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INTRODUCTION:

METHODS: The Premier Healthcare Database (PHD) was used to retrospectively identify all primary, elective TJAs from October 2015 to December 2021. Restricted cubic splines were used to characterize the relationship between hospital and surgeon volumes and PJI risk. High-volume hospitals were defined using Markov chain Monte Carlo Simulation, which identified a volume beyond which PJI rates no longer decreased significantly with increasing hospital volume. A similar methodology was used to identify low-volume surgeons operating in high- and low-volume hospitals. Multivariable models accounting for potential confounding covariates were created to determine the odds of PJI between cohorts.

DISCUSSION AND CONCLUSION: These results highlight that institutional volume directly mediates the risk of PJI after TJA performed by low-volume surgeons, suggesting that annual hospital volume is a more important consideration when predicting postoperative risk than surgeon volume in isolation.

