

Risk of opioid overdose appears higher in older Americans

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Even with COVID-19 dominating the news, the epidemic of opioid use remains a nationwide threat. While public awareness and efforts to stop addiction and overdoses have intensified, some communities reported

higher rates of opioid-related deaths in 2020 than ever before. The extent and burden of opioid prescription drug use has gone largely uninvestigated as most studies have focused on curtailing illegal use.

Recent research led by USC School of Pharmacy faculty member Dima M. Qato aims to fill that knowledge gap. The findings—published in *Pharmacoepidemiology and Drug Safety*—revealed that, although high risk prescription [opioid](#) use has declined, nearly 1 in 10 adults were taking opioids that puts them at increased risk from an [opioid overdose](#) in 2016.

Working with Carter McCormick of the University of Illinois at Chicago, Qato and colleagues examined a representative, 5% sample of anonymized data drawn from individual prescription claims from 2011 through 2016. The study analyzed use among U.S. adults age 18 and older who bought prescriptions from retail pharmacies.

"These findings indicate that many people are at risk of an opioid overdose and underscore the importance of strengthening the implementation of overdose prevention particularly naloxone access laws, and harm reduction strategies " said Qato, a senior fellow at the USC Schaeffer Center for Health Policy & Economics and the Hygeia Centennial Chair and Associate Professor and Director of the Program on Medicines and Public Health at the USC School of Pharmacy.

Many states have naloxone access laws that allow individuals to get naloxone directly from a pharmacy without a prescription from a physician.

Even so, increased awareness about the hazards of opioid use and a variety of policy interventions, such as prescription drug monitoring programs, has resulted in an overall trend of decreased prescribing, dispensing and use adds McCormick, the study's first author. "The rate

of high-risk opioid use decreased nationally from 12% to 9.4% in the period we evaluated," McCormick said.

Not every state showed a decline, however. High risk opioid use rose 13.7% in South Dakota—during the same time a spike in opioid overdoses occurred. "The prevalence of high risk opioid use remains troubling throughout the U.S.," McCormick said. There are also substantial variation in high risk opioid use by state, ranging from 5.4% in New York to 17.5% in Alaska in 2016.

The researchers' analysis utilized a nationally representative dataset that captures prescriptions from more than 90% of all U.S. pharmacies—the IQVIA Longitudinal Prescription Claims.

Risk of opioid overdose: Defining high risk use

The Centers for Disease Control and Prevention defines high-risk opioid use as equal to or greater than 50 morphine milligram equivalents (MME) per day. MME measures a drug's potency in comparison with morphine. For example, 10 tablets of Vicodin—the most commonly used prescription opioid—is considered 50 MME.

Accounting for these federal guidelines on usage, the USC team also factored in dangerous co-prescriptions of benzodiazepines, a class of sedatives commonly prescribed for anxiety, seizures or insomnia. "Combining opioids with benzodiazepines further increases the risk of overdose and death," McCormick said.

Despite national efforts to reduce co-prescribing of opioids with benzodiazepines, however, this pattern remained relatively constant throughout the six-year period, especially in older adults.

"We found that the declines in high-risk opioid use were largely driven

by declines in the use of of opioid medications greater than 50 MMEs per day and not concurrent use of opioids with benzodiazepines," Qato said.

High risk users at risk of opioid overdose

Qato and colleagues also accounted for several characteristics of prescription opioid users, including age and each pharmacy's zip code. To track changes in use across time and geography, the researchers also considered where the individuals purchased most of their prescriptions. They then broke down the data state-by-state and analyzed the trends for the entire nation.

The researchers found that more than half of high-risk prescription opioid users (51.1%) received their prescriptions from a single provider. Most (72.1%) also purchased the drugs at a single pharmacy.

Overall, use of opioids may be tapering: 30% of people filled at least one opioid prescription in 2011 compared to 27.2% in 2016. Payments usually being made through commercial or private insurance.

The study detected higher rates of risk among older consumers, who tended to use Medicare for payment. They were also more likely than their younger counterparts to have multiple prescribers and purchase from multiple pharmacies. While opioid use declined by 36.2% among people ages 18 to 35, use declined by only 6.7% among those 65 years or older.

"Future clinical studies and policy interventions," the authors suggest, "should consider targeting [older adults](#) with Medicare Part D, including those using a single pharmacy to fill their opioid prescriptions."

Turning the tide to reduce risk of opioid overdose

Still, Qato and colleagues see signs calling for cautious optimism. They found that 2012 marked the nation's peak of opioid prescribing. By then, many states had started prescription drug monitoring programs, passed "pill-mill" laws and limited painkiller prescriptions. The U.S. Centers for Medicare & Medicaid Services also initiated drug management programs that required beneficiaries to use specific prescribers and/or pharmacies.

By 2019, the national rate of opioid prescription had decreased to 46.7 per 100 individuals, down from 80.9 per 100 people in 2011. Although opioid use is declining, overdose deaths have not—with young adults showing the highest fatality rates.

"These different interventions all aim to reduce high-risk prescription opioid use," write the authors, but "there is varying evidence regarding their impact on opioid-related mortality."

So even though the nation may have turned the tide against high-risk prescription opioid use, more effective and targeted policy and community measures are needed, the authors noted. They plan to conduct further studies.

More information: Carter D. McCormick et al, Prevalence and distribution of high-risk prescription opioid use in the United States, 2011–2016, *Pharmacoepidemiology and Drug Safety* (2021). [DOI: 10.1002/pds.5349](https://doi.org/10.1002/pds.5349)

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