Rethinking supply chain management: How better practices impact the bottom line

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VP, Supply Chain Innovation
Lean Six Sigma Master Black Belt

Cardinal Health

Recognized leader in healthcare supply chain transformation
• Ranked #1 by Gartner 2011, 2012, 2013, in transforming the healthcare value chain to meet new challenges around costs, revenue and outcomes.
• Ranked #1 again in 2014

Unparalleled understanding of healthcare value chain
• Supplier and leading manufacturer of med/surg products
• Leader in providing supply chain services
• Built on a solid base of +40 years experience

Building for the future of healthcare
• Investments in innovative technology and data solutions
• RFID footprint in 41 countries
• Tracking medical devices in over 4,000 hospitals
A changing landscape

- Affordable Care Act (ACA)
- Unique Device Identification (UDI)
  - FDA
- Census & demographics
  - 10,000 people turning 65 every day
  - 10M Americans over 80
  - 20% Population >80 by 2030

Source: The State of Aging & Health in America 2013

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The silver tsunami

The average spending on someone age 80 and older is nearly \(9x\) what it is for someone between the ages of 1 and 64.
A changing landscape

- Affordable Care Act (ACA)
- Unique Device Identification (UDI) – FDA
- Census demographics
  - 10,000 people turning 65 every day
  - 10M Americans over 80
  - 20% Population >80 by 2030
- CMS is growing
  - Over 50% of patients are CMS
  - Increasing bundled reimbursement by DRG
- Supply chain becoming more important

Immense waste in the supply chain

Does not include indirect costs of:
- Excess time spent by nurses searching for inventory
- Time spent (or patient risk) during product recalls
- Risk of non-compliance with FDA/UDI regulations

10%-30%
Waste in PPI supply chain

$5,000,000,000*
Estimated loss per year

*PNC Healthcare; GHX quantitative research study (August 2011)
Ever changing environment

Must be **agile and adaptable**
to control costs

Sources of variation
Fluctuating patient census

Ramp up clinical staff          Seasonal staff

Demographics

Age

Gender

Geography

80
59
24
44

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Clinical practice

Lack of standardization  Diseases treated differently

Seasonal impact

Summer  Flu  Winter
Multiple variables effect

Interactions magnify demand variation

Demographics
Census
Disease states
Seasonality
Clinical practice

Adapting to change

- Grocery stores adapted to a lean model
- Point-of-use data collection/analytics
- Just-in-time inventory (logical unit-of-measure)
Ensuring financial success

Freight management

• Freight has become a profit center for manufacturers
  – Included in price of product
• For example, consider the Operating Room
  – Next-day delivery
  – Transportation budget managed elsewhere
• Unit cost vs total delivered cost
Number of suppliers

- More invoices
- More time spent ordering
- More time unloading trucks
- More cost

Manual cycle counting

- No value add in counting
  - 50% materials management time
- Too many mistakes
  - UOM issues
  - Fat finger
- Correct cycle count frequency?
  - Weekly, monthly, quarterly
  - NEVER?
Reviewing consignment

- Built in costs
- Expired/obsolete products – charged?
- Inefficient delivery method
- Ineffective controls and tracking
- Impact due to the FDA Unique Device Identification law (UDI)

How do you replenish?
Traditional forecast-based purchasing

- A retail model of purchasing
- Established based on some criteria
- A “stocking strategy”

<table>
<thead>
<tr>
<th>Positive</th>
<th>Negative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low effort</td>
<td>Inaccurate</td>
</tr>
<tr>
<td></td>
<td>Creates storage solution mentality</td>
</tr>
<tr>
<td></td>
<td>Lack of visibility</td>
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</table>

Traditional demand-based purchasing

- An industry model (automotive, aerospace, etc.)
- Based on utilization

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<tr>
<td>Based on actual demand</td>
<td>Inability to react quickly to unexpected demand variation</td>
</tr>
<tr>
<td>Replenish only what you need</td>
<td>Requires supply chain visibility</td>
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</table>
The art of finding the right balance

Three-legged stool

Technology is the enabler

Patient outcome

Labor

Capital

Freight
### Best practice for high value items

<table>
<thead>
<tr>
<th>Best practice</th>
<th>Reason</th>
</tr>
</thead>
</table>
| Using an RFID-enabled system               | • Real time visibility  
                                • Unique Device Identification  
                                • Accurate tracking  
                                • Eliminate manual counting and errors                                |
| Point of care charge/data capture          | • Compliance  
                                • Accurate charge capture                                                |
| Carefully choosing open vs. closed storage | • Time management  
                                • Inventory control and compliance  
                                • Cost                                                                   |
| Interface with HIS                         | • Integrate inventory management in eco-system  
                                • Eliminate double entry                                                 |
| Targeting the desired end state            | • Inventory profile changing with successful implementation            |

### Best practice for commodity products

**Replace your PAR system!**

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<th>Best practice</th>
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</table>
| Using 2-bin Kanban methodology             | • Proven best practice in other industries  
                                • Less labor  
                                • Supports FIFO (first in first out)                                  |
| No over investment in technology           | • ROI not realized                                                      |
| Eliminate manual counting                  | • Upside down transactions                                              |
| Strong analytics platform                  | • More predictable ordering patterns  
                                • Use data to optimize purchasing                                      |
Balancing the investment

Risk of under-investing  
Risk of over-investing

Metrics for success in supply chain
Before you begin

Consistency is key

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Ranking common metrics

<table>
<thead>
<tr>
<th>Rank</th>
<th>Tracking methods</th>
<th>Reason</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good</td>
<td>Total supply expense as a percent of net patient revenue</td>
<td>• Variability in Net Patient Revenue distorts month over month trends</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Does not effectively illustrate true supply spend performance</td>
</tr>
<tr>
<td>Better</td>
<td>Total supply expense per adjusted discharge or CMI adjusted discharge</td>
<td>• Better aligns supply spend with patient volumes and level of acuity</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Does not capture supply spend performance at the patient level</td>
</tr>
<tr>
<td>Best</td>
<td>Supply Intensity Score</td>
<td>• Measures supply costs by patient and procedure type</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Provides more precise and actionable data</td>
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</table>
Are you measuring the right metrics?

- Every hospital measures similar benchmarks
  - But your waste is hiding in what you’re not measuring

<table>
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<tr>
<th>New metrics to track</th>
<th>Improvement opportunity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expired Supplies</td>
<td>• How much are you expiring out each month?</td>
</tr>
<tr>
<td></td>
<td>• These are products that could have been returned, redeployed, or even resold.</td>
</tr>
<tr>
<td></td>
<td>• 2% - 5% annually lost</td>
</tr>
<tr>
<td>Lost Products (Leakage)</td>
<td>• How much product is missing each month?</td>
</tr>
<tr>
<td></td>
<td>• Leakage can be mitigated with enhanced tracking and inventory controls.</td>
</tr>
<tr>
<td>Clinical time spent on</td>
<td>• How much clinical time is spent on finding stocked out supplies, logging in/out of POU systems, or recording takes/returns?</td>
</tr>
<tr>
<td>supply chain (HCAHPS)</td>
<td>• This represents time could have been spent with the patient.</td>
</tr>
</tbody>
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Case study

Source: Emory St. Joseph case study, May 2015
Choose the right tool for the right inventory

Cardinal Health Inventory Management Solutions

Type of supplies

Low-cost supplies like gauze and bandages
Low-cost supplies that require each-level tracking
Surgical packs and other mid- to high-cost supplies
High-cost physician preference items and implantables

Optimal tracking & data capture system
2-Bin Kanban
Barcode
RFID-enabled Smart Wand
RFID-enabled Smart Cabinets

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The total supply chain approach

Cardinal Health Inventory Management Solutions

Supplier/manufacturer  Distribution center  Hospital/healthcare provider  Patient and procedure

Q&A

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