Executive Summary

Value-based Purchasing and Technology Assessment in Orthopaedics

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Abstract As US healthcare expenditures continue to rise, reform has shifted from spending controls to value-based purchasing. This paradigm shift is a drastic change on how health care is delivered and reimbursed. For the shift to work, policymakers and physicians must restructure the present system by using initiatives such as process reengineering, insurance and payment reforms, physician reeducation, data and quality measurements, and technology assessments. Value, as defined in economic terms, will be a critical concept in modern healthcare reform. We summarize the conclusions of this ABJS Carl T. Brighton Workshop on healthcare reform.

Introduction

Health care is consuming an ever-increasing percentage of the US Gross Domestic Product and is considered a major contributing factor to our present recession. More

disturbing is that as the cost of health care continually increases [4], our society's health, as measured by various health-related outcome indices, is actually lower than other industrialized nations' health. For instance, we have one of the highest infant mortality rates, one of the shortest life expectancies, and the greatest population percentage with a high body mass index [11]. Thus, we are paying a high cost for a poor outcome. In economic terms, the value of our current healthcare system is low, which means we pay a premium cost for a low return or yield. There are numerous reasons for how and why our present system evolved this way. One of the primary problems is our reimbursement model rewards patient and procedure volume over high-quality, efficient care. There is an overemphasis on expensive new technology and new (and often expensive) treatments with little data supporting improvement. Although there have been small strides attempting to reverse these issues (eg, DRG payment, HMO groups, pay-for-performance), none of these reforms have adequately addressed the problems.

So the question becomes, how do we get value in our system? We want the quality of American health care to continuously improve, yet it must remain affordable and cost-effective. Experts and policymakers have proposed many ideas in an attempt to redesign America's malaligned healthcare system. An increasingly popular concept is value-based purchasing (VBP), which links payment more directly to the quality and efficiency of care provided. This strategy focuses on transforming the current payment system by rewarding providers for delivering high-quality, efficient clinical care [1]. Although in theory, VBP sounds ideal, certain prerequisites must be achieved for VBP to be effective. First, VBP requires unambiguous, risk-adjusted measures of quality and efficiency that are easily interpretable and actionable by patients and purchasers. Second,

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VBP requires a consistent data infrastructure (eg, electronic health record) for collecting and sharing data. Third, the data must be made transparent through public reporting. Finally, the payment methodology must involve incentives that matter to both patients and providers. These goals will not be achieved easily as noted by the Executive Director of MedPAC who said, “Crucial information on clinical effectiveness and standards of care either may not exist or may not have wide acceptance. As a result, it’s hard to determine what care is appropriate” [10].

We summarize the recommendations regarding the improvement of value from the participants at the 2008 ABJS Carl T. Brighton Workshop on Health Policy Issues in Orthopaedic Surgery.

Strategies to Increase Value in Musculoskeletal Care

Process Reengineering

Process reengineering, a widely accepted concept to improve efficiency within businesses, can easily be applied to improve healthcare delivery. Reengineering involves redefining the overall mission and goal of healthcare delivery while using new information and technology to evaluate and decide how best to accomplish this redefined mission. Because our mission has been redefined to emphasize value in health care, this will require reorganizing the entire structure of the US healthcare system. If we can change the paradigm of how medicine is managed, delivered, and paid for, we can substantially reduce costs and improve results and thus increase value. To start, restructuring should focus on emphasizing clinical quality and efficiency in the provision of care.

Presently, there are limited evidence-based treatment protocols. Too often, in an attempt to improve care, physicians push for new, unproven, and more costly modalities and procedures. On the other hand, only recently have outcomes data and evidence-based-practice guidelines become more established. Although physicians must use their understanding of disease, past clinical experience, and knowledge of controlled studies to make appropriate clinical decisions patient by patient, evidence-based medicine (EBM) requires applying the best available evidence to improve the quality of care. Physicians and all healthcare providers should emphasize the use of such proven guidelines and should strive to embrace and implement evidence-based practice guidelines. There are numerous examples of how guidelines can improve efficiency and improve care, the Advanced Trauma Life Support (ATLS) protocol being one of them. The ATLS protocol is a set of evidence-based practice guidelines designed to maximize management in the first “golden hour” after trauma and is

now well established as the standard of care in all trauma centers.

Process reengineering requires health care to be both delivered and managed more efficiently. As healthcare systems grow increasingly complex, physicians and providers must work with healthcare administrators to align patient, provider, institutional, and societal incentives to make healthcare delivery as efficient as possible [6]. Organizational structures must be reconfigured by efficiently delineating responsibilities among service members and by teaming clinical service chiefs with institutional administrators. For example, in such a model, an entire hospital or healthcare institution is broken down by service. Each service then has its own governing chief or committee, operates with its own autonomy, and is responsible for its own success. By structuring into smaller, more manageable groups, each service can efficiently achieve their goals. At the primary care level, a “medical home” can be instituted. In this program, there is a centralized area to coordinate care around the patient, not around the doctor’s office. In this case, patients define value of treatment as their overall improvement in quality of life rather than their doctor’s assessment of how well they are doing, which is a radical shift in how health care is both perceived and delivered in the United States.

A critical component to restructuring or reengineering the US healthcare system is realigning financial incentives in addition to organizational incentives. By implementing a VBP program that rewards physicians for achieving better outcomes rather than merely seeing more patients, providers would compete to provide higher quality, more efficient care. Presently, our payment systems reward physicians who can best maximize volume, not quality of care. “Pay-for-performance” (P4P) programs have been implemented by both government and private payers in an attempt to incentivize quality over quantity of care. However, early P4P programs have not achieved their desired effect [9] primarily owing to the fact that bonus payments have been tied to adherence to process of care measures rather than actual improvement in patient outcomes. As we move from using process of care measures to risk-adjusted outcome measures, P4P programs will begin to achieve their goal of incentivizing and rewarding the provision of high-quality, efficient care.

Insurance Reform

Although restructuring our delivery system is vital, insurance companies also have an important role to play in improving value in our healthcare system. Insurance companies have vast amounts of data that must be made transparent and electronically accessible to providers and

patients. These data can be used to help create a more efficient, competitive market for healthcare services by helping providers, patients, and purchasers measure, understand, and reward quality and efficiency. These facts are the cornerstone of implementing a VBP program. However, insurance companies must work with, if not for, physicians for this to work and in fact increase efficiency. Ultimately, if insurance companies work with providers to eliminate waste, they should also be able to reduce premiums, which are necessary to cover wasted expenses.

Data Collection and Quality Measurements

A value-based system can only be facilitated through accurate, clinically relevant, risk-adjusted measures of quality and efficiency. These data help patients, providers, and purchasers determine the most clinically efficacious and cost-effective treatment strategies and technologies. Quality and efficiency measurements are the most important development in making VBP truly feasible and effective. With extensive electronic databases, evaluation of new technologies or treatment protocols can be assessed scientifically.

As an example, this use of EBM and outcomes research in orthopaedics is most readily apparent in total joint arthroplasty (TJA) registries. Although presently there is no national joint replacement registry in the United States, many Scandinavian countries, the United Kingdom, and Australia each have well-coordinated registries. Although there are many forms and levels of registries, the value of registries is apparent from the substantially lower revision burden in Scandinavian countries than in the United States [2]. Registries can be used to track and measure outcomes and performance in TJA and can provide valuable feedback to physicians, hospitals, and implant manufacturers. Although a registry is costly, it can be supported both publicly and privately from implant companies and its societal value will more than outweigh its cost.

Redefining Education

For healthcare reform to improve quality and control costs, education must be a primary focus. Only by changing how physicians and all healthcare providers are taught and trained would we be able to prevent and avoid many of the problems plaguing our system today. Currently, medical schools and postgraduate training programs do not teach and nurture the leadership and ethical components that help a physician practice efficiently or cost-effectively. Students observe and learn how to work in the current “fee-for-service” model and eventually run their practices the same

way. Clinical training should be grounded in the principles of evidence-based practice. By implementing changes throughout physician education and development, we can begin to teach doctors how to provide high-quality, cost-efficient care to their patients. Then, with this new education agenda in place and improved data collection, we can assess whether the education reforms are making their intended impact [8].

While reshaping education, teaching physicians good leadership must also be emphasized. Private practices, healthcare institutions, and insurance companies alike should support and develop “mavericks,” those inclined to see the big picture. Although not every physician has the time or ability to focus on policy, practice management, or healthcare economics, we should strive to train experts to focus on outcomes research, clinical effectiveness, and cost-effectiveness and be leaders within the medical community. Unfortunately, these mavericks are rare and often not supported by our institutions.

Education is also necessary at the patient level. Preventive medicine must be the cornerstone of a healthy population. It can also be used to help avoid potential problems and reduce measures that negatively impact the value of American health care. By implementing prevention education reforms in schools, physician offices, community outreach programs, and hospitals, we can considerably reduce unnecessary patient visits and hopefully keep people healthier overall. Although Direct to Consumer Advertising (DTCA) offers the potential to educate patients regarding the prevention and treatment of certain disease processes, in its current form, most DTCA rarely educates the patient on proven technologies and more commonly misinforms them on unproven ones. Starting in 1997, the US Food and Drug Administration broadened broadcasting guidelines allowing pharmaceutical companies to advertise directly to potential patients. Although proponents of DTCA argue that it improves overall patient education, therefore increasing overall public health, opponents argue that it does no such thing: “DTCA information provides patients with an incomplete and biased ‘education.’ Nearly 87 percent of television advertisements present the potential benefits of medications in vague, qualitative terms that are not backed by scientific data... Ultimately, DTCA encourages often inappropriate patient demands for the latest, most costly, and most heavily marketed drugs or devices. The growing use of such treatments can lead to a misallocation of resources and increase overall health care costs” [7]. Although transparency in advertising is of vital importance, misleading DTCA can lead to unrealistic patient expectations and increased tensions between physicians and their patients. Increased regulation regarding the content and accuracy of DTCA will help improve the value of DTCA in

educating and informing patients regarding the prevention and management of chronic diseases.

Technology Assessment

A recurring theme diminishing value in our present healthcare system is the financial burden of new, unproven, expensive technologies. Healthcare technologies can be drugs, devices, and medical and surgical procedures. The proper assessment of new technologies is paramount to our goal of reemphasizing value in our system. Presently, there is a move toward adoption and widespread use of new, unproven modalities that have only theoretical or laboratory-based success and little evidence of time-tested clinical success. Although innovative technologies that improve patient outcomes and/or reduce healthcare costs can improve value in our healthcare system, many new technologies remain unproven, even long after their introduction into clinical practice. New technology should always be targeted toward a specific and well-defined clinical problem.

Improving technology assessment is a difficult task. One does not want to stifle innovation, but rather support innovation that has a clear clinical benefit and inherent value. A new device or procedure should always be compared with the gold standard treatment so the new technology's function and value can be measured. Registries, clinical trials, and expert panel opinions will all be used to assess a new technology's value and help inform decisions on their overall use. The American Academy of Orthopaedics Surgeons has taken the first step in this direction with the implementation of their Health Technology Assessment "Technology Overviews" [12]. Furthermore, with improved technology assessments, we could reprioritize how to focus our research efforts by identifying gaps in our knowledge and true clinical needs. Research funds could be allocated more efficiently, thereby reducing additional waste. Ultimately, the use of high-value clinical modalities would increase as a result of reforms that reward the development and use of efficient and effective technologies.

Knee arthroplasty is an example in which the rampant exposure and advertising of new implant technology has led to an increased cost in delivering health care [3]. Total condylar knee arthroplasty is a clinically successful procedure that has undergone minimal change since its inception over 30 years ago. However, new products such as gender-specific and high-flexion knee implants have recently been developed and are being advertised as improvements to their predecessors. Despite a lack of clear evidence regarding their benefits over conventional implants [5, 12], these newer and "better" implants are

associated with higher implant costs and potentially greater revision rates. Proper technology assessment will lead to more responsible adoption of high-value technologies that have the potential to increase quality and reduce costs in our current healthcare system.

Conclusion

It is apparent that the present American healthcare system is not sustainable on its current path. Sweeping changes will be required to create a value-driven healthcare system. Although the changes proposed here focus on musculoskeletal health care, they can be applied on broader levels as well. The responsibility of reform lies with all healthcare stakeholders, including providers, policymakers, payers, and patients. Orthopaedic leaders should continue to play a leading role in developing reforms, surveying trends, and evaluating the current state of affairs. Although this will not be an easy task, we are reaching the point at which something must be done. To get value into our healthcare system, we must restructure how health care is delivered, managed, reimbursed, rewarded, taught, tracked, and assessed. These are some of the conclusions of the participants of the ABJS Carl T. Brighton forum on musculoskeletal health policy that will hopefully guide us to "where we want to go."

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