of remote operations to emphasize customer service proximity, according to Motsick.

"Our entire business has been operating remotely since the beginning of the pandemic, and it's worked really well for us," he said. "Many of our employees are positioned throughout the United States and around the globe, giving us coverage in all time zones. This means we can be available to support our customers around the clock while keeping our employees and families safe during the pandemic. We've become selective about the opportunities we take to travel for conferences and opted in for more web-based meetings, which has reduced operational costs associated with travel and allowed us to be more productive with our work hours. Now that the pandemic is coming closer to an end, a small team is working out of a new office in Louisville, Colorado, but we've implemented flexible schedules and have one designated day a week to work from home. Spending less time in the office means that when we're there, we work really hard to achieve our goals, and have seen great productivity in return." HPN

Freight/shipping suppliers pivot, pursue pandemic-induced logistics improvements

How specifically have freight/shipping service suppliers helped their provider customers simplify their practices in noteworthy ways during the last year? Six share their examples.

"Collaboration with our customers – to deeply understand their unique pain points – typically results in clever ways of working together. For example, a large health system was trying to streamline the way its multiple lab locations managed COVID-19 test samples. The software and process in place were cumbersome and required multiple steps and clicks to print a shipping label...

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With VPL's healthcare supply chain visibility platform, seeing is succeeding

When it comes to freight, shipping and the healthcare supply chain, much has come to light over the past 12 to 18 months, perhaps most notably the current fragility of existing supply chain operations, and the importance of being prepared for a crisis. Health systems that are looking ahead to become more resilient and mitigate this lack of preparation in the future are looking to *VPL* to lead the way.

Visibility is key to improving operational efficiency, building confidence in supply chain

Seeing what's happening in their supply chains allows supply chain professionals to become empowered leaders in their health systems, enabling them to get out in front of disruptions before they become problems—something that would have been especially helpful during the ongoing COVID-19 pandemic.


Don Carroll

"We talked to a number of customers who told us that much of their supply chain data is hidden or siloed, or both," states Don Carroll, VP of Business Development, VPL, "and we knew for a fact that most health systems lacked visibility into the movement of vital product from suppliers to providers and, in some instances, to patients themselves."

Drawing upon their expertise as pioneers in freight management, *VPL* is committed to the ongoing development of software solutions to help health systems stay ahead of the rapidly evolving supply chain, including their revolutionary cloud-based Healthcare Supply Chain Visibility Platform.

"By giving Supply Chain professionals enhanced visibility into end-to-end movement of vital product, VPL helps them improve operational efficiencies, mitigate risk, and increase transparency and resilience in the supply chain," Carroll says. "That means they can stop worrying about where product is and when it will arrive, and spend their valuable time focusing on what matters most: quality patient care.

Meeting today's challenges head on helps mitigate tomorrow's problems

During the pandemic, one health system in the Midwest came to VPL to ask for help tracking vital PPE product through their supply chain after being forced to source product outside of their preferred networks.

"This particular customer was experiencing a number of process changes and procedure delays, and really didn't know where to turn," Carroll recounts. "They were having to source from unfamiliar suppliers and had even less visibility than normal into both their orders and delivery statuses. That's a logistical nightmare when you're counting on elective surgeries to keep your doors open and you're either scrambling to find alternative product at the last minute or having to delay procedures altogether only to have to reschedule them for a later date."

"We were able to quickly develop a highly individualized solution that enabled the health system to collect POA, ASN, and tracking information for their orders," Carroll concludes. "And as a result, they were given longer lead times in which to react and substantially fewer delayed procedures."

The results of this specific case were so promising, *VPL* took what they had learned and created *VPL View*™, a supply chain SaaS product that lets customers track vital product from point of manufacture all the way to point of patient care. Not only does *VPL View*™ offer an immediate ROI by reducing delayed procedures, it also reduces the long-term impact of disruptions to the supply chain, which helps to ensure that health systems are able to maintain a supply of critical products and—ultimately—lower the cost of care and focus on delivering better patient outcomes.

Continuously creating new ways to deliver better patient care


Eric McGlade

"We really learned a lot from the pandemic," recounts Eric McGlade, CEO and Co-Founder of VPL. "And one of the things we realized was that not only do health systems need visibility into what's coming into their system, they also needed a better way to track what's being shipped out.

"Throughout the course of the past year or so, most health systems experienced a huge jump in the number of patients being treated remotely which, as you can imagine, resulted in a corresponding increase in the number of shipments being sent directly to patients' homes," McGlade continues, "particularly in the area of specialty pharmacy."

"Add to that the fact that at the same time small-package carriers were experiencing extraordinary increases in volume, and you have a perfect recipe for delayed deliveries and disgruntled patients. Since most health systems don't have the time to develop their own pharmacy shipping solutions, we decided to create one for them," says McGlade.

The result is *VPL TrajectRx*™, a SaaS product designed to provide hospitals' specialty pharmacies with access to more carrier options, a more seamless workflow, and better ways to monitor and track their outbound shipments.

Clearly, *VPL* is tapping into its years of experience to transform freight management, taking it from a purely service model to a place of complete upstream and downstream transparency through a unique combination of software, insights and visibility. HPN

Bringing supplier diversity home

by Karen Conway

The events of 2020, from the pandemic to the "Black Lives Matter" movement, sharpened our focus on issues of health equity and racial disparities. And once again, supply chain leaders are going above and beyond more traditional approaches to address the challenges.

The stats tell the story best: The hospitalization and death rates from COVID-19 are 2 to 3.3% higher among Blacks, Native Americans and Hispanics compared to Whites. That's because underlying comorbidities that increase the severity of the disease: Hypertension, obesity and diabetes are much more prevalent in lower-income and minority populations.

In June, I had the pleasure of leading a discussion on the evolving role of supply chain to combat health disparities with four procurement leaders at the Virtual National Health Equity Summit (www.healthequitysummit.com):

- Motz Feinberg, Vice President Supply Chain, Cedars-Sinai Health System
- Shaleta Dunn, Senior Director Strategic Programs, Supplier Diversity, Vizient
- Dameka Miller, Vice President, Strategic Sourcing and Value Analysis, Trinity Health
- Régine Honoré Villain, Chief Supply Chain Officer, Ochsner Health System

Below are some of the key recommendations from that discussion:

1. Expand the definition of supplier diversity

For years, procurement leaders across industries have tracked their spend with diverse suppliers, defined historically as companies that are woman-, veteran- or minority-owned, although that definition has been expanded to include ownership by lesbian, gay, bisexual and transgender individuals, veterans disabled in service and those qualifying as small businesses. Primarily, that data has been used for grant applications and other required community impact reports.

Today, the value of that data is getting attention at the highest levels of healthcare systems, from executive leadership and boards of trustees. With the continued move to value (and more reimbursement tied to keeping people healthy and out of the hospital), they recognize that the well-being of their healthcare systems will depend in large part on the health of the populations they serve. Instead of only measuring spend with "diverse" suppliers, leadership is asking: How much is being spent locally and how is that contributing to economic development, especially in disadvantaged communities?

2. Practice your multiplication tables

Measuring local impact goes beyond just what is spent with local suppliers. A key principle of economic development is the multiplier effect, or in other words, understanding how different types of direct investments generate additional impacts. For example, money spent with a non-local, diverse supplier leaves the community, while the same amount of money spent with a local supplier supports both employment and the tax base of the community. The multiplier effect is measured both in direct terms (e.g., generation of jobs at the supplier) and indirect (additional jobs created at companies supporting the supplier). There is an additional benefit when employees of those companies use their wages to spend and invest locally.

3. Play connect the dots

What happens when there is not a local diverse source for a product or service you need to buy? That's when you connect the dots and act as a matchmaker between the companies that have what you need and local resources that can assist in its acquisition, delivery, storage, use, disposal, etc. Organizations, including the group purchasing organization Vizient, help identify local resources and connect them with potential healthcare customers or with larger non-local suppliers with which they could do business, while the Health Anchor Network helps hospital members develop strategies to create more sustainable local economies.

Doing business with local suppliers can also be a benefit for larger suppliers that are increasingly being asked by their customers to share what they are doing to increase their spending with upstream diverse suppliers. In some places, like California, there are new regulations requiring hospitals of a certain size to annually report how much they spend with diverse suppliers.

4. Build the business case

Creating an effective local and diverse procurement program does not happen overnight. Trinity Health has been building out the necessary infrastructure for years. The effort began by understanding its current level of local impact purchasing and then outlining what it would take to expand the program and the anticipated return on that investment. With strong board support, Trinity was able to reallocate workloads in order to assess system needs and engage with local diverse suppliers.

For Cedars-Sinai Health System, the new California regulation served as a catalyst to create an ambassador program to internally promote the value of local impact purchasing and align it with the hospital's overarching diversity initiatives. As a community hospital system without the resources of much larger systems, Cedars-Sinai is also aligning with other local community hospitals to strengthen their networking reach and purchasing power.

5. Do it yourself

In the midst of the pandemic, Ochsner saw an additional opportunity. Faced with exponential increases in demand for personal protective equipment (PPE), the Louisiana health system decided to become its own manufacturer. Through a joint venture, Ochsner is investing millions in a local manufacturing facility that is expected to create approximately 1,200 direct jobs and another 1,000 indirect jobs.

The pandemic has created hardship for many, exposing the harsh socio-economic realities that contribute to health disparities. At the same time, it has elevated the strategic role of the healthcare supply

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chain. As healthcare systems across the country seek to increase the diversity of their boards by recruiting people of color, they, too, can strengthen health equity by attracting leaders who understand the potential for the supply chain to create healthier communities for all. 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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Supply Chain may face post-pandemic challenges makeup-free

This is not a time to gloat, primp and preen but to wake up

by Fred W. Crans

As the COVID-19 pandemic begins to wind down, many supply chain leaders are beginning to allow themselves a congratulatory sigh of relief, followed by a self-applied slap on the back for the heroic work they did during the crisis. Already, the tales of "how we snatched the rabbit out of the hat" and "I was really terrific" abound. Add to that the pompous and self-serving pronouncements from the so-called healthcare supply chain *intelligentsia* and one cannot help be giddy with the thought that after all the decades of being regarded a second-class citizen, the discipline is destined to rise to the top of the enterprise's "Most Important Functions" List.

During the past 18 months, old phrases have been either re-named or dusted off. "Domestic manufacturing" has been renamed "on-shoring." Farming stuff out to Canada, Mexico and Puerto Rico is now called "near-shoring." Finding short-term alternative sources or implementing different approaches to treating diseases has contributed to the "Resilient Supply Chain."

If nothing else, when a real crisis hits, we Americans are excellent at creating catchphrases that make us look as though we know what we are doing. Mull the popularity of the game, "Catchphrase." The more educated people are, the more likely they are to use language as a way to "pump themselves up." I once had a COO tell me, "Fred, we need to *disambiguate* this situation," to which I responded, "Why don't we just make things clearer?"

Big words and rose-colored glasses will not help you once the dust clears on COVID-19 or anything that follows. You must become realistic and skeptical, and you must not delude yourself if you want to survive after the pandemic dissipates.

Here is what you have to look forward to:

1. **What was happening before the pandemic will continue, but at an accelerated pace.** Prior to COVID-19, medium, small and even some very large healthcare systems faced financial failure or acquisition from competitors. That trend is only expected to continue. Those that know how to effectively compete in the dog-eat-dog real world will continue to get stronger. Those who don't will become lunch. Take a hard look at your organization and honestly assess where it sits in the continuum. You need to be aware so you can be prepared to fight for your professional life. Expect the non-traditional "healthcare" companies like Walmart, Amazon, Walgreen's and CVS – each loaded with billions of dollars and tons of expertise – to make your organization's life miserable.
2. **No one's job is assured.** There is an old saying that your job is only as secure as your boss'. Actually, it's worse than that. Your job is only as safe as your boss' boss'. Mergers happen. Generally, the team from the "winning" healthcare organization keeps their jobs while those from the "other" organization(s) are either out the door or demoted. Thirty-five years of faithful service means nothing when the excrement collides with the oscillating air-mover. Don't allow yourself to get caught unaware. Trust no one. Prepare yourself for the worst. It is your best chance for survival.
3. **Things are not going to change.** The healthcare supply chain has never been a primary strategic component of the organization's planning. Industry supply chains are absolutely indispensable to the fiscal success of the enterprise. Those supply chains are well-resourced and staffed by scores of key leaders with formal supply chain educations. With the exception of a very small number of truly visionary organizations, healthcare supply chains are generally staffed by one or two people at the top who have formal supply chain educations and a bunch of others who started out at the loading dock. And even the best-resourced supply chains are only mediocre at best when compared to their industry counterparts. Healthcare supply chains are transactional, generally with two of their key functions – contracting and logistics – outsourced to group purchasing organizations and distributors. The only times the Supply Chain catches the attention of the C-suite are (1) when the organization is significantly over budget, (2) when a crisis like the pandemic strikes or (3) when Doctor Jones can't do surgery because the sales rep couldn't get a purchase order for the unapproved implant he had in the trunk of his car. Other than that, the Supply Chain is simply overhead. Please wake up: Despite all the momentary hoopla associated with the pandemic, you're not going to get the people you need, you're not going to get the master supply chain assessment your organization needs, you're not going to be given the title and decision-making freedom you need to make yourself truly relevant in the organization and your job is going to become even less secure.

Given these conditions, you only have one choice if you want to survive: You've got to become a fearless warrior for the truth. You must arm yourself with the truth and be prepared not only to tell the Emperor that he is not wearing clothes, but that he should probably drop 25 pounds as well.

Dig in and fight with your head up – or perish meekly.

Those are the only choices. HPN

Fred W. Crans currently serves as Healthcare Business Development Executive for St. Onge Co. A veteran industry observer, he was inducted into Bellwether League Foundation's 2020 Hall of Fame for Healthcare Supply Chain Leadership and is a frequent HPN contributor with decades of experience as a hospital supply chain leader within hospitals, IDNs and GPOs. Crans can be reached at fcrans@stonge.com and at fcrans@wowway.com.

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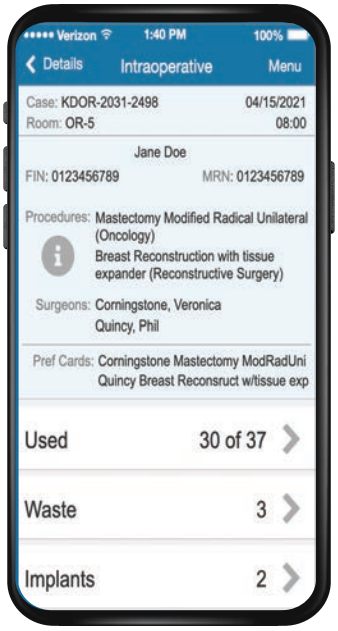

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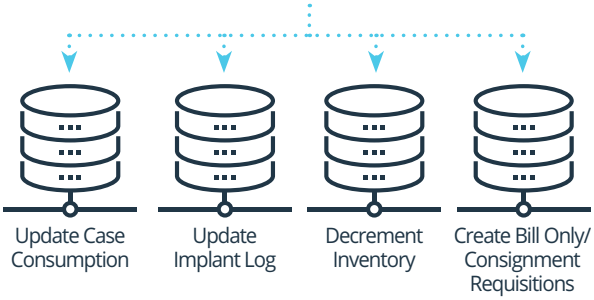

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