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Short commentary

Rural and Underserved Communities Most Vulnerable to the Rise in Methamphetamine

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Abstract

Methamphetamine use has seen a marked increase nationwide over the last decade. Highly potent forms of methamphetamine are currently internationally illicitly manufactured in great quantities. Methamphetamine is typically very inexpensive and widely available throughout the United States. Methamphetamine is profoundly psychoactive and can have a significant impact on mental health in addition to causing or contributing to multiple acute and chronic medical conditions. Methamphetamine has rapidly become part of the broader overdose epidemic due to co-use alongside of synthetic opioids. Rural and underserved areas of the country are often more vulnerable to overdose deaths and other medical and public health issues associate with substance misuse. These rural areas appear to be disproportionately impacted by this rise in methamphetamine. This commentary describes why rural and underserved communities are uniquely vulnerable to methamphetamine-related opioid overdoses and describes areas that need attention to help address this growing epidemic.

Introduction

The term "Ground Zero" has been adopted by multiple communities and regions throughout the United States to describe the starting point of the opioid crisis. Communities in New England, the West, the Mid-West, the South, Appalachia and elsewhere have laid claim to being Ground Zero for the opioid crisis. Ground Zero, in practicality, should be viewed as a symbolic and collective term to describe those communities that were initially hardest hit by prescription opioid deaths starting in the late 1990s. These earliest impacted communities often had two important things in common: they were rural and they had poor or limited economies. This "First Wave" of deaths shook these communities and disrupted the lives of families and the aftermath continues to have a significant impact locally, regionally and nationally. Subsequent overdose phenomenology including the rise of heroin overdose deaths early in the 2010s and synthetic opioid overdose deaths (primarily fentanyl) later in that decade have affected both rural and urban locations and have deeply impacted people from every walk of life. More recently, a rapid rise in polysubstance overdose involving both synthetic opioids (primarily fentanyl) and synthetic stimulants (primarily methamphetamine) have increased at an alarming rate [1].

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Background: A growing problem

Methamphetamine and other stimulants are the most common co-occurring drug class found in fentanyl-related overdoses in the United States. Psychostimulant-involved overdose deaths increased from 34.5% of opioid overdose deaths in 2010 to 53.5% in 2019 [2]. Many experts now describe the trend in polysubstance overdose as the "Fourth Wave" of the US opioid epidemic. Since methamphetamine can have significant psychoactive effects there is also a need to consider co-occurring mental illness in defining the Fourth Wave [3].

The increase in methamphetamine use in vulnerable communities is multifactorial. Supply has played a critical role as the country has seen a major increase in the availability of cheap, highly potent methamphetamine primarily manufactured in Mexico. There are now very few "meth labs" in the United States and the majority of methamphetamine is manufactured at industrial scale in Mexico via the phenyl-2-propanone (P2P) process by criminal organizations [4]. The P2P methamphetamine that is predominately used now appears to be more potent and cheaper due to the high volume of manufacture vs. the pseudoephedrine-based methamphetamine that was more prevalent in previous decades. There is simply more and more high potency methamphetamine available at lower prices which ultimately makes its way to individuals in communities that are most vulnerable.

The impact on rural communities

The Fourth Wave seems to be particularly problematic for rural areas. It is important to remember that the term "waves" in this context do not recede like waves on the ocean. They continue such as waves of attack in a battle. There are still people that die every day due to overdose from prescription opioids, heroin, and fentanyl without co-use of stimulants. The current overdose phenomenology is unique in that communities that have suffered so much now must endure the convergence of too highly addictive and deadly synthetic substances. Poverty and limited economic opportunities clearly play a role in providing fertile ground for the Fourth Wave. The states of Alaska (66.0%) and West Virginia (59.8%) currently lead the country in opioid-related overdose deaths that also involve methamphetamine [5]. Both states have significant rural populations and difficulty with access to primary care, addiction services, and behavioral health care. Both states also have populations with economic challenges. They are geographically in very different parts of the country, which shows the importance of the vulnerability that is inherent in rural populations given that high rurality is the common feature of these states.

Rural areas tend to have fewer behavioral health professionals, lower population density, less care access and high rates of stigma [3]. Diseases of despair which include drug-related deaths, alcohol-related deaths, and suicide have contributed to progressively less life expectancy since 2010 [6]. People in rural areas die at higher rates from these conditions vs. individuals in non-rural settings. It is clear that the co-use of synthetic opioids and synthetic stimulants are a rising contributor to the ongoing reduction in life expectancy particularly in rural areas. Why people in rural areas use methamphetamine is a challenging and complex question. Using it to feel better or to get high is an easy answer but not the complete story. There is some evidence that people co-use stimulants alongside opioids because they think the stimulant may counterbalance the sedating effect of the opioid. This is unfortunate as the combination actually increases the risk for an overdose death. There is some evidence that people also use stimulants, specifically methamphetamine, when they are unable to procure opioids such as fentanyl [7]. Stimulants and opioids are not cross-tolerant, but people can easily become dependent on both substances. Another important consideration is the Fourth Wave carries a significant mental health toll from methamphetamine which sets it apart from the previous waves.

Mental health shortages and methamphetamine

The Fourth Wave is highlighted by the sometimes-severe mental health effects of methamphetamine. Methamphetamine use either acutely or chronically can generate a vast array of clinical presentations. This can include: psychosis, confusion, self-harm, suicidal thoughts, delusions and other severe neurobehavioral changes. Some of these symptoms are very difficult to distinguish from conditions such as schizophrenia and there is much crossover in symptomology between chronic mental illness and acute or chronic methamphetamine induced psychosis [8]. Stimulant Use Disorder currently has no FDA approved treatment and there is no partial-agonist therapy such as the use of buprenorphine for Opioid Use Disorder. Treatment of methamphetamine induced psychosis is often supportive with an approached similar to treating acute or chronic psychiatric conditions. There has been a great amount of variation in approaches to treatment of stimulant use disorder and methamphetamine induced psychosis. The American Society of Addiction Medicine and the American Academy of Addiction Psychiatry jointly developed Clinical Practice Guidelines on the Management of Stimulant Use Disorder which may help rural and other providers guide initial and ongoing treatment [9].

Persistent psychotic symptoms may require admission to an inpatient facility for evaluation and stabilization. These individuals are not always suitable for admission to a substance dependence treatment facility and often require stabilization in a psychiatric hospital. This is particularly challenging as psychiatric beds (both community and state-ran) have declined nationally leading to a current "psychiatric bed crisis". This has had a deeper impact on rural communities which have seen significant closures of rural psychiatric facilities and critical access hospitals [10]. Access to behavioral health treatment has been even more challenging in the wake of the COVID-19 pandemic and subsequent workforce shortages.

The long-term neurocognitive and psychological ramifications of the increased use of methamphetamine are difficult to predict but the scale of use may seriously impact an already strained mental health system. There are more people that need inpatient mental health and substance use care due to the psychoactive and addicting effects of methamphetamine and there are less beds and resources to provide this care. There is evidence that methamphetamine has had a significant impact on medical costs and morbidity. This is demonstrated by a recent study showing an 840% increase in methamphetamine-related congestive heart failure hospitalization costs from 2008 through 2018 in California [11]. This is just one example from one state and one condition but shows the concern for the long-term economic impact in addition to the disease burden from increased methamphetamine use. Given that methamphetamine effects multiple systems including the potentially long-term neurocognitive and psychiatric effects of chronic use, the economic burden from the Fourth Wave is likely to be profound and could potentially worsen fragile health systems in rural areas.

Conclusion: Next Steps

The most important next step as rural communities, states, policy makers, and healthcare systems address the rise in methamphetamine is to learn from rural communities. While rural communities have been disproportionately impacted by overdose deaths, they have also shown resilience and strength with aspects of recovery and advocacy. There is still a great deal of work to have communities recover from the overdose deaths of the last few decades, but these communities have learned much in this process. Policy makers especially need to liaison with communities to learn success stories and avoid recovery pitfalls. Additional immediate needs include improving research, public advocacy, and investing in evidence based clinical care. A good example is having primary care providers becoming more and more comfortable with addiction care as a whole and developing an informed workforce pipeline to address immediate and future needs. Simply having providers becoming more familiar with the shared ASAM/AAAP Treatment Guidelines [9] is a good step forward.

Developing pharmacotherapy that is effective and lifesaving is critical as well. The FDA establish guidelines for the pharmaceutical industry to explore treatment opportunities for Stimulant Use Disorders in the fall of 2023 [12] which will hopefully lead to treatment options in the near future. There is good evidence for the use of Contingency Management to address Stimulant Use Disorders for underserved populations [13], but the availability of this intervention is very limited due to various reasons such as perceived cost and other implementation challenges. When the Fourth Wave is viewed as a continuum from the previous waves of overdose, it will also be important for policymakers to consider investing in resources from developing sources such as opioid settlement funds to help address problems from stimulants as well as opioids. Finally, from a "big picture" perspective, developing opportunities for improving economic and educational resources in rural and underserved areas is critical given the close relationship between overdose deaths and poverty. Supporting our rural and underserved communities will need to be a high priority as we continue to find solutions to the overdose epidemic.

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