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Redesigning Surgical Decision Making for High-Risk Patients

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An 80-year-old nursing home resident has a colon mass and has been scheduled for a colectomy. Has he been told that 30% of elderly nursing home patients who undergo colectomy die within 3 months after the surgery and that 40% of the survivors have a significant decline in functional status, or that 12 months after surgery, half the patients have died and half the survivors have a sustained functional decline?¹

One third of elderly Americans undergo surgery during the last 12 months of their lives, most of them within the last month.² Yet three quarters of seriously ill patients say they would not choose life-sustaining treatment if they knew the outcome would be survival with severe cognitive or functional impairment.³ How many of these patients and their caregivers are offered less invasive options? How should such patients be counseled about the risks of complications and functional impairment after major surgery? And who should help them weigh the risks against the potential benefits of surgery?

The process by which surgical decisions are made has remained largely unchanged since William Halsted's time. Typically, decisions are made after a discussion between a surgeon and the patient and perhaps the patient's spouse, partner, child, or caregiver. Other physicians — cardiologists, pulmonologists — are sometimes called in to provide clearance to pursue a planned procedure or for assistance after a complication occurs. This approach is deeply ingrained in surgical culture. Creating a trusting relationship with each patient is a key responsibility that society vests in surgeons and that surgeons consider central to their work.

Yet this approach may be suboptimal for many high-risk elderly patients facing decisions about major surgery. Patients may not always be presented with all treatment options, including watchful waiting, medical treatment, less invasive surgical options, or percutaneous approaches. Patient-centered care means that patients make health care decisions in partnership with their physicians and that these decisions are driven by the patients' values and preferences. For some patients, quality of life and autonomy may be much more important than quantity of life. A surgeon meeting a patient for the first time may not know that person's life circumstances well enough to fully understand his or her

values and preferences. And as trained interventionists, surgeons may be biased toward aggressive treatment approaches. Although efficient, the traditional approach may be more physician-centered than patient-centered and may not always be respectful of a patient's wishes and goals.

Shared decision making in surgical care requires a culture shift. It means that patients are given the choice among treatment approaches (including no treatment), along with the information they need to understand the potential benefits of each option, the likelihood of a good outcome, and the risk of complications. For patients at high risk for adverse events after surgery, or in cases in which the balance of risks and benefits may be equivocal, the traditional surgery model may fall far short of the ideal. Evidence-based clinical decision making may require input from a multidisciplinary group of experts, as opposed to a "consensus of one."

Evaluating treatment options, formulating recommendations, and articulating the benefits and risks to patients comprehensibly require more than a well-informed or experienced surgeon. Meeting these needs may require teamwork among physicians, nurses, and nonclinicians, including physical therapists and social workers. For patients with dementia who cannot advocate for themselves, input from a multidisciplinary group may be especially helpful for achieving balanced decision making with appointed decision makers. Ideally, such a team should include the primary care physician, who may be best able to incorporate information about the patient's needs and real-life circumstances into treatment planning. Currently, such teamwork typically occurs on an ad hoc basis, if at all. In the future, multidisciplinary teams could meet regularly to present and discuss high-risk cases. By limiting the focus of such efforts to high-risk patients or to those with complex conditions who stand to benefit most from this new approach, health care organizations could minimize the costs involved. A multidisciplinary team could collaboratively create a treatment plan that balances the advantages and disadvantages of surgical and nonsurgical approaches to disease management and is anchored in the patient's values and goals.

Achieving the best outcomes in the sickest and most frail patients "takes a village." It's difficult to create such a team through an ad hoc enterprise that begins the day of an operation and continues piecemeal from the early postoperative period until hospital discharge. Ideally, the team would have experience working together to coordinate preoperative assessment, intraoperative care, rehabilitation, and recovery. In the future, care for patients undergoing surgery may be managed in surgical homes that are analogous to the medical homes now envisioned for all patients. Before a high-risk patient entered the surgical home for treatment, an overall management plan would be discussed by a multidisciplinary team, similar to the tumor board review that is now routine in oncology. If the decision were made to proceed with surgery, the team could help to coordinate preoperative assessment and "optimization" — the latter through "prehabilitation," including preoperative exercise training, respiratory-muscle training, balance exercises, and even walking programs, which may benefit many patients with baseline functional impairment who are at increased risk for poor postoperative outcomes such as respiratory compromise, falls, and delirium. Multidisciplinary teams, with input from rehabilitation medicine specialists (physicians, physical therapists, and occupational therapists), might also

help facilitate transitions to safe home environments by identifying and correcting unsafe living conditions (e.g., poor lighting, tripping hazards, and lack of emergency response systems).

If teamwork and care coordination could be built into the DNA of the surgical multidisciplinary team, high-risk patients might be more likely to receive high-quality care and less likely to have complications or require rehospitalization. By providing a platform for multidisciplinary discussions, such teams might increase the likelihood that patients would be offered the most appropriate treatment approaches to choose from. They could help overcome communication barriers among surgeons, medical specialists, and anesthesiologists that can cause breakdowns in care and lead to medical errors. They might also reduce unnecessary variation in health care by increasing decision-making transparency. With decisions becoming less likely to be dominated by a single physician, clinicians would be more accountable to each other and their patients. Finally, a multidisciplinary team could break down some professional barriers among clinicians, nurses, and nonclinicians and facilitate collaboration across the full spectrum of care.

Such a change would require a major transformation in the culture of surgical decision making. Beyond requiring surgeons to be open to new voices, it would also require a commitment by all team members to share accountability for outcomes of surgical or nonsurgical care. This transformation would demand a new kind of trust — not only between patients and physicians but also among physicians with various disciplinary perspectives and cultures of practice. It would require a rethinking of professional roles and domains of practice and an openness to questioning customs that assign ownership of particular decisions to specific practitioners.

There are many barriers to implementing such teams. Buy-in from busy clinicians may require a formal reimbursement mechanism, a difficult sell in the current environment of cost containment. Clinicians may question the value of this approach, arguing that surgical multidisciplinary teams are resource-intensive, have unproven value, and might erode professional independence; even in oncology, where multidisciplinary teams are widely accepted, the evidence supporting their effectiveness is limited. But with data showing that 1 of every 150 hospitalized patients dies from a complication, 40% of complications occur in surgical patients,⁴ and half of surgical complications are preventable,⁵ we need to try something radically new. Striving to make surgical decision making more patient-centered and accountable through team-based approaches seems like a good place to start.

References

1. Finlayson E, Zhao S, Boscardin WJ, Fries BE, Landefeld CS, Dudley RA. Functional status after colon cancer surgery in elderly nursing home residents. *J Am Geriatr Soc*. 2012; 60:967–73. [PubMed: 22428583]
2. Kwok AC, Semel ME, Lipsitz SR, et al. The intensity and variation of surgical care at the end of life: a retrospective cohort study. *Lancet*. 2011; 378:1408–13. [PubMed: 21982520]
3. Fried TR, Bradley EH, Towle VR, Allore H. Understanding the treatment preferences of seriously ill patients. *N Engl J Med*. 2002; 346:1061–6. [PubMed: 11932474]

4. de Vries EN, Ramrattan MA, Smorenburg SM, Gouma DJ, Boermeester MA. The incidence and nature of in-hospital adverse events: a systematic review. *Qual Saf Health Care*. 2008; 17:216–23. [PubMed: 18519629]
5. Gawande AA, Thomas EJ, Zinner MJ, Brennan TA. The incidence and nature of surgical adverse events in Colorado and Utah in 1992. *Surgery*. 1999; 126:66–75. [PubMed: 10418594]