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Using the National Ambulatory Medical Care Survey (NAMCS) and National Hospital Ambulatory Medical Care Survey (NHAMCS) to Estimate Frequency of High-Risk Prescribing Patterns to Develop Targeted Interventions

Opioid use disorder (OUD) continues to be a crisis in the United States. In 2019, almost 50,000 people died from OUD [1]. Opioid prescribing has decreased over the last 4-5 years, though the knowledge about the changes in high risk prescribing over time is less understood [1, 2].

Citations:

[1] Gladden, R. M., O'Donell, J., Mattson, C. L., Seth, P. (2019, August 30). Changes in Opioid-Involved Overdose Deaths by Opioid Type and Presence of Benzodiazepines, Cocaine, and Methamphetamine — 25 States, July–December 2017 to January–June 2018. Mortality and Morbidity Weekly Report - Centers for Disease Control and Prevention. https://www.cdc.gov/mmwr/volumes/68/wr/mm6834a2.htm

[2] Schieber LZ, Guy GP Jr, Seth P, Losby JL. Variation in Adult Outpatient Opioid Prescription Dispensing by Age and Sex — United States, 2008–2018. MMWR Morb Mortal Wkly Rep 2020;69:298–302. DOI: https://www.cdc.gov/mmwr/volumes/69/wr/mm6911a5.htm

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Methods

We conducted a secondary analysis of NAMCS ambulatory care data from 2007-2016 and NHAMCS emergency department data from 2007-2018. Both surveys rely on multistage probability sampling to capture a representative sample of provision and access to medical care among the U.S. population. We downloaded the open-access data from CDC's website, merged datasets across years, and examined frequencies of high-risk prescribing patterns. For the purposes of our study, we focused on high-risk prescribing in relation to co-prescription with contraindicated drugs (e.g., hypnotics, benzodiazepines, gabapentinoids, cannabinoids, muscle relaxants, and tricyclic antidepressants).

Findings

- In the combined sample (N = 105,720), the most common frequencies of contraindicated co-prescriptions with opioids were benzodiazepines (20.2%), muscle relaxants (15.4%), gabapentinoids (12.6%), hypnotics (6.8%), tricyclic antidepressants (3.7%), and cannabinoids (0.1%).
- Compared to visits with only an opioid prescription, patient visits in which an opioid and contraindicated medication was prescribed, patients were older, more often white, female, and more frequently using private insurance or Medicare.

Fig 1. Mean Frequency of Contraindicated Co-Prescription(s) with Opioids

Legend: Total/Combined (N=105,720); NAMCS (N=31,825); NHAMCS (N= 73,895)
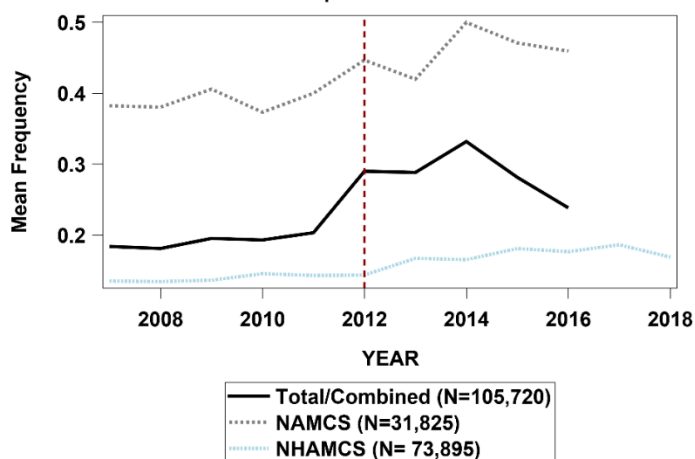
Figure 1: Mean frequency of co-prescription of opioids with contraindicated drugs increased from 2007-2014 for all strata; mean frequency decreased from 2014-2016 overall and for NAMCS and plateaued from 2014-2018 for NHAMCS. There is a red line through 2012 because data capture changed from paper to electronic collection and could have initially inflated results.

Discussion

Co-prescription of opioids with contraindicated medications and the means to which it is occurring may be best identified through understanding why certain patients are receiving these co-prescriptions disproportionately to others. The recent decrease in opioid prescribing and co-prescribing overall might indicate that education and existing interventions are taking effect. Investigation in scaling up and sustaining current interventions is warranted.