

## Younger Age is Associated with a Higher Risk of Periprosthetic Infection and Aseptic Failure after Total Knee Arthroplasty

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**Background:** Although early aseptic mechanical failure of total knee arthroplasty (TKA) has been reported in younger patients, it is unknown if early failure due to periprosthetic joint infection is more or less frequent in this subgroup of patients.

**Introduction:** Total hip arthroplasty (THA) has been heralded as the operation of the century for its ability to reduce pain and restore function. Thus, the purpose of this study was to examine the influence patient characteristics have on hospital charges and length of stay (LOS).

**Methods:** The 2009 National Inpatient Sample (HCUP-NIS) dataset was queried using ICD-9-CM codes to identify patients undergoing elective THA. We used weighted estimates of national procedure volume and patient comorbidities defined by AHRQ and identified them using standard methods described by Elixhauser. Generalized linear models, based on Poisson regression analysis, were used to estimate the influence of individual patient characteristics on hospital charges and (LOS).

**Results:** In 2009, an estimated 277,564 patients underwent THA. Of these, 16.6% patients had no comorbidities while 28.2% had three or more. The most common conditions included hypertension (60.8%), diabetes (14.4%), and obesity (13.3%). Mental disorders were found in 10.2%, renal failure in 3.7% and AIDs in 0.13% of patients. Mean hospital charges were \$49,740 and mean hospital LOS was 3.5 days. With incremental comorbidities, both hospital charges and length of stay increased ( $p < 0.01$ ). Both marginal charges and LOS rose with inpatient mortality (+\$24,165, 1.2 days), patients with recent weight loss (+\$20,487, 2.3 days), metastatic disease (+\$11,245, 1.8 days), minority race (+\$13,098, 0.6 days), pulmonary-circulatory disorders (+\$5,048, 1.0 days), AIDs (+\$7,248, 0.3 days). Patients treated in the West region had higher marginal charges but a lower LOS (+\$24,164, -0.2 days).

### Discussion:

Hospital charges and length of stay after THA rise dramatically with the multiply-comorbid patient. As the payments for arthroplasty continue to decline, policy makers should focus on providing fair compensation and quality metrics to hospitals and surgeons treating the comorbid; otherwise, significant restrictions in access to care may occur.

