Optimizing Outcomes of Total Joint Arthroplasty Under the Comprehensive Care for Joint Replacement

Mohamad J. Halawi, MD, Kenneth Greene, MD, and Wael K. Barsoum, MD

On July 9, 2015, the Centers for Medicare and Medicaid Services announced the Comprehensive Care for Joint Replacement model, which aims to improve coordination of the whole episode of care for total hip and knee replacement.[1] At stake is the fact that hip and knee replacements are the most common inpatient procedures among Medicare beneficiaries, costing over $7 billion in 2014[1] and projected to grow to $50 billion by 2030.[2] Under Medicare's new initiative, hospitals and physicians are held accountable for the quality and cost of care delivered from the time of surgery through 90 days after discharge. For the first time in the history of our profession, large-scale reimbursement is based on outcomes and value rather than fee-for-service. As a result, a hospital can either earn a reward or be held liable for added expenses related to events such as prolonged hospitalization, readmissions, and complications.

Under Medicare's new initiative, hospitals and physicians are held accountable for the quality of cost of care delivered from the time of surgery through 90 days after discharge. For the first time in the history of our profession, large-scale reimbursement is based on outcomes and value rather than fee-for-service.

How can we optimize outcomes for total joint arthroplasty (TJA) patients in this era of Medicare (r)evolution? A good outcome starts with good patient selection. Numerous studies have been published on patient-related risk factors for postoperative TJA complications including obesity, congestive heart failure, lung disease, and depression.[3,4] The risks and benefits of TJA should be carefully weighed in high-risk patients and surgery delayed until appropriate medical optimization has been achieved. Following the famous saying, "Good surgeons know how to operate, better surgeons know when to operate, and the best surgeons know when not to operate," one cannot overemphasize the need for an objective assessment of the likelihood of patient outcome weighed against patient risk factors.

Moderating patient expectation is another crucial component given the changing demographics of our country. Patients seeking TJA today are younger, more obese, and better educated; live longer; and have higher expectations.[5] Unrealistic expectations can have a profound impact on surgical outcomes, leading to frustration, dissatisfaction, and unnecessary resource utilization. For example, despite alleviating pain and restoring function in a severely degenerative joint, TJA does not necessarily translate to weight loss. There is currently conflicting evidence on this topic,[6-8] and the expectation of weight loss after TJA cannot be supported. There is also a paucity of data regarding return to athletic activity after TJA and the effect of athletic activity on TJA survivorship.[9] Communication and transparency are needed to moderate unrealistic expectations before surgery, outlining clear and achievable goals.

Clinical pathways for TJA have seen tremendous improvements in the past decade with the advent of multimodal analgesia, rapid recovery programs, use of spinal and regional anesthesia, and evidence-based guidelines for prevention of venous thromboembolic disease. Adequate pain control is critical to recovery. In a prospec-

Dr. Halawi is Fellow, Dr. Greene is Professor, and Dr. Barsoum is Associate Professor, Department of Orthopaedic Surgery, Cleveland Clinic, Cleveland, Ohio.

Authors' Disclosure Statement: The authors report no actual or potential conflict of interest in relation to this article.

Address correspondence to: Mohamad J. Halawi, MD, Orthopaedic and Rheumatologic Institute, Cleveland Clinic, 9500 Euclid Avenue, A40, Cleveland, OH 44195 (email, halawim@ccf.org).

Am J Orthop. 2016;45(3):E112-E113.

tive, randomized controlled trial, Lamplot and colleagues[10] showed that the use of multimodal analgesia correlated with improved pain scores, decreased narcotic usage, faster functional recovery, and higher patient satisfaction after total knee arthroplasty (TKA). In another study, Quack and colleagues[11] performed a systematic review of the literature on fast-track rehabilitation and found that it reduced both inpatient length of stay and costs after TKA. With respect to anesthetic choice, Pugely and colleagues[12] reviewed a national database of 14,052 cases of primary TKA and found that patients with multiple comorbidities were at higher risk of complications after general anesthesia when compared with spinal anesthesia. We should continue to invest in safer and more effective modalities for pain control and functional recovery.

Last but not least, in today's era of Medicare's Comprehensive Care for Joint Replacement, the role of low-volume orthopedic surgeons performing TJA deserves special mention. Over the next few years, we could likely see a decline in the role of low-volume surgeons in favor of high-volume surgeons. While most orthopedic surgeons are comfortable doing primary TJA, failed cases and complications are frequently referred to larger centers, which may create frustration among patients owing to fragmentation of care. The economic pressures related to bundled payments could further influence this transition. Given the lack of a widespread, long-standing national joint registry, the incidence of failed TJA performed by low-volume orthopedic surgeons compared with high-volume orthopedic surgeons is unknown. However, multiple studies have shown surgeon volume to be associated with lower rates of complication, mortality, readmission, reoperation, and discharge to postacute facilities.[13-16] As hospitals assume further financial risk, considerable data on physician performance will undoubtedly be gathered and leveraged. Time and data will determine the value of this transition of care.

Today, more than ever, we are challenged to provide efficient, high-quality, patient-centered care. As our nation grapples with reforming a broken health care system, initiatives like the Comprehensive Care for Joint Replacement will continue to emerge in the future. Orthopedic surgeons are the gatekeepers of the system and therefore hold significant responsibility to patients and society. Ensuring good outcomes should be a top priority not just from a financial standpoint, but as a moral obligation. We shall continue to be leaders in the face of challenges, using innovation and integrity to produce the best results and advance our profession.

References

1. Comprehensive Care for Joint Replacement model. Centers for Medicare and Medicaid Services website. https://innovation.cms.gov/initiatives/cjr. Updated December 21, 2015. Accessed December 30, 2015.
2. Wilson NA, Schneller ES, Montgomery K, Bozic KJ. Hip and knee implants: current trends and policy considerations. *Health Aff*. 2008;27(6):1587-1598.
3. Bozic KJ, Lau E, Ong K, et al. Risk factors for early revision after primary total hip arthroplasty in Medicare patients. *Clin Orthop Relat Re*s. 2014;472(2):449-454.
4. Bozic KJ, Lau E, Ong K, et al. Risk factors for early revision after primary TKA in Medicare patients. *Clin Orthop Relat Res*. 2014;472(1):232-237.
5. Mason JB. The new demands by patients in the modern era of total joint arthroplasty: a point of view. *Clin Orthop Relat Res*. 2008;466(1):146-152.
6. Riddle DL, Singh JA, Harmsen WS, Schleck CD, Lewallen DG. Clinically important body weight gain following knee arthroplasty: a five-year comparative cohort study. *Arthritis Care Res*. 2013;65(5):669-677.
7. Zeni JA Jr, Snyder-Mackler L. Most patients gain weight in the 2 years after total knee arthroplasty: comparison to a healthy control group. *Osteoarthritis Cartilage*. 2010;18(4):510-514.
8. Ast MP, Abdel MP, Lee YY, Lyman S, Ruel AV, Westrich GH. Weight changes after total hip or knee arthroplasty: prevalence, predictors, and effects on outcomes. *J Bone Joint Surg Am*. 2015;97(11):911-919.
9. Healy WL, Sharma S, Schwartz B, Iorio R. Athletic activity after total joint arthroplasty. *J Bone Joint Surg Am*. 2008;90(10):2245-2252.
10. Lamplot JD, Wagner ER, Manning DW. Multimodal pain management in total knee arthroplasty: a prospective randomized controlled trial. *J Arthroplasty*. 2014;29(2):329-334.
11. Quack V, Ippendorf AV, Betsch M, et al. Multidisciplinary rehabilitation and fast-track rehabilitation after knee replacement: faster, better, cheaper? A survey and systematic review of literature [in German]. *Rehabilitation (Stuttg)*. 2015;54(4):245-251.
12. Pugely AJ, Martin CT, Gao Y, Mendoza-Lattes S, Callaghan JJ. Differences in short-term complications between spinal and general anesthesia for primary total knee arthroplasty. *J Bone Joint Surg Am*. 2013;95(3):193-199.
13. Katz JN, Losina E, Barrett J, et al. Association between hospital and surgeon procedure volume and outcomes of total hip replacement in the United States medicare population. *J Bone Joint Surg Am*. 2001;83(11):1622-1629.
14. Manley M, Ong K, Lau E, Kurtz SM. Effect of volume on total hip arthroplasty revision rates in the United States Medicare population. *J Bone Joint Surg Am*. 2008;90(11):2446-2451.
15. Bozic KJ, Maselli J, Pekow PS, Lindenauer PK, Vail TP, Auerbach AD. The influence of procedure volumes and standardization of care on quality and efficiency in total joint replacement surgery. *J Bone Joint Surg Am*. 2010;92(16):2643-2652.
16. Lau RL, Perruccio AV, Gandhi R, Mahomed NN. The role of surgeon volume on patient outcome in total knee arthroplasty: a systematic review of the literature. *BMC Musculoskelet Disord*. 2012;13:250.