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When Two Health Emergencies Collide: Planning for the Crisis Health Needs of Opioid Abusers
and the Psychological Consequences of COVID-19

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Abstract

The COVID-19 pandemic has created new barriers for people suffering from mental illness and substance use disorders. From its expected major impact on mental health, social distance measures imposed worldwide are themselves risk factors for increased mental health problems, including opioid abuse. Since drug treatment for opioid use disorders is highly regulated by health authorities, people with opioid use disorders could experience difficulty accessing treatment, which should be considered an essential treatment during the COVID-19 pandemic. The accelerated transition away from in person appointments and group therapy because of social distancing calls for health systems and community collaborations and adjustments to clinical practice. This includes emphasizing mental health training for healthcare providers and frequent communication between providers and patients, increasing the flexibility of take home medications and access to overdose reversing medications, and leveraging technology through the use of telehealth and virtual support groups to optimize safety of medication treatment and increased support during this time. This paper explores mental health and substance use in the context of the COVID-19 pandemic, the challenges to accessing mental health and substance use services, and gives recommendations towards planning for the health needs of opioid abusers during future times of crises.

Keywords: COVID-19, opioid use, substance abuse disorders, mental health, telehealth, drug treatment, pandemic, social distancing, crisis preparedness, crisis health needs

Introduction

Social distancing represents a critical public health strategy to limit the increase in cases and deaths from COVID-19 and helps to prevent the overwhelm of healthcare systems during disease outbreaks. Social distancing for COVID-19 includes the need to shelter in place to avoid exposure, quarantine from others due to possible exposure, or having to go into isolation due to a confirmed diagnosis for 14 days or more. One group that may be especially vulnerable in quarantine and isolation is those who suffer from opioid addictions. When a crisis occurs, public health and medical responders must be ready to care for users of opioids who are going through withdrawal, patients who are in recovery, and patients who require opioids for pain management. People who are dependent on opioids encounter significant health inequities, including excess mortality connected to drug overdoses, suicides, traumatic deaths, and infectious diseases(Herdener et al, 2017). For those in treatment for substance abuse disorders and those who administer them, COVID-19 produces new barriers that make accessing these crucial services more challenging.

The COVID-19 pandemic has isolated many people, restricted them from their friends, family, and support. Fear and anxiety about COVID-19 can result in people feeling more anxious and stressed. Feelings of loneliness that are heightened during social distancing can result in poor mental health. From its anticipated impact on mental health, social distance requirements enforced worldwide are themselves risk factors for multiple mental health issues including substance abuse. Prior to the COVID-19 pandemic, nearly one in five U.S. adults reported

having a mental illness in the past year, and over 11 million had a serious mental illness, which frequently results in functional impairment and limits life activities(Mota, 2020).

Not all individuals who suffer from mental illness have substance abuse problems, but most substance abusers do suffer from mental illness. Substance use disorders and mental health problems often occur simultaneously. This is because they share many fundamental causes, including changes in brain composition, genetic vulnerabilities, and early exposure to stress or trauma. Mental health issues can sometimes lead to drug use, as some people with mental health problems may misuse these substances as a way of self-medicating. During times of uncertainty and uneasiness, it is possible that mental illness and substance use disorders among patients with these illnesses could worsen. Planning for the crisis health needs of opioid abusers by forming health system and community collaborations, as well as making existing mental health and substance abuse treatment programs and medications more accessible is critical to diminish disruptions from future crises.

Background

Planning for Emergencies

Substance abuse treatments have not been given much consideration from the preparedness community yet researchers have identified that substance abuse treatment programs have experienced large disruptions during past times of crises. Past times of crisis in the United States, like Hurricane Katrina and the 9/11 attacks, have been followed by increases in the prevalence of mental illness and substance abuse(Galea, 2007). Hurricane Katrina caused the immediate closure of all substance abuse treatment services in New Orleans(Torielle et al, 2007).

New York City opioid treatment programs reported substantial difficulties verifying doses and medication take-home privileges for patients who were unable to access their usual programs after the 9/11 attacks (Frank et al, 2003). After Hurricane Sandy in 2012, interviews of 300 New York City residents who injected drugs were conducted to interpret how that natural disaster influenced their medical treatment. This study found that only 30.1% of those on methadone or buprenorphine were able to obtain enough take-home doses to last them until their normal treatment resumed (Pouget et al, 2015).

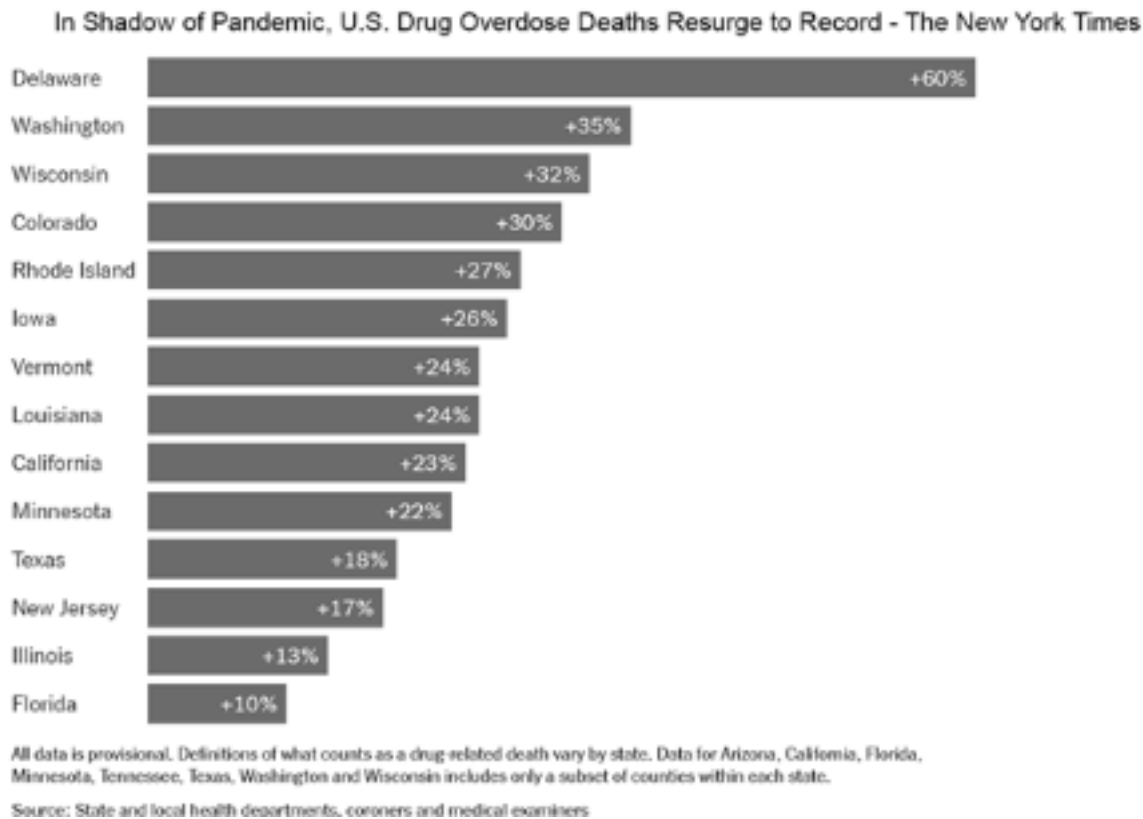
Public health and health care professionals need to incorporate the management of problems related to opioid use as part of their overall preparedness, response, and recovery plans. Individuals with preexisting disorders are particularly at risk of adverse outcomes during and after times of crises. Without advance planning from health care professionals and policy makers, these individuals may not benefit from necessary mental health services and treatments during and after future crises (Rabins, 2011). Through the development of community and health system collaborations, plans to address access to treatment and medications can be formed prior to another crisis, like COVID-19, occurring.

Health Impacts of COVID-19 on Opioid Abusers

Opioid abusers are particularly vulnerable during the COVID-19 pandemic. They may be alone, recently unemployed, overworked if they are considered essential employees, and overburdened with stress. If they are in an addiction treatment program, they may rely on group sessions for support. COVID-19 and opioid addiction can impact and worsen each other. Prior to COVID-19, the mortality ratio, compared to the general population, was about 15 times greater

for opioid use disorders(Chesney et al., 2014). Deaths due to drug overdose have increased more than threefold over the past 20 years, from 6.1 deaths per 100,000 people in 1999 to 20.7 deaths per 100,000 people in 2018(WHO, 2018). Drug deaths have risen an average of 13 percent so far in 2020 over 2019, according to mortality data from local and state governments collected by The New York Times, covering 40 percent of the U.S. population(Katz, 2020).

FIGURE 1 shows the increase in drug related deaths from 2019 through the beginning of 2020



<https://www.nytimes.com/interactive/2020/07/15/upshot/drug-overdose-deaths.html>

The opioid abuse epidemic and the COVID-19 pandemic are now overlapping, making them additively deadly. Substance use disorders are associated with a considerably large disease

burden and the highest mortality among all mental and behavioral disorders(WHO, 2017). People who suffer from the disease of addiction are more vulnerable to both contracting coronavirus and having more severe symptoms when they do get it. There is an increased burden of respiratory diseases in individuals who use illicit opioids, making this group more vulnerable to the pandemic threat, as there is an elevated risk of overdose, since these substances can depress breathing(Mota, 2020). Chronic respiratory disease is already known to increase the risk of overdose among individuals taking opioids, and thus the decrease in lung capacity from COVID-19 could similarly endanger this population(NIDA, 2020). Since opioids operate in the brainstem to relax breathing, their use could result in a life-threatening or fatal overdose and could also lead to a detrimental decrease in oxygen in the blood, which can be especially harmful for the brain(NIDA, 2020). Opioid use could also result in a weakened immune system, increasing an individual's susceptibility to pneumonia(Sarkar, 2015).

Socioeconomic Factors Associated with Opioid Abusers

Opioid abusers and those who access substance abuse treatment services may be at an increased risk of losing access to services and of contracting COVID-19. Individuals who contend with addiction are more likely to smoke and have lung or cardiovascular disease, be low income, underinsured or uninsured, or have experienced severe health and socioeconomic problems from drug addiction. Additionally, those with a substance use disorder are at an increased likelihood of experiencing homelessness or incarceration than those in the general population, and these circumstances offer additional challenges when it comes to transmission of coronavirus. Homelessness or incarceration can place individuals in congregate settings where

they are in close proximity with others who may also be at a greater risk of contracting coronavirus(NIDA, 2020). All of these socioeconomic factors increase the susceptibility of this population being exposed to and becoming infected with the virus.

Stigma Surrounding Substance Use Disorders

Stigma is defined as a set of negative beliefs that a group or society holds about a topic or group of people(Ahmedani, 2011). Opioid abusers who encounter stigma related to their drug use are less likely to pursue treatment resulting in economic, social, and medical costs. The stigmatization of individuals with opioid abuse disorders may be even more problematic during times of crisis. Along with their increased risk through homelessness and drug use itself, the genuine fear surrounding contracting COVID-19 could result in bystanders and even first responders being hesitant to help and give naloxone to those who have overdosed. There is also a possibility that hospitals will overlook individuals with apparent drug problems when making tough decisions about how to direct lifesaving personnel and resources(NIDA, 2020). The stigma applied to addiction and the illegality of drug use mean that many adverse outcomes and treatment decisions are possible.

Because of stigma, funds are less likely to be allocated to opioid abusers particularly when there are so many other demands. The stigma surrounding opioid abuse could result in legal, policy, funding, and community barriers to creating a crisis fund dedicated to the health needs of those with substance abuse disorders. As policymakers continue to discuss further actions to alleviate the burdens of the COVID-19 pandemic, plans for the health needs of opioid

abusers during the recovery and for future crises, as well as how to combat the stigma surrounding this population need to be addressed.

Disruptions in Healthcare Services

For someone struggling with addiction, many services and treatments available to them have been disrupted by the COVID-19 pandemic. Treatment centers have had to restrict the number of patients they can see in person (Mota, 2020). People have been advised to stay home which combats the need of those struggling with addiction to go to clinics to receive medications. In response to this, our federal government has relaxed regulations so that clinics are able to give 14-day or even 28-day supplies in some cases to patients that have a history of complying with program instructions and can be expected to take their prescribed medication as instructed, so that they do not have to wait in line and can adhere to social distancing for safety (Grinspoon, 2020).

Similarly, due to the COVID-19 pandemic, some restrictions on buprenorphine prescribing have also been relaxed and some telephone prescribing has been permitted, but this action assumes that there are doctors available that are certified to prescribe this medication, and that the pharmacies and doctors' offices are functioning at regular capacity. During the COVID-19 pandemic, many medical offices are functioning with fewer staff or adjusting to working remotely which results in longer wait times and slower responses from doctors. Additionally, clean needle exchanges have been affected and many rehabilitation facilities have limited new admissions or cancelled programs due to fear of spreading coronavirus in a communal living setting (Grinspoon, 2020). The disruption of steady-state systems necessary for

medical care, such as medical facilities and treatment programs, could increase the likelihood of opioid abusers searching for alternatives to prescribed medications that may be more easily available to them, like heroin and illegally made fentanyl.

Disruptions in service are a reality during times of crises. For those with behavioral health and opioid abuse disorder, dealing with an infectious disease outbreak and adjustments in access to medications and treatments can lead to additional crises(Pyle, 2020). Stress is a prominent risk factor related to the maintenance of opioid abuse. Times of ambiguity could result in an increase in misuse and relapse of substance use disorders(Clay, 2020). Troubling times could also result in people suddenly needing to manage their habits and addiction related symptoms when other support systems may be depleted or absent. Public health, healthcare, and emergency management planners and responders should plan for how to decrease the adverse effects of addiction withdrawal. Housing instability as well as reduced access to health care and recovery support services introduce added challenges for opioid abusers(Mota, 2020). As efforts to address the opioid epidemic unfold, federal, state, local, and community organizations must collaborate in planning for and responding to crises.

Disruptions in Mental Health Services

Limited access to mental health care and substance use treatment programs is partially due to the current shortage of mental healthcare providers, which will likely be worsened by the COVID-19 pandemic. The use of telemedicine among behavioral health professionals is a promising approach to lessen the need for mental health providers and increase access to mental health and substance use disorder treatment throughout the United States. While some mental

health professionals have expanded by using telehealth due to social distancing requirements, some providers may experience challenges. Challenges related to the delayed implementation of telehealth by the mental healthcare field are largely due to insurance billing restrictions and state licensing laws that prohibit providers from helping patients across state lines(Panchal et al, 2020).

In recent years, only the Department of Defense and the Veterans' Affairs Healthcare System, both federal systems without such restrictions, have been able to provide an ample amount of mental health care support through telehealth. Due to the COVID-19 pandemic, long-established regulations in the United States have been temporarily waived for patients, particularly vulnerable populations, and health professionals to experience the advantages of telehealth(Egede et al, 2020). This could benefit opioid abusers who are sheltering in place and need access to mental health services.

Going forward, it is critical that the emergency deregulation laws that have been authorized during the COVID-19 crisis are made permanent in order to support telehealth use in mental healthcare services. However, financial barriers to implementation, such as lack of reimbursement, cost of implementation, and cost of maintenance could be possible reasons why some providers could deter from using telemedicine. Other barriers could include a lack of organizational and political leadership, workforce shortages, confidentiality, educational and training barriers, and compliance barriers such as licensure regulations(Pyle, 2020).

Funds from the recently-passed Coronavirus Aid, Relief, and Economic Security Act (CARES Act) were allocated to combat the probable heightened need for mental health and substance use services. The CARES Act contains a \$425 million allotment to be used by the

Substance Abuse and Mental Health Services Administration (SAMHSA), along with multiple provisions proposed for expanding the availability and coverage of telemedicine for those covered by Medicare, private insurance, and other federally-funded programs(Panchal et al, 2020).

Concerns regarding the release of identifying patient information have been generated by the CARES Act. Patients usually consent to release their treatment information when they are admitted to a program. This is mandatory for insurance to cover the treatment. But under the CARES Act, reasons for why the information could be used in the future are not evident. The three potential uses for identifying patient information that the Cares Act authorizes are: treatment, payment, and healthcare operations. The last category is broad, and could lead to the release of this information to all kinds of entities and people outside the limits of what a typical patient would want. The negative implications of this could be severe and result in job loss, could be concerning in custody battles, and could result in insurance companies using substance abuse history to deny future payments(NatLaw, 2020). The goal of this allotment from the CARES Act is to expand services, ensuring that patient information is confidential and receives the same protections from existing privacy regulations is important. Future data is required to measure the growing effect on mental health and substance use that the COVID-19 pandemic has had, as well as research regarding the ethical concerns surrounding confidentiality and the CARES Act.

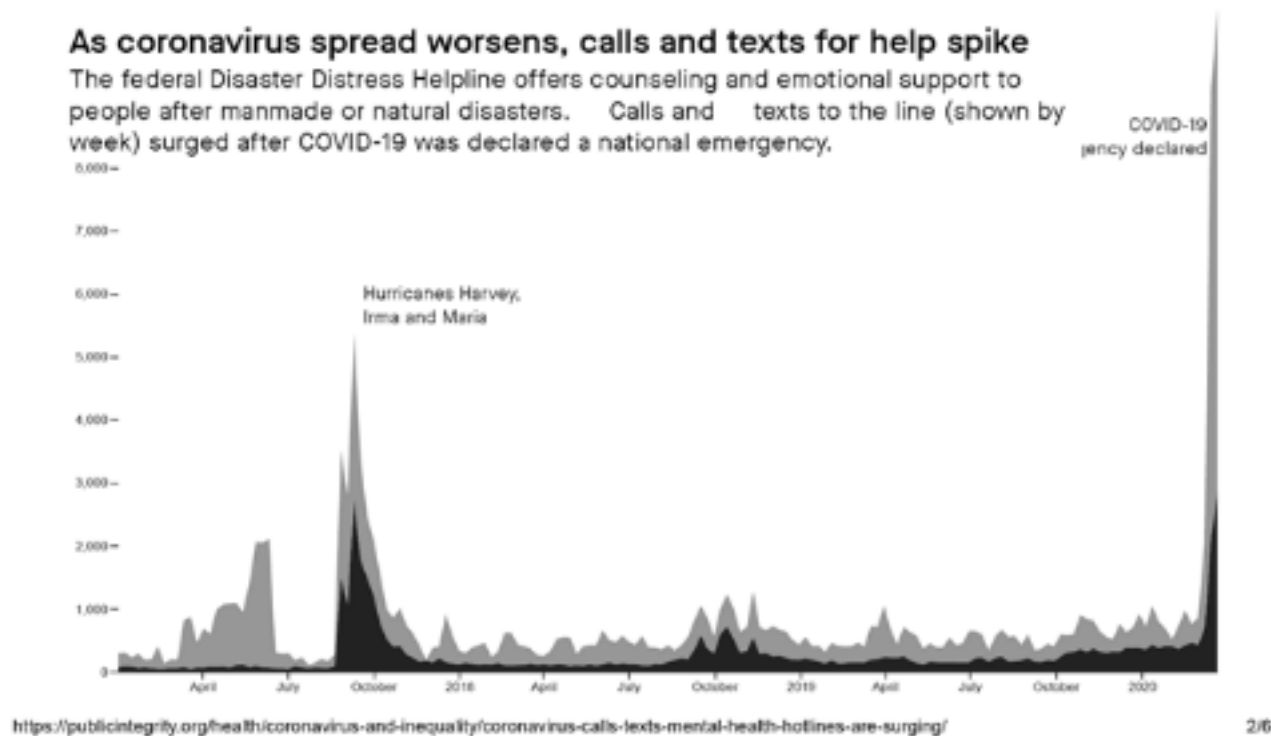
Recommendations

Health Systems and Community Collaborations and Partnerships

Individuals with preexisting disorders and newly emergent psychological symptoms are particularly vulnerable to adverse outcomes during and after emergencies due to added stress and isolation. Without advance planning, these individuals may not benefit from necessary mental health services and treatments during and after crises (Rabins, 2011). Collaboration among health system leaders from hospital and community mental health systems are needed to ensure the continuity of care for individuals experiencing mental health crises (Choi et al, 2020). There is opportunity for health system planning, resource mobilization, and new interventions to address obstacles faced by mental health providers and patients due to the COVID-19 outbreak.

Through these collaborations, support mechanisms for combating outbreak-related stress can be developed and implemented. This could include extended hotline hours and additional personnel to decrease hotline wait times, providing stress relieving and coping exercises/videos, and help with applying for benefit programs. Innovative models of mental health care need to be carried out so those who need support can access professional treatment. Telehealth, increased provider mental health training, virtual peer support, and virtual substance use support groups could help to ensure that mental health needs are being met (Choi et al, 2020). Using these virtual options more routinely will be beneficial in the long run, as they will be less likely to be disrupted during future crises and may also attract individuals who have deterred from in person substance abuse services in the past due to fear of stigma.

FIGURE 2 displays the calls and texts to SAMHSA’s Disaster Distress Helpline after COVID-19 was declared a national emergency



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Increase Flexibility and Guidance in Dispensing Extended Take-home Medications and Supplies

Greater flexibility in dispensing take-home medication, such as supplying extended doses of methadone to patients due to social distancing restrictions, combined with isolated consumption, could increase vulnerability to relapse and overdose, being that there may not be anyone around who can administer naloxone to reverse an overdose (Mota, 2020). New policies have been implemented due to COVID-19 at the federal level by SAMHSA and the Drug

Enforcement Administration (DEA) that allow healthcare providers the option of supplying patients with opioid use disorder extended take-home doses of buprenorphine and methadone.

In combination with these medications, individuals battling addiction need to be supported through online meetings in place of their normal in person meetings, so that they are not alone and are still receiving guidance from their providers. The rapid move to dispense larger amounts of medications assumes that all patients receiving these larger quantities have proficient substance management. Thus, a substantial portion of these patients may face a responsibility of medication management for which they may not be prepared. To supply increased amounts of take-home medications as a substitute for daily in person appointments without continuing behavioral treatment mistakenly views this type of treatment as merely medication therapy(Leppla et al, 2020).

Remote management calls for providers to leverage telehealth in order to maintain frequent contact with patients. An additional opportunity for providers supplying increased amounts of take-home medications to patients who may not be ready to handle the access to larger doses is to leverage technology, such as “smart” pill bottles/lock boxes that dispense doses on a remotely set timescale and also alert providers if incorrect doses have been taken. These technologies are costly, experimental, and may not be widely available in mass production(Leppla et al, 2020). Making these options more affordable to produce and manufacture could be beneficial, not just during times of crises, but for use with all prescription drugs that are known to be addictive. It is essential that opioid abusers are receiving the medications they need to recover, that they have access to clean needles if they are still using, as well as adequate medical care.

After Hurricane Katrina, SAMHSA issued guidance for opioid treatment programs receiving individuals displaced by Hurricane Katrina. SAMHSA's guidance consisted of procedures for authenticating identification, corroborating proof of treatment, and determining dosage information. The guidance stated that if unable to follow these procedures, providers should use “good medical judgement.” The guidance emphasized the need to abide by federal regulations, particularly concerning provision of take-home amounts and records of treatment(Curie, 2005). Learning from this event and expanding on this idea by implementing provider training so that they know what constitutes as “good medical judgement,” as well as instilling confidence in their prescribing abilities could be a beneficial way to adopt this guidance during future crises.

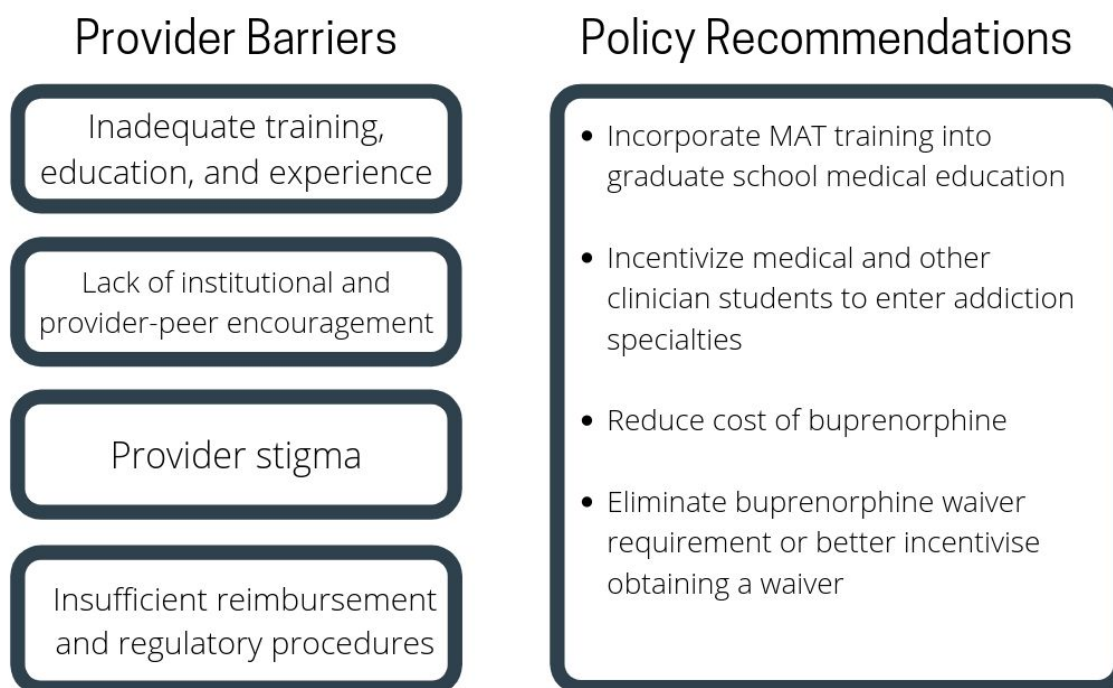
Expand Access to Medication-assisted Treatment (MAT)

The CDC defines Medication-assisted Treatment as a comprehensive way to address the needs of individuals [with opioid use disorder] that combines the use of medication (methadone, buprenorphine, or naltrexone) with counseling and behavioral therapies. Opioid abuse often leads to addiction, which can result in changes in the brain’s structure and functions. MAT counteracts and fights these changes by inhibiting certain receptors in the brain. This treatment plays a significant role in controlling withdrawal symptoms as patients work towards managing their recovery(CDC, 2018). Buprenorphine is a medication with complicated dosing, which is why it requires additional knowledge and a waiver requirement, showing that the provider has met the additional educational requirement to prescribe this medication. Buprenorphine is highly

regulated as it can cause respiratory distress and death when taken in incorrect doses or when combined with other substances(Bagalman, 2015).

In order to care for patients with buprenorphine outside of traditional federally certified opioid treatment programs, health care providers must apply for and obtain a waiver from the DEA. Providers with a waiver can treat 30 patients in the first year and 100 patients after having a waiver for one year; certain qualified physicians can request a waiver to treat up to 275 patients after having a 100 patient waiver for one year (Bagalman, 2015). Nationwide, there is a deficit of providers who provide MAT, specifically waived providers that can prescribe buprenorphine. In 2016, only 52.5% of counties in the United States had at least one waived provider and only 39.9% of rural counties had at least one waived provider in 2016(Andrilla et al, 2017). Quantifying these shortages can be problematic because some providers who acquire waivers may not help the maximum number of patients permitted, or treat any patients at all. It can be challenging to comprehend why some providers are not obtaining waivers.

TABLE 1 displays perceived barriers to providers obtaining MAT waivers and policy recommendations to address these barriers



Waiving the limitations on the number of patients a provider can treat would be beneficial during times of crises and result in more opioid abusers having access to this treatment. Making these waivers more easily obtainable as well as waiving the patient limit per provider during the pandemic could be beneficial and give more health professionals the opportunity to help more patients. Health care professionals would need to plan for the best way to dispense the necessary medications to patients who are in quarantine, such as using delivery services and providing patients with set dosing schedules, as well as utilizing telehealth and video appointment methods to set up counseling and behavioral therapy sessions. In the future, eliminating the waiver process for physicians altogether, when complemented by policies to

increase provider education during graduate school, would be beneficial. Buprenorphine prescriber training can be more effective if incorporated into graduate school medical education, similar to training often integrated for other prescriptions with complicated dosing, like warfarin(Haffajee et al, 2018).

Increase Access to Overdose Reversing Medications

Overdose reversing medications for opioid use disorders can be immediately effective and life-saving. They are highly regulated by health authorities which could result in individuals with opioid use disorders facing even greater challenges to obtaining opioid agonist treatment during times of crises(WHO, 2020). Naloxone and the generic version Narcan are prescription drugs that can reverse opioid overdoses. State laws and regulations restrict access to both. There have been concerns that if naloxone was viewed as a safety net, it would encourage people to use more opioids. Several studies have demonstrated that this is not the case and increased naloxone access has shown no increase in behaviors associated with opioid ingestion(Davis et al, 2015). As of 2020, all fifty states and the District of Columbia have adjusted their regulations to improve access to naloxone, but there are other legal and regulatory changes that can further increase access and availability(CDC, 2018).

TABLE 2 compares the different prescription models for Naloxone in the United States

Traditional	<ul style="list-style-type: none"> • Providers can prescribe naloxone to individual patients at high risk of opioid overdose • Only pharmacists or physicians can distribute naloxone • Drawbacks: Obtaining naloxone is a two step process. Patients first have to see their provider, then fill prescription at a pharmacy. Time, money, lack of insurance, and stigma are barriers to seeking/filling prescription 	All 50 states and the District of Columbia permit this model
Third Party	<ul style="list-style-type: none"> • Prescribers can write naloxone prescriptions for people who are likely to encounter an overdosing person • Drawback: Might still require a visit to a prescriber in places not covered by non-patient specific prescriptions 	48 states and The District of Columbia permit this model States that do not: MN, KS
Non-Patient Specific	<ul style="list-style-type: none"> • Authorize naloxone distribution to individuals and organizations • No need to interact with a prescriber • Drawbacks: Limited resources and funding for programs to purchase and distribute naloxone, may require a special training before distributing or receiving naloxone 	47 states and the District of Columbia permit standing orders States that do not: NE, OR, ID

Information obtained from: State Naloxone Access Rules and Resources. (n.d.). Retrieved from <https://www.safeproject.us/naloxone-awareness-project/state-rules/>

At the state level, those that have not passed regulation that expand layperson access to naloxone should prioritize doing so to aid in counteracting the adverse effects of the COVID-19 pandemic on opioid abusers. This will result in more individuals having access to the overdose reversing medications that could save their own or their loved one's life. Those that have implemented layperson access should assess whether or not the provisions of their regulations are achieving the desired outcome. In many cases, this could call for not only allowing naloxone to be accessed in pharmacies without a patient-specific prescription, but also permitting the distribution of it at drug treatment programs and health clinics (Davis, 2015).

Ensuring easy accessibility to take-home naloxone for patients is crucial for reducing overdose risks and providing deliveries of naloxone to the homes of individuals with positive COVID-19 diagnoses is necessary to comply with home isolation recommendations. A meta-analysis of 12 examinations of naloxone access programs found that the programs were associated with successful training of both people at high risk of an overdose and their friends and family when it came to acknowledging an opioid overdose and appropriately administering naloxone, and no increase in drug use or high-risk behavior (Haegerich, Paulozzi, Manns, & Jones, 2014).

Even without the ability to authorize third party prescriptions, research shows that educating family or friends about the signs of overdose and use of naloxone helps to prevent overdoses (CDC, 2018). Given the constraints of seeking providers who prescribe naloxone and accessing distribution programs, relabeling naloxone as an over-the-counter drug in the states that have not yet adopted this method should be considered. Naloxone has been available over-the-counter in Italy since the 1980s without any reported negative consequences (Burriss et al, 2001). Developing a delivery system of Naloxone and Narcan during times of crises, in which those unable to go pick up a prescription can get them delivered, would help to reduce the amount of opioid related overdose deaths.

Implications

The total economic burden of opioid abuse alone in the United States in 2018 was estimated at \$631 billion, including the costs of healthcare, lost productivity, addiction therapy, and criminal justice involvement (Siegel, 2019). The misuse of and the dependency on opioids

from addicts, including prescription pain relievers, heroin, and fentanyl, are a leading cause of overdose deaths and are a serious issue in the United States that affects public health as well as social and economic welfare(NIDA, 2020). Pandemic-related stressors could result in an increase in the prevalence of opioid usage. Thoughtful mental health care preparation and implementation of substance abuse practices are vital because without advance planning, opioid abusers may not benefit from and may not know how to access necessary mental health services and treatments during future crises. Support mechanisms offered by health systems like extended hotline hours and additional personnel to decrease hotline wait times, supplying stress relieving and coping exercises and videos, and help with applying for benefit programs would help to alleviate pandemic-related stress. These support mechanisms could help alleviate much of the stress added by the pandemic and help to reduce the pandemics impact on individuals with mental health and substance abuse disorders.

Although unprepared for the September 11th attacks, New York City's mental health system was able to act quickly. Within weeks, Project Liberty, a recovery program funded by the Federal Emergency Management Agency (FEMA), was fully operational. A mental health hotline was created called LifeNet to supply free information and counseling assistance to those afflicted by 9/11 and its aftermath. These services helped to relieve stress and anxiety accumulated by those most closely affected(Reissman, 2004). While this study did not directly reference opioid abusers, it can be expected that this relief effort would have had a positive impact on addicts who suffered from stress surrounding their treatment following the 9/11 attacks. Determining additional necessary support mechanisms could be done through a collaboration among health system leaders from hospital and community mental health systems

to assure that needs are met. A limitation of this could be the cost and the difficulty of planning for something that may not happen. Using money to plan for a possible crisis means that this money will not be allocated to other projects that may have a more urgent demand for it. As policymakers continue to discuss further actions to alleviate the burdens on opioid abusers following public health crises, plans for their health needs and how to combat the stigma surrounding this population need to be addressed. The lessons learned from COVID-19 surrounding access to support services and treatments, as well as expanded medication access will be beneficial in the response plans and preparations for future public health crises.

Implementing more innovative models of mental health care will help to ensure that community mental health needs are addressed. Telehealth, virtual mental health counseling, and virtual support groups help meet community needs by ensuring professional and social support during quarantine. Extended medication supplies allow patients to have increased access to the medications they need while complying with social distancing and quarantine recommendations. Increased provider mental health education that aims at addressing the mental health needs of opioid abusers and how to best address these needs is critical to help alleviate any stress and negative thoughts that this population could develop during times of crises. By providing patients with additional methods of healthcare access and access to support groups and by ensuring that health providers are trained to address the mental health issues of patients and the best ways to address these issues from a distance, an increase in mental health issues, such as stress and heightened anxiety, could be diminished.

A limitation to expanding telehealth and virtual mental health and peer support meetings is that participants may find these options impersonal or feel that their needs cannot be fully

addressed virtually and opt out of them. Connection and bandwidth issues could also be an issue during medical appointments and could result in miscommunications between patients and healthcare providers and incorrect information being recorded in patients' charts. Another issue that can be seen with telehealth is whether or not and how these online platforms are compliant with confidentiality. Virtual meetings and support groups, while helpful for some patients, may further marginalize patients without the availability of a phone or video platform. One solution is to supply prepaid phones or phone cards with enough minutes for appointment uses. Another challenge related to having medical appointments virtually is that patients may lack secure or private settings from which to have these appointments(Leppla et al, 2020).

An issue with extended take home medication could be the responsibility put on patients to follow their medication regimen without the support that in-person counseling offers. This could result in added stress on patients and a likelihood that they will be unable to comply with their treatment process. Patients may fail to take medications as directed due to a lack of guidance felt by the loss of in person appointments. The loss of in person interaction between patients and providers needs to be supplemented by frequent telehealth appointments and communication with providers.

By making the waivers needed to practice Medication-assisted treatment more easily accessible and by employing telehealth methods and easier access to necessary medications, more individuals with substance use disorder would have access to this treatment option. Limitations of MAT, especially relevant during this pandemic, would be time it takes for providers to get a waiver and also the anticipated barriers that providers might see like time constraints, resistance from practice partners, lack of available mental health support for patients,

and lack of confidence in their ability to manage substance use disorders(Andrilla et al, 2017). These barriers highlight opportunities to encourage providers who would like to obtain MAT waivers. Overall, more research is needed to determine how to increase the number of waived providers and thus increase the amount of people who can access MAT during times of crises. Randomized controlled trials could be beneficial to analyze how implementing graduate coursework for medical students on buprenorphine prescribing in place of receiving a waiver could result in an increase in MAT providers in the future and allow for more access for patients seeking this type of treatment.

Further increasing the availability of overdose reversing medications, such as naloxone and narcan, by creating a policy that makes over the counter access to naloxone during times of crises in all states could result in less overdose related deaths and serious hospitalizations. By allowing over the counter access of naloxone or increased access to those who are most likely to witness an overdose, many overdose deaths could be prevented. A delivery system for naloxone would be especially beneficial for individuals who are in quarantine and for those in rural areas who may not have easy access to pharmacies and other distribution sites.

As of April 2020, there had been 140 more naloxone administrations in 2020 than the entire year of 2019 in York County, Pennsylvania(YOC, 2020). This increase could be tied to COVID-19 related stressors that are in turn increasing the use of illicit drugs. This demonstrates the increased need for overdose reversing medications and that large supplies of Naloxone and Narcan should be made available and easily accessible to opioid abusers, friends and family of abusers, and to emergency personnel during times of crises. A limitation of this would be access

to the amount of supply needed during times of crises and the cost of naloxone, which can vary whether or not the generic version is available, for those that do not have insurance coverage.

Conclusion

The COVID-19 pandemic is likely to have both long and short-term implications for mental health and substance use. Knowledge of the opioid epidemic has been mainly limited to scattered statistics that only acknowledge some aspects of the epidemic, like particular geographic regions, limited time periods, and specific drugs. Additionally, we lack a comprehensive examination of the substance abuse epidemic in the context of the COVID-19 pandemic that acknowledges the complex and progressing dynamics of drug abuse in the United States during times of crises. For those in treatment for substance abuse disorders and those who provide them, COVID-19 introduces new barriers that make accessing these necessary services more challenging. The growing need for mental health and substance use treatment could result in a long-term problem even as new diagnoses and fatalities due to COVID-19 subside. By acknowledging the legal challenges and possible solutions for substance abuse and mental health services during and after a crisis; policy makers, emergency planners, health care professionals, and other stakeholders can cultivate strategies to ensure that this population continues to receive necessary treatment, even in difficult circumstances.

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Appendix

MPH Foundational Competencies

Foundational Competency	Description of how used for Capstone
Evidence-based Approaches to Public Health	
1. Apply epidemiological methods to the breadth of settings and situations in public health practice	Developed a thorough literature review after analyzing data from numerous studies, summarizing key results, and organizing findings in order of importance and relevance to my topic.
2. Select quantitative and qualitative data collection methods appropriate for a given public health context	
3. Analyze quantitative and qualitative data using biostatistics, informatics, computer-based programming and software as appropriate	
4. Interpret results of data analysis for public health research, policy and practice	
Public Health & Health Care Systems	
5. Compare the organization, structure and function of health care, public health and regulatory systems across national and international settings	
6. Discuss the means by which structural bias, social inequities and racism undermine health and create challenges to achieving health equity at organizational, community and societal levels	Described how the socioeconomic factors of opioid abusers create challenges for seeking treatment and create organizational and societal bias towards this population.
Planning & Management to Promote Health	
7. Assess population needs, assets and capacities that affect communities' health	Analyzed the treatment needs of opioid abusers and individuals with mental illness and assessed how these treatments and services were disrupted by the COVID-19 pandemic.
8. Apply awareness of cultural values and practices to the design or implementation of public health policies or programs	
9. Design a population-based policy, program, project or intervention	
10. Explain basic principles and tools of budget and resource management	
11. Select methods to evaluate public health programs	
Policy in Public Health	

12. Discuss multiple dimensions of the policy-making process, including the roles of ethics and evidence	
13. Propose strategies to identify stakeholders and build coalitions and partnerships for influencing public health outcomes	
14. Advocate for political, social and economic policies and programs that will improve health in diverse populations	Discussed the benefits of telehealth, as well as extensions of different treatment methods like MAT and easier access to Naloxone, and how these options are beneficial not just during a crisis, but for long-term care.
15. Evaluate policies for their impact on public health and health equity	
Leadership	
16. Apply principles of leadership, governance and management, which include creating a vision, empowering others, fostering collaboration and guiding decision making	
17. Apply negotiation and mediation skills to address organizational or community challenges	
Communication	
18. Select communication strategies for different audiences and sectors	
19. Communicate audience-appropriate public health content, both in writing and through oral presentation	Outlined, drafted and finalized a Capstone paper including a literature review, recommendations and implications on opioid abuse treatment during times of crisis. Created a slide deck based on the Capstone paper and delivered an oral presentation at Health Professions Day in front of an interprofessional audience.
20. Describe the importance of cultural competence in communicating public health content	
Interprofessional Practice*	
21. Perform effectively on interprofessional teams	
Systems Thinking	
22. Apply systems thinking tools to a public health issue	

Health Policy Leadership Concentration Competencies

Competency	Description of how Capstone used
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1. Apply economic concepts to understand the effect of changes in policies at the government, health systems, and public health sectors	
2. Synthesize economic concepts to assess equity and efficiency in making health policy recommendations in underserved communities	
3. Formulate efficient health policy change recommendations through the analysis of proposed health policy initiatives that could affect health outcomes of vulnerable populations	Evaluated the existing policies around Medication-Assisted Treatment and how eliminating the waiver requirement for providers when supplemented by additional coursework in medical school would result in more providers being able to perform this type of treatment, and more opioid abusers having access to MAT.
4. Develop recommendations to improve organizational strategies and capacity to implement health policy	
5. Analyze policy options to address environmental health needs at the local, state, and federal levels	