5 Points on
Value in Orthopedic Surgery

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Over the past few years, there have been major changes in the healthcare climate at local, regional, and national levels. Rising healthcare costs, an aging population, and exponential growth in new and expensive technologies have drawn the interest of providers, policy makers, insurance companies, and hospital administrators. Pressures to cut costs and maintain excellence in healthcare are constant and can be burdensome for orthopedic surgeons.

Compared with other medical fields, orthopedic surgery has attracted much attention, because of the high incidence of musculoskeletal disease, the increasing costs of orthopedic implants, and the relative paucity of high-quality evidence.[1,2] Although evidence-based practice in orthopedic surgery has become more commonplace, and the level of evidence and quality of orthopedic publications have improved over time,[3-5] improvements have been slow, and the current trajectory is unsustainable given the increasing costs of care.

Healthcare costs exceed 17% of the national gross domestic product (GDP) and are expected to rise to 20% of the GDP by 2020.[6] In 2009, $2.5 trillion was spent on healthcare in the United States; this spending is projected to exceed $4.6 trillion by 2020. Per capita healthcare spending was $8000 in 2009 and is estimated to increase almost 70%, to $13,700, by 2020.

The relative contribution of musculoskeletal disease to these costs is alarming. In 2004, the estimated total cost of managing musculoskeletal conditions was $849 billion, or 7.7% of the GDP. Direct costs accounted for $510 billion of the total, or 4.6% of the GDP, and indirect costs accounted for the rest.[7] In 2005, more than 107 million US adults (1 in 2) reported having a musculoskeletal condition for more than 3 months, and almost 7% of US adults reported that a musculoskeletal condition made routine activities of daily living significantly difficult.[7]

Given the combination of increasing costs, an aging population, and the high incidence of musculoskeletal disease, orthopedic surgeons will face many challenges in the coming decade. Reimbursements will continue to decrease, patient volume will increase, and surgeons will find themselves under pressure to provide cost-conscious, effective care. We believe that applying the principles of value-based care in orthopedic surgery will lay the framework for necessary improvements in care and will significantly benefit both patients and the healthcare system through improved outcomes and reduced costs.

1 What Is Value-Based Care?

Traditional definitions of *value* focus mainly on cost reduction or increasing the amount gained per a given dollar spent. The Agency for Healthcare Research and Quality (Rockville, Maryland)[8] defined value from a systems perspective, in which increasing value involves "reducing unnecessary costs (waste) and increasing efficiency, while maintaining or improving healthcare quality."

The idea of value-based care, as championed by Porter and Teisberg[9] in their 2006 book, shifts the primary focus away from the healthcare system and toward the healthcare "consumer," the patient. Value is defined as patient health outcomes achieved per dollars of cost expended over a given care cycle. Attention is directed toward providing "good outcomes that are achieved efficiently … not the false 'savings' from cost shifting and restricted services."[10]

The current healthcare system, Porter and Teisberg[9] argued, is fraught with misaligned incentives and unhealthy *zero-sum competition*, in which value gained by one entity is earned at the expense of another. In healthcare, zero-sum competition equates to competition to shift costs, competition to increase bargaining power, competition to capture patients, and competition to reduce costs by service restriction.[9] Each major player in the healthcare chain gains by increasing its share of the healthcare pie while shrinking the other players' shares. Insurance companies gain by limiting services and reducing payments. Physicians gain by increasing patient load, decreasing time spent with each patient,

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and increasing services rendered. Hospitals gain by banding together to increase collective bargaining power and by increasing use of certain profitable facilities.

Porter and Teisberg,[11] experts on competitive strategy, argued that an ideal healthcare system should integrate into its foundation healthy, *positive-sum competition*, in which collective value is increased by overall improvement in outcomes. Healthcare, they explained, should be modeled on other successful business fields, such as telecommunications, computers, and aerospace. In these fields, participants do not gain by shifting costs and limiting goods or services. Rather, both firms and consumers are rewarded with innovation, improved outcomes, and decreased costs. Firms that provide innovation, high quality, and value obtain larger market shares, and consumers obtain superior quality and decreased prices.

With the patient as the healthcare "consumer," positive-sum competition rewards improvements in outcomes and decreases costs by shifting the healthcare "market" toward those physicians, hospitals, and plans that provide patients with value—that is, improved outcomes at decreased costs. For those who feel that competition in healthcare may be destructive, one may recontextualize the idea of competition in terms of value toward patients, not toward the healthcare system. The primary focus of healthcare competition would be value for patients. Direct benefits include increased technological innovation, improved outcomes, and decreased costs of care, all of which collectively benefit patients' health and well-being.[9]

Other critical elements of value-based care, as explained by Porter and Teisberg,[9,11] are measuring and reporting results on a large scale, reorganizing healthcare delivery, and focusing payment systems on medical conditions and broader care cycles. *Results* are defined as the "set of risk-adjusted outcomes of care for each medical condition, together with the costs of achieving these outcomes."[11] Broad outcomes reporting would increase competition to improve results, and ideally would be risk-adjusted to account for variations in a treated population. Reorganizing healthcare delivery and payment around medical conditions and care cycles would provide more patient-centric care and less fragmented care than that provided by the current healthcare system.

2 Why Is Value-Based Care Important to Orthopedic Surgeons?

Porter and Teisberg[11,12] asserted that the initial steps toward adopting a value-based system do not necessarily have to arise from government policy or on a national level. Rather, physicians as a group are capable of instituting substantial changes, enough to shift healthcare as a whole toward a value-based delivery system. In orthopedics, the fundamentals of value-based care can be applied with local methods, through outcomes reporting, collaboration and care integration, and practice restructuring.

Adopting a value-based care model shifts the primary focus from pure cost reduction or quality-metrics improvement toward simultaneous improved patient outcomes and decreased costs. Patients directly benefit from improved outcomes, which we can agree are a primary goal of patient care, and lower costs of services.

The positive windfall to physicians who adopt this system is substantial. Orthopedic surgeons who maximize value for patients are simultaneously rewarded by increased patient volume, increased patient satisfaction, and increased market share. Early adopters of the system are further rewarded by becoming leaders in the value-care delivery chain, establishing positive reputations as well as strategic alliances with healthcare plans and hospitals. Early adopters also set the standards that others follow.

Orthopedic surgeons have a large role in managing musculoskeletal conditions, which in the US are exceedingly more prevalent than many other health conditions. As orthopedic surgeons adopt the principles of value-based care, these principles become more influential and necessary commodities within the musculoskeletal healthcare delivery process. By reporting outcomes and adopting value-based practices, orthopedic surgeons can help shape the field through innovation, waste reduction, and, most important, improved patient outcomes. In doing so, they collectively define their own outcome measures and goals of care and thereby avoid having these dictated to them by governmental agencies that lack an intimate familiarity with the field.

3 The Importance of Measuring Outcomes

One of the most fundamental actions that surgeons can perform when beginning to practice value-based care is to measure and report robust outcomes data. These data can help surgeons to support their role within the overall care team and to promote best practices on a broader level. In addition, analyzing and reporting costs can help provide context for given outcomes.

Within the context of value-based care, outcomes are generally not defined by a single time point or outcomes measure and do not include measurements of adherence to process measures. Rather, true outcomes measurement is performed on a large scale and over an entire cycle of care.[13] For instance, although it is helpful to know satisfaction rates 1 year after total knee arthroplasty, it is far more useful to have multi-tiered information on large sets of patients throughout all time points after surgery, long-term survival rates, short- and long-term health status, complications, revision rates, satisfaction, maintenance of pain-free symptoms, functional scores, and so forth. This information should be coupled with large-scale cost data, for example, costs for implants, hospitalization, postoperative physical therapy, and nursing facilities. These are not truly novel ideas, and elective registries documenting comprehensive, longitudinal outcomes and costs have been proposed for total joint arthroplasty in the US.[14] Some larger insurance

providers have already implemented these ideas in specific regions and have substantially improved value for their patients.[15]

Granted, such efforts are neither simple nor cheap. Outcomes measurement is expensive and time-consuming and must be adjusted for risk and comorbidities. Variation caused by confounding factors that cannot be controlled is almost a certainty. In addition, in the US, most orthopedic care is not practiced in tertiary-care academic medical centers with a variety of support staff members who can facilitate rigorous outcomes measurement. Such measurement can be and is burdensome for independently practicing physicians.

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Notwithstanding these constraints, it is only through rigorous outcomes measurement that surgeons can remain autonomous in their practices and provide compelling evidence to payers about the value of their work. Accomplishing this requires that outcomes be measured at all levels and across surgeons throughout a variety of practice locations and settings. Surgeons can now use large databases to measure outcomes cheaply, effectively, and with minimal effort. Within orthopedics and other fields exist many examples in which community orthopedists have teamed up to measure and report outcomes and thereby improve delivery of care.[9]

Despite fears that transparency in outcome reporting and mismatches in results between providers will lead to punishment and revocation of privileges, universal outcomes reporting has the potential to establish best practices, weed out unnecessary procedures, as well as decrease costs and unnecessary waste within the medical system. Not only will outcomes reporting help solidify the role of the orthopedic surgeon within the larger care team, but patients will also substantially benefit from improved outcomes and increased efficiency.

4 Restructuring Musculoskeletal Care

Most orthopedic surgeons in practice provide individualized services with multiple independent payment structures and reimbursement methods. Practitioners are rewarded for providing more care to more patients, not necessarily for increasing value by optimizing outcomes and reducing costs. Variations in standards of care and payment are enormous. For instance, with some of the most common orthopedic procedures (hip replacement, spine surgery), Medicare payments vary substantially, even after controlling for geography and illness severity.[16] The range of costs and payments in this study was largely attributed to variations in surgeons' practice styles.

Given such data, many healthcare economists and politicians think the only way to eliminate unchecked variation is to change payment incentives and institute a more radical approach, such as bundling payments for various diagnoses. In orthopedic surgery, however, use of various payment incentives has not been well studied or reported, and so far no single form of financial incentive has had great success.[17] Much of what is likely to be implemented in the future has been prompted by the need for drastic cost reduction and has not been studied.

According to Lansky and colleagues,[17] there are prerequisites for success in any broad adoption of new and innovative payment models. Not surprisingly, these prerequisites include a reliable and complete data infrastructure, improved collaboration, and a change in patient expectations, with the new expectation being to actively seek value in care. We have already described data (outcomes) reporting. The change in patient expectations will come, we believe, with transparency in outcomes reporting. As clinicians begin reporting outcomes and costs, patients will become more informed in their decision-making. They will be able to directly measure outcomes and costs, and they will identify successful providers from whom to seek care. Again, providers who outperform will be rewarded, and underperforming providers will alter practices to improve patient care.

Musculoskeletal care, in addition, needs to be restructured to promote cross-specialty collaboration based on chronic medical conditions. Currently, patients may receive highly fragmented care for particular conditions at multiple places across a given geographic region, and all caregivers are reimbursed separately. Proponents of value-based care look toward integrated practice units (IPUs) as centers of care delivery designed around patients' needs, where all care for a given condition could be provided in a multispecialty center.[9,11] In an IPU model for musculoskeletal care, patients could seek care at spine centers, foot and ankle centers, or rheumatic disease centers, and these centers would be staffed with many specialty care providers, from orthopedic surgeons to physiatrists, rheumatologists, therapists, social workers, radiologists, specialty nurses, access personnel, and others. Care would be patient-centric and would cross-traditional departmental lines.

This model would not dissolve orthopedic surgery departments but would foster collaborative care between departments. With collaborative care would come increased experience and volume and, ultimately, subspecialization into areas of true expertise for orthopedic surgeons. Surgeons would be able to gravitate to areas of "true excellence,"[11,13]

thereby maximizing value. Increased levels of condition-specific volume would substantially improve patient outcomes.[18]

In addition, whether orthopedic surgeons agree with the principle or not, the bundling of payments across care episodes is becoming more commonplace throughout the US. Under the IPU model, surgeons who provide superior value are rewarded through increased percentages of bundled payments. Bundled payments have become widely successful and profitable for physicians in other disciplines involving complicated medical and surgical diseases, and the situation would likely be no different in orthopedics.[19]

5 The Future of Patient-Focused Care

Increasing value for patients is an idea that most providers, government officials, hospitals, and healthcare plans can agree on. Focusing our efforts around a value-based platform will necessitate care delivery to be reorganized around the patient and must include interdepartmental collaboration, IPUs, and robust outcomes and cost reporting. Investment, innovation, and advances in information technology should be rewarded as valuable, and facilitating improvements through positive-sum competition will prove beneficial for all parties. As they begin to report outcomes and track costs, practicing orthopedic surgeons can provide themselves with a solid foundation for value-based care.

These ideas explained in this article are not rhetoric. Rather, in medicine and surgery, including orthopedic surgery, there are multiple examples of IPUs collecting and reporting robust outcomes data, collaborating across multiple specialties, providing excellent care, reporting high physician satisfaction, and, overall, providing value to patients.[9,20-25] Using and expanding on these models will allow us to provide patients with the best quality care possible, to restructure the modern healthcare framework to a more functional system, and to help decrease the financial burden of healthcare in our troubled economy.

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