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## Tertiary Care Centers Provide Successful Revision TKA to External Referrals, Despite Increased Patient Complexity

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### Introduction

The incidence of both primary and revision total knee arthroplasty (rTKA) continues to grow in the United States. Tertiary referral centers absorb a large share of the rTKA healthcare burden. This study characterizes the referral patterns and outcomes of rTKA cases performed at a tertiary referral center. We hypothesize that 1) external referrals have higher rates of prior TKA revision, and 2) referral status does not impact post-operative outcomes following rTKA.

### Methods

We retrospectively reviewed 243 consecutive rTKAs between 2013-2018 performed at a tertiary referral center by a single surgeon. Patient demographic information was recorded, and referrals were characterized as: external, internal within hospital system, or internal within surgeon's practice. Post-operative outcomes included 90-day, 1-year, and 2-year all-cause reoperation rates. Univariate and multivariate regression analyses evaluated the impacts of demographic variables, prior revision and referral status on post-operative outcomes.

### Results

Of the 243 rTKA cases, 51.0% (124) were external referrals, 33.7% (82) internal within hospital system, and 15.2% (37) internal within the surgeon's practice. External referrals had significantly higher rates of prior TKA revision (45.3%), compared to patients internal within surgeon's practice (25.0%;  $p = 0.029$ ). Multivariate logistic regression revealed prior revision TKA as an independent risk factor for reoperation at 90-days (OR: 3.1;  $p = 0.017$ ), 1-year (OR: 2.4,  $p = 0.032$ ), and 2-years (OR: 3.4,  $p < 0.001$ ). However, on univariate and multivariate analyses, referral status had no association with reoperation rates.

### Conclusion

External referrals were more likely to have had undergone prior revision, increasing their risk of rTKA failure at 90-days, 1-year and 2-years. However, no differences in rTKA outcomes were observed between referral groups. Tertiary care centers provide successful rTKA for external referrals, despite increased inherent patient complexity. Designation of specialty revision centers will help to ensure access to care for patients in need of complex revision total knee arthroplasty.