

## **A PearlDiver Analysis of Trends in Periprosthetic Joint Infection after Total Knee Arthroplasty**

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**INTRODUCTION:** The number of Total Knee Arthroplasties (TKAs) performed each year in the United States has increased considerably over the past decade. The purpose of this study was to analyze incidence rates of component revision for periprosthetic joint infection (PJI) within one year of primary TKA over a ten-year period.

**METHODS:** Medicare patients who underwent unilateral, primary TKA between 2010—2019 were identified within the PearlDiver database. Only patients treated for primary osteoarthritis (OA) with minimum one-year follow-up were included. Patients were grouped according to the year of the index procedure. Rates of component revision for PJI within one year of the index procedure were compared to TKAs performed in 2010. Aseptic revision rates, mean Charlson Comorbidity Index (CCI), and Elixhauser Comorbidity Index (ECI) scores were analyzed as well. Categorical variables were compared using the chi-squared test, and continuous variables using independent samples t-test.

**RESULTS:** 307,631 patients were included in this study. The 2010 one-year septic and aseptic revision rates were 0.4% and 0.7%, respectively. The one-year septic revision rate remained at 0.5% throughout the study period. One-year aseptic revision rates fluctuated between 0.8% (2011), 0.7% (2012-2016, 2018), and 0.6% (2017, 2019). Neither changes in septic or aseptic revision rates were statistically significant at any time point relative to 2010. Mean ECI scores increased each year during the study period, from 1.6 in 2010 to 4.3 in 2015 and 5.3 in 2019. With the exception of 2017 and 2018, mean CCI scores also increased each year, from 0.7 in 2010 to 1.6 in 2015 and 1.7 in 2019.

**DISCUSSION AND CONCLUSION:** Rates of one-year revision for both PJI and aseptic revision remained stable during the 2010—2019 study period despite an increasing comorbidity burden in Medicare patients seeking TKA.