



Issue Brief

A Growing Epidemic:  
Battling Opioid Abuse in Ohio



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years

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## Acknowledgements

*This issue brief was written by Michele Fancher, HCMBA, freelance health writer and Deanna Moore, MPA, vice president, Corporate Communications. Bill Ryan, president and CEO, provided invaluable insight and comments.*

*Special thanks are extended to the staff of The Center for Health Affairs: Julie Cox, director, marketing; Luisa Barone Gantt, digital marketing manager; Rachel Brown, graphic design marketing coordinator; Earnest Law, facilities assistant; Christopher Nortz, CFM, director, facilities; and Beverly Cash, receptionist, facilities.*

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## Correction

*The original version of the May Issue Brief, 100 Years in Review, inadvertently excluded Lake Health from a list of member hospitals on page 10 that were not charter members but operating at the time of The Center for Health Affairs' founding. Lake Health began operations in 1902.*



## A Growing Epidemic: Battling Opioid Abuse in Ohio

Rarely a week goes by when the issue of opioid abuse doesn't make the headlines. In recent years, the use of – and deaths associated with – opioids, both legal and illicit versions, have exploded. The progression of events leading up to the epidemic is as complex as the problem of addiction itself. Now, policymakers, healthcare professionals, law enforcement, community agencies, and a whole host of other organizations are embattled in efforts to reverse this very troubling trend.

This paper explores the many facets of the opioid abuse epidemic and discusses the extensive work underway to stem the addiction and overdoses that have affected so many people.

### About Opioids

Opioids are a class of drugs that include prescription pain relievers such as oxycodone (including OxyContin and Percocet), hydrocodone (for example, Vicodin), codeine, morphine, fentanyl and others.

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These drugs reduce the intensity of pain signals reaching the brain and also affect areas of the brain that control emotion, thereby diminishing the perception of pain. Hydrocodone and oxycodone products are commonly prescribed for a variety of painful conditions, including dental and injury-related pain, while codeine is often prescribed for mild pain. Morphine is often used before and after surgical procedures to alleviate severe pain. The illicit drug heroin is also an opioid.<sup>1</sup>

### *How Do Opioids Affect the Body?*

When an opiate travels through the bloodstream, the chemicals in the drug attach to specialized proteins, or receptors, in the brain and spinal cord, as well as in the gastrointestinal tract and other organs in the body.<sup>2</sup> The binding of these drugs to opioid receptors in reward regions in the brain produces a sense of well-being, while stimulation of opioid receptors in deeper brain regions results in drowsiness and respiratory depression, which can lead to overdose deaths. The presence of opioid receptors in other tissues is responsible for side effects such as constipation and cardiac arrhythmias.<sup>3</sup>

Opioids are prescribed therapeutically to relieve pain, but when they activate these reward processes in the absence of significant pain, they can motivate repeated use of the drug simply for pleasure. Repeated exposure to escalating dosages of opioids alters the brain so that it functions more or less normally when the drugs are present and abnormally when they are not. The results of this alteration include opioid tolerance, which is the need to take higher and higher dosages of the drug to achieve the same opioid effect, and drug dependence, which is the susceptibility to withdrawal symptoms.<sup>4</sup>

The pleasure derived from opioids' activation of the brain's natural reward system promotes continued drug use during the initial stages of opioid addiction. Subsequently, repeated exposure to opioid drugs induces the brain mechanisms of dependence, which leads to daily drug use to avoid the unpleasant symptoms of withdrawal. Further prolonged use produces more long-lasting changes in the brain that may underlie the compulsive drug-seeking behavior and related adverse consequences that are the hallmarks of addiction.<sup>5</sup>

Tolerance occurs when the person no longer responds to the drug as strongly as he or she initially did, thus necessitating a higher dose to achieve the same effect. The establishment of tolerance results from the ability of opioids to desensitize the brain's own natural opioid system, making it less responsive over time. Tolerance is a strong contributing factor to overdose among individuals who have abstained from opioid usage for a period of time, whether due to an attempt to quit or because they have been unable to obtain the drug. Those who do not realize they have lost their tolerance during periods of abstinence may initially take the high dosages that they had previously used, resulting in overdoses.<sup>6</sup>



People who use prescription opioids non-medically may seek to intensify their experience by taking the drug in ways that result in more rapid delivery to the brain. For example, extended-release oxycodone is designed to release slowly and steadily into the bloodstream when taken orally, which minimizes its euphoric effects. People who use pills for their mood-elevating effects may crush them to snort or inject the drug, which not only increases the euphoria but also increases the risk of overdose. When people break or crush long-acting or extended-release medicines, which typically contain higher doses because they are intended for release over long periods, the results can be particularly dangerous, as all of the medicine can be released at once. Taking opioids through nasal, smoked, or intravenous routes enhances risks both because of the higher dose than the manufacturer intended and the quicker onset of drug effects.<sup>7</sup>

Another contributor to overdose risk is the combined use of opioids with other drugs, like benzodiazepines, which can be prescribed to treat anxiety and insomnia, and other central nervous system depressants. Similar risks are observed when opioids are combined with alcohol. Unfortunately, some patients are still co-prescribed opioid pain relievers and benzodiazepines and in 2011, 31 percent of prescription opioid related overdose deaths involved these drugs.<sup>8</sup>

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## Dependence vs. Addiction

Physical dependence occurs because of normal adaptations to chronic exposure to a drug and is not the same as addiction. Addiction, which can include physical dependence, is distinguished by compulsive drug seeking and use despite sometimes devastating consequences. Someone who is physically dependent on a medication will experience withdrawal symptoms when use of the drug is abruptly reduced or stopped. These symptoms can be mild or severe, depending on the drug, and can usually be managed medically or avoided by using a slow drug taper.<sup>9</sup>

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Brain abnormalities resulting from chronic use of opioids are underlying causes of dependence and addiction. The abnormalities that produce dependence, well understood by science, appear to resolve after detoxification, within days or weeks after opioid use stops. The abnormalities that produce addiction, however, are more wide-ranging, complex, and long-lasting. They may involve an interaction of environmental effects – for example, stress, the social context of initial opiate use, and psychological conditioning – and a genetic predisposition in the form of brain pathways that were abnormal even before the first dose of opioid was taken. Such abnormalities can produce craving that leads to relapse months or years after the individual is no longer opioid dependent.<sup>10</sup>

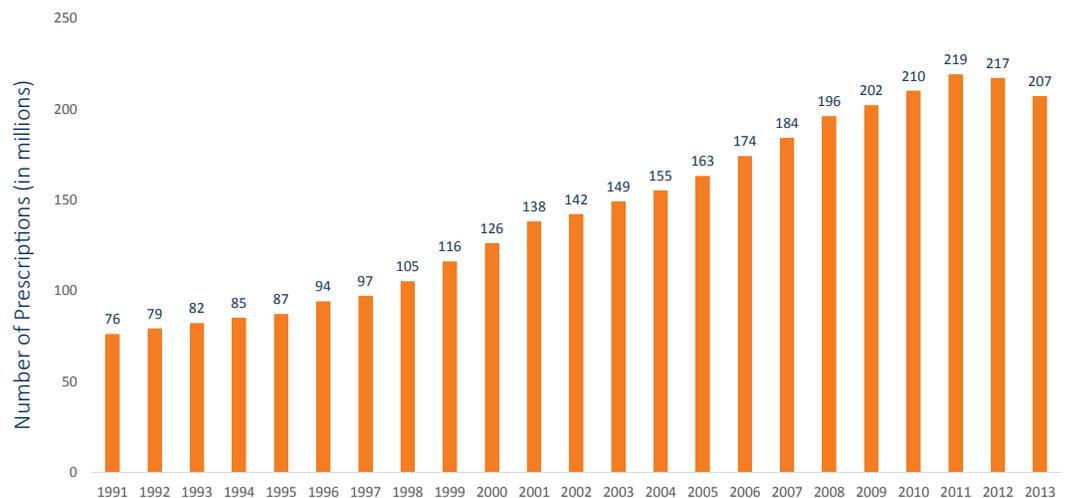
## An Addiction & Overdose Epidemic

The production and use of prescription opioids has exploded over the last few decades. In 2000, the world produced 21,417 kilograms – more than 47,000 pounds – of hydrocodone. In 2013, production was 99,562 kilograms, nearly a fivefold increase.<sup>11</sup> In the United States, the number of prescriptions for opioids like hydrocodone and oxycodone has escalated from around 76 million in 1991 to nearly 207 million in 2013, making the U.S. their biggest consumer globally. The U.S. accounts for almost 100 percent of the world total for hydrocodone and 81 percent for oxycodone.<sup>12</sup> In Ohio, the numbers are equally surprising. In 2013, Ohio’s Pharmacy Board Prescription Monitoring System tracked 280,443,578 solid doses of hydrocodone and its combinations to 1,688,511 patients.<sup>13</sup>



The bulk of American patients who need relief from persistent, moderate-to-severe non-cancer pain have back pain conditions (approximately 38 million) or osteoarthritis (approximately 17 million).<sup>14</sup>

### Opioid Prescriptions Dispensed by U.S. Retail Pharmacies



Source: National Institute on Drug Abuse

Not surprisingly, this high utilization is accompanied by high rates of both addiction and overdose death. In 2014, 21.5 million Americans ages 12 and older had a substance use disorder. For 1.9 million of them, this involved prescription pain relievers and for 586,000 this involved heroin.<sup>15</sup> Drug overdose is the leading cause of accidental death in the U.S., with 47,055 lethal drug overdoses in 2014. Opioid addiction is driving this epidemic, with 18,893 overdose deaths related to prescription pain relievers, and 10,574 overdose deaths related to heroin in 2014.<sup>16</sup>

Overdose death rates, opioid sales, and substance use disorder treatment admissions related to prescription pain relievers have increased in parallel.

- The overdose death rate in 2008 was nearly four times the 1999 rate.
- Sales of prescription pain relievers in 2010 were four times those in 1999.
- The substance use disorder treatment admission rate in 2009 was six times the 1999 rate.<sup>17</sup>

### *The Link Between Rx & Heroin*

There is a strong correlation between prescription opioid use and heroin use. Four in five new heroin users started out misusing prescription painkillers. It is estimated that 23 percent of individuals who use heroin develop opioid addiction. A 2014 survey of people in treatment for opioid addiction found that 94 percent of respondents said they chose to use heroin because prescription opioids were “far more expensive and harder to obtain.”<sup>18</sup>

The transition from misusing prescription opioids to using heroin may be part of the natural progression of disease in a subset of users. Evidence from interviews with individuals with heroin use disorder suggest that market forces, including the accessibility, cost, and high potency of heroin, are driving increased use of heroin and transition from prescription opioids. Some individuals who have developed dependence on prescription opioids, when faced with the increasing difficulty of obtaining these medications through their providers and the cost of obtaining them illegally, have initiated heroin use, which is cheaper and in some communities easier to obtain than prescription opioids.<sup>19</sup>

The risk of overdose and negative consequences is greater with heroin due to the lack of control over the purity of the drug and its adulteration with other drugs, such as fentanyl – originally a potent prescription opioid but now often synthesized in clandestine labs. All of these factors increase the risk for overdose since users have no way of assessing the potency of the drug before taking it and, in the case of adulteration with fentanyl, users typically have no opportunity to become tolerant.<sup>20</sup>

### *Mortality Rates*

The Centers for Disease Control and Prevention analyzed recent multiple cause-of-death mortality data from the National Vital Statistics System to track current trends and shifting characteristics of drug overdose deaths. Opioids—primarily prescription pain relievers and heroin—are the main driver of overdose deaths. Opioids were involved in 28,647 deaths, equating to 61 percent of drug overdose deaths,<sup>21</sup> in 2014 and opioid overdoses have quadrupled since 2000.<sup>22</sup> Since 2000, the rate of deaths from drug overdoses has increased 137 percent, including a 200 percent increase in the rate of overdose deaths involving opioids.<sup>23</sup>

### *U.S. Age - Adjusted Rate of Overdose Deaths Involving Opioids*

	2013	2014	Percent Increase
Deaths per 100,000 population	7.9	9.0	14%

Source: Centers for Disease Control and Prevention<sup>24</sup>

Some regions of the country have been more affected than others. Significant increases in drug overdose death rates were seen in the Northeast, Midwest and South Census Regions. In 2014, Ohio had the fifth highest drug overdose deaths among the states, at 24.6.<sup>25</sup> States with statistically significant increases in the rate from 2013 to 2014 included Alabama, Georgia, Illinois, Indiana, Maine, Maryland, Massachusetts, Michigan, New Hampshire, New Mexico, North Dakota, Ohio, Pennsylvania and Virginia.<sup>26</sup>

### *States with Highest Rates of Drug Overdose Deaths, 2014*

State	Deaths per 100,000 Population
West Virginia	35.5
New Mexico	27.3
New Hampshire	26.2
Kentucky	24.7
Ohio	24.6

Source: Centers for Disease Control and Prevention

In Ohio, drug overdose death rates increased 18.3 percent from 2013 to 2014. In Ohio in 2013, there were 2,347 drug overdose deaths, which sets the age-adjusted death rate at 20.8. This rose to 2,744 deaths in 2014, bringing the rate to 24.6.<sup>27</sup>

Nationwide, from 2013 to 2014, the age-adjusted rate of death involving natural and semisynthetic opioid pain relievers increased 9 percent; involving heroin increased 26 percent; and involving synthetic opioids other than methadone increased 80 percent. The sharp increase in deaths involving synthetic opioids, other than methadone, in 2014 coincided with law enforcement reports of increased availability of illicitly manufactured fentanyl; however, illicitly manufactured fentanyl cannot be distinguished from prescription fentanyl in death certificate data.<sup>28</sup>

## Nationwide Opioid-Related Deaths<sup>29</sup>

	Natural / Semisynthetic Opioid Pain Relievers*	Heroin	Synthetic Opioids Other than Methadone**
Age-Adjusted Death Rate Increase, 2013-2014	9%	26%	80%
Rate of Drug Overdose deaths, 2014	3.8 per 100,000	3.4 per 100,000	1.8 per 100,000

\* Natural and semisynthetic opioids include morphine, hydrocodone and oxycodone.

\*\* Synthetic opioids include fentanyl and tramadol.

## Fentanyl

Fentanyl is a man-made opioid that is 50 times more potent than heroin and 100 times more potent than morphine. Pharmaceutical fentanyl is primarily prescribed to manage acute and chronic pain associated with advanced cancer. Non-pharmaceutical fentanyl is made illegally and is often mixed with heroin or other drugs — with or without the user’s knowledge — in order to increase the drug’s effect.<sup>30</sup>



The cutting of heroin with fentanyl has been played a substantial role in the increase in heroin-related deaths in recent years.

Illegally made fentanyl has most often been found in the Midwest, Northeast and Southern regions of the U.S. More than 80 percent of fentanyl confiscations in 2014 occurred in 10 states in these regions. At 1,245, Ohio had far more fentanyl confiscations than any other state in 2014. The next highest number of confiscations that year was 630 in Massachusetts.<sup>31</sup>

As illegally made fentanyl confiscations have increased, so have fentanyl-related overdose deaths. A report released earlier this year found that during the time period from January 2014 through May 2015, there were 998 fentanyl-related deaths among Ohio residents. This is a sharp increase from the 84 such deaths in 2013.<sup>32</sup>

The majority of those who died from fentanyl-related overdoses during that 17-month period were male (69 percent), white (89 percent), never married (55 percent), and had some college or less education (94 percent). Their average age was 37.9 years. Although large metropolitan counties (those with populations greater than 1 million) had a higher number and percentage of all fentanyl-related deaths (47 percent), moderate metropolitan counties (with populations between 250,000 and 1 million) had the highest rate of fentanyl-related deaths (6.63 per 100,000).<sup>33</sup>

Risk factors for these fentanyl-related overdose deaths included: a history of substance abuse problems, current mental health problems (such as depression, anxiety, or bipolar disorder), recent release from an institution within the last month (such as jail, a hospital, or a treatment facility), and a history of high-dose opioid prescription.<sup>34</sup>

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Opioid abuse has become a public health epidemic with devastating consequences including not just increases in drug-related overdose fatalities, but also the increased spread of infectious diseases such as HIV and hepatitis C (HCV) due to injection of heroin or prescription opioids. In 2015, there occurred one of the

fastest-spreading outbreaks of HIV in the U.S. since the inception of the epidemic with 184 cases reported in a small area in southeastern Indiana. This outbreak was driven by injection drug use—specifically, injection of the opioid painkiller oxycodone. The high prevalence of opioid use also impacts public safety; from 1999 to 2010, there was a six-fold increase in positive opioid tests among drivers who died in car crashes.<sup>35</sup>

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### *Adolescents, Women and Babies*

Tragically, it isn't only adults who are affected by this dangerous trend of opioid abuse. In 2014, 467,000 adolescents ages 12 to 17 were current nonmedical users of pain relievers, with 168,000 having an addiction to prescription pain relievers. In 2014, an estimated 28,000 adolescents had used heroin in the past year, and an estimated 16,000 were current heroin users. Additionally, an estimated 18,000 adolescents had a heroin use disorder.<sup>36</sup>

The prescribing rates for prescription opioids among adolescents and young adults nearly doubled from 1994 to 2007. Yet, most adolescents who misuse prescription pain relievers are given them for free by a friend or relative. People often share their unused pain relievers, unaware of the dangers of nonmedical opioid use.<sup>37</sup>

Women seem to be disproportionately affected by prescription pain reliever overdoses. Women are reportedly more likely to have chronic pain, be prescribed prescription pain relievers, be given higher doses, and use them for longer time periods than men. From 1999 to 2000, overdose deaths related to prescription pain relievers increased more than 400 percent for women, compared to 237 percent for men. During that same time period, 48,000 women died of prescription pain reliever overdoses. Heroin overdose deaths among women have tripled in the last few years. From 2010 through 2013, female heroin overdoses increased from 0.4 to 1.2 per 100,000.<sup>38</sup>

This disproportionate effect on women has ramifications for newborn babies. In the United States, an estimated 14.4 percent of pregnant women with private insurance and 21.6 percent of Medicaid-enrolled pregnant women filled prescriptions for an opioid during their pregnancy between 2000 and 2007.<sup>39</sup> Babies born to women who have abused opioids can suffer from neonatal abstinence syndrome (NAS), also called neonatal withdrawal syndrome, which is a set of symptoms associated with the abrupt withdrawal of opioids and other drugs when infants are born to mothers who were taking these substances.<sup>40</sup> The incidence of neonatal abstinence syndrome increased by approximately 500 percent in the United States between 2000 and 2012.<sup>41</sup>

In Ohio between 2004 and 2014, 9,498 hospitalizations resulted from NAS in inpatient settings. In 2014 alone, there were 1,875 admissions, which equates to more than five admissions per day. The rate of NAS in Ohio grew nearly 10 times from 14 per 10,000 live births in 2004 to 134 per 10,000 live births in 2014. The most common conditions associated with NAS were respiratory complications, low birth weight, feeding difficulties and seizures.<sup>43</sup>

Babies born with NAS tend to have hospital stays lasting two to three weeks. In addition to the very difficult start to life experienced by these babies, NAS also results in significant healthcare expenses. In 2014, the average inpatient charge was four times higher for NAS infants, and the average length of stay was almost four times greater than for all Ohio infants. Treating newborns with NAS was associated with over \$105 million in charges in Ohio's hospitals in 2014.<sup>44</sup>



*Symptoms of neonatal abstinence syndrome can include:*

- *Low birth weight*
- *Breathing problems*
- *Seizures*
- *Feeding difficulties*
- *Tremors*
- *Irritability*
- *Sleep problems*
- *Vomiting*
- *Diarrhea*
- *Dehydration*
- *Sweating*
- *Fever / unstable temperature<sup>42</sup>*

## Understanding Opioid Dependence, Addiction & Treatment

Many factors, both individual and environmental, influence whether a particular person who experiments with opioid drugs will continue taking them long enough to become dependent or addicted. For individuals who do continue, the opioids' ability to provide intense feelings of pleasure is a critical reason. Opioids are prescribed therapeutically to relieve pain, but when they activate the brain's reward processes in the absence of significant pain, they can motivate repeated use of the drug for pleasure.<sup>45</sup> An understanding of the physiology of opioid dependence is important for considering treatment options.

One of the brain circuits that is activated by opioids is the mesolimbic (midbrain) reward system. This system causes the release of dopamine, which triggers feelings of pleasure. Other areas of the brain create a lasting memory that associates these good feelings with the circumstances and environment in which they occur. These memories, called conditioned associations, often lead to the craving for drugs when the abuser re-encounters those persons, places, or things, and they drive abusers to seek out more drugs in spite of many obstacles. Particularly in the early stages of abuse, the opioid's stimulation of the brain's reward system is a primary reason that some people take drugs repeatedly. However, the compulsion to use opioids builds over time to extend beyond a simple drive for pleasure. This increased compulsion is related to tolerance and dependence.<sup>46</sup>

From a clinical standpoint, opioid withdrawal is one of the most powerful factors driving opioid dependence and addictive behaviors. Treatment of the patient's withdrawal symptoms is based on understanding how withdrawal is related to the brain's adjustment to opioids. Opioid tolerance occurs because the brain cells that have opioid receptors on them gradually become less responsive to opioid stimulation. For example, more opioid is needed to stimulate the mesolimbic reward system to release the same amount of dopamine. Therefore, more opioid is needed to produce pleasure comparable to that provided in previous drug-taking episodes.<sup>47</sup>

Opioid dependence and some of the most distressing opioid withdrawal symptoms stem from changes in another important brain system, involving an area at the base of the brain called the locus ceruleus. Neurons in this part of the brain produce noradrenaline, which stimulates wakefulness, breathing, blood pressure, and general alertness, among other functions. Opioids suppress the release of noradrenaline, resulting in drowsiness, slowed respiration and low blood pressure, familiar effects of opioid intoxication. With repeated exposure to opioids, however, these neurons adjust by increasing their level of activity. Now, when opioids are present, their suppressive impact is offset by this heightened activity, with the result that roughly normal amounts of noradrenaline are released and the patient feels more or less normal. When opioids are not present to suppress the brain cells' enhanced activity, however, the neurons release excessive amounts of noradrenaline, triggering jitters, anxiety, muscle cramps, and diarrhea.<sup>48</sup>

Other brain areas also contribute to the production of withdrawal symptoms, including the mesolimbic reward system. For example, opioid tolerance that reduces the release of dopamine may prevent the patient from obtaining pleasure from normally rewarding activities such as eating. These changes in the brain's reward systems, though not fully understood, are an important factor underlying craving and compulsive drug use.<sup>49</sup>

### Medication-Assisted Treatment

Treatment for opioid dependence and addiction often involves both pharmacological and psychological components. The pharmacological component, referred to as medication-assisted treatment, is intended to help patients manage both withdrawal symptoms in the short term as well as cravings in the long term. Medications have become an essential component of an ongoing treatment plan, enabling opioid-addicted persons to regain control of their health and their lives.



A number of medications are available for the treatment of opioid use disorders, both for patients in acute withdrawal and to support long-term recovery. The three classes that have been developed to date include:

- 1 agonists, like methadone, which activate opioid receptors;
- 2 partial agonists, like buprenorphine, which also activate opioid receptors but produce a diminished response; and
- 3 antagonists, like naltrexone, which block the receptor and interfere with the rewarding effects of opioids.

Physicians can select from these options on the basis of a patient's specific medical needs.<sup>50</sup>

The evidence strongly demonstrates that methadone, buprenorphine, and injectable naltrexone, when administered in the context of an addiction treatment program, all effectively help maintain abstinence from other opioids, reduce opioid use disorder-related symptoms, and reduce the risk of infectious disease transmission and crime. Studies of methadone and buprenorphine have shown that:

- Patients on methadone were over four times more likely to stay in treatment and had 33 percent fewer opioid-positive drug tests compared to patients treated with placebo;
- Methadone treatment significantly improves treatment outcomes alone and when added to counseling; long-term (beyond six months) outcomes are better for patients receiving methadone, regardless of counseling received;

- Buprenorphine treatment significantly decreased the number of opioid-positive drug tests; multiple studies found a 75 to 80 percent reduction in the number of patients testing positive for opioid use;
- Methadone and buprenorphine are equally effective at reducing opioid use; no differences were found in opioid-positive drug tests or self-reported heroin use when treating with these medications.

Maintenance treatments have also been shown to reduce injection drug use and HIV transmission and to be protective against overdose.<sup>51</sup>

To be clear, the evidence supports long-term maintenance with these medicines in the context of behavioral treatment and recovery support, rather than short-term detoxification programs aimed at abstinence. Abstinence from all medicines may be a particular patient's goal, and experts recommend that goal be discussed between patients and providers. However, scientific evidence suggests relapse rates are high when tapering off of these medications, and treatment programs with an abstinence focus generally do not facilitate patients' long-term, stable recovery. It is often the case that patients with good long-term outcomes are the ones who engaged in medication-assisted treatment, although cycling in and out of treatment is not unusual in the path to a stable recovery.<sup>52</sup>

Regulations govern the use of medication-assisted treatment, including how many patients a physician is allowed to offer such services. Under the Drug Addiction Treatment Act of 2000, which amended the Controlled Substances Act, physicians may utilize buprenorphine to treat up to 30 patients at a time and after one year they may file a request to treat up to 100 patients at a time.<sup>53</sup> A newly finalized rule, which is effective August 8, 2016, expands this upper limit to 275 patients for physicians who meet certain qualifications.<sup>54</sup> According to the Substance Abuse and Mental Health Services Administration (SAMHSA), an agency within the U.S. Department of Health and Human Services, about 33,800 physicians currently are approved to provide medication-assisted treatment, with about two-thirds of these approved to treat up to 30 patients and the remaining one-third approved to treat up to 100 patients.<sup>55</sup> In Ohio, there are 400 physicians certified to provide such treatment, 76 of which are in the seven counties comprising The Center for Health Affairs' membership area in Northeast Ohio.<sup>56</sup>

# 33,800

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## Efforts to Address the Crisis

Work is under way at the federal level, in states, and in communities across the country to combat the growing problem. Strategies are many and varied, and include developing new non-opioid pain relieving drugs and treatments, providing education to healthcare practitioners regarding pain management and prescribing practices, increasing the availability of overdose-reversing drugs, tracking opioid drug prescriptions, and others.

### Federal Level

The most recent measure of progress at the federal level was the passage by Congress in mid-July of a wide-ranging piece of legislation aimed fighting the opioid epidemic. The Comprehensive Addiction and Recovery Act (S. 524) comprises several provisions backed by the American Hospital Association, including establishing an interagency task force, which would include a hospital representative, to develop best practices for pain management and medication prescribing.<sup>57</sup> Among numerous other provisions, the new law also:



- Codifies a grant program at the Substance Abuse and Mental Health Services Administration (SAMHSA) to expand access to life-saving opioid overdose reversal drugs by supporting their purchase and distribution as well as training for first responders and others in key community sectors.
- Codifies a grant program at SAMHSA to support states in expanding access to addiction treatment services for individuals with an opioid use disorder, including evidence-based medication assisted treatment.
- Amends the Controlled Substances Act to expand access to medication-assisted treatment by authorizing nurse practitioners and physician assistants to prescribe buprenorphine, while ensuring that patients receive the full array of quality evidence-based services and minimizing the potential for diversion.
- Reauthorizes a grant program for residential treatment for pregnant and postpartum women who have an opioid use disorder and for their children. It also creates a new pilot program to enhance the flexibility of the funds so states can more broadly support family-based services for pregnant and postpartum women and their children.<sup>58</sup>

While the legislation has the potential to significantly advance strategies for stemming opioid abuse, it received only about half of the \$1.1 billion in funding originally requested by President Obama to support these programs.<sup>59</sup>

This legislation is only the latest in a string of efforts on this issue at the federal level. In 2015, the U.S. Secretary of Health and Human Services (HHS) launched an initiative to address the complex problem of prescription opioid and heroin abuse in this country that emphasizes the implementation of evidence-based prevention and treatment strategies. Tactics include the improvement of prescribing practices, deployment of the medication naloxone to reverse overdoses, and access to medication-assisted treatment to treat opioid use disorders. In October 2015, President Obama also announced a number of important new public and private steps being taken to combat the opioid epidemic, focused on improved prescriber training and access to treatment. The National Institute on Drug Abuse (NIDA), a partner in these efforts, is focused on supporting research and disseminating findings to improve opioid prescribing practices, expand the use of the opioid overdose reversal drug naloxone, improve the integration of medication-assisted treatment into primary and specialty care, and develop more effective pain treatments with reduced potential for misuse and diversion.<sup>60</sup>

NIDA has been involved in this work for many years, having first launched its prescription opioid and heroin abuse public health initiative in 2001. Work currently underway includes initiatives aimed at developing effective pain control that is less likely to result in addiction. Researchers are developing new compounds that have been shown in animal studies to induce strong analgesia without producing tolerance or dependence. Researchers are also working to develop a new generation of non-opioid-based medications for severe pain that would circumvent the brain reward pathways, thereby reducing abuse potential. Other efforts are exploring approaches that combine both opioid and non-opioid systems, as well as non-pharmacological strategies for the treatment of pain. Neural stimulation therapies such as transcranial magnetic stimulation, transcranial direct current stimulation, electrical deep brain stimulation, and peripheral nerve stimulation have shown promise for the treatment of chronic pain. Additional research is exploring stem cell transplants to generate new pain signaling neurons to reduce inflammation and inhibit chronic pain. Other studies are exploring complementary, integrative health approaches, including cognitive behavior therapy, exercise, mindfulness practices, and team-based multidisciplinary care.<sup>61</sup>

In addition to research, NIDA is also working on education efforts to advance addiction awareness, prevention and treatment in primary care practices. Intended to serve as national models, these centers target physicians in training, including medical students and resident physicians in primary care specialties, like internal medicine, family practice, and pediatrics. NIDA also developed, in partnership with the Office of National Drug Control Policy, two online continuing medical education courses on safe prescribing for pain and managing patients who abuse prescription opioids. These courses have been viewed by over 200,000 individuals and completed for credit by over 100,000 clinicians combined.<sup>62</sup>

**200,000**

*These courses have been viewed by over 200,000 individuals and completed for credit by over 100,000 clinicians combined.*

Additional research supported by NIDA has demonstrated the efficacy of multiple types of interventions including:

- Educational initiatives delivered in school and community settings.
- Supporting consistent use of prescription drug monitoring programs (PDMPs).
- Implementation of overdose education and naloxone distribution programs to issue naloxone directly to opioid users and potential bystanders.
- Aggressive law enforcement efforts to address doctor shopping and pill mills.
- Diverting justice-involved individuals with substance use disorders to drug courts with mandated engagement in treatment.
- Expansion of access to medication-assisted treatment.
- Abuse-deterrent formulations for opioid analgesics.<sup>63</sup>

In states with the most comprehensive initiatives to reduce opioid overprescribing, the results have been encouraging. Washington state’s implementation of evidence-based dosing and best-practice guidelines as well as enhanced funding for the state’s PDMP helped reduce opioid deaths by 27 percent between 2008 and 2012. In Florida, new restrictions were imposed on pain clinics, new policies were implemented requiring more consistent use of the state PDMP, and the Drug Enforcement Administration (DEA) worked with state law enforcement to conduct widespread raids on pill mills, which resulted in a 23.2 percent decrease in prescription drug-related overdose deaths between 2010 and 2012. These examples show that state and federal policies can reduce the availability of prescription opioids and overdose deaths.<sup>64</sup>

## Ohio

Policymakers and others are hard at work at the state level to combat the problem in Ohio. State Attorney General Mike DeWine’s office, for example, has revoked the licenses of numerous doctors and pharmacists for inappropriate prescribing, seized millions of dollars in pills, and provided prescription drug drop boxes that allow people to rid themselves of unneeded medication. The Organized Crime Investigations Commission, which assists local law enforcement agencies in combatting organized crime and corrupt activities and is chaired by the Ohio Attorney General, in 2013 seized \$14.4 million in drugs and \$5.3 million in currency, with 395 indictments, 262 convictions and 620 arrests. This is on top of the \$9.6 million in drugs seized, 407 indictments, 358 arrests and 340 convictions in 2012.<sup>65</sup>



The state legislature has also taken significant action to fight opioid abuse and overdose deaths, passing several bills over the last few years. Most recently, the 911 Good Samaritan Law was passed to protect from arrest or punishment for minor drug offenses a person who calls 911 to save a friend who is overdosing.



Other recent Ohio laws include those that:

- Make naloxone, used to reverse overdoses, more readily available.
- Require prescribers to obtain written informed consent from a minor's parent or guardian before issuing a controlled substance prescription to the minor.
- Require hospitals to report neonatal abstinence syndrome.
- Prohibit a controlled substance that is a Schedule II drug or contains opioids from being prescribed or dispensed without review of patient information in the State Board of Pharmacy's Ohio Automated Rx Reporting System.
- Require hospice care programs to establish procedures to prevent diversion of controlled substances that contain opioids.
- Require each county to have the full spectrum of integrated opioid addiction recovery treatment and recovery housing, and require insurance and Medicaid to pay for opioid recovery treatment. This bill also provided funding for specialty drug courts.
- Require school districts to include instruction in prescription opioid abuse prevention in the district's health curriculum as well as and require the Governor's Cabinet Opiate Action Team to develop recommendations for instruction in prescription opioid abuse prevention and submit them to the Department of Education, which is then required to publish them online.

The Ohio Automated Rx Reporting System (OARRS), the state's prescription drug monitoring program, has been an important component of work to reduce opioid abuse in the state. Created by the Ohio Board of Pharmacy in 2006, OARRS collects information on all outpatient prescriptions for controlled substances dispensed by Ohio-licensed pharmacies and personally furnished by licensed prescribers in Ohio. Drug wholesalers are also required to submit information on all controlled substances sold to an Ohio-licensed pharmacy or prescriber.<sup>66</sup>

As the only statewide electronic database of its kind, OARRS helps prescribers and pharmacists avoid potentially life-threatening drug interactions as well as identify individuals fraudulently obtaining controlled substances from multiple healthcare providers. It can also be used by professional licensing boards to identify or investigate clinicians with patterns of inappropriate prescribing and dispensing, and to assist law enforcement in cases of controlled substance diversion.<sup>67</sup>

Databases similar to OARRS are in effect in numerous other states. As of September 2015, 49 such programs were collecting and providing authorized access to that information, and 29 states required prescribers or dispensers to query their systems under specified circumstances, which vary by state but which all relate in some way to patient use of opioids.<sup>68</sup> These systems have been found to be promising tools in addressing the issue of prescription opioid abuse and overdose. One study investigated the effects of these programs on the prescribing of opioids and other pain medications in ambulatory care settings in 24 states from 2001 to 2010. It found that the implementation of a prescription drug monitoring program was associated with more than a 30 percent reduction in the rate of prescribing of Schedule II opioids, which include hydrocodone, oxycodone and fentanyl. This reduction was seen immediately following the launch of the program and was maintained in the second and third years afterward.<sup>69</sup>

# 30%

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## Prescribing Guidelines

In October 2013, Ohio released a set of guidelines for prescribing opioids for the treatment of chronic, non-terminal pain. "Chronic pain" means pain that has persisted after reasonable medical efforts have been made to relieve the pain or cure its cause and that has continued, either continuously or episodically, for longer than three continuous months. These guidelines include the following:

- Providers should first consider non-pharmacologic and non-opioid therapies.
- Providers should avoid starting a patient on long-term opioid therapy when treating chronic pain.
- Providers should avoid prescribing benzodiazepines with opioids.
- Providers should recognize times to "press pause" in response to certain "trigger points," including when a patient's daily dose reaches a certain level. This pause allows providers to reassess their compliance with accepted and prevailing standards of care.
- When a patient has been on that trigger point dose for three continuous months, providers are advised to re-visit the treatment plan and goals as well as evaluate the patient to assess the effectiveness of the treatment and screen for addiction.<sup>70</sup>

In March 2016, the Centers for Disease Control and Prevention (CDC) released national guidelines for prescribing opioids for chronic pain. These guidelines, which were developed based on clinical research and with the input of a stakeholder group,

provide recommendations for primary care clinicians who are prescribing opioids for chronic pain outside of active cancer treatment, palliative care, and end-of-life care. The 12 guidelines address: 1) when to initiate or continue opioids for chronic pain; 2) opioid selection, dosage, duration, follow-up, and discontinuation; and 3) assessing risk and addressing harms of opioid use. Included are recommendations to use non-pharmacologic therapy and non-opioid medications when possible; prescribe immediate-release rather than extended-release or long-acting opioids; prescribe the lowest possible dose; limit the duration of prescriptions for acute pain; avoid prescribing opioid pain medication and benzodiazepines concurrently whenever possible; and both before prescribing and at regular intervals while patients are undergoing opioid therapy, evaluate patients for effectiveness of treatment and potential addiction.<sup>71</sup>

### Physicians

Healthcare providers, including physicians, play an important role in the fight against the opioid drug epidemic and organizations like the American Medical Association (AMA) and Ohio State Medical Association (OSMA) are contributing their voices and efforts.

The AMA established in 2014 its Task Force to Reduce Opioid Abuse. The task force has 25 members, including the OSMA, and has established the following five goals:

- 1 Increase physicians' registration and use of effective PDMPs.
- 2 Enhance physicians' education on effective, evidence-based prescribing.
- 3 Reduce the stigma of pain and promote comprehensive assessment and treatment.
- 4 Reduce the stigma of substance use disorder and enhance access to treatment.
- 5 Expand access to naloxone in the community and through co-prescribing.<sup>72</sup>

Both the AMA and the OSMA have engaged in advocacy efforts to effect policy change aimed at combatting the epidemic and are serving in the role of educators, providing information and training for physicians. In addition to offering its own education programming, the AMA is a partner of Providers' Clinical Support System for Opioid Therapies (PCSS-O), which makes available at no cost education programs on the safe and effective use of opioids for treatment of chronic pain and safe and effective treatment of opioid use disorder. PCSS-O also offers a mentoring program for providers treating pain and opioid use disorder.<sup>73</sup>

The OSMA created its own initiative, Smart Medicine and Responsible Treatment program (Smart Rx), a statewide awareness and education campaign. Along with the creation of Smart Rx, the OSMA assembled a Prescription Drug Abuse

Advisory Committee to provide education and resources to aid physicians in better understanding how to treat patients with substance-use disorders. The OSMA advocates for more physicians to be trained in recognizing substance-use disorders, as well as larger numbers of physicians trained and certified in providing medication-assisted treatment.<sup>74</sup>

According to the OSMA, progress is being made. In 2014 there were 40 million fewer doses of opioids prescribed compared to 2013; from 2009 to 2014, the number of patients seeking multiple prescriptions of opioid pain relievers dropped from 3,000 to 960; and from 2007 to 2014, there was a 5,900 percent increase in the number of OARRS reports requested and a 50 percent decrease in doctor shoppers (people moving from one doctor to another to obtain opioid prescriptions).<sup>75</sup>



### Project DAWN

Project DAWN (Deaths Avoided With Naloxone) is a community-based overdose education and naloxone distribution program.

It is designed to provide at-risk individuals with the tools they need to respond to a potential opioid overdose. The target population for this program varies from chronic pain patients who may misuse or abuse medications to non-medical users of prescription opioids and heroin users. Individuals who participate in Project DAWN receive training on:

- Recognizing the signs and symptoms of overdose.
- Distinguishing between different types of overdose.
- Performing rescue breathing.
- Calling emergency medical services.
- Administering intranasal naloxone.<sup>76</sup>

In Ohio, Project DAWN was initiated in Scioto County with the support of the Ohio Department of Health and later expanded to other counties in the state. Currently, there are Project DAWN naloxone distribution and training sites in 42 counties in Ohio, including Cuyahoga, Lake, Lorain, Medina and Portage counties.<sup>77</sup> Many pharmacies in Ohio now provide naloxone and education about its use to anyone who requests it. There is a charge for naloxone obtained at pharmacies; however, naloxone may be billed to Medicaid or private insurance. The Ohio State Board of Pharmacy maintains on its website a list of pharmacies that are providing naloxone without a prescription pursuant to a protocol.<sup>78</sup>

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## Naloxone

Naloxone, also known as Narcan, is a medication that can reverse an overdose caused by prescription opioids or heroin. When administered during an overdose, naloxone blocks the effects of opioids on the brain and quickly restores breathing. Naloxone has been used safely by emergency medical professionals for more than 40 years and has only this one critical function: to reverse the effects of opioids in order to prevent overdose death. Naloxone has no potential for abuse.

Naloxone is harmless if administered to a person who is not experiencing an opioid overdose. In someone who is dependent on opioids naloxone will produce withdrawal symptoms, which, while uncomfortable, are not life threatening. Naloxone is only effective for opioids and does not reverse overdoses that are caused by non-opioid drugs.<sup>79</sup>

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In 2012, concerned with a dramatic increase in overdose deaths that had occurred the prior year, a group came together in Lorain County and began working to implement Project DAWN. In 2013, the Ohio General Assembly passed legislation making the Lorain County initiative a pilot project for first responders, including law enforcement, to carry and administer nasal naloxone. Under the pilot, first responders received training that consisted of information on opioids, overdose risks, signs of overdose, education and instruction on naloxone, administration of the medication, the importance of calling 911, rescue breathing, and data collection and reporting procedures. The local hospital systems also participated in the pilot by supplying medication, nasal adapters, and face shields.<sup>80</sup>

By October 2014, at the conclusion of the one-year pilot, there had been 69 total administrations of nasal naloxone, 63 of which were known to be successful. Two patients died, two were ineffective (the cause of the symptoms was determined to have been not likely opioid related), and there were two unknown results (the status of the patients was unknown after they were transferred over to EMS). In March 2014, the Ohio General Assembly passed legislation expanding access to nasal naloxone by law enforcement statewide.<sup>81</sup>

### *Hospital EDs as Opportunities for Intervention*

Patients with opioid use disorders are at increased risk of adverse health consequences and often seek medical care in emergency departments (EDs). One recent study explored the efficacy of screening for opioid use disorders and initiating buprenorphine treatment in the ED. Patients who were started on buprenorphine treatment in the ED were more likely to engage in ongoing treatment, had reduced

self-reported illicit opioid use, and were also less likely to need inpatient addiction treatment services compared to patients who received only a brief intervention and a referral for treatment. Similarly, ongoing research is examining the impact of integration of medication-assisted treatment within infectious disease clinics. This type of research is essential for translating evidence-based strategies into real-world interventions that will reach the greatest number of people and get the most out of limited prevention and treatment resources.<sup>82</sup>

## Additional Challenges & Related Progress

While there is clearly substantial work underway to combat the growing epidemic, there remain numerous challenges, not the least of which is insufficient availability of treatment opportunities for those who are seeking help. Despite the availability of evidence-based treatments for opioid use disorders, there exists a significant and ongoing treatment gap in the U.S. In 2014, fewer than 12 percent of the 21.5 million Americans suffering with a substance use disorder received specialty treatment. Further, many specialty treatment programs do not provide current evidence-based treatments, with fewer than half providing access to medication-assisted treatment for opioid use disorders.<sup>83</sup>

One study published last year found that in 2012, the rate of opioid abuse or dependence was 891.8 per 100,000 people aged 12 years or older in the U.S., while at the same time, the maximum potential buprenorphine treatment capacity nationwide is 420.3 per 100,000 and there are approximately 120 patients receiving methadone in opioid treatment programs per 100,000 population. The vast majority of states – 96 percent – had opioid abuse or dependence rates higher than their buprenorphine treatment capacity rates, and three-quarters of the states reported their opioid treatment programs were operating at 80 percent capacity or more.<sup>84</sup> The National Survey on Drug Use and Health found that 238,000 Ohioans abuse or are dependent on an illegal drug, but fewer than 10 percent of Ohioans who are abusing or dependent on an illicit drug are receiving treatment.<sup>85</sup>

**891.8 per  
100,000 People**

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### *IMD Exclusion*

There are a variety of treatment options for people with substance use disorders, including both outpatient and inpatient, or residential. The new rules expanding the number of patients physicians can treat with buprenorphine is a step in the right direction. However, another aspect of federal law is increasingly being recognized as a limitation on access to residential care. Called the Medicaid Institutions for Mental Diseases (IMD) exclusion, it has been part of the federal Medicaid program since its enactment in 1965. Medicaid is a joint federal-state program, with a large portion of the costs associated with the program paid for by the federal government and states paying the remainder. The IMD exclusion, however, bars federal contributions to the cost of medically necessary inpatient care provided to Medicaid beneficiaries ages 21 to 64 in certain institutions. These include hospitals, nursing facilities or other institutions with more than 16 beds that are primarily engaged in providing mental healthcare.<sup>86</sup>



When it was written, the policy reflected both a long history of federal policymakers viewing the care of persons with mental illness as a state responsibility, and a preference for community-based care over large institutions.<sup>87</sup> However, in today's environment it has become a significant hurdle to accommodating the growing population of people who are in need of treatment for substance use disorders.

Recently, the Centers for Medicare and Medicaid Services (CMS) has published a new rule with the potential to alleviate this problem for Medicaid managed care enrollees. Previously, under the IMD exclusion, if a Medicaid managed care patient ages 21 to 64 were being treated by an IMD, the federal portion of the monthly capitation payment would not be paid for that month, meaning the enrollee would not be entitled to the federal Medicaid benefit for any services that month – it is not just the services provided by the IMD that would be excluded. Under the new rule, the federal portion of the capitation payment will be allowable for patients whose stay in an IMD is no longer than 15 days.<sup>88</sup> It is important to note, however, that the new rule only applies to managed care enrollees and does not include those covered by fee for service Medicaid. It also does not require states to allow IMD stays. At the time of publication of this paper, Ohio's response to the new federal rule is unclear.

### *Payment Incentives*

Some argue there are conflicting or misaligned payment incentives that exacerbate the opioid crisis. The Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey, which is essentially a national patient satisfaction survey, influences hospitals' reimbursement levels. Three questions in the survey concern hospitals' effectiveness in managing patients' pain. Critics, which include the American Hospital Association, argue that these questions create pressure on hospitals to prescribe opioids. The Centers for Medicare and Medicaid Services (CMS) recently proposed to exclude the results of those three questions from reimbursement determinations, beginning in federal fiscal year 2018. CMS also is field testing alternative pain management questions, which could be incorporated into the HCAHPS survey through future rulemaking.<sup>89</sup>

## Conclusion

Fortunately, much has been learned about addiction. It is increasingly shedding its stigma and being viewed as an illness, rather than as a character flaw. And at the same time, law enforcement professionals, policymakers, healthcare professionals and others have increased their understanding not only of how to effectively help people who are suffering from addiction, but also how to prevent more people from falling victim to it. Sadly, in many places, including Northeast Ohio, opioid overdoses continue to increase in numbers. The statistics are grim and prove that concerted efforts must continue.

## Suggestions for Stakeholders

Tactics in the fight against opioid abuse generally fall into one of two buckets: preventing more people from becoming addicted and treating those who already are. One of the direst needs in this effort is for improved access to treatment. To that end, consider the following:

- In order to accommodate the growing number of people who need care, there should be an expansion in the capacity of available treatment options across the full continuum, including detoxification, residential care, and outpatient treatment coupled with safe, sober housing.
- Ohio should make use of the new rule regarding the IMD exclusion and allow Medicaid managed care patients stays of up to 15 days in these institutions. The federal government should extend a similar exception to fee-for-service enrollees as well.
- Congress should ensure that national efforts to combat opioid abuse, such as those passed recently in the Comprehensive Addiction and Recovery Act, receive the full level of funding they require in order to be effective.

Prevention efforts are just as crucial.

- Patients, and parents of juvenile patients, who are prescribed opioid pain relievers should be fully informed about the risks associated with these medications.
- Providers should remain vigilant in following the guidelines set forth by the CDC in order to support the appropriate usage of opioid pain relievers by patients.
- The Food and Drug Administration (FDA), which must approve new drugs before they can be prescribed and sold, should train a watchful eye on the potential for addiction in new drugs seeking approval.

## Endnotes

- <sup>1</sup> National Institute on Drug Abuse. "Prescription Drug Abuse: What are opioids?" Accessed July 15, 2016. <https://www.drugabuse.gov/publications/research-reports/prescription-drugs/opioids/what-are-opioids>
- <sup>2</sup> National Institute on Drug Abuse. "Prescription Drug Abuse: How do opioids affect the brain and the body?" Accessed July 15, 2016. <https://www.drugabuse.gov/publications/research-reports/prescription-drugs/opioids/how-do-opioids-affect-brain-body>
- <sup>3</sup> National Institute on Drug Abuse. "What Science Tells Us About Opioid Abuse and Addiction." Testimony presented to U.S. Senate Judiciary Committee by Nora D. Volkow, MD, January 27, 2016. Accessed July 15, 2016. <https://www.drugabuse.gov/about-nida/legislative-activities/testimony-to-congress/2016/what-science-tells-us-about-opioid-abuse-addiction>
- <sup>4</sup> Kosten, Thomas and George, Tony. Addiction Science and Clinical Practice. "The Neurobiology of Opioid Dependence: Implications for Treatment." July 2002. Accessed July 15, 2016. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2851054/>
- <sup>5</sup> Ibid.
- <sup>6</sup> National Institute on Drug Abuse. "What Science Tells Us About Opioid Abuse and Addiction."
- <sup>7</sup> Ibid.
- <sup>8</sup> Ibid.
- <sup>9</sup> National Institute on Drug Abuse. "Prescription Drug Abuse: How do opioids affect the brain and the body?"
- <sup>10</sup> Kosten, Thomas and George, Tony. Addiction Science and Clinical Practice. "The Neurobiology of Opioid Dependence: Implications for Treatment."
- <sup>11</sup> Biddinger, Jennifer. Ohio Attorney General Office. "Ohio's Opiate Epidemic." Presented Sept. 19, 2014. <http://ohiohospitals.org/getattachment/Member-Services/Personal-Membership-Groups/OSHRM/Jennifer-Biddinger-Presentation.pdf.aspx>
- <sup>12</sup> National Institute on Drug Abuse. "America's Addiction to Opioids: Heroin and Prescription Drug Abuse." Testimony presented to Senate Caucus on International Narcotics Control by Nora D. Volkow, MD, May 14, 2014. Accessed July 15, 2016. <https://www.drugabuse.gov/about-nida/legislative-activities/testimony-to-congress/2016/americas-addiction-to-opioids-heroin-prescription-drug-abuse>
- <sup>13</sup> Biddinger, Jennifer. Ohio Attorney General Office. "Ohio's Opiate Epidemic."
- <sup>14</sup> National Institute on Drug Abuse. "America's Addiction to Opioids: Heroin and Prescription Drug Abuse."
- <sup>15</sup> American Society of Addiction Medicine. "Opioid Addiction: 2016 Facts and Figures." <http://www.asam.org/docs/default-source/advocacy/opioid-addiction-disease-facts-figures.pdf>
- <sup>16</sup> Ibid.
- <sup>17</sup> Ibid.
- <sup>18</sup> Ibid.
- <sup>19</sup> National Institute on Drug Abuse. "What Science Tells Us About Opioid Abuse and Addiction."
- <sup>20</sup> Ibid.
- <sup>21</sup> Rudd, Rose, et. al. Centers for Disease Control and Prevention. Morbidity and Mortality Weekly Report. "Increases in Drug and Opioid Overdose Deaths — United States, 2000–2014." Jan. 1, 2016. [http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6450a3.htm?s\\_cid=mm6450a3\\_w](http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6450a3.htm?s_cid=mm6450a3_w)
- <sup>22</sup> Centers for Disease Control and Prevention. Injury Prevention and Control: Opioid Overdose. "State Data." Accessed July 15, 2016. <http://www.cdc.gov/drugoverdose/data/statedeaths.html>
- <sup>23</sup> Rudd, Rose, et. al. Centers for Disease Control and Prevention. Morbidity and Mortality Weekly Report. "Increases in Drug and Opioid Overdose Deaths — United States, 2000–2014."
- <sup>24</sup> Ibid.
- <sup>25</sup> Ibid.
- <sup>26</sup> Centers for Disease Control and Prevention. Injury Prevention and Control: Opioid Overdose. "State Data."
- <sup>27</sup> Ibid.
- <sup>28</sup> Rudd, Rose, et. al. Centers for Disease Control and Prevention. Morbidity and Mortality Weekly Report. "Increases in Drug and Opioid Overdose Deaths — United States, 2000–2014."
- <sup>29</sup> Ibid.
- <sup>30</sup> Centers for Disease Control and Prevention. Injury Prevention and Control: Opioid Overdose. "Fentanyl Overdose Data." Accessed July 15, 2016. <http://www.cdc.gov/drugoverdose/data/fentanyl.html>
- <sup>31</sup> Ibid.
- <sup>32</sup> Spies, Erica, et. al. Centers for Disease Control and Prevention National Center for Injury Prevention and Control. "Undetermined risk factors for fentanyl-related overdose deaths — Ohio, 2015 (EpiAid 2016-003) Trip Report – Epi2." <http://www.dispatch.com/content/downloads/2016/03/Ohio-EpiAid-Report.pdf>
- <sup>33</sup> Ibid.
- <sup>34</sup> Ibid.
- <sup>35</sup> National Institute on Drug Abuse. "What Science Tells Us About Opioid Abuse and Addiction."

- <sup>36</sup> American Society of Addiction Medicine. "Opioid Addiction: 2016 Facts and Figures."
- <sup>37</sup> Ibid.
- <sup>38</sup> Ibid.
- <sup>39</sup> National Institute on Drug Abuse. "What Science Tells Us About Opioid Abuse and Addiction."
- <sup>40</sup> Ohio Department of Health Violence and Injury Prevention Program. "Neonatal Abstinence Syndrome (NAS) in Ohio: 2004-2014 Report." <http://www.healthy.ohio.gov/~media/HealthyOhio/ASSETS/Files/injury%20prevention/NAS%20Summary%20Report%2003%2017b%20-%20Updated%2003-22-2016-Final.pdf>
- <sup>41</sup> National Institute on Drug Abuse. "What Science Tells Us About Opioid Abuse and Addiction."
- <sup>42</sup> Ohio Department of Health Violence and Injury Prevention Program. "Neonatal Abstinence Syndrome (NAS) in Ohio: 2004-2014 Report."
- <sup>43</sup> Ibid.
- <sup>44</sup> Ibid.
- <sup>45</sup> Kosten, Thomas and George, Tony. *Addiction Science and Clinical Practice*. "The Neurobiology of Opioid Dependence: Implications for Treatment."
- <sup>46</sup> Ibid.
- <sup>47</sup> Ibid.
- <sup>48</sup> Ibid.
- <sup>49</sup> Ibid.
- <sup>50</sup> National Institute on Drug Abuse. "What Science Tells Us About Opioid Abuse and Addiction."
- <sup>51</sup> Ibid.
- <sup>52</sup> Ibid.
- <sup>53</sup> U.S. Department of Health and Human Services. "Fact Sheet: Medication Assisted Treatment for Opioid Use Disorders: Increasing the Buprenorphine Patient Limit." March 29, 2016. <http://www.hhs.gov/about/news/2016/03/29/fact-sheet-mat-opioid-use-disorders-increasing-buprenorphine-patient-limit.html#>
- <sup>54</sup> Federal Register. "Medication Assisted Treatment for Opioid Use Disorders." A rule by the Health and Human Services Department. July 8, 2016. Pages 44711-44739. <https://federalregister.gov/a/2016-16120>.
- <sup>55</sup> Substance Abuse and Mental Health Services Administration. Physician and Program Data. Accessed July 15, 2016. <http://www.samhsa.gov/programs-campaigns/medication-assisted-treatment/physician-program-data>
- <sup>56</sup> Substance Abuse and Mental Health Services Administration. Buprenorphine Treatment Physician Locator. Accessed July 15, 2016. [http://www.samhsa.gov/medication-assisted-treatment/physician-program-data/treatment-physician-locator?field\\_bup\\_physician\\_us\\_state\\_value=OH](http://www.samhsa.gov/medication-assisted-treatment/physician-program-data/treatment-physician-locator?field_bup_physician_us_state_value=OH)
- <sup>57</sup> American Hospital Association. AHA News Now. "House approves legislation to address opioid epidemic." July 8, 2016. <http://news.aha.org/article/160708-house-approves-legislation-to-address-opioid-epidemic>
- <sup>58</sup> U.S. House of Representatives Committee on Energy and Commerce. "Summary of the House–Senate Conference Report on S. 524, the Comprehensive Addiction and Recovery Act." <https://rules.house.gov/sites/republicans.rules.house.gov/files/114/PDF/114-CRS524-SxS.pdf>
- <sup>59</sup> Kodjak, Alison. National Public Radio. "Congress Approves Bill To Address Addiction As A Health Problem." July 13, 2016. <http://www.npr.org/sections/health-shots/2016/07/13/485818449/opioid-bill-reframes-addiction-as-a-health-problem-not-a-crime>
- <sup>60</sup> National Institute on Drug Abuse. "What Science Tells Us About Opioid Abuse and Addiction."
- <sup>61</sup> Ibid.
- <sup>62</sup> Ibid.
- <sup>63</sup> Ibid.
- <sup>64</sup> Ibid.
- <sup>65</sup> Biddinger, Jennifer. Ohio Attorney General Office. "Ohio's Opiate Epidemic."
- <sup>66</sup> Ohio Automated Rx Reporting System. About: What is OARRS? Accessed July 15, 2016. <https://www.ohiopmp.gov/Portal/About.aspx>
- <sup>67</sup> Ibid.
- <sup>68</sup> National Alliance for Model State Drug Laws. "2015 Annual Review of Prescription Monitoring Programs." <http://www.namsdl.org/IssuesandEvents/2015%20Annual%20Review%20of%20Prescription%20Monitoring%20Programs.pdf>
- <sup>69</sup> Bao, Yuhua, et. al. *Health Affairs*. "Prescription Drug Monitoring Programs Are Associated With Sustained Reductions In Opioid Prescribing By Physicians." June 2016. <http://content.healthaffairs.org/content/35/6/1045.full.pdf>
- <sup>70</sup> Governor's Cabinet Opiate Action Team. "Ohio Guidelines for Prescribing Opioids for the Treatment of Chronic, Non-Terminal Pain 80 mg of a Morphine Equivalent Daily Dose (MED) 'Trigger Point.'" Released Oct. 2013. <http://mha.ohio.gov/Portals/0/assets/Initiatives/GCOAT/Guidelines-Chronic-Pain.pdf>
- <sup>71</sup> Centers for Disease Control and Prevention. *Morbidity and Mortality Weekly Report*. "CDC Guideline for Prescribing Opioids for Chronic Pain — United States, 2016." March 28, 2016. <https://www.cdc.gov/mmwr/volumes/65/rr/rr6501e1.htm>

- <sup>72</sup> American Medical Association. The American Medical Association Task Force to Reduce Prescription Opioid Abuse: The 5 Goals of the Task Force. Accessed July 15, 2016. <http://www.ama-assn.org/ama/pub/advocacy/topics/preventing-opioid-abuse/opioid-abuse-task-force.page?>
- <sup>73</sup> Providers' Clinical Support System for Opioid Therapies. About the Program: What We Do. Accessed July 15, 2016. <http://pcss-o.org/>
- <sup>74</sup> Bachelder, Brian. The Columbus Dispatch. "Brian Bachelder commentary: Doctors must improve efforts to fight addiction." May 6, 2016. <http://www.dispatch.com/content/stories/editorials/2016/05/06/1-doctors-must-improve-efforts-to-fight-addiction.html>
- <sup>75</sup> Ohio State Medical Association. "Responding to the Prescription Opioid Epidemic: Ohio's Progress and Activity, 2011-Present." [https://www.osma.org/Documents/Advocacy/OpioidEpidemicResponse\\_Final.pdf](https://www.osma.org/Documents/Advocacy/OpioidEpidemicResponse_Final.pdf)
- <sup>76</sup> Project DAWN. "Ohio's Drug Epidemic." <http://www.healthy.ohio.gov/~media/HealthyOhio/ASSETS/Files/injury%20prevention/Background%20Document%20-%20Naloxone%20FINAL%20UPDATED.pdf>
- <sup>77</sup> Project DAWN. "Ohio Naloxone Distribution and Training Sites as of April 20, 2016." <http://www.healthy.ohio.gov/~media/HealthyOhio/ASSETS/Files/injury%20prevention/Project%20Dawn/List%20of%20ProjectDAWN%20sites%20April%202016.pdf>
- <sup>78</sup> Ibid.
- <sup>79</sup> Ohio Department of Health. Project DAWN. Accessed July 15, 2016. <http://www.healthy.ohio.gov/vipp/drug/ProjectDAWN.aspx>
- <sup>80</sup> Project DAWN of Lorain County. "SB 57 Project DAWN Lorain County Pilot Year-End Report." <http://www.lorainadas.org/wp-content/uploads/SB-57-Project-DAWN-Lorain-Pilot-Year-End-Report-distributed.pdf>
- <sup>81</sup> Ibid.
- <sup>82</sup> National Institute on Drug Abuse. "What Science Tells Us About Opioid Abuse and Addiction."
- <sup>83</sup> Ibid.
- <sup>84</sup> Jones, Christopher, et. al. American Journal of Public Health. "National and State Treatment Need and Capacity for Opioid Agonist Medication-Assisted Treatment. August 2015. <http://ajph.aphapublications.org/doi/abs/10.2105/AJPH.2015.302664>
- <sup>85</sup> Corlett, John. The Center for Community Solutions. State Budgeting Matters. "The Medicaid IMD Exclusion Comes Under Increased Scrutiny As Opioid Epidemic Kills Hundreds of Ohioans." March 2016. [https://ccs.memberclicks.net/assets/docs/State\\_Budgeting\\_Matters/2016/sbmv12n02\\_imdcorlett\\_updated03302016.pdf](https://ccs.memberclicks.net/assets/docs/State_Budgeting_Matters/2016/sbmv12n02_imdcorlett_updated03302016.pdf)
- <sup>86</sup> Rosenbaum, Sara, et. al. GWU School of Public Health and Health Services Center for Health Services Research and Policy. "An Analysis of the Medicaid IMD Exclusion." Dec. 19, 2002. [https://publichealth.gwu.edu/departments/healthpolicy/DHP\\_Publications/pub\\_uploads/dhpPublication\\_22CE3B02-5056-9D20-3DFE8F13074D0E21.pdf](https://publichealth.gwu.edu/departments/healthpolicy/DHP_Publications/pub_uploads/dhpPublication_22CE3B02-5056-9D20-3DFE8F13074D0E21.pdf)
- <sup>87</sup> Corlett, John. The Center for Community Solutions. State Budgeting Matters. "The Medicaid IMD Exclusion Comes Under Increased Scrutiny As Opioid Epidemic Kills Hundreds of Ohioans."
- <sup>88</sup> Federal Register. "Medicaid and Children's Health Insurance Program (CHIP) Programs; Medicaid Managed Care, CHIP Delivered in Managed Care, and Revisions Related to Third Party Liability." A rule by Centers for Medicare and Medicaid Services. May 6, 2016. Pages 27497-27901. <https://federalregister.gov/a/2016-09581>
- <sup>89</sup> American Hospital Association. AHA News Now. "HHS proposes hospital VBP change, other actions to combat opioid epidemic." July 6, 2016. <http://news.aha.org/article/160706-hhs-proposes-hospital-vbp-change-other-actions-to-combat-opioid-epidemic>

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With a rich history as the Northeast Ohio hospital association, dating back to 1916, The Center for Health Affairs serves as the collective voice of hospitals and the source for Northeast Ohio hospital and healthcare information.

As the leading advocate for Northeast Ohio hospitals, The Center aims to enhance the effectiveness of the healthcare community and the health of the communities it serves by providing expertise, resources and solutions to address the challenges faced by the region's healthcare providers.

The Center's efforts focus on areas that benefit member hospitals from a regional approach, including healthcare workforce; emergency preparedness; public policy and advocacy; finance and reimbursement; and community initiatives. The Center is proud to advocate on behalf of 34 acute-care hospitals and two long-term acute-care hospitals in six counties.

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