



Introduction

Bundled healthcare payments are becoming more prevalent in neurosurgery. Pre-operative prediction instruments may be leveraged to provide cost effective care. The Risk Assessment and Prediction Tool (RAPT) has been validated in a heterogeneous neurosurgical population to predict discharge disposition. We assessed RAPT's ability to predict discharge to acute rehabilitation facility (ARF) or skilled nursing facility (SNF) in patients undergoing cervical surgery.

Methods

All consecutive patients 50 years and older undergoing cervical surgery from June 2016 to February 2017 (n=210) were enrolled in a prospective IRB approved study. RAPT scores and discharge disposition were recorded. Prediction of discharge disposition by RAPT and other preoperative characteristics was assessed using logistic regression and two models of disposition. Model A predicted home versus ARF versus SNF, while Model B predicted home versus ARF or SNF. Multivariate backwards logistic regression was used to create a novel model for predicting disposition.

Results

Increasing RAPT score predicted an increasing likelihood of home discharge in both models ($p=0.0034$, $p=0.0007$; Figure 1). There was no difference in RAPT between those discharged to ARF or SNF. Using Model B, each increase in RAPT led to a 46.9% greater likelihood of home discharge. Of the individual RAPT components, only a higher Walk score was predictive of home discharge ($p=0.0014$). Younger age ($p=0.0145$, $p=0.003$) and shorter LOS ($p<0.0001$, $p=0.0003$) predicted home discharge in

Conclusions

RAPT effectively predicts post-acute care requirements. RAPT might be applied to increase LOS selectively in patients predicted to go home in order to avoid discharge to post-acute care inpatient facilities, or reduce LOS for patients with high probability of post-acute care need. Such strategies may improve patient outcomes while decreasing resource utilization.

References

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Learning Objectives

RAPT is useful in predicting ARF and SNF need. Utilizing RAPT may reduce unnecessary resource utilization and improve patient care.

Figure 1

