



ARIZONA DEPARTMENT
OF HEALTH SERVICES

Arizona Overdose Fatality Review Committee Report 2021

A Review of Overdose Deaths Occurring January 1 – December 31, 2020

December, 2022

Submitted to

The Honorable Douglas A. Ducey, Governor, State of Arizona

The Honorable Karen Fann, President, Arizona State Senate

The Honorable Russell Bowers, Speaker, Arizona State House of Representatives

This report is provided as required by A.R.S §36.198

Prepared by

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Intended Audience

This is a technical report on the analysis of data from Arizona state and local Overdose Fatality Review Committees (OFRCs), as well as overall overdose deaths from 2020. This report is aimed primarily at those actively involved in the prevention and intervention of illicit drug use and substance use disorders (SUDs), including healthcare providers, community service providers, researchers, policymakers, law enforcement, and other stakeholders. While publicly available, the intended audience of this report is not the general public, and extra care in the use or interpretation of this report should be taken by those with limited background or subject-matter expertise in the areas of SUDs.

How to Use This Report

This report describes the process used and data collected by OFRCs to review overdose cases. The key findings presented in this report should assist in identifying effective and targeted prevention measures and provide information on risk and protective factors of overdose death.

Disclaimers

Previous ADHS Reports on the Overdose Fatality Review Program

The findings in this report were derived from methods initially established for OFRC reporting with modification of data collection tools and prevention recommendations from previous years. Therefore, some comparisons to previous reports may be possible but not completely comparable due to the addition or subtraction of data collected, as well as changes made to the identification of cases reviewed.

Arizona Health Status and Vital Statistics Annual Report

The ADHS publishes the [Arizona Health Status and Vital Statistics Annual Report](#), which includes drug overdose outcomes. Data in this report differs from the annual reports as data is submitted by local and state OFRCs based on multiple data sources to analyze for the purpose of identifying prevention recommendations. Population level data for deaths of all Arizona residents can be found in the Arizona Health Status and Vital Statistics Annual Report.

Opioid Overdoses Surveillance Report

The ADHS publishes an annual [Opioid Overdoses Surveillance Report](#), which includes hospital discharge, death certificate, and emergency and inpatient data, as well as data from the Medical Electronic Disease Surveillance Intelligence System (MEDSIS) and the Arizona Pre-Hospital Information & EMS Registry System (AZ-PIERS). Although both reports focus on opioid overdoses, data in this report comes from OFRCs which make use of varying degrees of data sources requested from medical facilities, behavioral health agencies, prescription monitoring, law enforcement and emergency medical services, and others, as well as death certificates for identified fatal overdoses. The annual surveillance report contains trends for both fatal and non-fatal opioid overdoses.

Opioid Prevention Dashboard

The ADHS [Opioid Prevention Dashboard](#) is available to the public to explore opioid-related topics, including data, naloxone information and ordering, and Neonatal Abstinence Syndrome (NAS) resources. The data portion of the dashboard was overhauled in 2022 to improve data quality and accuracy. The data found is specific to Arizona opioid overdoses and contains details for both non-fatal and fatal overdose, emergency and inpatient visits, EMS and law enforcement, naloxone administration, and overdoses by local area.

Prevention Recommendations

The prevention recommendations included in this report are developed by the state OFRC and do not necessarily reflect the official views of the ADHS or the State of Arizona. The local OFRC recommendations are also presented to the state OFRC for inclusion in this report.

Commitment to Equity in Data Statement

The ADHS acknowledges that data (i.e., numbers) never tell the whole story or adequately present collective data from all related fatalities. We strive to work with individuals and

communities to learn and share their stories to improve collective understanding. Knowing that people across life circumstances have inequitable opportunities to achieve optimal health, we commit to pair numbers and stories to inform policy and systems change to improve health for all.

This publication can be made available in alternative formats. Contact the Office of Injury and Violence Prevention at azopioid@azdhs.gov.

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Executive Summary

Prescription and illicit opioids, like fentanyl, are addictive and responsible for an increasing number of deaths in Arizona.¹ This rise reflects a growing problem across the nation and overdose deaths are the leading cause of preventable injury death.^{2,3} Thus, a need emerged for more in-depth analysis of overdose deaths to aid in prevention.

The Arizona Department of Health Services' (ADHS) OFRCs were modeled after ADHS Child Fatality Review teams.⁴ By assembling multiagency, interdisciplinary teams, which include healthcare providers, emergency responders, medical examiners, law enforcement, public health, social services and others, state and local overdose fatality review teams determine the Relative Contribution to Fatality (RCF) for each overdose case and what measures could have been in place to alter the outcome.⁵ Overdose fatality reviews involved a series of confidential individual death reviews by a multidisciplinary team to effectively identify system gaps and innovative community-specific overdose prevention and intervention strategies.

In 2020, to aid the state OFRC, federal funding was secured to enable the establishment and support of local county OFRCs, which included the following counties for 2021: Cochise, Coconino, Gila, Mohave, Navajo, Pima, Pinal, and Yavapai. All these counties actively reviewed, or were in the process of establishing rosters to actively review death records for overdose deaths occurring in 2020. OFRCs make prevention recommendations for implementation that strengthen collaborations, communication, and system processes among entities to affect long-term impacts on public health outcomes. The state and local OFRC findings inform strategic planning and agency activities related to overdose prevention at the state and local level.

A total of 148 cases (of the 2020 deaths that fit the state team criteria of Arizona resident, 18 and over, and not pregnant in the last year) were randomly selected for state OFRC review and are included. A total of 303 cases were reviewed by eight local OFRCs (Coconino, Gila, Navajo, Pinal, Pima, Cochise, Mohave, and Yavapai counties). Subsequent to data quality review, 202 cases (from seven of the eight local OFRCs) were combined with the state OFRC cases for analysis (see inclusion criteria in Appendix 1). One county OFRC did not have complete data and

therefore was not included in the analysis. A total of 350 cases are included in a brief summary within this report.

The five most common prevention recommendation themes were: naloxone access and education, education and awareness of trending street drugs, education and awareness of the effect of co-morbid conditions, improved care coordination, and access to appropriate mental health care services.

- Naloxone access and education includes recommendations around methods of risk mitigation for emergency medical staff, healthcare professionals, and community members, as well as removal of barriers and obstacles for naloxone distribution.
- Increasing education and awareness of trending street drugs includes communicating the risks associated with using unregulated substances, as well as the possibility of drug contamination.
- Increasing drug education and awareness about the effect of co-morbid conditions when using includes communicating the risks associated with concurrent use of prescription medications, illicit substances, and/or alcohol with medical conditions that make overdose or death more likely.
- Improving care coordination includes warm hand-offs between treatment agencies, as well as communication between medical professionals not directly involved in treatment, whether substance use, mental health, or other.
- Increasing access to appropriate mental health services includes recommendations to increase access to the right level of mental health care, and to include increasing community awareness of available services.

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INTRODUCTION

In the United States there were an estimated 91,799 drug overdose deaths in 2020, a 30% increase from 2019.⁶ The age adjusted rate in 2020 (28.3 per 100,000) was higher than in 2019 (21.6).⁶ Age-adjusting the rates ensures that differences in deaths from one year to the next are not due to differences in the age distribution of the populations being compared. Synthetic opioids (other than methadone) are the largest driver of opioid-related drug overdose deaths (61.6% of all drug overdose deaths).⁶

In Arizona, the number and rate of drug overdose deaths increased from 2019 [2,004; 28.4 per 100,000] to 2020 [2,603; 36.3 per 100,000], a 20 percent increase in the rate.¹ Rates of overdose deaths in 2020 varied by county, with La Paz as the county with the highest rate and Yuma the lowest (Figure 1).

Drug overdoses are classified as injuries due to poisonings. As injuries, overdoses are predictable and preventable through system level changes that modify the environment, enforcement and education.⁸

There are numerous factors that indicate potential issues with substance use. Early intervention when the factors are initially identified is extremely important to prevent potential overdose (Appendix 3).

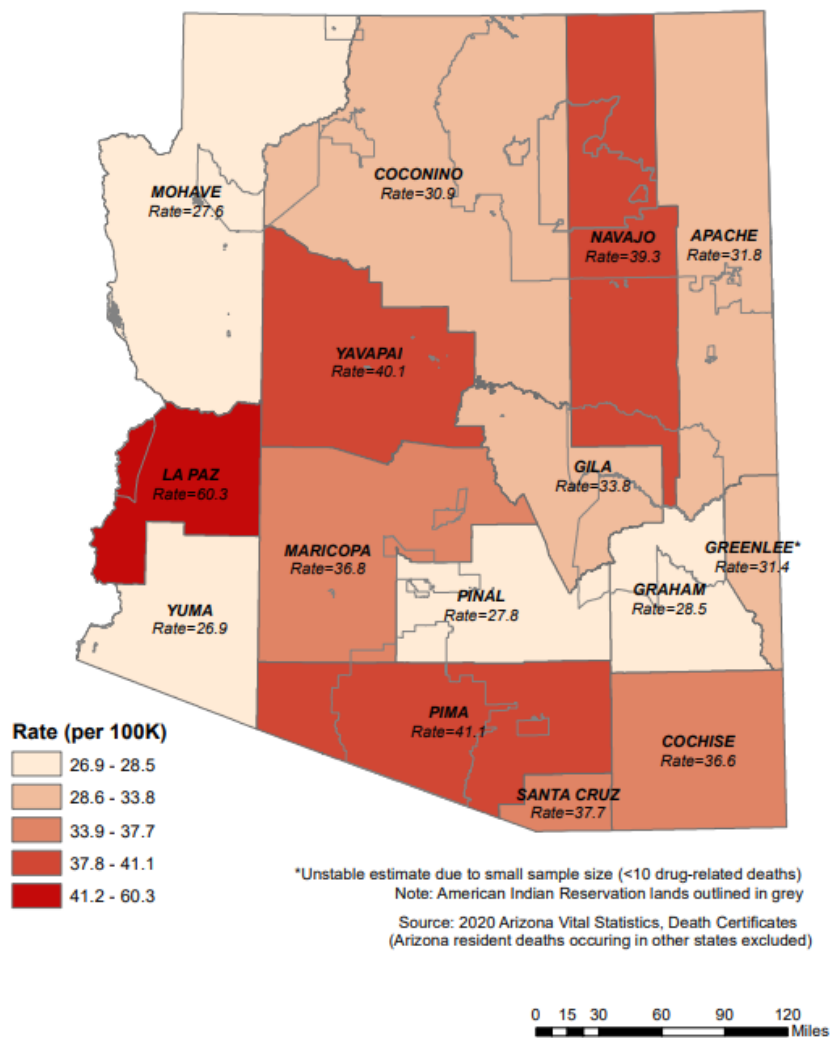
Governor Ducey declared a statewide opioid epidemic health emergency in 2017, the same year the OFRC was established under A.R.S. §36-198.⁹ The primary purpose was to develop data-driven recommendations for reducing preventable drug overdose deaths through OFRC establishment.

As per statute, the state team shall be composed of the head of each of the following entities (or their designee): the attorney general; the department of health services; the Arizona health care cost containment system; the department of economic security; the governor's office of youth, faith and family; the administrative office of the courts; the state department of corrections; the Arizona council of human services providers; and the department of public safety. In addition, the director of the Department of Health Services shall appoint the following members to serve on the review team: a medical examiner who is a rural forensic pathologist; a medical examiner who is a metropolitan forensic pathologist; a representative of a tribal government; a public member; a representative of an emergency management system association; a healthcare professional from a statewide association representing nurses; a health care professional from a statewide association representing physicians; a representative of an association of county health officers; a representative of an association representing hospitals; a professional who specializes in the prevention, diagnosis, and treatment of substance use disorders; and a county sheriff, or the sheriff's designee, who represents a county with a population of less than five thousand persons and a county sheriff, or the sheriff's designee, who represents a county with a population of more than five thousand people.

Local team membership may be consistent with state team members as described in the statute and above, but it is understood that membership may be limited by county size, as well as availability of representatives from said organizations. For the 2021 review process, there were 8 local county OFRCs, with other county deaths being reviewed by the state team. Smaller

counties are able to review all overdose deaths, but larger counties cannot. There is no set percentage of review for the larger counties, but the state team aims to review 10 percent of overdose cases assigned to it.

Figure 1. 2020 Drug Overdose Deaths by County of Death (Arizona Rate = 36.3 per 100,000)



METHODS

Identification of cases for review by the state and local OFRCs was accomplished by locating death certificates of Arizona residents who had any drug (prescription or illicit) listed as their primary cause of death. When a person dies, information is entered into the Arizona Department of Health Services (ADHS) Office of Vital Records-Database Application for Vital Events (DAVE).¹⁰ All Arizona deaths are registered through DAVE, which provides the ability to record death events completely and accurately. All deaths between January 1, 2020 and December 31, 2020, with a drug listed as the primary cause of death were identified, and further reviewed by the OFRC.

The state OFR epidemiologist matched identified death certificates to cases with available emergency department and inpatient admissions using the ADHS Hospital Discharge Database (HDD)¹¹ to identify drug-related hospital admissions that occurred in the year preceding death. Per A.R.S. § 36-198, “on request of the chairperson of the drug overdose fatality review team or a local team, and as necessary to carry out the team's duties, the chairperson shall be provided, within five days excluding weekends and holidays, with access to information and records regarding a drug overdose fatality that is being reviewed by the team or regarding the person who overdosed on drugs.” The state and local OFRCs request records from medical facilities, behavioral health agencies, the Controlled Substances Prescription Monitoring Program (CSPMP), law enforcement and emergency medical services, and others.

All records received by the state and local OFRCs were reviewed to determine if additional records were needed to analyze deaths and contributing factors (e.g. substance use, social, psychological and medical factors). A pre-review of the records was performed prior to review by the entire OFRC. Information obtained was subsequently abstracted using an internal abstraction database.

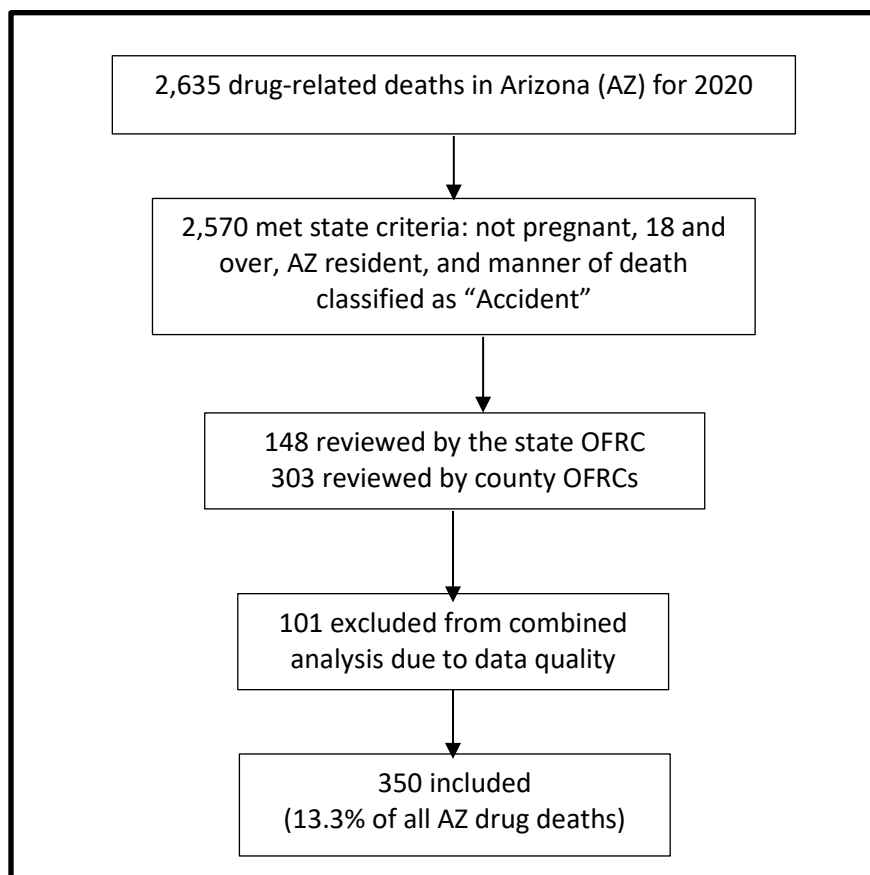
When no information was received from potential sources, which is usually a rare occurrence, the OFRCs used available data contained in the death certificate or non-Tribal agency records to establish causation.

APPROACH

The state OFRC reviewed a random sample of approximately 10% of all cases in counties without a local OFRC (Apache, Graham, Maricopa, Santa Cruz, and Greenlee) and fatalities whose county of residence were unknown. The state OFRC also assisted other local OFRCs and developed a statewide data collection system for comparison across jurisdictions to build a comprehensive picture of how these deaths may be prevented. Local OFRCs reviewed some or all of cases residing/occurring in their county (selection criteria varied by local OFRC).

A total of 148 cases (of the 2020 deaths that fit the state team criteria of Arizona resident, 18 and over, and not pregnant in the last year) were randomly selected for state OFRC review and are included. A total of 303 cases were reviewed by eight local OFRCs (Coconino, Gila, Navajo, Pinal, Pima, Cochise, Mohave, and Yavapai counties). Subsequent to data quality review, 202 cases (from seven of the eight local OFRCs) were combined with the state OFRC cases for analysis (see inclusion criteria in Appendix 1). One county OFRC did not have complete data and therefore was not included in the analysis. A total of 350 cases are included in a brief summary within this report.

Figure 2. 2020 OFRC annual analysis case inclusion



OFRC RECOMMENDATIONS

The OFRC recommendations first start as standardized recommendations given for reviewed cases. The standardized recommendations, created by the state OFRC, are the result of years of research and tweaks to envelop most prevention recommendations seen during OFRC case reviews. They are standardized to make data analysis easier and fall into 5 categories: healthcare, criminal justice, crisis response, community, and substance use disorder treatment. After final data collection and analysis, the OFRC looks at the most common recommendations and turns them into actionable ideas that can be implemented to reduce overdose deaths. The following are the prevention recommendations given for the 2020 cases, with the first addressing the OFRC itself:

- Develop and pass legislation to re-establish the state OFRC (ARS 36-198 and ARS 36-198.01) scheduled to be repealed on January 1, 2023 allowing for the continuation of processes, procedures, and data utilized to effectively identify system gaps and innovative overdose prevention and intervention strategies such as those included in this report. Amend this legislation to allow for state and county health departments to request records on behalf of the OFRC, that records should be free of charge, add the Department of Child Safety as a required OFRC member, and allow county health

departments to access the Controlled Substances Prescription Monitoring Program (CSPMP).

Healthcare

- Enforce mental health and [Substance Use Disorder \(SUD\) parity laws](#) to increase access to mental health services and SUD treatment. Review the most commonly used billing codes for SUD treatment and mental health services to ensure coverage.
- Remove barriers to evidence-based care for persons with SUDs. This includes removing prior authorization and step therapy for medications-assisted treatments for SUDs, continuing federal flexibilities for take-home medication for opioid treatment programs, and continuing telehealth options for persons to begin medication for SUDs. Increase education on all SUD options, and consider incentivizing primary care providers to provide medications used to treat SUDs.
- Continue and expand distribution of naloxone from all healthcare locations, particularly emergency departments. Amend existing naloxone laws so that the distribution of pre-packaged naloxone kits can be dispensed by any person in Arizona, including all staff within healthcare facilities. Additionally, amend Senate Bill 1087 (55th Legislature, 1st Regular Session, 2021) to remove mandatory reporting of naloxone distribution and add clarifying language that no record-keeping is required to distribute naloxone from healthcare settings.
- Increase awareness among healthcare providers of the harms and importance of treatment of co-morbid health conditions among person with SUD, including hypertension, obesity, alcoholism, asthma or chronic obstructive pulmonary disease, sleep apnea, and diabetes.
- Increase funding for appropriate mental health care services, with an emphasis on special populations (e.g., youth, mothers, pregnant persons, tribal and rural communities) in Health Professional Shortage Areas (HPSAs).

Criminal Justice

- Ensure people who are incarcerated are evaluated for SUD within 90 days of admission and as determined thereafter. Offer appropriate mental health services, MAT, and peer-support for prisoners with identified SUDs during incarceration.
- Improve care coordination for people with SUD who are scheduled to be released from incarceration within 90 days by ensuring the referral to the Regional Behavioral Health Authority (RBHA) to assess the individual's need and to develop a transition/discharge plan, to include providing naloxone and connection to peer navigators.

Crisis Response

- Increase access to mental health and substance use services at the time of crisis response, including the new [988 Suicide and Crisis Line](#), to specifically include the transportation and referral to appropriate treatment (in lieu of transportation to the emergency department or criminal justice department).
- Promote and leverage [Crisis Intervention/Response Teams](#) and training for police officers and civilian employees, where available, to increase specialized skills to assist persons with SUD encountered during responses.
- Emergency Medical Service agencies responding to individuals experiencing an opioid-

related overdose should be equipped with enough naloxone to [leave behind](#) pre-packaged, intranasal naloxone (in accordance with [ARS 36-2266](#)) to be used in the future by the at risk person, family members, or friends to reverse an opioid overdose.

Community

- Develop and pass legislation to re-establish the Good Samaritan law (ARS 13-3423) scheduled to be repealed on July 1, 2023 that protects people from being arrested for drug charges if they call 911 or seek medical help at the scene of an overdose where illicit drugs are present.
- Decrease stigma around the use of naloxone. Increase access and education on the use of naloxone in community, public, school, and family settings through training, outreach, and partnership building. Information on naloxone and naloxone training is available from ADHS for law enforcement agencies, county health departments, hospital and medical center emergency departments, community-based organizations (i.e., substance use prevention coalitions, harm reduction organizations, family and homeless shelters).
- Increase communication and alignment of substance abuse coalition work throughout Arizona, including establishment of substance-specific (e.g., opioids) work groups, to increase culturally appropriate education and awareness of the availability, risks, and harms of trending street drugs located throughout Arizona. Continue support for population campaigns highlighting the dangers of opioids, counterfeit pills, and illicit fentanyl in particular.

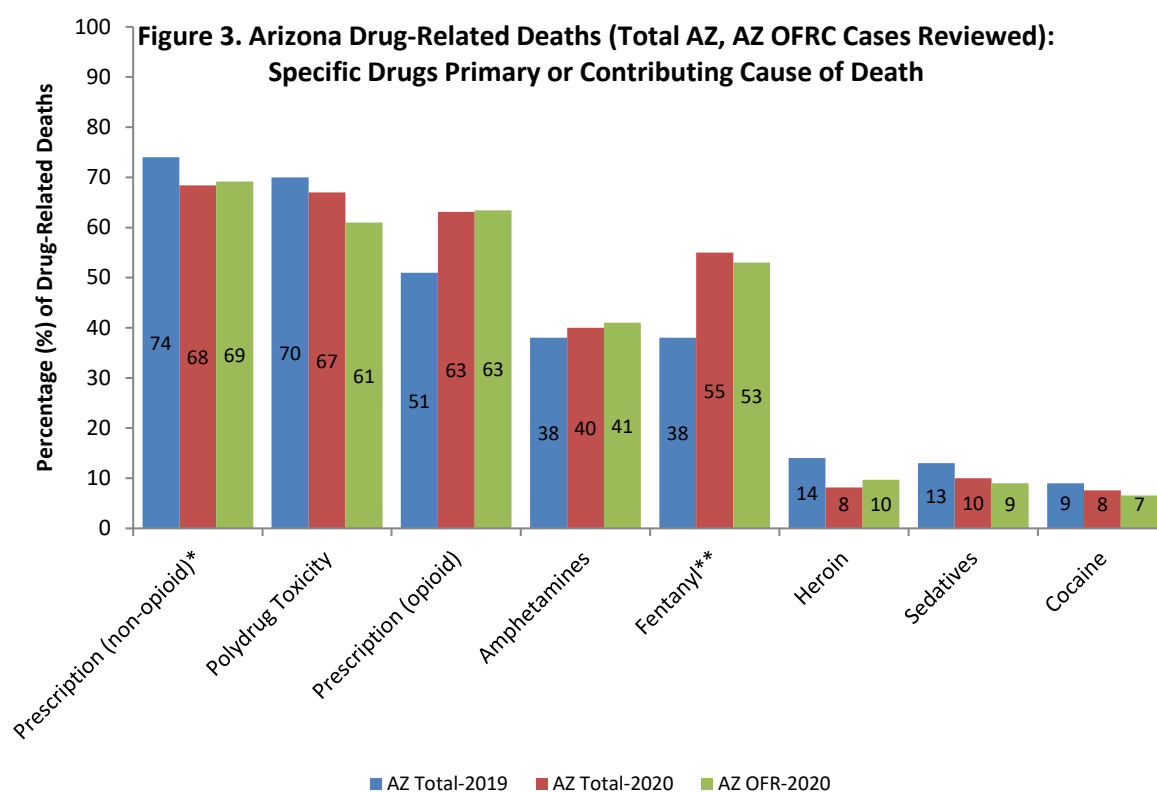
Substance Use Disorder Treatment

- Increase dissemination of culturally appropriate resources through various venues for persons and families of persons with SUD on how to discuss substance use, accessibility and utilization of services, the potential for relapse, and availability of community support networks.

FINDINGS

Drug Types

A primary cause of death is the final disease, injury, or complication directly causing death. A contributing cause of death is the disease or injury that initiated the chain of morbid events that led directly and inevitably to death. An analysis on specific drugs noted as the a) primary cause of death or b) contributing cause was completed for all Arizona drug deaths in 2019 (AZ Total-2019) and 2020 (AZ Total-2020), as well as for the 2020 cases the OFRCs reviewed (AZ OFR-2020). Polydrug toxicity was noted as the primary or contributing cause for 61% of 2020 OFRC drug overdose deaths. Prescription medications (any non-opioid or opioid prescription) were the most common drugs noted as the primary and/or contributing cause of death, followed by fentanyl, amphetamines, and sedatives, with heroin and cocaine the least common (Figure 2). Fentanyl, noted as the primary or contributing cause of death, increased most significantly from 2019 (38%) to 2020 (55%) for all Arizona drug deaths, and was a cause of death in 53% of OFRC cases analyzed. Drug types noted as the primary or contributory cause of death was similar among cases reviewed by the OFRC vs. all Arizona drug deaths.



*Prescription (non-opioid) drugs include antidepressants, corticosteroids, gabapentin, etc. **There was no specific ICD-10 code for fentanyl until October 2020; estimates approximated using cause of death text *** Percentages add to more than 100% because each death can have more than one contributing cause of death. ****Data from Vital Records.

Given the majority (61%) of OFRC case deaths involved polydrug toxicity (i.e., more than one drug), the percentage of cases involving each drug combination was calculated. The most common combination was fentanyl with an opioid prescription (52%), followed by an opioid prescription with a non-opioid prescription (40%), and amphetamines with a non-opioid prescription (40%).

Figure 4. Prevalence of drug combinations in 2020 OFRC cases, n=350, count (percent)

	Non-Prescription Opioid	Opioid Prescription	Fentanyl	Heroin	Cocaine	Amphetamines
Non-Opioid Prescription						
Opioid Prescription	139 (39.7)					
Fentanyl	113 (32.3)	182 (52.0)				
Heroin	22 (6.3)	0 (0)	* (*)			
Cocaine	17 (4.9)	17 (4.9)	15 (4.3)	* (*)		
Amphetamines	138 (39.4)	55 (15.7)	47 (13.4)	17 (4.9)	* (*)	
Sedatives	31 (8.9)	29 (8.3)	24 (6.9)	* (*)	* (*)	* (*)

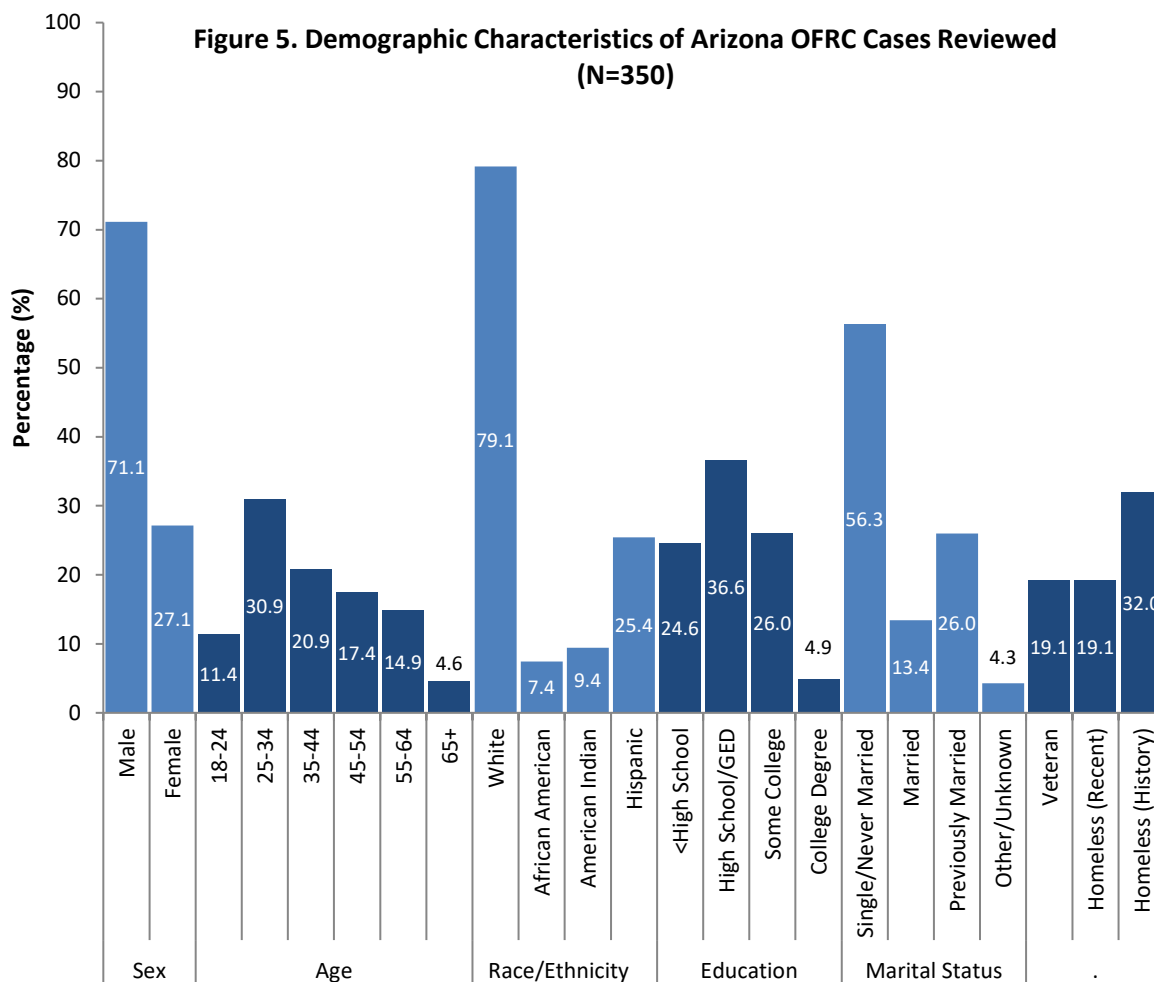
*Non-zero counts less than 6 (and calculated percent) have been suppressed.

2020 STATE OVERDOSE FATALITY REVIEW

From June, 2021 to December, 2021, the state OFRC reviewed a total of 148 overdose deaths. From June, 2021 to May, 2022, local OFRCs reviewed a total of 303 overdose deaths (202 were included in the analysis presented). A database was designed and used to consistently abstract specific variables of interest across all OFRCs for all cases related to demographics, circumstances, contributing factors, comorbidities, stressors, medical history and utilization and prevention recommendations. The level of review detail allowed for extensive analysis of overdose deaths and compiled aggregate data to help inform data-driven recommendations to reduce preventable overdose deaths.

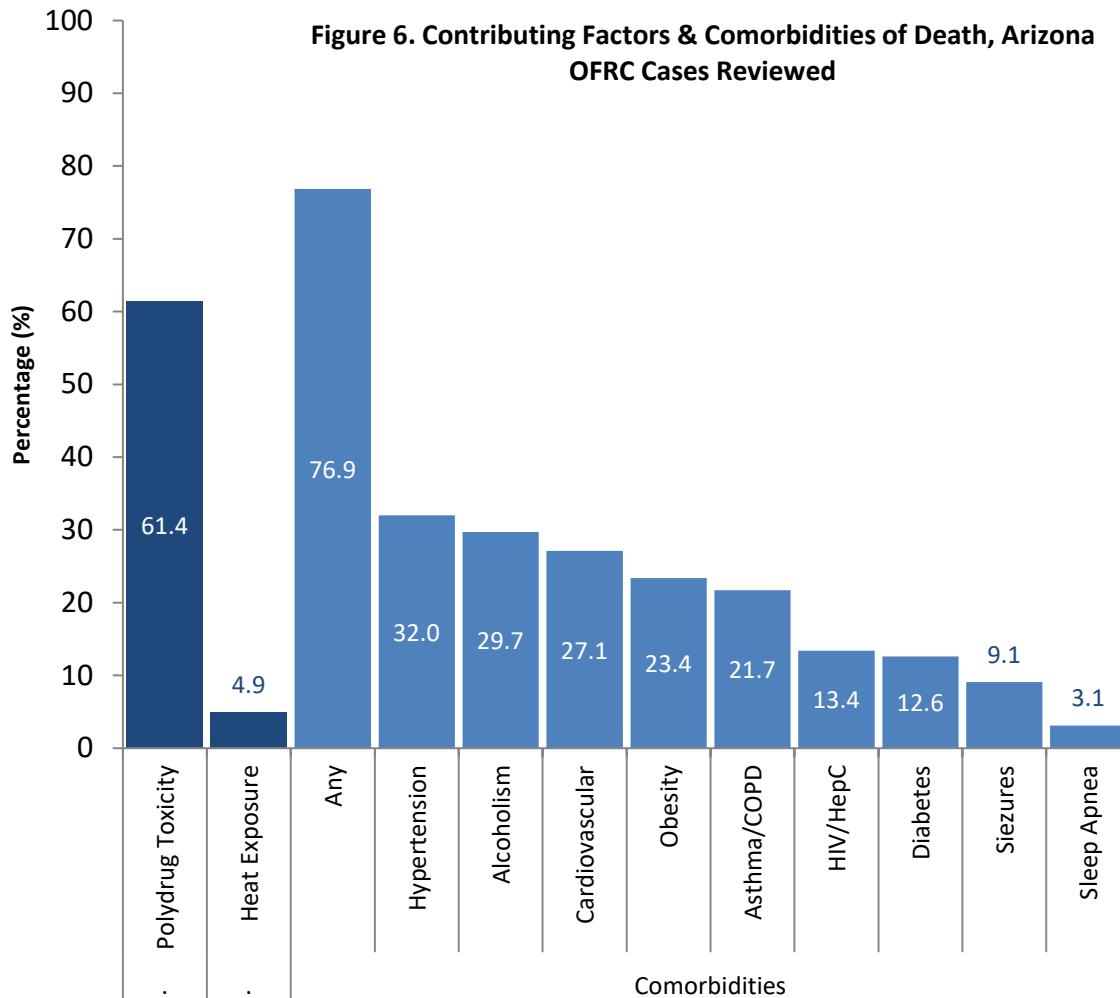
Demographics

OFRC cases were most commonly single/never married, white males who fell into the 25-34 age group. When compared with the general Arizona population, OFRC cases had more cases with unidentified sex, less cases identifying as Hispanic, and more minorities. Unstable housing was common among cases reviewed by the OFRC as evidenced by recent (19%) or lifetime (32%) history of homelessness (Figure 5). For comparison, a more thorough description of demographics for all drug deaths in Arizona can be found in **Appendix 3**.



Contributing Factors & Comorbidities

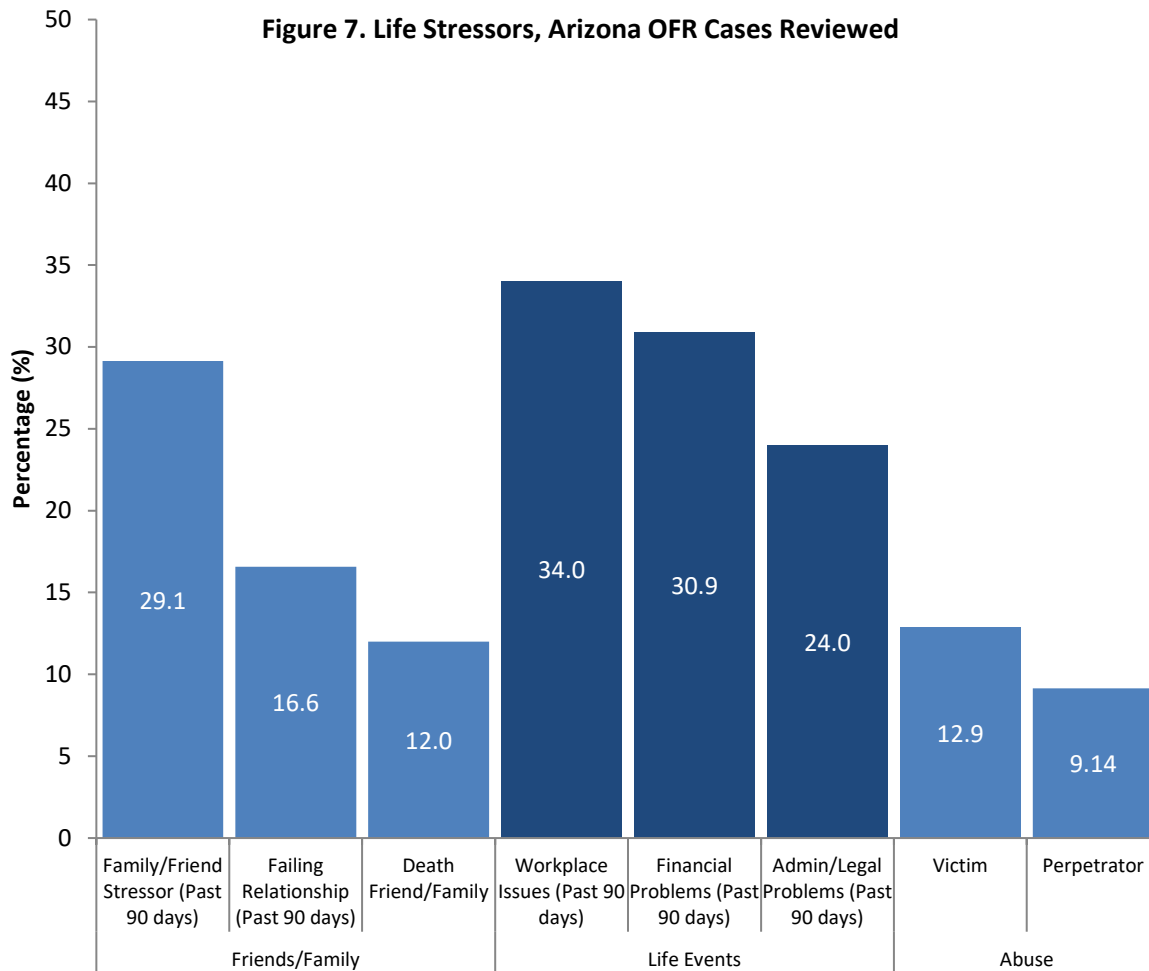
Polydrug toxicity was a contributing factor in the majority (61%) of OFRC cases reviewed. At least one underlying comorbidity was present in the majority (77%) of OFRC cases reviewed. The most common underlying comorbid conditions were hypertension (32%), alcoholism (30%), cardiovascular disease (27%), obesity (23%) and asthma/Chronic Obstructive Pulmonary Disease (COPD) (22%). (Figure 6)



*Any comorbid conditions also include other diseases and conditions prevalence in less than 5% of cases reviewed (e.g., disability, hepatitis, limited independence, unspecified) not specifically parsed out or presented above

Stressors

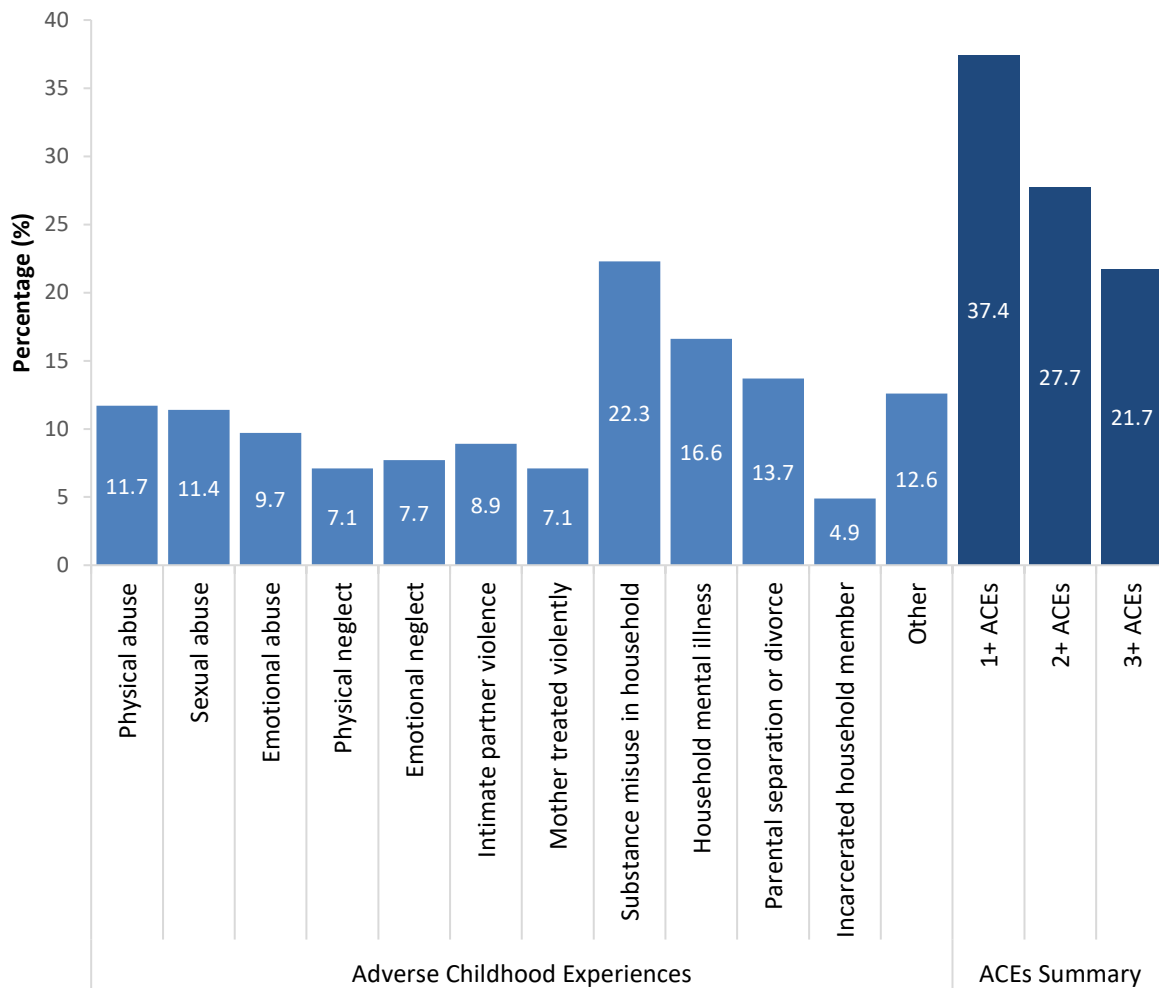
Among OFRC cases, the most common life stressors documented included workplace issues (34%), financial problems (31%), family/friend stressor (29%), administrative/legal problems (24%), and a failing relationship (17%). Thirteen percent (13%) of OFRC cases reviewed were the victim of abuse at some point in their life. Nine percent (9%) were the perpetrator of abuse. (Figure 7)



Adverse Childhood Experiences

Thirty-seven percent (37%) of OFRC cases reviewed had at least one Adverse Childhood Experience (ACE), a traumatic event that occurs between the ages of 0-17, which included abuse (physical, emotional, sexual), neglect (emotional, physical), intimate partner violence, mother treated violently, household substance misuse, household mental illness, parental divorce/separation and incarcerated family member.¹² Twenty-eight percent (28%) of OFRC cases experienced ≥ 2 ACEs and 22% experienced ≥ 3 ACEs. Of the ACEs experienced by the 2020 OFRC cases, the most common was substance misuse in the household (22%), followed by household mental illness (17%), and parental separation or divorce (14%). State and local OFRCs' access to certain medical records, psychosocial records, past clinical history, and other records varies. The prevalence of OFRC characteristics presented is based on known information. (Figure 8)

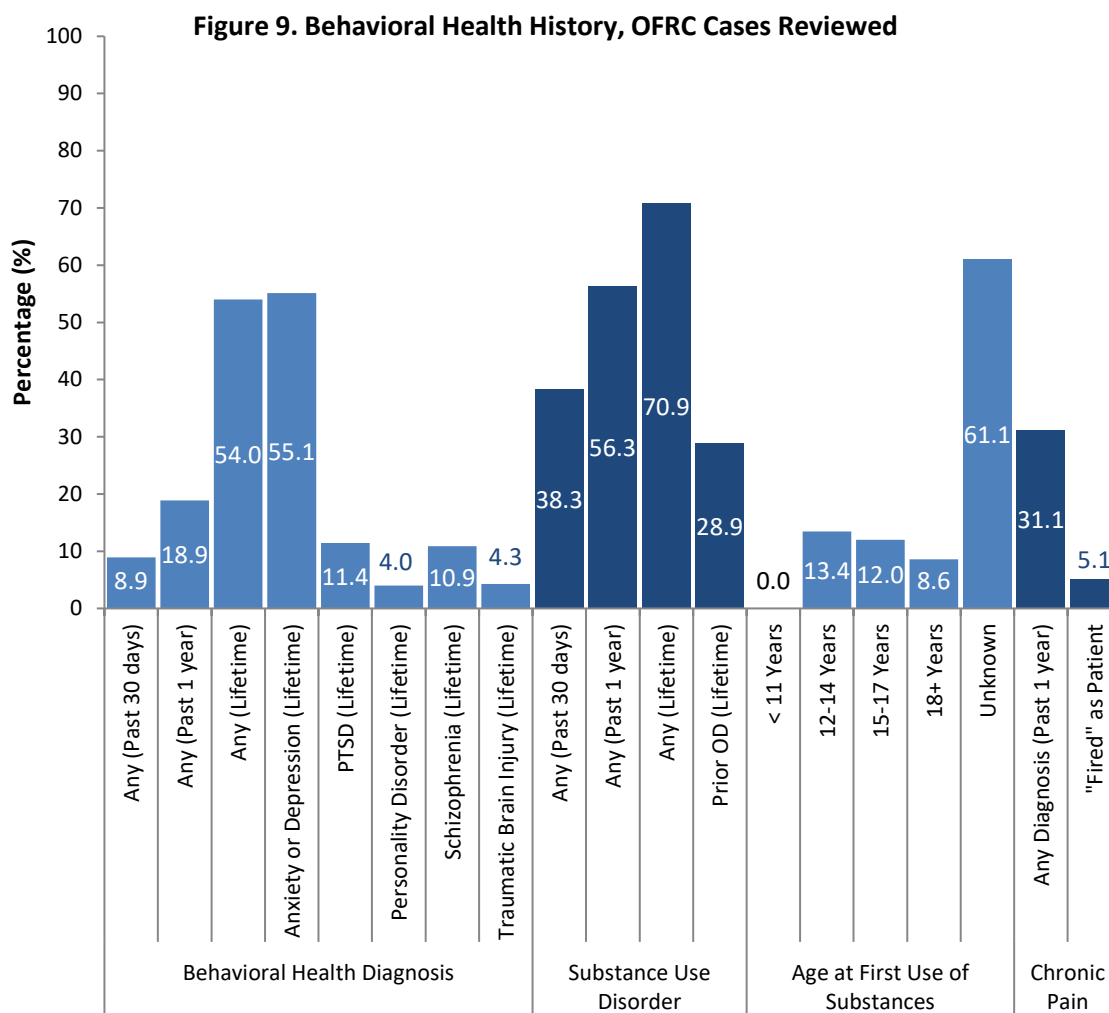
Figure 8. Adverse Childhood Experiences (ACEs)



Behavioral Health History

Among OFRC cases, a behavioral health diagnosis was documented preceding their death in the prior month (9%), prior year (19%), or ever in their lifetime (54%). The most common lifetime behavioral health diagnosis was depression or anxiety (55%).

Among OFRC cases, SUDs were identified preceding death in the prior month (38%), year (56%), or lifetime (71%). History of a prior overdose was identified for just over 1 in 4 cases reviewed (29%). For the majority of cases (66%, not shown in figure), age at which a case first began using substances was unknown. A chronic pain diagnosis was documented in the year prior to death among 31% of OFRC cases. Other lifetime indicators of possible prescription misuse were identified among OFRC cases, including a history of being “fired” as a patient (5%). (Figure 9)

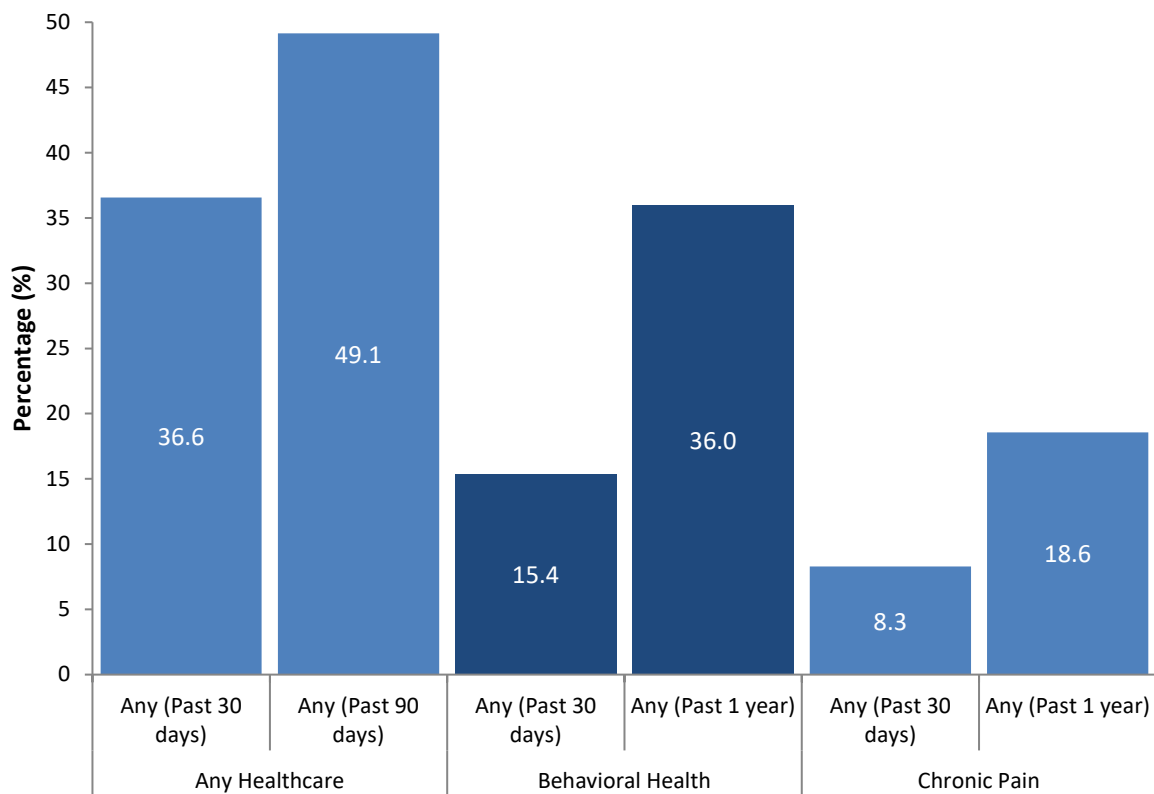


Healthcare Utilization

Approximately 2 in 5 (37%) OFRC cases reviewed had a healthcare encounter noted in the month prior to death, and 1 in 2 (49%) had a healthcare encounter noted in the 90 days prior to death. More specifically, OFRC cases had documented encounters for behavioral health in the month (15%) or year (36%) prior to death, and chronic pain in the month (8%) or year (19%) prior to death. (Figure 10)

Healthcare utilization may be confounded by insurance status. Among OFRC cases reviewed, insurance status and type were not always known or captured.

Figure 10. Healthcare Utilization History, Arizona OFRC Cases Reviewed

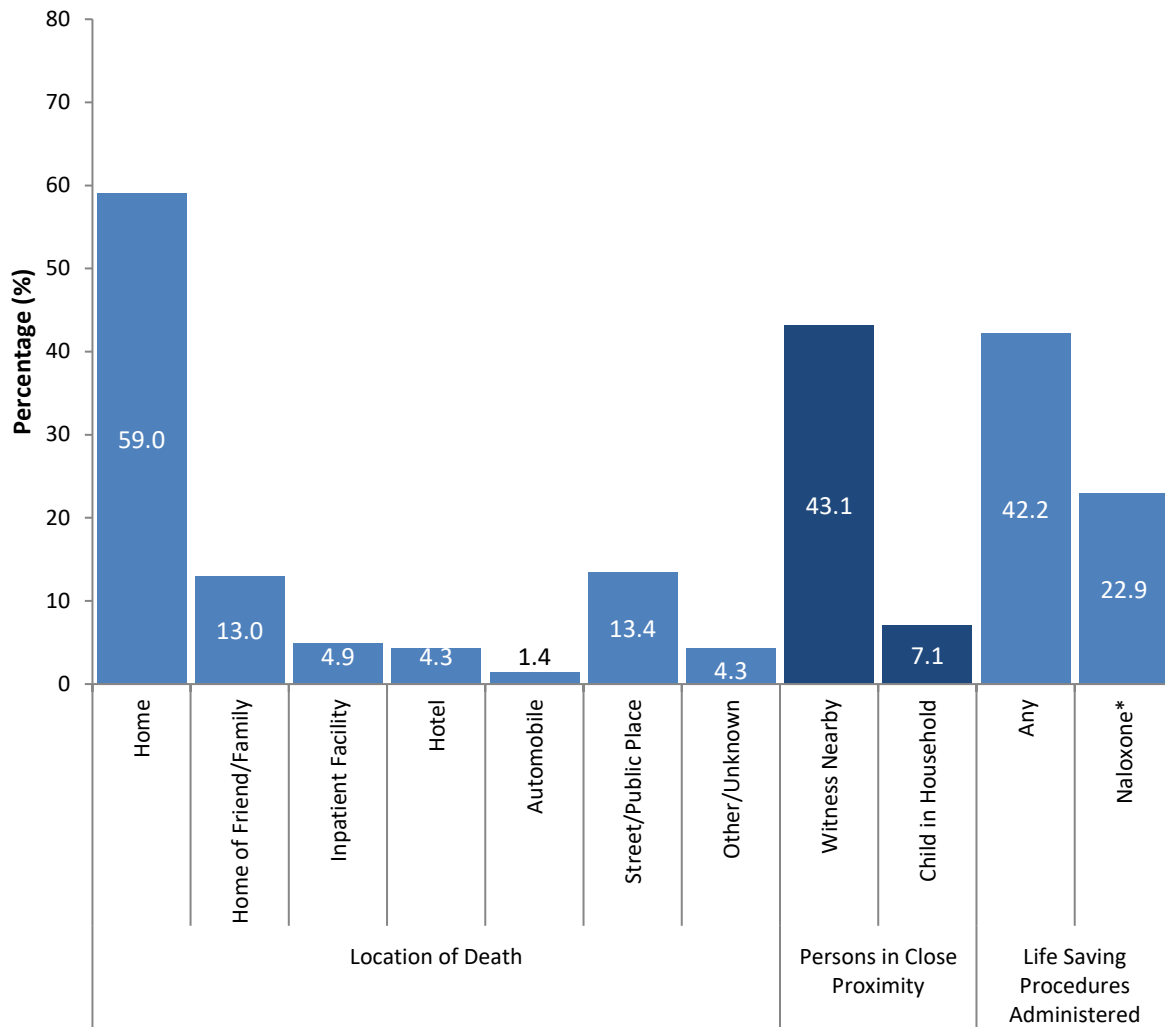


Circumstances

Three of four OFRC cases died at their home or the home of a family member/friend (59% and 13%, respectively), and 43% of cases indicated someone was present or had recently been present around the time of their death. A child (not always related) was in the home around the time of death for 7% of OFRC cases.

Administration of lifesaving procedures, including cardiopulmonary resuscitation (CPR), automated external defibrillation (AED), and naloxone, was documented for 42% of OFRC cases. Naloxone was alone was specifically administered to 23% of cases. (Figure 11)

Figure 11. Circumstances of Death, Arizona OFRC Cases Reviewed



*Naloxone was specifically administered to 25.4% of opioid-related overdoses

Preventability of OFRC Cases Reviewed

The OFR process in Arizona is grounded in the principles of public health and focused on the prevention of all drug overdose deaths. The OFRCs considered prevention measures if there was a *reasonable* opportunity that something could have been done (by an individual, community or system) at some point in a person's life to prevent the death. Prevention measures for an individual case were via consensus by OFRCs after discussing and reviewing all available data. The total number of prevention measures identified (918 total mentions) for 350 individual OFRC cases varied (range 1 to 5). Prevention measures are broadly grouped into themes based on the group the prevention measure involved: healthcare, criminal justice, crisis response, community, and SUD treatment. Local OFRCs also identified prevention measures not shown, but they were utilized to inform local decision-making and summarized for the state OFRC to inform the development of the recommendations included in this annual report.

All prevention recommendations for OFRC cases reviewed are shown in Figure 9 and the most common prevention recommendations within each broad category are described below.

Healthcare

- Increase drug education/awareness: co-morbid conditions (8%)
- Improve care coordination (e.g., discharge with naloxone, warm hand-off to treatment) (7%)
- Increase access to appropriate mental health care services (7%)

Criminal Justice

- Improve care coordination (e.g., release with naloxone, warm hand-off to treatment) (6%)
- Improve access to appropriate mental health care services (4%)
- Access to SUD treatment (e.g. MAT during incarceration) (3%)

Crisis Response

- Increase access to mental health/substance use services (e.g. transport/referral to treatment) (2%)
- Decrease stigma and improve access to naloxone (2%)

Community

- Increase education/access to naloxone (11%)
- Increase drug education/awareness: trending street drugs (9%)
- Improve support to address social determinants (resources: housing, employment, insurance) (6%)

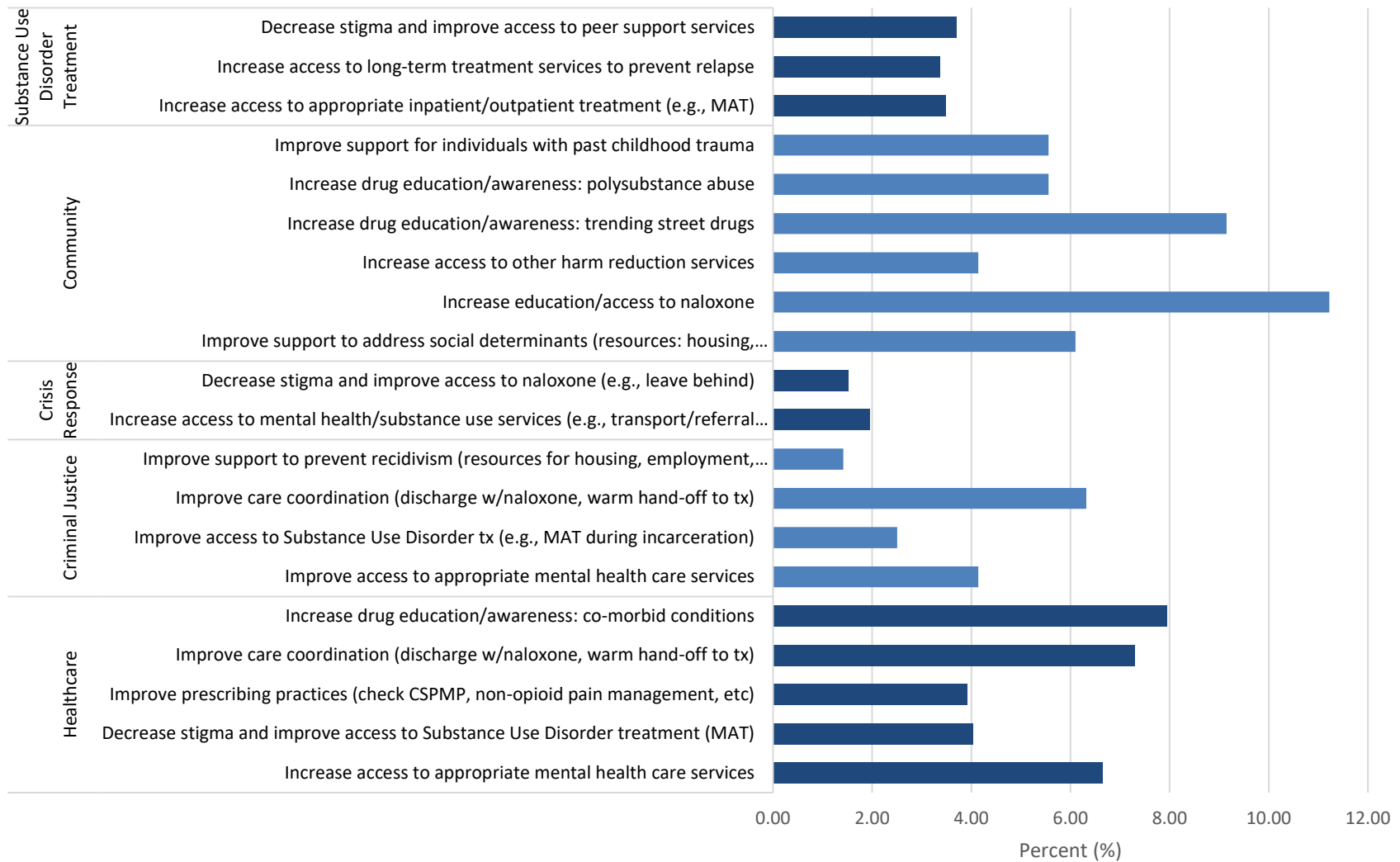
Substance Use Disorder Treatment

- Decrease stigma and improve access to peer support services (4%)
- Increase access to appropriate inpatient/outpatient treatment (e.g. MAT) (3%)
- Increase access to long-term treatment services to prevent relapse (3%)

The five most common prevention recommendation themes were: Increase education and access to naloxone (103 mentions); Increase drug education and awareness of trending street drugs (84 mentions); Increase drug education and awareness of co-morbid conditions (73 mentions); Improve care coordination (discharge with naloxone, warm hand-off to treatment) (67 mentions); and Increase access to appropriate mental health care services (61 mentions).

Naloxone access and education includes recommendations around methods of risk mitigation for emergency medical staff, healthcare professionals, and community members, and removal of barriers and obstacles for naloxone distribution. Increasing education and awareness of trending street drugs includes communicating the risks associated with using unregulated substances, as well as the possibility of drug contamination. Increasing drug education and awareness of the effect of co-morbid conditions when using includes communicating the risks associated with concurrent use of prescription medications, illicit substances, and/or alcohol with medical conditions that make overdose or death more likely. Improving care coordination includes warm hand-offs between treatment agencies, as well as communication between medical professionals not directly involved in treatment, whether substance use, mental health, or other. Increasing access to appropriate mental health services includes recommendations to increase access to the right level of mental health care, and to include increasing community awareness of available services.

**Figure 12. Recommended Preventive Measures, Arizona OFR Cases Reviewed
(918 Recommendations among 350 Cases)**



Limitations to the Overdose Fatality Review Process

One of the limitations to the fatality review process is the time interval between the initiation of substance use and death. This makes it difficult to identify earlier, perhaps more effective, interventions. Reviews are subjective, given that opinions are shaped by committee members' personal experiences, but ensuring the panel is made up of a diverse group of experts can help in countering this. The OFRC state team uses only a sample of the deaths from the counties it reviews, so there may be better representation for some counties than others, and some cases are intentionally excluded (pregnant, under 18) because they are already reviewed by other state or local teams. Arizona has 22 federally recognized Tribes, however the extent to which American Indian/Alaska Natives may be represented in state and local OFRCs varies and is limited by data available. This lack of access to certain medical records, psychosocial records, past clinical history, and other records is a barrier when reviewing the circumstances of a death and if it was preventable, which is the foundation of the OFRC. The prevalence of OFRC characteristics presented is based on known information. Some records may be more complete than others; OFRC reviews are based on what is available.

Next Steps to Enhancing Overdose Fatality Review Process

The state OFRC random sample of 10% review of overdose deaths (for counties without a local OFRC) and the eight local OFRCs' review of overdose deaths in their counties further identified the need for standardized processes and protocols for requesting and reviewing records and formulating an effective methodology to summarize data for these cases compared with all Arizona drug overdose deaths. It is critical that additional local OFRCs be established to conduct and prepare an annual analysis on the incidence and causes of drug overdose deaths in their communities and provide data-driven recommendations for legislation and public policy. It is also critical that established local OFRCs data quality procedures be improved to help inform the ongoing review and data submission of local OFRC case data for inclusion with state OFRC cases.

As directed by A.R.S. §36-198, the ADHS Office of Injury and Violence Prevention developed standards and protocols for local drug overdose fatality review teams and provide on-going training, support, and technical assistance to these teams. The ADHS Office of Injury and Violence Prevention developed a detailed policy and procedure manual for local OFRCs that include an updated prevention measures worksheet for recommendations within the categories of healthcare, criminal justice, crisis response, community and SUD treatment.

Membership

The 2020 state OFRC was a multidisciplinary team of professionals including subject matter experts in the following: forensic medicine (medical examiners), law enforcement, emergency medical services, residential treatment program, public health, correctional health, toxicology, personal experiences, and representatives of Arizona's Tribal nations.

- Daniel Brooks, MD-Chair-Association Representing Hospitals Representative
- Shannon Scheel-Co-Chair-County Sheriff or Sheriff's Designee (pop \geq 500,000)
- Brent Burgett-Professional Emergency Management System Association Representative
- Christina Mrukowicz-Association of County Health Officers (proxy)
- Elisha Franklin, MBA-Chicanos Por La Causa (public member)
- Francis (Shane) Ryder-Department of Public Safety (proxy)
- Gail Bradley, MD-Arizona Department of Health Services Bureau of Emergency Medical Services and Trauma System
- Grant Phillips, MD-Department of Corrections
- Hazel Alvarenga-Arizona Health Care Cost Containment System (proxy)
- Heston Silbert-Department of Public Safety
- Jacqueline Kurth-Arizona Department of Health Services (proxy)
- Jeffrey Johnston, MD-Medical Examiner-Metropolitan Forensic Pathologist
- Jeremy Bulger-Department of Public Safety (proxy)
- Kevin Ray-Office of Attorney General
- Krista Forster-Administrative Office of the Courts
- Lawrence Czarnecki, DO-Medical Examiner - Forensic Pathologist
- Lisa Villarreal, MD, MPH-Arizona Department of Health Services
- Marcy Flanagan-Association of County Health Officers Representative
- Maria Christina Fuentes-Governor's Office of Youth, Faith and Family
- Nidhi Krishna, MS-Arizona Health Care Cost Containment System Representative
- Richard Rowe, MD- Department of Corrections
- Sarah Coles, MD-Statewide Association Physicians Representative
- Satya Sarma, MD-Arizona Health Care Cost Containment System (proxy)
- Sophia Horn-Office of Attorney General (proxy)
- Susan Alameda-Governor's Office of Youth, Faith, and Family (proxy)
- Teresa Aseret-Manygoats, MPA-Arizona Department of Health Services
- Tony Mapp-Department of Public Safety (proxy)

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Appendix A. Local OFRC Data Quality Review Process

Background

Local OFRC teams are required to report drug overdose fatality data to ADHS using the OFRC data collection tool created by ADHS. State and local OFRC teams are required to conduct and prepare an annual analysis on the incidence and causes of drug overdose fatalities during the preceding year and provide data-driven recommendations for legislation and public policy. Annual analyses can also mobilize development of protocols for drug overdose investigations and the public's role in prevention.

Methods

All OFRC tools submitted by local teams were reviewed by the opioid overdose epidemiologist for completeness and to identify data quality issues. After the initial review, local teams were contacted about possible revisions needed for inclusion into the combined dataset (the All Counties Data Tool (ACDT)). There was then a final review and determination of whether resubmitted tools could be accepted and added to the ACDT.

Data quality metrics were established and reviewed for all local OFRC tools submitted. These included the number of cases reviewed, whether the cases matched 2020 drug-related cases from death certificates provided, the number of cases with blank or unknown entries, whether variables had been added or deleted, the number of variables missing data, and whether standard responses were used.

Findings

- Local OFR tools were often missing evidence of age of first drug use data.
- Some local teams overused “unknown” responses resulting in incomplete data collected.
- Some local teams included cases of overdose deaths that did not match 2020 provided death certificates or state requirements for various reasons (e.g., case from different years, not residents of the reviewing county, incorrect death certificate numbers, suicides). Further research was necessary to identify and match these cases to 2020 death certificates.

Conclusions

- After initial submission, 2 of 8 local OFRCs were asked to revise and resubmit their data tools; both resubmitted, 1 was accepted (Table A1).
- 7 of the 8 local OFRCs who submitted their tools were included in the ACDT (including 202 overdose death cases)
- Two common reasons for rejection of data tools were:
 - Incomplete data (too many “unknown” or blank responses)
 - Cases reviewed that could not be matched to 2020 death certificates for drug-related causes.
- Upon development of the ACDT, all OFRC cases were matched with 2020 death certificates.
- Suggested improvements for local team OFRC tools include:
 - Confirm names and death certificate number are included
 - Discontinue use of age of first drug use

- Ensure tool is capturing “evidence of...” to limit unknown responses
- Regularly communicate challenges throughout the OFR process

Table A1. Local OFR Data Tool – Data Quality Review								
County	Cases	Death Certificate Review	Missing Data for Each Case		Missing Data for Each Variable		Variables Added	Variables Deleted
			0-4 items	5+ items	>20% cases	>50% cases		
1*	88	Fail-no death certificate numbers	0	88	Yes-most cases missing data	Yes-most cases missing data	No	No
2	77	Pass	76	1	No	Yes-age at first use	No	No
3**	20	Pass	1	19	Yes-7 including suicidality and healthcare	Yes-20 including all ACEs, most stressors	No	No
4	22	Pass	19	2	No	Yes-education; age at first use	No	No
5	25	Pass	25	0	Yes-age at first use	No	No	Yes
6	7	Pass	6	1	No	Yes-age at first use	No	Yes
7	19	Pass	18	1	Yes-age at first use	No	No	No
8	45	Pass	33	12	10-several data elements missing	1-age at first use	No	Yes

*Did not pass data quality review; resubmitted but was not included in the All Counties Data Tool (ACDT)

**Did not pass first review, passed resubmission, was included in the ACDT

Appendix B. County OFRC Reports

OFRs involve a series of confidential, individual death reviews by a multidisciplinary team to effectively identify system gaps and innovative, community-specific overdose prevention and intervention strategies. By conducting a series of OFRs, jurisdictions begin to see patterns of need and opportunity, not only within the specific agencies but across systems. Examples of successful OFR practice and implemented recommendations are described briefly for participating Arizona Counties below.

Cochise County

For Cochise County's 2020 OFR cases, the most common drug in cause of death was methamphetamine, which is specifically named in their recommendation to increase education for providers and the community on the dangers of methamphetamine use when a person also has co-morbid conditions. This differs from the state trend of fentanyl being most common and highlights the importance of the localized data that county OFRCs collect. Addressing social determinants of health was another important recommendation given that 62 percent of their cases had AHCCCS (Medicaid), and 10 percent were homeless at the time of their death. They also recommended expanding naloxone distribution opportunities and protocols with hospitals, EMS, prescribers, correctional facilities, and public health sites after reviewing a large percentage of cases where naloxone was not administered.

<https://www.cochise.az.gov/DocumentCenter/View/4123/Cochise-Overdose-Fatality-Review-Annual-Report-2020-PDF?bidId=>

Coconino County

Coconino County's most recently posted report is for their 2019 OFR cases. In their analysis, they found that 32 percent of their cases had a mental health diagnosis, 36 percent had prior treatment for a SUD, 46 percent had chronic pain or a significant health issue, and 32 percent had been prescribed opioids. Given these data, Coconino recommended enhanced care coordination between providers, with more utilization of the Health Information Exchange (HIE) so providers may see all pertinent records for their patients, allowing for continuity of care between specialties. Their harm reduction recommendation through more access to naloxone includes family members and service industry employees, in addition to the usual pharmacists and physicians, and education recommendations are targeted at those who use drugs with messages about decreased tolerance and using with others. Throughout the recommendations, the theme of stigma reduction is seen with many recommendations.

<https://www.coconino.az.gov/DocumentCenter/View/43023/Coconino-County-Overdose-Fatality-Review-Annual-Report-2019>

Navajo County

Of Navajo County's 2020 OFR cases, 60 percent had a history of incarceration, which helped lead to a recommendation from Navajo's OFRC is to improve the "warm Hand-off" and referral

process for those being released from incarceration or hospitalization. Under this heading, they also recommended establishing a Crisis Response Team, which they are beginning to build with their first trained Peer Support Specialist. They have also begun to train their staff to be Mental Health First Aid trainers and had their first International Overdose Awareness Day, which is aimed at reducing the stigma around substance use. Given that 36 percent of their cases had 4 or more ACEs, Navajo's OFRC is also looking for ways to address ACEs in youth and the community as a whole.

https://www.navajocountyaz.gov/Portals/0/Departments/Public%20Health%20Services/Injury%20Prevention/Navajo%20County%202020%20OFR%20Annual%20Report.pdf?ver=qsp4WU6_P9QSL0zzCjU0Dg%3D%3D

Pima County

In Pima County's 2019 OFR report, they detail the lack of naloxone administration by those with the deceased at the time of overdose. Stating that only 2 of 22 cases with bystanders had naloxone administered, Pima County's OFRC recommended naloxone training for laypeople as well as first responders with added education about fentanyl and the possible need of multiple doses due to its strength. In addition, naloxone distribution is recommended for facilities such as hospitals and detention centers due to increased overdose risk for these individuals. As stated, they found that 33 percent of fully reviewed cases died within a week or less of their release from such facilities. With their recommendation of improved discharge planning for those with a SUD or overdose, such prevention measures could improve outcomes for many in their county.

https://webcms.pima.gov/UserFiles/Servers/Server_6/File/Health/CMHA/Pima%20County%20Overdose%20Fatality%20Review%20Annual%20Report%202019.pdf

Pinal County

For their 2020 OFR cases, Pinal County's OFRC found that 72 percent of them had never been in drug treatment, leading to recommending better access to inpatient and outpatient treatment for SUDs. To aid this recommendation, the Pinal County Wellness Alliance (a local stakeholder) put together a database for local judges where they can find behavioral health and substance misuse treatment options for those with SUDs. Thus, judges may have options other than straight incarceration for people with these needs, also touching on the recommendation of better access to mental health care services. In addition, their Overdose to Action program has used multiple avenues to advertise the Opioid Assistance and Referral (OAR) Line, where callers can get information on opioid medications, overdose, behavioral health/MAT resources, and securing naloxone, to name just some of the support they provide.

Yavapai County

Many of Yavapai County's recommendations involved law enforcement, most likely because 26 percent of the cases they reviewed were on court supervision at their time of death, and 46 percent had been incarcerated at some point. Their OFRC looks at these as opportunities of intervention, with recommendations like supporting those who complete Drug Court and

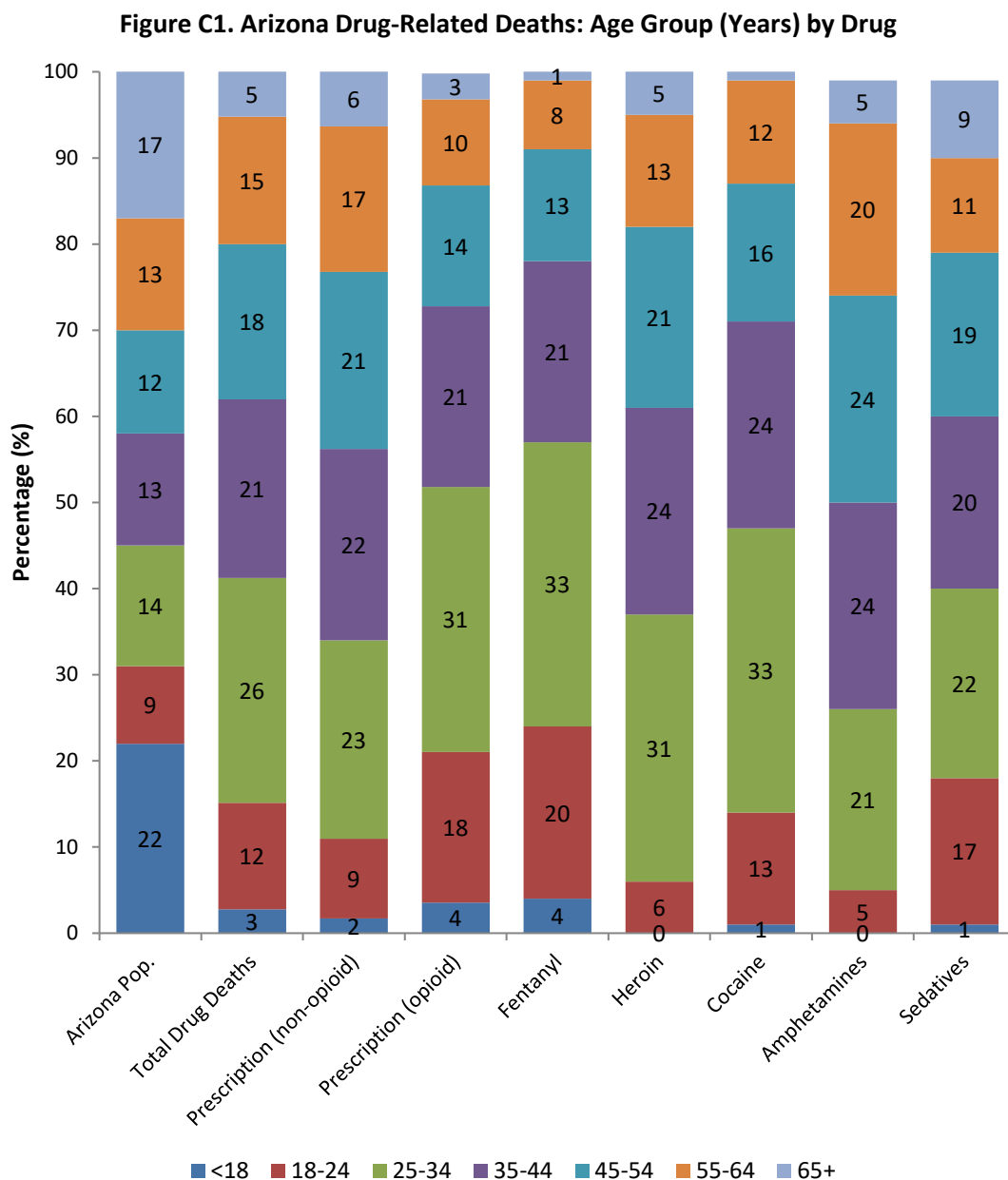
increasing mental health services in the jail. In addition, they recommended utilizing crisis teams for situations where police may not be the appropriate response. This will hopefully keep people out of jail and get them the help they need with just one call.

https://www.matforce.org/Portals/0/ofrb%20annual%20report-Spring%202021_WEB.pdf?ver=ZPGlbCK5nVWm9xsVB2jJag%3D%3D

Appendix C. All Arizona Drug Overdose Deaths - Demographics

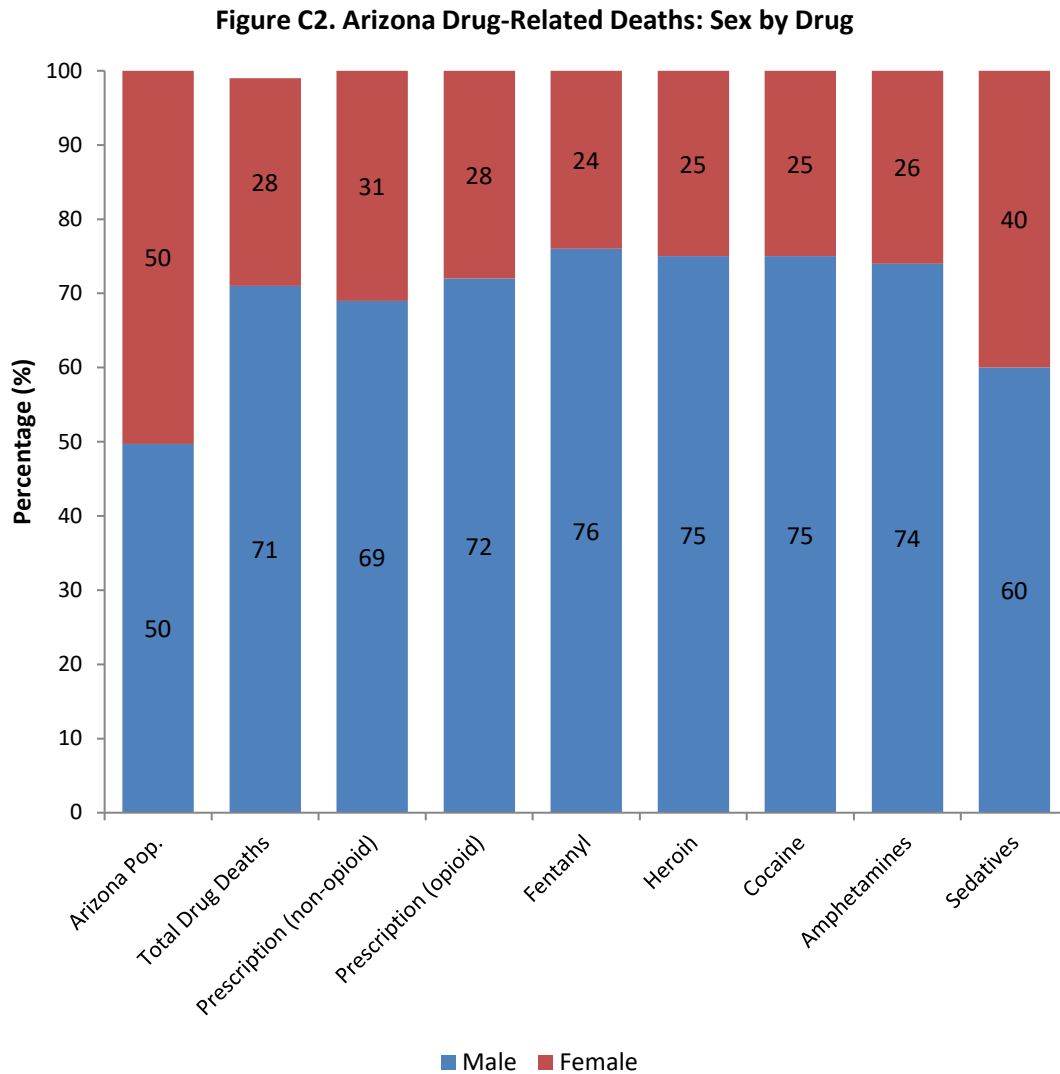
Age (Figure C1)

The distribution of drug overdose deaths by age is significantly different from the Arizona population, with numbers skewing younger to middle-aged. The most common age groups overall for drug overdose deaths were 25-34 years (26%), 35-44 years (21%) and 45-54 years (18%). Results varied by drug involved.



Sex (Figure C2)

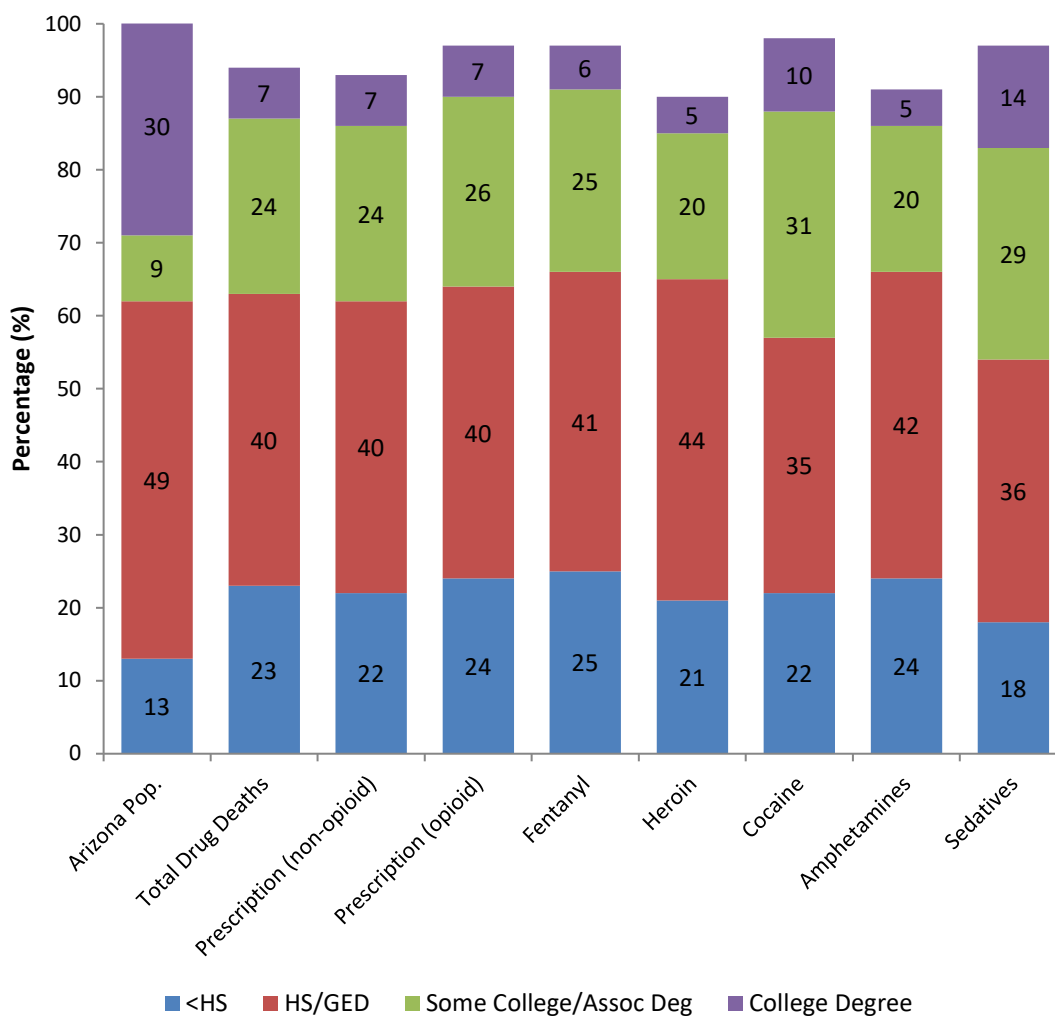
The distribution of drug overdose deaths by sex is significantly different from the Arizona population; skewed towards more males. Drug overdose deaths were more common overall among males (71%) than females (29%). This difference was more pronounced for some specific drug types including cocaine (75% males), heroin (75% males), fentanyl (76% males), and amphetamines (74% males).



Education (Figure C3)

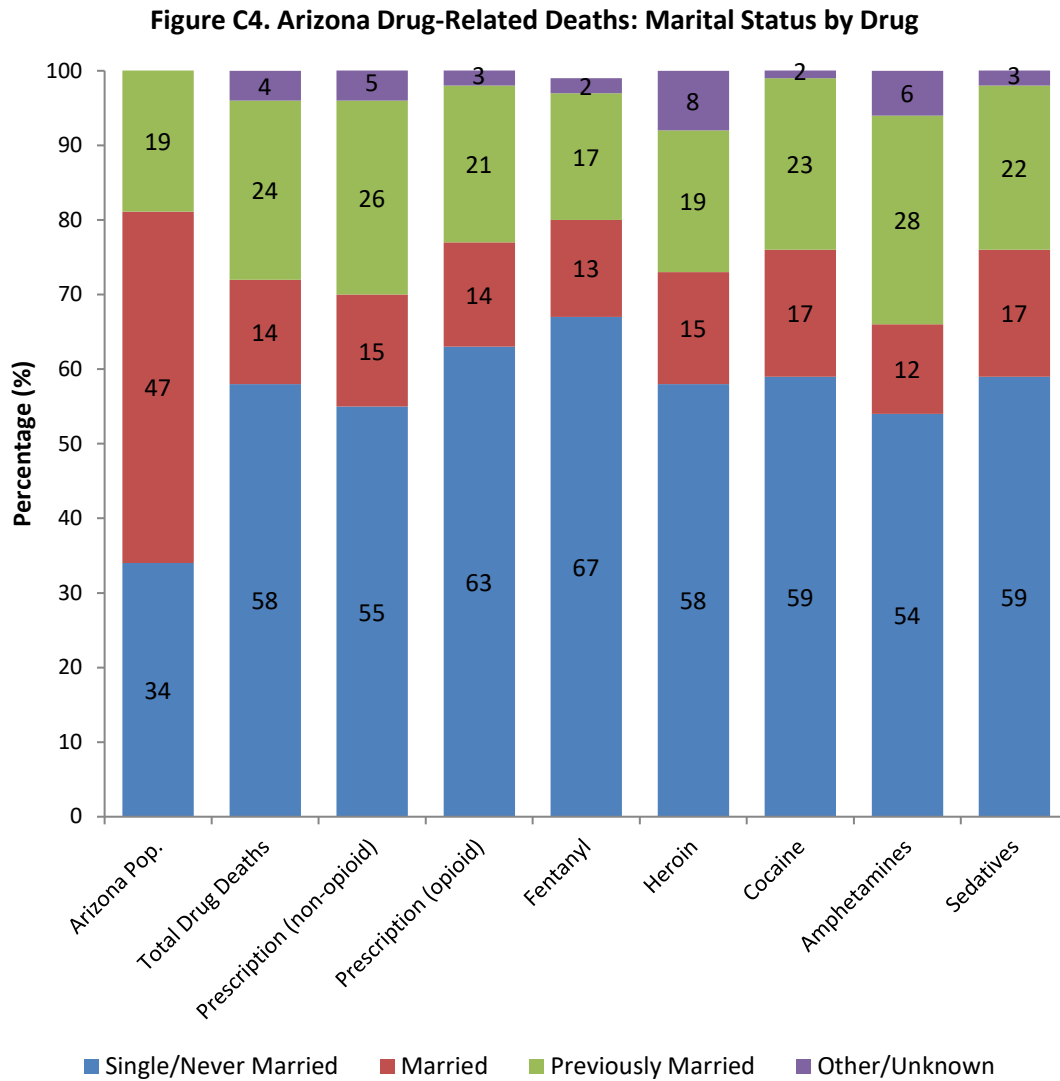
The distribution of drug overdose deaths by education is significantly different from the Arizona population; skewed towards lesser education levels. The most common education level overall for drug overdose deaths was a high school diploma (40%), some College (24%), or less than a high school diploma (23%), but results varied by drug involved. Drug overdose deaths due to fentanyl, prescription opioids, and amphetamines were more likely to have less than a high school diploma (25%, 24%, and 24%, respectively).

Figure C3. Arizona Drug-Related Deaths: Education by Drug



Marital Status (Figure C4)

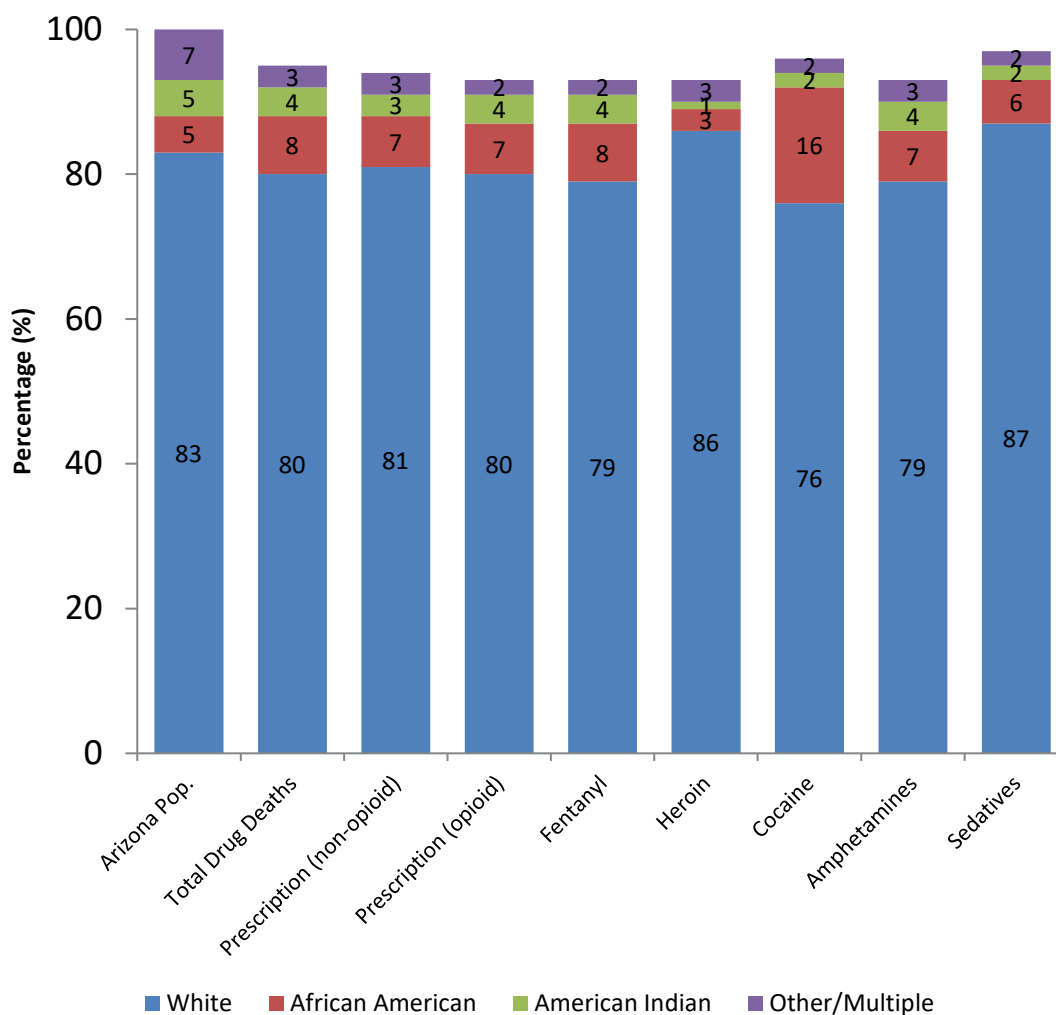
The distribution of drug overdose deaths by marital status is significantly different from the Arizona population; consisting of more single/never married and previously married. The most common marital status overall for drug overdose deaths was single/never married (58%) or previously married (24%), but results varied by drug involved. Drug overdose deaths due to fentanyl or prescription opioids were more likely to be single/never married (67% and 63%).



Race (Figure C5)

The distribution of drug overdose deaths by race is significantly different from the Arizona population for African Americans and those falling into the “Other/Multiple” category. The most common race overall for drug overdose deaths was White (80%), which closely aligns with the Arizona population, but the percentage of drug overdose deaths that were African American (8%) and Other/Multiple races (3%) were significantly different than the general population. Drug overdose deaths due to cocaine were two times more likely to be African American (16%) compared to all drug overdose deaths overall (8%). Drug overdose deaths due to heroin were about three times less likely to be African American (3%) compared to all drug overdose deaths overall (8%).

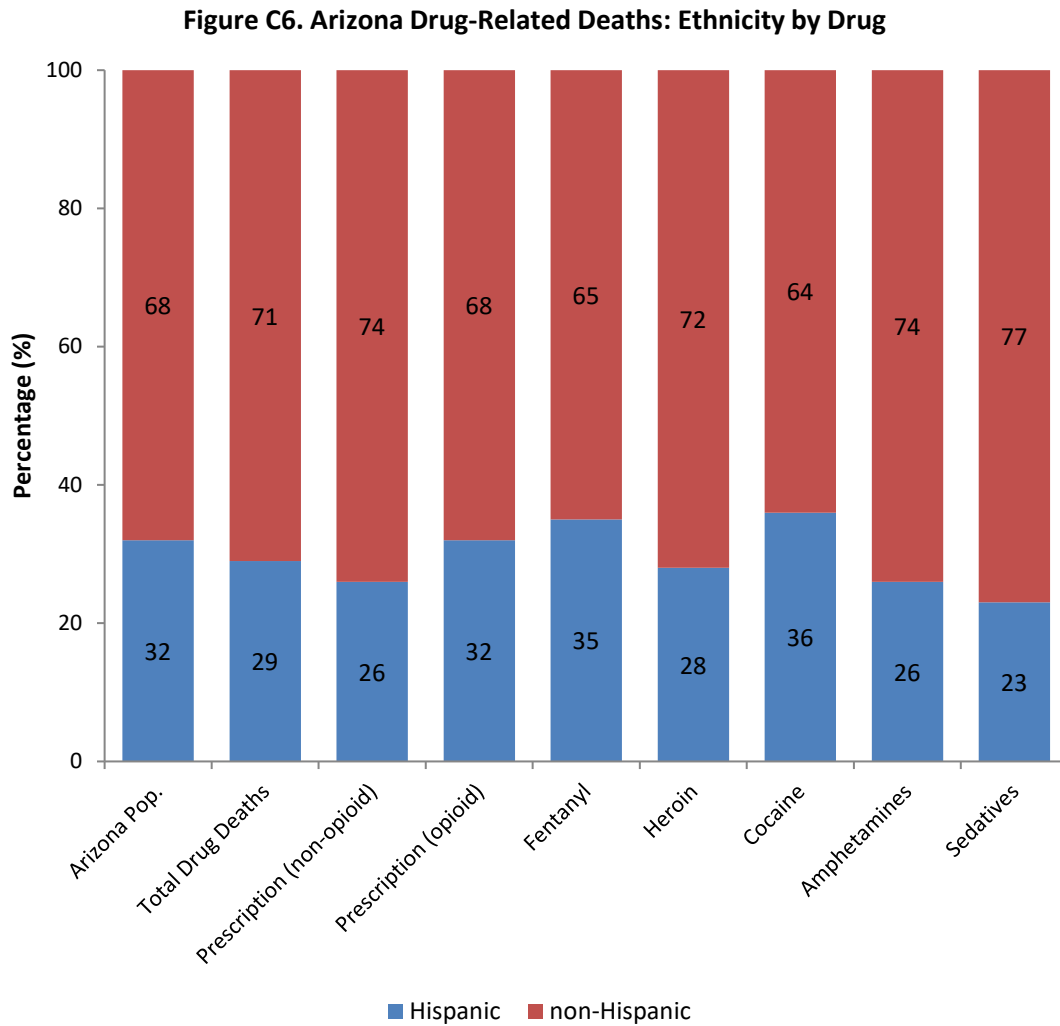
Figure C5. Arizona Drug-Related Deaths: Race by Drug



*Percent does not add to 100% due to rounding and unknown race data

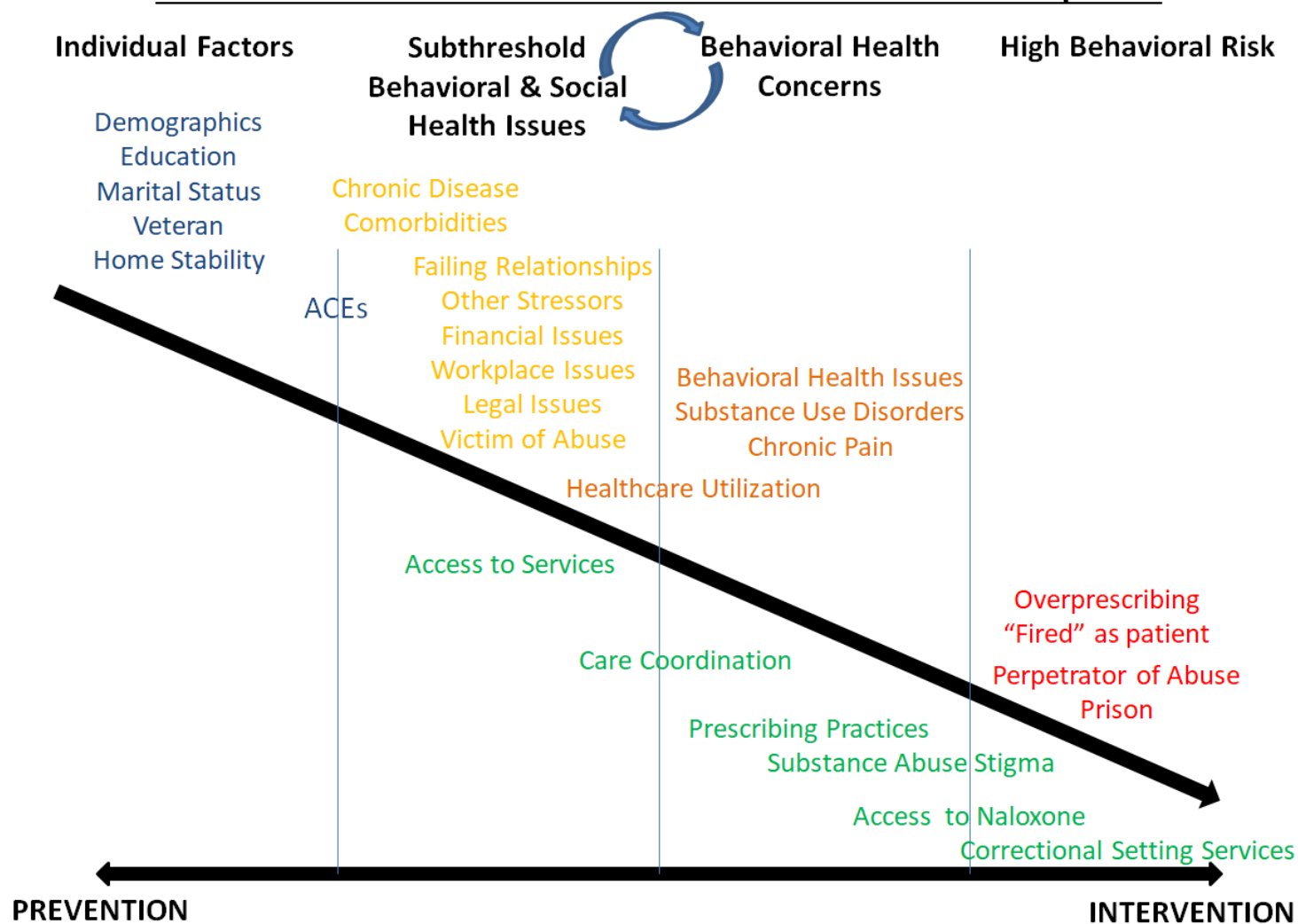
Ethnicity (Figure C6)

The percent of drug overdose deaths that were Hispanic (29%) was lower than the Arizona population (32%). Drug overdose deaths due to fentanyl or cocaine were about 1.3 times more likely to be Hispanic (35% and 36%) compared to all drug overdose deaths overall (29%).



Appendix D. Continuum of Behavioral and Social Health Outcome Development

Continuum of Behavioral and Social Health Outcome Development



*ACEs: Adverse Childhood Experiences