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GENERAL SURGERY NEWS

Why Surgeons Should Partner With Their Central Sterile Processing Department

Redefining the Relationship to Decrease Surgical Site Infections

By DAVID TAYLOR III, MSN, RN, CNOR

Over the past decade, hospitals have spent a great deal of time, resources and money to prevent surgical site infections (SSIs). Properly timed antibiotics, nasal decolonization, skin antisepsis, appropriate hair removal, preoperative bathing and hand hygiene have been some of the measures taken to reduce infection rates. But one critical dimension of infection safety has received comparatively much less attention, and that is the role of the central sterile processing department (CSPD).

Central sterile processing is the first link in the chain of infection prevention. Its role is to decontaminate, clean, inspect and sterilize instrumentation for future use. However, failure to do so can introduce pathogens into the OR, increasing the risk for SSIs. The major problem is a lack of awareness of the importance of this step.

In U.S. hospitals, SSIs are a major problem and a significant patient safety issue. They affect a significant number of the patients and can have devastating consequences, including long-term disability (<http://bit.ly/2OfAsSJ>) and worse outcomes (*BMJ Open* 2016;6[2]:e007224). Most hospitals have made substantial process changes to improve intraoperative safety, but these gains are vulnerable to weaknesses in the CSPD.

The Financial Issue

Nearly 1.5 million surgical procedures were performed in 2019. Cases declined in 2020 because of COVID-19, but experts are predicting a spike this year, with further growth in the surgical market from 2022 to 2025 (<http://bit.ly/30uwTe2>).

Surgical site infections are the third most expensive type of

health care–acquired infection, costing nearly \$21,000 per patient case. Some estimates raise that cost to \$90,000. It's estimated that the total cost of SSIs to the U.S. health care system ranges from \$3.5 billion to \$10 billion annually (bit.ly/3cfPbVB).

In addition, in 2015, the Centers for Medicare & Medicaid Services began to penalize hospitals for high rates of SSIs along with other health care–acquired conditions. Because these SSIs dramatically increase the risk for rehospitalization, hospitals are more vulnerable to readmission penalties (Table).

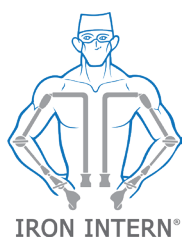
These safety and financial issues make a very compelling argument for timely preventive action (*Langenbecks Arch Surg* 2011;396[4]:453–459). A surgeon who knows more about CSPD can have a positive effect on their own practice. When surgeons engage directly with hospital leaders to create a strong process for preventing SSIs, patient safety surely will increase.

Going Behind Closed Doors

A CSPD orientation program designed to educate surgeons represents a low-cost, high-impact opportunity that not only drives the alignment between key customers of the OR, but can improve safety and efficiency.

Individual and small group tours are an important start, and can give the surgeon a general overview of the inner workings of the CSPD and how it may affect their practice. To increase the return on investment, a more robust program can be created by taking this concept further and allowing the leaders to present at a department of surgery meeting. Once established, the leaders can grow the orientation program and combine it with the introduction of a quarterly surgeon satisfaction survey.

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NEW PRODUCT ANNOUNCEMENT

Automated Medical Products Corp. (AMP), the manufacturer of the Iron Intern® Surgical Retractor, is pleased to announce its new web site (www.ironintern.com). The Iron Intern® is an articulated surgical retractor designed to mimic the human arm and deliver the best and safest exposure. It's the Surgeon's tireless assistant.

AMP has a history of manufacturing excellence, engineering, and innovation. For over 50 years, we have collaborated with surgeons worldwide to deliver the highest quality retraction systems.

Cybersecurity

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of Buffalo was hit by a variant of ransomware named SamSam. The attack shut down the hospital's HIS, including all electronic clinical applications, billing and scheduling services, and communication tools. The hospital decided not to pay the ransom and turned to old-fashioned paper charts and face-to-face communication for two months while the HIS was restored.

In that time, staff lost access to the electronic medical record (EMR), the picture-archiving and communication system, and even the internet.

Physicians could access patients' historical data, including medical records and imaging, through HealtheLink, an electronic clinical information exchange among hospitals in Western New York. Otherwise, patient information was communicated only in writing, by phone and in person.

W. Alan Guo, MD, an acute care surgeon and a surgical intensivist at the University of Buffalo, said trainees struggled with the abrupt switch to a paper-based system as they came to medicine in the era of the EMR.

In a study published in 2018, Dr. Guo and his colleagues reported that residents were very stressed by the lack of online resources in the aftermath of the attack (*J Surg Res* 2018;232:389-397). Some surgical residents said they had less hands-on experience in the OR because limited imaging made cases more difficult.

He urged hospitals to treat ransomware attacks like other disasters and prepare for them as part of disaster planning. Training in paper-based documentation should be included as part of hospital in-service and the graduate medical education curriculum, he said.

"Everything is digital now. So, younger generations need to learn about paper-based documentation in case something happens, because the cyberattack rate is getting higher and higher in this world."

Reliance on Telemedicine

During the pandemic, health systems have become more dependent on smart devices and telemedicine. This reliance makes hospitals more vulnerable to major attacks, according to Piyush Mathur, MD, a staff anesthesiologist and critical care physician at Cleveland Clinic in Cleveland. He chairs Cleveland Clinic's Anesthesiology Institute compliance committee.

"We need to understand that despite telemedicine providing access to a lot of different patient care areas, it has vulnerabilities and we need to be prepared for that," he said.

Telemedicine systems rely on a network of products that are built in one country, used in another and perhaps serviced in yet another. These systems can be accessed by a global network of people working at multiple points in the chain, including human resources programs, audiovisual intersections and even IV pumps at the bedside.

"These, across the entire nation, are all vulnerable to attack," Dr. Mathur said. ■

CSPD

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Program components can consist of the following:

- Walk through each area of the department.
- Detail the time it takes for accomplishing each step.
- Explain the equipment used in the process.
- Introduce surgeons to the staff responsible for their instruments.

Inpatient surgery patients who develop anSSI:	2% to 5%
Number of SSIs that occur in the U.S. each year:	160-300K
Increase in average length of stay as a result of an SSI:	7 to 11 days
Increase in chance of death associated with SSIs:	2 to 11X greater
Estimated percentage of preventable SSIs:	Up to 60%

Sources: *Infect Control Hosp Epidemiol* 2014;35(6):605-627;
World J Emerg Surg 2019;14:50.

What's There to Learn?

Efficient turnover of instrumentation can help ensure the surgical team has the necessary equipment to perform its procedures. However, far too often when instrumentation is missing, CSPD gets the blame. When surgeons have a better understanding of the department and its inner workings, they can begin to truly understand where the issues lie.

First and foremost, knowing your set inventory is critical. When a surgeon schedules five procedures for the day and the hospital has only three instrument sets, delays are inevitable. Most organizations require loaner instrumentation to arrive 24 to 48 hours before the surgery to ensure it has been properly inventoried, inspected, decontaminated, reassembled, sterilized and packaged. Also important to note, it takes on average three to four hours for an instrument set to be properly processed, and that's a low estimate. In this scenario, it's called an instrument turnover.

So, when the surgeon asks why their case is delayed and the circulating nurse says the instruments are not ready, it's easy to see why the CSPD would be blamed. The truth is the department most likely had requested additional instrumentation to improve processes; however, due to the high cost of instrumentation, the request probably was denied.

Finally, consistent turnover of instrumentation can result in corners being cut and a greater possibility that something was missed, which can have devastating consequences. ■

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