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Why we need bolder action to combat the opioid epidemic

Sarun Charumilind, MD; Thomas Latkovic; Razili Lewis; and Elena Mendez-Escobar

Why we need bolder action to combat the opioid epidemic

Although the opioid crisis in the US is gaining increased attention, the steps taken to date to combat it are insufficient. Our research suggests that much broader—and bolder—action is required.

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The problems resulting from the opioid epidemic have gained increased recognition in the United States, and greater focus is being placed on preventing opioid use disorder (OUD). We are hopeful that, because of efforts already underway, the number of new people with OUD will soon start to decrease.

That does not mean, however, that the opioid epidemic will soon be over. Given the number of people already suffering from OUD (whether diagnosed or not), the rate of adverse outcomes is likely to rise. These outcomes include not only overdoses and deaths, but also unemployment, lost productivity, and exacerbations of behavioral health conditions. In addition, a growing number of children are being displaced and/or emotionally affected because of their parents' opioid dependency.

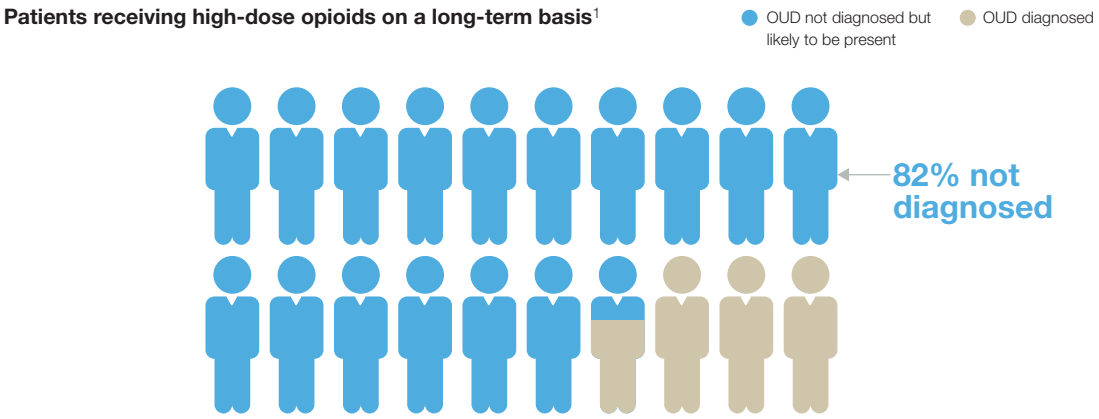
This paper summarizes our core perspectives on the opioid crisis in the United States. These perspectives are based on investments McKinsey has made in both research and proprietary analytics. The research included an extensive review of publicly available literature and conversations with more than 100 stakeholders, including executives from pub-

Our core perspectives on the opioid crisis

- The crisis is likely to worsen
- Intervention across ten themes is needed
- Innovation is imperative
- Greater investment in innovation is necessary
- Five actions could help "unlock" the problem
  - —Declare the crisis a healthcare and business problem, not just a societal problem
  - —Define strategies that challenge "the core"
  - —Dramatically expand the use of data and advanced analytics
  - —Be bold and take more risk
  - —Lead by example to collaborate

Footnotes for this article appear on page 10.

EXHIBIT 1 **Medicaid claims analytics suggests that most OUD cases remain undiagnosed**



OUD, opioid use disorder.
[1] "High-dose" and "long-term" are defined as patients receiving more than 120 of a morphine-equivalent dose (MED) of opioids per day for more than 180 days in a given year.

Source: McKinsey analysis of CY 2017 Medicaid claims data from one state

lic-sector organizations, payers, providers, pharmaceutical benefits managers, pharmaceutical and biotech companies, start-ups, and foundations.

The crisis is likely to worsen

Four primary factors lead us to believe that the effects of the opioid crisis will worsen over the next three to five years, even if the rate of new OUD cases slows considerably.

First, the prevalence of OUD is likely to be much higher than the figure commonly cited—two million people[1]—because OUD is significantly underdiagnosed and underestimated. For example, it has been shown that many, if not most, patients who use opioids for more than a brief period develop some degree of dependency.[2] However, in an analysis of data from one state's Medicaid population, we found that only 18% of the members receiving high-dose opioids on a chronic basis (defined as greater than 120 MED per day for more than 180 days in the past year[3]) had been given a diagnosis of opioid dependence or abuse (Exhibit 1). This and other recent research suggests that the nationwide prevalence of OUD could be upward of four million to six million people.[4]

Second, as more scrutiny is placed on opioid use and greater restrictions on the drugs are put in place, a growing number of people may begin using illicit opioids, including heroin. Evidence that this is occurring already exists: in one study, nearly 80% of heroin users reported using prescription opioids before starting on heroin.[5] Also, illicit drugs are increasingly being laced with fentanyl, an opioid that is 30 to 50 times more potent than heroin and which is causing the most recent rise in overdose deaths[6]; it is these drugs that are causing the most recent rise in overdose deaths.[7]

Third, the second-order effects of the opioid epidemic have yet to fully play out. Estimates suggest that for each opioid-related death, 20 to 30 other people overdose on opioids but do not die.[8] And for each of these people, there are dozens of others who have not yet overdosed. In addition, OUD adversely affects numerous people who never take the drugs—members, friends, co-workers and, in some cases, entire communities. The foster care system, for example, is experiencing a dramatic increase in the number of children in the system (in part because of substance abuse),[9] and over two million kids live in households in which at least one parent has an illicit drug use disorder.[10] Furthermore, the opioid epidemic continues to have unfavorable economic consequences; the impact of lost productivity and lower discretionary income has been estimated to be in the tens of billions of dollars each year.[11]

Fourth, given the interrelationship between socioeconomic factors and abuse, even a mild future economic recession could exacerbate the prevalence of OUD. An analysis of the aftermath of the 2008 financial recession suggested that higher unemployment rates contributed to rising OUD levels and that lack of employment hinders recovery attempts.[12]

Intervention across ten themes is needed

Our research suggests that ten themes must be emphasized to make real progress in combating the opioid crisis (Exhibit 2). Four of them address prevention; another four target treatment. Individual institutions—medical, legal, or other—are usually well positioned to focus on one or more of these specific themes.

EXHIBIT 2 **Most critical themes for combating the opioid crisis**

Prevention-focused

1. Improve **pain management/prescribing behavior** through transparency, incentives, and education
2. Systematically adapt **core payer functions**, including medical policy, utilization management, networks, formularies, and care management
3. Adapt **law enforcement** to address new threats (e.g., fentanyl, dark web), in part by collaborating with healthcare stakeholders
4. Address other **risk factors** (e.g., education, workers compensation, employment)

Treatment-focused

5. Increase the availability and efficacy of **naloxone/Narcan** where need is greatest
6. Increase **medication-assisted treatment** (MAT) capacity and match to individuals with best chance of success
7. Increase **accountability and coordination** among behavioral health, substance abuse, MAT, and physical health providers
8. Shift **correctional system** from being a source of the problem to part of the solution

Foundational enablers

9. Collaborate to launch an empowered **opioid control center** to drive action, monitor progress, refine/update strategy, and coordinate among internal and external stakeholders
10. Create a **cross-stakeholder "data lake" and advanced analytics** capacity to identify at-risk individuals, prioritize scare resources, better measure progress, and improve efficacy across actions

The two remaining themes are broader in nature; because they support all the other themes, we consider them foundational enablers. The first of them is an empowered "opioid control center" that would promote appropriate activities, coordinate the efforts of all stakeholders, monitor progress, and refine or update strategy as necessary. The second is a cross-stakeholder "data lake" to make possible the insights that can be gained from advanced analytics.

Innovation is imperative

Given the extent of the opioid crisis, ensuring that best practices are spread as widely as possible is hugely important. On its own, though, best practices will likely not be sufficient to combat the crisis—fundamental innovation is also required.

Admittedly, there is no purely empirical way to classify a strategy or tactic as a best practice. Nevertheless, our research reveals that consensus is emerging on a collection of strategies for both prevention and treatment. For example, a growing number of states, payers, and health systems are putting greater emphasis on understanding and altering how opioids are prescribed (to whom, when, at what dosage, and for how long). Many stakeholders are also developing more sophisticated clinical guidelines for pain management and opioid prescribing.[13] Some health systems (and prescribers) have been making significant changes to the way they approach pain management and prescribing.[14]

With respect to treatment, most states are expanding the use of naloxone to prevent overdose deaths, and consensus is growing that medication-assisted treatment (MAT) combined with psychosocial assistance is probably the most effective treatment for opioid addiction.[15] Both state organizations and private stakeholders are taking concrete steps to encourage greater use of MAT and expand treatment capacity.

Despite growing alignment on the importance of these practices, there is significant variation in the degree to which the practices are being put into place. Some of the variation is geographical: studies have shown that access to MAT is lower in the Midwest and mid-Atlantic states[16] and in rural areas nationwide.[17] Payer and provider organizations differ considerably in how aggressively they are implementing opioid strategies. If we look at prescribing practices, variation among clinicians is enormous; as Exhibit 3 shows, some orthopedic surgeons in one state rarely, if ever, prescribe opioids for common sprains, whereas others in the same state appear to do so routinely.

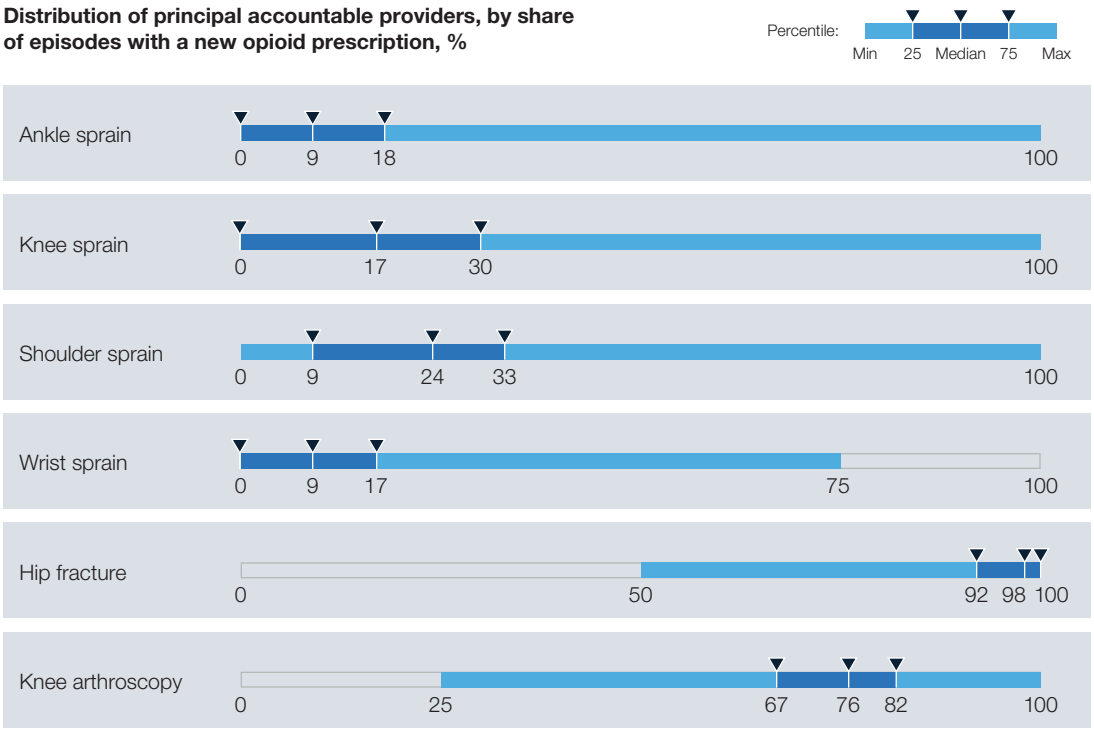
There is no doubt that more consistent use of best practices—across geographic areas, institutions, and clinicians—would provide tremendous help in combating the crisis. The Centers for Disease Control and Prevention estimates that lack of consistency in prescription guidelines could explain up to two-thirds of the geographical variations (at the county level) in opioid prescribing.[18] Multiple payers and providers have been successful in reducing prescribing through better guideline use. For example, some of them have put in place best-practice prevention policies that have lowered the rate of opioid prescribing by 25% to 50%.[19,20,21]

MAT has been shown to decrease overdose death rates by 50%.[22] However, MAT medi-

cations are prescribed in less than half of privately funded opioid treatment programs—and less than one quarter of publicly funded programs.[23] And, unfortunately, studies have shown that only about 20% of people who need substance abuse treatment actually receive it.[24] Our estimates suggest that for every additional 40,000 people (about 1% of those with OUD) who are given access to MAT, as many as 200 overdose deaths could be avoided each year.[25]

Nevertheless, scaling best practices, on its own, is not likely to be sufficient to combat the crisis. Even the states with the most purposeful, aggressive strategies to address the opioid epidemic are experiencing continued abuse and addiction. The most effective prevention efforts have slowed but not reversed the rate of growth. Between 2014 and 2016, not a single state had a statistically significant decrease in the overdose death rate. During that same period, only four states (Massachusetts, Kentucky, Tennessee, and Connecticut)—each of which is working especially hard to tackle the opioid crisis—managed to slow the rate of growth in drug overdose fatalities.[26] Furthermore, even the most effective treatment approach currently available (e.g., MAT plus counseling) has a high relapse rate and is very resource intensive.[27]

EXHIBIT 3 **Rate of new opioid prescriptions for select orthopedic episodes: Example from one state**



Source: McKinsey analysis of CY 2016 Medicaid claims data from one state

EXHIBIT 4 **Five types of innovation are needed in both prevention and treatment (examples)**

	Science/primary research	Policy (regulatory, medical)	Care/clinical models	Drugs/ devices	Business model
Prevention	**Better understanding** of what causes chronic vs episodic pain	**New and improved pharmacy utilization management policies** to reduce inappropriate prescribing and reduce risk of future dependence (e.g., pharmacy lock-in, prescription drug monitoring program innovations)	**Strong provider reporting** (providers should be given targeted performance data and suggestions) **Radical medical policy changes** to redefine the role of opioids in pain management	**Innovative pain management treatment**, especially non-opioid alternatives to address pain (e.g., peripheral nerve stimulation)	**Aligned incentives** to reduce unnecessary prescriptions
Treatment	**Better understanding** of underlying mechanisms of opioid dependence, how they develop, and how to address them	**Rigorously measuring treatment efficiency**, leveraging analytics to identify and expand access to what is working best (and for whom)	**Office-based addiction treatment** (e.g., new models to expand access to MAT) **Triage in the emergency department**, including "warm" hand-offs to OUD treatment	**Innovative OUD treatment:** New alternatives to OUD treatment, including MAT enhancements and non-opioid alternatives	**Aligned incentives** to scale OUD treatment

MAT, medication-assisted treatment; OUD, opioid use disorder.

For these reasons, we believe fundamental innovation is required in both prevention and treatment—innovation that meaningfully advances our understanding of the path to OUD and improves the tools and interventions at our disposal to change its course (Exhibit 4).

Greater investment in innovation is necessary

Despite the need for innovation, our analysis indicates that society's aggregate investment in combating the opioid crisis (through both public and private sources) is lower than its current investments in analogous challenges, such as developing electric vehicles, fighting cancer, and combating HIV/AIDS (Exhibit 5).

This analysis provides a rough estimate of the resources being invested in innovations to improve understanding, create new solutions or, in the case of HIV/AIDS and cancer, improve the efficacy of treatment. (It did not include the amounts spent on delivering healthcare services to patients; in terms of the opioid crisis, this analysis would include the cost of substance abuse treatment and alternative forms of pain management.) The analysis also shows that fewer researchers, clinicians, entrepreneurs, corporate executives, healthcare providers, and policymakers focused on OUD than on cancer or HIV/AIDS. In short, as of 2017, the opioid epidemic has received markedly less investment across the board.

Five actions could help "unlock" the problem

Those who aspire to play a leading role in combating the opioid crisis—regardless of whether they are in business, academia, or the government—should consider the steps outlined below. Our research and experience suggests that these actions could help "unlock" the problem and allow effective solutions to emerge.

EXHIBIT 5 **The opioid crisis has received less funding and research attention than other pervasive problems in the US have received**

	Number of lives affected (annually)	**Federal government investment** FY 2017	**Industry investment** (cumulative)	**Human capital** 2017	**Institutes at top 15 medical schools** 2018
Electric vehicles	760K electric car owners in the US	$2+B	$8B	4,500 articles in 2017	
Cancer	1.7M new diagnoses and 340K pre-mature deaths (age <75) each year	$6B	12,720 industry-sponsored clinical trials for treatment	50,400 articles in 2017	15 100%
HIV/AIDS	1.1M living with HIV infection and 7K deaths each year	$7.7B	1,400 industry-sponsored clinical trials for treatment	4,100 articles in 2017	10 67%
Opioids	4–6M people with opioid use disorder and >42K deaths	$1B	27 industry-sponsored clinical trials for treatment	600 articles in 2017	0 (6 general addiction centers)

CDC, Centers for Disease Control and Prevention.

Sources: Association of American Medical Colleges, CapitalIQ, CDC, clinicaltrials.gov (as of July 2018), Google Scholar and PubMed searches (as of July 2018), HIV.gov, International Energy Agency, National Cancer Institute, National Institute on Drug Abuse, Substance Abuse and Mental Health Services Administration, Pitchbook, SILA, McKinsey research

Declare the crisis a healthcare and business problem, not just a societal problem

To date, many, if not most, healthcare stakeholders have understood and reacted to the opioid crisis primarily as a societal problem. This reaction is understandable, given the size and scope of the crisis and the complex interrelationship between addiction and myriad ostensibly non-healthcare factors, such as economics, culture, education, and crime.

However, viewing the crisis as purely a societal problem sometimes gives rise to unfortunate sequelae: namely, an underappreciation of the potential role that healthcare institutions could play in combating the crisis, an assumption that "others" are better positioned to take on this role, and an organizational approach reduced to nearly symbolic interventions. Only when leaders of healthcare institutions recognize and declare that the opioid crisis is, in fact, also a healthcare priority and a business problem will fighting it become a real institutional priority.

Such a declaration is a prerequisite to making substantive progress for two reasons. First, it increases expectations that healthcare institutions and their leaders will take steps to actively combat the crisis—doing so becomes an obligation. Second, declaring the crisis a business priority opens the door to greater innovation. It increases the likelihood that new approaches to addressing the crisis—new technologies, products, services, models, etc.—are developed, identified, and funded. For investments in these new approaches to occur at any scale, entrepreneurs, venture capital firms, and large private and public institutions must view combating the crisis as a business opportunity.

Define strategies that challenge "the core"

Healthcare institutions must define a clear strategy for combating the crisis, just as they do for any meaningful business priority. We recommend that the strategy consist of a "portfolio of initiatives" or a set of specific actions with measurable objectives, led by accountable owners and supported with sufficient resources.

Most of the healthcare institutions we have interacted with, including government agencies and private-sector players, may be overemphasizing the importance of identifying *new* or *distinct* activities they can pursue. Innovation is certainly needed, as we discussed above. Our research suggests, however, that there is still a lot of room to scale existing best practices across all core processes and that doing so could have material impact. We believe that effective opioid strategies must systematically consider the role that *every* part of the institution plays and its impact (implicit or explicit) on opioid prescribing and treatment of OUD.

Government agencies, for example, should consider examining their core regulations, policies, and guidelines, as well as their oversight of key partners and vendors (e.g., managed care companies). Payers should examine their medical policies, utilization management protocols, formularies, provider incentive programs, and network management and configuration. Health systems should examine their clinical guidelines and protocols, clinician incentives, capital expenditures, physician alignment, and care coordination programs. Pharmaceutical companies should invest in alternative pain management solutions, innovations in OUD treatment, and overdose reversal drugs.

Dramatically expand the use of data and advanced analytics

Data and advanced analytics—and technology in all forms—can be powerful tools that can help support all eight of the prevention and treatment themes discussed above. For example, data and advanced analytics have the potential to identify at-risk individuals and provide insights into the factors that put them at increased risk. In addition, they can help prioritize scarce resources, optimize interventions, compare the efficacy of different approaches, and improve the efficacy of each intervention. We have identified over 50 potential use cases for data and advanced analytics, a few of which are illustrated in Exhibit 6.

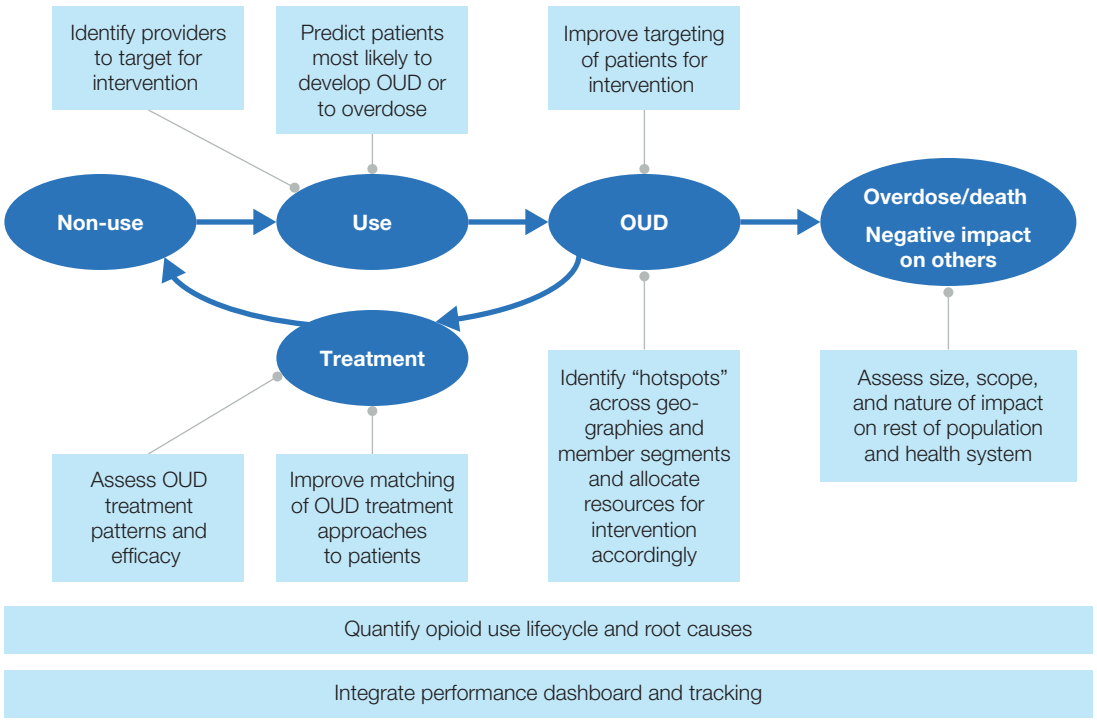
The use of data and advanced analytics to support action to combat the opioid crisis has been increasing. Nevertheless, we believe that stakeholders are barely scratching the surface of what is possible. More traction will require greater focus, resource allocation, and creativity.

Be bold and take more risk

Given the need for greater innovation, at least some stakeholders—be they states, government agencies, investors, entrepreneurs, employers, or large healthcare institutions—will need to make bold bets to stimulate innovation. These bets will likely require the assumption of actual risk (financial, strategic,

EXHIBIT 6 **Advanced analytics can help combat the opioid crisis in many ways**

Potential advanced analytics use cases



OUD, opioid use disorder.

and reputational). That said, we believe the potential benefits—in lives saved, health improvements, and economic and reputational gains—will often make the effort worthwhile.

Lead by example to collaborate

Many efforts to combat the crisis could benefit significantly from greater collaboration among stakeholders, including competitors. Examples include establishing or operationalizing new clinical guidelines and sharing data to better track and treat patients.

We encourage stakeholders to participate in such efforts. But more than that, we hope that institutions that aspire to be leaders in combating the crisis step forth to spearhead such efforts by organizing a coalition, actively offering to share data, or sharing research and insights with others.

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As more and more people—from elected officials and business leaders to the general public—grasp the magnitude of the opioid crisis, we believe it will become increasingly clear that the status quo is inadequate. Progress will require concerted action from all of us. ○

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For more information, visit McKinsey's Opioid Insights website on mckinsey.com. Our previous article, "Ten insights on the US opioid crisis from claims data analysis," can be found there.

FOOTNOTES

[1] Volkow, N. *America's addiction to opioids: Heroin and prescription drug abuse*. National Institute on Drug Abuse. May 14, 2014.

[2] Massachusetts completed a study (its Chapter 55 project) to more accurately estimate the prevalence of OUD in the state and found it was 4.4% among residents age 11 and older. It also found that, in comparison with the general population, those who received three months of prescribed opioids in 2011 were 4 times as likely to die from an opioid-related overdose within one year, and 30 times as likely to die of an opioid-related overdose within five years. (Massachusetts Department of Public Health. *An assessment of fatal and nonfatal opioid overdoses in Massachusetts (2011–2015)*. The Commonwealth of Massachusetts, Executive Office of Health and Human Services, Department of Public Health. August 2017.)

[3] There are many types of opioids. To compare dosing levels among them in an apples-to-apples way, a standard approach is to convert an opioid dose into what is called a morphine-equivalent dose (MED). A MED is also sometimes referred to as a morphine-milligram equivalent or MME.

[4] The Chapter 55 project also found that the prevalence of OUD in Massachusetts was 4.4% among those ages 11 and older, much greater than the often-cited figure of less than 1% for the nation, and that the state's overdose death rate (33 per 100,000) was 1.7 times the nationwide reported death rate (19.8 per 100,000). If prevalence correlates with the overdose death rate, then the nationwide OUD prevalence is likely to be at least 2% to 2.5% among those ages 11 and older, or four million to six million people.

[5] National Institute on Drug Abuse. *Prescription opioids and heroin*. January 2018.

[6] Drug Enforcement Administration. FAQ's—Fentanyl and fentanyl-related substances. Last accessed July 2018.
[7] Centers for Disease Control and Prevention. U.S. drug overdose deaths continue to rise; increase fueled by synthetic opioids. March 29, 2018.
[8] Darke et al estimate that there are 20 to 30 nonfatal overdoses for every fatal overdose. (Darke S et al. The ratio of non-fatal to fatal overdoses. *Addiction*. 2003;98(8):1169–71.) Recent data in Massachusetts (Chapter 55, see footnote 2) confirms the same ratio based on ambulance calls for overdoses.
[9] Simon S. The foster care system is flooded with children of the opioid epidemic. NPR. December 27, 2017.
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[20] Addressing America's opioids epidemic. Blue Cross Blue Shield Association. Last accessed July 2018.
[21] Worley SF. Stemming the opioid tide. *Geisinger Magazine*. Spring 2018.
[22] Volkow ND et al. Medication-assisted therapies—tackling the opioid-overdose epidemic. *New England Journal of Medicine*. 2014; 370:2063–6.
[23] Knudsen HK et al. Adoption and implementation of medications in addiction treatment programs. *Journal of Addiction Medicine*. March 2011;5(1): 21–7.
[24] Hostetter M, Klein S. Transforming care: Reporting on health system improvement. The Commonwealth Fund. September 28, 2017.
[25] Studies have shown that MAT can reduce deaths from OUD by up to 50% (see footnote 18). Therefore, for every 1% of patients with OUD who have access to MAT, we would expect a reduction in overdose deaths of –0.5%; given that there were about 42,000 opioid-related overdose deaths in 2016 (see footnote 22), about 200 lives would have been saved for every 1% increase in the number of OUD patients with access to MAT.
[26] Centers for Disease Control and Prevention. Drug overdose death data. December 19, 2017.
[27] The National Institute on Drug Abuse estimates that the relapse rates for treatment of any drug addiction is between 40% and 60% [*Principles of drug addiction treatment: A research guide (Third edition)*. Last updated January 2018]. Some studies have shown that relapse rates are even higher for opioid-abuse treatment.

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