Introduction:
The perioperative medication adherence rate has been estimated at 22-60% (1-2). Non-adherence has been associated with increased age, higher ASA status, race, number of medications, medication cost, insurance coverage and physician-patient communication (2-3). No single clear factor was associated with non-adherence, suggesting that compliance is associated with numerous interacting predictors (3). The primary objective of this retrospective chart review was to determine the proportion of patients undergoing non-emergent surgery who are non-adherent with medication instructions and to identify predictors of non-adherence.

Methods:
Approval was granted by the local Research Ethics Board. A random sample of 650 patients, who were under 18 years, was generated from 6338 surgeries. Emergency surgery and inpatients were excluded from this initial pool. From the 650, 94 patients were removed due to incomplete/illegible charting or not taking any medications, leaving a sample size of 556. Adherence was determined by comparing the medication instructions given to the patient at their anesthesia pre-operative clinic visit and medication reconciliation done by a nurse and undertaken on the day of surgery. Variables in the analysis included: demographics, American Society of Anesthesiologists (ASA) classification, total medication taken, medication classes, language, surgery type, type of anesthetic, patient comorbidities, disposition (home, overnight observation or admission), peri-operative complications, individual at preoperative clinic taking medication history, scheduled and actual case start, and time between pre-operative visit and surgery. A patient was defined as non-adherent if there was a single record of non-adherence (for any medication) in the anesthetic record.

Results:
412 patients were adherent and 144 non-adherent. The non-adherence rate was 25.9%. Predictors of non-adherence from univariate analysis were: regional anesthesia versus general anesthesia (odds ratio [OR] 2.4; 95% confidence interval [CI] 1.5 to 3.7), ASA class III (OR 5.2; 95% CI 1.8 to 14.9), ASA class IV (OR 3.7; 95% CI
CI% 1.2 to 11.4), pharmacist (versus a nurse) completing the medication list in the preoperative clinic (OR 1.9; 95% CI 1.2 to 2.9), MSK comorbidities (OR 1.5; 95% CI 1.0 to 2.2), increasing age (OR for each increasing year 1.0; 95% CI 1.01 to 1.04) and increasing number of medications (OR for each additional medication 1.1; 95% CI 1.0 to 1.1). Multivariate regression analysis revealed the variables that remained significant predictors of non-adherence were: number of medications (OR 1.1; 95% CI 1.0 to 1.1) and regional anesthesia versus general anesthesia (OR 1.8; 95% CI 1.1 to 3.1).

Conclusions:
The rate of non-adherence was 25.9%, which is in keeping with previously recorded rates. Univariate analysis showed significance for several variables; however, multivariate analysis showed predictors of non-adherence to be increasing number of medications and regional anesthesia.

References: