Eliminating Supply Chain Waste: OEM and Hospital Collaboration

Karen Conway, GHX
Bob Vitoux, Biomet
Steve Chyung, SCL Health System
Why the Implantable Device Supply Chain?

• Highly manual, duplicative, disjointed, with many players

• Cost to the industry >$5B annually

• Lack of visibility into what contributes to cost and quality

• Non-value added supply work creates waste, takes nurses/vendor reps away from primary responsibilities
A Shared Problem

PPI supply chain is $5B+ annual problem – industry must create new model in order to manage cost pressures of Healthcare Reform.

Commonly Shared Areas of Waste:
- Product Loss and Expiration
- Low Inventory Turns
- Back Office Labor

Provider: $2,625 M
Manufacturer: $2,725 M

Sources: PNC Healthcare; GHX Quantitative Research Study (Aug 2010; n=136 & n=25)
# The Implantable Reality for Suppliers

<table>
<thead>
<tr>
<th>Current Process</th>
<th>Economic Consequences*</th>
</tr>
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<tbody>
<tr>
<td>“Just in case” inventory</td>
<td>Up to 60% excess inventory</td>
</tr>
<tr>
<td>Complex &amp; manual processes</td>
<td>7% - 10% expiration</td>
</tr>
<tr>
<td>Transaction inaccuracies</td>
<td>25% - 50% excess labor</td>
</tr>
<tr>
<td></td>
<td>12% discrepant</td>
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<td>0.5% - 1% uncollectible</td>
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<td>30% higher DSO</td>
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* Supplier Averages based on data from Millennium Research
## The Implantable Reality for Providers

<table>
<thead>
<tr>
<th>Current Process</th>
<th>Economic Consequences*</th>
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<tbody>
<tr>
<td>Inaccurate catalog &amp; pricing data</td>
<td>7% revenue leakage</td>
</tr>
<tr>
<td>Complex &amp; manual usage capture</td>
<td>12% invoice discrepancies</td>
</tr>
<tr>
<td>Multiple usage records</td>
<td>12% overpayment</td>
</tr>
</tbody>
</table>

*Provider Averages based on data from Millennium Research*
Lack of Accurate Data Creates Range of Problems

**Under-Billing**

*Under-Billing Errors Were Found In Over 90% Of Cases*

Percentage of Procedures with Under-Billing Errors

- 7% Without errors
- 93% Underbilled revenue

N > 100 procedures

**Over-Billing**

*Over-Billing Affected Over 80% Of Cases And Exposes Hospital To Serious Risks*

Percentage of Procedures with Over-Billing Errors

- 17% Without errors
- 83% Over-billed cases

Risk of fraud

N > 100 procedures

Source: 3-month study conducted by VUEMED at a large metropolitan hospital Endovascular OR
Under Healthcare Reform, It’s all about Value
Value Requires Understanding Cost and Quality

\[
\text{Value} = \frac{\text{QUALITY}}{\text{COST}}
\]
“There is almost a complete lack of understanding of how much it costs to deliver patient care, must less how those costs compare with the outcomes achieved.”

Robert Kaplan and Michael Porter
*The Big Idea: How to Solve the Cost Crisis in Health Care*
Hospitals Looking More at SG&A

Orthopaedic Implant Industry Cost Structure

Total: 100%
SG&A: 39%
Operating Margin: 35%
Cost of Goods: 20%
R&D: 6%

We also have to focus here
natural focus

Graph Ref: “Orthopaedic Companies” 600bn, available at: www.600bn.com published Jan 2010
1: DoH QIPP National Procurement: A case for change. Delivering quality and efficiencies in the orthopaedic implant supply chain published Sept 2012

Slide presented by a hospital supply chain executive at a recent supplier meeting
What Really Happens in the OR?
Many Players, Many Documents

Roles in the OR

Surgeon - Performs surgery

Scrub tech a.k.a. Sterile Tech - In charge of handing items and supplies to the surgeon in the sterile field

Vendor Rep - Provides consignment implants, advises the surgeon and documents what is used for the supplier

Assistant - Physician's assistant aids surgeon during the procedure

Circulator a.k.a. Circulating Nurse - Documents what is used in surgery, brings in items from outside the OR, passes items into the sterile field
Who Owns What?

Consigned and hospital-owned inventory are comingled, making it hard to track!
Variation in Labeling

No Uniform Supplier Packaging

Implant sheet with three different types of implant stickers from three different vendors. Note that one sticker does not have a bar code.
Variation in Labeling

Boxed & In-Tray Items Require Different Documentation

No barcodes, no stickers, difficult to see by circulating nurse; requires reconciliation after the procedure.

UDI will help, but it still requires consistency in application and process.
Variation Increases Costs, Reduces Quality

Documentation Processes vary by Procedure, Team and Patient

Example: Some surgeons would like the Circulator to document implant usage on the progress notes form, while others do not. The Circulator might not be aware of what workflow is needed for each case which leads to unnecessary and/or arduous tasks.
Spine Adds Complexity to Paperwork

Spine Sheets

- The Circulating Nurse must document items not used on this sheet either with a sticker or by hand.
Many People, Processes and Paperwork

Multiple Records Must Be Completed by Clinical Staff

Different departments and staff (e.g. Accounts Payable, the surgeon) need different forms and records from the procedure.
Example: Implant Records

Providers and Manufacturers still use separate, manual processes to collect usage data that must match.
Lack of consistent, accurate data makes it difficult to determine what was used, what should be invoiced, and what needs to be replenished.
Automation and better data accuracy reduce purchase order and invoice cycle times for orthopedic manufacturers and hospitals

Aggregate data from GHX pilots as of August 31, 2012
Typical process today involves 15 manual steps that are often times based on inaccurate catalog, pricing, and charge data.
Better Data, Visibility, Automation: 4 Steps

Collaborative Scheduling and POU Capture Reduce Cycle time and Accuracy

### Initial Pilot Results*

<table>
<thead>
<tr>
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<th>Supplier Lead Time (days)</th>
<th>Non-item File Lines</th>
<th>Invoice Discrepancy</th>
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<tbody>
<tr>
<td>Pre-pilot</td>
<td>15</td>
<td>28%</td>
<td>12%</td>
</tr>
<tr>
<td>Pilot</td>
<td>47</td>
<td>-71%</td>
<td>8%</td>
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*Phase two pilot results with 1 IDN participant and 1 manufacturer participant.
Can We Find Value Together?
Eliminating Waste in the Orthopedic Supply Chain: The Provider View

Steve Chyung, Vice President
Supply Chain Management & Real Estate
SCL Health System
Past Success ≠ Future Sustainability

Total Joint and Spine Fusion Procedures are profitable business line, helping hospital cover their fixed costs

- **Total Knee MSDRG 470**
  - Variable Costs
  - Contribution Margin

- **MSDRG 460 Lumbar Fusion**
  - Variable Costs
  - Contribution Margin
Past Success Driving Current Variation

The success of the programs has led to a model that allows for high levels of variability:

![Graph showing variable costs for Lumbar Spinal Fusion and Total Knee procedures for different doctors (Doc A, Doc B, Doc C, Doc D, Doc E).]
Variation – Quality Outcomes

But this variation and the increased cost has no correlation to improved outcomes

Quality/Outcomes: Complication and Readmission Rates
Variability – But No Longer Affordable

Key Trends
• Payor/Employer Scrutiny
• Bundled Payment
• “Retailization”
• Price Transparency

*Chart information provided by Sg2*
Where Do We to Go? – Drive Out Variability

Manufacturer, Physician and Hospital Combined Margin and Costs

Profit Margin

Variable Costs

Shrinking Reimbursement

Reduce Variable Costs

Today

Tomorrow
Eliminating Waste in the Orthopedic Supply Chain: The OEM View

Bob Vitoux, Vice President
US Commercial Operations
Biomet
Biomet Inventory Challenges

Lack of timely demand signal & less than optimal pre-operative planning done by Surgeon and Sales Rep
  – Creates reactive sourcing

Peak surgery days for Hips & Knees
  – High volume Mon, Tues, Wed
  – Significantly reduced activity for the remainder of the week

Surgeon expectations
  – Pressure for Rep to have every implant available, every time

Physician preference uncertainty
  – Hard to tie preference to aggregate usage

Implant selection/sizing
  – Limited to “bell shape curve” usage info
Inventory Implications

Increased Field Inventory

- Consigned Inventory
- Lack of Visibility
- Poor Movement Tracking

Increased Complexity

- Bring “Kitchen Sink”
- Don’t Trust Corporate Fulfillment
- 25-50% Excess Work

Increased Waste

- Change Management
- Stock Rotation

Expiration

- Change Management
- Stock Rotation
Provider Collaboration
### Advanced Schedule Notification Impacts Sourcing

#### June 2014

<table>
<thead>
<tr>
<th>Mon</th>
<th>Tues</th>
<th>Wed</th>
<th>Thurs</th>
<th>Fri</th>
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<tr>
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<td>26</td>
<td>27</td>
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#### Insight Gained

- Advanced planning
- Peak surgery day volumes
- Replenishment timeframes
- Case notes specifying brand, laterality, and proprietary considerations
Analytics to Right Size Inventory

Determining Physician Preference
• Usage at case level

Leveraging Patient Demographics
• Age, sex, weight, height
• To determine size range
  – Better yet, leverage Signature cutting blocks

Link Together
• Goal is identify scenarios, by surgeon and patient to right size products for upcoming cases
Revisit: Inventory Challenges

Lack of timely demand signal
- Creates reactive sourcing
  ✓ Better planning leads to proactive sourcing & better working capital management

Peak surgery days
- High volume surgery days
  ✓ Better distribution of surgery days allows for better use of inventory

Surgeon Expectations
- Pressure to have every implant available, every time
  ✓ Don’t need every implant, need the right ones

Physician preference uncertainty
- Hard to tie preferences to aggregate usage
  ✓ Need case level details to determine preference

Implant selection/sizing
- Limited information on patient demographics
  ✓ Sex, age, weight, and height can be used to narrow size range
  ✓ Leverage Patient Specific technology to minimize working capital requirements
Questions and Answers

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