## Abstract

### Objective(s):
Our research aims to identify factors that influence post-operative length of stay (LOS) within a vascular surgery service.

### Methods:
Data from Mount Sinai's Department of Finance and NSQIP were retrospectively analyzed for 663 vascular surgery inpatients from January 2011 to October 2015. Information regarding patients' demographics, comorbidities, procedures, insurance status, and discharge dispositions was collected as independent predictors for post-operative LOS. Following log-transformation of post-operative LOS, a linear model was created. Statistically significant variables (P<0.05) were included in a final linear model for post-operative LOS.

### Results:
663 patients were included in our retrospective study. The variables that had a statistically significant influence on post-operative LOS include: age, Elixhauser comorbidity index, principal diagnosis, procedure type, procedural urgency, wound classification, post-operative complications and discharge disposition. Among procedural urgency, patients undergoing emergent procedures had significantly prolonged LOS (50%). Among diagnoses, patients with diabetic foot infections and embolic/thrombotic events had significantly prolonged LOS (30% and 42%, respectively). Among procedure types, open aneurysm repair had a significantly higher LOS than endovascular aneurysm repair (42%). Furthermore, each additional Elixhauser comorbidity increased LOS by 7% and a post-operative MI increased LOS by 11%. Interestingly, discharge disposition had the greatest effect on post-operative LOS. Being discharged to a nursing/rehabilitation facility or with home health care were both associated with significantly longer LOS when compared to patients discharged home with self-care. Patients discharged to nursing/rehab facilities had a 91% increase in average post-operative LOS and patients discharged with home health care had a 60% increase in LOS. Notably, insurance type did not influence patients' discharge disposition.

### Conclusions:
LOS is commonly used to evaluate patient outcomes, hospital performance and resource consumption. Our study is a single-institution retrospective study aimed to identify the factors that influence a patient’s post-operative LOS. While our study identifies many well-known factors, such as management of comorbidities, reducing post-operative complications, and preventing surgical emergencies, it also highlights other factors, such as patient disposition. Based on our findings, patient disposition has the largest influence on prolonging a patient’s LOS. These findings support the role of a multi-disciplinary approach to patient care and, if LOS continues to be used as a proxy for quality of care, increasing the urgency and frequency with which we address issues of patient disposition during hospitalization.