

Implementation of a shared-savings program for surgical supplies decreases inventory cost

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Background. Management of operating room inventory has substantial cost-saving opportunities if surgeons agree to standardize supplies used to perform procedures; however, there is no incentive for surgeons to participate in these decisions, because the cost-savings are realized only by the hospital, not the practitioner. In an attempt to engage surgeons with the management of the operating room supply chain, a shared-savings program was instituted that returned 50% of money saved to the surgery divisions.

Methods. Opportunities for savings in the use of biologic mesh, cranial plating systems, and neurostimulators was identified. Each item was assigned a physician champion responsible for ensuring that there was clinical equipoise between the products being used. Any cost-savings realized during the fiscal year were shared 50–50 between the hospital and the surgery divisions.

Results. The total cost-savings was \$893,865 with \$446,932 being shared across 15 surgery divisions. Standardization of cranial plating systems (\$374,805) generated the greatest amounts of savings followed by neurostimulators (\$278,404) and biologic mesh (\$240,655).

Conclusion. Aligning hospital and surgeon incentives led to dramatic cost-savings and standardization of the operative inventory used. Quality of care is not compromised by this approach, and no conflicts of interest are created. (*Surgery* 2015;158:996-1002.)

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TRADITIONALLY, COST-SAVINGS IN MEDICINE have been usually the responsibility of hospital administrators, but physicians are now being asked to be cost-conscious with diagnostic studies as well therapeutic interventions. Although the operating room generates large revenues for hospitals, it is also one of the greatest cost centers. An extensive amount of capital is allocated to ensure that surgeons have the resources needed to provide care to their patients. Traditionally, in the past individual surgeons often have had the freedom to choose their preferred product without consideration of price. This policy, if not monitored well with realistic criteria, can lead to substantial variability in cost per case, because products with very similar function and design can have wide variability in price.¹

Analysis and comparison of cost per case ranked our tertiary care academic medical center in the bottom quartile and led to the formation of a team addressing perioperative value analysis to identify savings opportunities in operating room costs. This disparity in the budget along with poor rankings provided an opportunity for administration and physicians to work together to decrease overall supply expense per case. Often (possibly/usually) in the past in many/perhaps most centers, surgeons have not had any incentive or vested interest in decreasing cost per case, because the money saved was realized by the hospital, and the practitioner received no financial incentives; however, recently in our center, this design changed when clinicians were promised that any savings generated made would be shared 50:50 between the hospital and with their respective surgical departments.

Initial opportunities for cost-savings among each surgical specialty targeted products that would yield greater than \$100,000 savings per year. This process originally identified 3 surgical products that were negatively affecting cost per case. Neurostimulators, cranial plating systems,

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and biologic mesh were 3 high-cost, high-volume items that could lead to substantial savings if surgeons were willing to standardize to one product of equal efficacy. This article describes the success of a shared-savings program that aligned the incentives of both surgeon and hospital administrator to generate savings without compromising quality of care.

METHODS

A perioperative value analysis team was established with physician champions from each department, members from the health systems and hospital administration, perioperative services, nursing, and representatives for outpatient surgery. Extensive research and cost-analysis was performed to ensure clinical equipoise of the products being compared. A score sheet was used to rank each product on the basis of its quality of clinical evidence, clinical benefits, subjective benefits (eg, competitive advantage), staff safety/satisfaction, goals of the supply chain and strategic plan, and financial impact (Fig). The research was then taken back to the surgeons and their departments with information that the products being compared were not inferior to the products that were being used currently. The perioperative value analysis team also conducted a request for proposal to determine the most competitive price point for each item. Price bids were elicited from different companies for neurostimulators, cranial plating systems, and biologic mesh. Negotiations led to a fixed price that was at or below-market share to add to the cost-savings.

In conjunction with surgeon support, the value analysis team was able to secure contractual agreement with companies for each implantable product. Two-year contracts for the respective devices were obtained at a price reduction compared with the previous contract price. By limiting the implantable products and having physician support, a price competition was created among the suppliers. Price savings are reported as annual savings as well as average quarterly savings.

RESULTS

Neurostimulators. The shared-savings program went into effect beginning in October 2012 with the signing of the neurostimulator contract. The duration of the contract was for 2 years with a single company. The annual spend the previous year for neurostimulators was just less than \$5 million per year. It was anticipated that \$337,006 annually (\$84,251 quarterly) could be saved with

implementation of the new contract. Actual savings within the first year was \$278,404 (\$69,601 quarterly average) with the savings being shared across 3 departments (neurosurgery, anesthesia, physical medicine and rehab) (Table I).

Biologic mesh. The biologic mesh contract began in March 2013 and was 2 years in duration with a single company. This contract was structured so that certain particular niche products not manufactured by this company were still able to be obtained by surgeons (ie, specialty mesh used for particular procedures that have no other substitute). Previously, 6 companies supplied biologic mesh to our medical center with a total annual cost of \$2,035,998. The anticipated annual savings with the new contract was \$397,755 (\$99,438 quarterly). Actual savings during the first 3 quarters of the contract was \$240,656 (\$80,219 quarterly) (Table II). This product had the greatest number of departments participating in the shared-savings program with 12 separate divisions participating in the shared-savings program.

Cranial plating systems. The final contract executed under the shared-savings program was the cranial plating system, which began in April 2013. The savings from this contract were realized by only one department, neurosurgery. This department agreed that cranial plating systems were a commodity product and the company that provided the best price should be selected. A 2-year contract was signed with an annual predicted savings per year of \$660,000 (\$165,000 quarterly). Actual savings within the first 3 quarters of the project was \$374,805 (\$124,935 quarterly) (Table III).

Combined savings. The actual cost-savings from all 3 projects equaled \$893,865, which provided \$446,933 to be shared according to use across 14 different divisions within the medical center. Neurological surgery enjoyed the greatest amount of savings due to their being the only department to participate in all 3 projects. In addition, cranial plating systems and neurostimulators accounted for 42% and 31% of the savings, respectively. The standardization of biologic mesh accounted for only 27% of the savings but allowed for the greatest number of divisions to be involved in the shared-savings program.

DISCUSSION

Shared-savings programs are a central tenet of the Affordable Care Act signed into law in 2011. The purpose of the program is to move away from volume-based reimbursement toward more value-

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