Johnson & Johnson Medical Devices Companies and the AOC invite you to a

Peri-Operative Efficiency WebEx

February 16th, 2017  |  3 p.m. EST

WebEx Details to follow

GET ANSWERS TO:

What is the potential impact of Peri-Operative Efficiency in my healthcare system?

How to identify the issues that may be causing delays in the OR.

What we learned—key insights from UCSF.

PRESENTORS:

Richard Capra
CAO, UCSF Orthopaedic Surgery

Dawn Bowden
Director Health Economic and Market Access, Johnson & Johnson Medical Devices Companies

Richard Smith
Field Solutions Director, Johnson & Johnson Medical Devices Companies

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• Welcome
• Overview of today’s AOC Webinar

Rich Capra  
Chief Administrative Officer, USCF Orthopaedics  
President, AOC

Dawn Bowden, PhD, GBA  
Director, Health Economics & Market Access  
US Health Economics & Market Access  
Johnson & Johnson Medical Devices

Richard Smith  
Director, Field Capabilities at JJMD
Improving Perioperative Efficiency:

• *Tray Optimization – Knee/Hip*

Richard Capra- President AOC, CAO at UCSF
Dawn Bowden- Ph.D., Director, Health Economics Market Access at JJMD
Richard Smith- Director, Field Capabilities at JJMD
Agenda

• Why peri-operative efficiency?
• Working Together: AOC, UCSF, and Johnson & Johnson Medical Devices Companies (JJMD)
  • Project Overview
  • The Process
  • Baseline Data Collection Results
  • Custom Implementation
• Lessons Learned/Considerations
UCSF Orthopaedic Surgery Goals:

1. Reduction in tray expenses
2. Reduction in overall resource handling of trays
3. 20% more cases through block time

Start with Arthoplasty, future work in Spine
UCSF Orthopaedic Surgery
Strategic Initiatives - 2017

New Programs
- Outside clinics
- O&P expansion
- New Affiliations
- HPC Research
- Market Intelligence

Clinical Care
- Scribes
- Analytics
- Call center
- PROS

Quality Improvement
- Pt sat
- Payor mix
- Bundled Payment
- LOS
- Readmissions
- Post-Discharge

Cost Reduction
- Staffing compliment
- OR Efficiency
- AA’s/MD
- Resource time/pt
- Drug use
- Workflow redesign

Strategic Growth - Financial Strength - Our People - Quality & Safety - Pt Experience
## Opportunities in the Inpatient Stay: Lean

<table>
<thead>
<tr>
<th>Pre-Operative Anesthesia Assessment</th>
<th>Pre-Operative Processes</th>
<th>OR Turnover</th>
<th>Post-Anesthesia Care</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Earlier identification and communication of high-risk patients (at the Orthopaedic clinic), enabling intervention weeks before surgery</td>
<td>• Elimination of nerve blocks for primary total hip patients</td>
<td>• Standard work for OR turnover, which as reduced turnover times by 50%</td>
<td>• Earlier assignment of floor beds</td>
</tr>
<tr>
<td>• 23% reduction in appointment length</td>
<td>• Parallel processing administrative tasks to enable smoother patient flow</td>
<td>• Aligned environmental services staff schedule to OR peak times</td>
<td>• Smoother flow from PACU to floor, reducing PACU hold time</td>
</tr>
</tbody>
</table>
Opportunities:

Costs, Efficiency and Duplication

Medication Management
Opportunities:

Direct Cost Per Case

- Medication Management
- Length of Stay
Opportunities:

Costs, Efficiency and Duplication

Direct Cost Per Case

Ortho Grouping
- Other
- Blood
- Labs
- Radiology
- Anesthesia
- Supplies
- Drugs
- PT/OT
- PACU
- Room & Board
- OR Services
- Implant

Medication Management
Length of Stay
Implant Costs

© AOC
Opportunities:

- Costs, Efficiency, and Duplication
- Medication Management
- Length of Stay
- OR Costs 23%
- Implant Costs
Spine

Ortho Grouping
- Blood
- Labs
- PT/OT
- Anesthesia
- Radiology
- Other
- Drugs
- PACU
- Supplies
- Room & Board
- Implant
- OR Services

OR Costs 27%
UCSF Orthopaedic Surgery
Strategic Initiatives - 2017

New Programs
- Outside clinics
- O&P expansion
- New Affiliations
- HPC Research
- Market Intelligence

Clinical Care
- Scribes
- Analytics
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- PROS
- MD communic

Quality Improvement
- Pt sat
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Cost Reduction
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- OR Efficiency
- AA’s/MD
- Resource time/pt
- Drug use
- Workflow redesign

Tray Utilization/Reduction

Strategic Growth - Financial Strength - Our People - Quality & Safety - Pt Experience
It Takes a Team:

- MD Champion
- CAO
- Sterile Processing Rep

Survey Feedback
- Surgical Techs
- Surgical RNs
- Decon/Loaners Reps

Initial feedback when presenting — “can’t wait”, “excited about this project”
Program Overview
Perioperative Efficiency

Reduce variation in clinical processes and operational costs by streamlining the movement of JJMD devices through the surgical services and sterile processing departments.

ATTRIBUTES

- Time and motion study of surgical cases, including assessment of inventory management and instrument cleaning processes
- Data-driven recommendation of practices to improve performance, including quantifying impact of potential scenarios
- Clinical experts to standardize device utilization and optimize operations related to product usage

BENEFITS

- Increase inventory turns and reduce waste due to product expiration, returns, or expedited orders
- Lower carrying cost and physical footprint of inventory through product standardization
- Improve labor productivity by reducing the number of products and instrument trays that need to be tracked, cleaned, or managed
The Process
Project Planning & Data Collection

Commitment to move forward with Program

Project Charter & Data Collection Plan

Program Implementation

Measure Outcomes

Evidence Output

Program Metrics Report (PMR)

Case Study

White Paper

Publication
Observational Data Collection

• Data Collection facilitated by JJMD via the OR Data Tracker App

<table>
<thead>
<tr>
<th>Metrics</th>
<th>Goal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turnover time</td>
<td>Improve OR throughput as measured by turnover time and reduction in surgical delays</td>
</tr>
<tr>
<td>Number of instruments being processed</td>
<td>Reduce the overall number of instruments being processed</td>
</tr>
<tr>
<td>Number of trays per procedure</td>
<td>Reduce the number of trays (cost estimated at $75.00 per tray)</td>
</tr>
<tr>
<td>Right size</td>
<td>Percent of time the correct size is called</td>
</tr>
<tr>
<td>Set up time</td>
<td>Improve OR set up time</td>
</tr>
<tr>
<td>Staff satisfaction</td>
<td>Improve staff satisfaction – OR team and SPD</td>
</tr>
<tr>
<td>Adding a case or same amount in less time</td>
<td>Explore how optimized trays can impact surgical flow and ongoing efficiency efforts</td>
</tr>
</tbody>
</table>
## Primary & Secondary Endpoints
### DePuy Synthes Tray Efficiency

<table>
<thead>
<tr>
<th>Aim</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Drive efficiency through a patient specific single tray instrument set that will; decrease time, reduce cost, and reduce waste.</td>
</tr>
<tr>
<td>• Improving OR efficiency is a key contributor to delivering on the Triple Aim objectives. As part of our strategic relationship, we will reduce trays and instruments and develop customized trays to help drive efficiencies.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Primary Endpoints</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Turnover time: Improve OR throughput as measured by turnover time and reduction in surgical delays. Note: Turnover Time is defined as “wheels out to wheels in of following patient”.</td>
</tr>
<tr>
<td>• Number of instruments being processed: Reduce the overall number of instruments being processed</td>
</tr>
<tr>
<td>• Number of trays per procedure: Reduce the number of trays</td>
</tr>
<tr>
<td>• Tray Weight Reduction: Reduction in overall weight of trays</td>
</tr>
<tr>
<td>• Set up time: Improve OR set up time</td>
</tr>
<tr>
<td>• Cost variance/impact of above endpoints</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Secondary Endpoints (Optional)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Adding a case or same amount in less time: Explore how optimized trays can impact surgical flow and ongoing efficiency efforts.</td>
</tr>
<tr>
<td>• Incidence and impact of holes in blue wrap (# of trays in wrap (goal to decrease trays in wrap))</td>
</tr>
<tr>
<td>• Frequency of lost or missing instruments</td>
</tr>
<tr>
<td>• Average number of trays per procedure - Total environmental impact potential</td>
</tr>
<tr>
<td>• Correlation between back table complexity and set up time/surgical time (same staff/same case to drive standard set-up)</td>
</tr>
<tr>
<td>• Environmental Impact for blue wrap (elimination of blue wrap)</td>
</tr>
<tr>
<td>• Surgeon/Staff Satisfaction: Improve surgeon/staff satisfaction – surgeons, OR team and SPD</td>
</tr>
</tbody>
</table>
### Key Milestones & Status

| DRI       | Key Milestones                                                                 | Target Completion | Oct 16 | Nov 16 | Dec 16 | Jan 17 | Feb 17 | Mar 17 | Apr 17 | May 17 | Jun 17 | Jul 17 | Aug 17 | Sep 17 | Oct 17 | Nov 17 | Dec 17 |
|-----------|---------------------------------------------------------------------------------|-------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| DSA/      | 1. Planning & Needs Assessment (Account Criteria Checklist)                      | Oct 16            |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
| FHEMA     |                                                                                 |                   |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
| FHEMA     | 2. Proof & Evidence Strategy Definition (Data Collection Plan (DCP), Project Charter) | Dec 16            |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
| FHEMA     | 3. Expedite Project Contract/LOA                                                | Feb 17            |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
| TBD       | 4. Baseline Data Collection                                                     | Jan 17            |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
| FSD       | 5. Program Implementation                                                       | Jan 17            |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
| TBD       | 6. Post-Implementation Data Collection                                          | Mar 17            |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
| FHEMA     | 7. Data Analysis/Results Review                                                 | Apr 17            |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
| TBD       | 8. Evidence Deliverable Development (Program Metrics Report (PMR), etc.)        | May 17            |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
| TBD       | 9. Evidence Dissemination                                                       | July 17           |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
| FHEMA     | 10. Project Debrief – Lessons Learned                                           | Sep 17            |        |        |        |        |        |        |        |        |        |        |        |        |        |        |

### Key Accomplishments in last 30 days
- Draft of DCP
- Draft of Program Survey
- Data Sharing & Publication LOA Signed
- Baseline Data Collection Complete

### Upcoming Activities in next 30+ days
- JJMD Survey Rvw with Richard Capra (Bowden, Toumajian)
- LOA Language Rvw with Richard Capra (Bowden, Toumajian)
- Data Analytics System Capabilities Rvw with Matt Callahan (Bowden)
- Capability Implementation (R. Smith, Cafaro)

### Decisions or Inputs Required description, DRI, due date
- Start Date for Post-Implementation Data Collection (Bowden, R. Smith, Cafaro)
- Presentation development and baseline data release to AOC (Capra, Bowden, R. Smith)
Baseline Data Collection

Results
### OR DATA Tracker - Baseline

<table>
<thead>
<tr>
<th>Procedure Type</th>
<th>Trays opened</th>
<th>Setup Time</th>
<th>Anesthesia Ready Time</th>
<th>Anestheisa Ready to Pt Prep</th>
<th>Patient Prep Time</th>
<th>Pt Prep to Cut</th>
<th>Cut to Close</th>
<th>Close to Pt Out</th>
<th>Clean Down Time</th>
<th>OR TIME (Pt In to Pt Out)</th>
<th>Turnover</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bilateral TKA Average</td>
<td>10</td>
<td>0:11</td>
<td>0:27</td>
<td>0:09</td>
<td>0:18</td>
<td>0:00</td>
<td>2:14</td>
<td>0:33</td>
<td>0:13</td>
<td>3:42</td>
<td>N/A</td>
</tr>
<tr>
<td>Cementless Primary Hip Average</td>
<td>5</td>
<td>0:27</td>
<td>0:25</td>
<td>0:06</td>
<td>0:12</td>
<td>0:03</td>
<td>1:21</td>
<td>0:08</td>
<td>0:31</td>
<td>2:17</td>
<td>0:32</td>
</tr>
<tr>
<td>Primary Knee - Reusable instruments Average</td>
<td>7</td>
<td>0:26</td>
<td>0:19</td>
<td>0:07</td>
<td>0:14</td>
<td>0:04</td>
<td>1:32</td>
<td>0:07</td>
<td>0:23</td>
<td>2:27</td>
<td>0:56</td>
</tr>
<tr>
<td>Total hip - Anterior Approach Average</td>
<td>7</td>
<td>0:19</td>
<td>0:13</td>
<td>0:14</td>
<td>0:01</td>
<td>1:32</td>
<td>0:06</td>
<td>0:28</td>
<td>0:28</td>
<td>2:22</td>
<td>0:31</td>
</tr>
<tr>
<td>UCSF Avg</td>
<td>7</td>
<td>0:20</td>
<td>0:21</td>
<td>0:09</td>
<td>0:14</td>
<td>0:02</td>
<td>1:40</td>
<td>0:13</td>
<td>0:24</td>
<td>2:42</td>
<td>0:39</td>
</tr>
</tbody>
</table>

- Tray reductions can result in true cost savings associated with sterilization and blue wraps.
- Reduction in setup time is an efficiency improvement from fewer trays and should improve with time.
- Data also identifies other opportunities between process steps: Anesthesia ready to start of Patient Prep, Patient Prep completion to Cut, and Turnover (wheels out to wheels in).
# Joint Recon Tray Consolidation

## Project Summary:
- **2 Procedure Types** – Total Hip and Knee
- **2 Surgeons** - Sterilization cost $75 per tray
- **Total Tray annual reduction** – 3,000 trays = approximately 60,000 lbs = 30 Tons
- **Estimated Annual Cost savings** - $225,000

### HIP:
1. **Dr. “V”**
   - Tracked Procedure – Hip; approximately 150 a year
   - Sterilization cost $75 per tray
   - Tray Reduction from 6 to 2
   - Est. Annual Cost Savings $45,000

2. **Dr. “B”**
   - Tracked Procedure – Hip; approximately 200 a year
   - Sterilization cost $75 per tray
   - Tray Reduction from 6 to 2
   - Est. Annual Cost Savings $60,000

### KNEE:
1. **Tracked Procedure** – Knee; approximately 200 a year
   - Sterilization cost $75 per tray
   - Tray Reduction from 8 to 3
   - Est. Annual Cost Saving $75,000
   - 174 instruments to 82

2. **Tracked Procedure** – Knee; approximately 150 a year
   - Sterilization cost $75 per tray
   - Tray Reduction from 8 to 3
   - Est. Annual Cost Saving $45,000
   - 174 instruments to 82

*These are examples only and do not guarantee or predict future results which will vary depending on individual circumstances.*
Tray Efficiency Pre-Implementation OR Team Survey Results

“Any efficiency in OR process, coupled with consistent availability of equipment is welcome.” (UCSF OR Staff/Surgeon)

100% Respondents think that the program is of high value for UCSF

100% Respondents feel the program will add some or a good deal of additional value than other facility-led programs

100% Respondents think that a reduction in number, size, and/or weight of the instrument trays can have a positive impact on patient care

Anticipated Patient Care Impacts

- Fewer delays from missing trays
- Quicker Turnarounds
- Increased staff familiarity with set

* UCSF Tray Efficiency Pre-Implementation Survey Results (Data pulled 2/11/17)
Custom Implementation
Perioperative Efficiency Project
Current TKA Tray Configuration

- 8 Trays
- 214 Instruments
Perioperative Efficiency Project
Optimized TKA Tray Configuration

- 2 1/2 Trays
- 70 Instruments
  (144 eliminated)
Lessons Learned/Considerations
Lessons Learned To Date

• Perioperative and SPD efficiency problems and solutions will be unique to each institution but commonalities exist.

• EMR may contain some relevant data, but often doesn’t capture granularity needed for accurate decision making

• As with any process improvement initiative, a committed change management team, often with surgeon leadership is a must.
Key Questions To Ask of Your Data and Staff

• Incidence and impact of holes in blue wrap?
• Frequency of lost or missing instruments?
• Average number of trays per procedure?
  – Sterilization cost per tray?
  – Total environmental impact potential?
  – Overall weight savings potential?
• Impact of tray and instrument volume on room clean down, turnover times, SPD?
• Staff satisfaction? (Scrubs techs?)
• Correlation between back table complexity and set up time/surgical time?
• Is there opportunity for industry collaboration?