

**Vanderbilt University Medical Center's
Collaborative Supply Chain Approach Involves
Physicians and Clinicians and Produces
Significant Institutional Cost Savings**



Summary

Costs of medical supplies and materials (known as the supply chain) within health care organizations represent a large proportion of overall costs and have been directed historically by administrators or individual physician preferences. Identifying the need to centralize and standardize supply chain decisions, Vanderbilt University Medical Center implemented a collaborative approach to managing its supply chain that relies on multidisciplinary purchasing committees that are led by physicians and/or nurses, and include supply chain representatives. These committees evaluate and make procurement decisions on all new proposed technology/products and work collaboratively toward reaching annual financial savings targets that are set by organizational leadership. Vanderbilt University Medical Center gives physicians access to real-time and historical cost data that, when tied to other institutional data, has enabled physicians and departments to analyze and address variations in practice. This approach has created collaborative relationships between supply chain personnel and physicians and clinicians. It also created mechanisms to leverage valuable provider input on supply decisions while also educating clinicians and physicians about costs. Since implementing this unique supply chain approach, Vanderbilt University Medical Center has reached financial cost saving targets every year.

Context of the Innovation

Vanderbilt University Medical Center (VUMC), located in Nashville, Tennessee, comprises several hospitals and clinics, as well as the schools of medicine and nursing associated with Vanderbilt University. VUMC employs nearly 20,000 individuals and handles over 50,000 surgical procedures and 1.8 million ambulatory visits each year.

As health care institutions look to reduce organizational costs, many are focusing on supply chain activities, since this area represents the second largest and fastest growing cost for hospitals after labor.¹ Attempts to reduce supply chain costs raise technical and inter-professional challenges. Physicians and other clinicians may resist changing their current practices and have strong preferences for clinical supplies, devices, and equipment.

Prior to 2008, VUMC's supply chain functions were distributed across multiple organizational entities, including Vanderbilt University (which handled contracting and procurement) and Vanderbilt University Hospital (which handled distribution and logistics). Additionally, VUMC operated under an "ask and you shall receive" philosophy whereby each department had autonomy in making purchasing and contracting decisions. In 2008, VUMC decided to centralize all its supply chain functions under a single entity and leadership team, as well as implement a standard approach to how new products and technology were requested and approved. This second initiative was championed by two VUMC physician leaders who expressed interest in having a more active role in supply chain decisions. As a result, VUMC implemented specific approaches and initiatives designed to make supply chain representatives integrated members of the health care team and engage physicians and clinicians in the supply chain process.

¹ 5 Ways Supply Chain Can Reduce Rising Healthcare Costs, <http://hitconsultant.net/2013/05/13/5-ways-supply-chain-can-reduce-rising-healthcare-costs/>

Description of the Innovative Activity

Vanderbilt University Medical Center developed a multi-pronged strategy to increase physician and clinician awareness of and involvement in activities related to the costs associated with medical supplies and equipment. VUMC shifted to a centralized approach to managing its supply chain that relies on physician- and nurse-led committees that work with the relevant Department Chairs and with the VUMC supply chain department to make purchasing decisions. VUMC provides education to committee members about supply chain-related concepts and also uses data from supply chain systems to give physicians access to provider/patient cost data. Additional information about VUMC's supply chain activities are provided below:

- **Physician/clinician-led, multi-disciplinary purchasing committees make supply chain decisions:** VUMC's supply chain works through four committees (three physician-led committees: surgical, interventional procedural, and laboratory, and one nursing-led committee) that evaluate all purchases of new technology and supplies. These committees are multi-disciplinary, and 80 percent of the committee members are clinical, while the remaining 20 percent are supply chain and other administrative representatives. Requests for a new product are submitted electronically through a third-party tool and reviewed by the appropriate Department Chair, and the administrator who has financial accountability. Once a preliminary sign off is received from both, the supply chain department compiles information about the product and works with the requesting physician or clinician to create a presentation about the product, including relevant effectiveness research, comparative competitive products, and financial, safety, and recall information. The committees also focus on product standardization, negotiating contracts with existing vendors, and reviewing opportunities to reduce the number of vendors and products based on the members' clinical expertise and experience. The committee also handles all appeals. If a physician or clinician wants to appeal a committee decision, they must present new evidence (e.g., new literature) that was not included in the original decision-making process. This approach avoids one-off appeals to Department Chairs or the hospital CEO. Appeals on the basis of simple disagreement with a committee's decision are not considered.
- **Education of committee members about supply chain-related concepts.** Since medical contracting and purchasing is complex and requires a specialized skill set and vocabulary, VUMC's supply chain staff provides education to the clinical committee members about various supply chain core competencies and cost- and industry-related concepts, such as contracting processes and group purchasing organizations. This education, along with the experience gained from working alongside supply chain representatives, has equipped the

clinical committee members with the skills and knowledge necessary to make purchasing decisions.

- **Supply chain systems provide access to provider/patient cost data.** VUMC implemented a point-of-use (POU) system (Omnicell) to manage its supplies and materials. VUMC’s internal information technology team created an interface between the POU system and the hospital’s documentation system to create what is known as a “Cash Register,” which can generate provider/patient cost data. For example, when a surgical case concludes, the surgeon can see in real-time the supply/equipment costs for the case. VUMC can also generate daily and monthly cost reports for physicians using the Cash Register. This system enables VUMC to send physicians via secure email daily line-item details on their costs per case and monthly activity summaries to Department Chairs across service lines.
- **Use of supply chain data to look at costs across episodes of care and reduce practice variation.** As these data systems and processes have matured, VUMC has begun to look at total costs across episodes of care for certain populations, such as total joint replacement patients. This process involves examining not only supplies and products, but also other cost drivers (e.g., variations in length of stay and OR/anesthesia time, prescribing practices, medical-surgical resources). VUMC can then feed this information to physicians at the Diagnosis-Related Group (DRG) or Current Procedural Terminology (CPT) level when appropriate to show variation against peers. Physicians then use this information to guide decisions about both best practice clinical management and supply chain management.

Impact

VUMC’s unique supply chain approach has produced annual cost savings while fostering collaborative relationships between supply chain representatives and physicians and clinicians.

- **Achievement of financial targets.** VUMC has achieved its financial savings target every year since the committee structure has been in place. On average, VUMC has reduced product expenses in various categories by roughly \$10 to \$15 million per year.
- **Creation of a collegial environment.** VUMC cites the creation of collegial relationships between supply chain representatives and physicians and clinicians (which can sometimes be contentious) as another success of this initiative.

Lessons Learned

- **Physicians and clinicians bring a unique and vital perspective to supply chain decisions.** VUMC's experience shows that giving physicians and clinicians a voice in influencing the supply chain management process helps to establish credibility of the program and contributes to an effective approach that balances the business/financial perspective with real-world clinical care delivery. Committee decisions "hold more weight" since physicians and clinicians who are actually delivering care are making these decisions, in contrast to decisions made only by administrators who are more removed from the clinical process.
- **Developing transparency and full disclosure processes are essential.** Since all supply chain decisions funnel through the committees, VUMC has developed processes to ensure transparency and avoid conflicts of interest among committee members. VUMC incorporated a nondisclosure statement on new product request forms, and committee members are required to disclose any relationships that could influence their decision making. If a conflict of interest exists, a committee member abstains from voting.
- **Executive leadership must be willing to empower and support the decision-making process.** Having executive leadership acknowledge and support the decision-making authority of the physicians and clinicians on the committees is critical. If an executive overruled committee decisions in one-off requests or appeals, it would undermine and impugn the entire process. To formalize and document this support, VUMC has hospital leadership sign the committee charters.
- **There is value in making the supply chain a more prominent member of the health care team.** Historically, supply chain activities have focused simply on inventory levels and contracting; however, VUMC's experience shows that having supply chain representatives work in tandem with physicians and clinicians can increase broader awareness of organizational costs and create systems and structures that can reduce these costs.
- **Physicians are generally receptive to using high-quality supply chain data to analyze practice patterns.** As noted, VUMC has developed systems to integrate supply cost information with other data points in an effort to identify variations in practice. In general, physicians have been receptive to reviewing this data as long as it is high quality and credible. It is important to ensure that comparisons are fair and accurate, so VUMC works with physicians to "scrub" the data and remove case outliers that do not reflect typical patients. Once this analysis occurs, physicians are open to reviewing the data and discussing potential practice-related changes to reduce variability and associated costs.

The Innovators

Teresa Dail, RN

Chief Supply Chain Officer
Vanderbilt University Medical Center