



Pima County Overdose Fatality Review Annual Report 2019

Community Mental Health and Addiction Program

Pima County Health Department



Dedication

We recognize that each case reviewed by the Pima County Overdose Fatality Review Team (OFRT) represents the death of a person whose absence is grieved by friends, family, and community. We dedicate this report to those who have lost their life and to those who have suffered the loss of a loved one to overdose.

Acknowledgements

The OFRT is a multidisciplinary team of professionals comprised of key subject matter experts from a variety of local organizations. This report would not be possible without the work and dedication of its team members and the following agencies they represent:

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- La Frontera Arizona
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- Pima County Attorney's Office
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- Pima County Health Department
- Pima County Office of the Medical Examiner
- Pima County Sheriff's Department
- Southern Arizona VA Health Care System
- Tucson Fire Department
- Tucson Police Department
- University of Arizona College of Public Health

Prepared by:

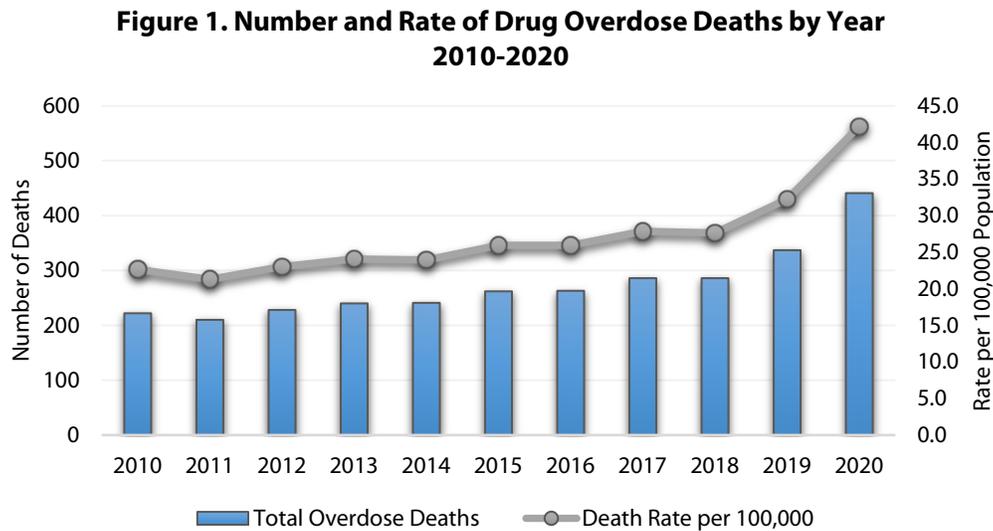
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Table of Contents

Dedication.....	ii
Acknowledgements.....	ii
Introduction.....	1
Methodology.....	2
Data Sources.....	2
Overview.....	3
Demographics.....	3
Circumstances.....	4
Comorbidities.....	5
Hospital/Emergency Department Utilization.....	6
Controlled Substance Prescription Monitoring Program.....	8
Incarceration History.....	8
Case Attributes.....	9
Summary of Findings.....	9
Recommendations.....	12
Limitations.....	13
References.....	14

Introduction

Over the past decade, the number and rate of drug overdose deaths in Pima County has risen annually (Fig 1). In 2017, Arizona Governor Doug Ducey declared a statewide opioid epidemic health emergency and established Overdose Fatality Review Teams under A.R.S. §36-198¹. The Pima County Health Department's Community Mental Health and Addiction (CMHA) program obtained grant funding in 2019 to establish a local OFRT, modeled after the Arizona Department of Health Services OFRT². Initial planning and implementation began in August 2019.



The mission of the Pima County OFRT is to investigate, research, and report key trends found in local drug overdose fatalities. The committee conducts confidential case reviews of overdose deaths that occur within our local jurisdiction. Case reviews examine a person's demographics, psychosocial history, treatment history, medical records, crisis system encounters, and other prominent risk factors associated with drug overdoses. From this, the team aims to identify missed opportunities for intervention in order to strengthen overdose prevention strategies, improve system-level operations, inform local service providers, public policy, and ultimately to reduce the number of overdose deaths in Pima County.

Methodology

CMHA program staff selected drug overdose cases for OFR via stratified sampling from a data file pulled by the Pima County Medical Examiner's office. Cases are representative of demographics of total overdose deaths in 2019 (i.e., assigned sex at birth, race/ethnicity, age group). Case criteria included a date of death (DOD) within the 2019 calendar year, a cause of death (COD) attributed to prescription or illicit drugs, and an accidental or undetermined manner of death (MOD). There were four, two-hour reviews conducted by the committee. Case selection was limited to no more than 10 cases per review.

Preliminary review of demographic data, death data (i.e. injury location, cause of death, forensic narrative), and case attributes was completed for 37 cases. A case is considered to be reviewed in full when the OFRT analyze all available case details, identify preventable factors that may have contributed to the death, and develop prevention recommendations for implementation. The OFRT completed full reviews on 24 out of 37 cases. The following data, if available, was collected on all 37 cases:

- *Decedent demographic data:* Age, sex, race, county of residence, length of residency, veteran status, hospitalization history, incarceration history
- *Circumstances of fatal overdose:* Forensic investigator narrative, first responder reports (i.e. EMS, law enforcement), toxicology report
- *Medical history:* Primary care physician (PCP), behavioral health medical provider (BHMP), substance use treatment provider, pain clinic provider, medication history, Controlled Substance Prescription Monitoring Program (CSPMP) history
- *Case attributes (decedent risk factors):* Undiagnosed or diagnosed substance use disorder (SUD), somatic health condition, mental health diagnosis, pain management, multiple emergency department (ED)/hospital visits, intimate partner violence (IPV)/domestic abuse, trauma/victimization, recent time of abstinence (released from jail, hospital, treatment, or other within 7 days of DOD and within 30 days of DOD), previous nonfatal overdose, polysubstance use, IV drug use, history of DUI, history of suicide attempts/ideation, homelessness, two or more controlled substance prescriptions at time of death, on parole/probation at time of death, history of court ordered evaluation or treatment, and other
- *Timeline of Events:* Re-constructed timeline of 90 days leading up to date of death

Data Sources

Data for case reviews is collected from a variety of sources including medical examiner data, toxicology reports, department of corrections, Controlled Substance Prescription Monitoring Program (CSPMP), pharmacy data, hospital discharge data, death certificate data, healthcare information exchange, Arizona Health Care Cost Containment System (AHCCCS), clerk of the court, county attorney, law enforcement, first responders, and various record requests from health care agencies.

Overview

Demographics

As shown in Figures 1-4, the majority of decedents reviewed by the OFRT were male (68%), in the 30-39 age range (27%) and 20-29 age range (24%), white (59%), and long-term Pima County residents (92%). Current or prior military service was uncommon, with only 5% of decedents having served (Fig. 5). Most decedents had less than a college degree (78%, Fig. 6).

Figure 1. Assigned Sex at Birth

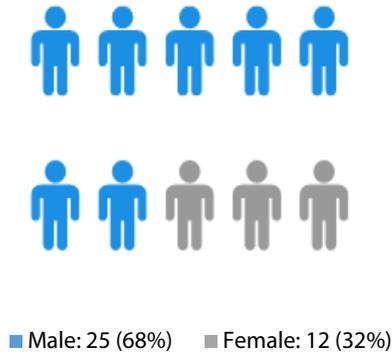


Figure 2. Age

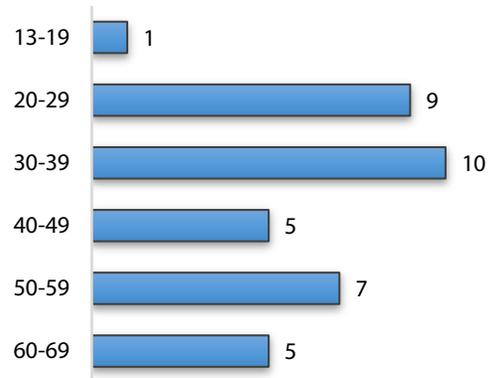


Figure 3. Race/Ethnicity

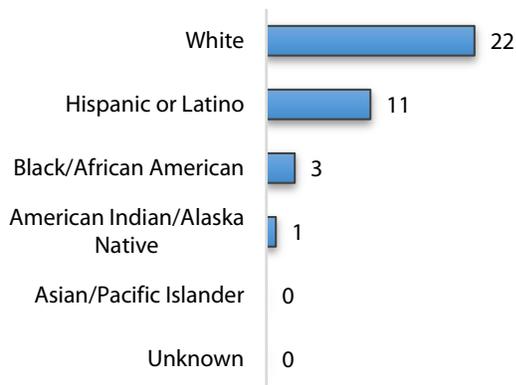


Figure 4. Residency

All decedents were Pima County residents

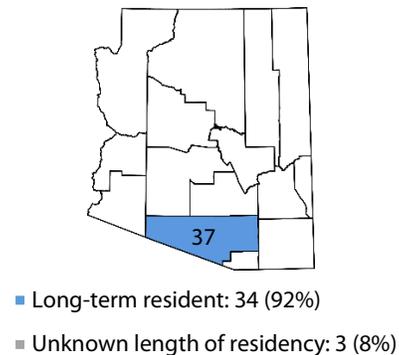


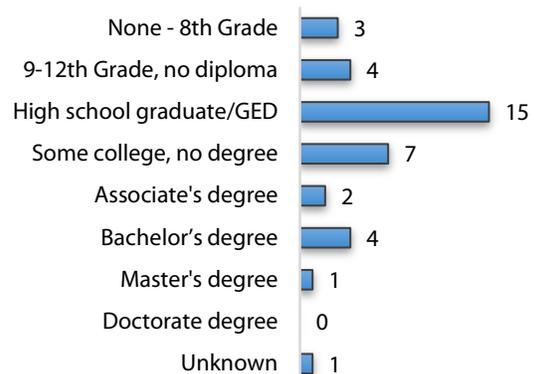
Figure 5. Veteran Status



Current or prior military service: 2 (5%)

No prior military service: 35 (95%)

Figure 6. Educational Attainment



Circumstances

The most frequent injury location for fatal overdoses was a decedent’s place of residence (59%, Fig. 7). More fatal overdoses occurred with other adults present or in the household at the time of death compared to when a decedent was alone (59% vs 41%, respectively, Fig. 8). Of note, it is unknown whether those present were aware of the decedent’s drug use. A bystander/family member administered naloxone prior to EMS arrival in two cases and first responders administered naloxone in 14 cases (Fig 9). In several cases, naloxone administration by EMS could not be confirmed due to data limitations.

Figure 7. Overdose Deaths by Injury Location

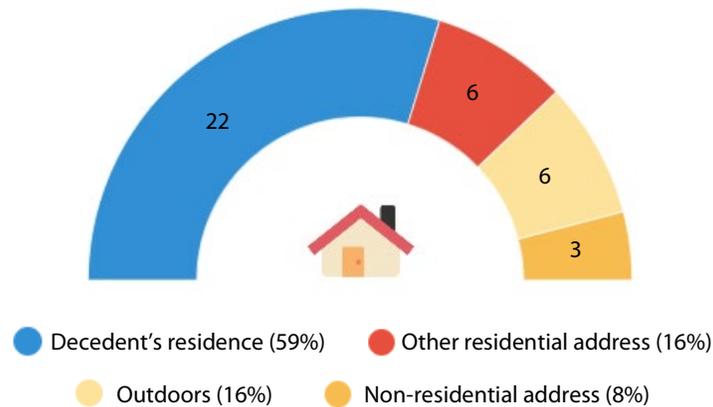


Figure 8. Presence of Others at Time of Fatal Overdose

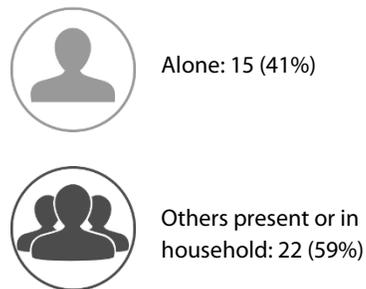
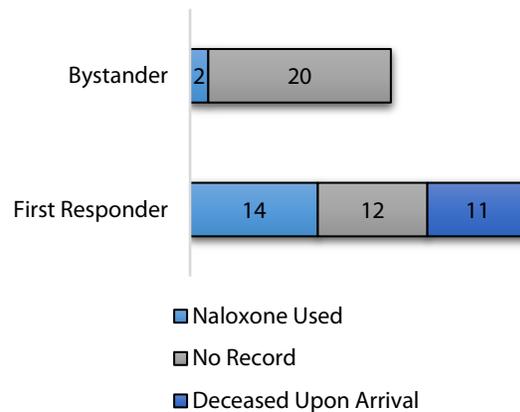
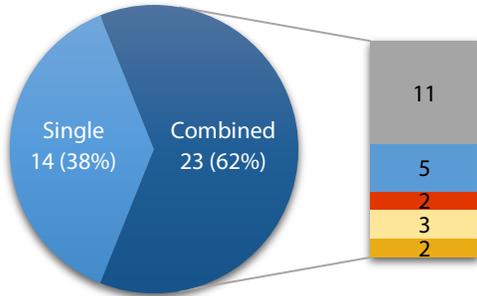


Figure 9. Use of Naloxone by Bystanders and First Responders



In 62% of cases, a combination of two or more substances were listed as a cause of death (Fig. 10), indicating a need for greater education on the risks of consuming multiple drugs simultaneously or in close proximity. Nearly half of those cases involved a combination of opioids and psychostimulants, most frequently heroin and methamphetamine (Fig. 10). Methamphetamine was the most frequently found substance in the overdose deaths reviewed, contributing to 41% of cases, followed by heroin (38%), fentanyl (30%), morphine (14%), and alcohol (11%, Fig. 11).

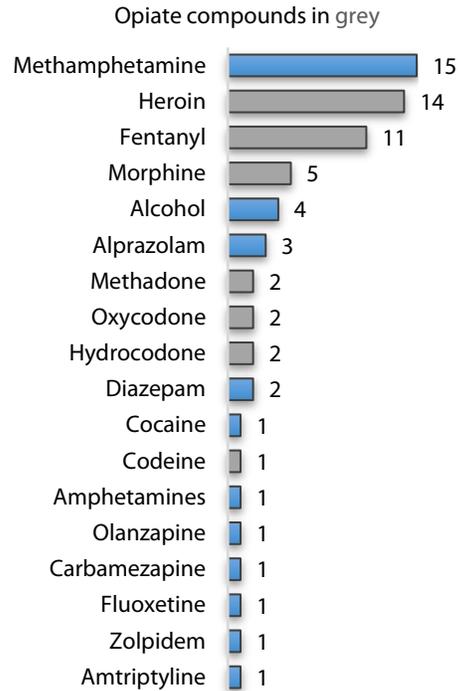
Figure 10. Single Substance vs. Combined Drug Deaths



Drug Combinations Contributing to Death:

- Opioid(s) + Psychostimulant(s) - 30%
- Opioid(s) + Sedative(s) - 14%
- Opioid + Psychostimulant(s) + Sedative - 5%
- Two Opioids - 8%
- Other Combination - 5%

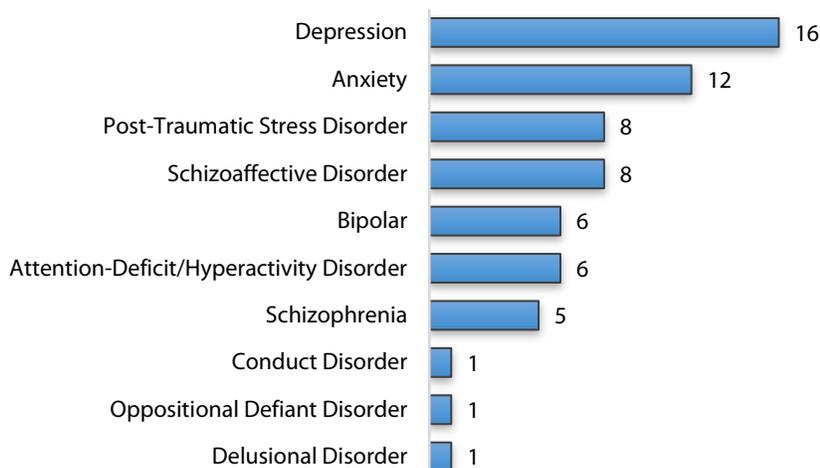
Figure 11. Drugs Contributing to Death



Comorbidities

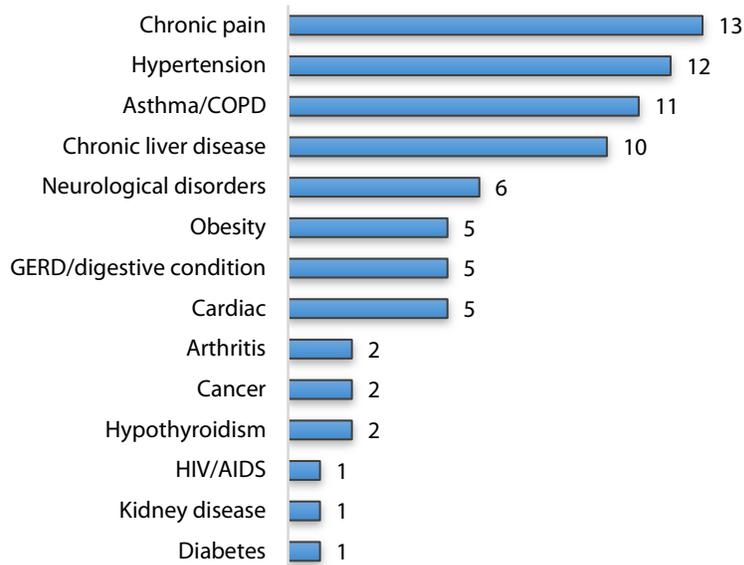
A majority of decedents had a mental health disorder diagnosis (70%), substance use disorder (SUD) diagnosis (65%), or chronic health condition (60%, Table 4). A total of 20 decedents had a co-existing mental health condition and SUD diagnosis. Depression (43%) and anxiety (32%, Fig. 12) were the most prevalent mental health diagnoses.

Figure 12. Presence of Mental Health Condition



The most common health conditions were chronic pain (35%), hypertension (32%), asthma/COPD (30%), and chronic liver disease (27%, Fig. 13). Out of 13 decedents with a chronic pain diagnosis, two received care at a pain clinic and five decedents received pain management through a PCP.

Figure 13. Presence of Chronic Health Conditions



Hospital/Emergency Department Utilization

A total of 17 out of 37 decedents had a hospital/ED visit within 30 days of their date of death (46%, Fig. 14). Three decedents had two visits in that timeframe, for a combined 21 hospital/ED visits. The majority of visits were for substance use-related diagnoses (71%, Table 1). Of the eight hospital/ED visits associated with a decedent’s date of death (i.e., the decedent died in the hospital), seven had an admitting diagnosis of overdose/poisoning; one admitting diagnosis was for hypoglycemia. Four decedents hospitalized for a fatal overdose did not have any other hospitalizations in the month prior to death.

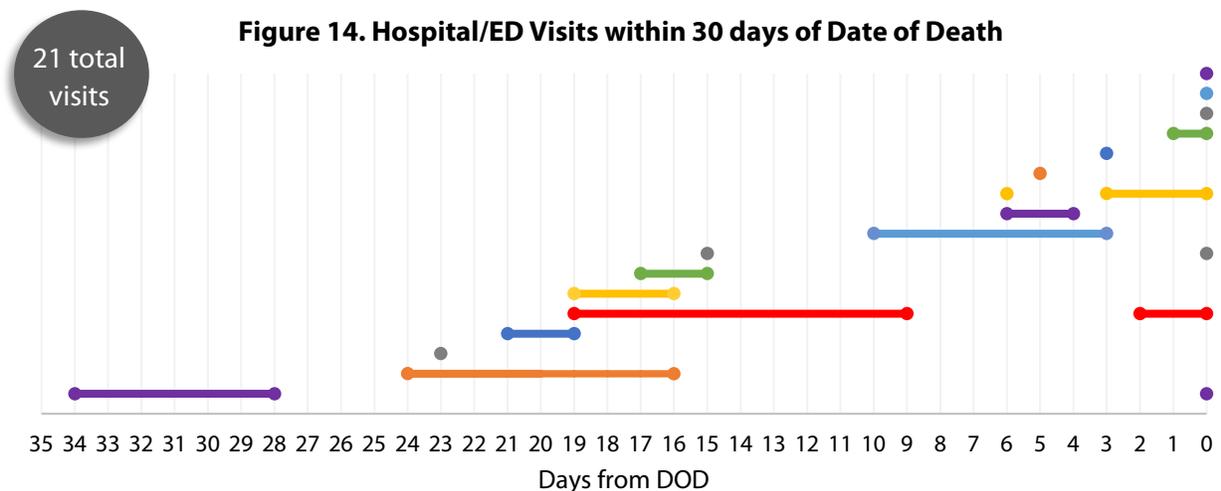
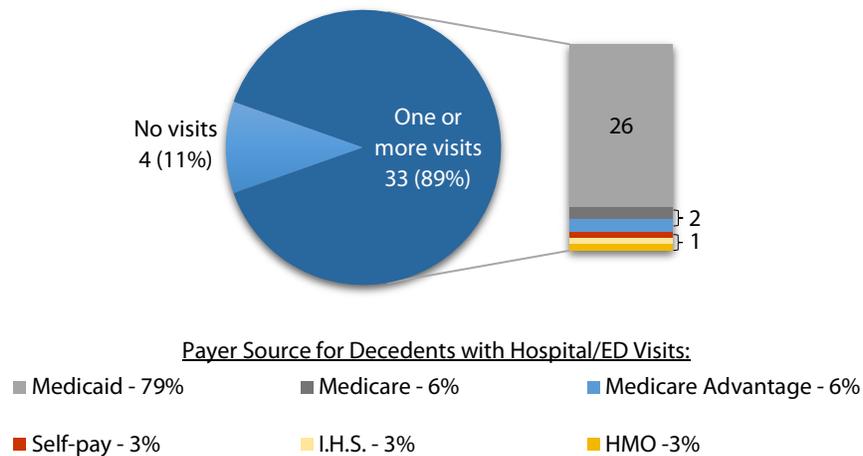


Table 1
Admitting Diagnoses for Hospitalizations within 30 days of Date of Death
(n=21)

Diagnosis	Count, n (%)
Substance Use	15 (71.4%)
Drug use/dependence	5
Overdose/poisoning	8
Withdrawal	1
Detoxification	1
Mental Health	3 (14.3%)
Depression	1
Anxiety	1
Suicidal ideation	1
Physical Health	3 (14.3%)
Medical diagnosis (i.e. stroke, hypertension, etc.)	1
Injury or trauma	2

Multiple ED/hospital visits in the year prior to death was common among OFR cases (43%, Table 5). Most decedents had one or more hospital/ED visits in that time frame (89%, Fig. 15), for a combined total of 190 visits. Medicaid was the most frequent payer source among decedents with hospitalization history (79%, Fig. 15).

Figure 15. Hospital/ED Visits by Payer Source within a Year of Date of Death



Five decedents had a history of involuntary hospitalization (13.5%, Table 2), one of whom had two involuntary hospitalizations. Danger to self was the number one reason for applications for emergency admission for evaluation and applications for involuntary evaluation. One decedent was on court-ordered treatment at the time of death.

Table 2
History of Involuntary Hospitalization
(n=5)

Characteristic	Count, n (%)
Reason(s) for involuntary hospitalization	
Danger to self	5 (100%)
Danger to others	3 (60%)
Persistent or acute disability	2 (40%)
Gravely disabled	0 (0%)
Disposition	
Released from evaluation	4 (80%)
Placed on court-ordered treatment	1 (20%)

Controlled Substance Prescription Monitoring Program

Almost all of the decedents had a history in the CSPMP, with 16 decedents having active prescriptions at the time of death (Table 3). Six decedents had active controlled substance prescriptions that matched the drugs listed in their cause of death. In five out of six of these cases, the decedents were taking higher doses than prescribed and family members knew about the decedent’s over-medicating. Of note, prescribed drug combinations may have contributed to the increased risk of overdose in some of these cases (i.e. benzodiazepines/sedatives and opioids, multiple opioids, etc.). In the sixth case, the decedent’s cause of death involved the combination of the decedent’s prescribed benzodiazepine and an illicit opiate substance. An additional three decedents had active, non-controlled substance prescriptions that matched the drugs listed in their cause of death. In these cases, decedents did not take their medications as prescribed and took higher than prescribed doses or took medications outside of the prescription date range.

Table 3
History of Controlled Substance Prescriptions
(n=37)

Characteristic	CSPMP, n (%)
History of prescription(s)	34 (92%)
Active prescription(s) at time of death	16 (43%)
Prescription(s) match drug(s) in COD	6 (16%)

Incarceration History

Twenty-four out of 37 decedents (65%, Table 4) had previous incarcerations at the Pima County Adult Detention Center (PCADC) and/or Arizona Department of Corrections, Rehabilitation & Reentry (ADCRR). Data does not include out-of-county jails or any federal facilities. In five cases, the decedent was released from incarceration within 30 days of the DOD; and four were released within a week of the DOD.

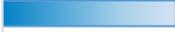
Table 4
History of Previous Incarceration at PCADC and/or ADCRR
(n=37)

Characteristic	PCADC, n (%)	ADCRR, n (%)
No history	15 (40.5%)	26 (70.3%)
Previous incarceration	22 (59.5%)	11 (29.7%)
Of those previously incarcerated, charged with a drug/alcohol-related offense	(n=22) 13 (59.1%)	(n=11) 5 (45.5%)

Case Attributes

Polysubstance use (81%), existing mental health condition (70%), SUD diagnosis (65%), and presence of at least one chronic health condition (60%) were the most frequently identified risk factors among decedents (Table 4). Notably, half of the decedents were released from a facility (i.e., jail, hospital, ED, etc.) within 30 days of their date of death.

Table 5
Case Attributes and Decedent Risk Factors
(n=37)

Attribute	Count, n (%)	%
Substance use disorder diagnosis	24 (64.9%)	
Undiagnosed substance use disorder	8 (21.6%)	
Mental health condition	26 (70.3%)	
Chronic health condition	22 (59.5%)	
Pain Management	7 (18.9%)	
Multiple ED/Hospital visits	16 (43.2%)	
History of intimate partner/domestic violence	4 (10.8%)	
History of trauma/victimization	10 (27.0%)	
Previous nonfatal overdose	13 (35.1%)	
Polysubstance use	30 (81.1%)	
IV Drug use	14 (37.8%)	
History of DUI	6 (16.2%)	
History of suicide attempt and/or suicidal ideation	12 (32.4%)	
2 or more controlled substance prescriptions at time of death	8 (21.6%)	
On probation or parole at time of death	5 (13.5%)	
Homeless at time of death	9 (24.3%)	
Released from jail, hospital, ED within 7 days of DOD	10 (27.0%)	
Released from jail, hospital, ED within 30 days of DOD	18 (48.6%)	

Summary of Findings

An overdose death is considered preventable if reasonable medical, educational, social, legal, or psychological intervention could have prevented the death from occurring. The OFRT determined prevention measures based on whether any actions (or inactions) could have changed the

circumstances leading up to a person's death. Based on 24 cases reviewed in full, seven macro-level prevention measures emerged:

Access to Services

Within healthcare settings and criminal justice institutions, recommendations emerged for improved access to and use of substance use services, mental health services, and Medication-Assisted Treatment (MAT). Improved enrollment and utilization of these services can provide people who use drugs (PWUD) critical support to reduce the risk of overdose and death. In seven cases, despite multiple contacts across the crisis system and evidence of drug-seeking behavior, there was no evidence of referrals to substance use services nor any record of attempts to engage the individuals in substance use treatment. For two cases, the OFRT recognized inconsistent engagement in substance use treatment and fragmented outpatient care. In one case, EMS referred the decedent to residential treatment, but they declined because they were unable to arrange care for their pet while in treatment. Discussion within the committee identified lack of pet care as a potential barrier to treatment. Additionally, many OFR cases highlighted the need for greater community awareness and utilization of crisis mobile team services.

Care Coordination

Improving care coordination following a crisis encounter appeared frequently in case recommendations. A pattern of crisis system encounters (incarcerations, emergency visits, and inpatient stays) occurring in close proximity and/or leading up to the DOD emerged. These encounters represent opportunities to provide linkage to care and harm reduction services, to help mitigate the high-risk period following release from a facility due to opioid tolerance depletion while incarcerated or hospitalized. Of the 24 cases reviewed in full, a third of decedents died within one week of their discharge/release from a facility. Suggestions include improved discharge planning for individuals treated for overdose, detoxification, and/or a known SUD. A standardized referral system for SUD treatment/MAT, utilizing the community's existing post-overdose response teams, along with improved communication and record sharing between outpatient treatment providers and hospitals may improve continuity of care and patient outcomes. Similarly, for correctional facilities, enhanced care coordination between jail and behavioral health providers during incarceration and upon release may reduce gaps in care. Lastly, the committee recommends that primary care providers utilize appropriate specialty care providers for medication management (i.e., Pain Clinic for pain management, BHMP for psychiatric medication, etc.).

Prescribing Practices

CSPMP records for OFRT cases highlight the need for enhanced prescription monitoring, pharmacy alerts, improved patient/provider education on the risks of prescription misuse, and the need for more providers to follow Arizona Opioid Prescribing Guidelines³ and risk mitigation strategies. In four cases, a physician prescribed opioid doses ≥ 90 MME on a long-term basis, which does not align with best practices to treat chronic pain. Further, naloxone prescriptions in conjunction with opioid prescriptions were rare, despite this being a standard for patient safety. The committee recommends opioid prescribers utilize an auto-generated reminder for treatment teams to dispense naloxone concurrently with an opioid prescription. Several decedents had multiple controlled substances prescribed concurrently, including drug combinations known to increase a person's risk of overdose (i.e., benzodiazepines, opioids, and amphetamines). Providers should limit prescribing multiple

controlled substances as much as possible (particularly sedative and stimulant medications), and should avoid these combinations altogether for patients with a SUD. Lastly, no decedents were flagged in the CSPMP despite it being warranted in several cases due to unsafe prescribing practices (e.g., high-risk drug combinations, and/or long term use of opioids >90MME). Improved use of CSPMP alerts is highly recommended as an additional measure to protect patient safety.

Naloxone Distribution and Training

Increased naloxone availability and distribution to the community at large was a common recommendation. Of all 37 cases reviewed preliminarily, over half of fatal overdoses (22 cases, 59%) occurred with other adults present or in the household. The majority of these cases involved an opioid (19 of 22), yet, in only two of these cases did a family member/bystander administer naloxone prior to the arrival of first responders. Targeted naloxone education and training is recommended for employers, family members, friends, and significant others in contact with a person struggling with substance use (including those in remission) particularly following a hospital visit, incarceration, or other known periods of abstinence. The OFRT recommends naloxone distribution at the point of care for local inpatient facilities, emergency departments, detention centers, rehabilitation centers, and residential programs, due to high overdose risk post release/discharge. On a policy level, one case highlighted the need for enhancing the Arizona Department of Health Services (ADHS) Standing Orders for Naloxone Administration policy for first responders to include intraosseous (IO) route of administration. Further, overdose deaths involving fentanyl are increasing in our community. In response, the OFRT recommend that first responder agencies be first priority for naloxone distribution to ensure adequate supply. Additionally, naloxone trainings for medical personnel and laypersons alike need to incorporate education about fentanyl overdoses often requiring multiple doses of naloxone.

Risk Screening

A repeated OFRT recommendation for first responders and crisis providers is to use standardized screening tools to help identify signs and symptoms of opioid-related substance use and provide treatment referrals (e.g., the targeted curriculum SBIRT-EMS⁴). This recommendation is based on the high probability of frequent encounters with PWUD, in addition to several cases reviewed by the OFRT in which the decedent had multiple crisis system encounters. Lastly, a small subset of cases had no record of a SUD, despite clear patterns of drug use. At the clinic level, regular screenings for OUD/SUD is also recommended in all settings where controlled substances are prescribed (e.g. pain clinics, family practice, etc.). For providers prescribing opioids, drug screening was inconsistent and represented several missed opportunities for identifying high-risk patients diverting drugs or overtaking prescriptions.

Prevention Education

A majority of OFR cases underscored the need for greater community awareness of naloxone availability, prescription misuse, substance use services, and non-opioid alternatives to treat chronic pain. More community outreach and education, as well as provider education, is needed to increase knowledge on how to acquire naloxone and the importance of keeping it on hand or at home, in case of an overdose. Public education about habit-forming prescription drugs, knowing the signs of substance misuse, and knowing when and how to get help, may go a long way to help prevent overdoses and reducing stigma related to substance use. In some cases reviewed in full by the

committee, individuals present during the overdose delayed calling 911, potentially out of fear of being arrested. The OFRT recommends greater public education and promotion of the Good Samaritan Law (A.R.S. §13-3423⁵), which protects someone from being arrested for drug possession if they call 911 in a good faith effort to help in the event of an overdose. Additional recommendations included more widespread harm reduction education emphasizing not using drugs alone or in hiding, carrying naloxone, using fentanyl test strips, the risks of fentanyl-laced substances, avoiding the use of multiple drugs in close proximity, and the dangers of polysubstance use; the most concerning being opioids, benzodiazepines, narcoleptics, stimulants, and alcohol in any combination.

Criminal Justice

Three case reviews produced criminal justice institution recommendations outside of the care coordination theme. The committee recommends adjusting release plans for detainees with SUDs and for those booked on drug charges. Specifically, release plans should avoid weekends and evenings when service providers have limited availability. Accessing MAT services, harm reduction programs, and relapse prevention programs is difficult outside of standard business hours/peak hours of operation. Additionally, a recommendation for enhanced enforcement of prosecution for neglect to notify 911 of medical emergency developed from two cases in which there was a significant delay in bystander(s) seeking care.

Recommendations

Table 6
Recommendations
(n=24)

Characteristic	Count, n (%)
Access to Services	
Improve access to/utilization of:	
- substance use treatment services in healthcare settings	20 (83%)
- substance use treatment services in criminal justice institutions	14 (58%)
- mental health services in healthcare settings	19 (79%)
- mental health services in criminal justice settings	11 (46%)
- Medication Assisted Treatment in healthcare settings	12 (50%)
- Medication Assisted Treatment during incarceration	5 (21%)
Greater utilization of crisis mobile teams/services	11 (46%)
Care Coordination	
Improve healthcare coordination	20 (83%)
Improve discharge planning after ED/hospitalization	12 (50%)
Increase coordination with substance use services after release from incarceration	9 (38%)
Prescribing Practices	
Improved prescribing practices	18 (75%)
Naloxone Distribution and Training	
More community naloxone training	18 (75%)

More naloxone available to first responders	8 (33%)
More first responders trained to use naloxone	6 (25%)
Naloxone distribution upon release from incarceration	3 (13%)
Naloxone distribution upon release from hospital, detox, etc.	2 (8%)
Outreach to Tribal Health Services for naloxone distribution and training	1 (4%)
Enhance ADHS Standing Orders for Naloxone Administration policy for first responders to include intraosseous (IO) route of administration	1 (4%)
Risk Screening	
More first responders trained in Screening, Brief Intervention, and Referral to Treatment (SBIRT)	9 (38%)
Improve screening for OUD	4 (17%)
Consistent drug screening between opioid prescriptions	4 (17%)
Improve screening for mental health disorders	1 (4%)
Prevention Education	
Increase community awareness of Naloxone availability	20 (83%)
Increase community awareness of prescription misuse/abuse	17 (71%)
Increase community awareness of substance use services	16 (67%)
Decrease stigmatization of drug use in the community	16 (67%)
Increase community awareness of nonprescription chronic pain management	10 (42%)
Enhance community education on the Good Samaritan Law	4 (17%)
Enhance community education on harm reduction techniques	3 (13%)
Improve provider education on risks of MAT	1 (4%)
Criminal Justice	
Enhanced enforcement of prosecution for neglect to notify 911 of medical emergency	2 (8%)
Limit incarceration release dates for SUD arrestees to exclude Friday and Weekends	1 (4%)
Enhanced enforcement of prosecution for dangerous drug sales	1 (4%)

Limitations

Health care records may be incomplete due to lack of access to additional databases and inability to identify all of a decedent's prior treatment providers. Due to limited EMS records, the committee was unable to confirm naloxone administration by first responders for several cases. The committee elected not to conduct family interviews; therefore, childhood experiences and social history data were limited.

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