



## CORR Insights

# CORR Insights®: Which Clinical and Patient Factors Influence the National Economic Burden of Hospital Readmissions After Total Joint Arthroplasty

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## Where Are We Now?

Medicare's Bundled Payments for Care Improvement (BPCI) initiative is a cost-control program containing four payment and service-delivery models intended to reduce

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expenditures while preserving or enhancing quality of care [2, 4]. As a high-value procedure, Medicare identified total joint arthroplasty for bundled payments in an effort to address its potentially high costs.

Hospital readmission rate, formalized in the Affordable Care Act through the Medicare Hospital Readmissions Reduction Program [3], is a major quality and cost-control metric used by hospitals, clinicians, and policymakers alike [6]. BPCI holds hospitals and/or Accountable Care Organizations financially responsible

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for readmissions for any reason between 30 and 90 days after discharge following THA or TKA. The design and effective implementation of these "risk sharing" or "risk transfer" policies are points of active discussion with profound implications that demand objective data and metrics.

In their study, Kurtz and colleagues offer a first look at the Nationwide Readmissions Database (NRD) from the Healthcare Cost and Utilization Project, an important and fascinating new dataset used to calculate the per-patient cost of 90-day readmissions for TKA and THA. This study challenges orthopaedic surgeons to use this information as a catalyst for reducing the mounting costs related to joint arthroplasty services in our aging US-population.

The most-effective method of improving patient care and reducing readmissions is to avoid complications. Most important, by far, is reducing the risk of prosthetic joint infection. Kurtz and colleagues found that in TKAs, infection dwarfs the

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impact of deep vein thrombosis/pulmonary embolism, hematoma, or fracture. For THA, infection is responsible for more than one-third of readmissions, followed closely by dislocation, fracture hematoma, and deep vein thrombosis/pulmonary embolism.

The health and social benefits of effective arthroplasty in relieving pain and restoring function for patients with joint disease is profound, durable, and highly cost-effective [1]. However, the individual benefits vary. Because joint disease is often polyarticular, the impact of treatment of a single joint on total health and mobility may be limited, even if the effect on pain and function in that joint is profound. Comorbidities, such as heart disease, may vastly increase risk for readmission, independent of the outcome in the joint or limb.

On a global level, the core goals of arthroplasty surgery and immediate perioperative care boil down to two statements: (1) Restore function and mobility in the affected joint for the remainder of a patient's life and (2) avoid complications.

## Where Do We Need To Go?

There is also a third goal, which is important both to the patient and the economy—achieve the first two goals

at the lowest-possible cost. However, as Kurtz and colleagues point out, the cost calculations vary as perspective changes from the patient, to the provider, to the payer, and to society at large, and often is further buried in variation in accounting assumptions and conventional practices of cost attribution and allocation.

The authors of the current study shine a light on hospital readmissions after total joint arthroplasty, leaving us with a number of questions. What can be done to reduce complications and readmissions? Not surprisingly, the data in the current study demonstrate that operating on patients less than 69 years of age who have private insurance and few comorbidities would make us look better. However, the number of such patients is relatively limited, and focusing our effort there lacks either moral or ethical high ground.

There are less obvious and (at this point) speculative questions about data validity and attribution to consider. Why, in the current study for example, are the second, eighth, and 15th most common causes for readmission following TKA a diagnosis of “osteoarthritis of the lower leg”? Why is the fourth most common cause for readmission following THA a diagnosis of “osteoarthritis of the pelvis/thigh”? Could it be that these are patients who are not being readmitted

for a complication involving the surgery? Are these simply patients who are being admitted, as planned, to complete the surgery on a contralateral joint? If so, perhaps we are being held accountable for bad coding and faulty interpretation of the data [5]. Only a deeper dive into the sourcing of these data by the team managing the NRD, using the side (left vs. right) information that is included in International Classification of Diseases, 10th Revision coding, can answer this question.

Jumping well beyond the scope of this initial report are looming questions on attribution, dissemination, equitable quality-based payment, and/or loss of payment. While it seems clear that some surgeons and hospitals are more likely to have readmissions than others, it is less clear whether this is a quality-of-care problem or a difference in complexity of the patients being cared for. If there indeed are quality problems, are there less-punitive ways to encourage the adoption of best practices?

We must also consider the impact cost-transfer penalties will have on patient care, in both quality and access. If individual treating physicians are penalized financially for readmissions, how are they likely to respond? Some might redouble attention to detail in surgical execution, and seek out best practices to improve quality and reduce risk, but others might recoil

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from the risk and opt not to care for more-complex patients. What would be the social and medical costs of these decisions?

## How Do We Get There?

We only have consensus on two points: (1) We do not have the models and sufficient granularity of data (on matters like severity of comorbidities, social variables, health habits, and other issues) to adjust effectively for risk, and (2) clinical variation across patients and practices is so great that we would need to collect data on thousands of patients over years to identify a difference in clinical quality among surgeons.

Kurtz and colleagues have started an important conversation; next steps might: (1) Advocate on behalf of our patients to preserve quality and access. (2) Do what we can to reduce cost. (3) Establish and refine the data sets and data collection systems that objectively assess quality, access and cost. (4) Dis-

tribute the responsibility for data collection and reporting from one focused only on the physician or hospital, to a partnership that includes patients and payers. (5) Define risk-adjusted models and systems of analysis and data distribution that enable responsible comparisons between providers, hospitals, payers and populations. (6) Engage and align the interests of patients, physicians, public and private payers, and health systems, to minimize opportunities for “gaming” the data collection or reporting process, and instead enable ongoing innovation and meaningful ongoing improvements in both outcomes and access.

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