



A New Narrative to Understand the Opioid Epidemic

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A Brief Introduction to Opioids and the Foundation of Today's Epidemic

Some opioids, like morphine and codeine, are derived from opium poppies while other opioids, like oxycodone (OxyContin), are semisynthetic chemicals isolated directly from opium poppies that have many of the same properties as morphine. Some other opioids with morphine-like properties such as fentanyl are purely synthetic chemicals that are made in laboratories. The opioids have important medical benefits in the treatment of pain; however, their beneficial analgesic effects also come with potentially dangerous effects. Opioids engender pain relief, addiction and overdose crises by acting at a common target, the mu opioid receptor in the brain.

Heroin is the best known semisynthetic opioid. It was introduced in 1898 by the Bayer pharmaceutical company for the over-the-counter treatment of cough. Heroin quickly became the iconic drug of abuse spurring three opioid epidemics in the United States: at the start of the 20th century, in the 1970s and again today. Heroin, illegal in the United States, remains a major part of global illegal drug trafficking, with most of the heroin in the US now coming from Mexico.¹

Unlike the second American opioid epidemic which was strictly heroin-based, today's opioid

¹ Drug Enforcement Administration. (2016, November). 2016 National Drug Threat Assessment Summary. DEA-DCT-DIR-001-17. Washington, DC: US Department of Justice. Available: <https://www.dea.gov/resource-center/2016%20NDTA%20Summary.pdf>

epidemic was initially driven by a rapid rise in prescription opioids, but has become more expansive and includes heroin, new synthetic opioids like fentanyl, and prescription opioids that are used nonmedically (i.e., used without a valid prescription or in ways not prescribed). Individuals suffering from opioid addiction often switch from one opioid to another based on availability and price since they all have similar effects, including euphoria and the risk of overdose.

Although opioids long have been used in medicine for the treatment of acute or end-of life pain, it was only in the past two decades and only in the US that opioids were widely prescribed for the treatment of chronic pain for outpatients of all ages for long periods of time and at high doses. Extending opioid prescribing to patients with chronic pain not only dramatically increased the number of Americans taking prescription opioids (97.5 million in 2015²), but it also massively increased access to and availability of prescribed opioids. For example, in 2012, 259 million prescriptions for opioids were dispensed in the US³ – enough for one bottle of opioids for each American adult.⁴

These factors combined to create a “perfect storm” of serious negative consequences. Recently the Centers for Disease Control and Prevention announced that in 2016, overdose death in the

² Hughes, A., Williams, M. R., Lipari, R. N., Bose, J., Copello, E. A. P., & Kroutil, L. A. (2016, September). Prescription drug use and misuse in the United States: Results from the 2015 National Survey on Drug Use and Health. *NSDUH Data Review*. Available: <https://www.samhsa.gov/data/sites/default/files/NSDUH-FFR2-2015/NSDUH-FFR2-2015.htm>

³ Paulozzi, L. J., Mack, K. A., & Hockenberry, J. M. (2014). Vital signs: variation among states in prescribing of opioid pain relievers and benzodiazepines—United States, 2012. *Morbidity and Mortality Weekly Report*, 63,563-568. Available: <https://www.cdc.gov/mmwr/preview/mmwrhtml/mm6326a2.htm>

⁴ Dowell, D., Haegerich, T. M., & Chou, R. (2016, March 18). CDC Guideline for Prescribing Opioids for Chronic Pain — United States, 2016. *Morbidity and Mortality Weekly Report*, 65(1), 1-49. Available: <https://www.cdc.gov/mmwr/volumes/65/rr/rr6501e1.htm>

US reached a record high of 63,600, two thirds of which were opioid overdoses.⁵ In the same year, about 2.1 million Americans age 12 or older met criteria for an opioid use disorder (i.e., addiction) – with 1.8 million people with a prescription pain reliever use disorder and 0.6 million with a heroin use disorder.⁶

In just one year, from 2015 to 2016 overdose deaths increased 21%. Before this increase, overdose deaths had already surpassed deaths from car crashes, guns and HIV (see figure below).⁷ Drug overdose deaths are now the most common cause of death for Americans under the age of 50.⁸ These facts are compelling but they do not tell the whole story and they can be misleading about today’s “public health emergency.”⁹

⁵ Hedegaard, M., Warner, M., & Minino, A. M. (2017, December). Overdose deaths in the United States, 1999-2016. NCHS Data Brief, 294. US Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Health Statistics. Available: <https://www.cdc.gov/nchs/data/databriefs/db294.pdf>

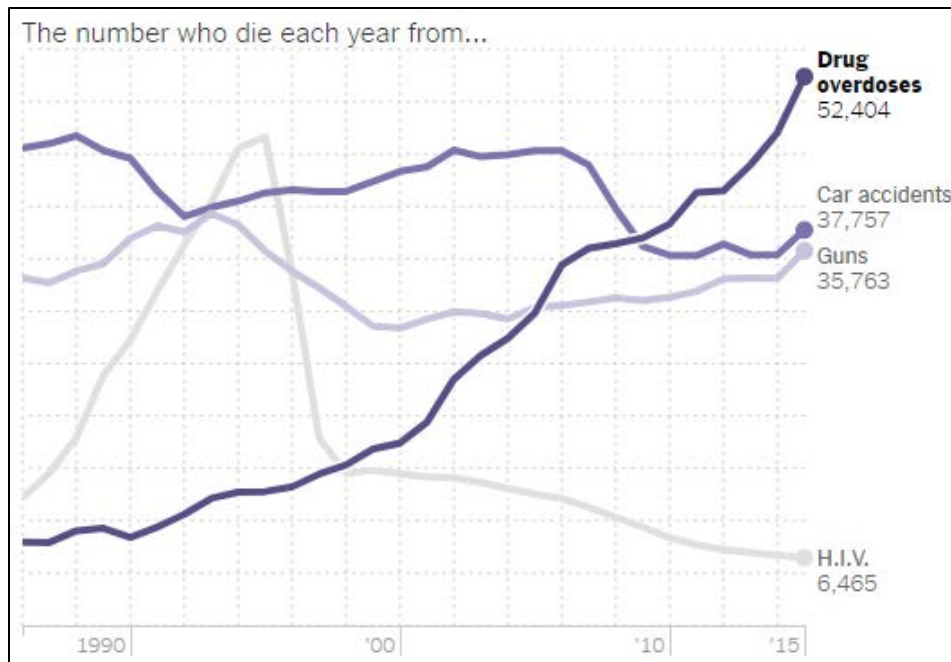
⁶ Substance Abuse and Mental Health Services Administration. (2017). Results from the 2016 National Survey on Drug Use and Health: Detailed Tables. Table 5.2A. Available:

<https://www.samhsa.gov/data/sites/default/files/NSDUH-DetTabs-2016/NSDUH-DetTabs-2016.pdf>

⁷ Katz, J. (2017, April 14). You draw it: just how bad is the drug overdose epidemic? *The New York Times*. Available: <https://www.nytimes.com/interactive/2017/04/14/upshot/drug-overdose-epidemic-you-draw-it.html>

⁸ Katz, J. (2017, April 14). You draw it: just how bad is the drug overdose epidemic? *The New York Times*. Available: <https://www.nytimes.com/interactive/2017/04/14/upshot/drug-overdose-epidemic-you-draw-it.html>

⁹ Remarks by President Trump on combatting drug demand and the opioid crisis. (2017, October 26). Available: <https://www.whitehouse.gov/briefings-statements/remarks-president-trump-combatting-drug-demand-opioid-crisis/>



Katz, J. (2017, April 14). You draw it: just how bad is the drug overdose epidemic? *The New York Times*. Available: <https://www.nytimes.com/interactive/2017/04/14/upshot/drug-overdose-epidemic>

Reshaping the Current Opioid Epidemic Narrative

The drug overdose epidemic, fueled mainly by opioid use, is the defining public health epidemic in the United States in the 21st Century. The central role of prescription opioids has turned national attention to the roles played in the epidemic by pain medicines, the healthcare system and the pharmaceutical industry. The current narrative about the role of opioid pain medicines in the opioid epidemic is that these medicines are highly addictive, are overprescribed and, as a result of their nonmedical use by patients, prescribed opioids are the primary driver of drug overdose deaths. In this narrative, many medical patients who are prescribed opioid medicines are on the path to addiction and overdose death. Importantly, the rise in heroin use in the last several years is commonly seen as having been caused by the advent of abuse-deterrent opioid drugs and the recent crackdown on the medical prescribing of opioids because physicians have become reluctant to prescribe these medicines. In this common narrative, opioid addicted pain

patients have turned to the illegal drug market for heroin because heroin is cheaper and more accessible.

Every element of this concern is correct. Efforts to reshape the treatment of pain with less reliance on chronic opioid use are needed. Healthcare generally and the pharmaceutical industry particularly bear tragic responsibility for the prolonged underestimation of the risks of widespread, high-dose, long-term prescribing of opioids.^{10 11}

However, this current narrative is only part of the story. It misses several essential elements of the larger picture of addiction that must be understood to turn back the overdose epidemic. First, it fails to specify how non-addicted opioid pain patients transition into opioid addiction and it ignores how the medical use of opioids differs distinctly from addictive use of the opioid medicines. Second, the current narrative fails to connect the role of opioids in overdose deaths to the wider pattern of nonmedical, or recreational, drug use. Opioid overdose deaths, like other drug overdose deaths, usually involve the use of other addictive drugs, such as alcohol, marijuana, cocaine, and methamphetamine, among many others.¹² Third, the current overdose narrative ignores the significant role of adolescent initiation to drug use in the opioid overdose epidemic at older ages. While it is important that for many opioid addicted people their first use of an opioid was a prescribed opioid from a physician, it is also true that the vast majority of

¹⁰ Higham, S., & Bernstein, L. (2017, October 15). The drug industry's triumph over the DEA. *The Washington Post*. Available: <https://www.washingtonpost.com/graphics/2017/investigations/dea-drug-industry-congress/>

¹¹ Whitaker, B. (2017, October 15). Ex-DEA agent: opioid overdoses fueled by drug industry and Congress. 60 Minutes, CBS News. <https://www.cbsnews.com/news/ex-dea-agent-opioid-crisis-fueled-by-drug-industry-and-congress/>

¹² Florida Drug-Related Outcomes Surveillance and Tracking System (FROST), <http://frost.med.ufl.edu/>

these individuals first used other drugs before or with their first use of opioids.¹³ Further, transition from pain medicine use of opioids to heroin is unusual although not rare; only about 4% of people who use prescription opioids nonmedically initiate heroin within five years of first prescription opioid use.¹⁴ Finally, and equally importantly, the current narrative which focuses on prescribed opioids does not recognize the increasing sophistication and effectiveness of the illegal global drug market to supply heroin, the newer synthetic opioids and many more illegal and addicting drugs.

Contrasting Medical Opioid Use for Pain and Opioid Use Disorders

Let's start with opioids as a first-line treatment for pain and how it relates to opioid addiction before we turn to the subject of overdose deaths. The majority of outpatient pain patients treated with opioids without a prior history of substance use disorders take the opioids only orally and only in doses as directed by the prescribing physician. Most prescription opioid users do not recreationally use these medicines with alcohol and other drugs – and thus are at little risk of addiction. However, a large minority of pain patients uses prescribed opioids in ways not intended by the prescribing physicians, including use by non-oral routes of administration and use of prescribed opioids in conjunction with other drugs of abuse such as alcohol and benzodiazepines, like Xanax. This notable minority of medical patients that uses their prescribed opioids nonmedically is at grave risk of addiction and overdose death. Additionally, a subset of medical patients sells or gives away their prescribed opioids adding to the risk of overdose death

¹³ Cicero, T. J., Ellis, M. S., & Kasper, Z. A. (2017). Psychoactive substance use prior to the development of iatrogenic opioid abuse: a descriptive analysis of treatment-seeking opioid abusers. *Addictive Behaviors*, 65, 242-244.

¹⁴ Muhuri, P. K., Gfroerer, J. C., & Davies, C. (2013). Associations of nonmedical pain reliever use and initiation of heroin use in the United States. *CBHSQ Data Review*. Available: <http://archive.samhsa.gov/data/2k13/DataReview/DR006/nonmedical-pain-reliever-use-2013.pdf>

and addiction in the community. At least 50% of people who misuse opioids – unintended populations – access them free from friends and family, implying that unused/unneeded opioids are supplying a significant population of misusers.¹⁵

Although the majority of pain patients do not misuse their prescribed opioids and are at little risk of addiction, those patients who take significant amounts of prescribed opioids over longer duration (e.g., more than a week or so) become physically dependent on them.¹⁶ This means that the non-addicted, compliant medical pain patients are likely to experience agonizing withdrawal symptoms if they abruptly discontinue their opioid use. For the majority of medical patients using long acting and/or high doses of opioids chronically as prescribed to treat pain and who are physically dependent on, but not addicted to, these drugs, there are two pressing health concerns that are separate from the risks of addiction and overdose death. The first is the growing recognition that the opioids are often unsatisfactory in suppressing pain and improving lifestyles when used for years.¹⁷ Second, it is difficult for patients who have been using opioids continuously for many years to stop using them entirely by gradually reducing their daily doses, especially when they get down to lower doses.

Contrasting the physical dependence that occurs with non-addicted opioid patients with addictive use of these same medicines shows that these two groups of users of medically-prescribed

¹⁵ Substance Abuse and Mental Health Services Administration. (2017). Results from the 2016 National Survey on Drug Use and Health: Detailed Tables. Table 6.53B. Available: <https://www.samhsa.gov/data/sites/default/files/NSDUH-DetTabs-2016/NSDUH-DetTabs-2016.pdf>

¹⁶ Volkow, N. D., & McLellan, A. T. (2016). Opioid abuse in chronic pain – misconceptions and mitigation strategies. *New England Journal of Medicine*, 374, 1253-1263. Available: <http://www.nejm.org/doi/full/10.1056/NEJMra1507771>

¹⁷ Chou, R., Deyo, R., Devine, B/, Hansen, R., Sullivan, S., & Jarvik, J. (2014). The effectiveness and risks of long-term opioid treatment of chronic pain: Evidence Report/Technology Assessment. No. 218 (AHRQ publication no. 14-E005-EF). Rockville, MD: Agency for Healthcare Research and Quality.

opioids use the medicines in very different ways. Individuals addicted to opioids prescribed for pain commonly use these medicines at higher doses than prescribed and by routes of administration other than oral, such as snorting, smoking, shooting, vaping and chewing or otherwise overcoming the intended slow release of the prescribed opioid to get a far larger and faster drug delivery. These addicted patients commonly use their prescribed opioids with alcohol and other drugs, often using several other addicting drugs at the same time.

For example, among 4,493 individuals treated for opioid addiction whose first exposure to opioids was through a prescription from their physician, notably 94.6% reported prior or coincident use of other psychoactive drugs.¹⁸ Alcohol was used by 92.9%, nicotine by 89.5% and marijuana by 87.4%, and excluding these top substances, fully 70.1% reported other prior or coincident drug use.

For many opioid-addicted individuals, drug use began in early adolescence with the use of alcohol, marijuana and other drugs. Early polydrug use often sets the stage for later transition from medical to addictive use of opioids that are prescribed for pain.

Like addiction to other drugs, a central feature of opioid use disorders that distinguishes them from mere physical dependence is continued drug use despite serious problems caused by their drug use. Moreover, individuals suffering from opioid use disorders often hide or lie about their drug use – to their families, physicians and other people in their lives – because they want to keep using drugs addictively when others want them to stop their drug use.

¹⁸ Cicero, T. J., Ellis, M. S., & Kasper, Z. A. (2017). Psychoactive substance use prior to the development of iatrogenic opioid abuse: a descriptive analysis of treatment-seeking opioid abusers. *Addictive Behaviors, 65*, 242-244.

Why are the patterns of opioid use so different between medical patients who are physically dependent and medical patients who are opioid-addicted? A significant part of the difference is determined by genes related to pleasure centers in the brain. Individuals with opioid use disorders seek out brain reward, a specific and powerful reaction of the brain to certain chemicals and experiences that are reinforcing, more than individuals who are less prone to addiction. Medicines that can produce brain reward are labeled “controlled substances” because they are dangerous when taken by those especially prone to addiction, amounting to about 10-15% of the population. For this reason, prescribed opioids are tightly controlled and for this reason physicians must take precautions to help their patients who are prescribed opioids and other controlled substances avoid addiction and to deter diversion of these medicines. These same chemicals produce brain reward in laboratory animals, like rats and monkeys, especially, but not only, among those with a genetic predisposition. Those genetically vulnerable animals will work hard to have access to them just like genetically vulnerable humans do. Many of these addictive chemicals stimulate brain reward many times more intensely than natural rewards such as food and sex.

When taken as directed – orally and at stable doses over time and without simultaneous use of other addicting substances – the opioid pain medicines in most people seldom produce brain reward. However, a small but important segment of medical patients prescribed opioids for pain do experience intense brain reward sometimes from their first dose of an opioid, even when it is taken orally, in the prescribed dose and without simultaneous use of other addicting drugs. This reaction is unusual but it is not rare. Most patients who have this reaction have had earlier

experiences with alcohol and other addictive drugs and have had similar strong positive reactions to their prior drug use. Their brains have been primed to this effect by their earlier chemical stimulation of brain reward and perhaps for other reasons including genetic vulnerability to addiction.

It is important to recognize that genetic factors account for between 40-60% of an individual's vulnerability to addiction "including environmental factors on the function and expression of a person's genes."¹⁹ Risk is accentuated in those with genetic vulnerability; of particular relevance is common family history of addiction. It is also important to recognize that there is no genetic invulnerability to addiction. Without any genetic predisposition, the repeated, high-dose use of opioids and other drugs addictively risks addiction in all people, as it does in all animals regardless of their specific genetic vulnerability.

Medical patients prescribed opioids need to be warned about the serious health risks of misusing these drugs, of using in combination with benzodiazepines (tranquilizers) and/or alcohol, and they need to be warned of the possibility of intensified brain reward because misuse can trigger long-lasting addiction to opioids. But even if patients are not warned of this risk by their prescribing physicians, or if they fail to heed this warning, there is another clear bright line that must be crossed to produce addiction: Patients must use the opioids at doses higher than prescribed, use alcohol and other drugs with the opioids, and/or use the opioids by routes of administration other than oral. In other words, when patients use the opioids against medical advice and in the face of mounting adverse reactions – this is addictive opioid use.

¹⁹ National Institute on Drug Abuse. (2014). *Drugs, Brains, and Behavior: The Science of Addiction*. NIH Pub No. 14-5605. Rockville, MD: NIDA. Available: <https://www.drugabuse.gov/publications/drugs-brains-behavior-science-addiction/drug-abuse-addiction>

Informing Medical Prescribing Practices

There are two important take-away messages from this discussion of the transition from non-addicted pain patients to active opioid addiction. First, prescribing physicians and patients as well as families need to be aware that histories of early and heavy substance use or addiction are danger signs for patients prescribed opioids for pain. To turn back the opioid overdose death epidemic, it is necessary to broaden the target beyond pain management. Parents and educators need to clarify the prevention and/or early intervention message to adolescents regarding the dangers of any early drug use. The prevention goal for youth is no use of alcohol, tobacco, marijuana or other drugs for reasons of health.²⁰ The opioid epidemic is an important reinforcement of this essential health message.²¹

Second, there are stark differences in the frequency, amount and circumstances of use between medically prescribed opioid use and opioid addiction. Prescribers and families need to monitor opioid use by patients regularly to assure that there is no transition to addictive use. Remember that the signs of addiction are not just larger amounts of medication, which can be appropriate medically in certain situations, but rather when patients use higher doses than recommended, use with other addictive drugs, shop for other doctors to prescribe opioids and are dishonest about their drug use. Nevertheless, it is possible for any patient prescribed opioids to transition into active opioid addiction, even if they have not been actively using alcohol or other drugs for some time, even for many years.

²⁰ DuPont, R. L. (2017, October 23). For a health brain teens make “One Choice”. Rockville, MD: Institute for Behavior and Health, Inc. Available: https://www.preventteendruguse.org/s/IBH_Commentay_One_Choice_10-23-17.pdf

²¹ DuPont, R. L. (2017). The opioid epidemic is an historic opportunity to improve both prevention and treatment. *Brain Research Bulletin*, pii:S0361-9230(17), 30292-3097.

Physicians have an important role to play in the future of opioid prescribing practices. There are steps that can help prescribing physicians reduce the supply of prescription opioids and opioid addiction.²² This begins with following the CDC guideline for prescribing opioids for chronic pain.²³ Patients should be screened for substance use, misuse and related problems and searched within their state Prescription Drug Monitoring Program (PDMP) to identify “doctor shopping” – i.e., getting controlled substances from multiple physicians. Physicians can also administer drug tests to identify the use of other drugs because many opioid addicted individuals use multiple drugs simultaneously. Physicians prescribing opioids can look for red-flag behaviors like “losing” prescriptions and needing early refills and they can talk with family members, with a patient’s permission, to get their opinions about the patient’s behavior including alcohol and other drug use. These practical steps are too-seldom taken now. Physicians often do not want to address the problems of addiction because the addicted patients do not want help, addicted patients lie about their drug use, including opioid use, and the busy physicians do not have the time to deal with this complicated and difficult health problem.

Worse yet, too many physicians falsely believe that intervention and treatment of addiction do not work – that addiction is hopeless. The reality is otherwise. Addicted patients are good people with serious and challenging health problems. Physicians need to provide care to their addicted patients, not by prescribing more opioids or other controlled substances, but by helping them recognize their disease and to find help overcoming it, as they would with any other serious, chronic disease. Physicians can help their addicted patients enter treatment and, because

²² Madras, B. K. (2017). The surge of opioid use, addiction, and overdoses: responsibility and response of the US health care system. *JAMA Psychiatry*, 74(5), 441-442. Available: <https://jamanetwork.com/journals/jamapsychiatry/fullarticle/2612443>

²³ Dowell, D., Haegerich, T. M., & Chou, R. (2016). CDC guideline for prescribing opioids for chronic pain: United States, 2016. *JAMA*, 315(15), 1624-1645. Available: <https://www.cdc.gov/mmwr/volumes/65/rr/rr6501e1.htm>

addiction is a chronic and even a life-long disease, physicians can play an essential role in helping to manage their long-term recovery. Physicians can also refer addicted patients to recovery support programs in the community including Alcoholics Anonymous and Narcotics Anonymous.

Correcting Misconceptions about Opioid Addiction, Overdose Death and Drug Supply

One common misconception about opioid (and other drug) addiction is that treatments that aim to stop drug use “fix” addicted patients. Treatment can be, and often is, a solid first step on the road to lasting recovery but, for most opioid-addicted patients, recovery requires extensive recovery support and years of work from patients and often from families. While stopping opioid use is difficult for addicted people, a large majority of individuals addicted to opioids have stopped using these drugs many times, both for voluntary and involuntary reasons. The real question is not “*why can’t they stop using drugs?*” but rather, “*why can’t they stay stopped?*”. The biggest challenge in the journey to achieving lasting recovery is remaining abstinent from all drugs, including alcohol. Treatment is almost always short-term while addiction changes the brain while using, even after stopping, these changes may persist for a long time or forever.

Another misconception is that opioid addiction is a quick death sentence. In fact, for an active heroin user, the estimated annual risk for overdose is an estimated 1.6% and 2.5% and for all opioids, about 2% (see Table 1). This translates to between about one in 40 to one in 60 active opioid users dying of an overdose each year of opioid use; however, the lifetime risk of premature death is higher, with death rates range between 25-50% higher than for non-addicted people 20 years after addiction sets in.

Table 1. Estimates of the Risk of Opioid Overdose Death

Drug Overdose Deaths		Use in the Past Year	Substance Use Disorder in the Past Year		Estimated Annual Risk of Overdose
Heroin – 15,469 ^a (2016)	/	948,000 ^b		=	1.6%
	/		626,000 ^b	=	2.5%
All opioids – 42,429 ^a (2016)	/		2.1 million ^b	=	2.0%

^aThielking, M. (2017, December 21). Life expectancy in the US is falling – and drug overdose deaths are soaring. *STAT*. The opioids most commonly involved in overdose deaths. Data from National Center for Health Statistics. Available: <https://www.statnews.com/2017/12/21/life-expectancy-drug-overdose/>

^bCenter for Behavioral Health Statistics and Quality. (2017). Results from the 2016 National Survey on Drug Use and Health: Detailed Tables. Rockville, MD: Substance Abuse and Mental Health Services Administration. Available: <https://www.samhsa.gov/data/sites/default/files/NSDUH-DetTabs-2016/NSDUH-DetTabs-2016.htm>

Note: These are crude estimates. Prevalence rates of drug use and substance use disorders are based on self-report, with some high-risk populations underrepresented. Past year users are diverse in many ways including how often they use opioids, by what routes of administration they use the opioids and by which individual opioids they use. Past year users include people who used once in the year and people who used opioids a thousand times in that year. Further, national overdose death data rely on state toxicological testing and reporting to the Centers for Disease Control and Prevention which vary dramatically. Additionally, among opioid overdose deaths, seldom are opioids used alone.

Many opioid-addicted people are unmoved by the risk of overdose death because such a small percentage of their opioid-using friends die each year. Overdose deaths often occur at a crucial time in which a person who has not been using opioids suddenly resumes using at the same dose level used previously and/or when other drugs, such as benzodiazepines or alcohol, are added to the opioids. Opioid doses that were tolerated during active addiction are often lethal to the same individual who has not been using at all for weeks or longer or who starts taking other sedative-type drugs.

A third misconception is that the opioid overdose epidemic is limited to opioids. Glaringly overlooked is the fact that there are few people addicted to opioids that do not also, and usually simultaneously, use other drugs. The national data on opioid overdose deaths provided by the

CDC is limited because it is based on routine death reports from medical examiners which substantially underreport the presence of additional drugs. This is because many death investigations do not include full (if any) toxicological testing and some medical examiners do not report more than a single drug, or they use vague language like “drug death” rather than specifying the drug(s) identified at autopsy. In contrast, the Florida Drug-Related Outcomes Surveillance and Tracking System (FROST) reports the state-wide systematic, extensive toxicological testing done on all drug overdose cases. About 95% of the opioid overdose deaths involve other drugs, with an average of 2-4 and a maximum of 11 in addition to the opioids.²⁴ A well-known example of polysubstance use at death is the tragic death of actor Phillip Seymour Hoffman in 2014; his body contained not only heroin but also cocaine, a benzodiazepine and amphetamine.²⁵

A final misconception of the opioid overdose epidemic is that legal prescription opioids continue to be the cause of the overdose death epidemic. It is important to note that a significant number of drug overdose deaths in 2016 did not involve opioids. While legal – and often diverted – prescription opioids are a central part of the overdose epidemic, by no means do they account for all of the illegally available opioids in this country. Although prescription opioids contribute to a significant number of overdose deaths, the numbers have declined in 2016, while heroin and fentanyl-related deaths have risen steeply.²⁶ The proliferation of illegally manufactured and sold opioids in the US is driven by the rapidly improving capability of illegal global drug supply

²⁴ Florida Drug-Related Outcomes Surveillance and Tracking System (FROST), <http://frost.med.ufl.edu/>

²⁵ Reaney, P. (2014, February 28). Philip Seymour Hoffman died of accidental overdose: official. *Reuters*. Available: <http://www.reuters.com/article/us-philipseymourhoffman-autopsy-idUSBREA1R1X920140228>

²⁶ Hedegaard, M., Warner, M., & Minino, A. M. (2017, December). Overdose deaths in the United States, 1999-2016. NCHS Data Brief, 294. US Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Health Statistics. Available: <https://www.cdc.gov/nchs/data/databriefs/db294.pdf>

networks to conveniently deliver opioids and other drugs to users at ever-higher potency and at ever-lower prices.²⁷ The world's illegal opioid supply is shifting from agriculturally-produced heroin to synthetic opioids starting but not ending with fentanyl, which are also commonly more easily able to slip most detection strategies. The market forces for distribution of synthetic opioids such as fentanyl are clear: laboratory synthesis can be undetected, whereas poppy fields are readily identified and destroyed. High potency opioids can be synthesized, shipped and distributed in small volumes, such a business envelopes. These factors raise profits and reduce risks for illegal drug distribution. The customers for illegal opioids are not only patients prescribed opioids for pain but also the very large number of Americans who currently use a wide range of illegal drugs. The most vulnerable population is made up of individuals who initiated use of alcohol, marijuana and other drugs in adolescence, thus priming their brains for subsequent addictive chemical stimulation later in life.

Finding Solutions to the Opioid Epidemic Starts with a New Narrative

The older opioid epidemic narrative unnecessarily scares legitimate medical patients and discourages the non-abusive use of opioids in pain treatment because it ignores the crucial differences between appropriate medical use of opioids and addictive use of these same medicines. The older narrative also downplays the role of purely illegal opioids which has the potential to vastly increase the availability of opioids and other drugs of abuse in the US and around the world.

²⁷ See, e.g., U.S. Department of Justice, Drug Enforcement Administration. (2017). *2017 National Drug Threat*. DEA-DCT-DIR-040-17. Washington, DC: DEA. Available: https://www.dea.gov/docs/DIR-040-17_2017-NDTA.pdf

An expanded formulation of the causes of today's opioid epidemic narrative to better inform future policy:

- identifies the distinctive pattern of drug use associated with opioid addiction;
- roots opioid addiction in polydrug use;
- identifies individuals who began substance use in adolescence as the population most vulnerable to opioid addiction; and,
- recognizes the efficiency and growth of the global illegal supply system which is rapidly shifting to synthetics produced in mobile laboratories around the world.

It is possible to turn back the epidemic of opioid overdose death and addiction, but it is necessary to broaden the target beyond pain management, to increase vigilance in the distribution of prescription opioids, prescribing to the at-risk population, to clarify the prevention message to adolescents, their parents and the general public regarding the dangers of early drug use, and to reduce global illegal drug supply. The nation – and the world – must become far more effective in the areas of treatment, prevention and law enforcement.²⁸ Understanding the opioid problem more accurately remains an essential first step for developing an improved drug policy.

There is encouraging work being done to develop better ways to prevent and treat opioid and other addiction. The recent CDC guideline for prescribing opioids for chronic pain serves as a

²⁸ DuPont, R. L. (2017). The opioid epidemic is an historic opportunity to improve both prevention and treatment. *Brain Research Bulletin*, pii:S0361-9230(17), 30292-3097

landmark for health care.²⁹ Health care and in particular, medical practice, are making simultaneous and significant improvements in the understanding, prevention and management of addiction and in the treatment of pain.

One of the most vital elements of an improved national effort to turn back the overdose epidemic is to revitalize the law enforcement role in a comprehensive public health strategy. It is essential that renewed and intensified efforts be made on a global basis to reduce the illegal supply of opioids, including the increasingly widely sold synthetics such as fentanyl. Opioid addiction and nonmedical drug use generally are not only American problems; they are a threat to all countries. The global drug supply, including prominently the supply of opioids, is expanding rapidly in scope and sophistication. Supply reduction must extend from global strategies to strategies in neighborhoods throughout the country.

Importantly, the drug policy choice for the future is not a choice between law enforcement and treatment.³⁰ Instead it is the integration of law enforcement and health care, including prevention, to achieve the public health goals that neither can achieve alone. It is commonly said that the nation cannot arrest its way out of the overdose epidemic. That is true and important. However, it is also true and important, but seldom stated, that the nation cannot simply treat its way out of the overdose epidemic. The criminal justice system is central to an improved drug policy with a key focus on more effectively managing the estimated 4.6 million Americans on

²⁹ Centers for Disease Control and Prevention. (2016). CDC guideline for prescribing opioids for chronic pain – United States, 2016. *Morbidity and Mortality Weekly Report*, 65(1), 1-49. Available: <https://www.cdc.gov/mmwr/volumes/65/rr/rr6501e1.htm>

³⁰ DuPont, R. L. & Humphreys, K. (2011). A new paradigm for long-term recovery. *Substance Abuse*, 32(1), 1-6.

parole and probation, many of whom are addicted to alcohol and other drugs, including opioids.³¹

Thankfully there are many encouraging developments and a remarkable new bipartisan national resolve to focus as never before on reducing the tragic drug overdose death epidemic. Where we are today is the only the beginning of the much-needed new policies and practices to achieve this goal.³² Those future policies and practices depend on our accurately understanding the current opioid epidemic, how it happened and what needs to be done to turn it back. It is to facilitate that vitally important understanding that is why this new narrative was written.

³¹ Kilmer, B., Caulkins, J. P., DuPont, R. L., & Humphreys, K. (in press). A large and promising opportunity: reducing substance use in criminal justice populations. In: S.C. Miller, D.A. Fiellin, R. N. Rosenthal, & R. Saitz (Eds.) *The ASAM Principles of Addiction Medicine* (6th ed.). Philadelphia, PA: Lippincott Williams & Wilkins.

³² The President's Commission on Combatting Drug Addiction and the Opioid Crisis. (2017). Final Draft Report. Available: https://www.whitehouse.gov/sites/whitehouse.gov/files/images/Final_Report_Draft_11-15-2017.pdf

About the Author

Robert L. DuPont, M.D.

President, Institute for Behavior and Health

For more than 30 years, Robert L. DuPont, M.D. has been a leader in drug abuse prevention and treatment. Among his many contributions to the field is his leadership as the first Director of the National Institute on Drug Abuse (1973-1978) and as the second White House Drug Chief (1973-1978). From 1968 to 1970 he was Director of Community services for the District of Columbia Department of Corrections, heading parole and half-way house services. From 1970 to 1973, he served as administrator of the District of Columbia Narcotics Treatment Administration (NTA), the city-wide drug abuse treatment program that was the model for the federal government's massive commitment to drug abuse treatment in the early 1970s. Following this distinguished public career, in 1978 Dr. DuPont became the founding president of the Institute for Behavior and Health, Inc.

Dr. DuPont has written for publication more than three hundred professional articles and fifteen books and monographs on a variety of health-related subjects. His books include *Getting Tough on Gateway Drugs A Guide for the Family*, *A Bridge to Recovery: An Introduction to Twelve-Step Programs* and *The Selfish Brain: Learning from Addiction*. In 2005, Hazelden, the nation's leading publisher of books on addiction and recovery, published three books on drug testing by Dr. DuPont: *Drug Testing in Drug Abuse Treatment*, *Drug Testing in Schools*, and *Drug Testing in the Criminal Justice System*.

Throughout his decades of work in addiction prevention, Dr. DuPont has served in many capacities. His activities in the American Society of Addiction Medicine (ASAM) include chairing the forensic science committee and he is a Life Fellow. He is also a Life Fellow of the American Psychiatric Association (APA) and was chairman of the Drug Dependence Section of the World Psychiatric Association (WPA) from 1974 to 1979. In 1989 he became a founding member of the Medical Review Officer Committee of ASAM.

A graduate of Emory University, Dr. DuPont received an M.D. degree in 1963 from the Harvard Medical School. He completed his psychiatric training at Harvard and the National Institutes of Health in Bethesda, Maryland. Dr. DuPont maintains an active practice of psychiatry specializing in addiction and the anxiety disorders and has been Clinical Professor of Psychiatry at the Georgetown University School of Medicine since 1980. He is vice president of Bensinger, DuPont and Associates (BOA), a leading national consulting firm dealing with substance abuse, founded in 1982 by Dr. DuPont and Peter Bensinger, former Director of the Drug Enforcement Administration.

Dr. DuPont's signature role throughout his career has been to focus on the public health goal of reducing the use of illegal drugs.

Conflict of Interest

I declare that I have no proprietary, financial, professional or other personal interest of any nature or kind in any product, service and/or company that could be construed as influencing the position presented in, or the review of, the manuscript entitled *A New Narrative to Understand the Opioid Epidemic*.