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The Transformative  
Hospital Supply Chain  
*Balancing Costs  
with Quality*



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## EXECUTIVE SUMMARY

*In recent years, the cost of providing healthcare has soared worldwide. In aggregate, healthcare spending accounts for almost 10 percent of the world's GDP. Those costs likely will continue to escalate. As a result, national healthcare systems face spiraling expenses as they seek to provide affordable, high-quality, and universal care services.*

*Hospital supply chains present healthcare systems with a prime opportunity both to mitigate increases in expenses and help improve patient care. The greatest opportunity is for hospitals to transform their supply chains into a vital, collaborative, and strategic function. As such, administrators and clinicians would collaborate on anticipating and ordering all medical and non-medical items, such as drugs, diagnostic machines, gloves, and sheets. This process would curb costs—but also yield more far-reaching benefits, such as creating a system that provides and validates product information and drug specifications and effectiveness. As a result, the supply chain would not only help control escalating costs but also boost efficiency and optimize clinical outcomes.*

*Creating an advanced, highly mature supply chain involves setting up an inclusive governance structure, implementing robust processes for key functions such as procurement and materials management, and integrating and automating information technology (IT) systems.*

## KEY HIGHLIGHTS

- Supply chains in hospitals can account for as much as 30 percent of total hospital costs.
- Only a few hospital systems worldwide have developed the collaborative, strategic supply chains that can help curb rising costs and improve patient care.
- Establishing a transformative supply chain involves setting up a holistic governance system, implementing robust processes, and automating integrated IT systems.

## CONTAINING COSTS AND IMPROVING CARE

Over the next decade, healthcare spending worldwide will almost double to US\$15 trillion. On average, OECD countries will spend an estimated 9.5 percent of GDP on public and private healthcare in 2011, an increase from 8.8 percent in 2008. In the U.S., healthcare accounted for 16 percent of GDP, up from 9 percent in 1980; it will rise to 20 percent

by the end of this decade. In the MENA region, healthcare accounted for 3 percent to 5 percent of GDP in 2008 and has been rising rapidly, growing at an average annual rate of approximately 15 percent since 2005. However, few, if any, healthcare systems around the world have managed to develop a successful formula for providing high-quality, universally accessible healthcare at a cost that is sustainable over the long haul.

Hospitals represent the largest cost component of national healthcare expenditures, and both medical and non-medical supplies account for one of the largest costs to hospitals. As hospitals continue to adopt expensive technology and customized drugs, their costs will likely continue to escalate.

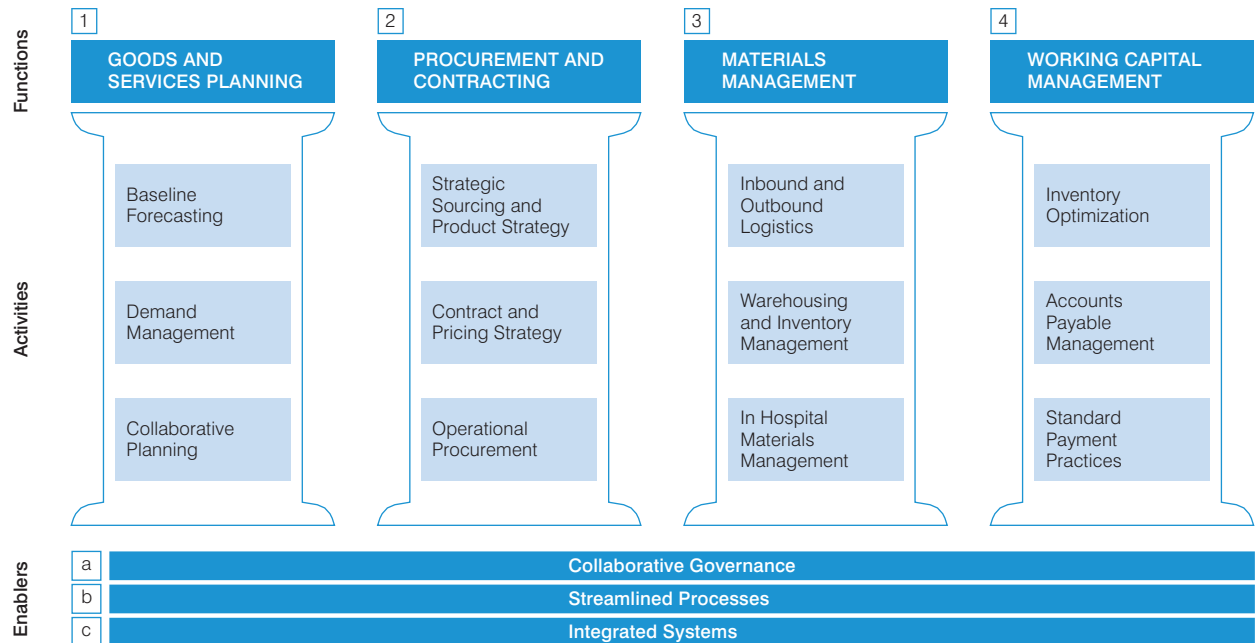
For hospital administrators, there is no magic bullet to control these accelerating costs. However, successful hospital supply chain management (SCM) can help contain costs while improving quality of care. SCM is the capability to execute broad functions—planning, procurement and contracting, materials, and working capital management—that are involved in obtaining any product or service that hospital staff needs to care for a patient (see Exhibit 1).

Hospital supply chains must be resilient and flexible to accommodate both global and regional market constraints, as well as government regulations, because they are critical to delivering healthcare services and achieving desired patient outcomes. In hospitals, SCM covers both medical and non-medical items as well as both operational and capital expenditures. The medical category includes clinical and pharmaceutical items; the non-medical category includes all

other goods and services required to run the administration of the hospital, from PCs to bedpans, from pens to surgical gowns. Some items, such as pharmaceutical narcotics, fall under heavy regulations with stringent laws constraining how providers source and handle them. These rules influence how hospitals should design and manage their SCM.

**Exhibit 1**  
*The Hospital Supply Chain Encompasses Four Functions*

**SCM FUNCTIONS OVERVIEW**



Source: Booz & Company

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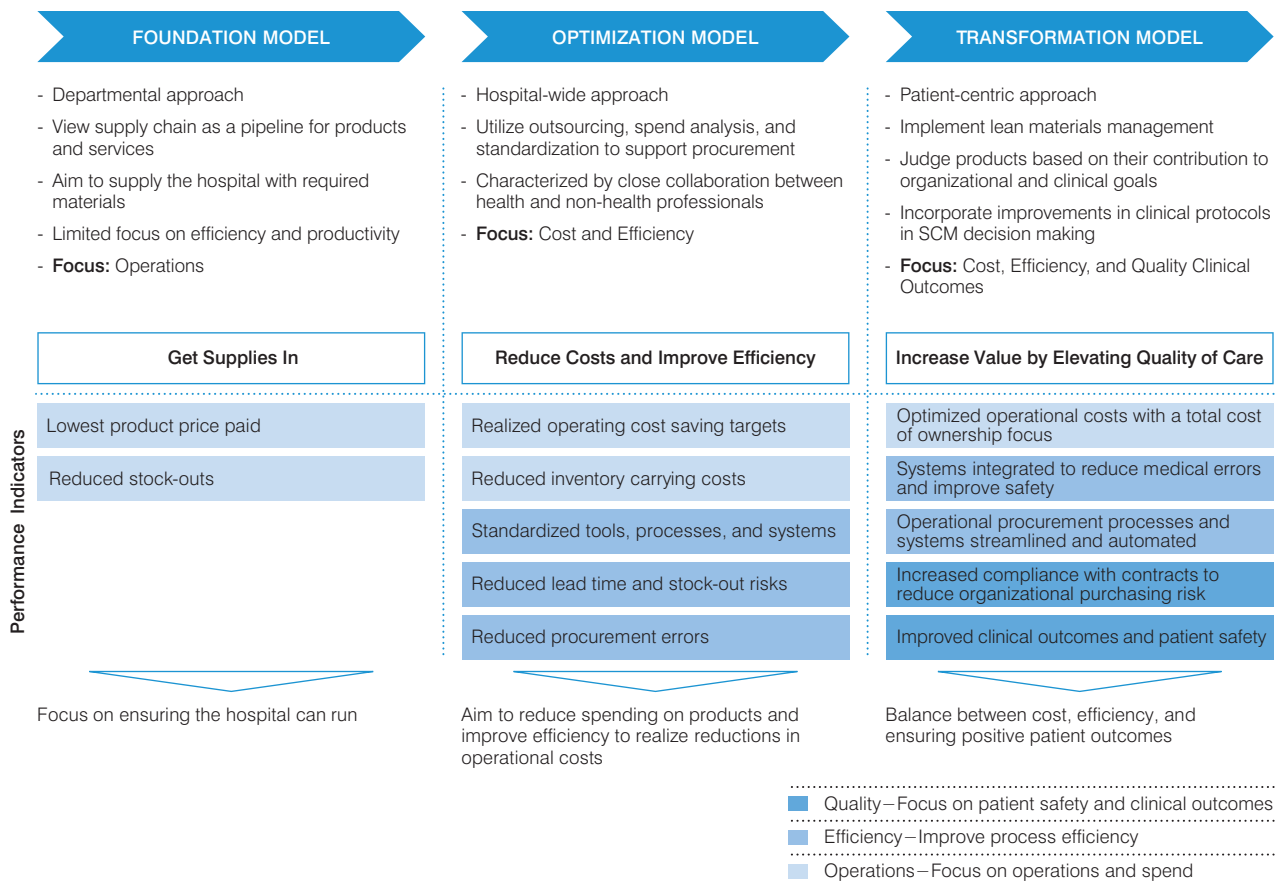
## MATURING HOSPITAL SCM

Hospital administrators strive to improve operations in their facilities because of the far-reaching impact it can have on patient experience, staff morale, and overall costs, as well as quality of care. In seeking to improve operational performance, administrators should look first to streamline and optimize their hospital's supply chain, which accounts for between 20 to 30 percent of a hospital's budget. Hospital SCM typically goes through three stages of maturity—from getting supplies to the hospital at the most basic level, to elevating the hospital's quality of care at the most advanced level (see *Exhibit 2*). In mature and emerging markets alike, few hospitals—even larger, more established

hospital care facilities—have made significant progress toward the most advanced level.

- *Foundation Model*: The first and most basic model aims simply to ensure supplies are in stock. This often is a minimalistic SCM with a focus on operations and materials management and limited strategic capabilities. At this level, hospitals usually adopt a segmented approach, fulfilling each department's needs in a vacuum rather than taking a holistic, hospital-wide view. As a result, the hospital is able to achieve few synergies or efficiencies across departments.

**Exhibit 2**  
**Hospital Supply Chains Can Advance Through Three Levels of Maturity**



Source: Booz & Company

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- *Optimization Model:* This more advanced model uses a hospital-wide approach to reduce costs and improve efficiency. Hospitals take a more strategic approach to SCM, building capabilities that will allow them to improve supply predictability and control. This model mandates close collaboration among departments to reduce costs via hospital-wide synergies and economies of scale; it requires leaders in the supply chain function to analyze expenditures, outsource non-core SCM functions, and push for standardization to improve efficiency.

- *Transformation Model:* The most mature SCM model is fundamentally different from the optimization model, aiming to balance cost control with patient outcomes. Organizations that operate under this model typically have engaged in cost optimization efforts and now realize the importance of focusing on increasing overall value for the hospital. This is a daunting prospect, given the inherent contradictions of reducing costs while improving outcomes and satisfaction. But SCM organizations can rise to this challenge by adopting a collaborative approach,

especially with clinicians. The goal is to engage them in identifying items that offer the best outcomes for patients based on evidence compared to costs. This collaborative model hinges on strong governance structures, such as establishing product standardization committees.

In sum, hospital SCM models can evolve and shift focus from simply ensuring required items are in stock to developing integrated processes and systems that aim to reduce costs, improve efficiency, and enhance patient safety and clinical outcomes.

*Hospital SCM models can evolve from simply ensuring required items are in stock to reducing costs, improving efficiency, and enhancing clinical outcomes.*



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### **Case Study: One Healthcare System's Successful Transformation Model**

One healthcare system, based in the United States, is a prime example of a well-functioning hospital supply chain that has implemented the transformation model. When senior hospital management at this healthcare system, which encompasses more than 15 facilities, recognized that the organization faced increasing costs and had disparate systems and an abundance of suppliers, they tackled those issues by elevating the supply chain to strategic importance. In 2002, the healthcare system created a separate division focused on streamlining supply chain operations and gaining efficiencies for all its hospitals, eventually turning the division into a separate for-profit subsidiary of the hospital.

The division implemented an advanced approach to materials management by deploying a state-of-the-art distribution service center to manage supply needs for its facilities. It defined a sourcing strategy, based on clinical empirical data. That strategy focused on leveraging volumes from all hospitals, and managing its physicians' preferred items. Other parts of the plan included rolling out an integrated IT system and focusing on customer service through continued system and process automation. For example, one highly successful initiative involves bar-coding repackaged medications; stocking them in automated, computer-controlled cabinets in nursing wards; and distributing them to patients using advanced technology such as hand-held scanners and unique identification on patients' wristbands.

As a result of its initiative, the healthcare system reduced its supply base by almost one-third and achieved cost savings throughout its supply chain. The system continues today to balance innovation, costs, efficiency, and growth—while keeping its focus on its main goal of providing the best possible patient care.

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## THE TRANSFORMATION MODEL IN PRACTICE

Three different enablers are crucial to facilitate the development of the transformation SCM model: clear collaborative governance structures, robust and efficient processes, and integrated systems.

### Collaborative Governance

Having the right governance structure for SCM allows hospitals to maintain the dynamic balance between reducing costs and providing high-quality care. With increasing maturity, SCM governance evolves from focusing on the SCM team alone to a collaborative approach involving all stakeholders, including the SCM team, administrators, and clinicians. Without such collaboration, all other efforts to move a hospital SCM to the transformation model simply will fail.

This collaboration requires the appropriate governance structure and processes to support clinicians in understanding the trade-offs involved in selecting products, from something as simple as gloves to something as complex as diagnostic equipment. Typically clinicians have to grapple with choosing from an array of medical items, models, and manufacturers with different costs, as well as the documented effectiveness of these products and their impact on patient

outcomes. Given that clinicians are the primary users of these items and the ultimate decision makers, a hospital SCM team needs to engage this group and work closely with them, providing information regarding available products, manufacturers, cost, and effectiveness. This is tricky territory for SCM teams, as clinicians likely will not trust the supply chain function and assume that cost savings are its first priority. As a result, SCM teams must take care to establish themselves as trusted partners who appreciate the importance of quality care.

One challenge will be to restrict the large numbers of items on individual “clinician preference lists,” which tend to limit supply chain efficiencies and economies of scale, running up the total cost of inventory management. A well-functioning collaborative system would allow a hospital to reduce its “clinician preference list” to manageable volumes and offer the products that scientific evidence shows have the most positive impact on patient outcomes.

To achieve such a mature governance model means moving away from merely executing clinician orders to engaging with them in an ongoing, constructive dialogue and equipping

*One challenge will be to restrict the large numbers of items on individual “clinician preference lists.”*

them with the proper information to help them make the right decision for their patients and for the hospital. This is a complex process that includes data collection, comparative and cost/value analyses, and communication.

### **Streamlined Processes**

At many hospitals, the four core supply chain functions—goods and services planning, procurement and contracting, materials management, and working capital management—operate in silos, not in concert with each other. Streamlining processes within these functions will ensure efficiency of SCM execution, while supporting transparency and compliance with the collaborative governance structure that is so important to achieving the transformation model. Ensuring transparency of SCM processes allows supply chain stakeholders to be equipped with the right set of data to react positively to challenges, such as having too many items out of stock or too many suppliers providing similar products. At the same time, a transparent process would inform stakeholders and enable them to participate in making critical decisions based on a set of

trade-offs regarding items or services required to provide patient care.

A streamlined process would also enable all stakeholders—administrators and clinicians—to comply with national regulations, contractual obligations, and internal policies.

### **Integrated Systems**

Automating and integrating IT systems will allow hospitals to seamlessly link their governance and SCM processes. Hospitals will have hurdles to overcome in doing so: most hospitals will have to deal with legacy IT systems and in some cases redundant applications, which is always more challenging than building a new system from the ground up. But the benefits are well worth it. An integrated system will establish approval flows electronically both for ordering and payment processes, ensuring that SCM applications comply with governance policies and processes by giving logged-in users the authority to make decisions only within the parameters ascribed to them.

The integration of SCM systems typically involves both strategic supply chain functions, such as demand

planning and forecasting, and the execution of the transactional ordering and procure-to-pay processes.<sup>1</sup> Integrated IT systems allow for the complete automation of procure-to-pay processes; specifically, they can connect procurement and invoicing operations, thus streamlining the whole process that begins with identifying needs, moves through procuring supplies, and ends with paying suppliers. In order to achieve this level of integration, hospitals will need to establish a common SCM data architecture as well as a detailed flow for the approval of expenditures, tied to the delegation of authority.

At the core of the SCM data architecture is the hospital's item master and taxonomy of the medical and non-medical items, which form the foundation of a hospital's supply requirements. The architecture works as the language of the integrated system, facilitating a collaborative environment in which buyers and suppliers establish a virtuous circle of SCM information flows and provide transparency throughout the entire supply chain to facilitate the procure-to-pay process.

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## OVERCOMING CHALLENGES TO ACHIEVE THE TRANSFORMATION MODEL

Evolving hospital supply chain organizations face key issues during their journey from a foundation model in which the focus is on avoiding stock-outs to a transformation model in which the main challenge is improving patient outcomes while reducing total costs. Although each hospital will face specific issues in building and maturing its SCM capabilities, there is a set of common issues and potential solutions for all hospitals on their way to achieving the transformation model:

*Defining an SCM strategy with a clear path forward.* Without a documented strategy that lays out the path ahead, hospital SCM organizations typically revert to a reactive mode in which they aim to fulfill requests from other departments. To move beyond this basic approach, those involved in SCM need first to recognize that

the function is not a service provider but a strategic partner in providing quality care, and then act from that perspective. That entails engaging in a SCM-wide diagnostic leading to a documented strategy defining clear and measurable objectives—such as inventory turnover, which measures how effective the hospital is at building a lean supply chain, and total cost per patient, which translates that savings into patient care as well as patient quality indicators.

*Building strategic SCM skill sets.* This is a recurrent challenge worldwide, as expert hospital SCM talent is scarce. In particular, hospitals that are still at the foundation level will have a difficult time attracting and retaining top hospital SCM talent, because most leaders will feel that they can't play a strategic role in such environments.

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Hospital boards will need to involve clinical leadership and recognize the importance of having SCM as a true partner with the administration and physicians to support the efforts to move toward a transformation model.

*Creating a strong governance model.* Without a robust governance model in place, the hospital SCM organization will lack the necessary mechanism to partner with all stakeholders and involve them in key decision making. Therefore, it is essential to establish such a model with senior leadership commitment from both a clinician and an administrative perspective. The governance structure becomes a forum for dialogue, and the SCM serves as a provider of key information that enables hospitals to make careful, balanced decisions. Such information could include a

cost-benefit analysis, which provides data points that can confirm whether an item is worth the additional cost. It could also include product specifications, validating research results that indicate that a drug is more or less effective than promised.

*Ensuring data is available and reliable.* Foundation SCM organizations rarely collect comprehensive sets of data; in the few cases data is collected, it is often of poor quality. Few hospitals have invested in designing the necessary data structures, such as taxonomy and item master. Limited IT system capabilities compound the problem, as they mandate multiple manual interventions across the supply chain, seriously hampering accurate data collection. It is critical for hospital SCM organizations pursuing the

transformation model to invest in comprehensive IT systems that can automate the procure-to-pay processes and enable comprehensive data sets.

*Integrating SCM processes.* When processes are fragmented or incomplete, SCM will resort to ad hoc activities, leading to divergence from existing policies and procedures. Such systems cause numerous errors: ordering the wrong item or wrong quantities of an item, losing items, or supplying items past their expiration date. It is critical for any hospital aiming to achieve the transformation model to reengineer its procure-to-pay processes comprehensively, complement them with the proper policies and procedures, and align those with capable IT systems.

***It is critical for hospital SCM organizations to invest in comprehensive IT systems.***

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## CONCLUSION

Hospitals today have a substantial opportunity—and a significant challenge—in transforming their supply chains to meet ever-higher standards for patient outcomes and the need to deliver healthcare services in a more efficient manner.

Most hospitals worldwide still operate under the foundation model, in which the function is essentially a service provider. As the costs of healthcare continue to increase, many hospitals can revamp their SCMs into a more strategic and dynamic collaborative endeavor—one that could help them control costs and enable them to serve their patients better. Learning that achieving efficient delivery of services and increasing the quality of care are not mutually exclusive can be a strong regional catalyst for supply chain transformation.

Hospitals eager to transform their SCM will have to embark on a capabilities-building mission, ensuring that

workers have strategic SCM skill sets, clearly defining strategies, creating a strong governance model, integrating processes, and ensuring availability and robustness of data.

Transforming a hospital SCM mandates a change in thinking as well as practices. It means that SCM needs to define its role and begin to execute value-added activities across all aspects of the value chain. It can no longer silo itself focusing on downstream, low-value-added, opportunistic efforts to reduce transaction costs or just enter into contracts with local distributors without evaluating total life-cycle costs. Instead, the transformation SCM model will allow hospitals to become lean and efficient, while improving their overall hospital operations, forging long-term partnerships with suppliers with whom they can collaborate closely to deliver value year in and year out, and ensuring better outcomes for patients.

## Endnotes

<sup>1</sup> "Procure-to-pay" refers to the business processes that cover activities of requesting, purchasing, receiving, paying for, and accounting for goods and services.

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