## Paper #24

## Can an Arthroplasty Risk Score Predict Bundled Care Events after **Total Joint Arthroplastv?**

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Introduction: A validated Arthroplasty Risk Score (ARS), using preoperative and intraoperative variables, was shown to accurately predict the need for postoperative triage to an intensive care setting. Our group hypothesized that this ARS could be applied to predict hospital length of stay (LOS), discharge disposition, and total episode-ofcare cost.

Methods: We retrospectively reviewed a consecutive series of 704 patients undergoing primary or revision total hip and knee arthroplasty from October 2013 to March 2015. An a priori power analysis was performed to ensure adequate power. The ARS score included history of cardiac, chronic obstructive pulmonary, and renal disease; BMI > 35 kg/ m2; intraoperative vasopressors; and estimated blood loss > 1L. Patient demographics, medical comorbidities, 90-day episode-of-care cost data, LOS, and readmission rates were compared between groups before and after implementation of the ARS tool in September of 2014. Multivariate logistic regression analysis was performed to identify the independent effect of the ARS on patients in the upper quartile of episode-of-care costs at our institution (\$31,804).

Results: Implementation of the ARS was associated with a lower proportion of patients going to a skilled nursing facility (SNF) or rehabilitation center post-discharge (63% vs. 74%, p=0.002). However, there was no difference in LOS, episode-of-care costs, readmission rates, or complications before and after utilization of the ARS (all p>0.05). An ARS score >3 was predictive of a high episode-of-care cost outlier (OR 2.65, 95% CI 1.40-5.01, p=0.003). An increased ARS score correlated with increased episode-of-care costs (p=0.003) while the Charlson score had no statistically significant association (p=0.797).

**Conclusions:** The implementation of an institutional ARS was associated with increased disposition to home while maintaining equivalent LOS, complication, and readmission rates. The ARS was predictive of high episode-of-care cost outliers and should be considered when considering risk adjustment variables for reimbursement in alternative payment models.



## Notes