Single best practice to prevent DVT reduces hospital costs by more than $1.5 million annually

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A major challenge facing today's health care community is to find ways to lower costs without compromising clinical quality. Taking that challenge to task, researchers at Medstar Health and Georgetown University School of Medicine, Washington DC, report success in using a concept called "value-based analysis," which simultaneously measures quality and cost and addresses inefficiencies in care. The researchers applied a value-based analysis approach to implementing a single best practice for preventing deep vein thrombosis (DVT) in surgical patients and were able to reduce hospital costs in excess of $1.5 million per year. The study appears in the April issue of the *Journal of the American College of Surgeons*.

"We've all been looking at how to deal with escalating costs in health care and since about 85 percent of the decisions regarding costs in health care are physician driven, you must impact physician decision making if you are going to impact value in health care," said lead study author John R. Kirkpatrick, MD, MBA, FACS, professor of surgery, Georgetown University School of Medicine and director of The Surgical Advisory Group. "Our goal was to create the appropriate methodology to improve value, which is really what the [Patient Protection and] Affordable Care Act of 2012 is all about: how to improve value and outcome without compromising level of care."

Each year, as many as two million Americans develop DVT, a condition

that occurs when the blood in a person's veins pools—usually in the calf or thigh—and forms a clot. The Centers for Disease Control and Prevention estimates that at least 300,000 of those people die from a pulmonary embolism, a complication that occurs when a clot breaks loose and travels to an artery in the lungs.* Importantly, surgical patients are at even greater risk for these lethal blood clots.

For the study, investigators tested whether value-based analysis—which uses clinical best practices as a surrogate of quality—could serve as a useful tool to determine the cost and quality of the perioperative clinical initiative DVT prophylaxis. The researchers determined the usual practice within the eight hospitals that comprise MedStar Health, a Baltimore-Washington, DC-based health care system, and then developed a clinical best practice based upon a meta-analysis of the medical literature.

The best practice they adopted for this clinical initiative consisted of limiting the use of sequential compression devices (stockings used to prevent blood from pooling in the calf area of the lower leg) to outpatient and short-stay procedures, and changing the protocol for pharmacological management for DVT prophylaxis by using an unfractionated heparin rather than a low-molecular-weight heparin, which is more expensive. "At one time, there seemed to be a therapeutic advantage to using a low-molecular-weight heparin. Studies now indicate that there is no advantage in using low-molecular-weight heparin for prophylaxis," Dr. Kirkpatrick explained.

The researchers converted four hospitals within MedStar Health to the best practice and analyzed the change in cost in going from usual practice to best practice. The analysis revealed an estimated overall system-wide savings opportunity of $4 million after implementing this single best practice. In addition, the study found that influencing the choice of supplies and materials by physicians (16 percent of total

expenditures) was the most effective way to decrease cost and increase value for the system.

Dr. Kirkpatrick explained that best practices are always evolving, and what was a best practice 10 years ago may not be the case today. Therefore, a major challenge for physicians is to stay current. Value-based analysis addresses this issue by exposing the differences in the use of best practices rather than usual practices; revealing how practices are being carried out (whether or not outdated ones are being used); and identifying when providers are not following best practices.

"Most people think best practices are very static, but they are not, they are very dynamic," Dr. Kirkpatrick said. "A physician is doing what his memory is telling him is the right thing to do, however, this [course of action] may no longer be the right thing. To avoid this dilemma you need to have a mechanism within hospitals to always upgrade or modify your usual practice, recognizing that while it reflected a best practice at one time, that is no longer the case."

What makes this approach different is that it compares best practice and usual practice, and analyzes cost at the same time. "I think this is the model that is going to be adopted around the country," Dr. Kirkpatrick said. "Whether it is the boardroom or the bedside, fundamentally all physicians are going to have to take the lead in terms of decision making, and we think best practices, as long as they are evidence-based, are going to drive protocol development and processes at every level and at every institution in the country."

There are 27 other initiatives that Dr. Kirkpatrick and his colleagues have identified as having cost-saving potential. Some of the next areas the researchers will tackle include decision making within the intensive care unit, evaluating clinical decisions about ventilator management, and determining how to develop best practices for managing end-of-life

decisions. "The impact on value by enhancing quality and reducing cost is enormous," Dr. Kirkpatrick said.

More information: *Beckman MG, Hooper WC, Critchley SE, et al. "Venous thromboembolism: a public health concern." Am J Prev Med. 2010 Apr:38(4 Suppl):S495-501.

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