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CORR Insights®: Comorbidities in Patients Undergoing Total Knee Arthroplasty: Do They Influence Hospital Costs and Length of Stay?

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Where Are We Now?

Comorbid conditions are associated with longer hospital stays and increased costs in TKA. Hospital and physician payments from Medicare have remained relatively fixed and do not include

recognition of individual patient factors, which may significantly affect outcomes. With increasing national expenditures associated with increased numbers of TKAs performed annually, efforts to reduce costs through cuts in reimbursement must include consideration of the impact of comorbid conditions on resource utilization and length of stay after total joint arthroplasty.

The widespread presence of hypertension, diabetes and obesity, particularly in economically disadvantaged and minority communities, also has important clinical implications. One group reported [1] an increase in the proportion of patients with obesity from 30% to 52% from 1990 to 2005. Combined with the presence of diabetes, patients who are morbidly obese have been reported to have a risk of periprosthetic joint infection in the range of 10% [2]. Clearly these factors will increase the

cost of care. And presumably, with implementation of the Patient Protection and Affordable Care Act, TKA should be available to more people, which could further confound the problem. As more physician-specific data are publicly reported and used by payors and policymakers, it is essential that patient-specific factors directly impacting outcomes and costs be used to stratify and risk adjust data.

The results of the current study demonstrate that of the 102,446 patients undergoing TKA, the most common observed comorbid conditions were hypertension (67.8%), diabetes (20%), and obesity (19.8%). Only 12.7% of patients undergoing TKAs had no comorbidities, while 32.6% had three or more. Furthermore, relative to non-Hispanic white race, costs of care for patients with Hispanic ethnicity and black race were higher. Certainly race and ethnicity alone without a socioeconomic context create a difficult variable to consider when stratifying cost and risk after joint replacement, yet these data reflect that there are important differences that exist among surgical patient

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populations. Patients with multiple comorbidities were associated with increased resource use and length of stay.

Where Do We Need To Go?

As we consider perioperative pathways to prepare and recover patients undergoing TKA, we should consider the impact of individual and aggregate comorbidities on resource utilization. This study is particularly insightful in highlighting that “current hospital reimbursement may not accurately reflect the cost of care for patients undergoing TKA with chronic medical disease and diverse socioeconomic backgrounds.” We must anticipate greater needs for medically complex patients including (1) rigorous preoperative assessment potentially to include specialty consultation to optimize preoperative medical issues, (2) intraoperative specific instrumentation that may be needed (in the case of patients with morbid obesity), and (3) a higher level of aftercare that may be required. Additionally, policymakers

and payors should consider the impact of additional needs on costs to hospitals and complexity of management by physicians.

How Do We Get There?

The findings for this study provide a framework for an effective introspection of patient specific factors and how they affect total knee replacement resource utilization and cost. These data point to opportunities for research and strategies aimed at targeting comorbid conditions and socioeconomic disparities, which directly affect patient related outcomes and hospital cost. First, there is an opportunity to directly impact care by ensuring that comorbid conditions are recognized and, to the degree possible, well managed. Specific emphasis should be placed on development of effective clinical interventions targeted at prevention and treatment of these common comorbid conditions, hypertension, diabetes and obesity, which are pervasive in the American population and particularly problematic in

medically underserved communities. The socioeconomic and cultural causes of these comorbid conditions are multifactorial, but primary care and specialty physicians can mitigate their impact through coordination of care and patient education. Second, opportunity exists for more research targeted at understanding differences among varied patient populations undergoing TKA. As physicians better understand individual needs of specific patient groups, we can better target our care to meet their needs. Future studies employing population based comparisons will allow us to understand the impact of race, gender and sociocultural factors on treatment outcomes.

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