

# Concurrent Use of Opioids and Benzodiazepines: Evaluation of Prescription Drug Monitoring by a United States Laboratory

## Background

- Deaths and other adverse events caused by opioid (heroin and opioid pain medications) overdose are an epidemic problem in the United States.<sup>1</sup> More than 30% of overdose-related deaths involve the concurrent use of benzodiazepines.<sup>2</sup>
- Previous studies of concurrent opioid and benzodiazepine use that rely solely on prescription data do not factor in adherence to prescriptions and use of non-prescribed or illicit drugs.
- Analysis of patient specimens provides an objective measure of actual concurrent use.
- **Objective:** The investigators analyzed prescription and demographic data along with urine drug testing results in patients who were prescribed at least 1 opioid or benzodiazepine from the ordering physician.

## Methods

- The study group included all patients with 1) urine opioid and benzodiazepine prescription drug monitoring results from Quest Diagnostics between March 2015 and December 2015, and 2) a prescription for at least 1 medication from the ordering physician.
- Demographic data were collected for the first analysis of each patient.
- Drugs and drug metabolites were detected by liquid chromatography-tandem mass spectrometry (LC-MS/MS) analysis.
- Statistical analyses used the chi-square, Cochran-Armitage, and t-tests, as well as multivariable logistic regression analysis.

## Results

- A total of 231,228 urine specimens from 144,535 patients were included.
- Among the 59,557 (25.8%) specimens that tested positive for concurrent use of an opioid and benzodiazepine, almost two-thirds included 1 or more non-prescribed opioid or benzodiazepine.
  - Among the 165,019 specimens that tested positive for prescribed opioids, 18.7% also tested positive for non-prescribed benzodiazepines.
  - Among 40,684 specimens that tested positive for prescribed benzodiazepines, 15.5% also tested positive for non-prescribed opioids.
- Increasing age and Medicare insurance coverage were associated with greater use of opioids and benzodiazepines, and their concurrent use.
- Female gender was associated with greater use of benzodiazepines and concurrent use of opioids and benzodiazepines.

## Conclusions

- For nearly two-thirds of the specimens that demonstrated concurrent use of opioids and benzodiazepines, at least one drug was not prescribed.
- In over half (52.2%) of the specimens that demonstrated concurrent use of opioids and benzodiazepines, one drug class was prescribed and the other was not.
- These findings support the recommendation of the Centers for Disease Control and Prevention that healthcare providers should use urine drug testing for patients before, and periodically throughout, opioid use.<sup>3</sup>
- Data from this study also suggest that urine drug testing should be extended to patients prescribed benzodiazepines.

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### Webpage

<https://www.ncbi.nlm.nih.gov/pubmed/28953504D>

### References

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