High-Risk Opioid Prescribing and Persistent Opioid Use After Major Lower Limb Amputation Among Medicare Beneficiaries

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BACKGROUND

- National quality improvement initiatives have attempted to mitigate opioid-related harms in postamputation patients.
- However, the prevalence of high-risk opioid prescribing in this population and the risk factors associated with persistent opioid use after major lower limb amputation are not well described.
- Filling this knowledge gap will guide safe-opioid prescribing practices for amputation patients.

OBJECTIVE



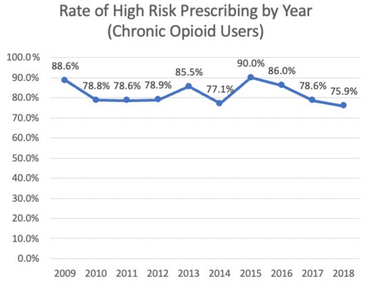
To identify risk factors associated with prolonged opioid use after major lower limb amputation.

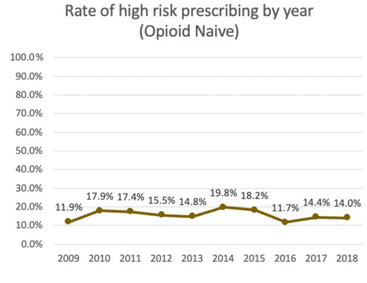
RESULTS

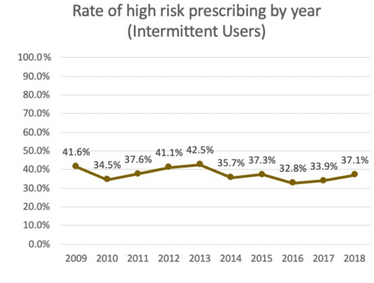
- 5,191 patients were included (Chronic opioid-users=1,432; Intermittent opioid-users=2,195; Opioid-Naïve=1,564).
- Rates of high-risk prescribing **did not** change significantly during the 9.5-year study period.
- 82.3% chronic users (p=0.65), 37.2% intermittent users (p=0.105), and 15.5% opioid-naïve (p=0.74) users were exposed to high-risk prescribing.
- Individuals with prior opioid fills were more likely to have prolonged use (chronic users OR=2.21, p=0.033; non-chronic users OR=4.46, p<0.001).
- Among non-chronic opioid users, age<55 years (OR=1.41, p=0.04), concurrent gabapentinoid fills (OR=1.92, p<0.001), and sedative/anxiolytic fills (OR=1.75, p<0.001) were associated with prolonged opioid use.

Risk-factors associated with prolonged opioid use in chronic and non-chronic opioid users

Cohort	Variable	Odds-Ratio	P-value
Chronic User	Opioid filled 30 days prior to admission	2.21	0.033
Non-Chronic User	Opioid filled 30 days prior to admission	4.46	<0.001
	Age < 55 years	1.41	0.04
	Concurrent Gabapentinoid	1.92	<0.001
	Concurrent Sedative/Anxiolytic	1.75	<0.001







METHODS and DEFINITIONS

Data Source: 20% National Sample of Medicare Fee-for-service Claim data, 2008 – 2018.

Study Sample: Patients who underwent major lower limb amputation (including hip, below hip, knee, below knee, ankle, and below ankle amputation) between 1/1/2009 and 6/30/2018 identified using ICD-9, ICD-10, and CPT codes.

Exclusion Criteria: Patients that did not discharge home, or had a length of stay > 30 days, or without parts A, B, and D continuous enrollment 1 year before admission and 6 months after discharge, or had subsequent surgery based on anesthesia CPT codes for surgery 180 days after discharge.

Persistent Opioid Use: 1 opioid prescription filled in the 4-90 days after discharge AND another fill 91 – 180 days after discharge.

High-risk opioid prescribing: Overlapping opioid prescriptions, concurrent benzodiazepine and opioid prescriptions, daily-doses>100 OMEs, multiple prescribers, and new long-acting opioid-use 90-days postoperatively.

Chronic Opioid User: 180-day supply over one year and at least 1 prescription within 60 days of surgery.

Opioid Naïve User: Did not fill an opioid prescription between 365 and 31 days before admission.

Intermittent Opioid User: Filled some opioid prescriptions (<180-day supply) between 365 and 31 days before admission.

Patient Covariates: Age, sex, race, Charlson Comorbidity index, presence of mental health disorders, co-existing pain conditions, level of amputation, filled benzos, sedatives, anxiolytics within 30 days before admission, filled gabapentinoids within 30 days before admission.

Statistical Methods: We used the Cochran-Armitage-Trend-Test to determine trends in high-risk prescribing over time, and multilevel mixed-effects logistic regression to determine predictors of prolonged use.

CONCLUSIONS

- Despite increased national awareness and attempts to improve opioid prescribing patterns in the past decade, high-risk prescribing practices remain common and have not changed over time for patients undergoing lower extremity amputation surgery.
- Following lower extremity amputation, a focus on preoperative risk factors, particularly preoperative opioid exposure, will be of high-value to optimize postamputation pain control and promote safe opioid stewardship.

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