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The "what triplets"

Rick Dana Barlow
Senior Editor

Mention the acronyms DEI and ESG or the term "sustainability" to many within certain generational groups and you might notice some kind of obscure facial tic in the response – be it a quick ear wiggle from a clenched jaw, an eyeroll, a lip purse or some such to indicate masked mild annoyance and irritation.

Some equate these terms to political and popular fads, spread exponentially faster through social media by hyperactive demagogues with extremely low attention spans and self-absorbed advocates embracing virtue signaling with vocal fry as persuasive techniques.

In short, these legitimate and salient issues unfortunately have been hijacked by the wrong human megaphones who have usurped a bully pulpit that besmirches the healthy strides and successful work of those truly making a difference without nearly as much publicity.

Rather than dismiss these issues as just another passing fancy (although you'd hardly be able to classify environmental responsibility and sustainability as a flash in the pan when it's been around for more than 50 years), perhaps the most useful strategy and tactic is to introduce them to the "what triplets" – led by the oldest "What," the "middlest" "So What" and the youngest "Now What."

What: Stripping away the emotional excess, hyperbole and red tape should expose DEI and ESG as relevant efforts and intentions to enable anyone – everyone – with an equal or equivalent opportunity to participate and succeed at something, at anything, that can contribute to the greater good. Great ideas aren't confined to a single economic or ethnic group, gender or religious category. You can trace this back through to the dawn of recorded time. Further, environmental responsibility and sustainability merely demonstrates our healthy stewardship of the resources we have for our use – attitudes and behaviors that are for our own good. Think of it as effective parenting of organic and inorganic objects.

So What: During an educational session at the GHX Summit six months ago, a passionate panelist uttered something profound that punctuated the need to support these issues in a world that juggles simmering labor challenges that have reached a boiling point with shortages and strikes. What did she say? Paraphrasing, "The new generation of talent expects this kind of thinking to be ingrained within the infrastructure of the organizations in which they pursue and seek employment. If they don't see that you're serious about this they'll go somewhere else, so you need to start doing something about this to attract talent or the economic consequences will be striking." The last word was added for subtle emphasis. Looking ahead, imagine a collective mindset moving markets.

Now What: From several related thematic sessions at the GHX Summit you could glean a common thread. Healthcare organizations – make that *all* organizations – must insert these issues into strategic and tactical goals and plans so that everyone is accountable and responsible for the desired outcomes. Notice the active and personal intent of "is accountable" versus the passive and collective "held accountable." One panelist expressed that short of such requirements emanating from the C-suite throughout an organization all the way to the trenches, this becomes a "nice-to-have" mantra instead of a "need-to-have" business and cultural plan.

Here's the rub: While true momentum with these issues must start from a single demarcation or multiple launching points, they ultimately require most everyone's participation to be meaningful. Think of it like a band or orchestra where multiple musicians play trombone and cover for one another so that when one or two must rest their embouchure, the sound continues to keep the symphony progressing.

You don't have to be a rocket scientist to get this. You just have to be a selfless and servant-minded leader, regardless of your title.

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Data are for the U.S.:

- Per capita national health expenditures: **$11,582 (**2019)
- Total national health expenditures: **$3.8 trillion** (2019)
- Total national health expenditures as a percent of **Gross Domestic Product**
- Percent of national health expenditures for hospital care: **31.4%** (2019)
- Percent of national health expenditures for nursing care facilities and continuing care retirement communities: **4.5%** (2019)
- Percent of national health expenditures for physician and clinical services: **20.3%** (2019)
- Percent of national health expenditures for retail prescription drugs: **9.7%** (2019)

Source: www.cdc.gov/nchs/fastats/health-expenditures.htm

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NEWSWIRE

Biden Administration invests in bolstering manufacturing of COVID-19 tests and announces reopening of COVIDTests.gov

On Sept. 20, the U.S. Department of Health and Human Services (HHS), through the Administration for Strategic Preparedness and Response (ASPR), is announcing an investment of $600 million across 12 domestic COVID-19 test manufacturers and the reopening of COVIDTests.gov to deliver COVID-19 tests for free to U.S. households.

These critical investments in U.S. manufacturing will improve preparedness for COVID-19 and other pandemic threats of the future, strengthen the nation's capacity to manufacture tests, and secure approximately 200 million new OTC COVID-19 tests for future federal government use.

Read on: hpnonline.com/53073040

Survey: 98% of executives agree that drug diversion occurs in hospitals

According to a Sept. 12 news release, Invistics, acquired by Wolters Kluwer Health earlier this year, published a survey entitled, "The State of Drug Diversion Report." The survey found that 98% of healthcare executives agree that drug diversion occurs in hospitals, yet 79% believe that most drug diversion goes undetected.

The news release stated, "The International Health Facility Diversion Association estimates that at least 37,000 diversion incidents occur in U.S. facilities each year, and this number is likely underreported. According to the Wolters Kluwer Invistics survey, 'The State of Drug Diversion 2023 Report,' only 40% of executives are very confident in the efficacy of their drug diversion detection programs, with a majority (67%) of executives planning to strengthen their drug diversion efforts in 2023."

Key highlights from the survey include:

- 71% of respondents reported that their team spends eight or more hours on each drug diversion investigation
- 69% of respondents pointed to the increased presence of floating staff or contract workers as the main factor that made drug diversion detection more challenging
- Since the first survey in 2019, hospitals that report using machine learning to detect patterns of diversion and automatically flag potential cases have nearly doubled (29% to 56%)
- More than half of executives who use AI tools (53%) reporting they are very confident in the efficacy of their diversion detection efforts

Read on: hpnonline.com/53072187

SARS-CoV-2 infects coronary arteries, increases plaque inflammation

SARS-CoV-2, the virus that causes COVID-19, can directly infect the arteries of the heart and cause the fatty plaque inside arteries to become highly inflamed, increasing the risk of heart attack and stroke, according to a study funded by the National Institutes of Health. The findings, published in the journal Nature Cardiovascular Research, may help explain why certain people who get COVID-19 have a greater chance of developing cardiovascular disease, or if they already have it, develop more heart-related complications.

In the study, researchers focused on older people with fatty buildup, known as atherosclerotic plaque, who died from COVID-19. However, because the researchers found the virus infects and replicates in the arteries no matter the levels of plaque, the findings could have broader implications for anybody who gets COVID-19.

"Since the early days of the pandemic, we have known that people who had COVID-19 have an increased risk for cardiovascular disease or stroke up to one year after infection," said Michelle Olive, Ph.D., acting associate director of the Basic and Early Translational Research Program at the National Heart, Lung, and Blood Institute (NHLBI), part of NIH. "We believe we have uncovered one of the reasons why."

Though previous studies have shown that SARS-CoV-2 can directly infect tissues such as the brain and lungs, less was known about its effect on the coronary arteries. Researchers knew that after the virus reaches the cells, the body's immune system sends in white blood cells known as macrophages to help clear the virus. In the arteries, macrophages also help remove cholesterol, and when they become overloaded with cholesterol, they morph into a specialized type of cell called foam cells.

The researchers thought that if SARS-CoV-2 could directly infect arterial cells, the macrophages that normally are turned loose might increase inflammation in the existing plaque, explained Chiara Giannarelli, M.D., Ph.D., associate professor in the departments of medicine and pathology at New York University's Grossman School of Medicine and senior author on the study. To test their theory, Giannarelli and her team took tissue from the coronary arteries and plaque of people who had died from COVID-19 and confirmed the virus was in those tissues. Then they took arterial and plaque cells – including macrophages and foam cells – from healthy patients and infected them with

SARS-CoV-2 in a lab dish. They found that the virus had also infected those cells and tissues.

Additionally, the researchers found that when they compared the infection rates of SARS-CoV-2, they showed that the virus infects macrophages at a higher rate than other arterial cells. Cholesterol-laden foam cells were the most susceptible to infection and unable to readily clear the virus. This suggested that foam cells might act as a reservoir of SARS-CoV-2 in the atherosclerotic plaque. Having more build-up of plaque, and thus a greater number of foam cells, could increase the severity or persistence of COVID-19.

Read on: hpnonline.com/53073860

FDA provides update on O&M Halyard surgical N95 respirators and use of existing inventory

On August 9, 2023, O&M Halyard sent a recall notice instructing customers not to use lot #AM2164811 of FLUIDSHIELD Surgical N95 Respirator Mask, Orange (Small), Level 3, (Model 46827), because this respirator may not provide adequate filtration protection to the user. This recall is a product removal of the one affected lot. Contact O&M Halyard if you have any questions about the recall or did not receive their notice at OMRA_RECALLS@owensminor.com using the Event # FA-2023-011 in the subject line.

For all other lots of FLUIDSHIELD Surgical N95 Respirator Mask, Orange (Small), Level 3, (Model 46827), the FDA recommendations are the same as the FDA recommendations provided on April 21, 2023, for the FLUIDSHIELD Surgical N95 Respirator Mask, Orange (Regular), Level 3, (Model 46727), and are as follows:

If necessary, this model may continue to be used for respiratory protection when fluid barrier protection against splashes, sprays, or splatter is not needed, such as in non-surgical settings where exposure to liquid, bodily or other hazardous fluids is not expected.

When fluid barrier protection against splashes, sprays, or splatter is needed, such as in surgical settings where exposure to liquid, bodily or other hazardous fluids may occur:

- Consider alternative options and seek an alternative surgical N95 respirator, if possible.
- In the absence of alternative options, the risk of fluid exposure can be mitigated by wearing a face shield over the respirator to prevent fluid penetration.

Unique Device Identifier (UDI) information provided by O&M Halyard:

- FLUIDSHIELD Surgical N95 Respirator Mask, Orange (Small), Level 3, (Model 46827): 20680651468271
- FLUIDSHIELD Surgical N95 Respirator Mask, Orange (Regular), Level 3, (Model 46727): 20680651467274

The FDA continues to evaluate fluid resistance concerns identified through laboratory testing for both O&M Halyard surgical N95 respirators. This continues to be an evolving situation, and we will continue to keep the public informed about these surgical N95 respirators.

FDA recommendations provided on April 12, 2023, for certain O&M Halyard surgical masks (including procedure masks) and pediatric face masks have not changed. The FDA continues to work with the manufacturer to evaluate testing results.

Read on: hpnonline.com/53071904

Study of hospital online price vs. telephone price

According to a Sept. 19 press release from Rice University, a new study entitled "Comparison of Hospital Online Price and Telephone Price for Shoppable Services" was published in the Journal of the American Medical Association: Internal Medicine. The study found that hospitals in the U.S. may quote very different prices for their services depending on how one finds the information.

The press release stated, "In this cross-sectional study of 60 U.S. hospitals, there was a significant difference in prices found online and those given over the phone to 'secret shoppers.'"

"The prices given on the phone were substantially different from those posted online," said Vivian Ho, the James A. Baker III Institute Chair in Health Economics at Rice University's Baker Institute for Public Policy. "And the cash prices given over the phone were not always the less expensive price. Moreover, prices for the same services vary wildly across different hospitals even in the same city. Anywhere from a 30% to 100% difference in price."

Due to the Hospital Price Transparency Rule, cash prices are required to be posted online, although many hospitals do not post their prices online or they are difficult to find.

"The authors calculated the difference between prices given by a hospital online versus over the phone for vaginal childbirth and brain magnetic resonance imaging (MRI)," the press release continued. "They identified different hospitals as top-ranked or safety-net hospitals—safety-net hospitals typically provide care to individuals regardless of their ability to pay."

Read on: hpnonline.com/53072756

FDA takes action on updated mRNA COVID-19 vaccines to better protect against currently circulating variants

On Sept. 11, the U.S. Food and Drug Administration took action approving and authorizing for emergency use updated COVID-19 vaccines formulated to more closely target currently circulating variants and to provide better protection against serious consequences of COVID-19, including hospitalization and death. Today's actions relate to updated mRNA vaccines for 2023-2024 manufactured by ModernaTX Inc. and Pfizer Inc. Consistent with the totality of the evidence and input from the FDA's expert advisors, these vaccines have been updated to include a monovalent (single) component that corresponds to the Omicron variant XBB.1.5.

Read on: hpnonline.com/53072022

Almost 70% of hospitals and health systems will adopt cloud tech by 2026

According to a Sept. 26 press release, Global Healthcare Exchange (GHX) published the results of a survey in a report entitled, "Modernizing the Healthcare Supply Chain Through the Cloud." The survey polled more than 100 hospital and health system leaders on cloud technologies and found that cloud-based solutions are becoming a new standard across all departments.

The press release stated, "According to the data, nearly 70% of all hospitals and health systems are likely to have adopted a cloud-based approach to supply chain management by 2026, helping them to enhance decision-making, improve efficiency and agility, reduce costs, improve data security and privacy and streamline processes."

The survey highlighted that approximately 80% of healthcare leaders that use cloud technologies for supply chain describe the transition as 'a positive change' and 45% of hospitals and health systems have transitioned to cloud technologies for supply chain

"One of the largest opportunities in healthcare is empowering providers to better control surging costs while ensuring patients receive the best possible care. Data show the cloud plays a vital role in making that a reality," said Archie Mayani, chief product officer, GHX. "By migrating data to the cloud, hospitals and health systems can make more trusted, accurate decisions, helping to lead to a safer and more efficient approach to supply chain management and, ultimately, higher-quality and more personalized care."

Read on: hpnonline.com/53073614

If green is the new black, why are some seeing red?

Ethical, moral, responsible concerns clouded by financial, operational aims

by Rick Dana Barlow

Recycling and sustainability, the dynamic duo of a circular economy, seems ensnared between a rock and a hard place. Some might see it as running in circles, questioning perceived outcomes as well as the pathways to those outcomes. Skeptics may debate the necessity and severity of it all as cynics effectively dismiss the never-ending hue and cry.

However, many converge around a single – and simple – question: What is the value proposition for recycling and sustainability? If it costs more to do "what's right," is that worth it? Sift your response through administrative, clinical, ethical, financial, moral, operational, and societal filters.

Emerging from the nearly three-year pandemic era, which generally seemed to dominate priorities, healthcare organizations, by and large, have returned to a host of priorities that they likely relegated to lower ranks from 2020 to earlier this year – such as recycling and sustainability.

Yet as healthcare organizations "reboot" their post-pandemic strategic plans, have those organizations elevated recycling and sustainability on the priority list or returned to standard operations circa 2019? Reviews are mixed even as views are variable (see sidebar titled "What motivates recycling, sustainability in healthcare organizations?").

"Legacy sustainability programs had no value proposition – they were a financial burden to hospitals, and the question became whether to do the right thing or to do the thing that made financial sense," Lars Thording, vice president, Marketing & Public Affairs, Innovative Health, told *Healthcare Purchasing News*. "This is because legacy sustainability programs were straight-out recycling programs where used items were broken down to component parts and inserted into ill-equipped recycled parts manufacturing – in a very expensive process. The fact is that in terms of circular utilization, recycling is a very poor solution.

Lars Thording

"Today's emerging circular programs combine environmental sustainability with financial upside," Thording continued. "When an item is not broken down into its component parts, but rather made ready for a second use, there is balance in the sustainability-cost equation: Tomorrow's circular solutions reduce costs and environmental impact. Single-use device reprocessing, for example, retains the value of devices while reducing carbon footprint by 50% or more. Recycling solutions are the enemy of financially and environmentally responsible reuse. High-value circular solutions achieve both because they are about bringing extra life to items, not piecing out their death."

Circular pain in the gas

Whether a healthcare organization has yet to embark on a recycling/sustainability project or program for the first time, looks to re-engage in environmental responsibility after a multi-year gap or seeks a fresh new target to accelerate ongoing efforts post-pandemic, corporate supplier executives whose companies service and support recycling and sustainability strategies and tactics industrywide offer plenty of recommendations. To begin, any prospective project or program should be preceded by an operational audit of supply chain operations.

James Burgess

"Be strategic in your efforts by identifying an area in the supply chain where you can reduce your environmental footprint," suggested Jim Burgess, director, Sustainability, Medline Industries. "Supply chain, specifically purchased products, make up the majority of emissions for a healthcare organization. If progress is to be made on reducing the

impact of healthcare, a major focus must be purchasing only those materials that are both made from renewable energy and can be 100% recycled. Health systems can set green purchasing goals and work with their suppliers to identify sustainable products that will help them achieve their objectives."

Burgess touches on one area that seems to resonate the most, echoed by Innovative Health's Thording and several others who zero in on reducing carbon emissions with no impact on finances or patient care.


Deb Fillis Ryba

"Our most pressing sustainability challenge is climate change, so every organization needs to work towards carbon neutrality or net zero," said Deb Fillis Ryba, global director, Corporate Social Responsibility and Sustainability, Nice-Pak/PDI Healthcare. "This is an ambitious goal that would allow for a broad range of sustainability initiatives, including recycling programs. Organizations can look across their value chain to identify the areas they want to impact, from engaging suppliers to address their carbon footprint, to focusing on their own waste streams or making it easier for staff, patients, and visitors to use less energy."


Mikhail Davis

Mikhail Davis, director, Technical Sustainability, Interface, concurs, homing in on specific areas of concern. He said, "Currently, healthcare systems contribute to around 5% of annual greenhouse gas (GHG) emissions, with a majority of that percentage corresponding to embodied carbon emissions. Embodied carbon is defined as the GHG emissions generated by the manufacturing, transportation, installation, and disposal of materials used in buildings."

"Reducing a healthcare facility's embodied carbon emissions presents a huge opportunity for the industry to decarbonize," Davis continued. "To do this, healthcare organizations must begin tracking the embodied carbon of all purchases. This accounts for emissions generated by their providers and suppliers on their behalf, called 'Scope 3, Category 1 Emissions' by regulators."

"By tracking the emissions generated by their purchases, healthcare organizations can begin identifying opportunities to reduce their footprint and even reduce costs. More importantly, they can begin to influence their key suppliers to decarbonize across their supply chains, prompting a shift to production of lower-carbon materials and encouraging sustainable innovation," he added.


Christina Indiveri

Cristina Indiveri, associate vice president, Core Tenet Programs, Vizient, recommends reducing emissions based on cause-and-effect links to significant and numerous negative health impacts — from cardiovascular disease to heat-related death. "Extreme climate events and pollution endanger human health, and some groups are disproportionately impacted, including minority groups, the poor, the elderly, and children. Ultimately, climate change fractures the healthcare organization's ability to deliver safe, effective care," she indicated.


John Ullman

Such efforts likely will take time for research, according to John Ullman, director, Safer Chemicals and Procurement, Health Care Without Harm. "An organization should work to accurately baseline its Scope 1, 2, and 3 greenhouse gas emissions and come up with an emissions reduction strategy," Ullman said. "Fortunately, these steps entail an initial investment of time for collecting and analyzing data and are not reliant on making major purchases."

Beyond carbon emissions and greenhouse gas reduction, Ashley Perry, Hazardous Waste Specialist, Daniels Health, urges healthcare organizations to evaluate waste generation in the operating room for a variety of reasons.


Ashley Perry

"The OR is responsible for a significant portion of the healthcare organization's waste," Perry insisted. "There are massive opportunities for waste reduction, whether through elimination of single-use plastics – and replacing them with reusable containers – or looking for recycling opportunities for the actual waste being generated. Multiple studies estimate that 70% of OR waste is 'blue wrap' where there is a recycling opportunity for that material and would drive significant landfill diversion. The opportunity in the OR allows for a major impact without the effort required for certain larger projects or overarching approaches."


Robert Chase

Rob Chase, founder and CEO, NewGen Surgical Inc., pinpoints trays as a key option. "Start transitioning your plastic procedure kit packaging trays to renewable plant-based trays currently on the market," he said. "Transition off plastic in the area that is easiest first, packaging, and then move to renewable plant-based OR consumable products where available."


Richard Radford

Options to make a difference abound, acknowledges Richard Radford, CEO, Cenorin. "Every institution has its own set of opportunities to significantly improve its sustainability programs," Radford noted. "Many have begun by assessing a variety of sustainability initiatives, from better purchasing programs to the utilization of third-party reprocessors and incorporating those that seem easily workable. The result: reduced costs, environmental impact, and material waste. This approach is incremental and will certainly make steady progress."

What if financial concerns were removed from the equation?

"Develop a list of all [single-patient use] devices and set priorities – from Pareto analysis [80-20 rule] for which devices would bring the best value if processed inside the hospital and saving on packaging, shipping, storage, and disposal," Radford noted. "Follow this by determining which devices have reprocessable alternatives and creating a plan to integrate them into inventory. Next, determine the necessary FDA-cleared reprocessing technologies required to safely return these devices for next safe use on a patent. Hospitals that have taken this course have found that the savings gained will offset both labor and capital investment costs with payback in less than 18 months. This is a big step and project. However, it is safe, sound, and meets the larger goals of sustainability."

If money were no object, according to Tom Ricciardelli, president and CEO, SelecTech Inc., he suggests "implementing renewable energy to completely offset consumption."

Modifying behaviors

Short of mandates, regulations and requirements that may involve certification, licensing and reimbursement issues, among others, the playbook to motivate healthcare organizations to participate in recycling and sustainability efforts likely centers on economic incentives.

"I think monetary incentives are the primary driver for implementing any new program," insisted SelecTech's Ricciardelli. "Healthcare organizations, in particular, often operate on tight profit margins and have to drive decisions based, in large part,

on use of capital and ROI. Tax credits seem to be the most implementable and attractive to organizations."

Others assess benefits from short-term and long-term perspectives, along with micro- and macro- impacts.

"If there is short-term economic opportunity involved, the business will take advantage of it," assured Medline's Burgess. "This is what we call double materiality, where an opportunity for improvement is both good for the business and the planet. An area that remains yet to be explored for economic payback is climate risk in both physical and transitional. There can be long-term business incentives found here to take advantage of and reduce the risks of relying on current systems."

Interface's Davis emphasizes the competitive impact of environmental responsibility. "The threat of losing business should be an initial motivator for providers and suppliers to implement recycling and sustainability programs," Davis insisted. "Today, sustainability is no longer a 'nice to have.' Instead, it's an expectation and a pathway for winning additional business.

"It's important to prioritize sustainability and continuous innovation to remain competitive in the marketplace," he continued. "If you are going up against another supplier to win business but cannot show that sustainability is deeply integrated into your organization's strategy, you will most likely lose out on that business."

Still, much hinges on specific choices and actions made, according to Cenorin's Radford.

"Recycling has its own set of incentives that will return some benefits to healthcare institutions," he said. "However, reuse of devices has a far larger impact on cost savings and sustainability, and thus, a stronger incentive to implement as broadly as possible. The reuse of devices does not eliminate recycling; it may just postpone it. The alternative is to repurpose the device construction materials to another purpose. An easy example is found in any number of plastic devices used throughout the hospital. These devices have a natural or stated useful life, many times listed in the [instructions for use]. There may be hundreds of examples of this in most hospitals. The motivation to move in this direction is found in the values held by most providers/practitioners: Don't be wasteful and do protect the environment. The challenge for management at all levels is to create policies and processes that will allow hospital staff to act on their natural tendencies to do what is right for sustainability."

To move the healthcare market toward low-carbon patient care, NewGen Surgical's Chase posits a carrot-and-stick approach that is applied to providers and suppliers alike.

What motivates recycling, sustainability in healthcare organizations?

Regardless of a nearly three-year global pandemic disrupting healthcare operations, the hot environmental topics of recycling and sustainability continue simmering to a slow boil with healthcare organizations pursuing projects and programs even if they lack and yearn for strategic and tactical direction as a number of recent studies show.

While justifications for recycling and sustainability participation are numerous, logical and salient from administrative, clinical, financial, and operational perspectives, one overarching theme seems to bubble to the surface among the roiling reasons. *Healthcare Purchasing News (HPN)* surveyed corporate executives at 10 different companies that support healthcare provider organizations with recycling and sustainability services. *HPN* asked them to rank the following nine reasons for recycling and sustainability efforts with the results based on averaging the scores. Here's what the collective suggested:

HPN: Please rank the following reasons as provider and supplier justifications for implementing recycling and sustainability strategies, processes, and projects.

1. Competitive and economic advantage
2. Future of the company
3. Strategy/tactic to ensure/reinforce employee health and safety
4. Simply the right thing to do
5. Future of the environment
6. Reinforce positive publicity
7. Legal obligation
8. Key strategy to attract labor
9. Elude/evade negative publicity

The skinny: Although the rankings were based on averaged scores, the biggest issue was that few – if any – agreed on any one reason. No one agreed on standard aims, goals, strategies, and tactics. Responses generally were all over the board. Lacking unity of purpose, beyond the monolithic support of sustainability, any movement may stagnate and stall – no progress. Striving for circular economy spirals in circles.

Most noteworthy, the top three reasons above all center/converge on business and economics. After that, there are ethical and moral motivations around the environment. The lowest concern? Publicity.

If you wanted your organization – or to convince other provider and supplier organizations – to embark on an effective recycling and sustainability process/program/project, what element could/should/would you include first?

1. Efficient energy consumption
2. Carbon neutrality
3. Reduced packaging (tie)
   Using energy-/fuel-efficient transportation methods/vehicles (tie)
4. Net zero emissions (tie)
   Using renewable energy sources (e.g., bioenergy, geothermal energy, solar panels, windmills, etc.) (tie)
5. Using recycled materials in construction, remodeling, daily operations (e.g., building materials, flooring, paper, water, etc.)

The skinny: Energy consumption, followed by packaging and recycled materials usage outpaced the rest. Once again, response rankings were averaged, but responses were all over the board. In fact, four responses emerged as dual two-way ties. Respondents were given the option of making their own suggestions, which included switching to renewable products completely, aligning goals and strategies, enlisting teams, developing roadmaps, setting resources and engaging participants, and minimizing the use of single-use plastic devices.

For those healthcare organizations that delay, postpone or reject recycling and sustainability efforts, why do you think they decline to participate in any environmental initiatives?

1. Not a primary priority per the C-suite
2. Perceived as too costly right now
3. Too many questions about ROI
4. Greenwashing (unreliable claims) give us pause
5. Lack of standards and validation
6. Other

The skinny: Respondents were allowed multiple responses and could suggest their own. Among the "other" responses were a lack of subject matter experts in the space to own the project or efforts, which dissuades the C-suite from investing in human capital, lack of regional infrastructure to facilitate recycling, lack of capital to support progress, and lack of understanding the connection between single-use plastics and climate change.

The top three came in very close together, followed by the bottom three in a very close format – both groups separated by a wider gap. The top three concentrate on confidence and priority, followed by lack of standards and reliability of claims.


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"For suppliers it is quite possible that manufacturers of single-use plastic products could be held responsible for the end-of-life impacts to the commons and society at large – the stick – or more likely and a more effective way to move the market would be for a change in reimbursement – the carrot – to providers, paying more for measuring and achieving lower carbon surgical procedures [and] patient care. This would really drive change and get manufacturers working on low-carbon product solutions. Absent some regulatory lever being put in place, providers and suppliers should act now because we all have families and we need to do the right thing, where we have expertise and can make a difference for future generations."

Obvious value proposition

Vizient's Indiveri argues that sustainability's value proposition should be evident already. "It yields cost savings, mitigates risk, improves resiliency, increases efficiency and most importantly, is critical for human health and safety," she said, adding that many facilities already recognize it.

"Many healthcare organizations are connecting their mission statements with the health impacts occurring due to climate change," she continued. "Everyone's health will benefit from efforts to reduce carbon emissions. Other healthcare providers are leveraging sustainability's comprehensive economic benefits through reprocessing programs, energy-efficient initiatives and anesthetic gas management to reduce costs. In addition to cost reductions, funding mechanisms are now available through the Inflation Reduction Act and other climate action resources to provide incentives for this work."

Plus, some providers are leveraging sustainability to support resiliency, Indiveri adds. "Prioritizing sustainability supports supply assurance, value chain sustainability, and furthers transparency and visibility to encourage agile decision-making. For instance, sustainability goes hand-in-hand with local purchases to reduce carbon emissions and transportation costs, assure supply chain resiliency and domestic sourcing, improve quality control, and forge partnerships with community-based suppliers for job creation to stimulate the local economy," she noted.

If anything, recycling and sustainability encourage healthcare facilities to evaluate what they do holistically, according to Health Care Without Harm's Ullman. "Sustainability and recycling programs can spur organizations to more closely analyze their procurement practices as well as waste streams, which has the potential for creating operational efficiencies and cost savings," he indicated.

PDI Healthcare's Ryba offers more of a global viewpoint. "Ultimately, healthcare leaders need to understand that the effects of climate change have direct impact on population health and could lead to overburdening the healthcare system," she concluded. "We are all in the business of healthcare delivery and prevention, and protecting the health of the planet is necessary to protect the health of its people. HPN

Ignoring, postponing, sidestepping recycling, sustainability efforts means business

Non-compliance with any recommendation, requirement, rule or standard may lead to negative or positive consequences, depending on context and outcomes, in the short term and long term. Participation in recycling and sustainability efforts offers no exceptions. So what might happen should any say, "meh?"

Short-term consequences

"With regard to recycling, we will continue to burden our disposal systems. We do see some of this now with some waste materials being exported for disposal. This is just a shift of the problem. I'm actually a proponent of burning waste as usable energy. With all the proper controls, I believe this can be done cleanly and solve two problems (waste disposal and energy generation) at the same time."

Tom Ricciardelli, president/CEO, SelecTech Inc.

"In the short term, it can be hard to see the challenges of not having programs in place. But that means you're not able to course-correct down the road. As an example, there may be an opportunity cost to losing out on sustainability experts going to other organizations. In general, you're losing out on the opportunity to get ahead."

Ashley Perry, hazardous waste specialist, Daniels Health

"Public image, employee loyalty, financial [issues]."

Lars Thording, vice president, Marketing & Public Affairs, Innovative Health

"For a portion of recycling and sustainability efforts there is an economic benefit to taking on the project or initiative. Businesses should look to capitalize on these opportunities for near-term benefit. Customers, in this case patients, and prospective employees are also evaluating sustainability efforts by healthcare systems. Undertaking sustainability initiatives can lead to a positive reputation within the community and further advance a health system's appeal to be the provider and employer of choice."

Jim Burgess, director, Sustainability, Medline

"Increased costs due to unnecessary waste or energy/operational inefficiencies; poor perception/reputation with patients, staff, visitors, and the community."

Deb Fillis Ryba, global director, Corporate Social Responsibility and Sustainability, Nice-Pak/PDI Healthcare

"In the immediate environment, it frustrates the people who are working towards behaving in a more environmentally responsible fashion to see their colleagues and their business associates – patients, vendors, contract MDs or travel HCPs – ignore and disrespect their efforts. If enough people who are employees sense a low level of commitment within the organization to reaching its stated sustainability goals, there will be morale issues that could lead to departures to – yes, it's a deliberate pun – greener pastures."

Ann Hewitt, vice president, Sales and Marketing, Cenorin

"In the short term, suppliers and vendors might see a loss of business opportunities, a lack of monetary savings from efficiency gains, and low employee motivation."

Mikhail Davis, director, Technical Sustainability, Interface

"Short-term consequences of non-compliance to sustainability efforts may include the inability to differentiate an organization's business to promote human health and safety as well as missed recruitment opportunities. Poul Weihrauch, CEO of Mars Inc., recently shared 'companies that back off their social and environmental commitments in the face of 'nonsense' political attacks risk alienating a generation of talent' (https://hbr.org/2023/04/why-business-leaders-must-resist-the-anti-esg-movement).

"Other short-term consequences may include the inability to earn revenue and conduct business in specific locations. The California Senate Bill 253 requires both public and private U.S. businesses with revenues greater than $1 billion operating in California to report their carbon emissions including

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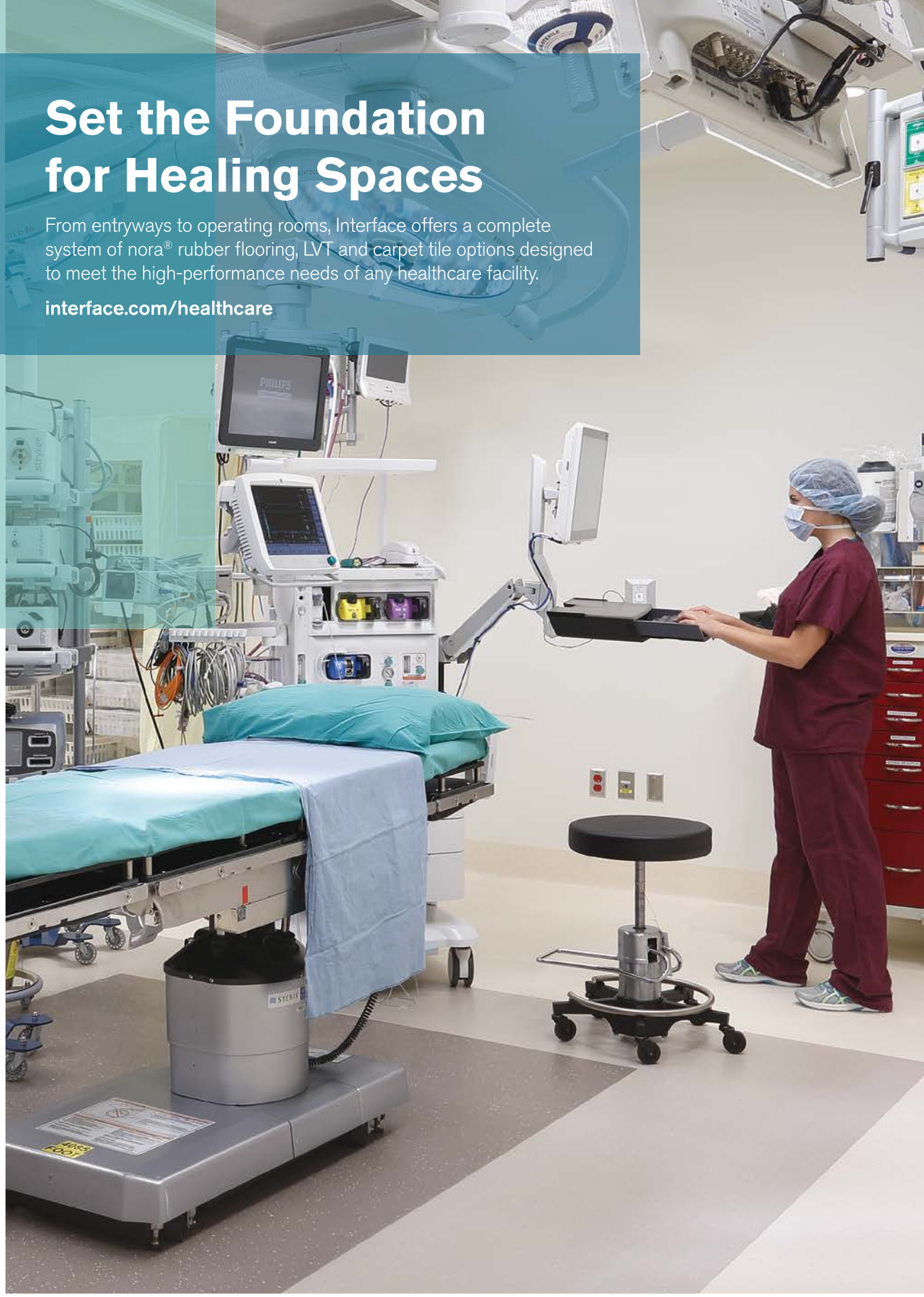

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scopes 1, 2, and 3, beginning in 2026. Senate Bill 253 also requires reporting companies to obtain third-party validation of their reports. The governor has recently expressed support for signing the bill. In addition, the NHS in the U.K. will require all suppliers to publicly report targets, emissions and publish a Carbon Reduction Plan for global emissions aligned to the NHS net zero target, for all scope 1, 2, and 3 emissions in 2027. In 2030, suppliers will only be able to qualify for NHS contracts if they display their progress through continued reporting (https://www.england.nhs.uk/greenernhs/get-involved/suppliers)."

Cristina Indiveri, associate vice president, Core Tenet Programs, Vizient

"A short-term consequence could be regulatory violations that result in fines from state and federal agencies. Not having an effective waste management program results in regulatory risk, as well as unneeded financial expenditures. For example, the lack of a regulated medical waste (RMW) reduction program could result in a large amount of waste that could be managed as MSW, instead of going out with the RMW at a much higher cost."

John Ullman, director, Safer Chemicals and Procurement, Health Care Without Harm

"The possibility of looking unfavorable with employees and other stakeholders. You're part of the problem and not the solution."

Rob Chase, founder and CEO, NewGen Surgical Inc.

Long-term consequences

RICCIARDELLI: "With regard to recycling, our disposal systems will be stressed beyond capacity and mandates will be required to prevent waste from piling up.

PERRY: "The landscape around sustainability overall has been changing. More than ever it's a primary focus for many organizations. From a healthcare perspective, the long-term consequence of non-compliance is that if/when things become mandated, they are going to be so far behind and will have a much larger gap to make up. It is much better to start small and work towards it over time than to be forced to bump up against a regulatory deadline. When you're rushed by a regulatory deadline, you have the potential for gaps or inefficiencies. With the luxury of starting early, you can avoid those pitfalls.

"As a supplier, this is becoming a much more common topic/ask of healthcare organizations. They want to know what suppliers are doing re: internal sustainability efforts. As a supplier in this space, the long-term consequences are that you could lose business when partners put parameters in place over who they can work with."

THORDING: "Competitiveness, macro-environmental impact."

BURGESS: "There are so many reasons for a healthcare organization to invest in sustainability. The goal of a health system is to increase health. Not investing in sustainability projects that reduce emissions, specifically in the supply chain where most emissions from a healthcare system can be attributed to, will continually decrease the ability for a health system to perform their most basic function. Almost everything a healthcare organization invests in sustainability can be attributed to increasing the health of those it serves. Examples include using emissions free and renewable energy and purchasing products that are designed to be recycled and are actually recycled, to name a few."

RYBA: "Deforestation, biodiversity loss, climate change, and ocean plastic pollution, which may lead to more diseases and sicker people and potentially hospital systems that are overwhelmed by an ill human population."

HEWITT: "We will face increasing upheaval from weather-related events, mass migrations, and inability to source products we need to care for increasingly vulnerable populations of patients."

DAVIS: "In the long term, companies run the risk of being unable to compete in a resource-constrained economy while also being subject to lawsuits over their supply chain's contributions to negative ecological and social impacts."

INDIVERI: "Long-term consequences of non-compliance to sustainability efforts include an array of adverse health outcomes. Climate change is expected to cause approximately 250,000 additional deaths per year between 2030 and 2050 (https://www.who.int/news-room/fact-sheets/detail/climate-change-and-health). Exacerbated air pollution may negatively impact respiratory and cardiovascular conditions. Changes in temperature may lead to changes infectious diseases. Droughts, extreme heat may affect food safety and lead to malnutrition.

"In addition, climate change and its reparations are not cheap. Direct damage costs to health are expected to be between $2 billion-$4 billion per year by 2030 due to climate change (https://www.who.int/news-room/fact-sheets/detail/climate-change-and-health). No one is safe from these significant environmental, safety, and health risks."

ULLMAN: "Without sustainability being a focus in an organization's strategy and plans, opportunities for significant cost savings and efficiencies could be overlooked, as well as opportunities for reducing risk and strengthening organizational and local community resilience for being able to respond to future crises."

CHASE: "We surpass what the scientific community has established as our planetary boundaries and exceed a 1.5-degree Celsius increase in average temperature with a continuation of and an increase in the extreme weather events happening now."

Recycling, sustainability efforts and outcomes abound among providers, suppliers

As myriad healthcare provider organizations successfully carry out recycling and sustainability projects and programs within their operations, *Healthcare Purchasing News (HPN)* asked a variety of supplier executives who work in companies that directly service and support providers in their recycling and sustainability efforts to share noteworthy accomplishments. Here's what they said.

"Simple changes can make a big difference when it comes to carbon footprints. Several years ago, we developed an innovative soft pack package that uses approximately 80% less plastic than our canisters. When we switched customers from our canisters to the soft pack format, we were able to reduce the number of trucks it takes to ship the same amount of product and reduce the amount of plastic packaging in their supply chain.

"However, we didn't stop there. We are continuing to refine all product packaging to be more sustainable. Look out for more on this in the coming weeks. Learn more about our sustainability initiative here: https://wearepdi.com/en-us/innovation."

Deb Fillis Ryba, global director, Corporate Social Responsibility and Sustainability, Nice-Pak/PDI Healthcare

"Medline ReNewal takes back single-use medical devices and reprocesses/refurbishes them to where the quality can be better than original OEM specification. This program can potentially lower overall life cycle emissions from a material and provide economic benefit for the health system. In 2022 alone, ReNewal helped Medline customers divert 1.1 million pounds of waste from landfills. Our 2022 Environmental, Social and Governance report

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- Reuse water from rinse cycles
- Recycle laundry supplies and wash water

76% of patients associate healthcare textiles with durability, comfort, and sustainability

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*Globe Scan surveyed more than 30,000 global consumers across 31 markets in 2023

provides more details on the work Medline is doing to make healthcare more sustainable for people and the planet."

Jim Burgess, director, Sustainability, Medline Industries

"At our organization, we have subject matter experts that are trained in sustainability/compliance to evaluate organizations to determine opportunities for recycling or landfill diversion. Through this process, we have been able to reduce waste volumes for customers. In one instance, we were able to divert 115 tons of waste from hazardous waste treatment and landfill disposal."

Ashley Perry, hazardous waste specialist, Daniels Health

"We see hospitals reduce carbon emissions by 10,000 pounds CO2 equivalent per year and achieving $1 million in cost reductions from reprocessing – a circular economy program, as well as reducing the cardboard footprint of packaging. Healthcare throws away far too much packaging."

Lars Thording, vice president, Marketing & Public Affairs, Innovative Health

"Many medical devices are constructed of plastic and are sold in both single-patient use (SPU) and reprocessable offerings. They serve the same function – though reusable may work better – but may be priced differently. A good example is sleep masks used in CPAP therapy, where achieving the right fit results in better compliance with wearing the mask and thus better sleep. The right fit is usually achieved with a reusable mask. Often, a lab chooses SPU devices because of a perception that sterile semi-critical devices are the best infection prevention option. And even if they prefer to employ reusable devices, many sleep center staff believe that The Joint Commission will cite them for using reusable supplies. Many sleep centers have switched to single-use masks, tubing and other materials as a proactive measure to avoid a citation."

Richard Radford, CEO, Cenorin

"Cenorin has worked with several progressive sleep centers to implement FDA-cleared high-level thermal disinfection (i.e., pasteurization) so they can continue to offer the high-quality, reusable masks that provide the best fit and highest compliance level for their obstructive sleep apnea patients. Pasteurization requires only water, uses minimal electricity, and involves zero solid waste disposal. Sleep centers that reprocess their reusable medical devices see a payback in less than a year, due to cost savings from eliminating purchasing, storage, and disposal of single-use plastics. They also report higher patient satisfaction, and several have seen an uptick in their referral base related to their higher compliance levels."

Ann Hewitt, vice president, Sales and Marketing, Cenorin

"The experience of high-level thermal disinfection in sleep labs can be generalized to many other clinical areas that use plastic devices, such as respiratory care, anesthesia, [emergency department] and even perioperative locations. The opportunities are there to improve sustainability throughout the hospital."

Richard Radford, CEO, Cenorin

"At Interface, we offer the ReEntry Recycling and Reclamation program to our customers. This program includes partnerships with independent recyclers to reclaim and reuse carpet tile and LVT to ensure nothing ends up in a landfill. ReEntry is the only third-party certified recycling system among flooring manufacturers in North America.

"Interface is consistently reinventing the ReEntry program and the company's product technology to make flooring-to-flooring recycling more scalable. For example, in 2020, Interface replaced its pioneering Cool Blue recycled backing technology with the CQuest backings line, which can use even more bio-based materials and recycled content. This increases our appetite for old carpet tile reclaimed from customers through ReEntry to use in new CQuest-back carpet tiles. Carpet tiles made on these backings are third-party certified as recyclable by GreenCircle Certified. Additionally, all of Interface's Sound Choice LVT products in North America are third-party GreenCircle Certified as 100% recyclable at end of life into CQuestGB backing.

"Interface also provides customers with a ReEntry certificate to highlight their commitment to closed loop recycling of their flooring."

Mikhail Davis, director, Technical Sustainability, Interface

"Our company specializes in interlocking flooring and uses high recycled content in the products we make, with some of our products using up to 100% recycled content. Our interlocking system is designed so that it is easy to move/reuse the tiles for additional use and we will pay to take back old tiles and recycle them back into new tiles. Our manufacturing also has implemented solar electricity to offset some of its electricity needs."

Tom Ricciardelli, president/CEO, SelecTech Inc.

"I recently moderated a panel discussion between three leading healthcare providers who are advancing sustainability performance improvement. One provider successfully integrated sustainability within major areas including: fleet management, water consumption, zero waste, carbon neutrality, locally sourced food, building energy consumption, and sourcing procurement. She has partnered with a variety of leaders at her organization to institute sustainability leadership councils and employee engagement groups and has leveraged external partners to realize over $13 million in cost savings over five years.

"Another provider prioritized sustainability within the sourcing process at his organization by avoiding chemicals of concern, improving energy and water efficiency, reducing climate impacts and reducing the total cost of ownership. His organization's strategic vision focuses on the triple-bottom line: Improvements in social, economic, and environmental areas and collectively saves over $12 million annually from avoided cost.

"The third sustainability leader completed a greenhouse gas inventory assessment to baseline carbon emissions at her organization. She organized emissions by energy and water, transportation, zero waste, and procurement to set goals and align departments throughout her organization. Her organization is on track to reduce scopes 1 and 2 greenhouse gas emissions 50% by 2030 and has integrated climate action as a cornerstone of its sustainability program.

"Sustainability opportunities are abundant. What's most important is acting now as the health and safety of our patients, families, and communities depend on it."

Cristina Indiveri, associate vice president, Core Tenet Programs, Vizient

"Practice Greenhealth created a custom waste-tracking tool for a multi-hospital health system in the Midwest. This baselining activity allowed this system to understand its waste streams, aggregate its vendors and vendor contacts, and set reduction goals moving forward. By understanding its waste streams, this system can better negotiate contracts and realize cost savings. Many other tools for addressing climate, waste, food, safer chemicals, and other areas can be found on the Practice Greenhealth website."

John Ullman, director, Safer Chemicals and Procurement, Health Care Without Harm

"We have one distribution customer that moved all their large surgical packaging trays in 2022 from Polystyrene to a Bagasse plant-based renewable packaging tray, and to date has eliminated over 281,000 pounds of single-use plastic and 262 metric tons of CO2e."

Rob Chase, founder and CEO, NewGen Surgical Inc.

Triose: Harnessing the dynamic nature of supply chain and logistics management to build resilience

The COVID-19 pandemic and economic challenges of the past several years have made supply chain resiliency a heightened priority for healthcare organizations. A recent survey from PricewaterhouseCoopers found that close to half of health industry executives named supply chain disruptions a serious business risk.

Yet, results from a Gartner survey showed that only 20 percent of executives describe their organization's supply chain networks as highly resilient.

Getting a better grip on its supply chain – and especially its costs – empowers a hospital or health system to run like a well-oiled machine in the background and return to focusing on patient care.

The question is: *how best to get a grip?*

Supply chain challenges

The pandemic exposed the fragility of lean supply chains, once a popular alternative to stocking large amounts of medicine and other supplies on-site. Healthcare organizations who had come to rely on "just-in-time" inventory management – ordering medicines when they were about to run out – suddenly found themselves scrambling to secure shipments of essential drugs and other critical supplies.

The rush to find healthcare goods and get them delivered in a timely manner created a logistical nightmare that added costs and strain on overworked staffers, decimating operational efficiencies and jeopardizing patient care.

Keys to supply chain and logistics management

Hospital leaders face a complex balancing act between saving on cost and ensuring they have the supplies necessary to deliver patient care. Navigating the granular intricacies of this delicate balance is nearly impossible without supply chain expertise to understand important concepts like diversifying manufacturing networks, multi-sourcing, and developing inventory and capacity buffers.

Mobilizing supply chain management into forward-thinking strategies that build a resilient supply chain can achieve excellence in procurement, purchasing, logistics, transportation, and distribution while also providing sustainability benefits including (but not limited to) reducing the size and weight of packaging and decreasing fuel consumption.

"By gaining control over product deliveries through data, resources, and cost allocation support, hospitals can more effectively manage their supply chain operations, gain visibility over costs, and, ultimately, realize more savings. This benefits hospitals, healthcare professionals, and patients," said Natalie Jones, Triose VP, Sales.

Triose is a full-service provider leveraging innovative technology to provide visibility and actionable, measurable results in inbound freight management services, courier management, and final mile pharmacy delivery. Partnering with hospital executives, clinicians, and supply chain leadership through the years, the company has uncovered four keys to optimizing supply chain management:

Embrace the idea of analyzing total value

Understandably, many hospitals facing constant financial strain and scrutiny zero in on cost-saving opportunities. While a specific vendor or agreement may offer initial savings, organizations could be sacrificing long-term efficiency. In-depth supply chain analytics can help hospitals avoid singular cost-based decisions in favor of a more strategic approach.

Anticipate and prepare for change

Without actionable insights into issues on the horizon, hospital leaders are left to pick up the pieces after a problem strikes rather than prepare ahead of time. Triose helps clients create detailed contingency plans in case of a shortage, emergency, or urgent issue, leveraging an omni-carrier approach with UPS, USPS and other large cargo carriers.

Enhance visibility

Better logistics visibility into everything from freight management to medical couriers is crucial for hospitals to address problems in real-time and mitigate future risks. A delay in time-sensitive medical deliveries is potentially detrimental to patients, so deeper visibility allows hospitals to minimize delays, mitigate risks all while focusing on patient care.

Prepare to pivot

No one knows what's coming around the bend, but preparation is essential. For example, a significant impact of the pandemic was a sudden shift in how patients received medication. Instead of picking up medicine at the pharmacy, patients wanted it shipped to their houses, which presented a new wave of challenges in tracking and last-mile delivery. This shift required organizations to quickly adapt and build the infrastructure to meet the growing demand for those services.

Healthcare is in a constant state of evolution. Partnering with a provider like Triose to streamline operations and reduce costs builds agile, resilient supply chains that are the backbone of the healthcare industry, ensuring clinicians and hospitals are ready to deliver excellent patient care today and in the future in the face of any challenge. HPN

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Recycling, sustainability spans the gamut of healthcare provider operations

by Rick Dana Barlow

With recycling and sustainability becoming as much a business proposition as much as an environmental one among healthcare organizations, *Healthcare Purchasing News (HPN)* throughout the spring and summer months this year queried a variety of suppliers on how they might adapt to the environmental accountability and responsibility demands of their provider customers. Options include improving packaging, reducing carbon emissions and footprint, conserving and/or regenerating and reusing energy and eliminating certain kinds of waste through efficient project management and overall operations. *HPN* concentrated on shelving and storage, storerooms and warehousing, orthopedics and freight and shipping, including drone use.

April 2023: On Shelving and Storage

"I look at environment and sustainability in a different sense. When I think of the environment, I think of the people who work in the department. The space in which they work. The workflow. The safety hazards. The organization of supplies. When I think of sustainability I think of the employees. The patients. The protection of valuable inventory and equipment. Specialized storage equipment for each application has a profound impact on the hospital's working environment and its sustainability."

Ian Loper, vice president, DSI

"Environmental consciousness and sustainability has undoubtedly moved to the forefront discussions when evaluating the companies we choose to develop relationships with, and rightfully so. At H+H SYSTEM Inc. we are mindful of these concerns every step of the way. First and foremost, the solutions we offer are made from durable materials that will withstand the test of time and use, offering a long useful life. Doing so provides our customers with a product that is not constantly pulling resources to support the replacement or repair of their equipment. To speak further about the materials we source, our customers are able to use basic, household agents to clean our MedTrays and FlexShelf lines of products. This eliminates the need for harsh chemicals that potentially pose a threat to health and the environment."

Tim Ramcoobeer, sales development representative, H+H System Inc.

"One positive side effect of high-density storage is a smaller carbon footprint. Between standard racks in a storage area, there is a lot of wasted space. There needs to be room between racks to be able to move the racks and search for items, not to mention the unused space between the top of the rack and the ceiling. Those areas need light and climate control, so staff are able to find what they need in a timely manner. An automated solution, such as the Hänel Rotomat Vertical Carousel, condenses all that unused space into an area that's only used for storage. A Rotomat doesn't need to be well-lit inside or constantly heated or cooled, and it only needs to draw electricity while it's used. Automation helps decrease the amount of energy needed for your operations. As a result, you'll reduce expenses and minimize your impact on the environment."

David Phillips, marketing manager, Hänel Storage Systems

"Modern, adaptable solutions allow spaces to change and improve with less waste. For example, qwikSLOT and EZ-ADD shelving enable users to create more sustainable storage decisions. Instead of shelving that would need to be replaced with room adjustments, these designs embrace the ever-changing environment of storage rooms eliminating waste. Metro shelving also offers options with extreme durability – multiple MetroMax shelving designs that are 100% corrosion-proof. Limit waste by purchasing shelving that is built to last and won't require regular replacement."

Dave Salus, healthcare market manager, InterMetro Industries Corp.

"One area we see receiving more attention in terms of sustainability considerations in non-acute care is with the cabinetry found in exam rooms. More customers are looking for cabinetry that not only is designed to withstand the rigors of the healthcare environment, but also strengthens their sustainability initiatives and programs.

"Traditional wood cabinets are usually built-in and can sometimes experience moisture damage and deterioration issues. A modular, steel-on-steel design not only means greater durability and longevity of the cabinetry, it also provides the potential of repurposing the cabinetry during a new build or expansion.

"For instance, our Midmark designers recently worked with a customer to repurpose their existing cabinetry in a new facility being built. Nearly $40,000 worth of existing cabinetry was moved to the new facility. This saved the customer from having to buy new cabinetry for the entire facility, delivering cost savings and sustainability benefits."

Brian Hazelwood, marketing manager, Midmark

"Quantum's storage products are easily adaptable for change. The wire shelving products are uniquely designed to: add or remove shelves, change shelves to a higher or lower level, solid shelves and open wire shelves are interchangeable within the same unit. Quantum provides plastic bins in a multitude of colors and has a large line of wire baskets.

"In many healthcare environments, the products being stored in a particular area often changes. By adding or removing wire shelves the storage space in between shelves can grow or shrink to accommodate different products. Shelves are easily removeable without the need for tools.

"Rules and regulations often determine how you must use the space that is provided. For example, stored products must be 18 inches below a ceiling sprinkler, so upon inspection, it may be deemed that shelves must be lowered to meet this specification. Similarly, upon inspection it may be noted that the bottom shelves of a shelving unit must be solid and not open wire.

In this case Quantum can provide a shelf mat to cover the open wire, or a solid shelf can be retrofitted into the unit to become compliant with regulations.

"Quantum has provided millions of plastic bins into the healthcare arena. Some years ago, it came to our attention that in many areas plastic bins were no longer the preferred method of storage. Plastic, it was said, trapped dirt and dust and had to be washed continually to keep stored products clean. Upon knowing this, Quantum embarked on manufacturing a full line of wire basket systems. Many of the baskets were the exact same dimensions of the previously used plastic bins – simultaneously, Quantum embarked on an entirely new wire basket storage system to meet customer wants and needs."

Ed Granger, director, Sales, Quantum Storage Systems

"All finishes can be antimicrobial. By making buildings smaller and more efficient we are proving a green solution that keeps building smaller. Smaller buildings use less energy and the savings to a hospital at $700 per square foot for construction costs usually pays for a system like this in the square footage savings alone. The bonus is you can make the staff more efficient and eliminate stock outs, expired product and more with a full supply chain system solution."

Craig Crock, president, Southwest Solutions Group Inc.

May 2023: On Storeroom and Warehousing

"Metro products are always built with sustainability in mind. Our collection of forever shelving designs is designed to limit the need to replace shelving throughout the lifetime of the facility. Our designers build better to keep broken and worn-down shelves out of landfills."

Dave Salus, healthcare market manager, InterMetro Industries Corp.

"Medline incorporates many techniques and technologies that aid our efforts to be sustainable and environmentally friendly. On a strategic level, we work with our customers to optimize their product purchasing, creating queues that signal when it is time to reorder and how much product to reorder. This reduces emotional ordering, which, in turn, allows our trucks to make less trips, use less gasoline and save our customers time and money. One example we use to conceptualize this better is that people don't go to the store every time they need one egg; instead, they buy a carton of eggs, reducing the miles driven to and from the store to get the same amount of product. We do this in product purchasing by encouraging fewer fuller pallets of product.

"We also use motion-sensing LED lighting, which has a low power draw and only illuminates areas when movement is detected. Additionally, we only use electric material handling equipment, not propane, and encourage our customers to reuse racking. Medline also has a recycling program for broken and damaged pallets to be repaired and reused, reducing the need for new pallets."

Jaimin Patel, senior project manager, Engineering, Medline Industries

"There is clear environmental value in sourcing with sustainability in mind, and in developing comprehensive recycling and donation policies, but we shouldn't ignore the environmental value of operational efficiency. In 2017, UPS made headlines when they reported saving 10-million gallons of fuel each year by virtually eliminating left turns. This should be an inspiration that small operational adjustments can translate into significant savings at scale, impacting both bottom line performance and sustainability targets.

"How much can a forklift's usable life be prolonged when it isn't subject to the wear and tear of picking high movers every day, but instead only for lower velocity items? How much spoilage can be avoided by proactively managing lots and expiries? How much waste can be prevented by picking only what's needed for a case or physician? What is the CO2 impact of LTL deliveries versus shared milk runs? Workflow and process optimization is often evaluated through the lens of financial KPIs, but there is a compelling sustainability component to these improvements that are certainly worth considering as part of a broader strategy."

Cory Turner, CMRP, senior director, Healthcare Strategy & Product Marketing, Tecsys Inc.

"Every facility operator is becoming more aware of their environmental impact, especially in the supply chain, as every touch of a product has an impact on our planet as well as operators. Even in the largest facilities, we are seeing a trend to use hydrogen fuel cells from companies like Plug Power to reduce the waste and maintenance associated with electrical fork truck batteries. In many cases they also see an operational improvement, as the refueling of the vehicle is safer and faster for your employees to perform while maintaining peak performance of the equipment through the entire 'charge.' In certain circumstances, the fleet of equipment is not large enough to justify hydrogen fuel cells, so electric equipment becomes the standard.

"Another concern is around the metal shelves and racking that's typically required in your warehouse or storeroom. Many people consider racking to be boring, but choosing the right shelves and rack systems is of critical importance to maximize density and sustainability. I have observed plenty of facilities that unfortunately chose rack or shelving with little flexibility, which causes the density of your storeroom to then suffer, as you may not be able to add levels or adjust the sizes of your locations without significant work. Another option that has seen a good deal of recent success is high density cardboard shelving, from companies like Pallite Group. Their solution provides inventory locations of high-density cardboard that supports hundreds of pounds of inventory yet weighs very little and can be shipped on a traditional pallet.

"It's extremely labor-intensive to change your inventory solution after it's built, so that is a critical element when considering your next facility design."

TJ Fanning, COO, SVT Robotics

"Flexible and scalable robotic automation technologies solutions enable increased productivity, shorter order cycle times and faster response to change. These same qualities, supported by an engineering focus on sustainability, can also enable a range of environmental benefits. For instance, some goods-to-person solutions feature energy-efficient robots and a modular design that can extend the life of an existing warehouse, eliminating the environmental impact of new construction. Companies should ask their automation technology provider for expected energy consumption data for each automation solution to support their equipment selection decisions."

Grant Beringer, vice president, Integrated Systems, Swisslog Americas

"For years, Cardinal Health has utilized many recycling programs within our Distribution Centers (warehouses). From recycling plastic (shrink wrap) to compacting and recycling corrugate. More recently, we have partnered with some customers to pilot re-usable pallets (in lieu of disposable wood pallets). We continue to look for ways to reduce landfill burden, conserve water, reduce greenhouse gas (GHG) emissions and design products and services that reduce overall environmental impact."

Paul Farnin, director, Supply Chain Solutions, Cardinal Health U.S. Medical Products & Distribution

More from July and August 2023 online at https://hpnonline.com/53074804

SURGICAL/CRITICAL CARE

Healthcare Industry Needs Infusion of IV Products

Severe weather and the COVID-19 pandemic remain directly responsible for today's continued shortage of essential IV-related supplies

by Brenda Silva

As common as latex gloves and used just as often, intravenous (IV) systems and products can usually be found in abundance throughout most hospitals and healthcare facilities. For the most part, this was true until 2018. That's when Hurricane Maria hit Puerto Rico and severely impacted production of many IV-related products, which only added to existing short supplies that were already in tall demand. While the healthcare industry waited patiently for daily-use supplies to be refilled to prior levels, healthcare workers carefully utilized their limited supplies as sparingly as possible, ignorant of the even bigger impact yet to come in 2020.

Like the second part of a "one-two punch," there was no way the healthcare industry could have predicted the impact the COVID-19 pandemic would have on already-limited IV-related supplies. Global pandemic demands exacerbated domestic product shortages even more, so much so that IV product manufacturers are still trying to catch up with demands from 2018 that were never completely met. As such, today's healthcare industry professionals are exploring available options in their attempt to ensure future deliveries of essential IV products, both to meet daily patient needs and to prepare in advance for another potentially deadly medical crisis.

Increased demands, decreased supplies

Among the most in-demand medical supplies in hospitals and healthcare facilities, IV-related products arguably rank as high as gloves, masks, and since 2020, hand sanitizer. However, manufacturing requirements are higher for IV bags than other daily-use items. This means the time it takes to produce IV bags has the potential to create shortages that can have an even greater impact on healthcare facilities. Much like the saline often found in IV bags, extensive production requirements could find supply chain departments watching in-stock supplies drip away as they wait for product replenishment.

Medical supply shortages are nothing new to the healthcare industry. Even as the amount of high-demand products often remains high enough to meet average usage and needs, when unexpected events occur, the same products that were in abundance can quickly dwindle to low and concerning levels. In the case of Hurricane Maria, the domestic impact on supplies of IV-related products was bad enough in itself, but the global impact of the COVID-19 pandemic increased demands and shortages to levels unseen in prior years. Today, manufacturers are still playing catch-up with IV-related products that are still in short supply, as the rest of the healthcare industry anxiously waits for products to arrive before they're needed for another potential pandemic. But is there more that can be done now to prevent shortages in the future?

According to Daniel Clark, CEO and president of Linear Health Sciences, "Technologies that can help minimize the impact of loss of IV therapy, and improve its standard of use, can go a long way toward alleviating supply shortages – each time an IV line doesn't need

Daniel Clark

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replacing is one less IV system that needs to be supplied."

He continued, "There are numerous examples of these solutions. It could be our Orchid SRV (safety release valve) technology, which prevents IV dislodgment, enhanced IV securement, or technology that enables needle-free blood draws, or even ultrasound-guided catheter insertion. In a perfect scenario, methodical use of some/all of these solutions can help in creating a complete continuum of care. Additionally, training on these enhanced vascular access techniques can help generate efficiencies, by educating care providers on the best practices to reduce waste."

Along with more efficient product use, Clark pointed out the role that cost plays when it comes to ensuring hospitals and healthcare facilities have the required amount of IV-related products available.

He said, "Cost does have an impact, but only considering cost ignores down-stream impacts on clinical workflows and, most importantly, patient outcomes. An IV set that doesn't require replacement, but costs slightly more than the competing status quo, creates a lot of value further along the line. It enables smoother workflows in the clinic, uninterrupted therapy for the patient, and ultimately creates cost savings from not having to replace the IV system – alongside easing the burden on the healthcare supply chain."

Clark added, "This broader perspective provides better potential to address cost impacts as a complete solution, in comparison to individual component carve outs. We need to be assessing the complete cost of care alongside the individual pricing impacts."

In an effort to safeguard against future supply shortages, James Zacha, director of marketing, enteral feeding, at Avanos, said, "Global supply has continued to improve and while Avanos was impacted by supply disruptions driven by the pandemic and one-time events, we are now in stronger inventory positions across our entire supply chain. We continue to take active measures to minimize risk of future supply chain disruption." The company's measures include:

- Ongoing scrutiny of global geopolitical events for the purpose of getting ahead of potential shortages
- Active identification of weaknesses in the supply chain for critical raw materials implementation of solutions to strengthen availability now and in the event of future widespread shortage
- Focus on curating alternate suppliers for critical materials
- For domestic operations, deepening partnerships with industry and government associations, all of which have programs focused on ensuring supply of critical raw materials

Related IV product shortages

In addition to supply chain issues with IV bags, the healthcare industry is still facing shortages of drugs and nutritional solutions as well. With many of the fluids administered for quality of life and life-sustaining reasons, the current shortages are raising industry causes for concern.

Gary Kerr, MBA, PharmD, chief pharmacy advisor at Ocus Health, pointed out various drugs that are currently in short supply.

Gary Kerr

"As the mass media has been reporting this summer and early fall, the U.S. is still in the throes of major drug shortages in the IV and nutritional (dextrose, saline, electrolytes) solution areas. Most critical are the adult and pediatric oncology drug shortages, as well as the shortages of diabetes injectables like Ozempic-semaglutide. Maybe less public, but no less important, are the many drug categories associated with operating room procedures which include sedatives, antibiotics, electrolytes, and pain medications. Over 240 drugs remain on the FDA drug shortage list as of September 2023; the American Society of Health Systems also has committed resources to track and report on drug shortages," Kerr said.

When asked about the causes of the shortages, Kerr reported, "Several key causes of shortages are listed here, and the challenges remain in difficult mode as we enter the fall season." Asserted as reasons for shortages of drugs and nutritional solutions, Kerr listed four important points:

"Manufacturer plant closings drive shortages, as plan shutdowns are usually due to quality issues and also business decisions centered on profits and shareholder obligations. The closings are often sudden, and there is apparently no 'central' repository or library of drug sources, alternative options, etc. that is managed or overseen by a 'regulatory body.'

Natural disasters like the July tornado at the Pfizer plant in North Carolina triggered many critical-essential responses as hospitals and health systems scrambled to find alternate supplies of the impacted injectables. The hurricanes in recent years at Puerto Rico manufacturing plants also created many crises in the U.S. as an inordinate percentage of the U.S. sourcing of select injectables came from facilities on the island.

The U.S. arguably has a dramatic over-reliance on sourcing via overseas suppliers for raw materials and active pharmaceutical ingredients (API) also. India, China and Italy represent the top three out of 42 suppliers of API to the U.S.

Make or buy decisions at health systems and hospitals are occurring more frequently than ever as an unprecedented National Pharmacy Technician Shortage continues. Pharmacy Technicians are an essential piece of hospital pharmacy operations as they are the primary admixers of injectable solutions usually in bag or syringe ready-to-administer form."

Kerr added, "Without that support, administrators may move products to 'buy' triggering unanticipated demand at the manufacturer. This is a cost decision that intertwines labor, supplies, and the drug itself, and can play out across hundreds of line items."

Looking ahead at what more could be done to ensure IV-related product availability, Kerr said, "I am always struck by the power of new innovators, and patient-specific stories. Capitol Hill could be an effective listener and problem solver here. Incremental change is better than none at all."

He continued, "Drug manufacturers are trying to get specific drug and volume commitments from the largest purchasers. This is often made more difficult by the swings in hospital demand and the financial state of affairs at so many health systems; post-pandemic fiscal headwinds continue to plague many. Creating domestic pharmaceutical sourcing of raw materials and API versus relying on overseas trade partners is very difficult to operationalize especially on a short timeline."

For hospitals and healthcare facilities, the current challenge of IV product shortages is a problem with no quick solution. However, strides towards much-needed progress are being made. With the FDA pursuing domestic and international IV product-securement options, and many manufacturers expanding their locations and production, the healthcare industry may soon see a welcome infusion of essential IV products with reliable availability. **HPN**

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Double-gloving with a colored indicator underglove can alert the user of costly occupational exposure (to bloodborne pathogens)

Photo courtesy Mölnlycke

Industry Leaders Examine PPE in a Post-COVID Landscape

Healthcare Purchasing News looks back at the height of the pandemic and two industry leaders comment on the current challenges associated with personal protective equipment

by Janette Wider

Personal protective equipment (PPE) practically became a household name during the COVID-19 pandemic. Those in the healthcare industry were always aware of the importance of PPE, of course, but the news of PPE shortages hit mainstream headlines during the height of the pandemic.

On March 3, 2020, the World Health Organization (WHO) published a news release on the shortage of PPE endangering healthcare workers worldwide.

The press release stated, "The World Health Organization has warned that severe and mounting disruption to the global supply of personal protective equipment (PPE)—caused by rising demand, panic buying, hoarding and misuse—is putting lives at risk from the new coronavirus and other infectious diseases."

Further, "Since the start of the COVID-19 outbreak, prices have surged. Surgical masks have seen a sixfold increase, N95 respirators have trebled, and gowns have doubled.

"Supplies can take months to deliver and market manipulation is widespread, with stocks frequently sold to the highest bidder.

"WHO has so far shipped nearly half a million sets of personal protective equipment to 47 countries, but supplies are rapidly depleting."

In 2021, *Healthcare Purchasing News (HPN)* wrote about the struggles of the ongoing shortages. We wrote, "'Nearly half of U.S. healthcare facilities surveyed are already out of, or almost out of respirators to use in caring for a patient with COVID-19,' reads an APIC March 27 press release. 'Lack of N-95s, masks, face shields threaten health workers in facilities in every state, in every size facility.'"

"When reflecting on 20-plus months of supply uncertainty—and lessons to take away moving forward—the themes expressed across the industry are similar: More diversity must be built into a company's lineup of PPE manufacturers, with an emphasis on production closer to home; More visibility and transparency must be built into the system so that clients and other stakeholders can track products and share information," we continued. "And in order to be successful in the supply chain of tomorrow, a company will need to maintain flexibility and be able to shift gears quickly."

PPE in 2023

Cheron Rojo is currently the senior clinical education specialist for Healthmark. Rojo is a CRCST (Certified Registered Central Service Technician), CIS (Certified Instrument Specialist), (CER) Certified Endoscope Reprocesser), (CFER) Certified Flexible Endoscope Reprocesser, CHL (Certified Healthcare Leader), and FCS (Fellow Central Service).

Cheron Rojo

Rojo commented to *HPN* on the current attitudes toward PPE in a "post-COVID" world. He said, "Post-COVID attitude toward PPE is a humbling one since no one thought that facilities would not have access to the

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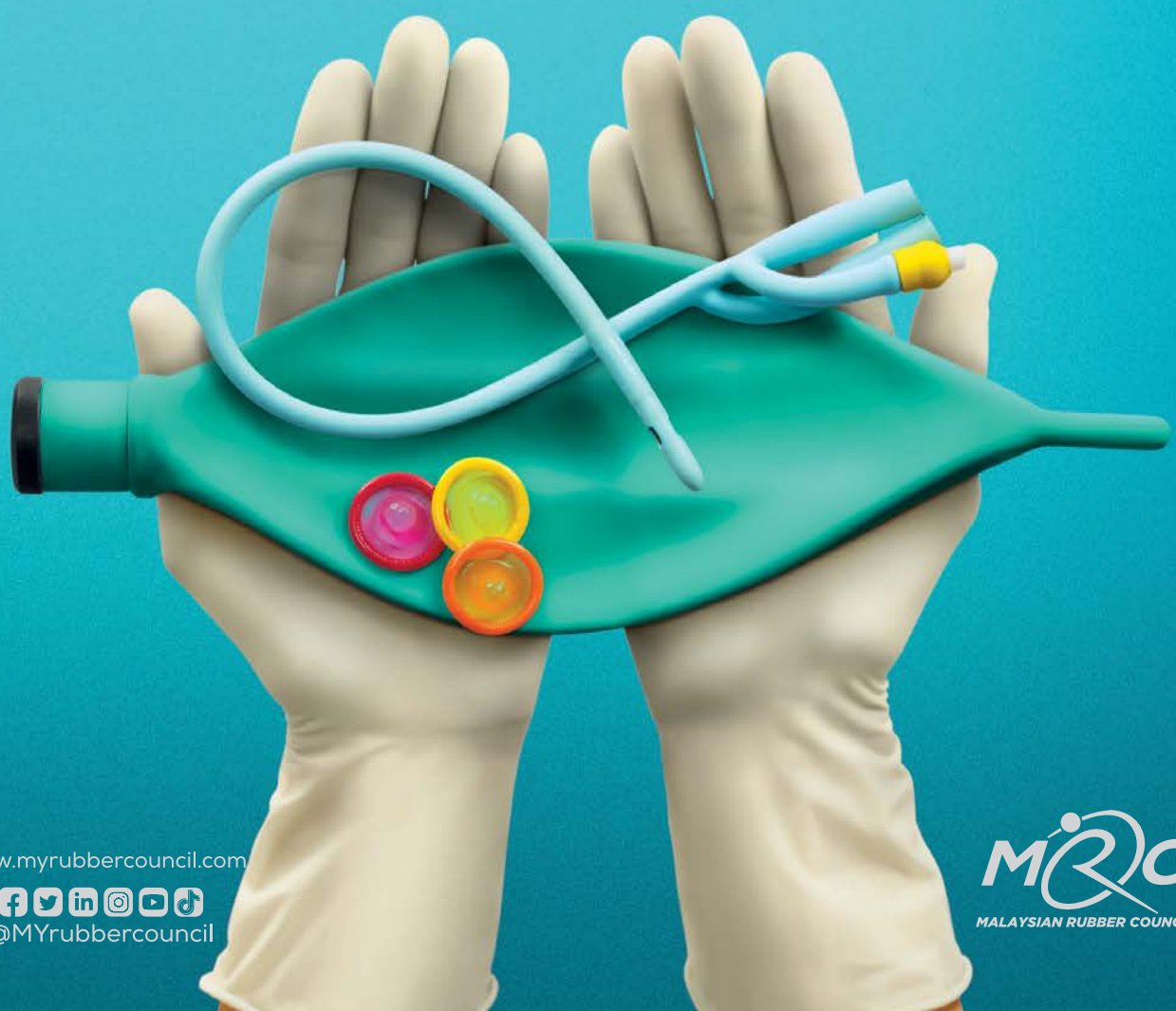

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plentiful array of PPE out in the marketplace. I think we all in some sense took PPE for granted assuming that it would always be available, except for the occasional backorder here and there. Also, there is a more respective attitude towards reusable PPE, which wasn't really considered before the pandemic."

Another major challenge hospitals are facing right now is finances. It should come as no surprise that hospitals are being challenged financially well into 2023.

Chad Flora, RN, BSN, CNOR, clinical director, Gloves Business Area, Mölnlycke, spoke with *HPN* about financial struggles as they relate to PPE. Flora said, "According to an article from *Becker's Hospital Review,* hospitals are facing intense financial pressures across today's healthcare landscape—more than 50% currently operate on negative margins. An article from the AHA [American Hospital Association] said that with a heightened focus on finding savings within the supply budgets, hospitals are now refocused on providing quality care while maintaining profitability. OR managers face unprecedented challenges in driving staff and patient safety while still achieving optimum savings. The post-pandemic impact of staffing shortages and inflationary impacts only further exacerbate these challenges."

"The traditional approach to identifying hospital savings is to focus on purchase price savings," He added. "This approach does not always consider the total cost impact to the facility of swapping out products for lower-priced alternatives. By recognizing hospital purchasing power as a driving force for total value impact, a value-based purchasing (VBP) approach combined with the LEAN methodology can help OR managers achieve the outcomes that matter—at the lowest possible price. [C J O'Connor (2018). *The Healthcare Supply Chain: Best Practices for Operating at the Intersection of Cost, Quality and Outcomes (2nd Edition).* New York, NY: GNYHA Ventures, Inc.]

Flora continued, "Fundamental to applying LEAN principles is understanding and reducing 'waste.' Importantly, waste isn't limited to what goes unused or is thrown away in the hospital setting. The LEAN model takes a more holistic view to include anything that absorbs personnel, resources or time but does not add value to the overall process or to the end user of the given service or product within the hospital [CimaRR, Brown MJ, Hebel JR, et al. "Use of LEAN and six sigma methodology to improve operating room efficiency in a high-volume tertiary-care academic medical center" *J Am Coll Surg.* 2011;213:83-94.]. Opportunities for waste reduction can be found across every area of the procurement process, including transportation, inventory, overprocessing, overproducing, defects, and skills [*NEJM Catalyst*, "What is Lean Healthcare?" August 2023]."

When *HPN* asked Rojo about potential funding problems from hospital leaders, he said, "Due to increasing cost for PPE post-COVID, decisions for purchasing PPE have been impacted, which could lead to subpar quality of materials of PPE."

An important matter to discuss with hospital leadership is standards, Rojo commented. He said, "In January of this year, ANSI/AAMI PB70 (protective barriers) revision was released for users to purchase. Even though the standard is mainly a manufacturer document, there is vital information for users in the selection of protective barriers like gowns. The document has numerous changes from labelling to additional specific protective barriers e.g., decontamination gown. In section A.4.2.3.6 decontamination gown it states, 'Due to the nature of the environment for which decontamination gowns will be worn the critical zones have a minimum barrier performance of at least Level 3.' This new verbiage helps users know that a level 1 or 2 gown is not sufficient for the type of task being performed and consideration for the 'OPIM (Other Possible Infectious Material) is most likely

to occur.' [ANSI/AAMI PB70:2022, *Liquid Barrier Performance and Classification for Protective Apparel and Drapes Intended for Use in Healthcare Facilities*. Association for the Advancement of Medical Instrumentation. Arlington (VA): AAMI; 2022.]

Surgical gloves

Regarding standards, Mölnlycke's Flora added, "Surgical gloves are an essential item for any OR, and thus are often a focus of cost-reduction measures. However, focusing on waste reduction, rather than price per unit cost containment can yield long-term savings. Three key areas for potential cost-in-use savings include examining glove quality, glove materials, and glove practices. Low glove quality can increase glove waste both in materials and time. Standardizing to a streamlined selection of high-quality gloves can result in total cost-in-use savings [*Utilizing the Lean Process in Surgical Glove Standardization*, Samuel E. Sullivan RN CNOR, Published Poster, AORN 2020]. Certain glove materials such as natural rubber latex can result in latex-related costs such as staff and patient allergies and treatment costs [Wharton, Kurt R., Thomas J., Henderson P., Phillippe, "Can converting to synthetic surgical gloves lower hospital operating room costs? OR Manager, May 2016]. Although synthetic gloves have a higher purchase price, eliminating latex can avoid costly OR teardowns due to late discovery of patient allergies. Finally, glove practices such as double-gloving can protect healthcare workers from exposure to bloodborne pathogens from needlestick injuries, each of which can cost an estimated $4,838 to treat [O'Malley EM, Scott RD 2nd, Gayle J. Dekutoski J. Foltzer M. Lundstrom TS, et al. *Costs of management of occupational exposures to blood and body fluids. Infection control and hospital epidemiology* 2007;28(7):774-82].

He continued, "A price-only-based approach to savings is too short-term to meaningfully address hospital budget challenges [C J O'Connor (2018). *The Healthcare Supply Chain: Best Practices for Operating at the Intersection of Cost, Quality and Outcomes (2nd Edition)*. New York, NY: GNYHA Ventures, Inc]. and choosing quality will allow hospitals to reduce waste and improve OR efficiency. Choosing the right glove vendor partner and having strong communication is vital to the success of a value-based procurement system to ensure a hospital is maximizing value and savings, while minimizing total waste."

Looking forward

It's clear that cost is a major concern for hospitals and health systems today, yet there are those out there working to improve cost alongside healthcare worker safety, as well as waste reduction.

A recent article from *American Laundry News*, said that TRSA, the association for linen, uniform, and facility services, confirmed sponsors for The Healthcare Worker Safety and Sustainability Act in New York state. The act requires a 50% threshold of reusable PPE in healthcare facilities.

The article stated, "In the state legislature, Assembly Member Amanda Septimo (D-84th District) introduced the bill (AB 6995) and Sen. Cordell Cleare (D-30th District) initiated the Senate companion measure. The legislation amends the New York public health law to require healthcare facilities to maintain this threshold of textiles as provided by a hygienically clean laundry service provider."

TRSA, according to the article, has been stressing that legislation is needed to improve healthcare employee safety and reduce waste healthcare facilities are sending to landfills.

"The linen, uniform and facility services industry made up for the shortfall of disposable healthcare items by stepping in to provide hygienically clean reusable products," said Joseph Ricci, president and CEO of TRSA.HPN

VCU Health's flexible scope processing success and the latest market innovations

by Kara Nadeau

When it comes to the processing of flexible endoscopes, sterile processing (SP) professionals have a broad range of resources with guidance on how to do it correctly, including the manufacturers' instructions for use (IFU) and industry standards.

These guidelines continue to evolve, with the American National Standards Institute (ANSI)/Association for the Advancement of Medical Instrumentation (AAMI) publishing its ST91:2021 flexible and semi-rigid endoscope processing in healthcare facilities standard in March 2022, and the Association of periOperative Registered Nurses (AORN) updating its Guideline for Processing Flexible Endoscopes guideline in September 2022.

How have SP teams adapted their processes, workflows, and training to meet updated recommendations? And what are vendors offering in terms of new products/solutions to support the work of SP professionals?

Healthcare Purchasing News (HPN) presents VCU Health's flexible scope processing success story, along with some of the latest endoscope care innovations from vendors in this space.

VCU Health: The heroes of HLD

As Frank Daniels, VCU Health's interim senior director of High-Level Disinfection & Sterilization, stated, "VCU Health thrives on being anything but ordinary and innovative." This innovation extends to the health system's scope processing workflows.

Daniels and his team established a High-Level Disinfection (HLD) department outside of the health system's main SP department "in response to the high volume and growing concerns of inadequate reprocessing of flexible scopes worldwide," in his words. The HLD department has its own dedicated staff to reprocess all flexible scopes (both semi-critical and critical) alongside all other semi-critical devices, which include endocavity probes, Transesophageal Echocardiogram (TEE) probes, ophthalmology devices, etc.

Growing talent through ongoing training

Fully staffed, the VCU Health HLD department has 35 employees, including a director, manager, coordinator, supervisor, equipment technicians, and technicians. The role hierarchy—from HLD Technician Assistant to HLD Technician to HLD Senior Technician—"helps promote growth internally and provides incentives for longevity," Daniels explained.

Equipment technicians in the department oversee all broken scopes, new scopes, and relevant equipment, and those who demonstrate success in their role are incentivized to be promoted to Biomed Technicians.

Upon hire, each new HLD department team member enters a "Grass Roots System" of training, which Daniels described step by step:

1. The first three weeks are spent outside the HLD room, at a desk completing an online course in flexible endoscope reprocessing. The team member must pass a quiz after each chapter and a final test.
2. After passing the test, the team member reviews department policies and standards.
3. Next, "the team member is ready to change into scrubs to join their coworkers in the HLD room, where they are assigned a trainer," said Daniels. Under the trainer's supervision, the trainee observes one task at a time and then attempts to complete the task themselves with guidance. The trainer administers a competency assessment for each process, equipment, and device model. Daniels noted how this process can take up to six months on average "as each piece of equipment, and device model must be meticulously shown and repeated."

The HLD team conducts general competency assessments for new team members upon hire and annually, but quarterly for more complex skills, such as duodenoscope reprocessing.

"The complexity determines the frequencies to ensure skill sets are fine-tuned," said Daniels. "Once fully competent, the

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The VCU Health HLD Department team

new team member will work towards receiving the certification that is mandated within two years of hire. Education is vital to maintaining a solid team. Therefore, the director picks a monthly webinar required for each staff member to complete that counts towards their yearly evaluation goals and continuing education units (CEUs) to maintain their scope certification."

Top-notch technology

"Our HLD team has undoubtedly been fortunate enough to purchase the newest technology as we strive to meet the rapidly changing environment in healthcare," said Daniels.

The VCU Health HLD department has purchased 23 automated endoscope reprocessors (AERs), 12 automated leakage testers, 12 automatic flushing devices, and 28 drying cabinets.

"A team of three equipment technicians is dedicated to ensuring the equipment is always up and running," Daniels explained. "In addition, the manual cleaning process was standardized to meet all manufacturer's instructions for use at a minimum, with added steps for quality assurance."

The VCU Health HLD team is responsible for managing, maintaining, and reprocessing a total of 1,244 devices, of which 531 are flexible endoscopes. Daniels noted that one of the most significant obstacles in reprocessing flexible endoscopes is their complex designs and inability to see inside the lumens. They use a borescope post-manual cleaning for all flexible scopes, including incoming scopes (new or returned from a repair).

"Utilizing a borescope has proven worth the investment for staff performing reprocessing and maintenance," said Daniels. "Upon implementing the borescope as part of our process, we created an initial and annual competency to include in our training process. The feedback from the staff was overwhelmingly positive; therefore, employee morale was boosted for several reasons. The most notable was providing peace of mind for the reprocessing team and reducing repair costs and turnaround times."

Leveraging internal knowledge and skills

Implementation of lit magnification and borescope technology has allowed the VCU Health HLD team to transition from relying on original equipment manufacturers (OEM)/3rd party companies to complete annual preventative maintenance, and to conducting annual scope assessments in house.

"Our staff has gained knowledge that most in this field need access to and utilizes this knowledge base daily to ensure scopes are patient-ready," said Daniels. "To our surprise, we began rejecting scopes either new to the facility or 'repaired' from OEM and 3rd party repairers. As a result, VCU Health has rejected 18 scopes in 2023, including 8 'new' scopes. Consequently, we have prevented further damage, reduced repair costs, and ensured that our staff started with a functional, flexible scope with no defects that can be reprocessed without the risk of cross-contamination."

"Our most valuable efforts were not simply investing in high-tech equipment but extracting the benefits sustainably for the staff to perform their job," Daniels added. "We still leverage outside vendors for advice, questions, and in-services when needed. However, we do our due diligence and follow up afterward to ensure each process is fine-tuned to meet our standards of patient-ready devices."

Exceptional efficiency, cost savings, and QA results

According to Daniels, each device that enters the VCU Health HLD department is guaranteed a two-hour turnaround time. Over the past year, this turnaround time has been met 99% of the time.

VCU Health recently opened a 15-floor standalone adult outpatient pavilion. The HLD team helped these departments adjust by providing a pickup and drop-off service for their devices to ensure a smooth transition and reduce turnaround time.

"We found that providing this service also allowed the staff to manage their time more effectively while relieving traditional staff that would transport these devices, such as nurses," Daniels explained. "Another essential benefit was cost savings. Costs decreased by 26% after the first six months. Most notably, the repairs were higher in quantity but smaller in price and turnaround time. This is due to minor rather than major repairs involving issues such as a complete rebuild of the flexible scope."

The VCU HLD team uses adenosine triphosphate (ATP) and protein testing alongside their visual scope assessments to "ensure scopes are as clean as they appear," said Daniels. He added, "Testing has been instrumental in adhering to the recently updated AAMI Standards identifying six types of flexible endoscopes as 'high risk.' VCU Health owns each type of scope specified in the list and chooses to be proactive rather than reactive. Our team first set a goal to test 90% of all high-risk scopes after each use. Exceeding all expectations, we had a 92% compliance rate for 2022. In 2023, we have conducted 3,147 protein tests leaving us at a 98% compliance rate."

The VCU Health HLD team also uses ATP testing periodically on all model scopes. As Daniels explained, luminometer provides instant results that display a specific number of relative light units (RLUs) post manual cleaning to verify the cleanliness of the scope. Despite a threshold of 200 RLUs, the HLD team averaged under 50 per scope.

"Immediately the staff became more engaged," said Daniels. "In response, we held a contest each month for the lowest number of RLUs. Over the first year, our average scope decreased to 22 RLUs. The incentive offered undeniable results."

Strides for continued success

"We continue to grow and work together as a team with multiple checks and balances to fulfill our maximum potential," said Daniels. "As a result, our equipment is not only state-of-the-art but also our team and policies and procedures. The equipment is only as effective as the staff operating and maintaining it. Having the proper equipment and competently trained staff allows us to take advantage of the data to ensure that all devices are done efficiently and correctly. But it can't be done alone, as we have great support from upper leadership within the health system to help the team thrive." HPN

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Endoscope processing technology advancements

HPN asked vendors in the endoscope-reprocessing space to provide information on their latest endoscope care products and services. Here's what they offered:

Cygnus Medical's Oasis flexible endoscope transport trays are designed for single-use and effectively eliminate the risk of cross-contamination, simultaneously streamlining labor efforts and minimizing space requirements. Oasis trays are made from a renewable resource and are biodegradable.

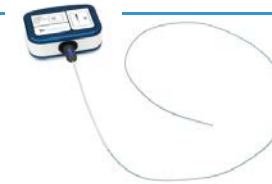
Reusable transport containers are ideal in certain scenarios but present challenges in others. When it comes to transporting flexible endoscopes, the common practice involves cleaning reusable containers using surface disinfection wipes. When these containers are nested together, inadequate disinfectant contact time can transfer the viable contaminants from the interior of one container to the exterior of the container nested within it, creating a break in the infection control chain.

Encore Medical Device Repair: "Endoscopes can cost $50,000 or more and require careful handling," said Kevin Liszewski, CEO, Encore Medical Device Repair. "Historically, the instrument manufacturing and repair industries have failed to educate SP teams on how to treat these instruments as assets rather than basic reusables. Encore Medical Device Repair shifts this paradigm by providing holistic, transparent device lifecycle management, while reducing unrepairable rates to drive tremendous cost savings.

Encore is the only company cleared to use advanced device-reuse technology developed for the remanufacturing of robotic instruments. It offers an extensive instrument-handling education program, digital device registration and tracking, seamless repair and service management by specialized technicians, real-time access to service and repair status, and quarterly device program reviews to create total transparency."

Medrica's Tip Protectors are available in individually packaged sterile and non-sterile formats. The semi-rigid expandable mesh protects the tip/lens of endoscopes from front and side impact, including other sensitive surgical instruments. The Tip Protector also allows moisture to escape, eliminating potential bacteria growth (Pseudomonas species) that can occur with foam or solid protectors. It is not abrasive, will not scratch any part of the scope/lens, will fit many different sizes of instruments, and will not fall off during transport and storage.

Medtrica's flexible scope sleeves provide a barrier from physical contact. By wicking moisture away, the disposable sleeve prevents moisture build up and potential bacteria growth on the insertion tube. The scope sleeve also provides a surface for the placement of labels showing detailed scope cleaning information for references, without having to place the label on the scope body (labels can be easily removed from the sleeve and placed on a patient's chart, etc.). It does not need to be taped directly onto the endoscope boot.

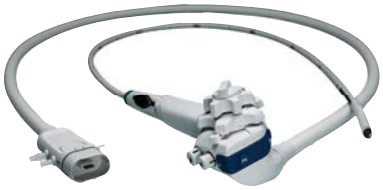


Healthmark's FIS-007 Flexible Inspection Scope is designed to visually inspect internal channels of potentially soiled or damaged items. The FIS-007 borescope provides enhanced light, vision, and magnification. It features a modular design with interchangeable flexible inspection scope attachments available in diameters of 1.06mm and 1.9mm. These scopes have a working length of 110cm and attach to a 13.3W x 9.9L x 4.7H cm control box, allowing for light level adjustments.

The FIS-007 also offers users the option to document photos and videos of lumens and crevices not visible to the unaided eye (these features only available for the USB control box with FIS-007 software, which is included and installs on Windows 10 & 11 PCs).

KARL STORZ's no-wrap containers are a superior option for sterilizing and protecting KARL STORZ products. These sterilization containers provide a simple yet effective system for protecting endoscopic equipment and instrumentation during sterilization, transport, and storage. They are available in a multitude of sizes and configurations and are custom-designed to accommodate KARL STORZ endoscopes, camera heads, and instruments. KARL STORZ containers are universally validated for use in low- and high-temperature sterilization systems. By eliminating the need for blue wrap, they also provide significant cost savings and waste reduction to healthcare facilities currently using traditional blue-wrap trays.

Metrex's enhanced EmPower detergent is a specialized cleaning solution formulated for thorough removal of diverse soils such as protein, starch, oil, and fat. With a low-foam design for enhanced visibility and an improved shelf life, EmPower supports both efficient reprocessing and effective inventory management. Beyond its cleaning power, the company has ensured its compatibility with common medical device materials including metal, plastic, glass, and rubber. EmPower aims to assist SP departments in streamlining workflow, offering both quality and reliability.

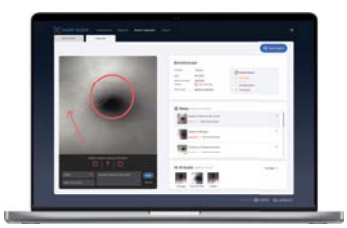


Ambu's single-use endoscopes are always sterile, helping create zero preventable harm. Ambu pioneered single-use endoscopy, introducing the first disposable bronchoscope in 2009, and continues to rethink solutions to save lives and improve patient care.

SP departments setting out on a journey to become a high-reliability organizations (HRO) should look to Ambu as an ideal process improvement partner. The company's single-use endoscopy platform means:

- Scopes are not delayed waiting to be cleaned
- No need to incur courier costs to get scopes to and from outreach clinics
- Avoid investments in expensive high-level disinfection equipment
- Can reinvest resources for new service lines in patient communities

Clarus Medical's inspection borescopes offer features to enhance an SP department's inspection process, such as picture- and video-capture capabilities for documenting their findings. Clarus borescopes provide a wide variety of interchangeable borescope lengths and diameter options to match the wide variety of sizes of medical device lumens.



Clarus Medical's SmartScope borescopes are designed to boost an SP team's confidence in borescope inspections. Using AI and Computer Vision technology in real time, SmartScope borescopes assist the user with automatic annotation, severity assessments, and recommended next steps. They enable seamless problem identification, documentation, and resolution management.

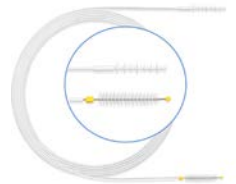
ASP's AEROFLEX Automatic Endoscope Reprocessor (AER) is an automated system designed for endoscope reprocessing that boasts a 22-minute complete cycle time.* The AER is equipped with an integrated minimum recommended concentration (MRC) monitor, eliminating the need for test strips. Its user-friendly interface can reduce human error. The ASP AEROFLEX AER features a space-saving design, making it an optimal choice where space is at a premium.

*In countries where distributed. Includes wash, HLD, rinses, MRC testing, and alcohol flush. For all qualified endoscopes except duodenoscopes, which require additional time. Assuming nominal conditions for water pressure, flow rate, and temperature.

Ruhof Corporation's Endozime SLR is the only multi-tiered enzymatic cleaner designed to molecularly displace synthetic lipids, allowing them to be rinsed off while dissolving blood, fat, carbohydrates, and protein. Synthetic lipids—including silicone, simethicone etc.—form an oily substance that coats the insertion tubes and internal channels of an endoscope. This oil does not break down during cleaning but redeposits itself in different areas becoming impossible to remove. Used as preventative maintenance or as needed, Endozime SLR stops synthetic lipid residues from accumulating on the outer sheath and inner channels of scopes, biopsy forceps and all surgical instruments.

Ruhof Corporation's ScopeValet TipGuard is an endoscopic tip protector that provides a simple, safe, and highly effective method of protecting the delicate optics of an endoscope during transport and storage. The open design of the ScopeValet TipGuard allows the tip of the scope to aerate, decreasing the likelihood of microbiological growth. Effectively protecting the entire distal end of the endoscope, TipGuard keeps the distal tip from protruding through the tip protector, unlike current boot sponges. Fitting onto a wide variety of scopes of multiple diameters (2.5mm to 14mm), the ScopeValet TipGuard is disposable--individually packaged for one-time use—thereby minimizing cross-contamination.

STERIS' DuoSwift combination squeegee brush is designed to work smarter, not harder. Its unique design features a tapered, nylon-bristled brush on one end and a series of flexible disks (squeegees) on the other. A recent study reports that the STERIS DuoSwift has superior brushing efficacy and efficiency compared to other market-leading endoscope cleaning brushes. DuoSwift provides cleaning action that removes more bioburden in a single pass.



STERIS' SPM Endo Workflow Solution provides the ability to marry the IFU and reprocessing requirements for every scope in our inventory with the competency level of each staff member and how the reprocessing area is outfitted to perform the work. The result is the ability to deliver specific work instructions for what the scope requires and how that work should be understood and accomplished. "We have found great success using SPM's Configurable Guided Workflows," said John Kimsey, VP, Processing Optimization and Customer Success, STERIS.

At each point of the workflow, from bedside pre-cleaning, leak testing, manual cleaning, brush selection, and the times and standards for each, the prescribed work and methodology is provided to the technician and the system records that the work is done properly and that the needed outcomes have been achieved. As a result, the system then provides electronic procedure- and audit-ready documentation of all activities related to reprocessing our flexible scopes.

Torvan Medical's CleanStation reprocessing sink with touchscreen-powered eSink system is designed to help take the guesswork out of endoscope processing. Auto-fill functionality with enzymatic dosing control (dosing pump included) ensures every endoscope wash cycle has the correct concentration of enzymatic detergent. Temperature control and monitoring gives the confidence that water temperature always matches enzymatic requirements. Integrated touchscreen lets the user set and adjust the height of the sink, operate the eDrain electronic drain system, adjust the overhead light, and control other options, all from a single intuitive interface.

Coming soon is Torvan Medical's fully automated eSink, with automated endoscope flushing and programmable workflow software to help reprocessing technicians work faster, easier, and more accurately.

TBJ's Model 30-96-2TB SPCS scope pre-cleaning sink is specifically designed for use in GI labs and SP departments for pre-cleaning flexible endoscopes. The unit includes two elongated trough-style sink bowls allowing for the extended linear positioning of endoscopes during the pre-cleaning process. AAMI guidelines suggest that endoscopes be positioned in the sink without tight coiling during the pre-cleaning process. TBJ's trough-style sinks enable scopes to be positioned with little or no coil for less restrictions during the flushing process. Water and cleaning solutions are more effective during the flushing process when coiling is reduced or eliminated. The sink bowl depths are at an ergonomic 8" to 10" and the height adjustment feature of the sink allows each user to position the sink top at a height desirable to their specific comfort zone.

Olympus America's OER-Elite automatic endoscope reprocessor (AER) is designed to simplify the user experience and reduce human errors. Smart Navigation guides users step-by-step on how to connect endoscopes, manage and replace consumables, and troubleshoot errors. Its Channel Monitoring System monitors connection set-up, and built-in log data management helps users effectively manage endoscope reprocessing records. According to Olympus America, this design approach helps users overcome human factor limitations with a goal to realize reprocessing consistency. Improper use of OER-Elite endoscope reprocessor may pose an infection control risk to patients and/or operators. HPN

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MetriCide™ OPA Plus- Reusable High-Level Disinfectant

MetriCide OPA Plus is the ideal choice for healthcare professionals who are concerned about the cost and effectiveness of high-level disinfectants used in reprocessing endoscopes and other heat sensitive semi-critical medical devices. It has the active ingredient ortho-Phthalaldehyde, requires no activation and can be used manually or in an automated endoscope reprocessor (AER).

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ATP COMPLETE 2, the Next Generation of Contamination Monitoring Technology.

For the cleaning verification of surgical instruments, endoscopes, and surfaces, ATP Complete 2 is a cloud-based monitoring system used to help hospitals and other healthcare organizations achieve optimal standardized cleaning levels to aid in the prevention of HAIs. Advanced features include a smart handheld mobile platform, wi-fi connectivity, infinite users and test points, customizable dashboard, RFID & barcode reader, a robust software toolkit for documentation, reporting, and traceability of contamination, multi language support and more.

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Endozime® SLR

Enzymatic Cleaner Designed to Remove Synthetic Lipids

Endozime® SLR is the only multi-tiered enzymatic cleaner designed to molecularly displace synthetic lipids, allowing them to be rinsed off while dissolving blood, fat, carbohydrates and protein. Synthetic lipids—including silicone, simethicone etc.—form an oily substance that coats the insertion tubes and internal channels of an endoscope. This oil does not break down during cleaning but redeposits itself in different areas becoming impossible to remove. Endozime® SLR stops synthetic lipid residues from accumulating on the outer sheath and inner channels of scopes, biopsy forceps and all surgical instruments.

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When Is Disposable the Right Choice for SPD?

by Angela Ritchey

November 2023

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LEARNING OBJECTIVES

1. *List considerations when evaluating disposable products*
2. *Identify common reasons for disposable usage*

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Which is cheaper, disposable or reusable medical items? The complexity of this question catches many off-guard. At first glance, disposable devices cost more but then you add in reprocessing costs and disposable looks better. Suddenly someone mentions the cost to throw away a biohazard item and the scale tips to reusable. Infection prevention chimes in with surgical site infections and the scale tips again. Then someone mentions "carbon footprint" and the discussion keeps going. These discussions leave sterile processing departments asking themselves "when is disposable the right choice?"

What is disposable?

There are a few definitions worth noting before reviewing why a facility may choose to use disposable products. The terms "disposable," "single use," and "consumable" are often used interchangeably, but there are a couple of distinctions.

Disposable is an item which is used once or a limited number of times before discarding.

Single use refers to an item that is used once and then discarded. It is a subset of disposable items.

Consumable refers to an item's purchase category. Consumables are commodities intended to be used and replaced. Bottles of cleaning chemistries and boxes of shoe covers are both consumables.

Single-use devices are disposable, and disposable products are consumable. Just as in geometry where all squares are rectangles but not all rectangles are squares, single-use devices and disposable products are always a consumable, but not all consumable products are disposed of after a single use. When assessing the choice of disposable, a clear understanding of use is needed.

Defining use

The exact meaning of "single use" varies based on the product manufacturer's written instructions for use (IFU) and the facility's policies. They fall into one of three categories: single-event use, limited reuse, and timed reuse. Single-event use means that once an identified event has occurred, the item cannot be used again. Peel pouches, chemical and biological indicators, and tip protectors come to mind. Once the sterilization cycle is complete, they cannot be sterilized a second time.

Limited reuse lists the number of times that an item may be used before disposal. This can be related to an event, such as the number of sterilization cycles, or to the

Photo 175265560 © Senkumar Alfred | Dreamstime.com

item's use, such as the number of surgeries performed. Another example would be using a disposable brush on a single case cart of instruments, regardless of the quantity of instruments in the case cart.

Timed reuse tracks the time that the item is available for use starting with its first use. For example, disposable flushing aides may have tubing that must be replaced after 24-hours. The number of times in which a cycle is started to flow detergent and fresh water through a reusable flexible endoscope, within that 24-hours does not matter.

How to choose between disposable and reusable?

Choosing between disposable and reusable items is a team effort. A team composed of sterile processing professionals, operating room staff, facilities, infection prevention, and materials management should perform an assessment to ensure that the total impact of both choices is understood.

The team reviews the total cost of use, impact on workflow, and impact on infection prevention / patient safety for both types of products. Items to review may include:

- Item cost
- Processing costs
- Repair costs
- Use and expected life
- Inventory storage requirements
- Infection rates / cross-contamination opportunities
- Disposal costs
- Environmental impact
- Impact on department workflow and capacity
- Compliance

In the example below, the disposable brushes that are discarded after each day are compared against the facility's current reusable brushes. The department has been challenged with documentation of the disinfection process. Based on usage and an incident where a bristle was found within an endoscope, the facility is looking towards single-use brushes. The facility would need to weigh the total costs of single-use brushes against the resolution of the compliance and patient harm incidence that they wish to resolve. Performing a risk assessment is a great way to decide the best course of action.

Common disposables found in instrument processing

Sterile processing departments have many choices of both reusable and disposable options each with specific considerations.

Rigid sterilization container systems are reusable boxes that hold instrumentation. The design requires the use of several disposable components including, filters, data cards, and lock tags. Of these components, a reusable filter is available for many container models. Both reusable and disposable filters may be validated for use with a single rigid container system, meaning they will aid in maintaining a microbial barrier during storage of a sterilized tray.

Single-use disposable filters may have a "use by" date on the original packaging that refers to the date by which the filter must be used for sterilization. They may also have a post-sterilization shelf life, or a date by which the sterile product must be used or reprocessed. Reusable filters may have the same limitations on use-by dates and shelf life. More comparison considerations include: how many times a reusable filter may be used? How will the uses be measured and monitored? How will the filters be cleaned? And ensuring SP, OR, and any other affected departments are educated on these factors.

Sterilization wrap is a disposable alternative to rigid sterilization container systems that can be made of cotton, polypropylene, cellulose, or a combination of polypropylene and cellulose. Many of the container systems use the same materials for their disposable filters. Several factors should be considered when choosing between reusable wrap, rigid containers systems, and disposable wraps. Not all items can be placed within a container system. Always check the instrument's instructions for use.

Reusable wraps will wear over time and require replacement. Compliance with reusable wrap inspection can be low. Additionally, studies have shown that is difficult to find pinholes and bear threads that could lead to a sterile barrier breach and contamination.

Disposable polypropylene wraps can be recycled if they are removed from the OR prior to the patient entering the room. Polypropylene/cellulose wraps require more steps before recycling to separate the layers.

An evaluation for a time-related single-use brush that is discarded after 24 hours from first use.

Criteria	Reusable Brush (Current State)	Single Use Brush
Costs	5 brushes a month	5 brushes a day increase brush cost
	Cleaning and disinfection costs	Increased disposal costs
Workflow	Daily disinfection step	Added storage space needed
Compliance	Poor documentation of disinfection	
Environmental Impact	Not recyclable	Increased landfill usage
Infection prevention	Increased potential of biofilm formation	Low to no biofilm formation
	Failure to remove damaged brushes	Little chance of damage brush usage
Patient harm history	Bristle found in endoscope due to damaged brush usage	May resolve future bristle incidences

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

Surgical towels used to promote moisture-wicking within sets can be a concern due to a lack of instructions for use on the reprocessing of the towel; superheating caused by the towel; and small pieces of lint which may transfer to the tray or instruments, sterile field, or enter the surgical site causing infection. Disposable tray liners can be an alternative. Consider that different tray liner models absorb different volumes of moisture.

Single-use instrumentation

Medical procedures use many disposable medical devices. Foley catheters, surgical scissors, and syringes are a few of the most common. The increase in disposable surgical instrumentation and other medical devices has significantly contributed to an increase in medical waste generated. The practice of single-use medical devices has been called into question, especially considering that reliable, patient-ready reusable instrumentation and accessories can be produced by trained Sterile Processing (SP) technicians.

Under the right conditions, single-use instrumentation could be the right choice. Where clinics, ancillary departments, and dental practices, for instance, do not have quick access to sterile processing services, sterile disposable single-use instrument packs are an option. Using disposable instruments eliminates the need to have decontamination and sterilization services onsite, and eliminates the need to transfer dirty instruments to another location.

Single-use devices give a fall-back when sterile processing departments are unavailable such as weekends, holidays, or temporary closures. Although some point-of-use treatment products can accommodate up to 72 hours of moist contact, storage of treated items creates challenges.

Of course, the primary reason for the use of single-use instrumentation is infection prevention. Moving away from reusable instrumentation that has consistently been involved with surgical site infections or infectious outbreaks can help reduce infection rates.

Preparing for challenges

In recent years, sterile processing departments have had to respond to unique challenges from internal disasters, including poor steam and water quality due to degraded and damaged piping, as well as external natural disasters that have caused flooding, fire, and, of course, the collective response to a global pandemic. Preparing for internal and external disasters is another challenge SP departments face. Having a plan is necessary for ensuring continuous patient care.

During the planning phase, several factors should be considered including how instruments and devices will be cleaned and sterilized when systems are not operational. Single-use, disposable instrument kits may help meet the need when sterile processing can't run.

During a prolonged disaster, disposable inventories will need to be replenished. As seen through the COVID 19 pandemic, product back orders and supply chain issues could prevent replenishment. Preparing for this possibility means reviewing alternative products that could be used if a backorder or disaster depletes available inventory.

Single-use instrumentation and kits may run out before replenishment can happen. Consider which single-use instrumentation would be needed, and if a reusable alternative could be stocked just for those emergency situations. Work with Supply Chain, or Materials Management, as well as Emergency Management and other departments' stakeholders to develop a plan should disaster strike.

Some questions to ask are:

- How much inventory needs to be on hand?
- Which products currently in use have alternatives and which companies supply them?
- Who is the representative point or contact person for these potential new suppliers, and will they be able to help if the need arises?

Environmental responsibility

As healthcare evolves, facilities are taking action to keep their communities and environments healthier. This includes prioritizing waste management and reducing environmental pollutants produced by the facility. Many healthcare facilities have a team of environmental champions who review facility practices and find alternative products, recycling, and reusing, are options. As noted, many single-use and disposable devices have recyclable components. Check the manufacturer's written IFU and with product representatives for the material composition. Some manufacturers have collection services for their devices. A facility's waste management department and local recycling programs are also good resources for more information about specific items.

Conclusion

The choice of whether to use single-use disposable products is often one left to the facility. The products an SP department chooses should be based on important factors, including process efficiency and a risk assessment. However, there are certain instances where single-use disposable products are the best choice for streamlining processes and preparing for challenges, including internal and external disasters. Preparedness is key. Reviewing department policies, procedures, and products now could be the deciding factor in the Sterile Processing department's ability to respond in an emergency and support patient care. **HPN**

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Ritchey holds a Bachelor of Arts in English from the University of Nebraska-Lincoln and a Master of Arts in English from the University of Nebraska at Omaha. She is certified as a CRCST and CIS and is a member of HSPA, ASQ, SGNA, AORN, and APIC.

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CONTINUING EDUCATION TEST • NOVEMBER 2023

When Is Disposable the Right Choice for SPD?

Circle the one correct answer:

1. **Which of the following statements is correct?**
   A. All consumable products are single use
   B. All consumable products are reusable
   C. All disposable products are consumable
   D. All single-use products are reusable

2. **When deciding between a single-use, disposable, and reusable product, what factors might be considered?**
   A. Cost
   B. Environmental impact
   C. Storage space
   D. Recyclability
   E. All the above

3. **Which of the following is *not* how a "use" might be defined in a policy for single-use disposable brushes?**
   A. Disposal only after brush bristles are frayed
   B. Disposal after use on one case
   C. Disposal after use during one shift
   D. Disposal after use for one day

4. **What should be evaluated when considering a reusable filter?**
   A. The number of filters needed
   B. The "Use by" and "Post sterilization" dates
   C. The material of construction
   D. Moisture-absorption capabilities

5. **Which of the following is a reason to use disposable products in ancillary departments, procedure rooms, and offsite clinics?**
   A. When soiled instruments cannot be delivered to decontamination in a timely manner
   B. When staff do not wish to clean devices
   C. When there is adequate equipment, space, education, and staffing for sterile processing activities to occur onsite
   D. When disposable products cost more than reusable

6. **Which of the following is one reason to switch from using surgical towels to line trays to using tray liners?**
   A. Lint
   B. Moisture absorption
   C. Superheating
   D. All of the above
   E. A and B

7. **Which of the following are *not* disposable products?**
   A. Rigid containers
   B. Polyethylene wraps
   C. Foley Catheters
   D. Tray liners

8. **Which question should be considered when preparing for potential disasters?**
   A. Who are the stakeholders?
   B. Who are alternative suppliers?
   C. How will the SP department pay their staff?
   D. Will the department have warning before the disaster occurs?

9. **SP should prepare for what potential disasters?**
   A. Only natural disasters
   B. Only construction disasters
   C. Any disaster, internal or external, that may impact the ability of the department to render sterilization services
   D. Disasters that happen at night

10. **Who should be consulted for guidance on recyclable materials and practices?**
    A. Waste management
    B. Manufacturer
    C. Both a and b
    D. None of the above

CONTINUING EDUCATION TEST SCORING

HEALTHCARE PURCHASING NEWS EDUCATION HUB

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HSPA HEALTHCARE STERILE PROCESSING ASSOCIATION

CBSPD

We have been asked by HSPA to discontinue publishing the approval code for these exams. *The code will be printed on the successfully completed certifcate at the end of the online course at https://educationhub.hpnonline.com.*

Don't Sweat Your Next SPD Survey

by David Taylor

Those who have experienced one or more surveys from The Joint Commission (TJC) should have a relatively good idea of what to expect for future surveys. Yet, Sterile Processing (SP) professionals across the country are often surprised when a survey is on the near horizon, and even more surprised when they receive citations from surveyors. Ideally, seasoned SP leaders and technicians would work proactively to identify issues within their responsibility and fix any outstanding issues long before a survey occurs.

Preparing for a TJC survey should be part of daily practice and not just in the days or hours before surveyors arrive. As a consultant who assesses dozens of hospitals each year, however, it is discouraging to see how unprepared many SP teams are. It is important that SP leaders and their teams understand that deficiency findings identified by TJC surveyors may trigger a subsequent survey from the federal Centers for Medicare and Medicaid Services (CMS). If this happens, CMS will not only survey the SPD, but the entire facility as well. These steps can help SP professionals prepare for upcoming surveys:

Review the past. It is rare that TJC surveyors will appear unannounced unless an organization has had issues in the past or a serious negative patient event. Therefore, SP leaders typically will have ample time to devise a survey preparedness plan. Start with a review of previous TJC surveys to review what recommendations or findings were given. Understanding previous performance will help leaders and staff better prepare for the upcoming survey.

Conduct mock surveys. Mock surveys help all employees better understand the survey process and what to expect. The more trial runs are performed, the more comfortable employees will become when they are questioned by a surveyor. (*Note: Surveyors seem to have a knack for picking out the newest employees, so ensure everyone is prepared.)*

Review policies. It is prudent to carefully review the department's policies and procedures to ensure they align with current standards and best practices.

Get back to basics. Infection prevention practices, standards, regulatory guidelines, and instructions for use (IFU) are the blueprints for setting up and maintaining a well-run SPD. Understanding SP-related challenges and the various practices that go into maintaining a highly functional department is critical for managing day-to-day operations. If a leader cannot keep their department clean, well-organized, and maintained, it will become especially difficult to manage the larger, more complex aspects of the job—an outcome that will surely be noticed by surveyors.

Prioritize education, training, and communication. SP leaders should consider the following:

- Are staff members fully trained in all areas of SP operations?
- What is the process to orient new employees?
- Can all employees answer basic survey questions?
- Have initial and annual competencies been conducted, documented, and included in employee files?
- Are regularly scheduled inservices provided, and is attendance documented?

Keep the department clean and orderly. Not only is maintaining a clean and organized SPD good for safety and positive outcomes, but it also sets a positive first impression during a survey. If the department is dirty or unkempt, the surveyor may wonder what else is falling short. Each area (decontamination, assembly, sterilization, and storage) should be routinely cleaned and free from dust and debris. Workstations should be well-organized, functional (well-stocked), and cleaned regularly (each shift daily, weekly, and as needed), and computer stations should be cleaned routinely and organized (including wire management). Shelving and storage should be cleaned routinely and documented each time it is performed. Bottom shelving should have a solid surface and be elevated off the floor to allow proper cleaning. Tape, adhesives, and other sticky residue should be removed from all surfaces. This is essential because if hospital-approved cleaning products cannot contact the surfaces being cleaned, the device will be considered contaminated.

Repair and maintenance (work orders). Proper departmental maintenance is vital for safe, successful operations. For things the SPD cannot maintain or repair on its own, it will be necessary to place appropriate work-order requests. Such examples include patching and painting walls, replacing stained, broken, or missing ceiling tiles or damaged floor surfaces, and other equipment or structural damage. Temperature and humidity are other essential factors to maintain in the SPD. Surveyors may ask who is responsible for maintaining temperature and humidity logs, and inquire about processes taken when temperature and humidity fall out of an acceptable range.

Routinely monitor equipment. Monitoring of each piece of processing equipment should be performed to ensure the units are functioning properly. Sterilizer monitoring should be performed for each type of sterilizer in use and includes the use of challenge devices such as biological indicators (BIs) and chemical indicators (CIs). A surveyor will review this process, the frequency it's performed, and whether the findings are documented.

Leverage technology and ensure standards and policy compliance. Are you able to trace an instrument, set, or endoscope from its origin to patient use and back to inventory? Do you have the most current standards, regulations, IFUs, and policies in a dedicated location that is readily accessible to all employees? Surveyors will ensure current practices align with best practices and the SPD's internal policies and procedures. HPN

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SUBMIT YOUR QUESTIONS:
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STERILE PROCESSING INSIGHTS

Competency: What Is It?

by Stephen M. Kovach

Q "We just had a staff meeting and our manager told us that 'Results from a recent survey of the department stated we need to have more competency for the staff and the work they do.' Do you know how many competencies a department should have?"

A Great question! I think competencies go hand in hand with certification. I call them my "C²" (certification/competency). I will explain why in later articles.

Most medical facilities want Centers for Medicare & Medicaid Services (CMS) accreditation. To receive this, they will use various organizations to survey their facilities. If deemed "approved," the facility will receive CMS certification.

When searching the various CMS standards, it is difficult to find our profession outlined; specifically *(31-9093.00 - Medical Equipment Preparers*). Yes, that is what we are called by the U.S. Federal Government.[1,2,3,4] Remember, this is what your Human Resources Department will reference when conducting a wage analysis. If you have not visited the U.S. Bureau of Labor's website (bls.gov), I advise you do.[1]

31-9093.00 - Medical Equipment Preparers states that staff: "Prepare, sterilize, install, or clean laboratory or healthcare equipment. May perform routine laboratory tasks and operate or inspect equipment." Samples of reported job titles for this type of position are a) Central Processing Technician (CPT), b) Central Service Technician (CST), c) Central Sterile Supply Technician (CSS Technician), d) Certified Registered Central Service Technician (CRCST), e) Instrument Technician, f) Sterile Preparation Technician, g) Sterile Processing and Distribution Technician (SPD Technician), h) Sterile Processing Technician, i) Sterile Technician, and j) Sterilization Technician.[2,3]

Our critical thinking must take over for the next step, in defining competency. How is nursing competency defined by CMS, and then by some of the surveying organizations? "Why nursing?" you ask. In my investigation, we would fall under support staff for nursing in the various guidelines and nursing has some of the most published articles on this topic.

The U.S. Office of Personnel Management (OPM) states, "A competency is a measurable pattern of knowledge, skills, abilities, behaviors, and other characteristics that an individual needs to perform work roles or occupational functions successfully."[5] This is repeated throughout the CMS DEFINITIONS §483.35.[6,7]

One of the surveying organizations (The Joint Commission [TJC]) says the following on this subject. "While not formally defined, competency may be described as a combination of observable and measurable knowledge, skills, abilities, and personal attributes that constitute an employee's performance. The goal is that the employee can demonstrate the required attributes to deliver safe, quality care. Competency assessment timeframes may vary greatly based on the individual's entry skill level and the complexity of the task(s) the individual will be required to safely perform. … Competency assessment then focuses on specific knowledge, technical skills, and abilities required to deliver safe, quality care."[8]

Documenting that staff attended in-service training, listened to a lecture, or watched a webinar may not be enough for demonstrating competency. It is best to collect metrics on how staff have integrated the knowledge and skills that were the subject of the activity. Staff already deemed competent in these skill areas must assess and evaluate fellow staff to see if they understand and can apply the knowledge gained to their work practice.

So, now the issues to address:

- How many competencies does a department need or should have?
- How does your department develop competency for staff?
- How does your department demonstrate the staff's specific task or skill?

That is in next month's article to help answer this question correctly. HPN

Stephen M Kovach, BS, CFER, started in the medical field in 1975 as a sterilization orderly and has worked in many positions within the Healthcare Industry. He presently is Clinical Educator Emeritus at Healthmark Industries.

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Might cross-functional, multipurpose rooms be standard operating procedure?

by Rick Dana Barlow

Designing and equipping rooms for multiple purposes may just be a universal strategy and tactic after all.

At home you can convert a bedroom to a den or even an office to accommodate work-from-home capabilities that grew in popularity during the COVID-19 pandemic. Churches remove stationary pews to enable the sanctuary to accommodate concerts, theatrical and physically demanding youth events. Colleges and universities convert common areas to dormitory rooms when student numbers surpass available living arrangements.

Even hospitals – particularly during the pandemic – converted waiting areas to exam and treatment rooms and intensive care units to accommodate patient overload. In fact, a number of healthcare provider refits and retrofits include multipurpose rooms to be used as demands dictate, switching between exam and treatment rooms to imaging and even outpatient surgery suites.

As healthcare provider organizations continue to struggle with intensified cost containment pressures post-pandemic, they need and welcome the convenience and flexibility that multipurpose rooms can offer, particularly if they can pivot their functionality, service and use rather quickly.

"Multipurpose rooms are a means to reduce cost and improve utilization," observed Thomas Wallen, AIA, principal, Vizient. "The cost of constructing healthcare space has continued to escalate, especially in the ambulatory realm. The nature of patient flow and consequently space utilization may be difficult for providers to control. This often leads to low utilization of certain room types. Building or converting these rooms to be more flexible and adaptable will increase utilization and thereby reduce first-time costs, as well as continuous operating costs."

Thomas Wallen

Boon and/or boom?

Observers contend that designing and operating multipurpose rooms within a hospital or outpatient facility not only can be a boon to those facilities and their patients but should lead to a boom in development.

"Progressive healthcare providers understand that efficient use of resources is paramount to profitability," said Felicia Kurz, senior vice president, Advanced Therapies, Siemens Healthineers North America. "The emergence of multipurpose rooms marks a pragmatic next step in that paradigm."

Felicia Kurz

Kurz lists a plethora of benefits emerging from the simple premise of making efficient use of limited resources. "A better patient experience is the result when fewer transfers are needed between different examination and procedure rooms," Kurz indicated. "There is less risk to patients, comfort is improved, and patients are more confident in the continuity of care. Multiple procedures can be performed on the same day – one hospital visit, one sedation, one hospital stay for recovery – further reducing risk and stress to patients.

"A more efficient health facility emerges when interdisciplinary clinical needs are met in a single room," she continued. "The CT system can be used for diagnostics, for example, when not in use for interventions. The versatility encourages a more efficient workflow, medical staff can seamlessly transition from task to task in the same room to minimize downtime, and physical space is used more efficiently to reduce operational costs. The result is a faster return on investment."

"A more confident treatment plan is delivered when doctors and radiologic technologists have access to multiple sources of imaging information all in one room. CT angiography is a good example. And with access to multiple imaging capabilities and resources, doctors can develop new treatment techniques that expand minimally invasive options," she added.

Multipurpose room design can be a strategic and tactical benefit based on real estate, according to David Horn, AIA, ACHA, director, Corporate Project Development, Surgical Solutions, STERIS. "The design of multipurpose spaces is a sound decision particularly for rural hospitals, landlocked urban hospitals and in preparation for a mass catastrophe or pandemic," Horn noted. "The flexible nature of these spaces allows facilities to utilize a single or group of spaces more efficiently and effectively clinically and operationally. Additionally, the saved square footage of a combined/shared use space makes financial sense and allows facilities to effectively use underutilized and highly coveted hospital space."

Tom Redding

Location may be a motivating force, concurs Tom Redding, senior managing director, Healthcare, St. Onge. Redding recognizes that the concept of designing multi-disciplinary rooms is becoming more common for similar types of clinical activities.

"Outpatient clinics are the primary target for standardizing exam and/or treatment rooms to leverage multiple types of providers that cover varying clinical specialties," Redding recommended. "Many times, exam and/or treatment rooms in outpatient clinics are severely underutilized because there isn't enough patient volume for a particular clinical specialty to justify the cost of building and operating the specialty clinic. Creating multi-disciplinary rooms makes sense clinically and financially but it can be challenging operationally to ensure the rooms have the right equipment and supplies for the particular specialty. Outpatient clinics are exploring options to create an exchange model for equipment and supplies to enable the quick transition of the room(s). Additionally, there are opportunities to standardize equipment to reduce usage variability and increase the availability of the right equipment."

Redding further explains that certain specialties may be more amenable to multipurpose use than others.

"Creating a standard surgical procedure room is on the forefront of hospital architects but it doesn't naturally translate into the same benefits as the exam and treatment rooms," he said. "The reason is [that] each surgical specialty can have significantly different needs when it comes to supplies/implants and their specific equipment. The sheer volume of supplies and equipment requirements will create operational inefficiencies and most likely financial implications because it may take longer to turnover a reason and require more physical space to accommodate the movement of the necessary supplies, implants, and equipment."

Tracy Timmerman, senior marketing manager, Midmark, encourages healthcare organizations to investigate multipurpose room concepts as something worth considering, particularly during a volatile labor market. "As staff shortages continue to be a challenge among healthcare settings and space is a valuable and limited asset, a well-designed workflow that balances new technology, connectivity and workflow can improve clinical standardization, realize greater efficiencies, enhance patient-caregiver interaction and contribute to better outcomes."

Tracy Timmerman

Timmerman points to several options for multi-purpose use that include the exam room, consultation space and options for telehealth.

"In a traditional exam room workflow, patient weight and height are captured manually in the hallway," she explained. "A triage nook may be used as a semi-private space designed to assess and capture vital signs. The nook may also be a space where weight and height are taken. Optional equipment could include a wheelchair scale, a sink for proper hygiene and storage supplies. The patient is then escorted to the exam room and directed to a side chair or exam table for capturing additional health data. Most of these steps can be accomplished within the exam room if the exam room is designed appropriately.

"In a connected in-room vital signs workflow, the patient is directed to the exam chair to support proper positioning for blood pressure measurement," Timmerman continued. "Weight, temperature, pulse, and blood pressure are captured via an integrated scale in the exam chair and a connected, automated vital signs device. All patient-related health information can be discussed during the process while the patient sits on the exam chair. All vital signs data can then be imported directly into the [electronic medical record], saving time and eliminating manual transcription errors. Studies have shown you can save 69 seconds per patient during the vital signs acquisition process by simply bringing all vital signs capture to the point of care."

Exam room design must be flexible and functional, according to Timmerman. "A care zone designed with flexibility and proximity are important for increasing caregiver efficiency and reducing the need to move away from the patient to retrieve instruments and/or supplies," she said. "A consultation zone within the exam room allows for a shared interactive display for the caregiver and patient. It allows the caregiver to review medical records and education materials as well as set schedules for medical, reinforcing long-term care relationships. For maximum efficiency, the caregiver may use the consultation zone for telehealth, remote communication between face-to-face visits, saving time and utilizing fewer exam rooms."

Still, Timmerman cautions that there are instances when a multipurpose room may be less than ideal. "For example, there may be a desire to share a space for procedures as well as primary care exams. However, the equipment for exams can be vastly different than the equipment needed for procedures," she countered. "An exam chair is designed to support primary care functions such as vitals acquisition while a procedure chair is designed to promote access, versatility and a large range of motion. The average length of a procedure is [reported to be] 50 minutes, so a procedure chair needs to be designed for proper ergonomics for the physician and comfort for the patient. Procedure workflows can include a procedure zone designed for efficiency along with a consultation zone in one shared space."

Kelly Fitzgerald, marketing director, Systems Integration and Infrastructure, Olympus Corp. of the Americas, adds up the pros and cons that can shape decision-making.

Kelly Fitzgerald

"On the pro side, multipurpose rooms are "nimbler, promoting efficiency, potentially lower operating costs and potentially increase revenue by reducing bottlenecks by transitioning rooms as needed," Fitzgerald noted. "They may create more flexibility and may also result in the availability of more resources. A reduction in transfers from one unit to another can potentially reduce errors that sometimes happen during handoffs. Nimbleness can encourage flexibility and enable providers to adapt quickly to changing patient needs."

On the con side, however, multipurpose rooms may create the "need to purchase more equipment up front to support each room, and sterility for some surgical procedures and certain laboratory tests could be challenging or impossible," she cautioned.

Vizient's Wallen argues that effective use of multi-purpose rooms can improve utilization based on flexibility and adaptability. In fact, one key to understanding and implementing cross-functional rooms is to recognize the difference between flexibility

and adaptability as they represent two ways to improve utilization.

"Flexibility is the ease in which space can be utilized for various tasks and activities without the need to modify the space," Wallen said. "In general, larger, contiguous, and more repetitive environments – settings for repeated tasks – yield greater flexibility. Additionally, if repetitive spaces are standardized to meet the optimal use, the space will be more flexible." Wallen lists examples of repetitive rooms or spaces that may serve multiple functions that include:

- patient intake spaces
- pre- and post-op rooms
- exam/treatment rooms
- medication prep rooms
- clean supply rooms
- soiled holding/utility rooms

"Adaptability is the ease at which space can be quickly and easily modified to meet changing needs," he continued. "This could include a change in staffing, equipment, technology, supplies, etc. Spaces that are modular and allow subsets to be created easily to account for changes in need are more adaptable. To the extent possible, standardizing repetitive spaces to meet the most complex need of the space is desirable. This is not to say that all rooms should be capable of providing care or support the highest levels of acuity, however it is saying that adaptability will provide the ability to change the utilization of the space based on higher acuity when needed."

Aesthetic alikeness

Once a healthcare organization embraces the concept of cross-functional, multipurpose rooms the next step involves elements that facilitate workflow. One option may be to ensure that these rooms look and feel the same or similar when it comes to layout, equipment and supplies on site. Reviews are mixed.

Siemens' Kurz sees many benefits with familiar aesthetics. "It's not merely an aesthetic choice to build multipurpose rooms that look and feel alike, with uniformity between equipment and supplies," she said. "It's a smart strategic decision that assures significant clinical, financial, and operational advantages that contribute in real ways to quality patient care and the facility's reputation.

"Technologists and doctors are a patient's first line of defense in every procedure," Kurz continued. "Their familiarity with the many systems in a multipurpose room is essential to a successful outcome. Deploying a common user interface enables staff to more easily reach a high level of efficiency when it matters most and avoid procedure-specific adjustments. We've seen firsthand how this allows providers to focus more on the patient and less on learning a new setup. Facilities benefit from streamlined training that saves time and money, and patients benefit from faster procedures because staff can more easily assimilate within the room."

Equipment access represents a positive feature, according to Kurz. "The ability to use various equipment for all rooms is a clear cost-saving feature," she indicated. "It's uncommon in a traditional setting to share equipment or find compatibility between systems when rooms are not shared. The importance of uniformity, or at least finding commonality and uniformity across systems, is a smart way to minimize a room's downtime, particularly during service or equipment repair. The reward for keeping maintenance costs low is clear."

Workflow efficiencies must be apparent, according to Olympus' Fitzgerald. "Consistency in rooms enables [healthcare practitioners] to move from room to room and use equipment without added training, which could increase speed to care," she said.

STERIS' Horn emphasizes the patient benefits. "The design/layout of these spaces should provide a comfortable environment for the patient while balancing the clinical needs of the caregiver in terms of workflow and circulation," he noted. "Furthermore, from a consumer's perspective, it's important to the space looks finished and not ad hoc to help instill comfort and confidence in the patient receiving treatment."

For Midmark's Timmerman, patient perception may be a prime motivator. "It is possible to design a functional space without discounting aesthetics," she said. "In fact, aesthetics can have an impact on how a patient perceives the quality of the care being provided. Cluttered areas and supplies strewn across the exam room can appear unprofessional, unorganized, and even dirty. Therefore, it's critical to balance functionality and aesthetics.

"The room design and layout can also help the care team," Timmerman continued. "The more standardized the room and workflows, the greater the efficiency gains. One of the main issues clinicians constantly encounter is the need for adequate, accessible storage at the point of care. Johns Hopkins Hospital estimated that these activities take 20% of a nurse's time. The space needs to be designed to allow the needed supplies to be available right at the point of care. Standardizing clinical workflows such as [blood pressure] acquisition can also save time for the care team while providing better outcomes."

St. Onge's Redding ponders the mobility and transportation challenges that cross-functional, multipurpose rooms might cause. "In theory, having the same equipment and supplies throughout every room are preferred, but unfortunately, with specialty specific equipment and supplies, operationally it may result in inefficiencies to continually move equipment and supplies based on the clinical need," he noted. "Without a doubt, the room configuration can be consistent, but what ultimately is utilized for patient care will force some segregation of rooms. There is a fine line with balancing clinical flexibility and room availability without introducing considerable inefficiencies."

Vizient's Wallen stresses the need for standardization as the key ingredient for success. "Standardization is one of the most effective quality improvement concepts, yet it is infrequently and inconsistently utilized across most organizations," he said. "Embracing the

Midmark offers a variety of choices and options for its exam room models

concept of standardization requires the full development, documentation and application of best practice(s) to ensure their sustainability. In turn, sustained best practices will promote safety, efficiency, quality and high reliability of both operations and outcomes. Standardization should be broadly applied to foster synergy between workflow design (standard work processes) and facility design (standard workspaces)."

But Wallen acknowledges at least three roadblocks can stymie standardization efforts:

- "Overcoming the fear that standardization will stifle flexibility and innovation. While it is true that standardization is chiefly intended to reduce variation, it has at its core the expectation of ongoing improvement and evolution of best practices.
- "Recognizing that 'similarization', e.g., a mirrored layout of a repetitive room versus an identical layout, is not standardization. True standardization sets a definitive specification and utilizes metrics to measure adherence to the expected performance or condition. Allowing the 'similar' introduces an unacceptable level of variation and process confusion.
- "Embracing a framework through which standardization is defined. Developing standards through consensus requires a facilitated scientific approach and the participation of a multi-disciplinary team of key stakeholders. It requires time and resources to be dedicated to accomplishing clear objectives."

The lack of standardization may lead to ineffective processes, unexpected outcomes, poor quality, diminished safety, and increased cost, Wallen insists. But the benefits of standardization extend far beyond mitigating these consequences by providing advantages that bolster organizational performance. Wallen anticipates that standardization will serve to:

- "Define the 'normal' and establish a guide or reference to allow variations in process or conditions to be quickly identified and remedied.
- "Reduce compliance risk associated with human factors by making the right work easier to do and the wrong thing difficult to choose.
- "Reflect best practice targets and set expectations for performance metrics and ongoing improvement.
- "Decrease staff /employee fatigue by removing workplace confusion and replacing it with activities that are well defined, intuitive, and predictable.
- "Promote high reliability by replacing less efficient and effective informal methods with thoughtfully designed and consensus driven guidelines."

Aesthetic difference

Delineating specialties in a cross-functional, multipurpose room has benefits, too, experts say. "Building specialized multipurpose rooms to have distinct and unique specializations is a smart strategy that benefits patients, positively influences a facility's bottom line and boosts the facility's

How do you equip a cross-functional, multipurpose room?

If a healthcare organization wanted to convert or set up an existing room as a multipurpose room, what are some of the key pieces of equipment and furniture – mobile or stationary – that should be included, depending on which specialties it wanted to incorporate (e.g., medical exam, treatment, imaging, laboratory, surgery)? Five executives from leading equipment, furniture and service companies share their recommendations with *Healthcare Purchasing News*.

"Once you have a workflow design that allows for flexibility, there are some key equipment solutions that might build in additional flexibility.

"Mobile treatment cabinets and procedure carts can be used to assist in supply access and storage within the exam room, as well as serve as an additional work surface positioned left or right of the caregiver. They also allow for sturdy room-to-room maneuverability and can be customized for specific workflows and procedures, offering an optimal platform for supporting the delivery of care and making the most of available space.

"Mobile workstations are designed to strengthen patient-caregiver interaction by supporting a seamless experience at the point of care. Mobile workstations allow clinicians to make the most of their space while maintaining their focus on the patient. They can also be easily moved from room to room or within the room."

Tracy Timmerman, senior marketing manager, Midmark

"Building or converting a multipurpose room requires careful planning and consideration of the specialties the facility plans to incorporate. Room conversions often come with tight room constraints, so prioritizing how the available space is allocated is important.

According to Kurz, key equipment and furniture that should be used includes:

- Imaging system(s)
- A table system that caters to the planned procedure mix, with adjustable height and patient positioning capabilities
- Shielding (ceiling mounted, table mounted, mobile)
- Lights
- Ceiling supply units (gases, surgical, monitor)
- Machines: Heart lung machine, endo, microscope, ablation
- Carts and tables: Anesthesia, instruments, trash
- Injector
- Working station for running nurse
- Cabinets for drapes, needles, tubes
- Wall monitors
- Laboratory equipment: lab benches, microscopes, centrifuges, storage for reagents and samples.
- Exam room furniture: Chairs, workspace, seating for patients/ family members

Felicia Kurz, senior vice president, Advanced Therapies, Siemens Healthineers North America

"For exam/treatment/inpatient rooms, consideration should be given to facilities for a ventilator, electrical/medical gas services, continuous patient monitoring and air pressure relationships to adjacent spaces (i.e., negative pressure rooms in the case of COVID)."

David Horn, AIA, ACHA, director, Corporate Project Development, Surgical Solutions, STERIS

"Handwashing accommodations, flexible lighting levels, standardized location and availability of documentation technology, supply carts for unique set up and vitals/assessment tools."

Thomas Wallen, AIA, principal, Vizient

"As health systems explore how best to leverage multi-disciplinary rooms, the focus will be on mobility of equipment to enable changes in the delivery of patient care. This includes sizing the room to accommodate larger equipment, including door size and access to the room from a corridor. The room should be 'plug-and-play' to reduce the need to rearrange the room leading to additional inefficiencies."

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

overall reputation in the community," Kurz encouraged.

But she contends that several caveats must be addressed. "It is important that every room design caters to the planned procedure mix that will be executed in that room," Kurz noted. "In other words, each room design must be tailored to the client's unique needs, particularly for any unique procedures that are more complex or rare.

"Each room design should be evaluated for its ability to switch rooms at any time, with built-in adjustments that allow the room to be transitioned for specific disciplines that require a unique setup," she continued. "From the start, room design must be forward-thinking and accommodate future needs. If a clinical specialty is in the long-term plan, the room design must account for it. Naturally, a surgical room won't be equipped like an [interventional radiology] room. The needs are vastly different, and the room design should match the need.

"Infection control can't be overlooked," Kurz insisted. "Surgical rooms demand special planning considerations to secure a sterile environment. Think about floor and ceiling construction, boom use for overhead displays, shields, OR lamps and laminar airflow."

Pairing up procedural specialties: Which makes the most sense and why?

When a healthcare organization looks to convert or set up an existing room for cross-functionality or multipurpose use, the clinicians and administrators have to determine how to choose the optimal procedures to combine – medical exam, treatment, surgical, diagnostic imaging, interventional radiology and laboratory are key options – and then focus on equipment and product contract negotiations. But what might be the procedural specialties that are the easiest to pair up versus the most challenging? Four executives from leading equipment, furniture and service companies shared their combinations.

"The answer may seem obvious, but the easiest and most practical multipurpose room combinations involve the integration of modalities that share similar medical equipment, infrastructure and operational requirements. Success is more easily achieved when you have one discipline and one team working in the room.

"The imaging suite is a good example. X-ray and fluoroscopy machines share similar technology and room requirements. By combining these modalities into a multipurpose room, hospitals can easily reduce physical space and more efficiently deploy resources.

"Another simple combination is the medical exam and treatment room. The modalities share core equipment and supplies. The patient who can seamlessly transition from exam to treatment eliminates a follow-up visit and doesn't need another room.

"Conversely, finding synergy between divergent modalities is difficult. The challenge lies in the different infrastructure, equipment, and operational requirements between the modalities under consideration. Combining multiple interests and disciplines is not easy; it gets harder with each new imaging system or hygiene level you want to combine.

"Imagine the challenges of building a room that combines medical exams and surgery. The exam room requires a quiet environment for consultation. Surgical rooms demand strict sterilization, special equipment, and space. Building that room will be a challenge because it lacks commonality.

"These complexities can be overcome, but only with meticulous planning that emphasizes effective workflow design and equipment compatibility. The ability to adapt to changing dynamics in the healthcare market – pandemics, demographic shifts, evolving treatment modalities, and more – is a fair measure of a facility's ability to meet the needs of its community.

"Multipurpose room design has emerged as a viable approach to maximize clinical, financial, and operational efficiency. Embracing the trend gives health facilities a new tool in their delivery of quality care. For many, it's an empowering cornerstone to continued flexibility and sustainability. Embracing this design philosophy is not just an operational choice; it's a commitment to the future of healthcare delivery."

Felicia Kurz, senior vice president, Advanced Therapies, Siemens Healthineers North America

"From my perspective, the less specialized, the easier to build in multipurpose use and flexibility. The exam room can be easily designed to include a zone for the exam, a consultation space, and options for telehealth.

"Areas such as surgical, interventional radiology, or diagnostic imaging have very specific purposes. Therefore, those spaces are likely to present more challenges to build in multipurpose use simply due to the nature of the work being performed."

Tracy Timmerman, senior marketing manager, Midmark

"Creating multidisciplinary rooms have many benefits to an organization but finding clinical commonality is key to the success of leveraging these types of rooms. Ideally, there are nature synergies when considering exam and treatment rooms. The rooms are typically similar sizes but with varying requirements for what ultimately will be utilized in each room. This includes varying supplies and equipment but through creative and innovative thinking there are opportunities to standard equipment and creating an 'exchange model' to enable interchangeability.

"There are plenty of opportunities to standard patient care rooms, but not all clinical care is created equal and allows for flexibility given the equipment requirements. The natural example where room standardization is not readily feasible is combining surgical and diagnostic imaging. For example, combining an MRI with a surgical suite will have immediate challenges because the MRI is fixed and requires significant room infrastructure and precautions to handle the magnetic field, and which will not allow for it to be easily moved out of the room to provide space to the surgical care. Additionally, many of the diagnostic imaging areas have expensive control rooms that aren't necessary for surgical care leading to unnecessary capital expenditure and redundancy."

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

"Flexing a multipurpose room between functions is most easily achieved when the activities, or service performed, are simple rather than complex. An example is an exam room in a clinic, where the same room may be utilized for taking vitals, visiting with the provider, consulting with a dietician or educators, receiving therapy, scheduling follow-up appointments for diagnostics or procedures, and checking out. Flexing rooms where the activities are more complex (surgical suites), may require adapting the room with different mobile equipment, technology, or supplies. It is important to note that in all cases, creating flexibility and adaptability within the design will result in increased utilization. Where more complex activities are performed the cost of building and equipping the room is often higher and may yield a greater return on investment."

Thomas Wallen, AIA, principal, Vizient

Fitzgerald further illuminates the footprint demands for cross-functional, multipurpose rooms. "Multipurpose rooms must be designed and planned with higher ceilings, large doors, larger and open floorplan, outlets, lighting and ceiling-mounted monitors to accommodate different uses," she noted. "This can result in added costs. Specialty rooms, meanwhile, only have the product they need."

Redding agrees. "The clinical requirements for an exam room versus a surgical suite are vastly different and the sheer size of equipment to support surgeries are prohibitive and non-functional in a smaller footprint," he said. "Additionally, it is imperative to understand the number of resources that will be interacting with the patient throughout their patient encounter. In some areas like surgery, the number of resources is significant and space mobility is key to providing a safe and workable environment. I do believe there are plenty of opportunities to standardize room size and configuration for a similar clinical setting. Creating a standard room size and configuration across the clinical settings may be prohibitive clinically, financially, and operationally."

Timmerman recognizes the motivations for uniform room configurations. "There may be a very good reason to configure rooms differently depending on the purpose of the room," she said. "The requirements of an exam room are different than the requirements of the procedure room. The important design element is to standardize the workflows so that the needed supplies and equipment are available at the point of care and there is flexibility built in to allow for elements such as consultations or telehealth."

Wallen understands the decision challenges, too. "Design variation must be minimized," he noted. "However, it may be required in some cases. For example, depending on the procedure or treatment, a particular multi-functional room may require different equipment and supply set-up. To maximize utilization of the space, a support room for staging and exchanging equipment and supplies should be immediately adjacent to the procedure/treatment room."

Horn encourages healthcare organizations to be practical. "Some specialties make sense to combine, like surgery and imaging for example, as the rooms often require significant square footage," he said. "Alternatively, exam, treatment and lab service combined spaces provide a one-stop-shop model for patients improving patient outcomes and satisfaction."

Vendor consolidation

Once a healthcare organization chooses to design cross-functional, multipurpose room, whether each looks similar or distinct, the next decision centers on the necessary equipment and supplies and whether that gear should be acquired from a single vendor or multiple vendors. Think standardization versus specialization.

Much depends on contracting agreements and negotiations. "The benefits of designing and outfitting a multipurpose room with a single vendor outweigh the drawbacks in measurable ways," Kurz indicated. "Of course, health facilities must carefully consider their specific needs, negotiate favorable terms and actively manage the vendor relationship to ensure seamless implementation. For Siemens Healthineers, the imperative is to engage in each project as a partner invested in the facility's success.

"The single-vendor option lets facilities leverage economies-of-scale cost savings at the point of sale. And it simplifies procurement," she continued. "Instead of dealing with multiple vendors, facilities can negotiate a single and comprehensive contract. This saves time and resources, and it makes acquisition of equipment more efficient. With one vendor, hospitals can be certain that equipment and systems are seamlessly integrated and compatible. The result: Less downtime and better overall system reliability in the room. There is consistency between systems and consistency in the room design. And in addition to enhancing aesthetic appeal, this consistency ensures the layout is optimal for workflow efficiency and infection control. And regarding service, support, and troubleshooting, a single vendor option means a single point of contact, so operational concerns are easier to manage."

Timmerman highlights the single vendor versus multiple vendor options as well. "There are certainly challenges that go along with vendor selection and management," she said. "There are pros and cons to having multiple vendors, and there are pros and cons to having a single vendor. A single vendor may be easier to manage, but there may be concerns with continuity of supply. Having multiple vendors can be difficult to manage, but the supply chain may have less risk. Therefore, it's likely that the vendor strategy may change based on the criticality of the equipment being sourced.

"Ultimately, vendors need to partner with their customers throughout the entire design journey. Ideally, a partner for critical solutions will have the expertise to help develop design solutions that are rooted in research to help achieve the desired goals and improved outcomes. They should have the knowledge and expertise that starts with the design process, through installation, and all the way through servicing the solution," she concluded.

"Generally, multiple vendors can complement one another based on their respective offerings," Horn assured. "Assuming each vendor is respectful of their competition, the space, patient and end user can all benefit from the various capabilities of a variety of vendors."

There is one way to supersede the single-versus-multiple quandary, according to Fitzgerald, that hinges on information technology. "The design doesn't need to involve a single vendor, but the equipment needs to be interoperable," she insisted. "That way you can wheel in what you need and plug it in, not only into the electricity but also into the care delivery system, such as monitors, image capture, smoke evacuation, gasses, etc." **HPN**

ADVERTISER INDEX

As ESG Advances to the Board Room, Can Supply Chain?

by Karen Conway

As environmental, social and governance (ESG) issues gain more prominence in healthcare organization board rooms and C-suites, so too are opportunities for supply chain professionals to demonstrate their strategic value. Recently, the American College of Healthcare Executives (ACHE) published a special feature on the importance of ESG to the long-term viability of health systems. The article makes reference to the role of supply chain, but still in rather limited terms, focusing on its more traditional role in lowering costs, optimizing resource utilization, and reducing waste and negative environmental impacts. In this article, we will focus on how supply chain can secure a more integral role in helping craft and implement their organization's ESG objectives.

The higher priority being given to ESG-related topics is driven by growing regulatory, consumer, and employee interest in matters that impact the long-term health and well-being of individuals, families, entire communities, and the planet as a whole. Healthcare executives, in turn, recognize that this longer-term focus requires investments that may not see a return for a period of years and which, in today's financially constrained environment, require board support.

That's not to say that all ESG activities cost more. There are plenty of examples where the ROI is quickly realized. Take Gunderson Health System as an example. By making a $2 million investment in its heating and cooling systems, the health system became the first in the nation to achieve energy independence in 2014 and now saves more than $1 million annually in energy costs. Providence Health hospitals in Oregon saved about half a million dollars a year just by switching to an anesthesia gas with a lower carbon footprint.[1]

These are compelling case studies of the opportunities to save both money and the environment, as well opportunities for the supply chain to advance more holistic sourcing decisions. Other investments are not as clear cut, taking either longer to achieve a return or resulting in savings in other areas, such as reducing the costs associated with chronic disease. Valley Children's Hospital in California is investing $30 million in a renewable energy microgrid to meet 80 percent of its energy needs, while cutting its GHG emissions in half by 2030. Other institutions are shifting the focus of their fundraising campaigns. For example, rather than raising money to expand a hospital or service line, ProMedica has launched long-term initiatives to identify and address issues creating health disparities across its service area. Its first such campaign, begun in Toledo, Ohio, in 2016, identified food insecurity as a critical issue, leading to a variety of programs, including opening its own grocery store in a food desert near one of its hospitals. Such an effort requires considerable supply chain expertise, e.g., to optimize ordering and inventory management, while complying with regulatory mandates to ensure food safety.

These are some very specific examples of what hospitals and health systems across the country are pursuing, often as part of much larger corporate strategies. ACHE emphasizes how addressing ESG initiatives improves not just environmental, social, and economic matters but also critical long-term sustainability of health systems, a fundamental responsibility of boards of trustees. At Cincinnati-based Bon Secours Mercy, the institution's ESG Council (which includes supply chain) reports directly to the board, while other organizations provide regular executive-level updates to boards on the progress of various ESG initiatives.

UPMC recently appointed two executives—one clinical, the other administrative—to collaborate on green initiatives in order to meet its commitment to halve its GHG emissions by 2030 as part of the White House Health Sector Climate Pledge.[2] They have already worked to reduce GHG emissions in surgery and food waste, while expanding use of solar energy. Both have longstanding experience with the healthcare system, which they believe is key to working across multiple stakeholders to facilitate change.

Multistakeholder engagement is another supply chain superpower; as the AHRMM Cost, Quality, Outcomes (CQO) Movement demonstrated, supply chain is the one discipline that works with both internal and external stakeholders to optimize management of the multitude of resources needed to not only take care of sick patients, but also to optimize population health.

If you are a supply chain professional interested in advancing ESG initiatives and aligning more closely with your organization's strategic objectives, here are some suggestions:

1. Find out if and how your organization has incorporated ESG objectives into its overall strategy and identify areas where supply chain can play a role, from helping source products with less embodied carbon to providing more care (including access to key resources such as nutritional food) in disadvantaged communities.
2. Establish relationships with the executives in your organization designated as the leads for ESG and/or sustainability (terms often used interchangeably) and express your interest and qualifications for being involved in corporate level initiatives.
3. Engage your suppliers beyond just finding more sustainable products and contracting with diverse suppliers. Consider how you can collectively reduce GHG emissions and waste across the supply chain. As an example, see the May issue of *Value.Delivered* to learn how Rush Health, Johnson & Johnson, and Concordance consolidated orders to reduce the number of shipments (and the associated carbon footprint and packaging waste). HPN

As Vice President, Healthcare Value for Global Healthcare Exchange (GHX), Karen Conway works to advance the role of the supply chain as a critical enabler in the pursuit of a value-based healthcare system.

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