Improving instrument readiness cuts case delays, boosts surgeon satisfaction

Surgical case delays have been found to last an average of nearly 17 minutes. Not only do such delays make surgeons dissatisfied, they also reduce case volume and related revenues, and they may lead to additional time under anesthesia for patients.

The root causes of instrument-based delays are seldom simple, and long-lasting culture-based solutions prove elusive in many facilities.

Managers in the OR and sterile processing department (SPD) at Wesley Medical Center in Wichita, Kansas, had tried unsuccessfully over the years to address recurrent instrument issues. In 2011, following management consultant Peter Drucker’s mantra that “what gets measured gets managed,” we outsourced our sterile processing to improve instrument readiness and to measure and benchmark performance.

As a result, we significantly improved key performance indicators (KPIs) in this area within 180 days, and over 3 years, we reduced dirty instruments by 94%, tray errors by 86%, immediate-use sterilization by 77%, and unprocessed trays by an average of 94%.

Process improvements
A key resource for our process improvements was access to a national database of KPIs related to instruments, sterile processing, and OR throughput, maintained by our SPD outsource vendor, Integrated Medical Systems International, Inc. (IMS). (KPIs are performance measurements designed to evaluate an organization’s success in achieving and maintaining operational standards or meeting strategic objectives.)

The first step was to educate OR and SPD staff about the interdependent relationship between their departments. The KPIs would improve only if the 2 teams worked together to resolve issues. Instead of casting blame, OR and SPD staff had to understand how their actions contributed to or detracted from overall performance.

A survey of our surgeons enabled us to identify surgeon hot points to address aggressively within the first 180 days. Surgeons were asked to rank these and other questions on a 5-point Likert scale that ranged from “very dissatisfied” to “very satisfied”:

• Are cases delayed due to instrumentation?
• Do surgical instruments function correctly?
• Is sterile processing responsive to your needs?

Based on the evaluation of on-site assessments, the following KPIs were targeted for improvement:

• Dirty instruments
• Unprocessed trays
• Tray errors
• Immediate-use sterilization loads
• Post-case audits
• OR frictions.

A 5 × 4 foot dry erase board was installed in the SPD to track performance. A white
board may sound like a small thing, but it is essential for keeping staff focused on ongoing goals. In addition, the white board created a level of conscientiousness around these KPIs that began to seep into the culture of our surgical unit. SPD tracked activity in real time, noted trends and discussed them with IMS weekly, and reviewed them with facility administration monthly.

These metrics serve as a visual reminder of the initial barriers we faced, our progress over time, and any recurrent issues that required a more intense focus and discussion.

KPIs were tracked in conjunction with a central sterile process management program that included Lean process implementation, staff training and certification programs, inventory and equipment management, OR liaisons, and regular audits and adjustments of all processes. Lean processes implemented included:

- Linearized workflows
- Establishment of visual cues
- Elimination of non-value-added activities (excess steps or material usage).

Results measured over 6-month periods for 3 years are shown in the table, p 18.

A key objective was reducing the incidence of OR frictions, i.e., factors that may negatively impact the OR, such as missing instruments, incomplete case carts, instru-

<table>
<thead>
<tr>
<th>KEY PERFORMANCE INDICATOR (Metric)</th>
<th>Baseline</th>
<th>6-Month AVG (Month Ending)</th>
<th>%Δ</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>2011 Jan - Jun</td>
<td>Jul - Dec</td>
</tr>
<tr>
<td>OR Frictions / Case</td>
<td>13.82%</td>
<td>9.93%</td>
<td>6.41%</td>
</tr>
<tr>
<td>Dirty Instruments / Case</td>
<td>3.34%</td>
<td>1.35%</td>
<td>0.85%</td>
</tr>
<tr>
<td>Daily AVG Unprocessed Trays / Daily AVG Processed</td>
<td>19.47%</td>
<td>9.31%</td>
<td>8.69%</td>
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<tr>
<td>Tray Errors / Total Sterilized Items</td>
<td>1.44%</td>
<td>1.05%</td>
<td>0.67%</td>
</tr>
<tr>
<td>Immediate-Use Sterilization / Total Sterilized Items</td>
<td>2.20%</td>
<td>1.62%</td>
<td>1.36%</td>
</tr>
<tr>
<td>Surgeon Satisfaction AVG</td>
<td>3.59</td>
<td>4.55</td>
<td>4.54</td>
</tr>
</tbody>
</table>

Note: Based on 257 surgeon surveys. AVG = average; surgeon satisfaction survey scale: 1 = very dissatisfied; 5 = very satisfied.

Source: Reprinted with permission from Wesley Medical Center, Wichita, Kansas.
ments not functioning properly, or insufficient instrument volume. Over the 3-year period, our success in this area was dramatic (figures, pp 18–19).

Some of the variability in the monthly trends can be attributed to external factors such as department construction, employee turnover, and equipment maintenance.

**Lessons learned**

All of these improvements were rewarding, but we learned that there is no quick fix for instrument readiness, surgeon satisfaction, and other instrument-related issues. Continuous assessment, training, communication, and intervention are required.

Top management must support change but cannot drive it. Even though this started as a top-down initiative, we continue to achieve our success from the bottom up. Everyone is actively participating: the OR and SPD technicians who monitor the boards daily, the supervisors who manage the process, and the business managers and directors who champion continuous improvement and cultural changes. The C-level executives look forward to quarterly business reviews where we can monitor and evaluate our progress.

“Establishing effective communication between the OR and SPD was essential,” says Randall Smith, the IMS clinical operations manager who manages our SPD. “Everyone wanted the same final outcome, but at times there seemed to be a disconnect between the 2 teams, and it affected processes. Today we have a system that encourages open communication, measurement, and assessment, and this has facilitated root-cause analysis when issues do occur. We now have shared goals and objectives between the OR and SPD, and we have built a cohesive team that shares feedback without blame.”

When instrument-related problems arise, our managers now have the tools to identify them quickly, work toward a collaborative solution, and move forward without blame or bad feelings.

Through this process, we learned a great deal about our surgical unit. For example:

- By accessing IMS’ national database, we were able to ascertain the length of the average instrument-related case delay. Using research showing that OR downtime costs an average $60 per minute, we projected the true cost of our delays and prioritized accordingly.

- Weekly meetings between OR and SPD representatives allow us to review the weekly KPIs, discuss problems, and make adjustments. Meetings remind us that we share the same goals, and we’re less tempted to develop an “us versus them” mentality.
Most instrument issues occur in orthopedics, so we focused more intensely on those trays. “The improvements gained through this process helped to reduce delays to on-time starts and improved satisfaction among our surgeons,” says OR staff member Logan Sorensen, RN. “The whole team worked together to make this happen.”

The surgeon satisfaction surveys gave us valuable insight. “The surgeon satisfaction surveys have been more and more positive as instrument-related processes have been improved,” says Cherise Becker, OR manager at Wesley. This feedback allows our executives to monitor our surgeons’ attitudes in the context of national norms and to respond accordingly.

We adopted a culture of consistent communication and documentation, leading to a pattern of measurable success. Bridging the gap between our OR and the SPD teams is the key to sustainable process improvements.

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References
http://tinyurl.com/OREfficiency
