
Hospitals can cut materials costs by managing supply pipeline

BY ROBERT J. BERLING JR.
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MATERIALS MANAGEMENT

Materials management costs are affected by all the members of the supply pipeline—the manufacturer, the distributor, and the hospital. Hospitals need to develop closer relationships with distributors. By reducing the number of distributors it deals with and by shifting part of its inventory to a principal vendor, the hospital can reduce its inventory and cut materials management costs.

As payment pressures have increased, hospitals have become better consumers of medical supplies by focusing on product purchase price, high quality, and volume discounts.

Although much effort has gone into lowering per-unit costs, attention to an entirely separate component of materials management—the cost and effort associated with moving supplies from the factory floor to point of use—has been largely restricted to theoretical discussion rather than practical implementation.

Hospital materials management costs (defined here as the purchase price plus all the costs associated with ordering, moving, storing, and paying for the material) account for as much as one-third of all hospital expenditures, making it the

second largest portion of the hospital budget behind salaries and wages. Because a substantial portion of that amount covers all of the elements other than the unit price, hospitals have begun to consider more than simply price.

THE SUPPLY PIPELINE

Financial managers should step back from the limited perspective of their single institution and observe the entire materials distribution system. From the new vantage point, relationships between the players in the distribution chain become apparent, and the financial effect of moving supplies from the factory floor to the point of use can be analyzed.

The supply pipeline in the healthcare industry is designed to move products from the factory to the patient. Pipeline members include the manufacturer, the distributor, and the hospital. Each faces its own cost and pricing considerations (see Exhibit 1), but each member affects the total cost of distribution within the system through its accumulation of inventory, transportation, handling, and transaction costs.

For instance, a hospital that significantly reduces its inventory—and associated storage and carrying costs—requires more frequent deliveries from vendors. This increases the vendors' transportation costs. Hospitals are often unaware of the effect their decisions have on the system as a whole, just as manufacturers and distributors are un-

ware of their particular influence on system-wide costs.

Supply pipeline costs include the manufacturer's cost to produce (product price) and logistics costs. Logistics is defined as all of the cost-generating activities needed to move supplies from their source to their point of use. Logistics costs include transportation, inventory storage, administration, handling, financing, transaction costs, per-

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sonnel, space, equipment, and opportunity costs (spending money that otherwise could be used in revenue producing areas).

Historically, each link in the supply pipeline has been managed separately. This duplicates effort and unnecessary costs that are ultimately borne by all three participants in the pipeline. Overlapping warehouse facilities among hospitals, distributors, and manufacturers, for example, duplicates inventories and carrying costs. Cost-generating activities also set in motion additional events that compound total system costs. For instance, every order for supplies initiates more cost-generating actions on the receiving end, such as handling, administration, and transportation. By reducing the frequency of cost-generating activities,

system-wide costs fall, and capacity for new services increases.

Each member of the healthcare supply pipeline naturally focuses on its own business. The business of hospitals is patient care. From the materials manager's outlook, that translates into getting medical supplies to the patient when they are needed. Large inventories ensure that supplies will be on hand, but they also burden the hospital with needless financing, handling, and opportunity costs.

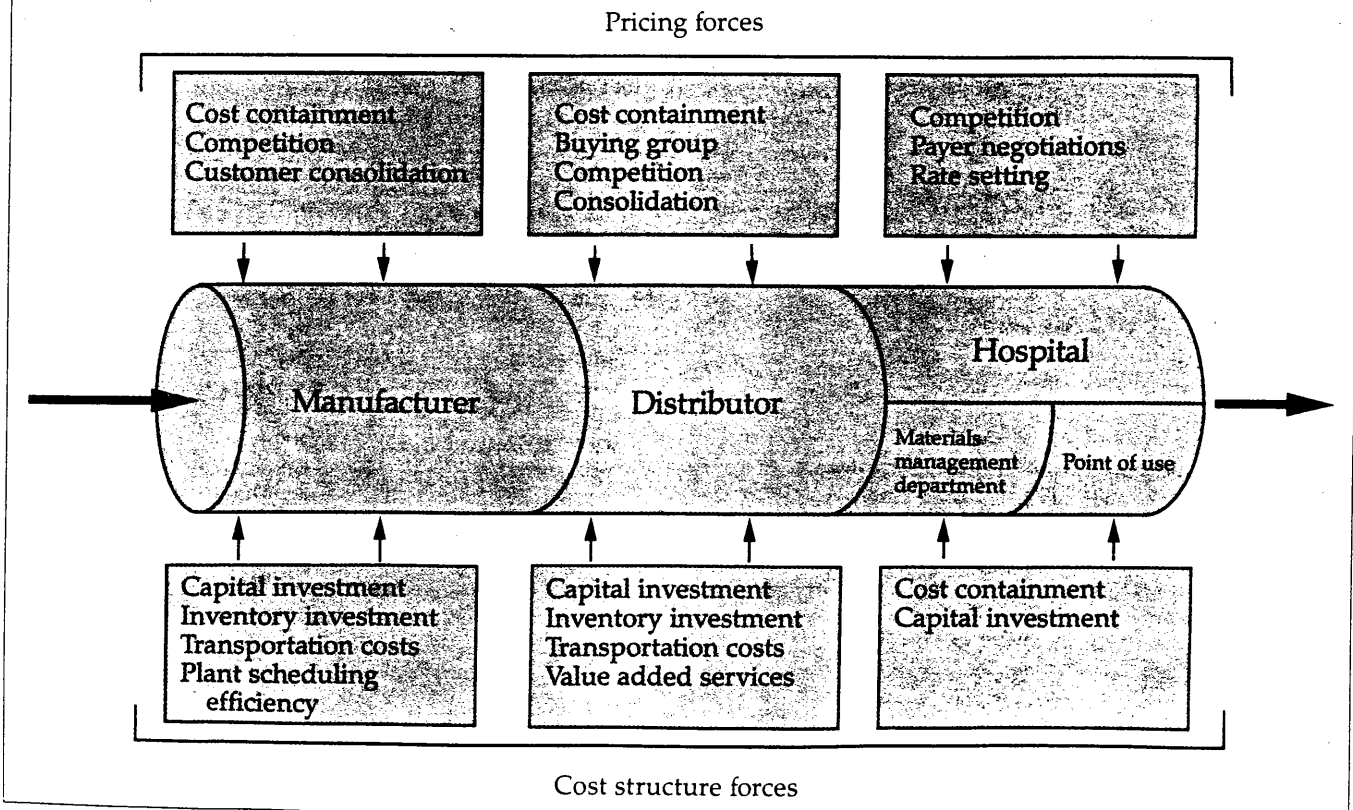
Hospitals have frequently ignored the interactions of the supply pipeline in favor of narrower strategies aimed at lowering the product purchase price, such as group purchasing, product standardization, and centralized purchasing. But a focus on per-unit price ignores the costs of materials management within the hospital and the duplica-

tion of inventories and related functions by the manufacturer, distributor, and hospital.

Cost benefits to each member of the supply pipeline peak when total system costs are reduced, which does not necessarily result from the lowest per-unit pricing. When the pipeline's focus shifts to the lowest total system costs, materials management expands into supply pipeline management.

The ultimate goal of supply pipeline management is to reallocate to the lowest cost provider the investment and effort required to move supplies through the pipeline, while maintaining high service levels. This will lower the total costs of the major distribution investments (facilities, equipment, and inventories) and activities (transportation, handling, and administration).

EXHIBIT 1: FORCES CHANGING THE HOSPITAL SUPPLY PIPELINE



SUPPLY PIPELINE

INVENTORY MANAGEMENT

Two inventory management programs—"just-in-time" (JIT) and "stockless" inventory—emphasize the importance of overall system costs rather than per-unit costs. These programs take materials consumption information from the point of use and communicate it to the various points along the supply pipeline.

Both programs are currently used by organizations in several industries to reduce total system inventory by shifting much of the warehousing and distribution functions to the supplier.

Under a JIT inventory management program, the principal vendor, acting as the hospital's warehouse, makes frequent bulk deliveries to support the hospital's internal supply needs. The hospital

retains the central supply task of breaking down cases into proper units for delivery to the floors. JIT reduces hospital storeroom stocks to a supply of several days, while inventory levels in the total system are cut.

A stockless program requires the most intense relationship between the hospital and the distributor. A high degree of trust and cooperation is essential.

In a stockless program, nearly all the hospital's supplies are furnished by a principal vendor, who not only bears the burden of the hospital's warehousing service, but also is responsible for the "pick-and-pack" operations of central supply. The distributor becomes, in effect, an extension of the hospital's materials management department, while the hospital retains a small in-house inventory for emergency use.

Theoretically, a stockless program is the ultimate route to reducing total inventory. But different institutions will reach different inventory levels, depending on preference for individual products, proximity to supplier, the emergency level of inventory desired, confidence in service levels, the level of trust between the hospital and principal vendor, and management's incentive to reduce costs.

HOSPITALS SHOULD TAKE THE INITIATIVE

The hospital, distributor, or manufacturer can initiate changes in the pipeline relationships. Whoever takes the leadership role is in the best position to allocate the benefits resulting from any reduction in system-wide costs.

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bers of the pipeline. The hospital is the only pipeline member that has complete knowledge of how all the medical supplies it purchases are used.

The hospital is the customer, and potentially the driving force of the medical supplies market. It has control over a significant number of delivery cost generators, such as order size and the number of its vendors. The hospital has the best opportunity to reduce inventory by shifting inventory control from the storeroom to the usage location.

COST REDUCTION OPPORTUNITIES

The results of supply pipeline management can be dramatic. Hospital inventories can be reduced by 50 percent in a short time, decreasing payroll costs and increasing floor space that can be used for income generating activities.

Inventory at the usage locations (also termed unofficial inventory) runs from one to 10 times the level of official inventory and can also be substantially reduced. Any reduction in official or unofficial inventories directly lowers a hospital's demand for working capital. Other areas affected by pipeline management include:

Handling. Receiving and central supply operations can be streamlined by decreasing the level of materials handling. Hospitals can realistically expect to reduce related payroll costs by 50 percent and space requirements by 75 percent. The amount of handling and distribution equipment will also be dramatically reduced.

Transaction costs. These costs, which can account for a large portion of materials management costs, can be reduced by minimizing the number of vendors the hospital deals with and by installing a materials management system that su-

ports inventory reduction programs. These systems require a capital investment that is offset by a potential 50 percent reduction in costs related to ordering, invoicing, and tracking materials.

Increased volume rebates. Additional volume increases vendor profit margins by spreading fixed costs such as transportation and handling over a greater amount of business. The additional margin should be shared with the hospital for a savings of 3 percent to 6 percent of the purchase price.

Automated order-entry discounts. The use of automated order-entry systems saves the vendor costs associated with order taking and processing by sales representatives and service personnel. Vendors can pass on an average discount of one-half of 1 percent from the purchase price to hospitals.

Faster payment terms. Vendors receiving weekly payments reduce their receivables financing costs. Hospital savings average 1 percent to 3 percent of the purchase price.

Value-added services. Value-added services (that is, materials management consultation, product screening, and flexible service levels) can help the hospital avoid running out of supplies and can cut response time to user requests. These services can be priced separately from product costs so the hospital can make an informed value judgment regarding cost and benefits of the available services.

CRUCIAL RELATIONSHIPS

Reducing the system-wide inventory level will significantly lower the supply pipeline management costs because inventory quantity and location have the greatest effect on total system costs. The hospital is in a key position to facilitate system-wide inventory reductions, but two actions are required. First, the hospital must reduce its total number of vendors. Second, the hospital

must form a partnership with a principal vendor who can support an inventory management program.

The hospital will buy a large percentage of its materials from this vendor. In return, the principal vendor will agree to assume a portion of the hospital's inventory and materials processing function in exchange for increased business from the hospital.

Why should hospitals focus on distributors rather than manufacturers? In theory, all three pipeline members should cooperate. Product usage information shared all the way to the pipeline's source would allow the manufacturer to schedule production most efficiently. But it is much easier for the distributor and hospital to team up because they share readily identifiable cost-generating activities. Therefore, cost saving opportunities for both partners are closely tied.

When a hospital shifts its inventory to the distributor, the distributor's inventory levels increase, as do the number of deliveries to the hospital, but the distributor's operating costs rise only slightly because its labor rates are the lowest of all members in the chain and the distributor can take advantage of economies of scale in handling and storing merchandise. As the warehousing function shifts to the distributor, the only inventory in the hospital will be a few days' supply. The payoff: The hospital cuts its costs, and the vendor increases its profit margin as a result of increased volume.

A smooth flow of information is vital to maintaining a strong relationship between the hospital and the distributor. Accurate and fast information exchange is needed to reduce delivery lead times, because lead times are built into inventory levels. This can be accomplished through an electronic ordering system that transmits orders and receives confirmations virtually in-

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stantaneously.

The information system must be capable of providing a daily flow of product usage data to the distributor so that deliveries are made on a timely basis and high service levels can be maintained. Because a distributor's performance will be measured by indicators such as its ability to fill orders and resolve emergencies and problems, the system should also be equipped to efficiently handle such demands.

Hospital-distributor relationships create tangible cost benefits to both parties. Transaction processing costs are reduced because fewer transactions are made. That is, many more products can be ordered at the same time from the principal vendor.

Although reducing the hospital inventory generates the need for more frequent deliveries, a distributor can spread those costs over a

larger volume of business. Instead of 10 trucks delivering partial truckloads, for instance, the vendor would deliver one full truckload to the hospital. Consequently, payroll costs for receiving and warehouse personnel are reduced for both the hospital and the distributor.

As the number of vendors continues to decrease, the intensity of the relationship with the principal vendor increases and the potential for inventory (and cost) reductions rises.

COOPERATION NEEDED

Reimbursement pressures in the healthcare industry will continue to increase, as will the public's demand for high-quality services. Because materials management costs are affected by all members of the supply pipeline—manufacturer, distributor, and hospital—there

must be greater cooperation and collaboration among all parties to reduce total system costs within the distribution chain.

Today, the hospital must take the initiative in forming such a relationship. By selecting a principal vendor that offers services necessary to support an inventory management program, a hospital can reduce the amount of system-wide inventory and materials management costs. This requires a level of cooperation never before achieved in the supply pipeline. Trust and shared information between hospital and distributor is essential for the success of these relationships. As the relationships evolve, each hospital will have to individually tailor its materials management program based on factors such as the size of the facility, proximity to suppliers, and institutional acceptance. □

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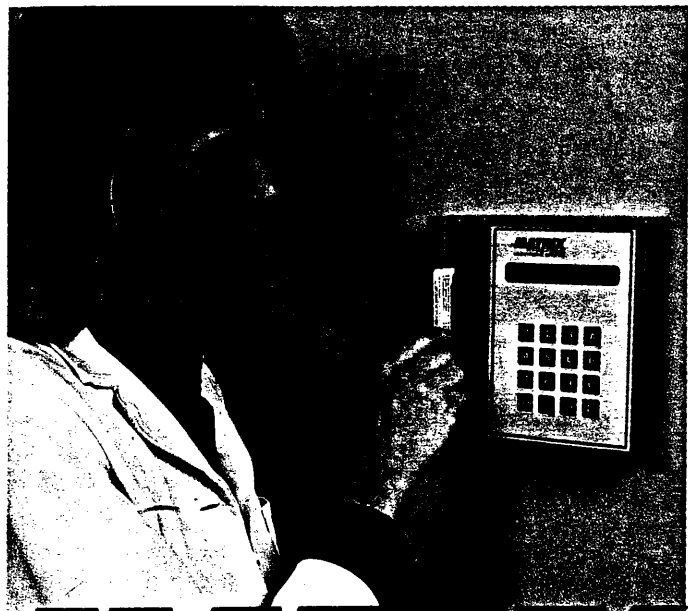
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