

Date: March 15, 2024



To: Michael J. Ortega, P.E., City Manager

From: Sarah Launius, PhD, Community Safety Health & Wellness Director

Subject: The Road Ahead to Combat the Fentanyl Epidemic

This memo provides a roadmap to address the critical public health crisis of fentanyl and opioid use in Tucson and Pima County.

Introduction

Fentanyl is a potent synthetic opioid approximately 50 times stronger than heroin and about 100 times stronger than morphine. It is often mixed with other illicit drugs like cocaine, methamphetamine, and heroin, which can exacerbate the potential for accidental overdose (Centers for Disease Control, 2022).

According to the Center for Disease Control and Prevention (CDC), over 107,000 people died of a drug overdose in 2021, an increase of almost 15% from the number of deaths in 2020 (Center for Disease Control and Prevention, 2022b). Opioid-related drug overdoses account for over 75% of these deaths, with synthetic opioids (fentanyl) accounting for 66%. The table presented below details fatal overdoses, including those attributed to fentanyl, in Pima County for the years 2019 to 2022 (Source: Pima County Office of Medical Examiners, 2023):



Table 1 Annual Overdose Deaths by Year in Pima County

Year	Fatal	Qty. Involving	Percent
	Overdoses	Fentanyl	Involving
			Fentanyl
2019	337	89	26%
2020	445	207	47%
2021	497	298	60%
2022	495	286	58%
2023 ¹	374	222	59%

In Arizona, a Statewide Public Health Emergency due to the Opioid Epidemic was declared in June of 2017 (Arizona Department of Health Services, n.d.). Despite, the number of reported deaths attributed to fentanyl continues to increase in Arizona. According to the Arizona Department of Health Services (ADHS), more than five people die each day from opioid overdose in Arizona (Mendoza, 2023).

Fentanyl Overdose as a Public Health Crisis

Trends in overdose mortality rates reflect persistent discrimination, income inequality, generational historical trauma, mobility barriers, and high unmet need for services. In 2021, American Indians and African Americans died of overdose at an age-adjusted rate of 104.8 and 62.4 per 100,000, respectively, compared to 49.5 per 100,000 for non-Hispanic whites.

While certain populations are disproportionately affected, fentanyl is not merely a problem confined to specific individuals. Its impacts transcend demographic, socioeconomic, and geographical boundaries, and is a pressing public health issue that reverberates throughout our entire community. Confronting this crisis requires close collaboration among healthcare providers, law enforcement, educators, social service agencies, government agencies, and community members to develop and implement proven promising practices that can effectively combat this epidemic. Jurisdictions must act collectively, pooling expertise and resources to safeguard the well-being of community members and mitigate the devastating impact of fentanyl.

Countless families and friends are grieving the loss of a loved one. As a community, we must look to promising practices and opportunities for innovation to combat the fentanyl epidemic and overdose crisis through education, prevention, and treatment. As we improve efforts to raise awareness and treat substance use disorder (SUD), acknowledging shared pain and supporting healing is critical to advance public health.

¹ The 2023 counts include data last updated on September 27, 2023.



In what follows, you will find a brief review of exemplar promising practices currently in the United States. This is followed by a review of promising practices that are currently underway in Tucson and Pima County, those that are planned and funded or in development pending funding, and those promising practices that are recommended for local study and feasibility review (the status of these local practices are summarized in table format in Appendix A). The promising practices and current actions are not exhaustive but, rather, highlight high impact efforts involving Pima County, the City of Tucson, and multiple partners that provide treatment, support services, and resources to people who use drugs.

A Three-Tiered Prevention Framework

Despite increased funding, improved surveillance and data collection, and attention from policymakers, the opioid epidemic presents an ongoing national public health crisis. Addressing this complex and persistent crisis requires a range of regional approaches that address its multiple causes and effects. Strategies must focus on reducing harm, promoting recovery for people with existing substance use disorders, prevention of initial opioid misuse, and increased enforcement efforts to reduce access to dangerous drugs like fentanyl and methamphetamine.

Many regions throughout the United States have implemented various strategies to confront the opioid crisis, with particular focus on reducing fentanyl use and overdose. While several best practices have been identified, there remains a critical need for the development or discovery of novel initiatives and interventions.

Strategies for addressing the opioid epidemic are categorized within a three-tiered prevention framework:

1. Primary Prevention Strategies: Create Healthy Communities and Prevent Substance Misuse.

Primary prevention strategies create and maintain healthy communities while proactively preventing substance misuse. This includes providing information and support for individuals within their residential communities, and at service access points. Notably, both healthcare systems and individuals stand to gain from increased knowledge and awareness of proper prescribing and use of controlled substances. Elements of primary strategies include:

• Strengthening prevention and education for medical providers, schools, businesses, and community-based organizations.



- Utilizing Prescription Drug Monitoring Data for evaluation and intervention
- **2. Secondary Prevention Strategies**: Diagnose and Treat Substance Use Disorder and Addiction.

Secondary prevention approaches are primarily focused on the early diagnosis and treatment of addictions and substance use disorders. They aim to prevent injury and disease in their early, preclinical stages, and encourage non-judgmental approaches to providing diagnosis and support to individuals using drugs. These strategies encompass:

- Screening, referral and retention in treatment.
- Administering medication for Opioid Use Disorder (MOUD) alongside supportive services.
- Improving access to overdose reversal and expanding naloxone distribution.
- Increasing the education, availability, and ease of use of fentanyl test strips.
- Establishing drug sobering centers and overdose prevention sites.
- Facilitating connections to the justice-involved population with SUD services and providing opportunities for positive, healthy re-entry.
- Utilizing data to strengthen linkages to services and improve outcomes at all points of intercept across service providers, community-based organizations and first responders.
- 3. Tertiary Prevention Strategies: Prevent Sequelae.

Tertiary Prevention Strategies aim to prevent complications and adverse outcomes stemming from opioid misuse, with a primary goal of preventing overdose deaths. These strategies include:

- Exploring the creation of opioid response units for rapid emergency response.
- Engaging in ongoing real-time data collection and data sharing to inform collaborative actions and resource allocation.

Strategies that work across each of the primary, secondary and tertiary prevention strategies must include multijurisdictional coordination, data collection, analysis, data sharing and action.

Ongoing Local Efforts

Pima County is making significant strides in addressing the pressing challenges posed by fentanyl and opioid overdoses. The following initiatives represent the ongoing, collective efforts in a continuous fight against the fentanyl public health crisis.



1. Current Primary Prevention Strategies

A. Youth Prevention and Access to Services

PCHD's Not Alone campaign is a youth designed, anti-stigma campaign that provides access and linkages to free mental health support services and a peer-to-peer support program. For youth under the age of 18, research suggests that co-occurring SUD and Mental Health Disorder (MHD) is more common than not (Hulvershorn, Quinn, & Scotta, 2015; Sverdlichenko, Hawke, & Henderson, 2021). Therefore, programs like Not Alone empower youth to seek mental health help when they need it and provide them with the tools to support themselves and others, while offering a proactive approach to reduce the likelihood of a co-occurring SUD.

Broad-reaching methods such as radio, social media, targeted ads, and trusted messengers were developed with, and continuously informed by youth and for youth. Not Alone has implemented QR codes placed on stickers and posters in areas where youth congregate. Since the Not Alone webpage launched in mid-March of 2023, over 6,000 individuals have engaged with the website to learn about youth mental health and link to COPE Community Services, or the Be There certificate program. The lessons learned can be extended into more aggressive overdose prevention and linkage to care efforts.

PCHD school-supported prevention initiatives include week-long school resource events with multiple schools to distribute Narcan and educational materials for parents/guardians. and a large communication campaign including two Facebook live events with one school district. In 2022, 1,113 youth participated in PCHD substance use presentations, including Rise of Fentanyl and Rx360. In the first six months of 2023, 342 youth participated in PCHD substance use presentations.

PCHD has joined Tucson Unified School District (TUSD), which has recently launched a Substance Abuse Task Force. The task force's objective is to develop programs for substance use/abuse/disorder among school-aged youth in TUSD and make spending recommendations for the JUUL settlement funds over the next 6-7 years. Additionally, Proposition 207 funds (the Smart and Safe Arizona Act) allocated to Pima County Health Department in 2023, are earmarked to address youth behavioral health and substance misuse prevention. These investments strengthen and scale prevention efforts already led by community-based organizations.

B. Prosperity Initiative



The inter-governmental Prosperity Initiative is comprised of the Tohono O'odham Nation, Pascua Yaqui Nation, incorporated areas in Pima County and Pima County Government. Based on national research, the Prosperity Initiative has identified these four policy areas that provide the greatest opportunity to break the cycle of poverty and contribute to growing the wealth and prosperity of the overall region: (1) ensure the availability of jobs that will economically support a household; (2) increase housing stability; (3) provide equitable and effective resources; and (4) build individual and community assets.

The initiative aims to reduce generational poverty and improve opportunities, including strengthening access to unmet service needs. The Prosperity Initiative provides a foundation for a layered approach to combat the fentanyl and the opioid epidemic, and the intersection of overdose mortality rates with historic discrimination, income inequality, generational historical trauma, mobility barriers, and high unmet need for services.

C. Data tracking

PCHD regularly tracks fatal and non-fatal injury data related to overdoses and suicides which includes mortality data obtained from the Office of the Medical Examiner (OME) and Arizona's Bureau for Vital Records, as well as morbidity data from syndromic surveillance, hospital discharge data, community data sharing partners, and other surveillance efforts. Evaluating mortality data enables Pima County Health Department to identify intervention opportunities and informs strategic responses to the overdose death demographic and geographic trends. In 2019, PCHD implemented the first local drug overdose fatality review committee to assist in these efforts. Additionally, PCHD is hiring an epidemiologist to launch overdose surveillance, monitor trends, and hospital data to identify more effective interventions to reduce overdoses.

The publicly accessible Pima County OME interactive overdose mortality dashboard is updated monthly and has provided this data to the public since 2022. Tucson Fire Department and Tucson Police Department also track overdose calls for service and their distribution of naloxone. This data is used to inform strategic overdose prevention efforts, improve emergency medical services, and engage individuals with treatment and other service options. PCHD and ADHS implemented this data tracking strategy in 2018.

2. Current Secondary Prevention Strategies



A. Justice-involved populations

The Pima County Jail has operated detox units for detainees at risk of withdrawal from substances along with an off-site program for pregnant persons to access MAT and reduce complications of untreated OUD during pregnancy. The Pima County Jail has recently resumed MAT services with a new medical service contractor within the jail. Individuals who have been receiving methadone, buprenorphine, and naltrexone prior to booking continue to receive the same care. Medical services in the jail conduct on-site MAT inductions to all detainees who meet criteria request the service. This service is coordinated with a MAT discharge planner and a Behavioral Health Peer MAT navigator.

Correctional officers are trained to administer Narcan provisioned within the housing pods. All individuals released from a jail or prison receive naloxone take-home kits under a Pima County supported strategy.

B. Quick Response Team and Deflection

Tucson Police Department's Substance Use Resource Team (SURT)² pairs officers with peer support specialists from CODAC for outreach, resulting in deflection of over 200 individuals into treatment and away from the criminal justice system in 2022. Additionally, SURT engages in follow-up with individuals who have experienced a non-fatal overdose within 72-hours to support navigation into substance use treatment.

C. Leave Behind Narcan

Tucson Fire Department and TC-3 operate the Leave Behind Narcan program to support fire crews to leave behind the overdose reversal treatment as they conclude their response to these calls. Tucson Fire Department responded to nearly 3,000 overdose calls in 2022. Additionally, TC-3 engages in focused outreach with naloxone in areas experiencing frequent EMS overdose calls for service. In 2022, 1,320 doses were distributed.

D. PCHD's Community Mental Health and Addiction Team

Established in 2018, CMHA is dedicated to addressing the opioid and fentanyl overdose crisis and eliminating overdose deaths and injury. The program conducts surveillance of trends related to self-harm, deaths by suicide, fatal and non-fatal drug overdose, and neonatal abstinence syndrome, and delivers evidenced-based interventions based on a data-to-action

² SURT has been combined into a new TPD unit called Community Outreach Resource Engagement or CORE.



framework. CMHA distributes naloxone to community-based organizations and recently added fentanyl testing strips in June 2022. PCHD's CMHA is the primary source for these opioid prevention supplies in Pima County. CMHA currently has 12 full-time positions supporting substance misuse interventions.

PCHD began conducting post-overdose response services as part of a previous grant through ADHS. Public health case managers work with a dedicated CMHA epidemiologist to identify reported overdoses and respond to offer support and linkage to care services. This program is also relatively new (first year) and very little data exists to this point to track effectiveness. We anticipate by year two these trends should begin to emerge if successful.

E. Targeted Outreach in High-Risk Overdose Areas

PCHD's Community Mental Health and Addiction unit (CMHA), TPD/SURT, TFD/TC-3 and Community Safety Health and Wellness (CSHW) coordinate outreach in areas of high rates of overdose calls for service or fatal overdoses. By cross-referencing different datasets available to each entity, we are better able to focus our resources to have impact.

F. Pima County Libraries Access Point

In partnership with PCHD, Pima County Libraries are serving as an access point to the community for naloxone, fentanyl test strips and educational materials to provide family members with early signs and symptoms of substance use disorder and other supportive services. The CMHA staff support these efforts by supplying free Narcan and providing harm reduction and overdose response trainings to library personnel.

G. Local Progress To-Date

In 2022, Pima County Health Department and partners distributed 12,629 naloxone kits - up 50% from the previous year. Pima County initiated overdose response protocols and naloxone trainings for local schools and launched an assertive overdose prevention response in partnership with the Pima County Superintendent and public and private schools to address teen overdose deaths. A year after the launch, teen overdose deaths were reduced by more than 60%. In addition, PCHD added two public health case managers to provide linkages to care for people with SUD and Implemented the Strengthening Families Program to support families in helping address their youth's substance misuse and mental health needs. Additionally, PCHD



increased treatment/support capacity for opioid-involved pregnant and postpartum women.

H. Early Alert System and Data Coordination

In tandem with various law enforcement agencies, PCHD aims to integrate overdose and drug seizure data to trigger early public notifications when high levels of fentanyl are suspected to be circulating in the community. This early notification system will improve the timeliness of public advisories and targeted outreach efforts to prevent overdoses.

Proposed Programs and Opportunities

Significant opportunities have presented themselves to combat the fentanyl and opioid overdose crisis in Pima County. By addressing risk factors, optimizing early intervention, and extending vital support to affected individuals, our community can make substantial progress in reducing the impact of substance misuse and preventing overdoses. These comprehensive strategies underscore our dedication to safeguarding the well-being of our community.

1. Opportunities for Primary Prevention

A. Implement a Joint Cross-Jurisdictional Fentanyl/Opioid Coordinating Committee

A proposed Joint Cross-Jurisdictional Fentanyl/Opioid Coordinating Committee and centralized infrastructure will facilitate a comprehensive approach to the current crisis. Engagement of partners for successful regional planning and response is essential to ensure a coordinated way to review and critically evaluate proposed recommendations and actions. with data collected, analyzed, and used for ongoing response and improvement. This model is a proven public health approach and was used successfully during the pandemic in Pima County and aligns well with the proposed community-driven cross-sector partnerships.

B. <u>Initiate Coordinated, Accessible, Responsive, Equitable and Safe System (Pima</u> CARES)

PCHD has received funding for a CDC Overdose to Action Local Grant to ensure an accelerated response to the surge in overdose deaths and injury in Pima County, Arizona through a five-year award of approximately 12.5 million dollars. This award will extend PCHD's response and ensure inclusion of community members, public safety agencies and health care practitioners. Pima CARES will expand efforts to target youth, including extending PCHD's current work to



place Program Coordinators and Navigators at schools and with community-based organizations providing training, implementing overdose response plans, and supplying naloxone.

2. Opportunities for Secondary Prevention

A. <u>Improve Overdose Prevention and Drug Threat Coordination</u>

Pima CARES will support efforts to significantly extend the peer navigator workforce by hiring PCHD's first tribal OD2A liaison, case managers, Community Health Workers, and program coordinators. Work will centralize and complement coordination to reduce fatal and non-fatal overdoses and address emerging drug threats, high-risk opioid prescribing, and other harms associated with substance use.

B. Address Justice-Involved Populations

Pima County Justice Services has initiated new programs within the Pima County Jail, including transition center services. These efforts are designed to facilitate the connection of individuals who are released from the Pretrial Service prebooking process or the jail facility with social services agencies. This support aims to enhance engagement with treatment services for individuals facing both felony and misdemeanor charges, especially those with a history of frequent rearrests. The overarching goal of establishing this module is to minimize the involvement of individuals in the justice system.

C. <u>Increase Linkages to Treatment</u>

Through strategic investments and partnerships, Pima CARES will strengthen key linkages to care to support a full continuum of care of recovery services for OUD and target outreach and navigation supports to high-risk communities, including expanded navigation services to individuals upon release from institutions.

With approved funding, the presence of Peer Navigators, Community Health Workers, and Case Managers in hospitals and clinics throughout Pima County will increase along with linkage and retention services at additional healthcare organizations in areas not currently served. Pima CARES will fund expansion of standardized screening for mental health/substance use needs, referrals to internal navigators and warm transfer to care providers. Expansion of 24/7 MAT availability and navigation support connected to an Emergency Department is also part of the Pima CARES rapid response.

D. Expand Medication Assisted Response/Treatment



PCHD is evaluating the ability to expand MAT access through 16-hour, 7-day staffing with initiation of MAT through PCHD and follow-up referral care to community-based organizations. This is building on the success of an initial program sponsored by the Chicago Public Health Department.

3. Opportunities for Tertiary Prevention

A. Expand Linkages for High-risk Communities

Pima CARES funding will expand peer support and case management at homeless camps, bus transit centers, and rural sites to allow for linkages to care, harm reduction services, and Narcan distribution. Currently, Pima County has limited resources to conduct such activities.

Additionally, Pima CARES will place navigators and Community Health Workers at libraries and at PCHD's Life-Point Needle Exchange to support distribution of Narcan and fentanyl testing kits and linkages to other services.

Recommendations

We remain hopeful, considering that several evidence-based promising practices are already in the initial stages of implementation in Pima County and the City of Tucson. The following 10 recommendations collectively underscore a holistic approach to address the fentanyl crisis in Pima County.

1. Develop Culturally Competent Popular Education Tools and Communication Campaigns

A lack of education coupled with stigma about both mental health and substance use contributes to the many unmet needs of people with co-occurring SUMHD. We propose the development of a regional, strengths-based, and culturally competent education and messaging campaign around the connection between mental health and substance use to include early signs and symptoms, well-being practices, and availability of locally accessible tools, services and resources. This campaign may leverage the current anti-stigma campaign that has been currently funded at PCHD.

Individuals with lived experience will play an important role in developing educational and messaging tools. The stories of individuals with lived experience can be a powerful tool in raising awareness and destigmatizing access to care. By making access to the information available through nationally certified curriculum such as Mental Health First Aid more readily accessible to residents of Pima County with lived experience, we can strengthen the role of natural supports (friends, family, community) as an avenue to combat the fentanyl epidemic and



strengthen a culture of care and well-being. This approach also provides a framework to address the impact that the fentanyl crisis has had on individuals, families, and the community.

2. Establish a Fentanyl/Opioid Coordination Team

In this moment, a whole-of-government, community-led approach is needed to inform current activities and develop out-of-the-box solutions to the overdose crisis. We recommend that a cross jurisdictional, cross-sector, PCHD-convened response team be assembled and supported by the City of Tucson to coordinate opioid response and reduce overdose-related morbidity and mortality.

3. Strengthen Community Driven Cross-Sector Partnerships

Non-profits, faith-based communities, and community coalitions are critical partners for successful regional planning to identify hotspots and mobilize effective and targeted harm reduction. We recommend that this cross-sector partnership follow a collective impact model with a dedicated staff to facilitate a process to guide partners to develop a common agenda, shared metrics, and complimentary activities that support the overall vision for change.

4. Expand Post-Overdose Interventions

Follow-up with Peer Support Specialists following a nonfatal overdose is best practice. Currently TPD does not have the capacity to conduct follow-up at the scale needed. We propose that, as an extension of current practices and as a compliment to Pima CARES, a public-private harm reduction team comprised of Community Based Organizations, Substance Use Treatment and Navigation Services, PCHD, CSHW and Public Safety partners be convened to provide rapid follow-up and navigation to services within 72 hours of a non-fatal overdose based on calls for service review. This team will expand the number of people and organizations engaged in nonfatal post-overdose follow-up and reduce the amount of time SURT officers are taken away from responding to active calls for service.

5. Strengthen Individual and Family Trauma and Recovery Support

In Tucson and Pima County service partners are providing meaningful support to individuals and families living with trauma due to substance use disorder and the loss of loved ones to overdose. We recognize that more is needed. We recommend a coordinated effort with local partners—faith communities, community-based organizations, social service providers, etc.—to reach the scale of the need for trauma and recovery support in our community.

6. Implement Opioid Interventions within the Emergency Response System We recommend a regional review of Emergency Opioid Response Units



functioning within the emergency response system along with the potential to engage in MOUD treatment in a pre-hospital setting.

7. Explore RISE (Recover, Initiate, Support, Engage) or Similar Centers

24/7 drug sobering centers can be an important part of a robust regional overdose prevention plan, welcoming intoxicated people who are struggling with substance use from the streets to a safe place indoors with access to low barrier therapy. We recommend this approach be reviewed for potential implementation in Tucson or Pima County.

8. Study Rapid Access to Behavioral Health Residential Care

Rapid access to behavioral health residential care with step down beds is a significant need in Tucson and Pima County. We recommend that the potential for a referral network as well as a potential facility be studied locally to include State of Arizona AHCCCS, ADHS and other relevant stakeholders and potential funders.

9. Train Frontline Staff in Overdose Prevention

Combatting fentanyl requires a regional response that starts with our frontline public servants. We propose training frontline staff and contractors of Pima County and the City of Tucson to be trained in overdose prevention and to have access to Narcan to prevent overdose when needed. Other regional jurisdictions and Tribal Nations are invited to participate.

10. Openness to Invest in Innovation

Just as the ubiquity and low-cost of fentanyl is resulting in emergent dynamics, we know that our solutions must continue to adapt and innovate. For that reason, we recommend investing up to 10% of Opioid Settlement funds received by Pima County and the City of Tucson be set aside for innovative investments that will be vetted and evaluated through the Substance Misuse Advisory Committee.

Conclusion

The fentanyl crisis continues to profoundly impact our community and demands urgent attention. The statistics are alarming, and we must acknowledge that shared pain and collective support are fundamental to advancing public health. However, it is our unwavering resilience and collective commitment to overcome these challenges that give us hope.

We are experiencing a public health crisis that extends beyond demographic, socioeconomic, and geographic constraints, rendering it an issue that impacts our entire community. In response, we must come together, fostering cross-jurisdictional



collaboration, and collectively develop and implement promising practices to effectively combat this epidemic.

We commend our community's unyielding spirit and commitment to confronting the fentanyl crisis. In the face of this ongoing challenge, we have demonstrated our capacity for adaptation and innovation. By pooling our expertise and resources we are able to work toward a safer and healthier future for our community.

Respectfully submitted,

Sarah Launius, PhD Community Safety, Health & Wellness Director

Cc: Theresa Cullen, MD, MS
Pima County Health Department Director



Bibliography:

Centers for Disease Control and Prevention. (2022). Polysubstance use facts. CDC.gov. Retrieved October 8, 2023, from https://www.cdc.gov/stopoverdose/polysubstance-use/index.html

Center for Disease Control and Prevention (May 11, 2022b). U.S. Overdose Deaths In 2021 Increased Half as Much as in 2020 – But Are Still Up 15%. https://www.cdc.gov/nchs/pressroom/nchs_press_releases/2022/202205.htm.

Hulvershorn, L. A., Quinn, P. D., & Scotta, E. L. (2015). Treatment of Adolescent Substance Use Disorders and Co-Occurring Internalizing Disorders: A Critical Review and Proposed Model. *Curr* Drug Abuse Rev. 2015; 8(1): 41–49. doi: 10.2174/1874473708666150514102745.

Mendoza, N. (2023). Arizona Opinion: Arizona makes significant strides in combating opioid crisis. Arizona Daily Star. https://tucson.com/opinion/local/arizona-opinion-arizona-makes-significant-strides-in-combating-opioid-crisis/article_0c1b78ac-eac5-11ed-a1bf-479747543d78.html.

Pima County Office of the Medical Examiner. (2023). Overdose Death Dashboard. https://app.powerbigov.us/view?r=eyJrIjoiMjU4NGYxMGYtZmQ5Yi00OTdhLTkzZTYt https://ogziZDZiYzg4OGU3IiwidCI6IjMzYjZlMmMzLTBiMWEtNDg3OS1iNzQxLTQ3NDYxYTZjMWE4OSJ9

Sverdlichenko, I., Hawke, L. D., & Henderson, J. (2021). Understanding the service needs of youth with opioid use: A descriptive study of demographics and co-occurring substance use and mental health concerns. Journal of Substance Use and Addition Treatment, 132(2022), 108592. DOI: https://doi.org/10.1016/j.jsat.2021.108592.

Recommended and Promising Practices

Primary Prevention Strategies: Create Healthy Communities and Prevent Substance Use	Under Review	Planned Pending Funding	Planned & Funded	In Process
Early Alert System and Data Coordination of overdose and drug seizure data			x	x
Multijurisdictional data collection, analysis, sharing and action	X		x	x
Recommendations for and improved access to non-opioid pain treatment models			х	x
Strengthen culturally competent prevention and education for medical providers, schools, businesses, and community-based organizations addressing mental health and substance use.			x	x
Utilize of Prescription Drug Monitoring Data for evaluation and intervention			х	
Prosperity Initiative				х
Youth prevention and access to services: Not Alone Campaign, etc.			х	х

Secondary Prevention Strategies: Diagnose and Treat SUD and Addiction	Under Review	Planned Pending Funding	Planned & Funded	In Process
Expand Post-overdose Interventions		х		х
Expansion of Medication Assisted Response/Treatment through 16-hour, 7-day staffing with initiation of MAT through PCHD and community support	x	x		
Fentanyl/Opioid Response Team	x			x
Improved Overdose Prevention and Drug Threat Coordination to reduce fatal and non-fatal overdoses and address emerging drug threats, high-risk opioid prescribing, and other harms associated with substance use.			x	x
Justice-involved populations programs				

· Transition Center Pilot Program launched by Pima County with support from City of Tucson to provide navigation to services for individuals leaving pre-trial services or custody from the Pima County Jail (with data coordination with Pima CARES).				V
Di				X
· Pima County Behavioral Health MAT induction within PC Jail			Х	
Linkages to Treatment to support a full continuum of care of recovery services for OUD and target outreach and navigation supports to high-risk communities		x		x
Multijurisdictional data collection, analysis, sharing and action	V	X		v
Pidicijansaictional data conection, analysis, sharing and action	X	^		Χ
Rapid Response Coordination Review	X			
Strengthen Community Driven Cross-Sector Partnerships		x		x
Syringe exchange				x

	Under	Planned Pending	Planned &	In
Planned Tertiary Prevention Strategies: Prevent Sequelae	Review	Funding	Funded	Process
Create opioid response units for response to emergency calls.	x			
Creation of drug sobering center(s) in high need areas	x			
Diversion and Deflection connections to treatment		х		х
Education and guidance on MOUD practices to support treatment retention	x			
Individual and family trauma and recovery support		Х		х
Investment in Innovation	х	Х		
Linkages for high-risk communities to expand peer support and case management to support linkages and delivery of care.		x		x
Empower frontline staff to prevent overdose deaths	x			
Prevention and treatment for pregnant people			x	x
Publicly accessible resource hubs and trainings (Mental Health First Aid)		x		x
Regional Coordinating Committee response and planning				х
Targeted outreach and marketing to reduce stigma			x	x





Promising Practices to Combat the Fentanyl Epidemic from Other Jurisdictions

Exemplar Promising Practices

Effective opioid prevention strategies are crucial in addressing the ongoing opioid epidemic. The following best practices encompass primary, secondary, and tertiary prevention strategies, aiming to create healthier communities, diagnose and treat substance use disorders, and prevent opioid-related complications. They align with the CDC's recommendations for evidence-based strategies that can assist community leaders in navigating effective ways to prevent opioid overdose in communities (Centers for Disease Control and Prevention, 2022). By considering these strategies, Pima County can make substantial progress in mitigating the impact of opioid misuse and promoting public health.

1. Promising Practices for Primary Prevention

The risks associated with opioid use start long before initial misuse, and addressing risk factors is more cost-effective than providing treatment and recovery services (Miller and Hendrie, 2008). Effective prevention begins with a focus on creating and maintaining healthy communities and proactively preventing substance misuse. A key component of primary prevention best practices involves strengthening prevention and education initiatives in schools, medical providers, businesses, and community-based organizations. The following examples illustrate exemplar primary prevention strategies in other jurisdictions:

A. Strengthening Prevention and Education for Schools

One promising primary prevention strategy is programming and education for school-aged children. Arizona's 2018 Substance Abuse Prevention Programming Inventory (SAPPI) survey revealed that 72% of schools that participated in the survey did not provide substance abuse prevention programs, and schools that did provide programs only started doing so in the past few years (Clark & Mully, 2018).

Research suggests that addressing modifiable childhood and adolescent risk

and protective factors¹ can reduce substance use risk. A comparison of the 2018 SAPPI survey and the 2022 Arizona Youth Survey (AYS) on 51,448 8th, 10th, and 12th grade students from 301 schools across all 15 counties in Arizona (Arizona Criminal Justice Commission, 2022) reveals a disconnect between risk and protective factors identified by schools and factors identified as being important by students.

For schools that had substance use prevention programs, SAPPI survey respondents reported that the programs were designed to address risk factors including academic failure; family conflict; family history of antisocial, high risk or drug related behavior; favorable attitudes towards drug use; and friends' use of drugs. The top risk factors identified by students in the AYS survey, however, included slight or no perceived risk of drug use, low school commitment, and low neighborhood attachment. Similarly, while the top protective factors prioritized by schools were academic skills, healthy beliefs, clear standards for behavior, and belief in a moral order, students felt the most critical protective factors they lacked were prosocial involvement in school, opportunities for prosocial involvement with family, and a belief in the moral order (i.e., what is "right" and "wrong," 55.5%). Bridging the gap between student experiences and school perceptions is critical to ensuring prevention programs target the greatest needs. While schools may struggle to address risk factors outside the school walls, they are better equipped to influence the priority protective factors identified by students that relate to the environmental and personal factors that influence youth relationships with their peers and to themselves, or the peer-individual domain.

Community-wide education is also critical to reversing the opioid epidemic. Two of the three solutions to substance use disorder identified by the 2021 Pima County Health Needs Assessment involved education, specifically education that decreases stigma around substance use, and education on overdose and fentanyl. "Increasing education on overdose and substance use can help to not only increase control and knowledge on overdose but can also decrease stigma" (Arizona Prevention Research Center, 2021, p. 85). Key informants for the Needs Assessment noted that education should be focused on harm-reduction and overdose prevention, and not involve scare tactics.

¹ Risk factors are environmental or personal factors that may make a youth more likely to engage in substance misuse. Protective factors are those environmental or personal factors that reduce the likelihood of substance misuse.

Some promising prevention campaigns seek to engage communities at higher risk of exposure to fentanyl and potential overdose, while including strengths-based messaging to support de-stigmatization. Washington State's Health Care Authority's Friends for Life Overdose Prevention Campaign targets youth and young adults. Similarly, the Indian Country ECHO program and Northwest Portland Area Indian Health Board (NPAIHB) Tribal Opioid Response Consortium provide education materials designed for tribal community members.

B. Utilizing Prescription Monitoring Program (PMP) for Evaluation and Intervention

Prescription Drug Monitoring Programs (PMP) collect data on controlled substance prescriptions at a state level (schedules II-V). This information assists healthcare providers in making better-informed care decisions when treating patients. The PMP also helps prevent the diversion and misuse of controlled substances at the provider, pharmacy, and patient level through the monitoring process. Data can successfully be utilized by Public Health Departments with skill and experience in appropriately obtaining, protecting, and utilizing confidential health data. Improved sharing and analysis of PMP data can inform strategies for responding to the opioid overdose epidemic and help ensure that evidence-based interventions are efficiently and effectively targeted.

Recent successes in Kentucky, Pennsylvania, and West Virginia have shown that PMP data can be used to target interventions where they are most needed. PMP data can be leveraged to identify geographic areas with higher rates of opioid dispensations, areas with disproportionately fewer providers and pharmacies offering OUD treatment medications to help guide interventions. State and Local Health Departments may assess current barriers to utilizing PMP data and develop methods to access and use PMP data in an ongoing fashion to inform and advance the jurisdiction's response to the opioid epidemic.

2. Promising Practices for Secondary Prevention

Secondary prevention strategies prioritize early intervention to prevent injury and disease in the preclinical stages. Key practices in this category include providing non-

judgmental services and acknowledging the real-life trauma that can come from the use of illicit drugs. These approaches aim to address the immediate needs of those affected by substance use disorders and addiction. The following are promising practices utilizing secondary prevention approaches:

A. Medication for Opioid Use Disorder (MOUD) Access and Supportive Services

An overdose prevention plan issued by the San Francisco Health Department includes strategies increasing engagement, treatment capacity, and temporary residential services. They have introduced a plan to open Wellness Hubs offering preventive and harm reduction tools along with needed services. San Francisco is also establishing a drop-in space with low-barrier therapy for people experiencing homelessness, a new 250-bed behavioral health residential care and treatment facility, including a 24/7 drug sobering center and 70 step-down beds.² In San Francisco's South of Market (SoMa) and Tenderloin neighborhoods, the SoMa RISE facility welcomes intoxicated people who are struggling with substance use from the streets to a safe place indoors. At SoMa RISE, participants have access to clean bathrooms, showers, food and a place to rest. Staff help participants connect with medical care, mental health and substance use and housing services. The center focuses on safety for both participants and neighbors by creating a safe place for people experiencing a drug related crisis.

B. Medication for Opioid Use Disorder Practices for Treatment Retention

In addition to connecting individuals in treatment with core support services for better outcomes, there are several practices related to where, when, and how to administer MOUD to increase the likelihood of successful treatment interventions.

Local governments and public health departments are providing guidance to health providers related to opioid prescriptions and coordinating with them to improve MOUD access. In San Francisco, the city's health department coordinated with major hospitals to provide medications for addiction treatment and access to contingency management³ programs for patients with a SUD. Practices related to

² Step-down beds provide stability for individuals experiencing or at risk of homelessness to support ongoing outpatient treatment for substance use disorders. These are typically used as individuals are leaving residential treatment or other residential institutions.

³ Contingent management interventions use incentives to encourage behavioral change.

MOUD such as micro dosing of buprenorphine show promising findings to reduce precipitated withdrawal and therefore support individuals to remain in treatment (Adams et al., 2021). Low dose buprenorphine initiation shows promise in safely supporting patients to avoid withdrawal while building up to a higher dose of buprenorphine and eventually replacing the use of other opioids such as fentanyl (Rozylo et al., 2020).

EMS initiated Medication for Opioid Use Disorder has shown promising results in high-risk patients who typically refuse transport to hospitals following an overdose reversal. A recent peer-reviewed study finds that the use of buprenorphine by emergency medical services in the field results in over 97% of individuals accepting transport to a hospital emergency department, in the short-term no one experienced withdrawal related to treatment, a major contributor to treatment denial, and after 30 days 36% retained treatment (Hern et al., 2022). In Camden, New Jersey, Cooper University Health Care initially tested the use of buprenorphine by EMS in a pre-hospital setting through the Field Initiation of Rescue Treatment by EMS (Bupe FIRST). Individuals in this program who experienced a nonfatal opioid overdose were provided buprenorphine on site by EMS personnel, connected with addiction resources and provided a same-day or next-day treatment appointment. The Bupe FIRST pilot found a 6-fold increase in treatment retention for patients in the following 30 days (Carroll et al., 2020).

C. Overdose Reversal and Naloxone Distribution

Overdose prevention education and naloxone/Narcan distribution is a cost-effective overdose prevention approach (Young, 2012). The cost-benefit of naloxone distribution improves with community-based distribution (Cherrier, et al., 2021). A Rhode Island study found that targeted community distribution of naloxone to intravenous drug users and other high-risk groups and in high-risk geographic areas offered the best and lowest cost outcomes (Zang, et al., 2022). Making naloxone available to first responders as well as individuals most likely to witness an overdose, is most effective at overdose prevention and resource maximization (Townsend et al., 2019). Naloxone access via health providers also has modest benefit when targeted toward high-risk prescription opioid users (Acharya et al., 2019).

While supply of overdose reversal medications can be a barrier, increasingly many local governments and prevention coalitions seek to make naloxone access as routine as AED access, and knowledge of how to use it as common as CPR or the Heimlich maneuver.

D. Syringe Exchange Programs

Fentanyl is typically smoked or injected. As intravenous use of heroin and fentanyl have increased, many states are using syringe exchange programs to reduce the spread of HIV, viral hepatitis, and other blood borne pathogens from needle reuse. In addition, syringe exchange programs support an entry into other services, including the opportunity to discuss addiction treatment options.

E. Fentanyl Test Strips

Access to fentanyl test strips is still relatively new and early findings are promising. In San Francisco, the test strips promoted increased fentanyl awareness and encouraged safety precautions to prevent overdose. A North Carolina program found that 81% of individuals with access to test strips routinely used them (Minnesota Department of Health, 2021). In most areas, fentanyl test kits are being added to existing naloxone or Narcan distribution efforts and treatment navigation services. For instance, in 2021, Philadelphia trained 1,000 individuals on how to administer naloxone and distributed 120,000 fentanyl test strips.

In 2017, Las Vegas began placing syringe vending machines in key health and treatment locations across the city. Now these machines also supply Narcan and fentanyl testing strips. Increasingly, vending machines are being introduced as a tool to make Narcan nasal spray and fentanyl testing strips more available (Perrone, 2023).

In Minneapolis, Boston, Denver, and Austin, where mobile needle exchange programs previously existed, these same programs are also providing Narcan, fentanyl testing strips, safe sex kits and rapid HIV tests.

Targeting high-risk populations for fentanyl testing strips is a best practice. Increasingly, large music events and nightclubs offer an opportunity to engage in life-saving fentanyl awareness where recent clusters of drug-related poisoning and overdoses have occurred (Palamar, et al., 2021). Nonprofits like DanceSafe provide drug testing and public health information at music venues and nightclubs to

combat the likelihood of an overdose due to fentanyl contamination (Farmer, 2022).

F. Healthcare Facility Testing for Fentanyl

States such as Kentucky have state hospitals and clinics offer toxicology testing for consumers who desire to have drugs tested for fentanyl. This allows individuals to take the necessary steps to protect themselves. West Kentucky saw a decrease in the risk of infectious disease and overdose and an increase in referrals to substance use treatment and recovery services. This harm reduction approach, paired with quick response teams, allowed engagement with individuals who would otherwise have limited healthcare access.

A Prescription Drug Abuse Task Force in San Diego created a tool kit for hospitals that recommended fentanyl testing to be included on all urine drug screens. This increases fentanyl awareness among providers and patients and provides critical information to inform inpatient care and best outcomes. Over 60% of San Diego's hospitals implemented fentanyl testing within the first ten months of the project (Lev, 2022).

G. Justice-involved Population and Substance Use

The Philadelphia Department of Corrections created a pilot program in 2018 that distributed MOUD to incarcerated female opioid users. MOUD involves a combination of medications that target the brain, and psychosocial interventions (e.g., counseling, skills development) aimed at improving treatment outcomes both while incarcerated and continued in community settings following release. The 40-fold increase in overdose deaths in the first two weeks of release from incarceration illustrates the need to offer support and connection to care to individuals immediately after release. In California, individuals being released from incarceration are provided overdose prevention and resuscitation training, as well as two doses of Narcan.

In 2019, the state of Maine implemented a MOUD program to better assist incarcerated individuals suffering from opioid use disorder. The state contracted with vendors for provision of transitional care to individuals being released back into the community. These services include access to MOUD/MAT programs, peer

recovery, group therapy, nurse case manager services, and any other case management necessary for successful reentry.

The City of Denver recently opened the Assessment, Intake, and Diversion Center that provides access to treatment and supportive services for individuals with active warrants for low-level, non-violent crimes and who face challenges accessing supportive services and housing. Through the center, individuals referred by law enforcement or alternative first responders can access housing navigation, case coordination, food and hygiene supplies, mental health support, substance misuse and sober living services, veterans' services and employment services.

H. Overdose Prevention Sites

Overdose Prevention Sites (OPS) are places designed to allow individuals to use opioids while simultaneously preventing drug overdose deaths, reduce the risk of harm related to drug use, provide health services to people who use drugs and reduce drug-related crime in the areas where they operate. OPS staff prevent a fatal overdose as soon as overdose symptoms appear. OPS reduces injection site-related illnesses and injuries. The first sanctioned OPS in the United States opened in late 2021.

There are currently two OPS in New York State, in East Harlem and Washington Heights, where many heroin overdoses occur. Harocopos, et al. (2022) found that of the nearly 6000 visits by more than 600 individuals, 75.9% reported that they would have used their drugs in a public or semipublic location if OPC services had not been available. OPS also provides access to sterile syringes, health care, sterile paraphernalia, HIV and Hepatitis C testing, education, and counseling to reduce the potential harms associated with drug use and needle-sharing. While studies on international OPS are more extensive, Samuels et al. (2022) encourage multifaceted evaluations in the U.S. context and urge OPS to be seen as part in a robust, person-centered approach to reduce overdose deaths.

3. Promising Practices for Tertiary Prevention

Tertiary Prevention Strategies aim to prevent complications and adverse outcomes stemming from opioid misuse, with a primary goal of preventing overdose deaths. Key

practices in this category include comprehensive addiction counseling and therapy, peer support groups, vocational training, and access to stable housing and other social services to support recovery and prevent relapse. The following are promising practices utilizing Tertiary prevention approaches:

A. Quick Response Teams or Post-overdose Response Team⁴

Quick Response programs are typically community-based initiatives addressing the opioid overdose crisis. They provide rapid support to overdose survivors, combining medical interventions like naloxone with referrals to treatment and emotional support, with follow-up within 72 hours of a non-fatal overdose. These teams aim to reduce subsequent overdoses and save lives by providing harm reduction strategies along with treatment options.

San Francisco launched the Street Overdose Response Team (SORT) in August of 2021. A collaboration between San Francisco Department of Public Health and the San Francisco Fire Department, the Street Overdose Response Team (SORT), is an immediate, street-based response for people experiencing homelessness who had a recent, non-fatal overdose. The team includes a Community Paramedic, a Street Medicine Clinician, and other specialists and peer counselors who engage with the individual immediately after the overdose and then on the day after the overdose, continuing to offer engagement, care coordination, and low barrier treatment, including MAT.

Monroe County, New York created a 24-7 IMPACT team to engage in community outreach conducting face-to-face visits with individuals who have experienced an overdose in the last 48 hours. The IMPACT team also offers street outreach, providing overdose prevention education and information regarding treatment options and services. The team also provides naloxone training in the community.

Most Quick Response Team (QRT) or Post-Overdose Response Team (PORT) programs are comprised of both public health and public safety personnel for outreach events within 72-hours of a non-fatal overdose. The form of collaboration can vary from having public safety personnel only providing 911

9

⁴ Pima County Health Department and The Tucson Police Department operate portions of an Opioid Response Unit or Quick Response Team, yet we know gaps remain due to low capacity. Additionally, the Tucson Fire Department has a "Leave behind Narcan" program.

information to public health partners or peer-support specialists for follow-up, to some programs that include only public safety personnel involved in outreach. Others utilize a wide variety of behavioral health personnel, harm reduction staff, clergy, and community health workers, among others (Grayken Center for Addiction, 2023).

B. Real-Time Data Collection and Utilization

Many states have implemented real-time data collection to identify where opioid overdoses are occurring and prioritize interventions and resources in those areas. While these approaches are still too new to offer findings, public-facing dashboards have the additional benefit of supporting public awareness. Monroe County, New York, for example, has implemented real-time data collection to map concentrations of opioid overdoses, which it shares with local law enforcement. Summary data is made available through a public dashboard.

Hennepin County, MN launched an interactive dashboard to raise awareness of overdose deaths as part of a broader prevention and awareness strategy. Dashboard users are also provided information on places to access naloxone, syringe programs, treatment, and other services. King County, WA maintains a public-facing dashboard of both fatal and non-fatal overdose deaths.

Conclusion

In conclusion, the exemplar promising practices outlined above encompass a comprehensive approach to combat the fentanyl epidemic across various jurisdictions. By integrating primary, secondary, and tertiary prevention strategies, communities can strive towards creating healthier environments, diagnosing and treating substance use disorders, and preventing opioid-related complications. These practices, aligned with evidence-based recommendations from the CDC, offer insights for Tucson and Pima County to make significant strides in addressing opioid misuse and promoting public health.

Through proactive prevention efforts, early intervention strategies, and comprehensive support services, communities can work together to mitigate the devastating impact of the fentanyl epidemic and foster safer, more resilient communities for all residents. By embracing innovative approaches and leveraging community partnerships, Tucson and

Promising Practices to Combat the Fentanyl Epidemic from Other Jurisdictions

Pima County can build upon these promising practices to develop tailored solutions that address the unique needs of its population and enhance the overall well-being of its residents.

Promising Practices to Combat the Fentanyl Epidemic from Other Jurisdictions

Bibliography:

Acharya, M., Chopra, D., Hayes, C. J., Teeter, B. S., & Martin, B. C. (2019). Cost-Effectiveness of Intranasal Naloxone Distribution to High-Risk Prescription Opioid Users. Value in Health, 23(4), 451–460. https://doi.org/10.1016/j.jval.2019.12.002.

Adams, K.K., Machnicz, M. & Sobieraj, D.M. (2021). Initiating buprenorphine to treat opioid use disorder without prerequisite withdrawal: a systematic review. *Addict Sci Clin Pract* **16**, 36. https://doi.org/10.1186/s13722-021-00244-8

Carroll, G. M., Wasserman, D. D., Shah, A. A., Salzman, M., Baston, K. E., Rohrbach, R., Jones, I., & Haroz, R. (2020). Buprenorphine Field Initiation of ReScue Treatment by Emergency Medical Services (Bupe FIRST EMS): A Case Series. Prehospital Emergency Care, 25(2), 289–293. https://doi.org/10.1080/10903127.2020.1747579

Centers for Disease Control and Prevention. (2022). Polysubstance use facts. CDC.gov. Retrieved October 8, 2023, from https://www.cdc.gov/stopoverdose/polysubstance-use/index.html

Cherrier, N., Kearon, J., Tetreault, R., Garasia, S., & Guindon, E. G. (2021). Community Distribution of Naloxone: A Systematic Review of Economic Evaluations. *PharmacoEconomics* - Open, 6(3), 329–342. https://doi.org/10.1007/s41669-021-00309-z.

Farmer, B. (2022, August 3). Music Festivals Embrace Overdose Reversal Drugs, but Fentanyl Testing Kits Remain Taboo. KFF Health News. https://kffhealthnews.org/news/article/music-festivals-overdose-reversal-drugs-fentanyl-testing-kits-naloxone/.

Grayken Center for Addiction. (2023). Best Practice Guidance for Post-Overdose Outreach. Boston, MA: Grayken Center for Addiction, Boston Medical Center. https://drive.google.com/file/d/13kVugURbCNjUtJreSV3rtjknS2hgQW93/view.

Harocopos, A., Gibson, B. E., Saha, N., McRae, M. P., See, K., Rivera, S., & Chokshi, D. A. (2022). First 2 Months of Operation at First Publicly Recognized Overdose Prevention Centers in US. JAMA Network Open, 5(7), e2222149. https://doi.org/10.1001/jamanetworkopen.2022.22149

Hern, H. G., Lara, V. N., Goldstein, D., Kalmin, M. M., Kidane, S., Shoptaw, S., Tzvieli, O., & Herring, A. M. (2022). Prehospital Buprenorphine Treatment for Opioid Use Disorder by Paramedics: First Year Results of the EMS Buprenorphine Use Pilot. Prehospital Emergency Care, 27(3), 334–342. https://doi.org/10.1080/10903127.2022.2061661

Miller, T. and Hendrie, D. (2008). Substance Abuse Prevention Dollars and Cents: A Cost-Benefit Analysis, DHHS Pub. No. (SMA) 07-4298. Rockville, MD: Center for Substance Abuse Prevention, Substance Abuse and Mental Health Services Administration.

Minnesota Department of Health. (2021, November 12). Fentanyl Test Strips to Prevent Drug Overdose. https://www.health.state.mn.us/communities/opioids/documents/ftsforph.pdf.

Promising Practices to Combat the Fentanyl Epidemic from Other Jurisdictions

Palamar, J. J., Fitzgerald, N. D., Keyes, K. M., & Cottler, L. B. (2021). Drug checking at dance festivals: A review with recommendations to increase generalizability of findings. Experimental and Clinical Psychopharmacology, 29(3), 229–235. https://doi.org/10.1037/pha0000452.

Perrone, M. (2023, May 15). Vending machines are the latest tool for fighting opioid overdoses. The Hill. https://thehill.com/homenews/ap/ap-health/vending-machines-are-the-latest-tool-for-fighting-opioid-overdoses/.

Rozylo, J., Mitchell, K., Nikoo, M., Durante, S. E., Barbic, S., Lin, D. W., Mathias, S., & Azar, P. (2020). Case report: Successful induction of buprenorphine/naloxone using a microdosing schedule and assertive outreach. Addiction Science & Clinical Practice, 15(1). https://doi.org/10.1186/s13722-020-0177-x

Samuels, E. A., Bailer, D., & Yolken, A. (2022). Overdose Prevention Centers: An Essential Strategy to Address the Overdose Crisis. JAMA Network Open, 5(7), e2222153. https://doi.org/10.1001/jamanetworkopen.2022.22153

Townsend, T., Blostein, F., Doan, T. T., Madson-Olson, S., Galecki, P., & Hutton, D. W. (2019). Cost-effectiveness analysis of alternative naloxone distribution strategies: First responder and lay distribution in the United States. International Journal of Drug Policy, 75, 102536. https://doi.org/10.1016/j.drugpo.2019.07.031.

Young, M. (2012, December 31). Study shows naloxone kits cost-effective in preventing overdose deaths. Seattle, WA: University of Washington News. https://www.washington.edu/news/2012/12/31/study-shows-naloxone-kits-cost-effective-in-preventing-overdose-deaths/.

Zang, X., Bessey, S., Krieger, M. S., Hallowell, B. D., Koziol, J., Nolen, S., Behrends, C. N., Murphy, S. M., Walley, A. Y., Linas, B. P., Schackman, B. R., & Marshall, B. D. L. (2022). Comparing Projected Fatal Overdose Outcomes and Costs of Strategies to Expand Community-Based Distribution of Naloxone in Rhode Island. JAMA Network Open, 5(11), e2241174. https://doi.org/10.1001/jamanetworkopen.2022.41174