

## Increase Operating Room Profits with Supply Consolidation and Automation

For hospitals seeking increased profitability in the operating room (OR), it is essential to streamline the movement of materials from suppliers to the hands of doctors. Efficiently acquiring and moving supplies critical to OR procedures are measurable ways to reduce costs, increase revenue capture, optimize labor and improve process management.

### The Challenges of Handling Supplies

*A key to increasing OR profitability is found in the supply chain*

The OR is often a hospital's largest cost center. A significant portion of OR cost results from the inefficient use of labor required to move supplies into the OR and dispose of them after a procedure. By effectively controlling the supply chain, costs can be notably curtailed. The *supply chain* involves moving the right supplies to the right place in the right quantity at the right time. In the OR, this involves properly managing the processes required to purchase, store, prepare and dispose of supplies used for surgical procedures.

### The True Cost of Supply Acquisition

The price paid for supplies often represents less than half the true cost of acquiring supplies. The number of times items are handled before they reach their final destination significantly impacts the actual cost of supplies. The true cost of supplies include costs related to:

- Storage space for supplies in various departments
- Assembly of supplies for surgery
- Cost of personnel to manage supplies
- Multiple purchase orders to acquire supplies
- Accurate patient billing for supplies
- Restocking of unused supplies

*Handling bulk quantities of materials and storing enough supplies for 30 days contribute to increased costs*

### Storage Challenges

Maintaining an adequate stock of supplies involves more than having a physical place to house materials. Often, different vendors sell supplies in varying bulk quantities that must be properly accounted for and managed prior to surgery. Handling bulk quantities of materials is awkward and time-consuming, as supplies often need to be broken down into usable units. To assure



inventory shortages do not occur, 30 days' worth of supplies are usually kept on hand, adding additional expense to maintaining the OR. Finally, the staff that assembles supplies for an OR procedure tend to be highly trained, costly personnel.

### Operating Room Issues

Supplies must arrive at the OR in a timely manner and properly bill to the patient. Often supplies arrive in the OR that require additional preparation and processing. With the high quantity of individual supplies used in most procedures, there is a significant likelihood of lost charge capture, further degrading the operating profit of the OR.

*By assigning expensive and overworked nursing staff to material handling, the overall costs of supplies increase*

### Labor Challenges

Each task necessary to move supplies and prepare them for OR use contributes to the total cost of supplies. Typically, a registered nurse handles and prepares materials prior to a procedure. With the ever-deepening nursing shortage, higher-cost personnel should not be responsible for material-handling tasks that are viewed as menial and can contribute to job dissatisfaction. Assigning the right personnel to the appropriate management processes ensures cost-efficient labor usage.



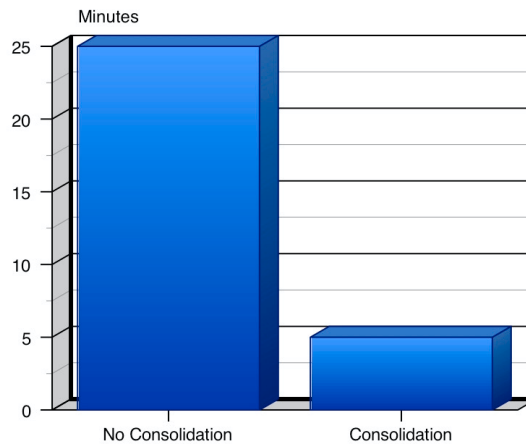
### The Solution: Supply Consolidation and Automation

*Supply consolidation and automation creates a highly efficient supply chain that increases OR profits*

Supply consolidation and automation can overcome the challenges of handling supplies, resulting in a highly efficient supply chain that returns greater profits to the OR. *Supply consolidation* is the grouping of many single items into larger packages or kits for better supply chain efficiency. For example, when supplies for a particular type of procedure are grouped into a kit, a single package can be easily ordered, billed, stored and repurchased. *Supply automation* is the use of technology to streamline inventory, consumption, charging and ordering procedures. For example, secure cabinetry, bar code technology and radio-frequency (RF) devices enable tracking of items throughout the supply chain, helping management identify the status of supplies and inventory in the chain.

A highly efficient supply chain can:

- Reduce the actual cost of supplies
- Decrease the labor required to manage the supply chain
- Increase charge capture
- Enhance process management
- Increase staff morale
- Improve quality of care
- Free staff to spend more time with patients
- Increase physician satisfaction



The above chart demonstrates the time savings supply consolidation can achieve when compared to manually picking supplies. The result is an 80 percent reduction in the time needed to acquire supplies. In addition, manually picking supplies results in an error rate of approximately 10 percent. The error rate is virtually eliminated with consolidation. Moreover, lost revenue is reduced from up to 25 percent to less than 5 percent.<sup>1</sup>

<sup>1</sup> Source: HB Maynard Company, 2003

*Costs are reduced as supplies are consolidated to a single line item that is easier to handle, bill and reorder*

### Reduced Costs

Consolidation results in lower costs by reducing a significant number of supply line items for a particular procedure to one. With consolidation, there is no bulk breakdown and material redistribution – everything necessary is in a single container. The result is fewer inventory handlers and lower inventory levels. Efficient packaging reduces inventory par levels by providing the right items in each supply configuration. The increased effectiveness translates into greater space efficiency because fewer supplies are stored. Automation via point-of-use systems, such as cabinets, bar code scanners and RF devices, places an order the moment a supply kit leaves the shelf and assures that every line item is properly billed.

### Increased Revenue Capture

By combining many single components into one pack, a single line item represents every component necessary for a particular procedure. By entering one stock keeping unit (SKU) number for the pack, the patient is always billed for all the components used in a given surgical procedure. Opportunity for human error is reduced and billing is highly accurate. This simplified process is enhanced by computer-based automation that can automatically bill a patient for supplies the moment a supply package leaves the shelf.

*Human error is reduced as the delivery of supplies to the OR is simplified*

### Improved Process Management

A highly efficient supply chain equates to less time required to move and prepare supplies for patient consumption. Computer technology can handle the mundane tasks of process management, rather than OR staff. An automated system also provides consumption and replenishment reports to help administrators better manage the OR. By improving the supply delivery process, errors are reduced. Additionally, space requirements for supplies shrink and human resource efficiency improves as the supply chain is streamlined through consolidation and automation.

### Improved Clinical Process

Consolidated supplies assure that the proper items arrive for a specific procedure. Precise pack designs eliminate picking extraneous supplies so OR staff does not need to return unused inventory. In addition, providing the right supplies in the proper quantities eliminates the need to rush to acquire missing supplies.

### Improved Satisfaction

An efficient OR operation eliminates unnecessary supply management procedures enabling staff to focus on patient care. The result is greater job satisfaction and increased productivity for clinicians and surgeons.

*Combining supply consolidation and supply automation into an integrated service is a recent advancement*

## **Brief History of Supply Consolidation and Automation**

Consolidating supplies into streamlined packaging is not a new concept. In the late 1960s, sterile supplies were specially packaged for OR procedures. By the early 1990s, cost pressures motivated hospitals to group sterile items and non-sterile items into a single package. The early 1990s also introduced point-of-use bar code technology that could track and automate supply consumption. More recently, automation has been enhanced by closed cabinet solutions that enable security for expensive supplies and radio frequency technology that allows more efficient mobile supply tracking. Until recently, no single vendor has combined the benefits of supply consolidation with supply automation to offer a fully integrated and highly efficient supply chain.

## **Supply Consolidation – What to Look For**

A supply consolidation vendor should provide experts to consult in clinical and supply management OR processes. The vendor should study the OR's pattern of consumption, observing how items are used and assembled. Based on an on-site assessment, the vendor should estimate the size and scope of the consolidation program and provide preliminary financial and operational benefits.

Upon implementation of supply consolidation, the vendor should provide consultants with experience in healthcare materials management to observe and apply statistical analysis to measure and validate consumption patterns. These consultants typically redesign the OR supply chain to optimize efficiency, including storage space and case picking areas.

Clinical consultants should work with OR nurses and staff to develop a matrix of procedures to help develop new packs and modules. They should also work with OR managers to update preferences and pick lists based on the new supply process.

A quality consolidation vendor will also offer ongoing support of the program once it is in place. A steering team made up of hospital and vendor personnel should review the program on a regular basis to determine additional improvements. In addition, a web-based program should be provided that allows staff to manage the supply consolidation program. Advanced vendors offer visual review of all the items in a supply kit via a web-based interface.

## Supply Automation – What to Look For

The automation of a supply chain usually involves either bar code or radio frequency devices that track items as they leave the shelf. This is useful for reordering product and can be connected to a billing system to assure patients are properly billed for supplies related to their procedures. Typically a point-of-use dispensing device must be installed in the storage location (i.e.; a cabinet, bar code reader or radio frequency switches).

The key benefits of automation include reduced human error, easy billing, simplified reordering and supply tracking as materials move throughout the hospital. When shopping for a supply automation system, consider the following:



- **Security:** Securing supplies is more than simply making sure they do not disappear, it involves identifying which person removed inventory. Access to supplies is usually handled via a login and password, magnetic card reader or biometric authentication, such as a fingerprint or retina scan. By automating security, ORs can be assured inventory is there when it is needed and reduce shrinkage.
- **Flexible Technology:** The vendor should offer technology that is flexible enough to integrate with a hospital's existing computer systems. In addition, the vendor should help with the implementation of the supply automation solution and provide ongoing support.
- **Open Access:** Providing an open-shelf system for supply automation is important for many hospitals as it increases the number of stock locations covered by automation.
- **Radio Frequency:** Radio frequency provides flexibility for supplies that are difficult to scan with a bar code reader, such as a pair of crutches. With a radio frequency solution, a staff member simply presses a button when removing an item from inventory. A wireless signal is sent to a receiver for proper recording. This is a fast and easy way of automating the supply chain.
- **GUI-based Management:** Touch-screen monitors allow users to easily control inventory, produce reports and interface with other systems.
- **Mobile Access:** Supply automation is enhanced with secure mobile carts. Secure carts allow specialty supplies to be transported to the OR for specific procedures, reducing the need for additional inventory.

- **Reporting:** Automation systems should provide reporting on supply utilization, refill requirements, inventory levels and system compliance. This information allows hospital managers to better manage costs and inventory.

### **Benefits of Supply Consolidation and Automation from a Single Vendor**

A truly optimized supply chain leverages both supply consolidation and supply automation. By combining these two services, operating expense is further reduced and productivity is increased. The benefits to using a single vendor for consolidation and automation include:

- Seamless integration of consolidation and automation
- Single assessment and implementation process
- Less work for OR staff to access and implement
- Supply chain improvements achieved more quickly
- One vendor serving a shared supply chain optimization objective
- Single-source support

Be sure to look for a vendor that has expertise in the OR and an extensive understanding of the supply chain. The vendor should provide expert clinical and logistic support as well as highly qualified information-management professionals. A nationwide capability to respond to problems and a single source for support are other important qualities.

### **The Cardinal Health Solution – ProcedureLink<sup>sm</sup>**

Cardinal Health offers the industry's only integrated supply consolidation and automation solution to help the OR create a highly efficient supply chain. Designed to meet all of the requirements outlined in this paper, Cardinal Health's ProcedureLink is the first fully integrated supply chain solution for the OR.

Supply consolidation through ProcedureLink includes a complete supply chain redesign by Cardinal Health's clinical and logistics consultants. Cardinal Health will consolidate 85% of the supplies used during a procedure into a single module. Cardinal Health clinical consultants will create a "procedures matrix" that details the modules to be used for specific surgical procedures. Cardinal Health will design a new supply space using computer-aided design tools to maximize supply and instrument storage. A labor reduction plan for staff reallocation to tasks other than picking supplies is also provided. Various managers in the supply chain will have access to web-based tools to administer pack changes, check change status, track usage and reorder packs.

Cardinal Health provides advanced supply chain automation services that include secure cabinetry and open radio frequency or bar code scanning capabilities. A supply console is available to collect and coordinate the information gathered at the point of use and provide a robust set of reporting capabilities. A plan to reduce on-hand inventory and create interfaces to existing hospital information systems is also included.

### **About Cardinal Health**

Cardinal Health is a leading provider of products and services supporting the health care industry. Cardinal Health companies develop, manufacture, package and market products for patient care; develop drug-delivery technologies; distribute pharmaceuticals, medical-surgical supplies and laboratory supplies; and offer consulting and other services that improve the quality and efficiency of health care organizations.

Each day, Cardinal Health:

- Makes over 33,000 deliveries of pharmaceutical and medical-surgical products
- Picks more than 2.5 million pharmaceutical products
- Manufactures more than 3 million surgical products
- Manufactures or packages nearly 500 million doses of pharmaceutical products
- Dispenses 4 million doses of medication and 1 million medical supplies through its automated dispensing systems

To learn more about Cardinal Health or ProcedureLink, visit [www.cardinal.com/presource](http://www.cardinal.com/presource).

