EDITORIAL

The Surge of Opioid Use, Addiction, and Overdoses
Responsibility and Response of the US Health Care System

Bertha K. Madras, PhD

The crisis in opioid overdose deaths has reached epidemic proportions in the United States and currently (33 091 in 2015) exceeds all other drug-related deaths. The risk for overdose resides primarily among those harboring a medical diagnosis of an opioid use disorder. Prescription opioids remain a primary driver of opioid-related fatalities. It is incumbent on the medical community to prevent, diagnose, and facilitate treatment of this disease and its substantial health consequences.

Related article

From 1999 onwards, overdose deaths due to prescription opioids rose incrementally and consistently outpaced annual heroin death rates. Heroin overdose deaths remained relatively low from 1999 onwards and then escalated 3-fold from 2010 to 2015. These lamentable, premature, and preventable deaths persisted during 2014-2015, but surveys revealed a disproportionate rise in deaths attributable to fentanyl/analogs (72.2%) and heroin (20.6%) compared with prescription opioids (2.6%).[1] In this issue of *JAMA Psychiatry*, Martins et al[2] portray a detailed view of heroin use trends over time by excavating data from the 2001-2002 and 2012-2013 National Epidemiologic Survey on Alcohol and Related Conditions and National Epidemiologic Survey on Alcohol and Related Conditions-III. Although absolute values may be inexact because of different survey procedures in the 2 National Epidemiologic Survey on Alcohol and Related Conditions waves, or because homeless and incarcerated populations were not surveyed, the trends can assist in guiding targeted prevention and treatment services. The prevalence of heroin use increased 5-fold and use disorder tripled in the United States during the period of the 2 surveys. The rise was greater among white individuals, unmarried respondents, males, young users, those with lower educational achievement, and those living in poverty. Prior exposure to nonmedical prescription opioids increased among white heroin users, reinforcing concerns and other reports that prescription opioid misusers were transitioning to heroin use.

Physicians' prescriptions became the major source of opioids over the past 2 decades, as prescription opioid sales rose 300%, with more than 50% designated for chronic noncancer pain. This shift in practice norms created a risk for diversion, use disorder, and overdose deaths. It was fueled by acceptance of low-quality evidence that opioids are an effective, relatively benign remedy for managing chronic pain. This improbable belief created pressure on physicians to treat all types of pain with opioids as a standard of care and catalyzed a successful movement to designate pain as a fifth vital sign.[3] Nearly half of patients entering treatment for opioid use disorder reported first exposure to opioids through a physician's prescription for pain management.[4] Although the percentage of annual conversions from prescription opioid to heroin use is low, 80% of heroin users are estimated to have transitioned from misuse of prescription opioids.[5,6] Incentives to use heroin/fentanyl burgeoned after implementation of policies to reduce availability of prescription opioids coincided with an influx of high-potency, low-priced heroin/fentanyl analogs. The languid response of the medical community compelled federal and state governments to generate policies to limit access to prescription opioids, augment treatment services, and prevent overdose deaths. Regrettably, both national and medical policies consigned lower priority status to universal prevention, screening, and intervention for all substances and for mental health status, as polypharmacy and psychiatric comorbidity are common. For each policy and practice, there is measurable progress and persistent deficiencies.

Physicians' Role in Prevention: Screening and Changing Prescribing Practices

The medical community can prevent opioid misuse by altering prescribing practices to limit the supply of prescription opioids. The US Centers for Disease Control and Prevention issued a landmark set of evidence-based recommendations to guide primary care centers on management of chronic pain outside of active cancer, palliative, and end-of-life care.[7] The guidance outlined categories of sequential clinical decisions: when to initiate or continue opioids for chronic pain, selection and precautions in prescribing of opioids, and addressing harms of opioid use. Screening of patients for all substances, to stratify risk and manage care for those with moderate to severe positive screens, was promoted 10 years ago as an initial strategy to integrate and medicalize screening intervention and referral to treatment (Screening, Brief Interventions, and Referral to Treatment). Implementation was incentivized with *Current Procedural Terminology*, H, and G billing codes.[8,9] The Screening, Brief Interventions, and Referral to Treatment practice was mainstreamed into health care reform, but has yet to be applied nationally. Comprehensive screening for concurrent psychiatric conditions and a review of patient's history of controlled substance prescriptions using state prescription drug monitoring programs should be the standard of care. Standardized medical training should include awareness of the risks posed by high opioid doses, immediate-release formulations, use combined with alcohol and/or benzodiazepines, his-

tory of overdoses, and other factors. Reflecting inadequate training, physicians continue to prescribe opioids for 91% of patients who overdosed.[10] If discontinuation of prescription opioids is indicated, efforts to prevent the transition to heroin use would involve screening for an opioid use disorder and, if necessary, introduce medications to assist in recovery. National scaling of medical education and training in opioid prescribing practices and in screening for problematic substance use or disorders remains a goal, not a reality.

Physicians' Roles in Opioid Use Disorder Treatment

Of more than 14 000 drug treatment programs in the United States, some funded by federal block grants to states, many are not staffed with licensed medical practitioners. An integrated medical and behavioral treatment system, under the supervision of a physician and substance abuse specialist, would foster comprehensive services, provide expedient access to prescription medicines, and bring care into alignment with current medical standards of care. Ideally, integrated medical care can offer earlier intervention, improved support, behavioral therapies, and medications assistance. Notwithstanding the potential for misuse, overdose, and diversion, medications increase retention in treatment, reduce opioid use, and decrease risks for infection and overdoses. Resources, training, and workforce issues are a concern but the benefits of integrated health care and behavioral treatment conceivably outweigh the risks of maintaining the status quo.

Physicians' Role in Opioid Overdoses and Use of Naloxone

Overdose prevention is critically important, not only because of potential fatalities, but because a nonfatal overdose is associated with complications of unknown frequency, including aspiration and brain, nerve, and trauma-related injuries. Naloxone, a short-acting mu opioid receptor antagonist, effectively reverses life-threatening respiratory depression provoked by an opioid overdose. Traditionally, naloxone use was restricted to emergency departments and first responders, but the current overdose epidemic and reports that naloxone administered by nonmedical personnel have saved countless lives justifiably has led to widespread distribution of naloxone.[11] Which patients should be prescribed naloxone rescue kits along with opioid medications remains discretionary, as no evidence-based risk stratification guidance has been developed. Systematic reporting on kit use in overdoses is needed to fill a gap in formulating postreversal protocols in coordinated care and treatment with the primary physician.

Summary

Physicians' prescriptions for chronic noncancer pain rose 3-fold and became the major source of opioids over the past 2 decades. This shift in practice norms was fueled by an acceptance of low-quality evidence that opioids are a relatively benign remedy for managing chronic pain. These vast opioid supplies created a risk for diversion, opioid misuse and disorder, and overdose death. A proportion of prescription opioid misusers transitioned to illicit opioids, following contraction of prescription opioid supplies, and an expanding influx of potent, low-cost heroin and fentanyl analogs. The rise in overdose deaths catalyzed formation of federal and state policies to reduce supply, augment treatment, and distribute overdose medications. The current response remains inadequate until opioid deaths decline.

ARTICLE INFORMATION

Author Affiliation: Department of Psychiatry, Harvard Medical School, McLean Hospital, Belmont, Massachusetts.

Corresponding Author: Bertha K. Madras, PhD, Department of Psychiatry, Harvard Medical School, McLean Hospital, 115 Mill St, Belmont, MA 02478 (bertha_madras@hms.harvard.edu).

Published Online: March 29, 2017. doi:10.1001/jamapsychiatry.2017.0163

Conflict of Interest Disclosures: Dr Madras serves on the scientific advisory board of RiverMend Health, is a consultant for Guidepoint, and recently served on a panel organized by the Vatican Pontifical Academy of Sciences (unfunded) titled "Narcotics: Problems and Solutions of this Global Issue."

REFERENCES

1. Rudd RA, Seth P, David F, Scholl L. Increases in drug and opioid-involved overdose deaths: United States, 2010-2015. *MMWR Morb Mortal Wkly Rep*. 2016;65(5051):1445-1452.

2. Martins SS, Sarvet A, Santaella-Tenorio J, Saha T, Grant BF, Hasin DS. Changes in US lifetime heroin use and heroin use disorder: prevalence from the 2001-2002 to 2012-2013 National Epidemiologic Survey on Alcohol and Related Conditions [published online March 29, 2017]. *JAMA Psychiatry*. doi:10.1001/jamapsychiatry.2017.0113

3. Kolodny A, Courtwright DT, Hwang CS, et al. The prescription opioid and heroin crisis: a public health approach to an epidemic of addiction. *Annu Rev Public Health*. 2015;36:559-574.

4. Cicero TJ, Ellis MS, Kasper ZA. Psychoactive substance use prior to the development of iatrogenic opioid abuse: a descriptive analysis of treatment-seeking opioid abusers. *Addict Behav*. 2017;65:242-244.

5. Compton WM, Jones CM, Baldwin GT. Relationship between nonmedical prescription-opioid use and heroin use. *N Engl J Med*. 2016;374(2):154-163.

6. Muhuri PK, Gfroerer JC, Davies MC. Associations of nonmedical pain reliever use and initiation of heroin use in the United States. *CBHSQ Data Rev*. http://www.samhsa.gov/data/sites/default/files/DR006/DR006/nonmedical-pain-reliever-use-2013.htm. Published August 2013. Accessed February 15, 2017.

7. Dowell D, Haegerich TM, Chou R. CDC guideline for prescribing opioids for chronic pain: United States, 2016. *JAMA*. 2016;315(15):1624-1645.

8. Madras BK, Compton WM, Avula D, Stegbauer T, Stein JB, Clark HW. Screening, brief interventions, referral to treatment (SBIRT) for illicit drug and alcohol use at multiple healthcare sites: comparison at intake and 6 months later. *Drug Alcohol Depend*. 2009;99(1-3):280-295.

9. Madras BK. Office of National Drug Control Policy: a scientist in drug policy in Washington, DC. *Ann N Y Acad Sci*. 2010;1187:370-402.

10. Larochelle MR, Liebschutz JM, Zhang F, Ross-Degnan D, Wharam JF. Opioid prescribing after nonfatal overdose and association with repeated overdose: a cohort study. *Ann Intern Med*. 2016;164(1):1-9.

11. US Department of Health and Human Services, Office of the Surgeon General. Facing addiction in America: the surgeon general's report on alcohol, drugs, and health. Washington, DC: US Department of Health and Human Services. https://addiction.surgeongeneral.gov/surgeon-generals-report.pdf. Published November 2016. Accessed February 15, 2017.