The Johnson & Johnson Medical Devices Companies (JJMDC) CareAdvantage approach enables partnership with health system to improve operating room efficiencies in spine surgery

With healthcare costs continuing to rise, bundled payments and declining DRG reimbursements place added pressure at every level of a health system’s operations. As health systems look for ways to reduce costs without sacrificing quality of care, the operating room is often a focus for improvement. Through its CareAdvantage approach, JJMDC is a key third partner in this endeavor, working collaboratively with providers to deliver cost savings without compromising outcomes.

In the case of an Arizona-based, nonprofit hospital, the collaboration with JJMDC resulted in significant— and sustainable—time and cost savings across several types of spine procedures using JJMDC products. These savings were achieved through a process of increasing instrument tray efficiency, improving instrument standardization, and identifying other key procedural modifications.

An analysis of instrument utilization per tray across several specialties revealed that less than 25% of instruments in a given tray are used. This study also found that an increase in instruments per tray correlated with an increased instrument error rate.

To learn more please visit www.CareAdvantageJJMDC.com or email CareAdvantageJJMDC@its.jnj.com.

Reference
As surgical spine cases typically involve a highly variable quantity of instrumentation and implants, industry representatives often bring in additional instrumentation to ensure that they meet usage demands. This is a largely unrecognized problem. Hospitals do not restrict the number of trays opened or processed; operating rooms rarely track instrument utilization, and surgeons typically have limited visibility to this cost. The result is high cost of sterilization, and significant time spent by the operative staff on the handling and setup of unnecessary instrumentation and implant trays.

This facility had a busy spine surgeon who had made OR efficiency a top priority and a constant focus for continued improvement. One key area that kept emerging as a pain point for the surgical team was the significant amount of time that the scrub tech was spending in each case managing the orthopedic instrumentation on the back table. This activity was creating significant bottlenecks in the operative processes, leading the hospital team to approach the local JJMDC team for help optimizing the JJMDC instrument trays.

The Johnson & Johnson Health Economics and Market Access team partnered with the hospital to study the impact of tray optimization on OR efficiency and costs. The JJMDC OR Data Tracker was used to capture key time points in the perioperative process as well as the number of instrument trays used in a procedure. The hospital and JJMDC team developed a rigorous protocol for measuring perioperative processes before and after improvements were implemented. Five time points were measured before and after surgery:

- OR Setup
- Anesthetic
- Patient Prep
- Surgery
- OR Clean Down

The initial analysis included 63 cases. In each, the number of trays opened was recorded to establish baseline data. Real time case data was provided to OR staff and individual surgeons via dashboard reports, providing a level of transparency which helped fuel organizational change among all stakeholders.

During the study it was found that complete trays were often being opened for just one or two instruments. Additionally, the same number of instrument trays that were used for an 8-level spine procedure were often being staged for a 2- or 3-level procedure. This inefficiency was resulting in significant time spent handling and staging excess instrumentation at the back table, which also led to unnecessary instrument sterilization costs.

After analyzing the baseline metrics, it became evident that there were several areas of inefficiency that could be improved or removed altogether significantly decreasing the quantity of JJMDC instrumentation and implants brought into a case. Once tray optimization was implemented and other improvements were made, the teams tracked another 85 cases utilizing the same time stamps.

This facility had a busy spine surgeon who had made OR efficiency a top priority and a constant focus for continued improvement. During the study period, JJMDC worked with the hospital and the surgeon to consolidate JJMDC trays and standardize instrument use, while the hospital leveraged the data to make other procedural modifications such as synchronized surgery start times and nursing teams deployed specifically for spine surgery.

Reducing the total number of JJMDC trays brought in for each case resulted in a reduction of time required for room setup, an increase in procedural efficiency, and thousands of dollars in savings related to sterilization costs.

### Delivered Results*

<table>
<thead>
<tr>
<th>Baseline Procedure Averages</th>
<th>Post Implementations Procedure Averages</th>
<th>Efficiency Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trays Opened</td>
<td>Setup Time</td>
<td>Anesthesia Ready Time</td>
</tr>
<tr>
<td>16</td>
<td>0:42</td>
<td>0:21</td>
</tr>
<tr>
<td>4</td>
<td>0:24</td>
<td>0:13</td>
</tr>
</tbody>
</table>

### Total Time Savings (A + B) = 0:40

These efforts resulted in significant time and cost savings.

#### Reductions (annual):$^{1,3}

- Fewer trays
- Tray weight
- Savings on sterilization costs alone
- Reduction in OR setup and OR clean down time

1,572
20 tons
$196.5K
43%

*$These are examples that are specific to JJMDC/Ethicon products only and do not guarantee or predict future results, which will vary depending on individual circumstances.