A Prescribing Protocol Decreases the Rate of Chronic Opioid Use in Orthopaedic Trauma Patients
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INTRODUCTION:
The epidemic of opioid overdose in the United States is an ongoing public health crisis with increasing visibility in the media and public awareness. There is a clear need for orthopaedic-specific protocols that address both patient expectations as well as provider practices for routine postoperative opioid prescriptions in order to minimize the risks of prolonged opioid use. The purpose of this study was to assess the effect of an opioid prescribing protocol on new persistent opioid use in fracture surgery patients. We hypothesized that the protocol would reduce the rate of new persistent opioid use, as measured by prescriptions filled between 6 and 12 months after surgery.

METHODS:
The study cohort consisted of patients treated surgically for a fracture at our level 1 trauma center before or after implementation of the orthopaedic trauma discharge opioid prescription protocol. Exclusion criteria were age less than 18 years old, preexisting opioid use, or polytrauma. One-hundred-twenty-two patients prior to protocol implementation and 103 patients after protocol implementation met inclusion criteria.

Postoperatively, all patients received multimodal analgesia with scheduled acetaminophen, scheduled gabapentin, oral opioids as needed, and intravenous opioids available for breakthrough pain. The discharge opioid prescription protocol consisted of a suggested opioid prescription, patient education, and instructions on multimodal analgesia in general as well as specific opioids. The amount of 5mg oxycodone tablet equivalents prescribed at discharge was determined by the location of the fracture and was based on historical trends at our institution. Patient discharge instructions included information on the benefits of multimodal analgesia, instructions for how to taper opioid medication, as well as instructions for the safe disposal of unused medication. The primary outcome measured was persistent opioid use more than six months postoperatively.

RESULTS:

There was a statistically significant difference in the percent of female patients between the two groups (44% vs. 60%, Table 1). There was a significant decrease in the rate of new persistent opioid use in the protocol group (25% vs. 12%, odds ratio 0.37, p=.012, Table 2) was observed. The number of patients that needed to be treated in order to prevent one case of new persistent opioid use was eight. There was a statistically significant decrease in variability in the protocol group (standard deviation 31 vs. 21 tablets, p<.001, Table 3). Age was a significant risk factor for new persistent opioid use (odds ratio 1.03, p=.006). For each additional year in age, risk increased by 3%.

DISCUSSION AND CONCLUSION:
We studied the effect of implementing a protocol for opioid prescribing at a Level I trauma center and found a statistically and clinically significant decrease in the rate of new persistent opioid use following implementation of the protocol. We identified increasing age as an independent risk factor for new persistent opioid use.

A simple and straightforward protocol can reduce the risk of chronic opioid use. We believe the success of this type of protocol stems from a few main factors. First, standardization of the postoperative analgesia helps set expectations about expected opioid use for both patients and prescribers. This allows providers to more easily identify patients that are using higher than normal amounts of opioid and at risk for developing chronic opioid use. Second, the protocol helps manage patient expectations on the level of postoperative pain and establishes the ultimate goal of cessation of opioid use as a shared goal between patients and providers. Third, providing information on safe disposal of excess opioids reduces the risk that the patient will resume opioid use at a later date, and reinforces the expectation of opioid cessation.