New commentary paper highlights costs of defects in surgical care and calls for elimination of defects in value

November 3 2021

Credit: Pixabay/CC0 Public Domain

A commentary, published in the Nov. 3 issue of the journal *NEJM Catalyst Innovations in Care Delivery*, highlights how defects in surgical

care could be diminished or eliminated for the benefit of patients and to lower costs in American health care spending.

"While prior reports have commented on individual defects in surgical care, we believe that the current article is the first to summarize the opportunity to reduce defects in surgical care," said author David W. Dietz, MD, Chief, Division of Colorectal Surgery, and Vice President of System Surgery Quality, University Hospitals Cleveland Medical Center.

Using colorectal surgery to provide examples and national estimates of the costs of defects in surgical care, the paper summarizes a holistic approach to eliminating defects in surgical care and offers a framework for centers of excellence for removing them.

"Defects in health care are common and can be defined as behaviors, based on known evidence, that needlessly reduce the quality of care and patient experience or add to the annual total costs of care," said Dr. Dietz.

"We are now entering a new era in medicine and surgery in which the focus will be elevated from the quality of care to its value," he said. "High-value health care is achieved when excellent outcomes, including patient experience, are achieved at reasonable costs. As surgery accounts for nearly half of all Medicare spending, surgeons will have a critical role in this journey."

Co-author Peter Pronovost, MD, estimates the U.S. health care system spends $1.4 trillion annually—one-third of health care costs—on defects. At his own institution, University Hospitals in Cleveland, where he is the Chief Clinical Transformation Officer, he found that focused efforts to reveal and reduce defects improved quality and reduced Medicare costs by 9 percent. Dr. Pronovost is also Professor, Schools of Medicine, Nursing, and Management, Case Western Reserve University.

In their new paper, Drs. Dietz and Pronovost estimate that defects in colorectal surgery cost the American health care system more than $12 billion. The authors discuss eight areas (or domains) of defects that waste money and/or contribute to lower value in care for colorectal surgery patients.

They are:

- Difficulty in accessing care, where patients may find navigating health systems difficult and unable to find information about the quality of surgeons or hospitals. "While this defect may or may not drive up costs, it results in low-value care by compromising patient experience and quality of life. For example, patients with rectal cancer who are treated by a non-specialist surgeon are much more likely to end up with a permanent colostomy," said Dr. Pronovost.

- Difficulty supporting shared decision-making—Under the current fee-for-service system in the U.S. health system, surgeons have pressure to see more patients, making it difficult for them to spend adequate time answering questions and discussing treatment alternatives. While researchers have developed patient decision aids for diseases such as ulcerative colitis and colorectal cancer, these aids are rarely used in clinical practice. This situation leads to less-satisfactory outcomes.

- Inappropriate care—One study estimates that 10 percent to 20 percent of all wasteful spending in U.S. health care is for overtreatment, overuse, and unnecessary care, accounting for $70 billion to $200 billion annually. For virtually every procedure studied, 30 percent are unnecessary if clinicians use rigorous appropriateness criteria. These services land squarely in the realm of no-value care because the patient cannot gain clinical

benefits.

- Low-value site of care—Many surgical procedures are performed at expensive inpatient facilities when they could be performed at an ambulatory center for 50 percent less.

- Care at low-volume hospitals by low-volume surgeons—Outcomes of many major surgical procedures are strongly correlated with the annual volume performed at the hospital and by the surgeon. Yet many patients continue to be treated by low-volume hospitals and providers, even when a high-volume option is less than 30 miles away. When treated by low-volume providers, patients with rectal cancer are more likely to undergo abdominoperineal resection, to end up with a permanent colostomy, and to have worse survival.

- Care with avoidable complications—Colorectal surgery procedures are associated with some of the highest rates of postoperative complications across the country. A recent study showed that 70 percent of patients have at least one complication, with an associated cost increase of nearly 40 percent. The most serious complication of colorectal surgery—anastomotic leak—increases the cost of hospitalization by $8,000. A reduction in the rate of anastomotic leak from 15 percent to 10 percent nationally would save $20.4 million annually. If 75 percent of anastomotic leaks could be avoided after colorectal surgery, $32.1 million in health care costs could be saved annually in U.S.

- Avoidable post-acute care—Discharge to post-acute care is a common practice for patients undergoing any major surgery. Reasons for post-acute care include advanced age, poor functional status, and preventable postoperative complications.

One study showed significant variability between hospitals in terms of post-acute care spending for patients managed with colectomy.

- Preventable readmissions—Readmissions after surgery represent potentially low-quality care and increased costs to the health system. Yet readmissions are also indicative of the patient's health: Either it is deteriorating or the patient gained no clinical benefit from the procedure. Such circumstances represent no-value care scenarios. Approximately 14 percent of patients who have undergone colorectal surgery are readmitted after being discharged. Commons reasons for readmission include surgical site infections, small bowel obstruction, and dehydration in patients undergoing ileostomy. One study examined readmissions after colorectal surgery from 2013 to 2016 and showed that 40 percent were preventable. The median cost per stay was $8,885 (based on 2002–2008 data); thus, $300 million in cost-savings could be achieved per year by preventing unnecessary readmissions.

"Given the abundance of opportunities presented, a 'whack-a-mole' approach to address them individually seems inefficient and overwhelming," said Dr. Pronovost. "However, a holistic approach through the creation of Centers of Excellence (COEs), if well designed and well executed, can address all of these defects."

Dr. Pronovost said, "COEs are a systematic attempt to design surgical care to eliminate all or most of these defects. In COEs, we provide frictionless access; we provide patient navigation; we use explicit appropriateness criteria to ensure patients will benefit from the procedure; we ensure the procedure is done at the highest value site of service by a surgeon and at a hospital that has high volume; we use standard protocols, yet personalize when needed to eliminate preventable

harm; we ensure patients go home rather than to a post-acute facility when possible. As a result; quality and experience increase and cost decrease." University Hospitals has created COEs, for example, for joint replacement surgery, spine surgery, and atrial fibrillation ablation and is creating one for colorectal surgery.

"If we are to finally improve the value of surgical care in the U.S., we need to ensure that surgeons are engaged in the process and that principles for quality improvement are also applied to identify and eliminate all defects in value in surgical care," he said.

Other authors of the paper are William V. Padula, Ph.D., MS, Assistant Professor, Department of Pharmaceutical & Health Economics, School of Pharmacy; Fellow, Leonard D. Schaeffer Center for Health Policy & Economics, University of Southern California, Los Angeles; and Hanke Zheng, MS, Graduate Research Assistant, Department of Pharmaceutical & Health Economics, School of Pharmacy, University of Southern California, Los Angeles.

More information: David W. Dietz et al, Costs of Defects in Surgical Care: A Call to Eliminate Defects in Value, *NEJM Catalyst Innovations in Care Delivery* (2021). DOI: 10.1056/CAT.21.0305

Provided by University Hospitals Cleveland Medical Center