

## Can Preoperative Risk Factors be used to Predict Unplanned Admission or Readmission Rates? A Study of Foot and Ankle Patients.

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**Introduction/Purpose:** In the current health care climate, there is an increasing focus on cost savings and resource management. As such, there is an emphasis on decreasing length of stay and performing surgery on an outpatient basis. Consequently, some patients will have unanticipated intra-operative or post-operative adverse events that will necessitate an unplanned post-operative hospital admission or a readmission after discharge. These unplanned admissions or readmissions represent an increased burden on health care systems and can cause cancellation of other scheduled procedures. The purpose of this study is to investigate whether pre-operative patient risk factors or intra-operative events could predict unplanned admission or readmission following discharge in patients undergoing either elective or emergency foot and ankle surgery.

**Methods:** Data was prospectively collected on a total of 889 patients. The patients were divided into two groups: patients without readmissions (N=791) and patients who had an unplanned admission or readmission (N=98). We also collected and analyzed the following variables: age, gender, BMI, diabetes, ASA class, surgery start time, length of surgery, regional vs. general anesthetic, elective vs. trauma surgery and type of procedure. Logistic regression models were used to identify risk factors that could independently predict unplanned admissions or readmissions to hospital following foot and ankle surgery.

**Results:** Factors that could be used to independently predict readmission were length of surgery (p 0.0154, Odds Ratio 1.004) and trauma surgery (0.0167; 1.978). For every 1-hour increase in length of surgery, the odds of unplanned admission/readmission increase by 1.27 times. The odds of patients undergoing surgery for acute traumatic injuries getting readmitted are 1.978 times higher than for elective surgery patients.

**Conclusion:** In conclusion, our study showed that pre-operative patient risk factors including BMI, diabetes, and ASA status were unable to predict whether patients would have an unplanned admission or readmission. The two factors that were able to predict whether patients would have an unplanned admission or readmission were length of the procedure and trauma surgery – both of which are not readily modifiable. Our results showed that in spite of institutional measures to ensure timely discharge, only 11% of patients required an unplanned admission or readmission.

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