Policy Brief

A Nation in Crisis: A Health Education Approach to Preventing Opioid Misuse and Addiction

This policy brief explores the U.S. opioid epidemic and advocates for a broader role for health education in prevention strategies to stem the tide of opioid-related deaths in the United States. Declared a public health emergency in 2017, the opioid crisis continues to inflict a damaging mental and physical toll on those addicted; impacts the lives of children and family members of those affected; negatively impacts the economy by weakening the workforce; places additional burdens on the healthcare, criminal justice, and social welfare systems; and challenges the health of communities. Much of the focus on addressing the opioid epidemic has centered on initiatives to prevent opioid overdoses, expand addiction treatment and curtail the availability of illegal and counterfeit opioids. Despite these efforts, greater measures must be taken to prevent opioid misuse that leads to addiction.

The goal of this policy brief is to illustrate the role of health education specialists (those who educate people about behaviors that promote wellness) in addressing the opioid crisis. This brief will outline the role of health education specialists in coordinated actions and interventions that include one or multiple strategies: curtail opioid overdose; provide recovery resources to both health providers and opioid users; and advocate for health policies that improve the health of children, families, communities, and the economy that are all negatively impacted by the opioid crisis.

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Cicily Hampton, PhD, MPA

Jordan Buckley, MPH, CHES®

M. Elaine Auld, MPH, MCHES®

Katherine Drewiske

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Note: As used in this policy brief, opioid refers broadly to a class of chemicals that inhibit pain receptors in the brain, spinal cord, and digestive tract that function to reduce the effects of pain. This includes heroin (a highly addictive, illegal substance), fentanyl, hydrocodone (e.g., Vicodin®), oxycodone (e.g., OxyContin®, Percocet®), methadone and morphine.

Contents

BREAKING DOWN THE OPIOID EPIDEMIC: A PREVENTABLE PUBLIC HEALTH EMERGENCY

Opioid refers broadly to a class of chemicals that inhibit pain receptors in the brain, spinal cord, and digestive tract that function to reduce the effects of pain. This includes heroin, a highly addictive, illegal substance, fentanyl, hydrocodone (e.g., Vicodin®), oxycodone (e.g., OxyContin®, Percocet®), methadone and morphine (CDC, 2017b-c). In addition to relieving pain, opioids provide a feeling of euphoria, making them increasingly addictive (CDC, 2017b). Repeated use of opioids may lead to opioid tolerance such that a higher dose of the drug is needed to achieve the same effects. For this reason, the risk for developing dependence is high and the rate of progression to opioid dependence is far shorter than other classes of drugs (Ridenour et al., 2006; Volkow, N., & McLellan, A., 2016; Wagner & Anthony, 2002;). As opioid users increase their dosage or progress to more powerful forms of opiates, their likelihood of overdose and death increases (Mars et al., 2014; SAMHSA, 2018a).

Unlike some other forms of addiction, which may be concentrated within population segments, the opioid crisis affects individuals across all socioeconomic demographics. Where one lives is a determinant of both health status and health outcomes, and this does not exclude risk for opioid drug dependence. Those who are addicted to opioids are both young and old, living in both urban and rural environments, and span racial and ethnic groups (Overdose Lifeline, 2017). However, the population most likely to be affected by opioid dependence are white men and women, aged 50-54, without a college degree (Social Capital Project, 2017). **Opioids are often misused due to pain, injury, trauma, despair, and age.**

While the number of opioid prescriptions has increased over the previous two decades, policies to detect and prevent opioid abuse have been inconsistent, if not altogether absent in many states and localities. The rise in opioid prescriptions coupled with inconsistent oversight have dire consequences. Opioid-related deaths have quadrupled since 1999, doubling in the decade ending in 2015 (WONDER, 2017). **In 2016, an estimated 66 percent (42,249 people) of more than 63,600 drug overdose deaths involved opioid use.** Problems associated with opioid misuse – spanning the spectrum from prescription overdose, illegal opioid use, to the comorbidities associated with opioid misuse – are multi-faceted, evolving, and difficult to solve. In a time when opioid overdoses and deaths are climbing year after year, high-quality health education by trained health education specialists is critical to prevent any further opioid addiction and misuse.

OVERVIEW OF OPIOIDS, OVERDOSE, AND OPIOID USE DISORDER (OUD)

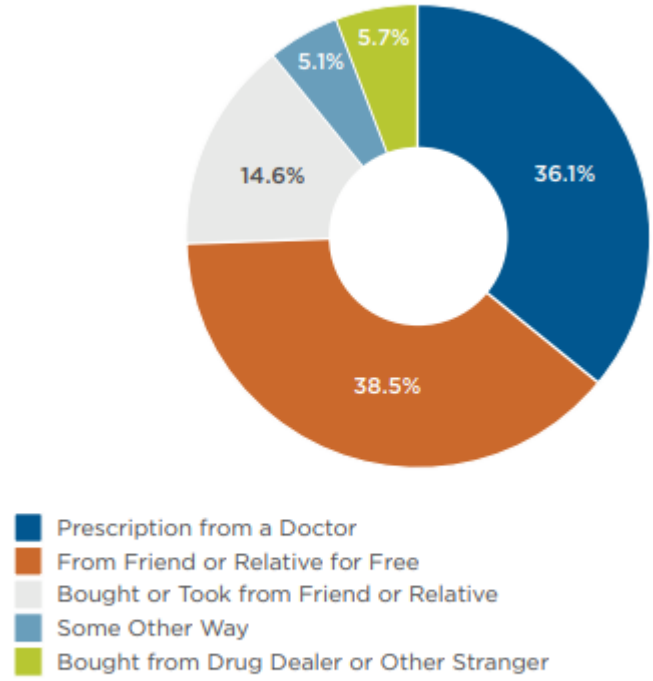
THE ESSENTIALS TO UNDERSTANDING OPIOIDS

There are three main types of opioids:

1) Natural opiates, such as morphine, codeine, and thebaine;
2) Semi-synthetic, such as hydromorphone, hydrocodone, oxycodone, and heroin; and
3) Fully synthetic (synthetic), such as fentanyl, pethidine, levorphanol, methadone, tramadol, and dextropropoxyphene.

Prescription Opioids

Figure 1: Source of Misused Prescription Painkillers



Note: *Misuse in 2017 among people age 12 or older.*
Source: *SAMHSA, 2018.*

Prescription opioids are necessary and appropriate to treat moderate-to-severe pain and are often prescribed when there is a medical need for pain relief, including after surgery or injury, or for pain management with other health conditions such as cancer. Yet, prescriber behavior has changed noticeably in the last 40 years to include prescribing opioids for the treatment of chronic pain, despite the lack of evidence regarding the long-term effectiveness of opioids for chronic pain relief (CDC, 2017d). This has resulted in physicians prescribing opioids more often, for longer durations and at higher doses than ever before, thereby increasing the risk of addiction, overdose, and opioid-related mortality. Additionally, this prescribing behavior has negatively impacted the doctor-patient relationship as patients feel misled with the care received (CDC, 2017c; King et al., 2014).

In addition to the use of prescription opioids for medical use, there is potential for misuse of prescription opioids through legal and illicit means, including: prescription from one or more physicians or stolen from a health care provider, given, bought, or stolen from a friend or relative, acquired from a drug dealer or some other method (SAMHSA, 2017a). In 2016 alone, 11.5 million people misused prescription opioids with 2.1 million people misusing prescription opioids for the first time (Kochenak, 2017). Additionally, with the exception of marijuana, prescription opioids are the most abused illicit drug in the United States. According to the 2016 National Survey on Drug Use and Health (NSDUH), 3.3 million people aged 12 years or older were current misusers of prescription opioids (SAMHSA, 2017a). Altogether, the medical consequences of prescription opioid misuse are detrimental, considering the potential for addiction, overdose and other side effects (CDC, 2017c).

Potential Side Effects of Opioids

- Tolerance (taking more of the medication for the same pain relief)
- Physical dependence (symptoms of withdrawal when the medication is stopped)
- Increased sensitivity to pain
- Constipation
- Nausea, vomiting, and dry mouth
- Sleepiness and dizziness
- Confusion
- Depression
- Low levels of testosterone that can result in lower sex drive, energy, and strength
- Itching and sweating

HEROIN

SOURCE: DEA

SOURCE: DEA

Heroin is an illegal, highly addictive opioid made from morphine, a natural substance derived from opium poppy plants. Heroin it can be a white or brown powder, or a black sticky substance known as black tar heroin (NIH, 2018). There are multiple ways to use heroin, including injecting, sniffing, snorting, or smoking. Like other opioids, heroin influences the brain by binding to and activating specific pleasure receptors. Heroin affects the user's heart rate, sleeping, and breathing. Heroin is perceived to be a cheaper, more readily available alternative to prescription opioids (Lankenau et al., 2012).

Prescription opioid misuse is a risk factor for initiating heroin use, albeit at a low rate (Compton, Jones, & Baldwin, 2016; Muhuri, 2013). Multiple research projects are exploring the trajectory from opioids to other types of drugs, and/or methods of use among people aged 30 years and under to better understand progression from prescription opioids to heroin or cocaine. (Compton et al., 2016; Lankenau et al., 2012).

FENTANYL (PHARMACEUTICAL AND ILLICIT)

Fentanyl is a synthetic opioid with effects that mimic morphine. However, fentanyl may be 50 to 100 times more potent than morphine (DEA, 2017). Although pharmaceutical grade fentanyl is prescribed to treat severe pain (typically advanced cancer pain), the current, dangerous trend of fentanyl abuse and related overdose is primarily fueled by illicit use of the substance.

Illicitly-manufactured fentanyl (IMF) is sold alone or may be mixed with heroin or other substances like cocaine to mimic pharmaceutical drugs like oxycodone (DEA, 2017). Both IMF and heroin have become increasingly available in the illicit U.S. drug market and continue to be mass produced (DEA, 2017; Pezalla, Rosen, Erensen, Haddox, & Mayne, 2017). Because fentanyl is 30 to 50 times more potent than heroin, IMF that is adulterated, or "cut," with other substances can be deadly. In addition, there are no standard dosages of IMF or illicit fentanyl-related compounds. According to the Drug Enforcement Administration (DEA), two milligrams of fentanyl, equivalent to a few grains of table salt, is considered a fatal dose for more than 95 percent of the American public. Both the high potency and potential for high dosage of IMF accelerates the epidemic of opioid-related mortality and further hinders abilities to curb illicit opioids (DEA, 2017).

SOURCE: DEA

OPIOID OVERDOSE DEATHS

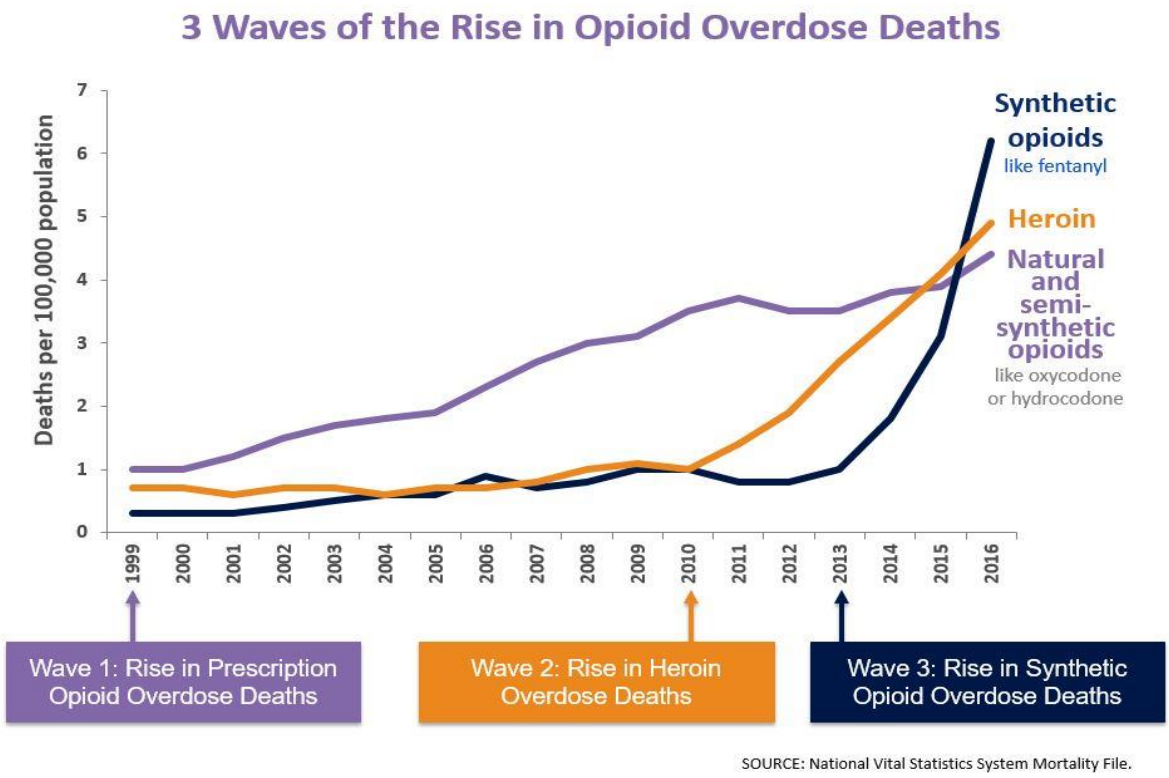
Deaths from opioid overdose (i.e. using enough of a drug to produce a life-threatening reaction and sometimes death) have never been higher than they are today (Hedegaard, 2017). Since the opioid epidemic affects a broad demographic, opioid overdose deaths continue to increase among men and women, all races, and adults across the lifespan (2017). The potential for abuse of prescription opioids, heroin, and fentanyl are similar in that the risk of overdose rises as users build a tolerance to the effects of the drugs and begin to seek higher

doses and/or stronger forms of opioids to achieve the euphoric effects. Inevitably, opioid-dependent individuals experience withdrawal symptoms (e.g. negative mood, sweating, abdominal cramps, and nausea/vomiting) during prolonged abstinence (Chang, 2007). To avoid or alleviate these withdrawal symptoms, many opioid-dependent individuals continue to use opioids, despite the serious health consequences associated with this behavior (2007).

Figure 2 shows the top three substances contributing to the rise in opioid overdose deaths over the last few decades.

Opioid Use Disorder (OUD)

Figure 2: 3 Waves of the Rise in Opioid Overdose Deaths



Given the highly addictive nature of opioids, they are regulated as controlled substances (DEA, 2016). The use of opioids may lead to the development of opioid use disorder (OUD), a primary type of substance abuse disorder, which as defined by the Diagnostic and Statistical Manual of Mental Disorders (DSM-5), includes both illicit and prescribed opioids (SAMHSA, 2018b). A substance use disorder occurs with the recurrent use of alcohol and/or drugs causing clinically and functionally significant impairment. Furthermore, OUD diagnosis is based on evidence of impaired control, social impairment, risky use, and pharmacological criteria (2018b). Symptoms of OUD include the following:

> A strong desire for opioids, inability to control or reduce use, continued use despite interference with major obligations or social functioning, use of larger amounts over time, development of tolerance, spending a great deal of time to obtain and use opioids, and withdrawal symptoms that occur after stopping or reducing use, such as negative mood, nausea or vomiting, muscle aches, diarrhea, fever, and insomnia. (SAMHSA, 2018b).

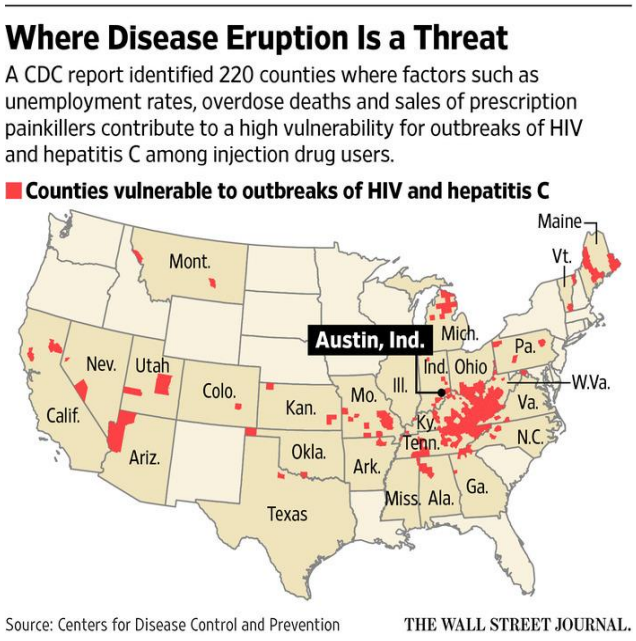
COMORBIDITIES & THE COST TO SOCIETY

INFECTIOUS DISEASE

Comorbidities are exacerbated by the opioid crisis, including incidence of Hepatitis B and C, HIV, and other diseases caused by injecting drugs with infected needles. In addition to risk for addiction and overdose, injection drug users (IDUs) face the risk of contracting or transmitting viral infections through blood or bodily fluids. Disease transmission is problematic for both IDUs and the public. Contact with these fluids may easily occur when people inject opioids and share needles or other drug equipment or have unprotected sex with an infected partner (NIDA, 2018).

Hepatitis B virus (HBV) and Hepatitis C virus (HCV) are viral infections that cause inflammation of the liver, which can lead to cirrhosis and result in the loss of liver function altogether. Infection is most likely to spread via sharing needles and other drug equipment (NIDA, 2018). While increased incidence of Hepatitis infections are extremely concerning, public health concerns are highest for HIV/AIDS (Human Immunodeficiency Virus and Acquired Immune Deficiency Syndrome), as these conditions limit and, in progressed cases, terminate the body's ability to fight off infection and disease (2018).

To illustrate the magnitude of comorbidities associated with opioid abuse and addiction, see the map to the right depicting a 2015 event when the rural town of Austin, Indiana faced HIV and Hepatitis C outbreaks associated with IDU (Campo-Flores & McKay, 2016). Indiana's Austin county (as well as multiple others marked in red) faced common situations in which its 'vulnerabilities,' including high unemployment rates, opioid-related overdose deaths, and illegal use of prescription opioids were exposed which resulted in heightened susceptibility and instances of HIV and HVC outbreaks.



Another related issue is that as the opioid crisis amplifies in mortality and morbidity, its costs reverberate into the community and economy. In 2015, the estimated cost of the epidemic was $504 billion (Council of Economic Advisers, 2017). A contributing cost includes opioid-related care, which continues to burden the capacity of the medical community, including responders and resources to care for this influx of patients. In 2014 alone, the rate of unintentional, opioid-related poisonings resulted in 53,000 hospitalizations and an estimated 92,262 emergency department (ED) visits. As the rate of these hospital-related treatments rise, communities are increasingly challenged to keep up with this surge (CDC, 2017a).

Toll on Youth & Families

The national toll of the opioid crisis is evident not only in incidence of infectious disease, but also in the impact on the health and safety of children, their families, and the communities in which they live. In fact, opioid misuse and abuse has many additional repercussions on society, including but not limited to increases in crime, violence, and disruptions in family, workplace, and educational environments (NIDA, 2018).

Babies born exposed to opioids experience:

- lower birthweight
- respiratory conditions
- feeding difficulties
- seizure
- longer hospital stay

Source: NIDA, 2015

One prominent issue is maternal opioid use and the incidence of opioid withdrawal syndrome in newborns caused by exposure to opioids, otherwise known as neonatal abstinence syndrome (NAS), which accounts for the majority of in utero opioid exposure incidences (Ko, Patrick, Tong, Patel, Lind, & Barfield, 2016). To detect NAS, the following symptoms may be identified: central nervous system irritability (e.g., tremors, increased muscle tone, high-pitched crying, and seizures), gastrointestinal dysfunction (e.g., feeding difficulties), and temperature instability (Hudak, 2012). Postnatal opioid withdrawal is caused due to a variety of reasons for opioid use, which range from maternal prescription opioid use, nonmedical opioid use, or medication-assisted treatment (Hudak, 2012; Ko et al., 2016). According to available state data, the incidence of NAS has skyrocketed (383 percent) between 2000 and 2012– in other words, every 25 minutes a baby is born suffering from opioid withdrawal (Ko et al., 2016; NIDA, 2015).

Early childhood adversity due to a parent/caregiver who uses opioids may range in social, emotional, physical and mental health challenges and lead to:

- multigenerational cycles of child abuse, neglect and substance use
- school failure
- increased risk for costly, preventable diseases like obesity and heart disease

Source: Lipari & Van Horn, 2017

It is estimated that 8.7 million children have a parent with a substance abuse disorder. This home environment can cause children to endure stressful or traumatic events, otherwise known as adverse childhood experiences (ACEs), which may last into adulthood (Lipari & Van Horn, 2017). The 1998 ACE Study by Kaiser Permanente and CDC yielded considerable results in understanding children in families with substance abuse disorders and drew a powerful correlation between ACEs and its effect into adulthood (Felitti et al., 1998). This research is important today, as it aids the nation in addressing the opioid crisis with primary prevention strategies, as well as screening tools to detect children in need, offering those children the support they need and the ability to achieve resilience that otherwise may not be possible (Felitti et al., 1998; Blanch, 2017). According to Smith and Wilson (2016), primary care physicians or pediatricians are essential to identify and assess risk in the context of the parent's opioid addiction and can therefore intervene to protect the child. Additionally, schools are a key point of contact for screening as they have the unique opportunity to connect with families and children who may be at risk, and lessen the impact of ACEs (Blanch, 2017).

In sum, the task of protecting children in families suffering with opioid addiction begins with prevention and requires early screening intervention (Blanch, 2017; Felitti et al., 1998; Smith & Wilson, 2016). For reference, the American Academy of Pediatrics (AAP) has outlined an approach to 'heal' children and families suffering from opioid addiction through: A) establishing policies that prioritize prevention so that these families can remain together during treatment, B) supplying providers with tools and resources to recognize and assist children and

their parents affected by trauma to give them the best chance for lifelong health, and C) equipping these families with knowledge and access to prevention education, treatment services and Medicaid (AAP, n.d.).

TREATMENT FOR OPIOD USE DISORDER & OVERDOSE

In the instance of opioid overdose, harm reduction is the best choice to mitigate the effects of opioids and prevent death. The CDC (2017a) suggests it is crucial to expand access to evidence-based treatments, including medication-assisted therapy (MAT) and naloxone (Narcan®).

MEDICATION-ASSISTED TREATMENT (MAT)

Medication-assisted treatment (MAT), an approach that combines medication (methadone, buprenorphine, or naltrexone) with counseling and behavioral therapies, is effective in treating OUD and preventing repeated overdose. There is a common misconception associated with MAT; that it is not safe and that it is simply substituting one drug for another. However, these medications are shown to relieve the withdrawal symptoms and psychological cravings (effects of opioids) that cause chemical imbalances in the body (SAMHSA, 2018a).

NALOXONE

Naloxone is a medication known as an "opioid antagonist" that is administered via intramuscular, intravenous, or intranasal routes and acts to block the effects of opioids. This medication can reverse an overdose within minutes and can be life-saving (SAMHSA, 2018). Sold under brand name Narcan®, among others, this medication is Food and Drug Administration (FDA)-approved for the immediate treatment of a known or suspected overdose caused by opioids and can be used on men, women, children, pregnant women, and the elderly. In the instance of an overdose emergency, naloxone kits are administered by law enforcement agencies, fire departments, first responders, departments of health, local school districts, colleges and universities, community-based organizations and are priority for the following populations:

- People who have an immediate, medical need due to overdosing (*greatest need)
- People in treatment or who have recently completed treatment
- People who use and/or are prescribed opioids
- People recently released from jail or prison
- Family members/loved ones of those using opioids
- Law enforcement

RESPONSE OF STATE & FEDERAL LEADERS: IDENTIFYING THE GAPS & OPPORTUNITIES FOR HEALTH EDUCATION

SUMMARY OF FEDERAL-LEVEL INITIATIVES

The United States has the highest opioid-related death rate in the world, having increased by 140 percent since 2000, with American citizens consuming more opioids than any other country (Rudd, 2016). In response to the opioid epidemic, the U.S. government has proposed multiple approaches to decrease opioid related deaths. SAMHSA, CDC, and NIH have all recommended that additional research and access to harm reduction and treatment be expanded throughout states. Although the epidemic has received the attention of these government agencies, targeted strategies based in health education are lacking. Looking ahead, this leaves an opportunity

for health education advocates to recommend that these key stakeholders adapt strong platforms to include prevention and health education. A brief synopsis of this work follows.

The President's Commission on Combating Drug Addiction and the Opioid Crisis

The President's Commission on Combating Drug Addiction and the Opioid Crisis was established through an executive order on March 29, 2017 to analyze ways to control and treat individuals affected by drug abuse, addiction, and the opioid crisis (President's Commission, 2017). The Commission recommends: a mass media public education campaign on opioids; proper drug disposal and take-back programs (medication boxes), expanding Screening, Brief Intervention, and Referral to Treatment (SBIRT) programs in schools, changing opioid prescribing practices, improving data collection, and protecting first responders against highly lethal substances often combined with opioids. The report also discusses the prospect for federal drug courts in all 93 federal judicial districts, expanding the use of recovery coaches in hard-hit areas, increasing naloxone training, and for HHS to create guidelines for recovery support services. The commission also recommends block grant federal funding for states to work on opioid-related activities, and for the White House Office of National Drug Control Policy (ONDCP) to establish a system of tracking and accountability for federal-funded activities related to the opioid crisis. Additionally, the commission offers a variety of programming (President's Commission, 2017).

In June 2018, the Youth Opioid Prevention Campaign, a partnership of ONDCP, the Truth Initiative, and the Ad Council, was launched with the purpose of preventing and reducing opioid misuse among youth and young adults, with a target audience of ages 18 - 24 years and a halo audience of ages 15 - 30 years (President's Commission, 2017).

STRATEGIES OF FEDERAL HEALTH AGENCIES

1) The U.S. Department of Health and Human Services (HHS) recommends a 5-point strategy, including:
    - Better addiction, prevention, treatment, and recovery services
    - Better data
    - Better pain management
    - Better targeting of overdose reversing drugs
    - Better research
2) The National Institutes of Health (NIH), a component of HHS, recommends key strategies for pharmaceutical companies and academic research centers to discuss:
    - Safe, effective, non-addictive strategies to manage chronic pain
    - New, innovative medications and technologies to treat opioid use disorders
    - Improved overdose prevention and reversal interventions to save lives and support recovery

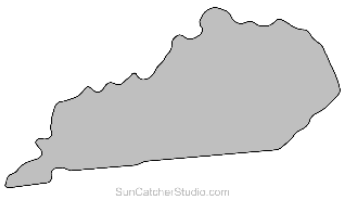
    In 2018, NIH director, Francis S. Collins, M.D., Ph.D. launched the HEAL (Helping to End Addiction Long-term) Initiative to address scientific solutions that span the agency.

3) The Substance Abuse and Mental Health Services Administration (SAMHSA) focuses its efforts on reducing the impact of mental illness and substance abuse, and in light of the opioid crisis, has amplified its work in:
    - Releasing an Opioid Overdose Prevention Toolkit (2018)
    - Awarding grants to 50 states, territories, and pacific jurisdictions; the agency has also dedicated funds to elements of opioid prevention, treatment and recovery, such as: training for MAT, naloxone, pregnant and postpartum women, first responders and treatment providers (SAMHSA, 2017b)
4) The Centers for Disease Control and Prevention (CDC) focuses on:

- Providing states with resources and strategies for improved data collection (see Prescription Drug Monitoring Programs)
- Collecting and analyzing data on opioid-related overdoses
- Supporting healthcare providers and health systems with data, tools, and guidance; recommendations for clinicians to improve communications and outcomes between providers and patients is in the *Guideline for Prescribing Opioids for Chronic Pain* (Dowell, Haegerich, & Chou, 2016)
- Partnering with public safety officials, including law enforcement
- Raising awareness on consumer safety of prescription opioids

The Surgeon General's Spotlight on Opioids Report

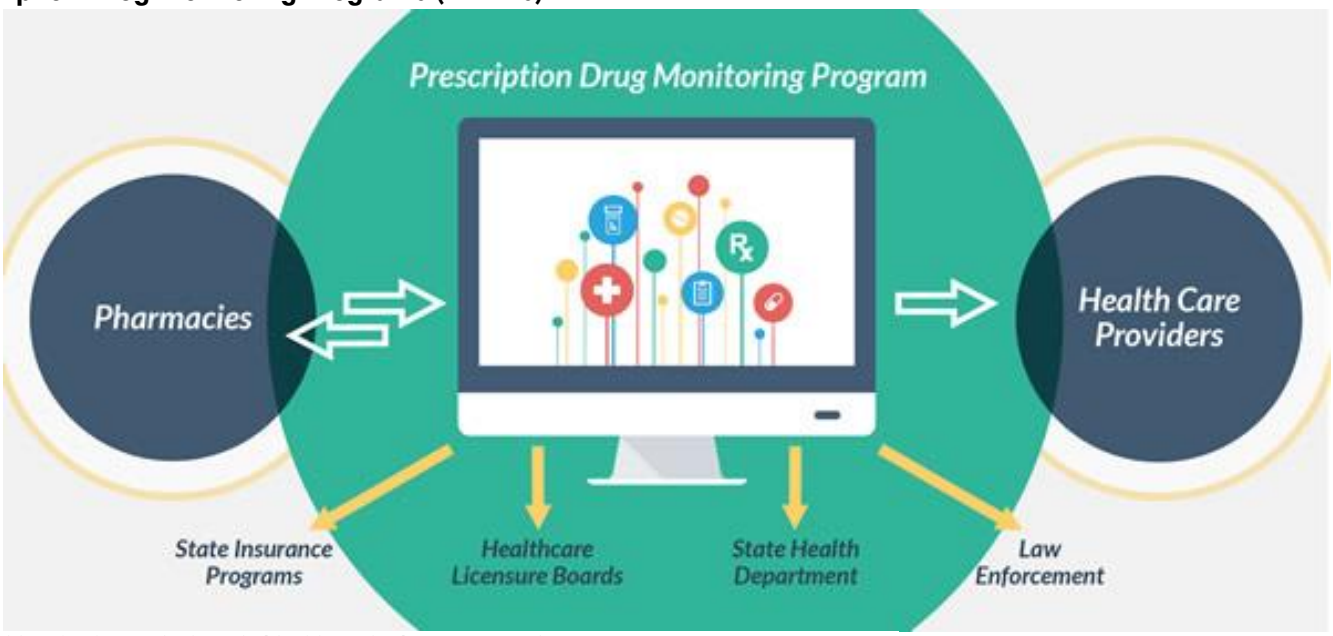
The Surgeon General, Dr. Jerome A. Adams, issued a report in September of 2018 emphasizing the opioid crisis and the support required across multiple sectors to end this epidemic (HHS, 2018). The unique ties and resources that health education specialists have with individuals and their communities were highlighted as vital opportunities to improve prevention, patient access, and treatment efforts for this epidemic (2018). Health education specialists can also play a role by developing curricula to educate students on substance use prevention, which has been identified as an effective component of school-based strategies. Education is a critical component of harm reduction strategies, which can utilize health education specialists to organize outreach and education programs as well as provide overdose prevention education. The Surgeon General also calls on health education specialists to teach up-to-date information on substance abuse disorder as a medical condition, implement evidence-based prevention programs and interventions, provide support in both treatment and recovery, and improve the training of all health care professionals (HHS, 2018).



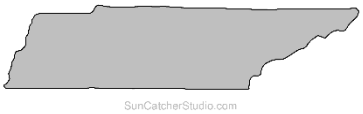
SUMMARY OF STATE-LEVEL INITIATIVES

Currently, state-level initiatives focus on secondary intervention, i.e., mandated state-based prescription drug monitoring programs (PDMPs), naloxone distribution programs, and medication-assisted treatment (MAT) (Pezalla et al., 2017). A synopsis of PDMP objectives and effectiveness follows.

Prescription Drug Monitoring Programs (PDMPs)



SOURCE: CENTERS FOR DISEASE CONTROL AND PREVENTION



A PDMP is an electronic database that tracks controlled substance prescriptions in a state to assure safe prescribing and patient behaviors. State-based PDMPs allow physicians and other prescribers the ability to access clinical information about a patient to make better informed treatment decisions, and ultimately help identify patients at risk of opioid addiction or overdose (CDC, 2017d). Although the shortfall of PDMPs is that they overlook a major contributor to the opioid epidemic, the control of illicit opioids, PDMPs are critical to preventing overprescribing and misuse of opioids (Haffajee, Jena, & Weiner, 2015).

In 2017 there were 51 PDMPs in all states except Missouri, plus the District of Columbia and Territory of Guam (Alexander, Frattaroli, & Gielen, 2015). One barrier to using PDMPs is that physicians find the process of retrieving information needed from the database too time consuming or difficult. Optimization of PDMPs, therefore, requires that states mandate prescriber use of PDMPs to consistently monitor data for treating patients (PDMP COE, 2014). Some successful comprehensive mandate programs include:*

Kentucky – the first state to mandate comprehensive PDMP use in 2012. Opioid prescriptions decreased by 8.6% the first year after the mandate law was in effect (Warner, Chen, Makuc, Anderson, & Miniño, 2011).

Tennessee – Mandated in 2012, Tennessee saw a 75% drop in patients' seeing multiple prescribers for the same drugs in one year (PDMP COE, 2014).

New York – From the mandate going into effect in 2012, the number of patients' seeing multiple prescribers for the same drugs decreased 36% in 2013 (PDMP COE, 2014).

*Following each mandate, all three states increased PDMP registration, increased use of PDMP by prescribers, (approximately 10,000 percent in New York), and decreased opioid prescribing, 'doctor shopping' for additional prescriptions, and prescription overdose hospitalizations (heroin treatment admissions rose during the study period) (PDMP COE, 2014).

Per Alexander, Frattaroli, & Gielen (2015), the recommended actions to achieve comprehensive use of PDMPs include: A) mandate prescriber PDMP use, B) proactively use PDMP data for enforcement and education purposes, C) authorize third-party payers to access PDMP data with proper protections, and D) empower licensing boards for health professions and law enforcement to investigate high-risk prescribers and dispensers.

Massachusetts state legislation, Chapter 55 of the Acts of 2015, gave the Massachusetts Department of Public Health the ability to collect data to help epidemiologists generate more distinct estimates of trends and the prevalence of OUD (Bharel, 2019). In doing so, this allows more targeted program interventions and precise methods to reach individuals most affected by this disease. Barocas et al. analyzed the data from the Massachusetts databases, where researchers discovered the prevalence of OUD in Massachusetts was 4.60 percent in 2015, which is nearly four times higher than current national prevalence estimates. This shows the national average is likely underestimated and that states should provide detailed data sets to enable more accurate prevalence estimates.

In addition to actively using PDMP throughout the United States, since 2015 many states have implemented an opioid tax. New York, Massachusetts, Pennsylvania, Connecticut, Kentucky, Minnesota, California, and Washington are among the first states to implement said tax. Many state proposals are intended to finance treatment or prevention programs (Brill, 2018).

CURRENT & PROPOSED FUNDING

Nearly $4 billion was allocated to address the worsening opioid epidemic in the FY 2018 omnibus, the largest investment to date – however, these funds are lacking a focus on primary intervention.

The highlights of funding for public health programs include: (H.R. 1625, 2018)

- $1.4 billion to SAMSHA
- $500 million for the NIH for more opioid addiction research
- $350 million to the CDC for opioid overdose prevention, surveillance, and state-based PDMPs
- $415 million for the Health Resources and Services Administration (HRSA) to, among other efforts, improve access to addiction treatment in rural and other underserved areas
- $100 million to the Administration for Children and Families to help children whose parents misuse drugs
- An additional $299.5 million to the Department of Justice's (DOJ) anti-opioid grant funding
- An additional $500 million to the Department of Veterans Affairs for mental health programs

State-level public health efforts depend on increased federal funding and grant awards to support ongoing efforts in their communities.

Related Legislation & Funding

The Energy and Commerce Committee has steered multiple pieces of legislation to fund key opioid prevention initiatives, as well as address other policy recommendations for federal agencies. Key pieces of legislation include, the Comprehensive Addiction and Recovery Act of 2016, as well as the committee's work in mediating other bills for consideration (House Committee on Energy & Commerce, 2018).

Comprehensive Addiction and Recovery Act of 2016 (CARA)

The Comprehensive Addiction and Recovery Act of 2016 (CARA) (P.L. 114-198) was signed into law on July 22, 2016 (S.524, *2016*). CARA includes a wide variety of measures to combat the opioid epidemic: prevention, treatment, recovery, grant funding, law enforcement, and criminal justice (ASAM, 2016). CARA expands the availability of Naloxone® to law enforcement and first responders. It also improves PDMPs to help eliminate loop-holes in opioid prescriptions. The law works on improving treatment options within the incarcerated population and guides these individuals along a road to recovery before they are released (S.524, 2016). The law reduces the number of opioids that are available through prescription (requiring only partial refills for patients rather than full refills); provides grants for physicians to prescribe reversal medications to opioid users, safe care plans for addicted babies, and programs for veteran opioid users; creates a new Comprehensive Opioid Abuse Grant Program, advances in VA opioid management and care, and a study on the Good Samaritan laws (ASAM, 2016). There are also **components of the law that address health education:** (S.524, 2016)

- Campaigns to increase education and awareness of opioids for the general public.
- Community-Based Coalition Enhancement Grants to address local drug crises to create prevention strategies in heavily affected areas.
- Informational materials for parents of youth who may have to take opioids after a sports injury.

21st Century Cures Act ("Cures")

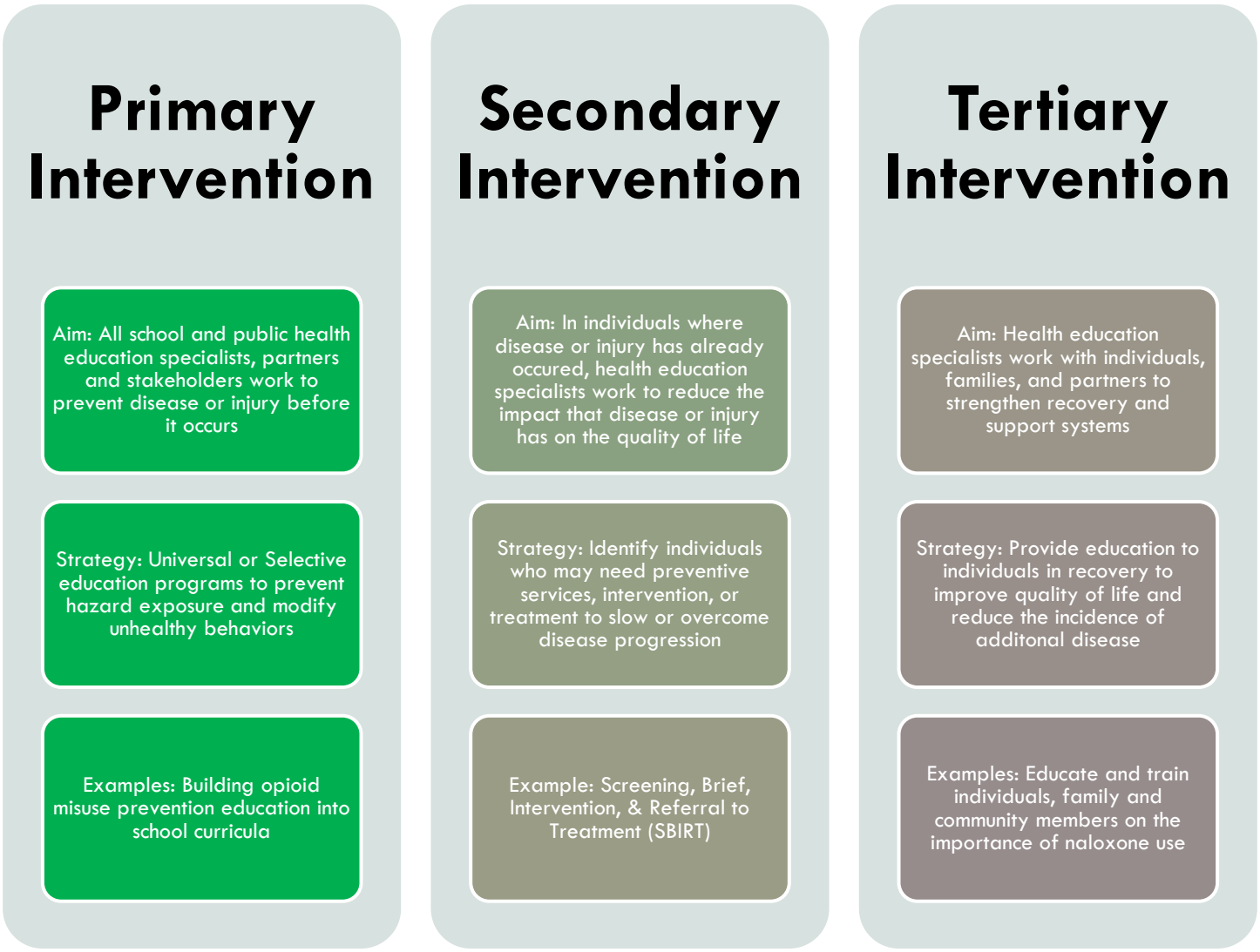
The 21st Century Cures Act (P.L. 114-146) was signed into law on December 13, 2016. Goals of this act include priorities to update and advance the discovery, development, and delivery of new cures and treatments. Text of the act outlines projects and state responses to address opioid abuse, including funding for the NIH Innovation Projects Precision Medicine Initiative (PMI) and Brain Research through Advancing Innovative Neurotechnologies® (BRAIN) Initiative. Both initiatives are historic efforts that aim to gather data from over a million Americans to gain a deeper understanding of how individual differences such as lifestyle, environment and biology impact health (NIH, 2017). Funding will also be appropriated to the FDA to meet the activities outlined in the text, and funding for HHS grants to states to address the opioid abuse crisis (H.R.34, 2016).

POLICY RECOMMENDATIONS: A CASE FOR HEALTH EDUCATION SPECIALISTS

HOW CAN HEALTH EDUCATION PREVENT OPIOID ADDICTION?

Every day, more than 115 people die from opioid overdose (WONDER, 2017). To understand the opioid crisis and curb opioid-related morbidity and mortality, health education specialists, public health partners, community members and their stakeholders must engage in a **comprehensive effort** to apply health education strategies (prevention and harm reduction) across all levels of intervention. When working together, all players may better understand how the crisis began, evolved, and continues to transcend county lines – this is the health education approach to prevent opioid addiction and ending this epidemic (Chaney, n.d.). The National Academies of

Science, Engineering, and Medicine developed a framework of prevention that operationalizes a multidisciplinary approach, paired with a strategy aimed towards high-risk populations. This framework is intended for both clinical and community levels, which is categorized in three ways: 1) Universal Interventions: clinical guidelines of prescribing opioids and recommendations for evidenced-based pain reduction alternatives, and broad strategies to increase community resilience, quality education, stable housing, sustainable employment, and justice reform, 2) Selective Interventions: tailoring responses to specific subpopulations and communities who are at greater risk for drug misuse and addiction, and 3) Indicated Interventions: identify individuals who are in the early stages of addiction, this requires the engagement of community partners in mental health, law enforcement, social services, and the medical community (Springer & Phillips, 2007). The opioid crisis must be viewed as both a clinical and public health crisis in order to properly deploy primary prevention interventions.



Health education prevents disease and injury by influencing behaviors, systems, environments and policies. By nature, health education refers to a skills-based approach that targets health-risk behaviors, decision-making, and related outcomes. Health education specialists (HES) apply skills and competencies in the health education profession as they assess, plan, implement, and evaluate programs in identified populations (NCHEC, 2015). Key strategies or activities HES may engage to address opioid include:

- Universal education about the dangers of opioids and opioid prevention across health care settings
- Best-practice programming for injury prevention and harm reduction
- School-based practices that create protective environments to prevent opioid misuse
- Policy, systems and environment (PSE) change through evaluating interventions and analyzing data to advocate for increased opioid-related research

Seven Areas of Responsibility for Health Education Specialists

Area I: Assess Needs, Resources and Capacity for Health Education/Promotion

Area II: Plan Health Education/Promotion

Area III: Implement Health Education/Promotion

Area IV: Conduct Evaluation and Research Related to Health Education/Promotion

Area V: Administer and Manage Health Education/Promotion

Area VI: Serve as a Health Education/Promotion Resource Person

Area VII: Communicate, Promote, and Advocate for Health, Health Education/Promotion, and the Profession

Source: NCHEC, 2015

In October 2018, a new guide on best practices for opioid prevention and treatment was released that reinforces the health education approach to ending the opioid epidemic. Region 1 and 2 opioid best practices 2018 is the result of a year-long multidisciplinary committee, chaired by Monica Bharel (SHO-MA), working with the Association of State and Territorial Health Officials (ASTHO) as part of the 2017-2018 President's Challenge. ASTHO and officials identify primary intervention efforts such as information and media campaigns to increase knowledge and awareness of the public about the dangers of opioids (ASTHO, 2018b). Other best practices acknowledged in this category include the funding of school programs to increase health education among youth, adolescent and young adult populations, as well as increasing prescriber education on pain management techniques and the importance of utilizing PDMPs (2018b). Another recommendation in the guide supports secondary intervention efforts, including harm reduction initiatives such as needle exchange programs as a best practice for opioid prevention (2018b). The guide recommends limiting the supply of opioid prescriptions and requiring prescribers to check PDMPs prior to supplying any prescription. In the instance of overdose, the guide recommends increased use and access to naloxone and expanded MAT services, both of which are tertiary interventions. Families, communities and first responders should be able to access naloxone supplies and receive training on its use in emergency situations. For treatment and recovery, MAT services should be expanded to provide enhanced treatment access and recovery support networks for those in recovery (2018b). Collectively, ASTHO and state and territorial health officials acknowledge and advocate for the same best practices as outlined in this policy brief to prevent and reduce opioid abuse, encourage cultural competency and strong partnerships with all community stakeholders, and integrate health education at all levels of care to end this epidemic.

When society institutes health education teaching and practice at every age, it is possible for all individuals to increase their awareness of health behaviors, promote healthy role-modeling, instill and refine comprehension of health policies that shape systems, communities, and the well-being of all families/individuals (Fields, 2013; NCHEC, 2015).

RECOMMENDED ACTIONS

A comprehensive, systems approach is key to success in ending the opioid epidemic. This systems approach must include: federal, state, local government, health providers, health education specialists, community members (including individuals in recovery, and those still using), and all stakeholders (Overdose Lifeline, 2017). Consider the following actions for effectively preventing opioid abuse and addiction:

1) **Advocate for communities to implement health education programs that target opioid use and addiction.** Health education programs are a vital component to end the opioid epidemic by preventing opioid addiction and misuse before overdose or opioid-related comorbidities occur. If the nation's public health response to the opioid epidemic is met with a strategy founded on opioid prevention, the mortality rates and comorbidities (infectious disease, NAS, economic burden, impact on the workforce, and toll on children and families) associated with opioid addiction and abuse can be reduced. Therefore, health education is not only effective in its ability to allow community members to make informed health decisions, but to improve safety and quality of life.

2) **Employ health education specialists in roles that involve efforts to prevent opioid addiction.** As of 2016, health education specialists were employed in 61,000 positions in a multitude of settings, including: government organizations, hospitals (local, state, and private), religious institutions, grant making, civic, and professional organizations, as well as social assistance organizations (Bureau of Labor Statistics, 2018). There is a promising job outlook for health education specialists, which is expected to increase by 14 percent between 2016-2026. Yet, as competent and effective as health education specialists are in implementing prevention education across a variety of public health positions and programs, they remain underutilized in the workforce – especially in the face of an opioid epidemic (Bruening et al., 2018). This makes the opioid crisis a priority arena to deploy health education specialists who can provide a comprehensive set of skills that make them uniquely qualified to combat the opioid epidemic and teach the importance of this practice to other health professionals.

3) **Dedicate funding to health education strategies to prevent opioid addiction.** Although overall opioid funding increased $3.3 billion from FY17 to FY18, which is a victory for public health funding, these monies were not prioritized around strategies that prevent opioid abuse and addiction (H.R. 1625, 2018). Evidence-based interventions have a documented return on investment for the economy by controlling health care costs and improving quality of community health (APHA, 2015). Moving forward, it is imperative to advocate for increased funding for prevention programs to most effectively combat the opioid epidemic.

POPPED CURRICULUM: INCREASING AWARENESS AT THE LOCAL, STATE AND FEDERAL LEVELS

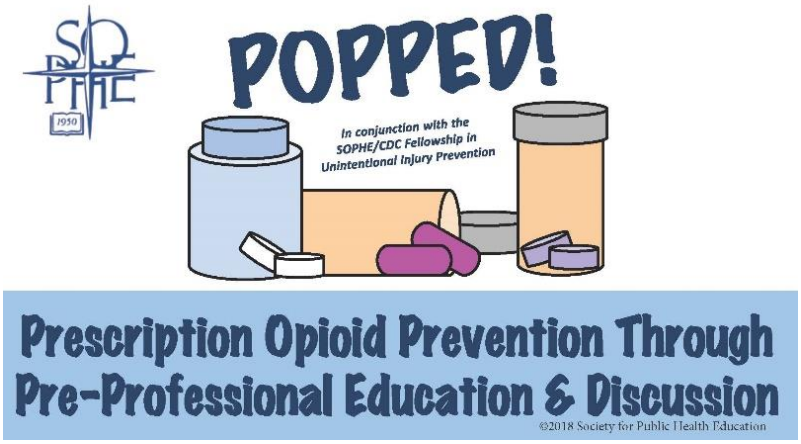
The Prescription Opioid Prevention Through Pre-Professional Education & Discussion (POPPED) Curriculum was developed by the SOPHE/CDC 2017-18 Unintentional Injury Prevention Fellow to increase awareness about the opioid epidemic and initiatives at the local, state and federal levels (SOPHE, 2018). The curriculum is uniquely targeted for instruction of health profession students and is cross-walked to the health education (NCHEC, 2015) and public health (Council on Linkages Between Academia and Public Health Practice, 2014) competencies. It

provides all health profession students and emerging professionals step-by-step actions for intervention based on the socio-ecological model. The learning objectives guide multiple health disciplines through research on the comprehensive efforts to prevent opioid addiction, as well as treat and control the crisis as follows:

- Introduce the opioid epidemic as a public health problem, provide background on opioids and the opioid epidemic demographics, and explain key terms.
- Provide an overview of the known national, state and local priorities actively working to combat the opioid epidemic.
- Outline the theory behind the socio-ecological model and list varying strategies to prevent, treat and control the opioid crisis; **emphasis is placed on the role of public health to prevent opioid addiction through increased education, advocacy, and innovative means to influence behavior change, access to opioid-related care and increase awareness of the opioid crisis.**
- Identify the various allied health and medical providers that are key to a comprehensive approach addressing the opioid epidemic and define overlapping roles and opportunities to apply health education strategies.
- Explore additional local (Philadelphia) opportunities for obtaining more information or working with other stakeholders on the opioid crisis.

According to the original pilot implementation of the POPPED Curriculum which took place in Philadelphia, PA, the three focus areas of the community's efforts were prevention and education, harm reduction and support, and data management among stakeholders. As a result of the pilot, health profession students at Thomas Jefferson University showed significant increases in both knowledge and awareness about the opioid epidemic and the local, state and federal initiatives associated with combating opioid use and misuse. By introducing the opioid epidemic as a public health problem and reiterating the health education and public health competencies that guide their academic programs, health profession students and emerging professionals can differentiate the roles of various allied health and medical providers and identify the comprehensive efforts necessary to combat the opioid epidemic.

Although the educational content outlined in the POPPED Curriculum describes Philadelphia's approach to addressing opioids, **the curriculum serves as a model for all public health disciplines to easily modify the curriculum with relevant information to their geographic area and adapt the program in their community.**



SUMMARY

The opioid epidemic is a complex and worsening public health emergency, taking the lives of over 42,000 people in 2016 alone, a fatality rate higher than ever before (CDC, 2017d). While there have been a handful

of federal-level and state-level policy responses to this epidemic, these efforts have concentrated on treatment of opioid addiction, as opposed to preventive efforts. **Opioid addiction is preventable** - health education is the key to decreasing opioid addiction in the U.S. and helping to heal communities.

The three tiers of intervention serve to guide public health education specialists, stakeholders, and partners on how to establish a comprehensive effort to address the opioid epidemic at the different levels of use among individuals. Any programs, educational, and training efforts to reduce opioid misuse and overdose must specifically cater to the primary, secondary, or tertiary level of intervention, as the individuals at each of these levels have very different needs. Education is a critical component of any prevention efforts in addressing the opioid crisis in the United States. Collaboration among health education specialists and policymakers at the local, state, and national level is vital to reducing the impact of and ending this epidemic. SOPHE has several resources available for public health education specialists to utilize to address this crisis, including:

- Opioid Bibliography: Resources for Public Health and Allied Health Students, Professionals and Faculty
- A Primer on Opioids: The Critical Role of Health Education in Preventing Addiction and Saving Lives
- Resolution on Improving Lives through Health Education on Opioid Prevention & Treatment

Moving ahead, it is necessary to prioritize the role of prevention to avoid addiction and overdose before it can occur. Proven mechanisms to achieve these results must include health education strategies (e.g. screening, early intervention, and prevention education), along with other necessary harm reduction strategies (e.g. naloxone and MAT) and enforcement of health provider mandated use of PDMPs that oversee opioid use. **In a time of crisis, the nation's force of health education specialists and other education and health advocates must align in a comprehensive approach to bring the opioid epidemic to an end.**

COMMONLY USED TERMS

Adverse Childhood Experience	ACE
American Academy of Pediatrics	AAP
Association of State and Territorial Health Officials	ASTHO
Comprehensive Addiction and Recovery Act of 2016	CARA
Centers for Disease Control and Prevention	CDC
Diagnostic and Statistical Manual of Mental Disorders	DSM-5
Drug Enforcement Administration	DEA
Emergency Department	ED
Health Education Specialists	HES
U.S. Department for Health and Human Services	HHS
Hepatitis B virus	HBV
Hepatitis C virus	HCV
Illicitly Manufactured Fentanyl	IMF
Injection Drug Users	IDU
Medication Assisted Treatment	MAT
National Institutes of Health	NIH
Opioid Crisis Response Act of 2018	OCRA
Opioid Use Disorder	OUD
National Survey on Drug Use and Health	NSDUH
Neonatal Abstinence Syndrome	NAS
Prescription Drug Monitoring Program	PDMP
Prescription Opioid Prevention through Pre-professional Education and Discussion	POPPED
Policy, systems and environment change	PSE
Screening, Brief Intervention, and Referral to Treatment	SBIRT
Society for Public Health Education	SOPHE
Substance Abuse and Mental Health Services Administration	SAMHSA

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Society for Public Health Education

10 G Street, NE, Suite 605

Washington, DC 20002

www.sophe.org