
From Staffing to Sterilization: The Critical Aspects of SPD

Optimize your sterile processing department
to provide the foundation for OR success.



Sterile processing has a measurable impact on patient safety in the surgical setting¹. Reusable surgical instruments must be completely cleaned, decontaminated, and sterilized before they return to circulation in procedures at the facility. Failure to do so puts patients at risk of infection from soiled instruments and results in delays when the team must stop the surgery to request new instruments. This further impacts patient safety if an individual requires extended time under anesthesia. An inadequate or ineffective sterile processing department (SPD) can harm patients and put providers and facilities at risk of lost business, regulatory scrutiny, loss of accreditation, and reputation damage.

Going off schedule in the surgical suite is more than just an inconvenience. According to data from the

Joint Commission reported by the American College of Obstetricians and Gynecologists, time limitations are associated with a higher risk of wrong-site surgical procedures, which the Commission considers a sentinel (never) event.²

To create and maintain an effective sterile processing program, health care facilities must engage in these best practices:

- Establishing strong leadership in a complex health system environment
- Building program elements that support a culture of excellence
- Engaging in ongoing assessment with standards and metrics for quality and productivity

Setting the Stage: Establishing Strong Leadership in a Complex Environment

Depending on location, size, and other factors, the modern SPD processes anywhere from 10,000 to 30,000 surgical instruments every day to supply carts for 100 or more cases. The journal Clinical Leadership and Infection Control (CLIC) reports that the number of processed trays per day provides the most accurate estimate of SPD caseload.³

In addition to meeting this substantial volume, SPD employees must keep up with the flow of technology, which creates a constant introduction of new instruments that have unique

sterilization and processing requirements. In an institutional culture of immediacy, surgeons demand fast turnarounds as the staff struggles with procedure cards that offer limited information regarding provider needs.

At the same time, all SPD operations must adhere to the mandates, standards, and regulations of the Centers for Disease Control and Prevention (CDC), Association of Perioperative Registered Nurses (AORN), and the Association for the Advancement of Medical Instrumentation (AAMI). Additional barriers to excellence in the SPD realm include inadequate resources for leadership, equipment, resources, inventory, accountability, education, technical support, and physical space.

¹ <https://www.ecri.org/components/PSOCare/Pages/PSONav0812.aspx?tab=2>

² <https://www.acog.org/clinical/clinical-guidance/committee-opinion/articles/2010/09/patient-safety-in-the-surgical-environment>

³ <https://www.beckersasc.com/asc-quality-infection-control/6-common-errors-in-surgical-instrument-processing.html>

Profile of a Strong SPD Leader

Having the right person to lead the SPD can break down these barriers and reduce the risk of damaging patient safety problems. The priorities for the SPD department manager must include, and are by no means limited to:

- Building a dedicated team of trained and certified staff
- Proactively solving problems and planning for potential issues before they arise
- Reducing the rate of surgical instrument errors at the facility
- Eliminating supply back-up that wastes time and reduces profits
- Instituting a streamlined same-day turnaround for instrument processing
- Creating a department culture of pride in one's work
- Requisitioning the equipment and resources necessary for department success
- Implementing digital QA initiatives, such as instrument tracking systems

Based on these demanding and varied responsibilities, hiring managers must carefully screen SPD leadership candidates to ensure they have the qualities for success in this role.⁴ Look for expertise in workflow, instrumentation, and relevant technology as well as strategic foresight, the emotional intelligence to build strong relationships with employees at all levels, and the ability to provide error-free delivery under pressure.

The importance of SPD certification

While only a few states mandate certification for SPD professionals, hiring technicians and managers who have the proper credentials can significantly improve department operations. Becker's Hospital Review reports that SPDs with certified staff and managers are more likely to adhere to AAMI best practices for sterilization, inspection, and cleaning of instruments. By contrast, technicians who do not hold certification are less likely to understand and value their roles in patient safety.⁵

Certification in the sterile processing field should be the minimal requirement for all technicians, with expectations for achievement established at hire date (12-18 months). The SPD career ladder should have additional certifications tied to promotion; i.e. Certified Instrumentation Specialist (CIS), Certified Healthcare Leader (CHL).

⁴ <https://www.sullivanhealthcareconsulting.com/single-post/2020/07/30/7-qualities-of-effective-sterile-processing-leadership>

⁵ <https://www.beckershospitalreview.com/quality/on-the-brink-3-dangers-of-inadequate-surgical-instrument-reprocessing-departments.html>

Building Program Elements That Support a Culture of Excellence

With the right manager in place for your facility's SPD operation, you can begin to develop aspects of the program that help eliminate dangerous, costly errors.

Smart team structure

Ideally, you should have a leadership FTE for every eight to ten SPD staff technicians to expand the facility's available specialty areas, meet state and federal requirements for education and training, and successfully fulfill the instrument management and coordination needs of your facility. Leadership FTEs are not necessarily whole positions, and can be portioned into productive positions. For example, a site can have 5 lead technicians at 80% productivity (or 20% leadership/administrative), which would represent one FTE of leadership.

Leadership positions include the manager, supervisors, educator (which can be a supervisor), and lead technicians. One potential and impactful role of lead technicians is that of a liaison specialty services, attending group meetings in these areas and remaining highly accessible for proactive troubleshooting and problem-solving across departments. The lead technician serves as a resource to other SPD staff members. For example, they may conduct educational in-services for new policies, instruments, and service lines.

In addition to these responsibilities, your facility's lead technicians direct, supervise, and coordinate all daily SPD operations under the management of

the department supervisor. Support positions within SPD may include supervisors for each shift, functional, or physical area, as well as loan coordinators, instrument tracking system administrators, instrument coordinators, and educators.

Effective coordination and communication

As an essential perioperative service, SPD can help break down the silos that exist within many health care facilities by prioritizing frequent, regular, and effective communication with the OR team and across service lines. Again, SPD visibility is an essential element of program success. This visibility should start with a lead tech from SPD at each morning OR huddle.

SPD should also start each day with a planning meeting to address instrument conflicts, outstanding loans, and other needs to ensure that each shift runs smoothly. At a monthly meeting, the SPD supervisor should address:

- Protocol for handling instruments
- Process changes
- Quality and productivity statistics
- Streamlining of instrument trays and case carts

The SPD supervisor should support open communication with daily rounds throughout the department as well as the OR and service areas. These supervisors should build solid relationships with surgeons and providers both within and outside the health care system.

SPD management can also encourage two-way communication by proactively submitting feedback from each department and practitioner. Addressing departmental and practitioner concerns builds trust and strengthens the reputation of SPD throughout the institution, bolstering the department's ability to operate effectively.

Education plays a vital role in the success of sterile processing. CLIC stresses the importance of educating staff about best practices for processing, such as following manufacturer recommendations. Adhering closely to complex instructions is especially critical to ensuring the continued safe and effective operation of robotics equipment, minimally invasive surgical tools, and high-speed electric instruments.

The role of automation: Beyond instrument tracking

The AAMI and the American National Standards Institute recommend that surgical facilities have a digital system to track each surgical instrument, denote its use in patient procedures, and verify sterilization after each use. Many operating rooms have implemented electronic barcodes or radio-frequency identification (RFID technology) so that each tool can be scanned at each point in the SPD

protocol. ACOG reports this strategy helps reduce retained instrument injuries, which can be life-threatening for patients. Unique device identification is also an FDA requirement.⁶

In many facilities, electronic instrument tracking is the sole focus of new technological initiatives. Automation beyond the tracking process can dramatically increase productivity by:

- Tracking staff output by individual, station, or shift
- Managing the repair, replacement, and maintenance of instruments, including regulations and recalls
- Forecasting instrument, staff, and resource needs
- Tracking and attaching instruments to the patient electronic record

In addition, smart software systems allow managers to match SPD resource needs with the surgical schedule. Figure 1 provides an example of resource needs for a typical hourly SPD workload. Figure 2 displays the typical model for flat-shift staffing, while Figure 3 shows the recommended smart staffing model as a basis of comparison. Note the contrast between the resource needs and staffing in Figure 2 and the lack thereof in Figure 3.

In SHC's experience, most SPD automation systems pay for themselves with increased productivity within 18 months.

FIGURE 1 - TYPICAL HOURLY SPD WORKLOAD

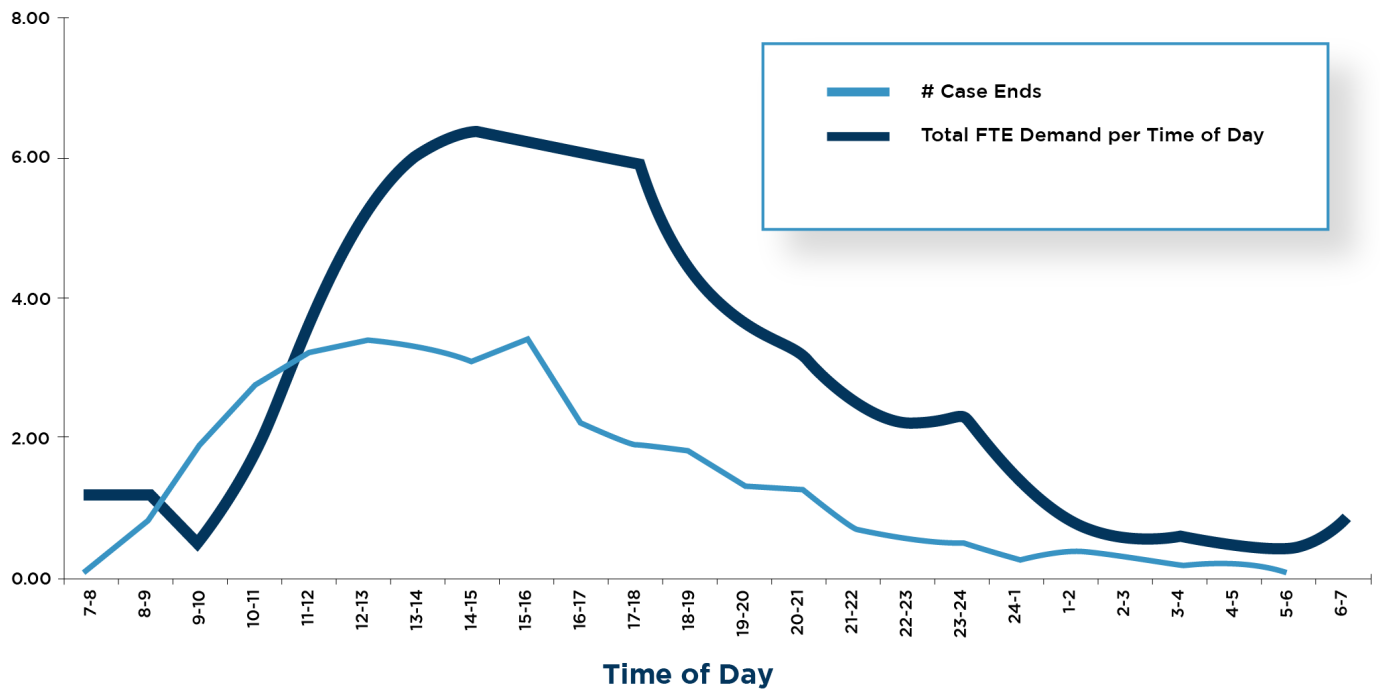


FIGURE 2 - TYPICAL FLAT-SHIFT STAFFING

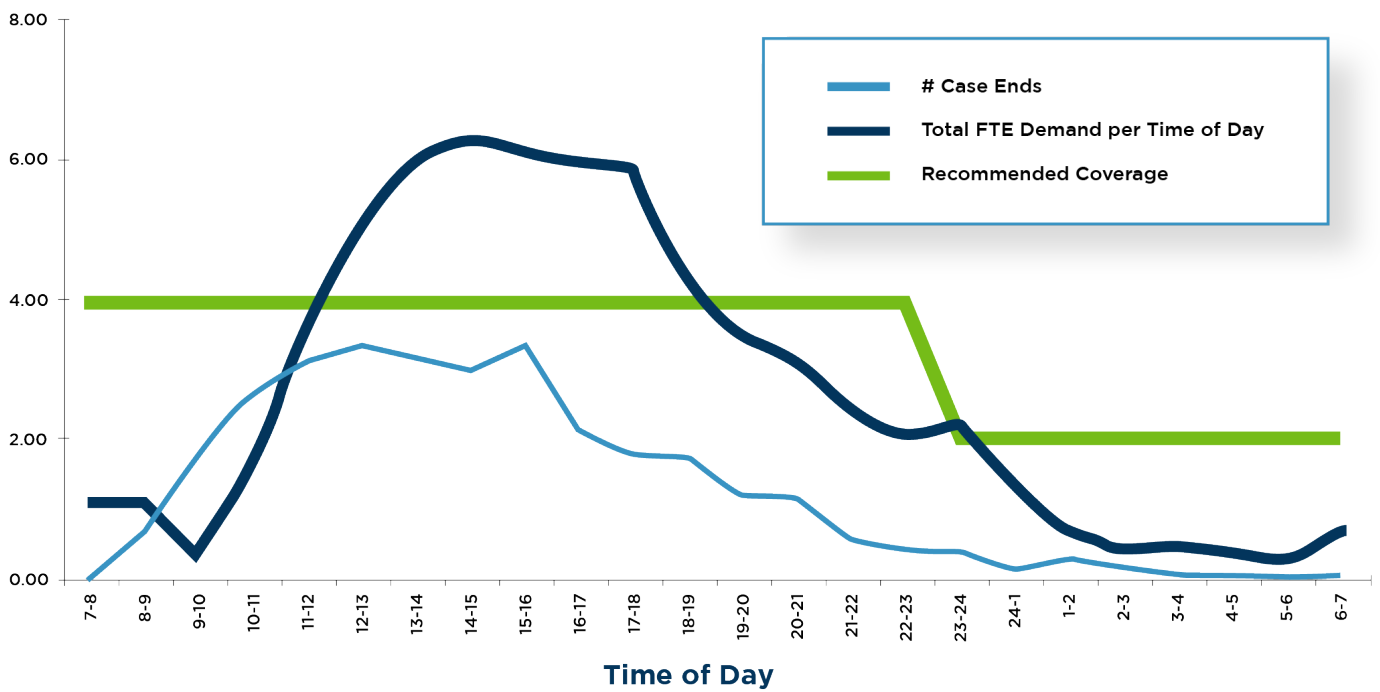
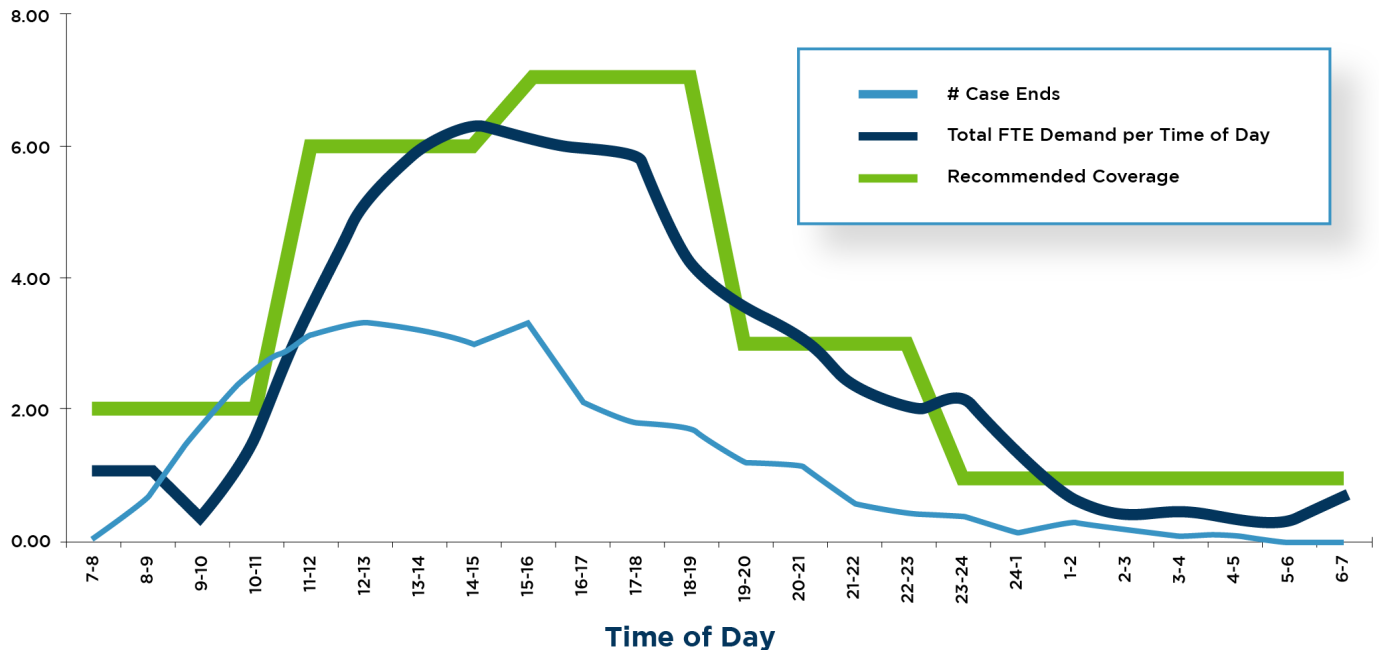


FIGURE 3 - SMART STAFFING



Tracking Metrics to Measure Success

Without close attention to relevant metrics, it's impossible to tell whether improvement measures have had the intended effect. These are the recommended measurements to track as you take steps to optimize the SPD at your facility. The ability to easily download and analyze data is another benefit of an updated automation system.

Incidental tray errors

An SPD should have an incidental tray error rate lower than 0.25 percent of processed trays, which represents no more than one in every 400 trays, in SHC's experience. Examples of incidental tray errors include:

- Missing instruments not indicated on the label
- Wrong or broken instrument in the tray
- Bioburden on instruments
- Missing integrators
- Mislabelled trays
- Lack of sterile trays when needed

Case cart errors

An SPD should strive for a case cart error rate of less than 1 percent, or no more than one out of every 100 carts. This category includes carts delivered with the wrong or missing items.

Additional SPD metrics

Other targets to set for a successful SPD include:

- No more than 7 minutes from receipt of an emergent case cart order to delivery of the case cart to the appropriate OR
- Less than 12-hour turnaround time until instruments are back into circulation after the end of a surgical case, or less than 4 hours when indicated
- An immediate use sterilization rate of zero, with all such cases subject to documentation and review
- Client satisfaction rate of at least 95 percent as documented by OR physician and staff surveys

Shared metrics

Departments like SPD share responsibility for some performance metrics. While it can be difficult to determine accountability, the SPD manager should track and report these key performance indicators:

- Holes in tray wrappers, with a target below 1 percent (one out of 100 trays)
- Late return of loaner trays, with the target of no trays returned less than 48 hours before the start of the next case
- Less than 1.5 percent of patients affected by instrument errors
- Less than 1 percent of patients affected by case cart errors and delays

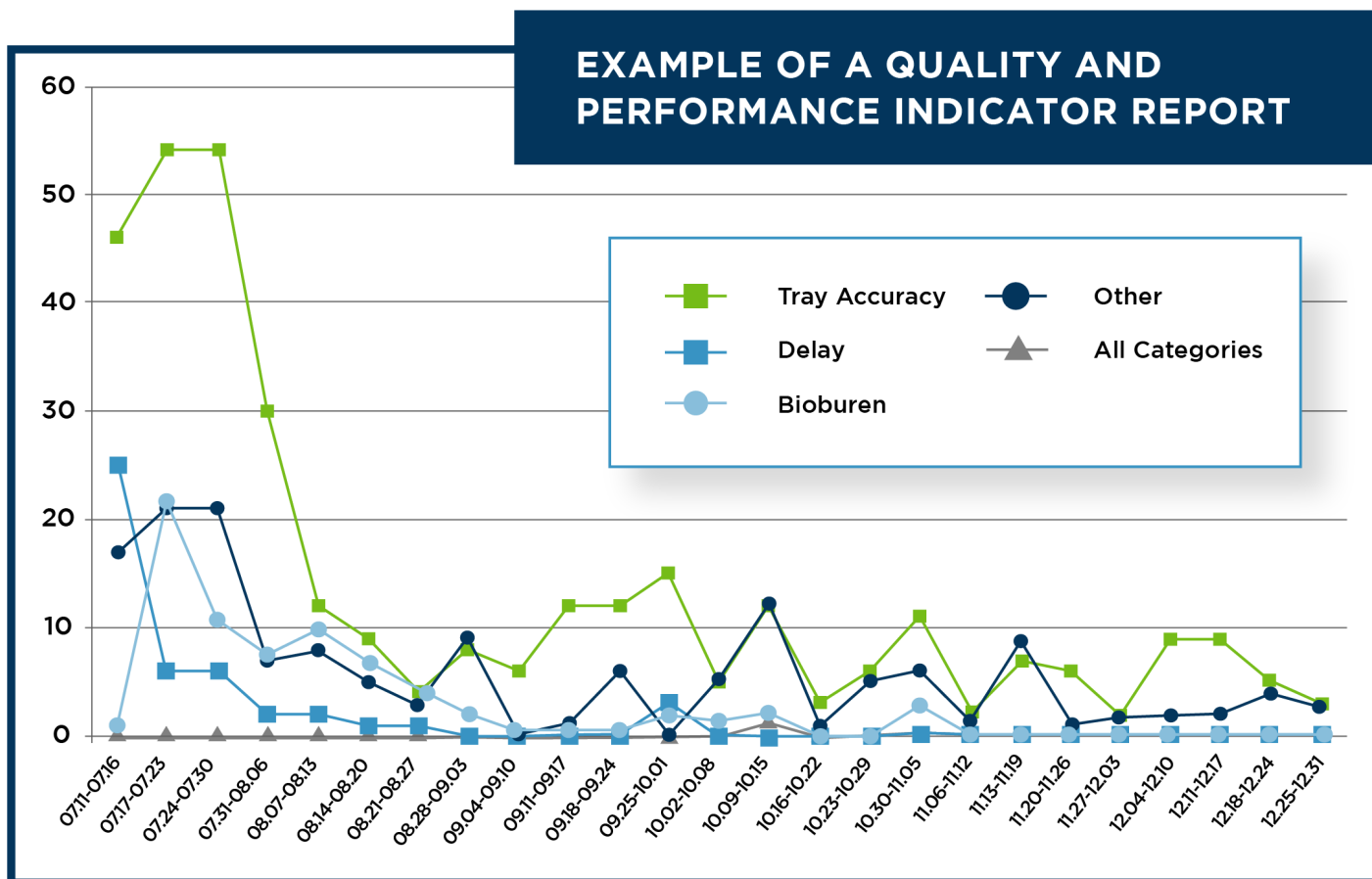
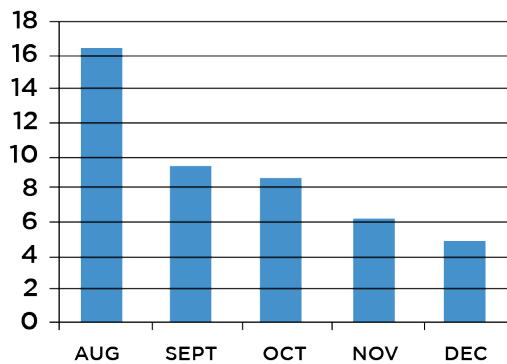


Figure 4

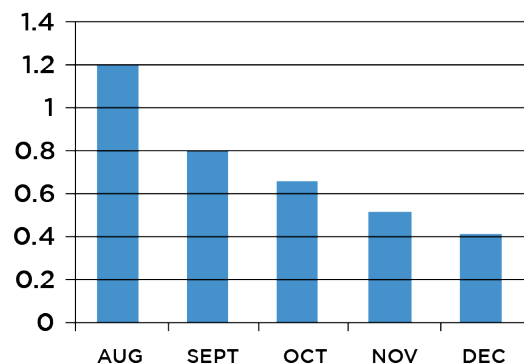
Gathering feedback for every case in which an issue occurs provides valuable quality assurance by highlighting gaps in the process. Becker's Hospital Review cites instrument-related patient injuries, such as burns from damaged insulation, retained foreign bodies resulting from cracked or broken instruments, and harbored foreign bodies in the cracks and crevices of instruments that result in infection. Becker's also notes that laparoscopic instruments are particularly difficult to thoroughly clean and sanitize without proper knowledge.

EXAMPLES OF A QUALITY AND PERFORMANCE INDICATOR REPORTS



PATIENT ERROR RATE: ■

AUG	SEPT	OCT	NOV	DEC
16.5%	9.4%	8.5%	6.2%	4.9%



SPD VOLUME ERROR RATE: ■

AUG	104/8960 sets sterilized	1.2%
SEPT	70/8804 sets sterilized	0.8%
OCT	64/9647 sets sterilized	0.66%
NOV	44/8318 sets sterilized	0.6%
DEC		0.53%

Take the Next Steps to SPD Success

For more than 40 years, Sullivan Healthcare Consulting (SHC) has provided valuable analysis, project design, and implementation for perioperative services of all sizes across the globe. Sullivan specializes in SPD consulting services that improve efficiency

while promoting safety and accuracy.

The individualized solutions begin with a thorough assessment of the facility's scheduling, staffing, organization protocol, education and training programs, inventory, communications, card and case cart systems, processing and reprocessing, regulatory processes, and quality control. Gathering and analyzing this data illuminates the path to better sterile processing. Contact Sullivan today to begin a transformative partnership.