



CORR Insights

CORR Insights®: High Risk of Readmission in Octogenarians Undergoing Primary Hip Arthroplasty

Simon C. Mears MD, PhD

Where Are We Now?

Initially introduced on a voluntary basis as the Bundled Payments for Care Improvement program, bundled-payment models have become mandatory in certain areas of the country. The bundled-payment model for joint replacement is called the Comprehensive Care for Joint

Replacement model (CCJR). This year, an additional bundle for all femur fractures will be added called Surgical Hip/Femur Fracture Treatment.

A major criticism of these programs is a lack of any type of patient risk stratification. Without stratification, the systems that care for patients with complications (ie, those who are more likely to be admitted or need nursing home stays) will likely lose money under a bundled-payment model [8]. This has been shown for patients with hip fractures who underwent THA, as they are included within the CCJR bundle. Hip-fracture surgery is not elective, and patients with hip fractures cannot always have their health improved measurably before surgery. Costs and readmission rates are higher

for patients with hip fractures than for patients undergoing elective total hip arthroplasty [5, 9].

Complex procedures such as conversion to hip replacement, hip resections with a spacer for infection, and two-stage revisions are also included in the CCJR bundle. Patients undergoing these types of procedures often require expensive revision implants and have a higher risk of reoperation and readmission. The extra risk of more-complicated patients may potentially lead to surgeons and hospital systems leaning away from offering surgery to these patients. This could lead to overburdening of safety net hospitals or of reduced access to care.

Bundled-payment models have led hospital systems to try to improve patients before surgery to lessen postoperative complications and readmission rates. Many of these improvements have been in an attempt to lessen infection rates and have focused on changing factors about a patient that are potentially modifiable. Modifiable risk factors include diabetic control, obesity, smoking, and preoperative narcotic use [2]. Because the

This CORR Insights® is a commentary on the article “High Risk of Readmission in Octogenarians Undergoing Primary Hip Arthroplasty” by Malkani and colleagues available at: DOI: 10.1007/s11999-017-5241-9.

The author certifies that neither he, nor any members of his immediate family, have any commercial associations (such as consultancies, stock ownership, equity interest, patent/licensing arrangements, etc) that might pose a conflict of interest in connection with the submitted article.

All ICMJE Conflict of Interest Forms for authors and *Clinical Orthopaedics and Related Research*® editors and board members are on file with the publication and can be viewed on request.

The opinions expressed are those of the writers, and do not reflect the opinion or policy of *CORR*® or The Association of Bone and Joint Surgeons®.

This *CORR* Insights® comment refers to the article available at DOI: 10.1007/s11999-017-5241-9.

S. C. Mears MD, PhD (✉)
Department of Orthopaedic Surgery,
University of Arkansas for Medical
Sciences, Little Rock, AR, USA
e-mail: SCMears@uams.edu;
simon_mears@hotmail.com

CORR Insights

patient has some control over these factors, preoperative changes could potentially reduce readmission rates and improve surgical outcomes for patients with these conditions. This has led some surgeons to declare non-negotiable cutoffs for patients which if not met will not allow surgery, the so-called “hard stop.” Long-term, it is unclear if “hard stops” will force portions of the population who once received a joint replacement to now only receiving nonoperative care.

However, age is not a modifiable risk factor. The current study shows that octogenarians have a high risk for readmission and complications after primary hip replacement. Subsequently, these patients are at risk for higher costs in a bundled-payment model. The concern is that octogenarians will not be offered hip replacement, a procedure that greatly decreases pain and improves quality-of-life in our elders. While rationing care to those who can improve themselves prior to surgery seems to make sense, we must consider seriously that the bundled-payment model could lead to restricted care based on patient age and preexisting, nonmodifiable conditions.

Where Do We Need To Go?

We are still in the early stages of determining the ramifications of

bundled-payment models, but published data on the outcomes of bundled-payment models and potential costs savings are beginning to emerge. Recent publications have showed modest improvements in 90-day costs [3, 4].

But questions still remain. We still do not know whether we can improve the outcomes of octogenarian patients. The current study examines Medicare patients overall, but not necessarily those within a bundled-payment model or those with a fast-track program. It is important to determine if modifications in bundled-payment models will mitigate the effects of age on readmission and complication rates.

We do not know if therapy focusing on strengthening, gait training, and balance to improve function before surgery may be beneficial in the elderly population. What if we improve patients’ modifiable conditions before surgery? Can rapid recovery protocols be safely applied to older patients and can they improve our outcomes? Indeed, pilot work suggests that this is possible [7], but the support systems in place for older patients vary tremendously. Family involvement, whether that involves getting the patient home or staying with the patient before (s)he is taken home, is critical. Would preoperative therapy, a greater focus on medical issues, or additional family

involvement improve outcomes and reduce readmissions? We do not know.

If bundled-payment models continue and perhaps expand, we must address these gaps in our knowledge. Orthopaedic surgeons widely accept that younger healthy patients can be put on a rapid-recovery protocol after hip replacement. We do not know if these same models can be safely adapted to our elder and more infirm patients.

With the rise in bundled-payment models, we must carefully monitor the outcomes of these older patients with joint replacement. Prospective studies to address this issue should focus on outcomes of older patients. According to the current study, the number of octogenarians undergoing joint replacement surgery is increasing. Will this trend for joint replacement in elderly patients continue or will these surgeries be limited in those regions participating in the CCJR? Will hospitals “cherry pick” young, healthy patients and refer older patients to tertiary referral centers?

How Do We Get There?

Database studies and examination of care in areas with bundled-payment models could potentially answer the above questions. Additionally, prospective studies examining the methods to prepare older patients and their families for surgery should be

CORR Insights

performed. Specifically focusing on the 90-day costs, discharge disposition, and readmission rates may help determine any opportunities to improve the outcomes of this population. Small changes in care such as the elimination of Foley catheters, reduced narcotic use by regional anesthetic techniques like periarticular injections, and a greater effort to discharge older patients home rather than an extended care facility may equate to large differences in outcomes. These techniques may help reduce postoperative urinary retention and the need for indwelling catheters. Analgesic approaches de-emphasizing narcotics may improve urinary retention and delirium, minimize extended hospital stays, decrease readmission for constipation, and lead to fewer reoperations [6].

One of the main cost savings in bundled-payment models has been to reduce the use of skilled nursing facilities. For patients who chose to have elective total joint arthroplasty, the use of skilled nursing facilities may actually increase readmission rates [1]. While in the past, we have routinely discharged joint replacement patients to either acute rehabilitation facilities or subacute nursing facilities, it is possible that this does more harm than good. There is potential in these institutions for iatrogenic problems that would not have happened if the patient had been discharged directly home and had direct followup with their surgeon.

However, some elderly patients may have limited social support systems and may require more postdischarge care. Further work is required to understand what type of rehabilitation is needed in skilled nursing facilities and how a more balanced team approach can improve overall care, particularly for our elderly patients.

We also need to determine the effect of bundled care on patient-recorded outcomes after hip replacement. It will be important to prospectively determine if patient recorded outcomes are improved with changes in care pathways.

Looking ahead, our specialty would like to demonstrate improved outcomes, improved patient experience, and cost savings for the elderly patients undergoing joint replacement. It is important that increased value does not come at the expense of rationing care by age alone.

References

1. Bini SA, Fithian DC, Paxton LW, Khatod MX, Inacio MC, Namba RS. Does discharge disposition after primary total joint arthroplasty affect readmission rates? *J Arthroplasty*. 2010;25:114–117.
2. Boraiah S, Joo L, Inneh IA, Rathod P, Meftah M, Band P, Bosco JA, Iorio R. Management of modifiable risk factors prior to primary hip and knee arthroplasty: A readmission risk assessment tool. *J Bone Joint Surg Am*. 2015;97:1921–1928.
3. Dummit LA, Kahvecioglu D, Marrufo G, Rajkumar R, Marshall J, Tan E, Press MJ, Flood S, Muldoon LD, Gu Q, Hassol A, Bott DM, Bassano A, Conway PH. Association between hospital participation in a Medicare bundled payment initiative and payments and quality outcomes for lower extremity joint replacement episodes. *JAMA*. 2016;316:1267–1278.
4. Dundon JM, Bosco J, Slover J, Yu S, Sayeed Y, Iorio R. Improvement in total joint replacement quality metrics: Year one versus year three of the bundled payments for care improvement initiative. *J Bone Joint Surg Am*. 2016;98:1949–1953.
5. Kester BS, Williams J, Bosco JA, Slover JD, Iorio R, Schwarzkopf R. The association between hospital length of stay and 90-day readmission risk for femoral neck fracture patients: Within a total joint arthroplasty bundled payment initiative. *J Arthroplasty*. 2016;31:2741–2745.
6. Namba RS, Inacio MC, Pratt NL, Graves SE, Roughead EE, Craig Cheetham T, Paxton EW. Postoperative opioid use as an early indication of total hip arthroplasty failure. *Acta Orthop*. 2016;87:37–43.
7. Pitter FT, Jørgensen CC, Lindberg-Larsen M, Kehlet H; Lundbeck Foundation Center for Fast-track Hip and Knee Replacement Collaborative Group. Postoperative morbidity and discharge destinations after fast-track hip and knee arthroplasty in patients older than 85 years. *Anesth Analg*. 2016;122:1807–1815.

CORR Insights

8. Rozell JC, Courtney PM, Dattilo JR, Wu CH, Lee GC. Should all patients be included in alternative payment models for primary total hip arthroplasty and total knee arthroplasty? *J Arthroplasty*. 2016;31(9 Suppl):45–49.
9. Schairer WW, Lane JM, Halsey DA, Iorio R, Padgett DE, McLawhorn AS. The Frank Stinchfield Award: Total hip arthroplasty for femoral neck fracture is not a typical DRG 470: A propensity-matched cohort study. *Clin Orthop Relat Res*. 2017;475:353–360.