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Supply Chain Management in Healthcare

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Abstract

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Introduction

S**upply chain management** (**SCM**): the management of the flow of goods and services between businesses and locations, and includes the movement and storage of raw materials, of work-in-process inventory, and of finished goods as well as end to end order fulfillment from point of origin to point of consumption. Interconnected, interrelated or interlinked networks, channels and node businesses combine in the provision of products and services required by end customers in a supply chain.

Supply-chain management has been defined as the "design, planning, execution, control, and monitoring of supply-chain activities with the objective of creating net value, building a competitive infrastructure, leveraging worldwide logistics, synchronizing supply with demand and measuring performance globally". SCM practice draws heavily on industrial engineering, systems engineering, operations management, logistics, procurement, information technology and marketing, and strives for an integrated, multidisciplinary, multimethod approach. Marketing channels play an important role in supply-chain management. Current research in supply-chain management is concerned with topics related to sustainability and risk management, among others. An important concept discussed in SCM is supply chain resilience. Some suggest that the “people dimension” of SCM, ethical issues, internal integration, transparency/visibility, and human capital/talent management are topics that have, so far, been underrepresented on the research agenda. Supply chain management (SCM) is the broad range of activities required to plan, control and execute a product's flow from materials to production to distribution in the most economical way possible. SCM encompasses the integrated planning and execution of processes required to optimize the flow of materials, information and capital in functions that broadly include demand planning, sourcing, production, inventory management and logistics -- or storage and transportation.

Although it has the same goals as supply chain engineering, supply chain management is focused on a more traditional management and business based approach, whereas supply chain engineering is focused on a mathematical model based one.

Mission

Supply-chain management, techniques with the aim of coordinating all parts of SC from supplying raw materials to delivering and/or resumption of products, tries to minimize total costs with respect to existing conflicts among the chain partners. An example of these conflicts is the interrelation between the sale department desiring to have higher inventory levels to fulfill demands and the warehouse for which lower inventories are desired to reduce holding costs.

Origin of the term and definitions

In 1982, Keith Oliver, a consultant at Booz Allen Hamilton introduced the term "supply chain management" to the public domain in an interview for the Financial Times. In 1983 WirtschaftsWoche in Germany published for the first time the results of an implemented and so called "Supply Chain Management project", led by Wolfgang Partsch. In the mid-1990s, more than a decade later, the term "supply chain management" gained currency when a

flurry of articles and books came out on the subject. Supply chains were originally defined as encompassing all activities associated with the flow and transformation of goods from raw materials through to the end user, as well as the associated information flows. Supply-chain management was then further defined as the integration of supply chain activities through improved supply-chain relationships to achieve a competitive advantage.

In the late 1990s, "supply-chain management" (SCM) rose to prominence, and operations managers began to use it in their titles with increasing regularity

Healthcare supply chain management.

Cutting healthcare costs has become a mantra for many hospitals and physician practices, especially as payers start to tie claims reimbursement amounts to quality and cost performance. Many organizations have looked to the billing and services portion of the revenue cycle for budget decreases, but others have started to examine their **healthcare supply chain management**.

The supply chain generally refers to the resources needed to deliver goods or services to a consumer. In healthcare, managing the supply chain is typically a very complex and fragmented process.

Healthcare supply chain management involves obtaining resources, managing supplies, and delivering goods and services to providers and patients. To complete the process, physical goods and information about medical products and services usually go through a number of independent stakeholders, including manufacturers, insurance companies, hospitals, providers, group purchasing organizations, and several regulatory agencies.

However, by promoting efficiency in the healthcare supply chain, hospitals and physician practices can create substantial cost-reducing opportunities across their organization.

Here is a look at what goes into healthcare supply chain management and how healthcare organizations can overcome major challenges to further reduce spending.

What is healthcare supply chain management?

Take a moment to think about what providers use every day to treat patients. Providers use a myriad of items, such as syringes, prescriptions drugs, gloves, pens, papers, and computers. Employees involved in **healthcare supply chain management** are responsible for stocking organizations with the products providers need and managing inventory. However, managing supply chain is not as simple as making sure providers have enough gloves.

"Simply stated, supply chain is the management of upstream and downstream relationships with suppliers and customers to deliver superior customer value at less cost to the supply chain as a whole," James Spann, Practice Leader of Supply Chain & Logistics at Simpler Healthcare, **said** in a 2015 interview.

"The challenge for hospitals is to align the supply chain to the care delivery model." The healthcare supply chain starts at the medical product manufacturer where items are produced and sent to a distribution center. Depending on the type of product, hospitals can either purchase inventory directly through the manufacturer or distributor, or the transaction can be conducted through a group purchasing organization, which establishes a purchasing contract with the manufacturer on behalf of the hospital.

Medical products are then sent to the healthcare organization, where the goods are stocked into inventory for providers and patients. The organization ensures that providers are not left without essential medical products and patients have access to potentially life-saving tools.

Another aspect of healthcare supply chain management involves the participation of regulatory agencies, such as the Federal Drug Administration, and healthcare payers, including Medicare and private health insurance companies. Regulatory agencies and payers determine if a medical resource is fit for consumer use and whether providers will be reimbursed for using it on specific patients.

Why is healthcare supply chain management so complex?

Healthcare supply chain management is unique because each stakeholder has their own interests to protect. Different stages in the supply chain flow may be focused on their own goal. Providers may want to use a specific product because they were trained with it, whereas hospital executives aim to purchase the most affordable quality items.

Since supply chain goals are not always aligned within an organization, the healthcare supply chain management process can be inefficient and fragmented. Healthcare organizations must take into account numerous requests and viewpoints to settle on specific product budgets.
Patients also have a voice in the healthcare supply chain management process. Healthcare organizations may be able to regularly order the correct sizes of gloves and keep them stocked, but some patients may need more customized medical products, such as latex-free options, depending on their health status.

Likewise, providers may prefer a specific brand or type of medical product, which could lead to cost concerns. For example, providers may prioritize their own preferences for certain products, while financial managers attempt to cut healthcare costs and reduce out-of-date products. Oftentimes, hospitals face hoarding or squirreling away of certain products by providers.

"In most cases, clinicians just want the products when they need them," Spann **explained**. "But to ensure that happens they oftentimes hoard or opt manage their own supplies. This can contribute to cost variance and off contract

spending which are hard to uncover. One more invisible cost that is often overlooked is the time spent looking for supplies or waiting for someone to deliver what they need."

Misaligned incentives and independent goals can disrupt the flow of the supply chain for many healthcare organizations.

How can providers overcome common challenges in healthcare supply chain management?

Some healthcare organizations have found success with supply chain management through cost transparency. By harnessing price and utilization data, healthcare organizations can track and manage inventory more efficiently and construct more informed purchasing contracts with manufacturers.

"Due to vertical internal structures, supplies and supply data historically have been siloed and firewalled so that information important for efficient business operations is fragmented," Steve Kiewiet, Vice President of Supply Chain Operations at BJC HealthCare, **told** *RevCycleIntelligence.com* in June 2015. "We end up spending billions of dollars of inventory within these various silos because we live in a world where you can never run out of anything ever, in the interest of what is best for the patient."

"When we have visibility of product from finished goods to the use on the patient and we actually capture demand and consumption versus capturing purchasing activity, we capture consumption activity," added Kiewiet. "We significantly reduce waste and variation in the supply chain. Inventory levels come down for everybody. Product expiration can be virtually eliminated."

Different automated tools can help organizations increase price transparency, such as computerized provider order entry systems, which can standardize and streamline physician orders, or Radio Frequency Identification technology that can capture volumes of data from a product's barcode.

Getting all hospital departments on the same page is also a key strategy for optimizing healthcare supply chain management. In the era of value-based care, healthcare organizations are focused on reducing redundancies and eliminating waste, but providers also need to work together to effectively reduce costs and boost performance.

"The supply chain touches every department within the hospital," **stated** Spann "You must look at the people in the organization, supply partners, and determine how you can get synergy and maximum productivity out of your clinical and supply chain staffers to achieve your supply chain goals."

Engaging clinical staff can also help to establish cost-saving habits, discourage hoarding, and empower providers to keep cost concerns in mind when delivering care.

"Today, health systems must be willing to take risks," continued Spann. "They have to be willing to hand over the keys and allow physicians to co-lead these strategies. Physicians will engage when they understand the issues, and it is very important to let them help craft a solution that they can stick to."

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