

OBJECTIVE

Depending on the nerve site, mechanism, and chronicity, patients with peripheral nerve injuries often present with life-limiting pain. Managing pain after surgery may be especially challenging among this patient population given the known pathophysiological changes with pain. The goal of this study was to leverage a population-level dataset to **determine the incidence of new persistent opioid use after surgery for different types of peripheral nerve conditions.**

METHODS

We used the Truven Health MarketScan® databases to identify the following patients:

- **Patient cohort (Figure 1):**
 - Adult patients aged 18-64 years old
 - Filled perioperative opioid prescription
 - Opioid naïve (i.e. did not fill opioids 12 months prior to surgery)
 - Continuous enrollment
 - Did not undergo subsequent surgery within 6 months
- **Surgery for following conditions:** brachial plexus injury, cubital tunnel, carpal tunnel, ulnar nerve at wrist, neuroma, pathology of peroneal and facial nerves
- **Primary outcome**
 - New persistent opioid use = opioid prescription fill between 90 and 180 days after surgery
- **Statistical analysis**
 - Chi-square for categorical variables
 - Multivariable logistic regression
 - Significance at $p < 0.05$

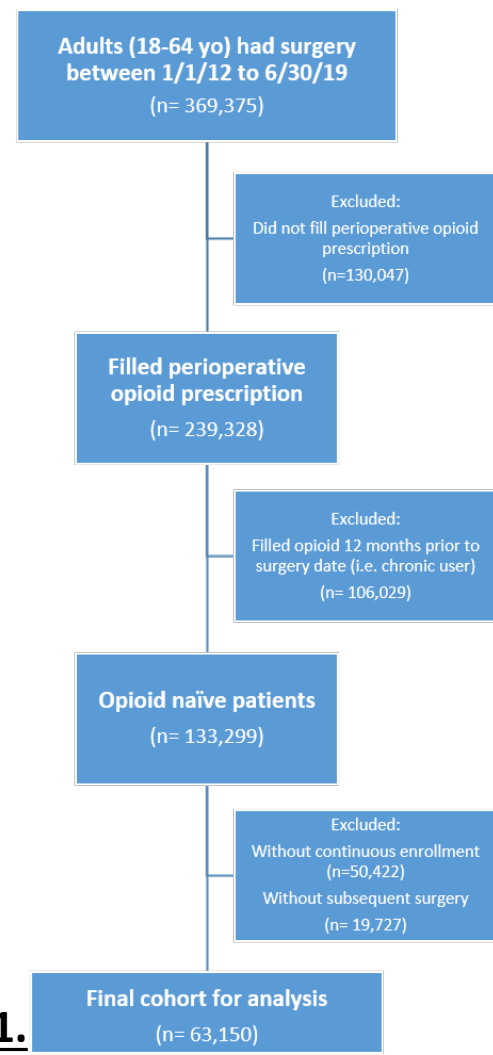
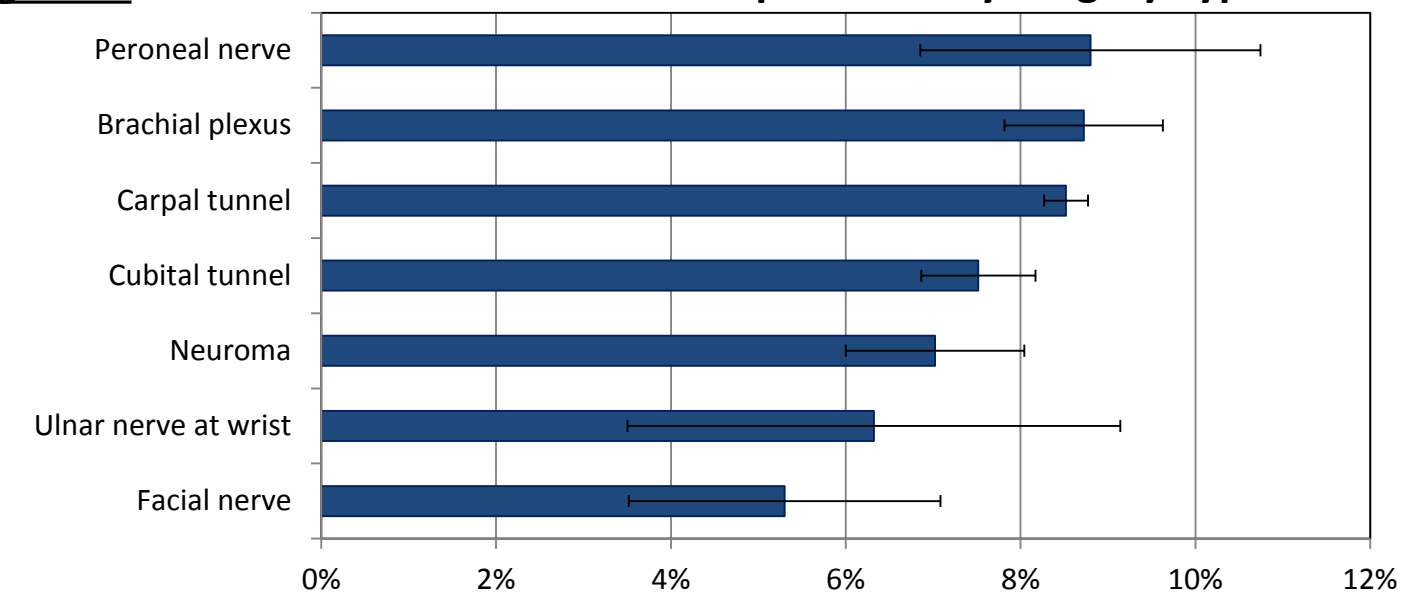


Figure 1.

RESULTS

Figure 2. Incidence of New Persistent Opioid Use by Surgery Type



We found three main results from this study:

1. **Preoperative use:** Overall, 55.7% of patients who filled an opioid prescription in the perioperative period were opioid-naïve.
2. **New persistent postoperative use:** The rate of new persistent opioid use in opioid-naïve peripheral nerve surgical patients was 8.3%. These patients continued to fill an opioid prescription between 90 and 180 days after surgery. Rates varied between procedure types (Figure 2).
3. **Risk factors of new persistent use:** Logistic regression found that female sex, comprehensive insurance, comorbidities, anxiety, mood disorder, drug and substance use disorders, pain disorder, higher opioid dose of initial prescription, and use of adjunct neuropathic pain medications were associated with an increased risk of new persistent opioid use after surgery.

CONCLUSIONS

About 8% of opioid naïve patients continue to fill opioids 90 days after peripheral nerve surgery. Identifying patients at highest risk and educating all-comers are necessary to curbing the prescription opioid drug crisis.