Value-based Healthcare

Value-based Healthcare: The Challenge of Identifying and Addressing Low-value Interventions

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The US healthcare system is the most expensive in the world on a per capita basis [24], while producing health outcomes that in many cases are in the lower 50% among Organization for Economic Cooperation and Development nations [19]. High administrative burden, misaligned financial incentives, limited

transparency of costs and outcomes, and the concept of “defensive medicine” are some of the cost drivers that explain this discrepancy. Other factors, such as access issues and poor coordination of care have been blamed for poorer outcomes. Under our definition of “value”—patient-centered outcomes achieved per health care dollar spent—it is clear that there is considerable room to improve the value of US healthcare. For physicians and surgeons alike, doing so can seem like a daunting task, with many of the factors contributing to the unfavorable cost-to-outcome relationship perceived to be outside of an individual provider’s control.

Limiting the use of low-value interventions is one substantial

contributor to value that is directly within the control of clinicians. These interventions, and the additional downstream unnecessary care they can generate, represent approximately 20% to 30% of the healthcare costs wasted on unnecessary care [9]. But what constitutes a low-value intervention [7]? Should such interventions be defined by when the potential for harm exceeds the benefits [16]? When the intervention is not clinically effective and/or are not supported by current evidence [14]? Or when avoiding the procedure results in increased efficiency of care [8].

In her essay in the *New England Journal of Medicine*, Carrie Colla PhD [6] suggests that the identification of low-value interventions can be informed by a framework that includes net benefit, uncertainty of expected benefit, and cost. These characteristics should be considered in the context of available alternatives, including no treatment. Through this process, it is important to recognize that the principles of value-based healthcare require that benefits be assessed from the patient’s perspective [20]. Given these factors, the assessment of what

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Value-based Healthcare

constitutes a low-value intervention must be made using a collaborative and inclusive approach among physicians, while taking into account outcomes that are important to patients, variation in preferences between patients, alternative options for addressing patients' health needs, and costs not only from a per capita basis, but also overall health system perspective. Ultimately, while some interventions may be of universally low-value, others may have a markedly different value profile across different patient groups or care delivery environments.

Several low-value interventions have been identified that are of particular relevance to orthopaedic surgeons. As part of the American Board of Internal Medicine's Choosing Wisely® campaign, the American Academy of Orthopaedic Surgeons recommended avoiding the following five low-value interventions: (1) splinting after carpal tunnel release, (2) lateral wedge insoles for medial knee osteoarthritis, (3) glucosamine and chondroitin for osteoarthritis of the knee, (4) needle lavage for knee osteoarthritis, and (5) routine deep vein ultrasonography following hip and knee replacement [1].

We could identify other consistently low-value interventions performed by orthopaedic surgeons including intra-articular viscosupplementation [4, 17,

22] and arthroscopic knee surgery in older patients with degenerative meniscal tears [25]. Additional orthopaedic interventions such as lumbar decompression and fusion are potentially high-value for selected indications, but are also being used in an attempt to treat conditions where they provide low-value, such as low back pain [12]. While less-commonly recommended by surgeons themselves, further low-value interventions such as imaging [3] for acute uncomplicated back pain and MRI of large joints with known degenerative disease [21], are frequently provided to patients who ultimately seek orthopaedic care.

Despite increased emphasis on evidence-based medicine in both training and practice, and growing awareness of the need for good stewardship of healthcare resources, the use of these low-value orthopaedic interventions continues. Spending on viscosupplementation continues to grow [15, 23], the rate of knee arthroscopy in patients with osteoarthritis has remained stable in the Veterans Administration system [2], and complex spinal fusion rates among patients with Medicare have increased markedly [11].

Even when compelling evidence is available, low-value interventions are continually being used. Although the Choosing Wisely® campaign strives to influence demand for low-value interventions through patient education, we

must recognize that patients have a high degree of trust in their physician to make appropriate patient-centered recommendations [5], and many fear being branded as "difficult" if they try to engage in shared decision-making around their care [13]. Consequently, it is incumbent on us as surgeons to provide high-value care and let go of low-value interventions, thereby reducing their supply. Doing so, however, requires addressing training and incentive structure [18] and measurement barriers. Fortunately, approaches already exist to address these, including a range of clinical decision support strategies; education programs and feedback tools to address training barriers; alternative compensation structures such as risk sharing and pay for performance to address misaligned incentives; and increasing numbers of measures of value of care [7, 10].

As concern continues to swirl around the sustainability of US healthcare expenditures, there will be a greater emphasis on maximizing the value of orthopaedic and musculoskeletal care. Perhaps then the most important question is who will lead these changes toward higher-value care? Given the clinical nuance involved in defining value from the patient's perspective, the high degree of trust that surgeons are afforded by patients, and the familiarity that they have with the entire spectrum of

Value-based Healthcare

musculoskeletal care, orthopaedic surgeons are particularly well positioned to lead this change. The alternative would likely require further payer-driven, cost-containment efforts including increased restrictions on access to care, preauthorization and network provider limitations, and increased patient cost-sharing—all manifesting at a time of rising copays and deductibles.

While focusing on higher-value care does mean modifying clinical practice patterns, it also offers the prospect of delivering the best possible care for patients while also being personally, professionally, and financially rewarding.

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Value-based Healthcare

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