



The science of effective supply chain management



HealthCare Materials Management
Society of New Jersey

Bill Brindise, Strategic Accounts Vice President
Frank Ridgway, VP Sales & Market Management

December 10, 2008

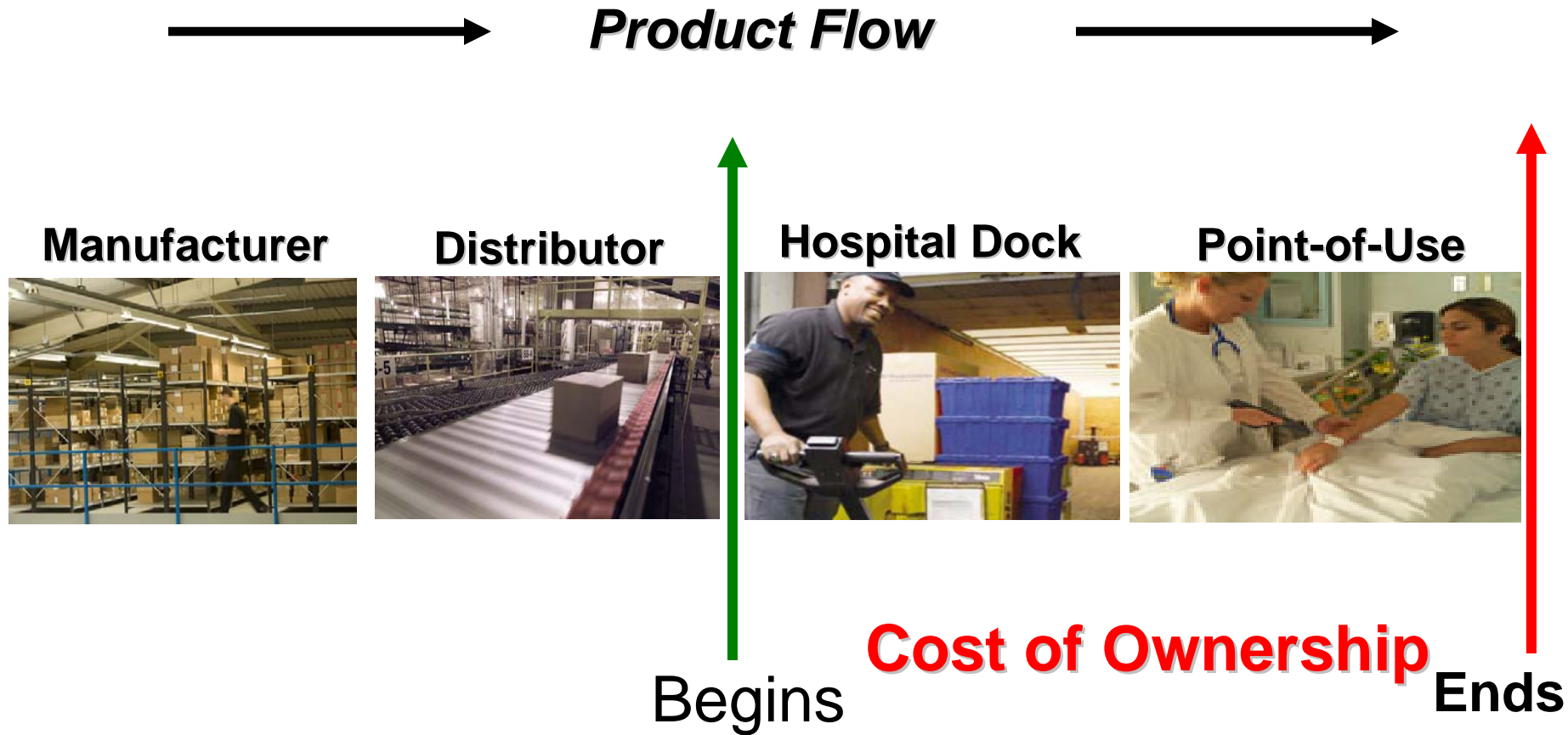
What we know today . . .

Supply chain impact on bottom line

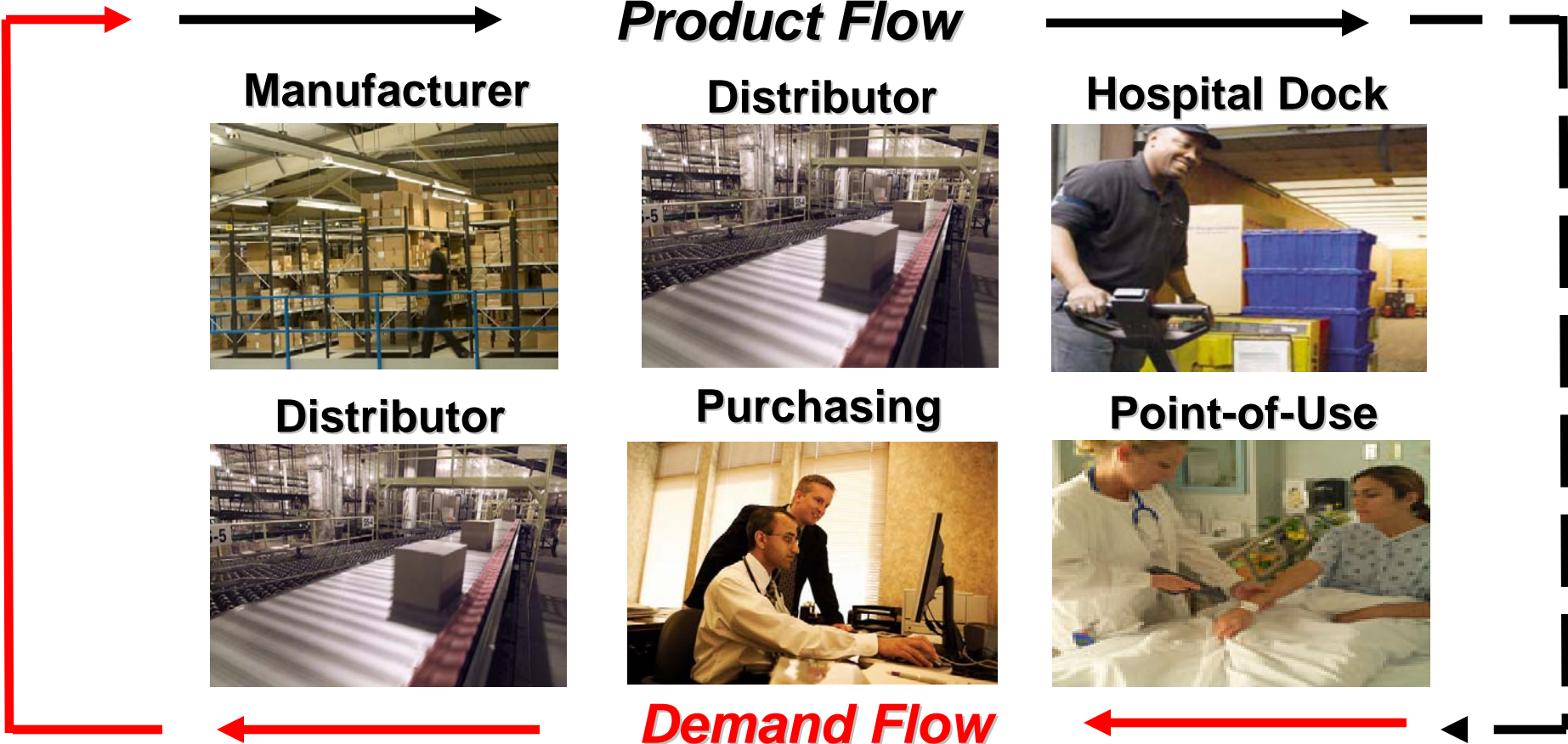
- Supply costs (product and people/handling) represent ~25-35% of hospitals total costs **
- Supply costs represent greatest source of new capital available to hospitals*
- A 5-15% savings in supply chain costs equates to 1-3% improvement in operating margin **



Traditional Healthcare supply chain

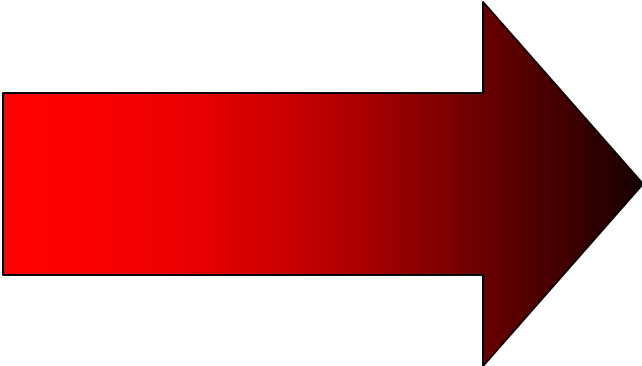


Dynamic supply chain



Leading Industry Trend

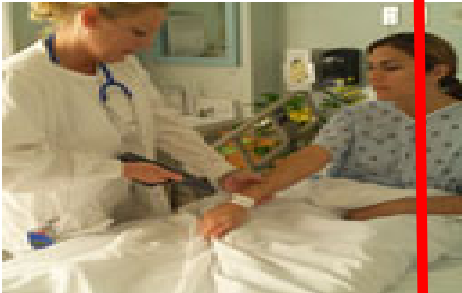
**Reduced Supply Chain Inefficiencies
Driven by focus and scale**



Hospital Dock



Point-of-Use



**Cost
Of
Ownership**



**Within a controlled supply chain environment
Utilizing comprehensive consumption data**

**Return
on
Investment**

World Class Supply Chain . . . best practice

“At the heart of every ‘best practice’ supply chain is a powerful, **comprehensive information** and **control infrastructure** that spans the entire enterprise, as well as the extended supply chain, ***from point of sale to vendor planning and product replenishment...***”

*Jonathan L.S. Byrnes,
DBA, MIT*

Stabilizing the inventory environment

Create the **control infrastructure** for product and data management

Start with the appropriate **distribution platform**

Optimize replenishment logic and routing

Common objectives

- Improve service to patient care areas
 - Flexible demand driven replenishment that manages clinical fluctuations
- Lower your cost of (internal) distribution
 - Align distribution expenses with clinical demand activity
 - Reduce processing costs
- Improve efficiency and sustainability
 - Improve space utilization and capacity
 - Vendor consolidation and streamlining

Results of stabilized inventory



Cost Containment

- Improve cash flow timeline (inventory reduction average 20-30%) **

Supply Chain Efficiencies

- Improve product availability (99%+ service levels) **
- Control par delivery costs (15% line reduction) ***
- Optimize department storage space and ergonomics **

Customer Satisfaction

- Reduce clinical handling of supplies **
- Improve clinical satisfaction **

Data Capture & Management

MIT Research Findings

- Four simulated inventory policies
 - Simulated existing – well-run major medical center policy
 - Simulated 4 times max – “ultra safe”: 4 x maximum demand
 - Simulated S – periodic review, replenish to par
 - Simulated s,Q – periodic review, EOQ if ROP reached

| Inventory Policy Comparison | | | | |
|-----------------------------|------------|---------------|---------------|-------------|
| Inventory Policy | Order Cost | Carrying Cost | Stockout Cost | Total Cost |
| Simulated existing | \$449,220 | \$234,448 | \$309,756 | \$993,424 |
| Simulated 4 times max | \$334,860 | \$393,335 | \$933 | \$729,128 |
| Simulated S | \$766,440 | \$201,551 | \$109,161 | \$1,077,152 |
| Simulated s, Q | \$166,920 | \$260,495 | \$49,449 | \$476,864 |

Sources: DeScioli, D.T. *Healthcare Industry: Optimizing Hospital Supply Chains* [master's thesis]. Cambridge, MA: Massachusetts Institute of Technology; 2005. Oliveira, J.F. *Enabling Long Term Value Added Partnership in the Healthcare Industry* [master's thesis]. Cambridge, MA: Massachusetts Institute of Technology; 2005.

What the future holds . . .

Achieving world class supply chain effectiveness

“In clinical medicine, best practices bubble-up to ultimately become what is known as “standards of care”. I believe ... that . . . looking to a company that can partner from dock to patient bedside will ultimately be seen as the standard of care in hospital supply chain management. You either do it now or later but soon enough everyone will need to do this to stay competitive”.

Dr. Jonathan Byrnes, Senior Lecturer, DBA, MIT

What are the driving forces . . .

- Economic trends and supply expense increases
- Clinician satisfaction and efficiency
- Tighter control and visibility to product pipeline
- Focus on quality patient care
- Knowledge of best practice supply chain models in other industries
- Benefits of vendor managed inventory models

Creating Quantum Improvements – APU-VMI System

Supply Chain Benefit Map

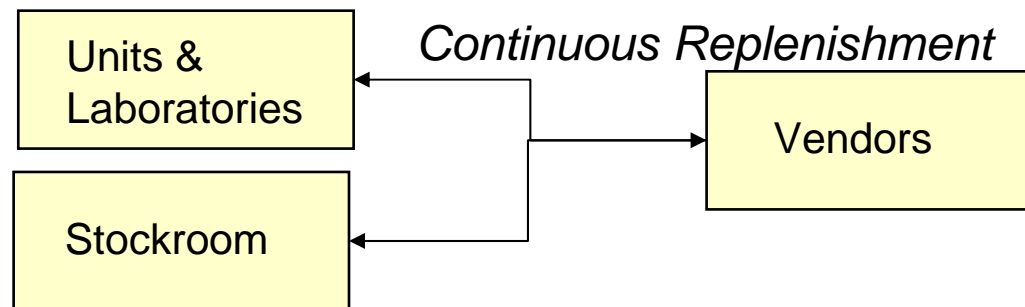
| Physical Distribution Benefits | Materials Management Benefits | Safety Benefits | Financial Benefits | Management Benefits | Extended Supply Chain Benefits |
|---|--|--|--|---|---|
| <ul style="list-style-type: none">• Less labor• Fewer discrepancies• Better control over SCM personnel• Eliminates redundant tasks• More security• Frees up space | <ul style="list-style-type: none">• Precision inventory policies vs. rules of thumb• Full hospital visibility• Precision forecasting• Cost & criticality mgmt• Peak alignment and response• Eliminates “unofficial” inventories• Smooths out staff workloads | <ul style="list-style-type: none">• Cross-ref: MD orders• Recalls• Criticality – right products, amounts, places• Vetted product master file• Eases nursing shortage• Better professional focus• Fail-safe with volume and complexity growth | <ul style="list-style-type: none">• Frees up capital• Assures savings• Enhances charge capture• Frees up professional resources• Reduces administrative costs• Aligns incentives: ROP, efficiency• Accurate, timely usage data• Reduces product expirations | <ul style="list-style-type: none">• Pinpoints & corrects quality problems• Culture of accuracy & efficiency: professionals and patients• Fast, efficient to spread best practices• Enhances job satisfaction• Freedom to manage strategically | <ul style="list-style-type: none">• Stabilizes order pattern• Optimizes safety stock• Allocation priority |

Achieving World Class Supply Chain Effectiveness

Seamless visibility from operation to operation

Supply Chain Management Standard of Care

Paradigm shift: Automated Point of Use – Vendor Managed Inventory (APU-VMI)





Thank you!



CardinalHealth
Essential to care™