MAYO CLINIC

How Good Intentions Contributed to Bad Outcomes: The Opioid Crisis

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Abstract

The opioid crisis that exists today developed over the past 30 years. The reasons for this are many. Good intentions to improve pain and suffering led to increased prescribing of opioids, which contributed to misuse of opioids and even death. Following the publication of a short letter to the editor in a major medical journal declaring that those with chronic pain who received opioids rarely became addicted, prescriber attitude toward opioid use changed. Opioids were no longer reserved for treatment of acute pain or terminal pain conditions but now were used to treat any pain condition. Governing agencies began to evaluate doctors and hospitals on their control of patients' pain. Ultimately, reimbursement became tied to patients' perception of pain control. As a result, increasing amounts of opioids were prescribed, which led to dependence. When this occurred, patients sought more in the form of opioid prescriptions from providers or from illegal sources. Illegal, unregulated sources of opioids are now a factor in the increasing death rate from opioid overdoses. Stopping the opioid crisis will require the engagement of all, including health care providers, hospitals, the pharmaceutical industry, and federal and state government agencies.

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There is no debate that the United States is in the midst of an opioid crisis. Between 1999 and 2014, drug overdose deaths nearly tripled.[1] In 2016, more than 60,000 people died from drug overdoses, and opioids were responsible for most of these deaths.[2] For the first time since 1999, life expectancy decreased for US citizens compared with citizens of other developed countries, and opioid overdoses were a factor.[3]

This crisis includes both prescription and nonprescription (illegal) use of opioid drugs. Prescription opioids include natural and semisynthetic opioids such as codeine and morphine, and synthetic opioids such as methadone, fentanyl, and tramadol. Many of the synthetic agents such as fentanyl are manufactured and distributed illegally. With the increased availability of both prescribed and illegally obtained opioids over the past 30 years, there has been an increase in misuse and deaths (Figure).[4]

Various opioids have been available for more than a century, and opioid misuse has occurred during that time. Following the Civil War, veterans who suffered severe injuries were given morphine for pain relief. In the late 1800s, pharmaceutical companies began producing synthetic opioids, at which time heroin became available. At the same time it became clear that these derivatives of opium were addictive, and the United States restricted the importation of opium for medical purposes only.[5] In 1912, the United States and other countries signed the International Opium Convention, which controlled the import, manufacture, and sale of morphine.[6] In 1924, because of misuse of heroin, the Heroin Act prohibited manufacturing, importation, and possession of heroin, even for medical purposes.[7] However, opioid problems continued to surface especially following war. Veterans were given opioids for relief of acute pain associated with combat injures but many continued to use and then misuse opioids once the immediate crisis was over. By the 1970s, additional opioids such as oxycodone and hydrocodone were developed and marketed for relief of acute and cancer pain.

Opioid use impacts all ages, sexes, ethnic and socioeconomic backgrounds, and especially those in rural settings.[8] According to a study in *Annals of Internal Medicine*, nearly one-third of US adults currently use prescription opioids.[9] The United States leads the world in opioid use, consuming roughly

Mayo Clin Proc. ■ March 2018;93(3):344-350 ■ https://doi.org/10.1016/j.mayocp.2017.12.020
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80% of all the world's opioids.[10] According to former Surgeon General Vivek H. Murthy, MD, MBA, the substance use disorder problem, which includes opioids, is now more prevalent than common medical diseases such as diabetes and is 1.5 times more prevalent than all cancer diagnoses combined.[11] More people use prescription opioids than use tobacco.[11] Substance misuse disorder in the United States costs $442 billion a year in health care, criminal justice costs, and lost productivity.[11] The opioid crisis alone skyrocketed to more than $78 billion a year.[12]

With increased opioid misuse, drug overdoses have become the leading cause of death for Americans younger than 50 years and a growing problem for those aged 15 to 24 years.[3] By 2016, more die per year than from influenza, pneumonia, and kidney disorders, as well as from motor vehicle and firearm deaths.[2] Unfortunately, only a fraction of those impacted by substance misuse, with some estimates indicating only 10%, are able to access services and get help for their condition.[13]

Opioids have been available for some time, so why are we now seeing a tremendous increase in opioid misuse and deaths? The reasons for this are complex. It appears that some good intentions to improve pain and suffering have contributed to some of the bad outcomes we are experiencing today with the opioid crisis.

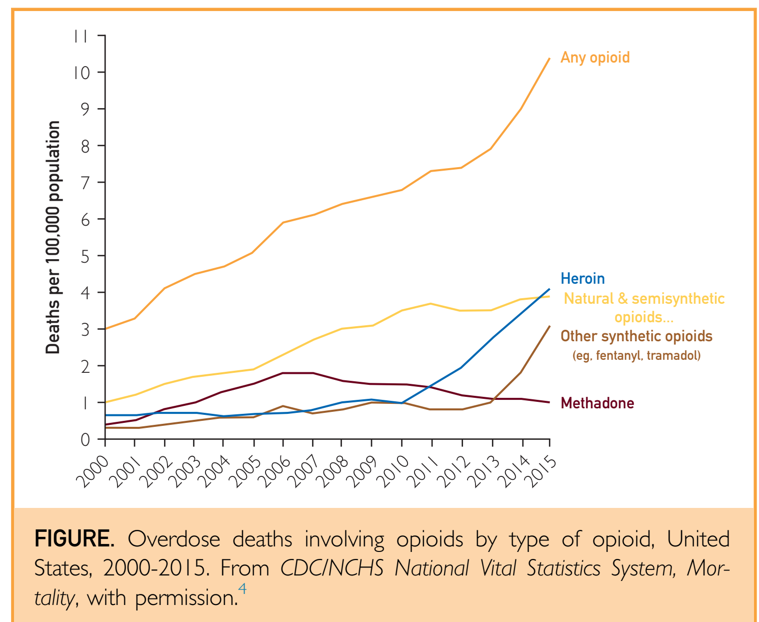

FIGURE. Overdose deaths involving opioids by type of opioid, United States, 2000-2015. From *CDC/NCHS National Vital Statistics System, Mortality*, with permission.[4]

ADDRESSING CHRONIC PAIN

In the past, opioid medications were prescribed primarily for acute pain due to injury or surgery or severe pain related to cancer or a terminal illness. Physicians were reluctant to prescribe opioids for other conditions because there was no evidence to support wider prescribing practices, and there was a concern for addiction. In addition, physicians feared investigation and state board disciplinary action if they did prescribe opioids more liberally.[14-16] In 1980, a 1-paragraph letter to the editors of the *New England Journal of Medicine* challenged the practice of using opioids only for relief of acute pain.[17] The authors of the letter, after a retrospective review of their records, stated that only 4 of 11,882 patients who had pain and were given opioids became addicted to them. Subsequently, this 5-sentence letter was referenced over 600 times in support of using opioids for chronic pain.[18]

A number of physicians and pain organizations, including the World Health Organization, began advocating for more aggressive use of opioids for pain control for anyone who had "pain."[19] A study published in 1986 in the journal *Pain*, based on only 38 patients, concluded that "opioid maintenance therapy can be a safe, salutary and a more humane alternative to the options of surgery or no treatment in those patients with intractable non-malignant pain."[20] In the textbook *Narcotic Analgesics in Anesthesiology*, Arthur Taub similarly indicated that continuing opioid therapy in patients with nonmalignant pain was not associated with substance abuse or psychological dependence.[21] Consequently, opioids were no longer limited to acute pain and pain associated with terminal illnesses but were also used to treat chronic pain.

This led to a slow but steady expansion of opioid use in the 1980s for anyone having "pain." In 1996, the American Academy of Pain Medicine and the American Pain Society issued a consensus statement that opioids should have a role in the treatment of patients with chronic noncancer pain.[22] Subsequently, many states passed Intractable Pain Acts that removed sanctions for physicians who

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