Prevalence of Preoperative High Dose Chronic Opioid Use and Opioid Tapering in Knee, Shoulder, and Spine Surgery

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BACKGROUND

High dose chronic opioid use can be observed in prescription drug claims by calculating morphine equivalent daily dose (MEDD) and cumulative days supply (Figure 1). However, measurement of opioid tapering in administrative claims data is challenging. Currently, there is no specific billing code available to practitioners in order to reimburse medically managed reductions in opioid dose, or tapering.[1]

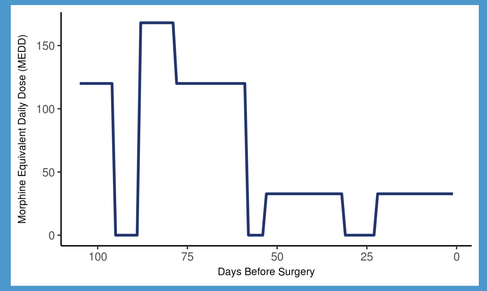

Figure 1. Example of opioid use patterns observed in claims.

In order to discern medically supervised tapering from random dose reductions in managed healthcare populations, comparison of observed reductions over time must be made against medical guidelines. Practitioners often manage tapers by instructing patients to reduce opioid consumption over the course of a 30-day prescription, and these special instructions are not observable in prescription drug claims.

OBJECTIVE

- To describe methods for measuring opioid tapering i administrative claims
- To apply these methods to members with high dose chronic opioid use and evaluate whether they were tapered according to the Centers for Disease Control and Prevention (CDC) guidelines2 prior to selected musculoskeletal (MSK) surgeries.

METHODS

We performed a retrospective analysis of U.S. commercial medical and pharmacy claims provided by Blue Health Intelligence™[3] with dates of service between June 1, 2016 and January 1, 2018.

- High dose chronic opioid use was identified in members who had an opioid prescription covering at least 90 days of a 120-day preoperative window with MEDD ≥ 50 mg. Among members meeting this criteria, we identified those individuals who met CDC guidelines[2] for opioid tapering.
- Opioid tapering was assessed during a 90-day preoperative window. Members were identified who had reductions in opioid dose of 10% weekly or 10% monthly from initial to final dose using a financial compound interest formula.
- Opioid tapering was evaluated relative to the following MSK surgeries:
  - Total knee arthroplasty (HCPCS 27447)
  - Knee arthroscopy (HCPCS 29881)
  - Shoulder arthroscopy (HCPCS 29826)
  - Anterior spinal fusion (HCPCS 22551)

Members were included in this analysis if they were at least 18 years of age at the time of surgery and if they had a single MSK surgery performed with at least 390 days of continuous health coverage surrounding the procedure (210 days before, 180 days after).

RESULTS

86,651 members were included in this analysis. Of these, 2.0% were identified as preoperative high dose chronic opioid users. Individuals undergoing anterior spinal fusion made up the largest proportion (4.8%) of these members (Figure 2).

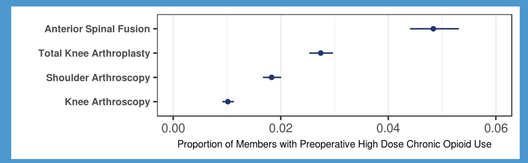

Figure 2. Proportion of members using preoperative high dose chronic opioids, by surgery type.

Pooled across all surgeries, 32.8% of 1,766 preoperative high dose chronic opioid users were tapered according to the CDC recommendation of either 10% weekly or monthly dose reductions. The majority (67.6%) of the 580 tapered members experienced dose decreases at a monthly frequency.
Per surgery, about 10% of tapers occurred at a weekly frequency while about 20-25% occurred monthly (Figure 3).

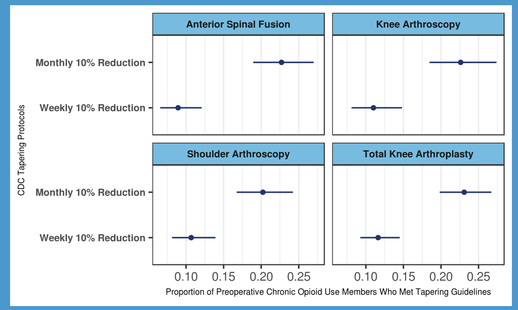

Figure 3. Proportion of members using preoperative high dose chronic opioids who met CDC tapering guidelines, by surgery type and timeframe.

CONCLUSIONS

The proportion of members using preoperative high dose chronic opioids before total knee arthroplasty, knee arthroscopy, shoulder arthroscopy, or anterior spinal fusion was low (2%) in this commercial population. Fewer than 33% of these members met CDC guidelines[2] for an opioid taper (10% dose reduction weekly or monthly) over 90-days prior to surgery. Most tapers (67.6%) occurred at a monthly frequency.

- Standardized measurement of opioid tapering in administrative claims is necessary to assess the prevalence and potential impact of opioid tapering in patients with chronic opioid use.
- Creation of billing codes specific to medically managed opioid reduction would allow for real-time assessment of interventions.

The opioid reduction data in this analysis do not include member-reported outcomes or measures of pain, mood, or function, and opioid dose reduction alone should not imply improvement in member outcomes. Further analysis would give insight into the association of opioid tapering with outcomes and medical utilization (AAPM poster 125).

REFERENCES

1. Current Procedural Terminology (CPT®) copyright 2019 American Medical Association. Search terms: opioid, wean, taper, reduction.

2. Dowell D, Haegerich TM, Chou R. CDC guideline for prescribing opioids for chronic pain—United States, 2016." JAMA. 2016;315(15): 1624-45.

3. Blue Health Intelligence™ (https://bluehealthintelligence.com/bigdata)