

Injury Prevention & Control

Policy Impact: Prescription Painkiller Overdoses



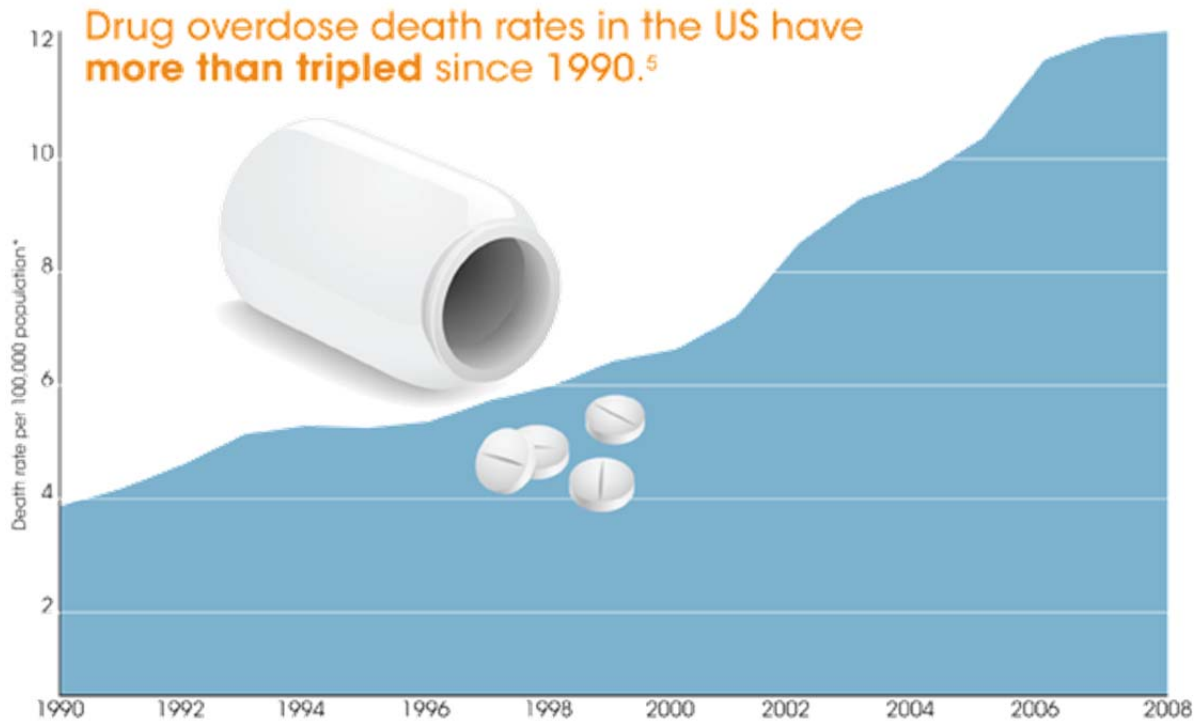
From the Center for Disease Control

What's the Issue?

In a period of nine months, a tiny Kentucky county of fewer than 12,000 people sees a 53-year-old mother, her 35-year-old son, and seven others die by overdosing on pain medications obtained from pain clinics in Florida.¹ In Utah, a 13-year-old fatally overdoses on oxycodone pills taken from a friend's grandmother.² A 20-year-old Boston man dies from an overdose of methadone, only a year after his friend also died from a prescription drug overdose.³

These are not isolated events. Drug overdose death rates in the United States have more than tripled since 1990 and have never been higher. In 2008, more than 36,000 people died from drug overdoses, and most of these deaths were caused by prescription drugs.⁴

100 people die from drug overdoses every day in the United States.⁴



*Deaths are those for which poisoning by drugs (illicit, prescription, and over-the-counter) was the underlying cause.

Commonly Abused Medications

Opioids
Derived from the opium poppy (or synthetic versions of it) and used for pain relief. Examples include hydrocodone (Vicodin[®]), oxycodone (OxyContin[®], Percocet[®]), fentanyl (Duragesic[®], Fentora[®]), methadone, and codeine.

Benzodiazepines
Central nervous system depressants used as sedatives, to induce sleep, prevent seizures, and relieve anxiety. Examples include alprazolam (Xanax[®]), diazepam (Valium[®]), and lorazepam (Ativan[®]).

Amphetamine-like drugs
Central nervous system stimulants used to treat attention deficit hyperactivity disorder (ADHD). Examples include dextroamphetamine/amphetamine (Adderall[®], Adderall XR[®]), and methylphenidate (Ritalin[®], Concerta[®]).

What Do We Know?

The role of prescription painkillers

Although many types of prescription drugs are abused, there is currently a growing, deadly epidemic of prescription painkiller abuse. Nearly three out of four prescription drug overdoses are caused by prescription painkillers—also called opioid pain relievers. The unprecedented rise in overdose deaths in the US parallels a 300% increase since 1999 in the sale of these strong painkillers.⁴ These drugs were involved in 14,800 overdose deaths in 2008, more than cocaine and heroin combined.⁴

The misuse and abuse of prescription painkillers was responsible for more than 475,000 emergency department visits in 2009, a number that nearly doubled in just five years.⁶

More than 12 million people reported using prescription painkillers nonmedically in 2010, that is, using them without a prescription or for the feeling they cause.⁷

The role of alcohol and other drugs

About one-half of prescription painkiller deaths involve at least one other drug, including benzodiazepines, cocaine, and heroin. Alcohol is also involved in many overdose deaths.⁸

In 2008, there were 14,800 prescription painkiller deaths.⁴

For every **1** death there are...



10 treatment admissions for abuse⁹

32 emergency dept visits for misuse or abuse⁶

130 people who abuse or are dependent⁷

825 nonmedical users⁷

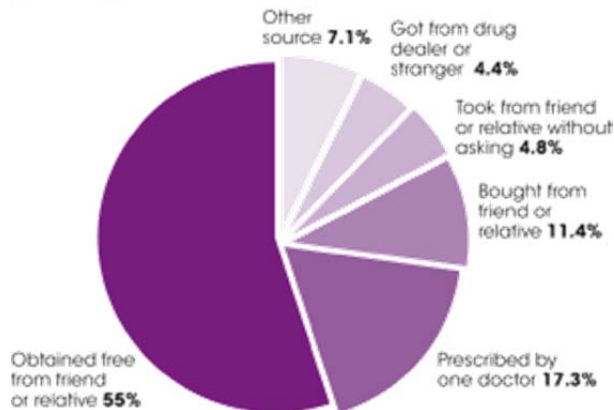
How Prescription Painkiller Deaths Occur

Prescription painkillers work by binding to receptors in the brain to decrease the perception of pain. These powerful drugs can create a feeling of euphoria, cause physical dependence, and, in some people, lead to addiction. Prescription painkillers also cause sedation and slow down a person's breathing.

A person who is abusing prescription painkillers might take larger doses to achieve a euphoric effect and reduce withdrawal symptoms. These larger doses can cause breathing to slow down so much that breathing stops, resulting in a fatal overdose.

In 2010, 2 million people reported using prescription painkillers nonmedically for the first time within the last year—nearly 5,500 a day.⁷

People who abuse prescription painkillers get drugs from a variety of sources⁷



Where the drugs come from

Almost all prescription drugs involved in overdoses come from prescriptions originally; very few come from pharmacy theft. However, once they are prescribed and dispensed, prescription drugs are frequently diverted to people using them without prescriptions. More than three out of four people who misuse prescription painkillers use drugs prescribed to someone else.⁷

Most prescription painkillers are prescribed by primary care and internal medicine doctors and dentists, not specialists.¹⁰ Roughly 20% of prescribers prescribe 80% of all prescription painkillers.^{11,12,13}

Who is most at risk

Understanding the groups at highest risk for overdose can help states target interventions. Research shows that some groups are particularly vulnerable to prescription drug overdose:

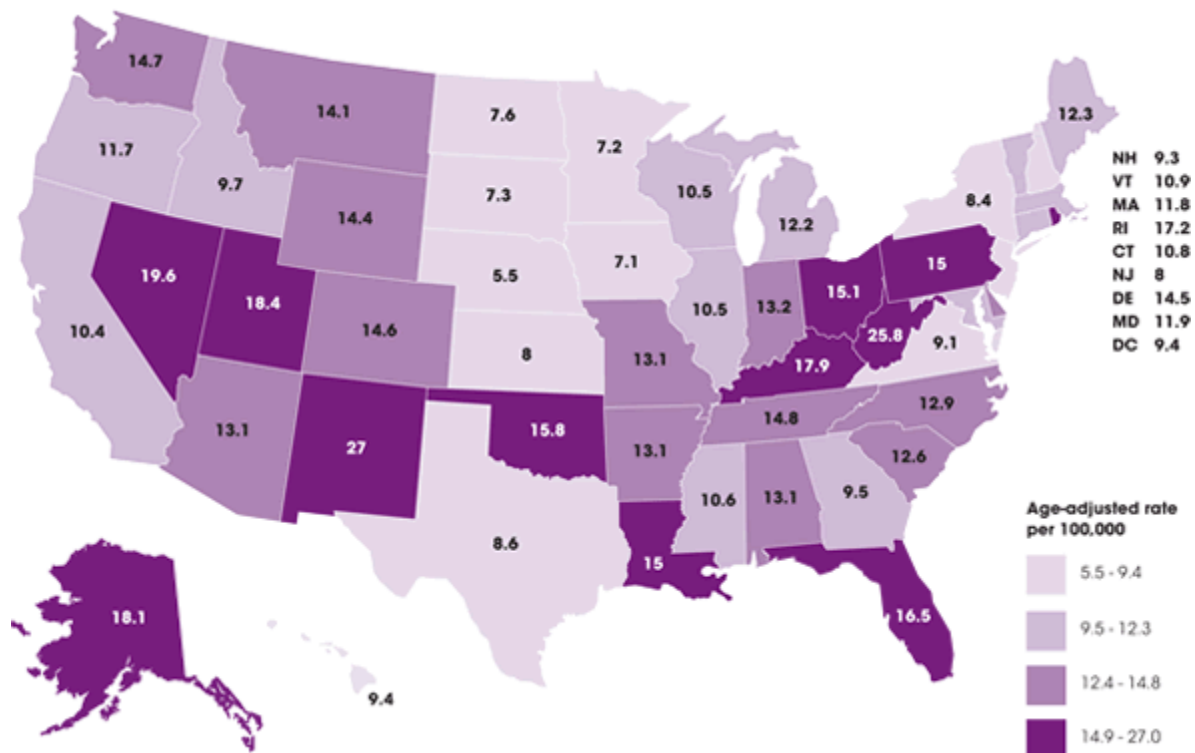
- People who obtain multiple controlled substance prescriptions from multiple providers—a practice known as “doctor shopping.”^{14,15}
- People who take high daily dosages of prescription painkillers and those who misuse multiple abuse-prone prescription drugs.^{15,16,17,18,19}
- Low-income people and those living in rural areas.
 - People on Medicaid are prescribed painkillers at twice the rate of non-Medicaid patients and are at six times the risk of prescription painkillers overdose.^{20,21} One Washington State study found that 45% of people who died from prescription painkiller overdoses were Medicaid enrollees.²⁰

- People with mental illness and those with a history of substance abuse.¹⁹

Where overdose deaths are the highest

The drug overdose epidemic is most severe in the Southwest and Appalachian region, and rates vary substantially between states. The highest drug overdose death rates in 2008 were found in New Mexico and West Virginia, which had rates nearly five times that of the state with the lowest rate, Nebraska.⁴

Drug Overdose Rates by State, 2008⁴



[View detailed list of rates](#)

What Can We Do?

There are many different points of intervention to prevent prescription drug overdoses. States play a central role in protecting the public health and regulating health care and the practice of the health professions. As such, states are especially critical to reversing the prescription drug overdose epidemic.

The following state policies show promise in reducing prescription drug abuse while ensuring patients have access to safe, effective pain treatment.

CDC Recommendations

Prescription Drug Monitoring Programs

Thirty-six states have operational Prescription Drug Monitoring Programs.²²

Prescription Drug Monitoring Programs (PDMPs) are state-run electronic databases used to track the prescribing and dispensing of controlled prescription drugs to patients. They are designed to monitor this information for suspected abuse or diversion—that is, the channeling of the drug into an illegal use—and can give a prescriber or pharmacist critical information regarding a patient’s controlled substance prescription history. This information can help prescribers and pharmacists identify high-risk patients who would benefit from early interventions.

CDC recommends that PDMPs focus their resources on

- patients at highest risk in terms of prescription painkiller dosage, numbers of controlled substance prescriptions, and numbers of prescribers; and
- prescribers who clearly deviate from accepted medical practice in terms of prescription painkiller dosage, numbers of prescriptions for controlled substances, and proportion of doctor shoppers among their patients.

CDC also recommends that PDMPs link to electronic health records systems so that PDMP information is better integrated into health care providers’ day-to-day practices.

Patient review and restriction programs

State benefits programs (like Medicaid) and workers’ compensation programs should consider monitoring prescription claims information and PDMP data (where applicable) for signs of inappropriate use of controlled prescription drugs. For patients whose use of multiple providers cannot be justified on medical grounds, such programs should consider reimbursing claims for controlled prescription drugs from a single designated physician and a single designated pharmacy. This can improve the coordination of care and use of medical services, as well as ensure appropriate access, for patients who are at high risk for overdose.

Health care provider accountability

States should ensure that providers follow evidence-based guidelines for the safe and effective use of prescription painkillers. Swift regulatory action taken against health care providers acting outside the limits of accepted medical practice can decrease provider behaviors that contribute to prescription painkiller abuse, diversion, and overdose.

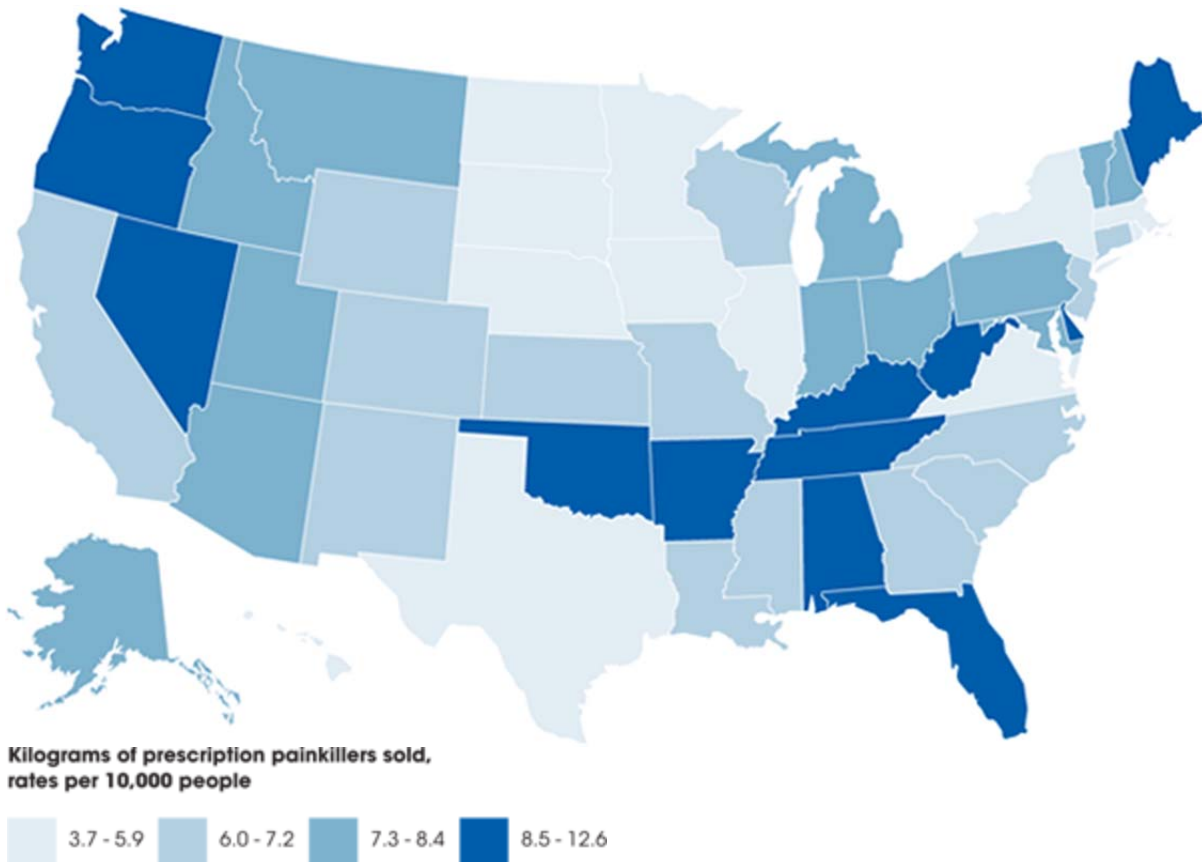
Laws to prevent prescription drug abuse and diversion

States can enact and enforce laws to prevent doctor shopping, the operation of rogue pain clinics or “pill mills,” and other laws to reduce prescription painkiller diversion and abuse while safeguarding legitimate access to pain management services. These laws should also be rigorously evaluated for their effectiveness. [View your state's prescription drug laws.](#)

Better access to substance abuse treatment

Effective, accessible substance abuse treatment programs could reduce overdose among people struggling with dependence and addiction. States should increase access to these important programs.

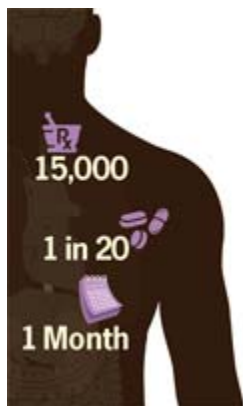
These recommendations are based on promising interventions and expert opinion. Additional research is needed to understand the impact of these interventions on reducing prescription drug overdose deaths.



The amount of prescription painkillers sold in states varies.⁴

The quantity of prescription painkillers sold to pharmacies, hospitals, and doctors' offices was 4 times larger in 2010 than in 1999. Enough prescription painkillers were prescribed in 2010 to medicate every American adult around-the-clock for one month.

Additional Resources



[CDC Vital Signs: Prescription Painkiller Overdoses in the US](#)

MMWR: Vital Signs: Overdoses of Prescription Opioid Pain Relievers --- United States, 1999-2008

CDC Feature Article: Prescription Painkiller Overdoses in the U.S.


Science Clips: CDC Vital Signs, Opioid Pain Reliever (OPR) Abuse



CDC Vital Signs: Prescription Painkiller Overdoses - A Growing Epidemic, Especially Among Women

Prescription Drug Overdose: State Laws

Nearly 15,000 people die every year of overdoses involving prescription painkillers. In 2010, 1 in 20 people in the US (age 12 or older) reported using prescription painkillers for nonmedical reasons in the past year. Enough prescription painkillers were prescribed in 2010 to medicate every American adult around-the-clock for a month.

References

1. Valarie Honeycutt Spears. Ky. sees rise in overdose deaths from pills obtained in Fla. Lexington Herald-Leader 2009 Apr 12. Available from URL: <http://www.kentucky.com/2009/04/12/758845/ky-sees-rise-in-overdose-deaths.html>.
2. Cathy McKittrick. Youth's overdose sends strong message. Salt Lake City Tribune 2011 May 17. Available from URL: <http://www.sltrib.com/sltrib/news/51689248-78/prescription-drugs-drug-watson.html.csp>.
3. Keith O'Brien. Man fights what son could not. Boston Globe 2008 Jan 12. Available from URL: http://www.boston.com/news/local/articles/2008/01/12/man_fights_what_son_could_not/.
4. CDC. Vital Signs: Overdoses of Prescription Opioid Pain Relievers—United States, 1999-2008. MMWR 2011; 60: 1-6
5. National Vital Statistics System. Drug overdose death rates by state. 2008.
6. Substance Abuse and Mental Health Services Administration. Drug Abuse Warning Network: selected tables of national estimates of drug-related emergency department visits. Rockville, MD: Center for Behavioral Health Statistics and Quality, SAMHSA; 2010.
7. Substance Abuse and Mental Health Services Administration. Results from the 2010 National Survey on Drug Use and Health: volume 1: summary of national findings. Rockville, MD: Substance Abuse and Mental Health Services Administration, Office of Applied Studies; 2011. Available from URL: <http://oas.samhsa.gov/NSDUH/2k10NSDUH/2k10Results.htm#2.16>.
8. CDC. Warner M, Chen LH, Makuc DM. Increase in fatal poisonings involving opioid analgesics in the United States, 1999-2006. NCHS Data Brief; 22 Sept 2009. Available from URL: <http://www.cdc.gov/nchs/data/databriefs/db22.pdf> 
9. Substance Abuse and Mental Health Services Administration. Substance abuse treatment admissions by primary substance of abuse, according to sex, age group, race, and ethnicity 2009 (Treatment Episode Data Set). Available from URL: <http://www.dasis.samhsa.gov/webt/quicklink/US09.htm>.
10. Volkow ND, McLellan TA, Cotto JH, Karithanom M, Weiss SRB. Characteristics of opioid prescriptions in 2009. JAMA 2011; 305(13): 1299–1301.

11. Blumenschein K, Fink JL, Freeman PR, Kirsh KL, Steinke DT, Talbert J. Independent evaluation of the impact and effectiveness of the Kentucky All Schedule Prescription Electronic Reporting Program (KASPER). Lexington (KY): Institute for Pharmaceutical Outcomes and Policy; 2010.
12. Dhalla IA, Mamdani MM, Gomes T, Juurlink DN. Clustering of opioid prescribing and opioid-related mortality among family physicians in Ontario. *Canadian Family Med.* 2011;57:e92–e96.
13. Swedlow A, Ireland J, Johnson G. Prescribing patterns of schedule II opioids in California Workers' Compensation. *Cal. Workers' Compensation Update.* 2011 Mar: 1–12. Available from URL: <http://www.cwci.org/research.htm>.
14. White AG, Birnbaum HG, Schiller M, Tang J, Katz NP. Analytic models to identify patients at risk for prescription opioid abuse. *Am J of Managed Care* 2009;15(12):897-906.
15. Hall AJ, Logan JE, Toblin RL, Kaplan JA, Kraner JC, Bixler D, et al. Patterns of abuse among unintentional pharmaceutical overdose fatalities. *JAMA* 2008; 300(22):2613-20.
16. Green TC, Graub LE, Carver HW, Kinzly M, Heimer R. Epidemiologic trends and geographic patterns of fatal opioid intoxications in Connecticut, USA: 1997–2007. *Drug and Alcohol Dependence* 2011;115:221-8.
17. Paulozzi LJ, Logan JE, Hall AJ, McKinstry E, Kaplan JA, Crosby AE. A comparison of drug overdose deaths involving methadone and other opioid analgesics in West Virginia. *Addiction* 2009; 104(9):1541-8.
18. Dunn KM, Saunders KW, Rutter CM, Banta-Green CJ, Merrill JO, Sullivan MD, et al. Opioid prescriptions for chronic pain and overdose: a cohort study. *Ann Intern Med.* 2010;152(2):85-92.
19. Bohnert AS, Valenstein M, Bair MJ, Ganoczy D, McCarthy JF, Ilgen MA, et al. Association between opioid prescribing patterns and opioid overdose-related deaths. *JAMA* 2011; 305(13): 1315-1321.
20. CDC. Overdose deaths involving prescription opioids among Medicaid enrollees-Washington, 2004-2007. *MMWR.* 2010;59;705-9.
21. Braden JB, Fan MY, Edlund MJ, Martin BC, DeVries A, Sullivan MD. Trends in use of opioids by noncancer pain type 2000-2005 among Arkansas Medicaid and HealthCore enrollees: results from the TROUP study. *J Pain* 2008;9(11):1026-1035.
22. Alliance of States with Prescription Monitoring Programs. Status of Prescription Drug Monitoring Programs (PDMPs). Available from URL: <http://www.pmpalliance.org/pdf/pmpstatusmap2011.pdf>  .