ARIZONA DEPARTMENT OF HEALTH SERVICES

Opioid Overdoses Surveillance Report, Arizona, 2022

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Intended Audience

This is a technical report on the analysis of the prevalence and causes of opioid overdoses in Arizona. This report is aimed primarily at those actively involved in the prevention, intervention, and interdiction of substance use disorders, 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 substance use disorders.

How to Use This Report

This report describes the prevalence of opioid overdoses in Arizona, as well as a variety of risk- and associated-factors contributing to these events among individuals in Arizona. The key findings presented in this report should assist in the identification of future targets for intervention and guide effective and evidence-based efforts towards the reduction of substance use disorder outcomes.

Disclaimer

Use of Term: Opioid Overdose

The use and definition of the term "opioid overdose" in this report may differ from other organizations, and is largely dependent on the data source from which it is derived. All definitions are described in the Definitions Section.

Previous ADHS Reports on Opioid Overdoses

The findings in this report related to opioid overdoses were derived from methods established in 2022 by the Business Intelligence Office during the revision of the ADHS Opioid Dashboard, including institution of increased data quality standards for all data sources.

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 limited to opioid-related overdoses. Population level data for deaths of all Arizona residents can be found in the Arizona Health Status and Vital Statistics Annual Report. In order to produce the timeliest availability of reported data, provisional population denominators were used.

Data Suppression

It is important to note that ADHS suppresses numbers less than ten to protect confidentiality of rare cases and to eliminate bias or potential for error in reporting numbers or rates.

Race/ethnicity categorization

Race/ethnicity groupings are mutually exclusive. Individuals identifying as 'Hispanic or Latino' are not included in the remaining race categories. Population rates for 'Other' and 'Unknown' categories are not available due to the lack of an appropriate denominator.

While we acknowledge that there is a significant amount of surveillance data from the Centers for Disease Control and Prevention (CDC) and other partners, this report is solely based on data from state data repositories. Please note our findings may slightly differ from other national data sources such as CDC's State Unintentional Drug Overdose Reporting System (SUDORS), Drug Overdose Surveillance and Epidemiology (DOSE) system, and National Vital Statistics System (NVSS). However, as part of our ongoing surveillance efforts, we actively contribute to these data sources.

Arizona Department of Health Services aspires to present data humbly, recognizing numbers never tell the whole story. We aim to collaborate with individuals and communities to gain valuable insight and foster a collective understanding of the drug overdose crisis. By combining this insight with data to inform policy and drive systemic change, we hope to leverage this collaboration for the improvement of health for all.

Executive Summary

51,760 Opioid-related hospitalizations

3,422 Non-Fatal Opioid Overdose Events

1,927 Opioid Overdose Deaths

10,093 Suspected Opioid Overdose Responses

3,159,954 Opioid Prescriptions

Synthetic opioids (except methadone), mostly illicit fentanyl, are responsible for an increasing number of overdose deaths in Arizona.[1,2] This rise reflects a growing problem across the nation and overdose deaths remain a leading cause of injury-related death in the United States.[3] In 2022, there were 1,927 opioid overdose deaths among Arizona residents. The leading manner of opioid overdose deaths was accidental (93.4%), followed by suicide (4.0%), and undetermined (2.0%). The leading cause was prescription and synthetic opioids (97.2%). The mortality rate for opioid overdose deaths was highest among males (39.7 per 100,000), Black or African Americans (32.4 per 100,000), individuals 35-44 years old (55.0 per 100,000), and 25-34 years old (52.0 per 100,000). The rate of opioid overdose deaths per 100,000 increased from 2017-2021, with a slight decrease from 2021-2022.

Other opioid overdose-related events are reported via multiple data sources in the report, each providing different levels of detail. From most to least specific, there were 3,422 reportable non-fatal opioid overdose events (Medical Electronic Disease Surveillance Intelligence System) and 51,760 hospitalization or Emergency Department (ED) visits with any mention of opioids (hospital discharge records) in 2022. Hospitalizations with any mention of opioids resulted in approximately $2.2 billion in total charges annually in 2022. Opioid-related hospitalizations and emergency department visits rate was highest among males (833.1 per 100,000), Black or African American (1058.7 per 100,000) and White individuals (837.3 per 100,000), and individuals aged 25-34 years (1342.5 per 100,000). Non-fatal opioid-related overdoses most commonly occurred among males (65.1%), White (57.2%) and Hispanic (28.2%) individuals, and individuals aged 25-34 (31.8%). The rate of non-fatal opioid-related overdoses was highest among males (60.5 per 100,000), African American or Black individuals (67.7 per 100,000) and American Indian or Alaska Native individuals (54.4 per 100,000), and individuals 25-34 years old (105.6 per 100,000). Throughout the year the overall trend of non-fatal opioid overdoses was fairly stable, with peaks in summer months (July-August). In 2022, fentanyl was the most common drug involved in non-fatal opioid overdose events, with polydrug use reported in approximately half (52.1%) of these events.

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[1] SUDORS Dashboard: Fatal Overdose Data | Drug Overdose | CDC Injury Center. www.cdc.gov. Accessed August 29, 2023. https://www.cdc.gov/drugoverdose/fatal/dashboard/index.html#

[2] Centers for Disease Control & Prevention. Products - Vital Statistics Rapid Release - Provisional Drug Overdose Data. CDC. Accessed August 29, 2023. https://www.cdc.gov/nchs/nvss/vsrr/drug-overdose-data.htm

[3] Centers for Disease Control & Prevention. Understanding the epidemic. CDC. Accessed August 29, 2023. https://www.cdc.gov/drugoverdose/epidemic/index.html

The number of opioid prescriptions and average morphine milligram equivalents (MME) dispensed in Arizona decreased during 2022 compared to previous years.

There were 10,093 Emergency Medical Services (EMS)/Law Enforcement responses reported for suspected opioid overdoses in 2022. EMS/Law Enforcement response for suspected opioid overdoses occurred most commonly among males (68.1%), White (51.3%) or Hispanic (24.2%) individuals, and individuals 18-44 years old (65.9%). Naloxone was administered for 8,053 EMS/Law Enforcement responses for suspected opioid overdoses (>78.0% of all responses). Naloxone was administered most commonly by EMS (77.9%), Law Enforcement (15.0%), or a bystander (5.0%). In 2022, a total of 60,964 naloxone was dispensed by pharmacies, a 18.5% increase compared to previous year.

In summary, the opioid overdose data underscores the alarming contribution of synthetic opioids, particularly illicit fentanyl, to the number of overdose deaths in Arizona. The findings also highlight demographic disparities in both fatal and non-fatal cases, emphasizing the importance of tailored prevention and response strategies. Notably, the ongoing efforts to mitigate the impact of opioid-related incidents are underscored by the widespread administration of naloxone by EMS/Law Enforcement responses and naloxone dispensation by pharmacies. Despite a slight decrease in opioid overdose deaths from 2021 to 2022, the data demonstrates the continued urgency to address the drug overdose crisis in Arizona through comprehensive and collaborative approaches.

The most current statistics for opioid-related overdoses, including for the current year to date, can be viewed on the ADHS Opioid Dashboard.

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Introduction

In 2021, in the United States there were an estimated 106,699 drug overdose deaths. The age-adjusted rate of overdose deaths increased by 14.5% from 2020 (28.3 per 100,000) to 2021 (32.4 per 100,000).[4] 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. Opioids, mainly synthetic opioids (other than methadone), are currently the largest driver of drug overdose deaths (88% of all drug overdose deaths). Opioids were involved in 80,411 overdose deaths in 2021 (75.4% of all drug overdose deaths).[4]

In Arizona, the number and age-adjusted rate of drug overdose deaths increased from 2020 [2,643 (36.8 per 100,000)] to 2021 [2,846 (39.1 per 100,000)][5]. According to CDC, relative to other states, Arizona ranked 15th highest in 2020 for the rate of drug overdose deaths.[6,7] Despite significant national efforts and resources dedicated to tackling the drug overdose epidemic, the data highlights the urgent need to intensify our efforts, especially given the post-pandemic facing Arizona communities.

The current report provides an update on current trends of opioid-related overdoses in 2022 in Arizona. The most updated statistics for opioid-related overdoses can be viewed on the ADHS Opioids Dashboard. The data presented in this report may differ slightly, even for comparable years, as this is a snapshot of the data and the dashboard will continue to be updated.

[4] https://www.cdc.gov/opioids/data/index.html
[5] Data source: Arizona Vital Statistics
[6] https://www.cdc.gov/drugoverdose/deaths/2020.html
[7] Please note as of December 24, 2023, data for 2021 is not yet available on CDC's webpage

Definitions

Opioids

Opioids are a class of drugs that derive from, or mimic, natural substances found in the opium poppy plant. Opioids work in the brain to produce a variety of effects, including pain relief. Opioid drugs include prescription pain medicine and illegal drugs. Prescription opioids can be prescribed by doctors to treat moderate to severe pain but can also have serious risks and side effects. Common types are oxycodone (OxyContin), hydrocodone (Vicodin), morphine, and methadone. Methadone is a medication approved by the Food and Drug Administration (FDA) to treat Opioid Use Disorder (OUD) as well as for pain management. Buprenorphine is another (semi-synthetic medication) approved by the FDA to treat OUD.[8]

Pharmaceutical fentanyl is a synthetic opioid approved for treating severe pain, typically advanced cancer pain. It is many times more powerful than other opioids. Illicitly made and distributed fentanyl, as well as deaths involving synthetic opioids – such as fentanyl and fentanyl analogs, have increased in recent years.

Opioid Deaths (from Death Certificate)

Opioid deaths in Arizona are based on final determination of cause of death as reported on the official death certificate. The underlying cause code used in opioid overdose deaths may not always specify opioids, in which case the contributing cause(s) are also referenced. For example, drug overdose deaths caused by acute poisonings as the underlying cause of death that involve any opioid as a contributing cause of death, regardless of intent (e.g., unintentional, suicide, assault, or undetermined) or type of drug are considered opioid deaths. The list of ICD-10 codes used to identify opioid deaths can be found here.

Opioid-Related Hospitalization and Emergency Department (ED) Visits

Opioid-related hospitalization and ED visits are defined as hospitalization or ED visits with any mention of opioids in the diagnosis codes of hospital discharge records. Hospitalization or ED visit events are grouped by year according to discharge date.

Non-Fatal Opioid Overdose Events (from MEDSIS)

The Medical Electronic Disease Surveillance Intelligence System (MEDSIS) is a state-based medical surveillance system used by healthcare professionals, healthcare institutions, correctional facilities, and medical examiners in Arizona to report suspected opioid overdose

[8] https://www.cdc.gov/opioids/basics/index.html

events. Only suspected non-fatal opioid overdose events with confirmed or probable case classification are considered non-fatal opioid overdoses. To meet the case classification, various criteria are taken into consideration in addition to the toxicology report.

Primary Care Areas (PCAs)

PCAs are geographic regions created by the Arizona Department of Health Services (ADHS). They are designed to represent the communities of the state while maintaining populations conducive to statistical/spatial analysis. PCAs are built from U.S. Census Tracts and are updated every Census using a repeatable rule-based methodology intended to preserve community boundaries, provide population numbers conducive to statistical analysis, account for demographic variation and represent common utilization of primary care services. The creation and maintenance of PCAs is required by Arizona Administrative Code R9-24-204 for use in designating Medically Underserved Areas.

Suspected Opioid Overdose (from Arizona Pre-Hospital Information & EMS Registry System)

A suspected opioid overdose is defined as reporting entity specified the incident is opioid related, or reports one or more reasons why an opioid overdose is suspected.

Methods

The methodology for reporting of opioid overdoses varies based on reporting requirements for each data source.

Data Sources

Hospital Discharge Data

ADHS collects hospital discharge records for emergency department (ED) visits and hospitalizations from all Arizona licensed hospitals. This collection is required by Arizona Revised Statute (A.R.S.) § 36-125-05, and Arizona Administrative Code Title 9, Chapter 11, Articles 4 and 5. Hospital discharge data includes both fatal and non-fatal encounters. Data were submitted by 144 facilities in Arizona (as of December, 2020).

MEDSIS

In 2017, a public health emergency was declared to address the rise in opioid deaths and later reporting of suspected opioid overdose events was mandated under Arizona Administrative Code R9-4, Article 6. These suspected opioid overdose events are reported by healthcare professionals, healthcare institutions, correctional facilities, and medical examiners via MEDSIS. Only non-fatal opioid overdose related events with confirmed or probable case classification are included in this report. In 2022, a total of 59 facilities reported suspected opioid overdose events into MEDSIS.

Death Certificates

Information on opioid deaths (see Definitions above) is compiled from the original documents filed with the Arizona Department of Health Services', Bureau of Vital Records and from transcripts of original death certificates filed in other states but affecting Arizona residents.

Arizona Pre-Hospital Information & EMS Registry System (AZ-PIERS)

AZ-PIERS is a web-based prehospital patient care data repository supported by the ADHS Bureau of EMS & Trauma System (BEMSTS). Emergency Medical Services and Law Enforcement use AZ-PIERS to report any out-of-hospital suspected opioid overdoses, suspected opioid overdose deaths, and out-of-hospital use of naloxone to treat opioid overdoses.

Prescription Drug Monitoring Program (PDMP)

Arizona State Board of Pharmacy's Controlled Substances Prescription Monitoring Program (CSPMP) requires pharmacies and medical practitioners who dispense Schedule II, III, and IV controlled substances to a patient, to report prescription information to the PDMP on a daily basis. As pertaining to prescriptions dispensed, only schedule II, III, and IV controlled substances and opioid prescriptions (excluding buprenorphine) dispensed among Arizona residents are shown in the report.

Analytic Methods

Prevalence Estimates

The prevalence for the number of fatal and non-fatal opioid related events were calculated as the proportion of individuals who had an opioid overdose at a specified point in time.

Computing Rates

Crude rates were calculated as the number of events (or deaths) occurring among Arizonians per year, divided by the total number of populations for that year. Rates are shown as the number of events/deaths per 100,000 population.

Age-adjusted rates were calculated by multiplying the age-specific rate for each age group in the study population by the appropriate weight in the standard population (2000 U.S. standard population)[9]. These products were then summed to get the directly age-adjusted, or age-standardized rate.

Denominators

The denominators for rates of fatal and non-fatal opioid related events and hospital encounters were calculated based on 2022 population data from ADHS. Denominators for EMS, Naloxone administration, and prescriptions filled were data source specific, and based on the number of events.

Trend Analyses

Prevalence estimates were examined over multiple years (and across groups) to compare current and past trends to provide insight into population differences over time.

[9] https://seer.cancer.gov/stdpopulations/

Findings

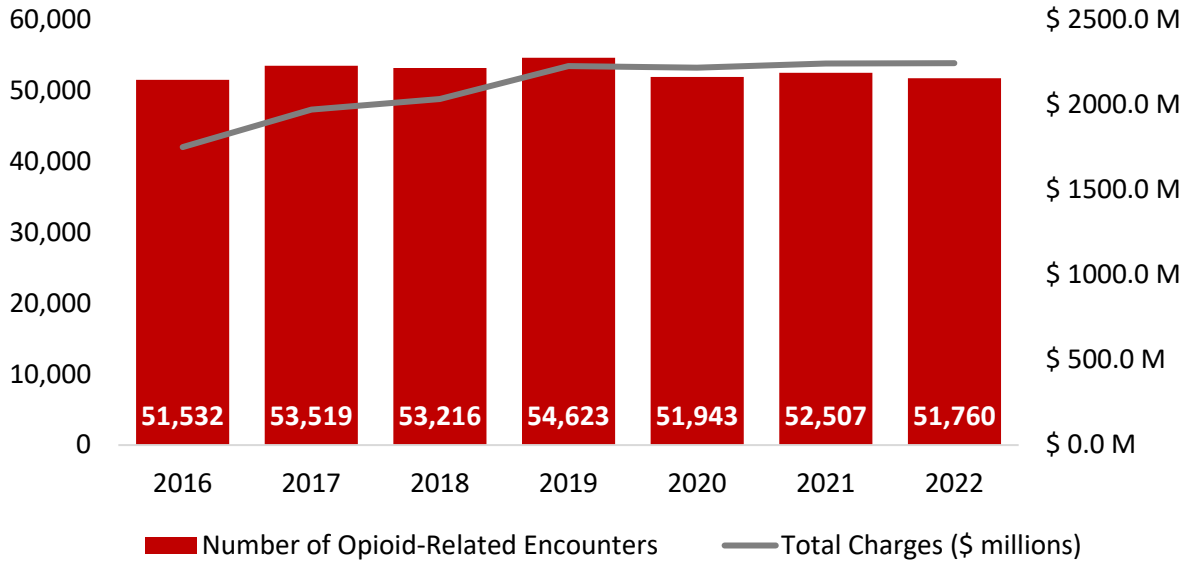
The findings described in this section are derived from several data sources, including hospital discharges, death certificates, various surveillance systems, and stakeholder inputs.

Hospital Discharges and Costs (Data: Hospital Discharge Data)

Trends 2016-2022

The number and associated costs of opioid-related hospitalizations have been fairly stable between 2020-2022, subsequent to a significant increase in the number and associated costs of opioid-related hospitalizations from 2016-2019. In 2022, there were 51,760 opioid-related hospitalizations, respectively, with a 0.1% annual net change in associated costs. The cost of opioid-related hospitalizations and emergency department visits has maintained stable at $2235.5 million per year on average since 2020.

Figure 1. Number and Cost of Opioid-Related Hospitalization and Emergency Department Visits, Arizona, 2016-2022



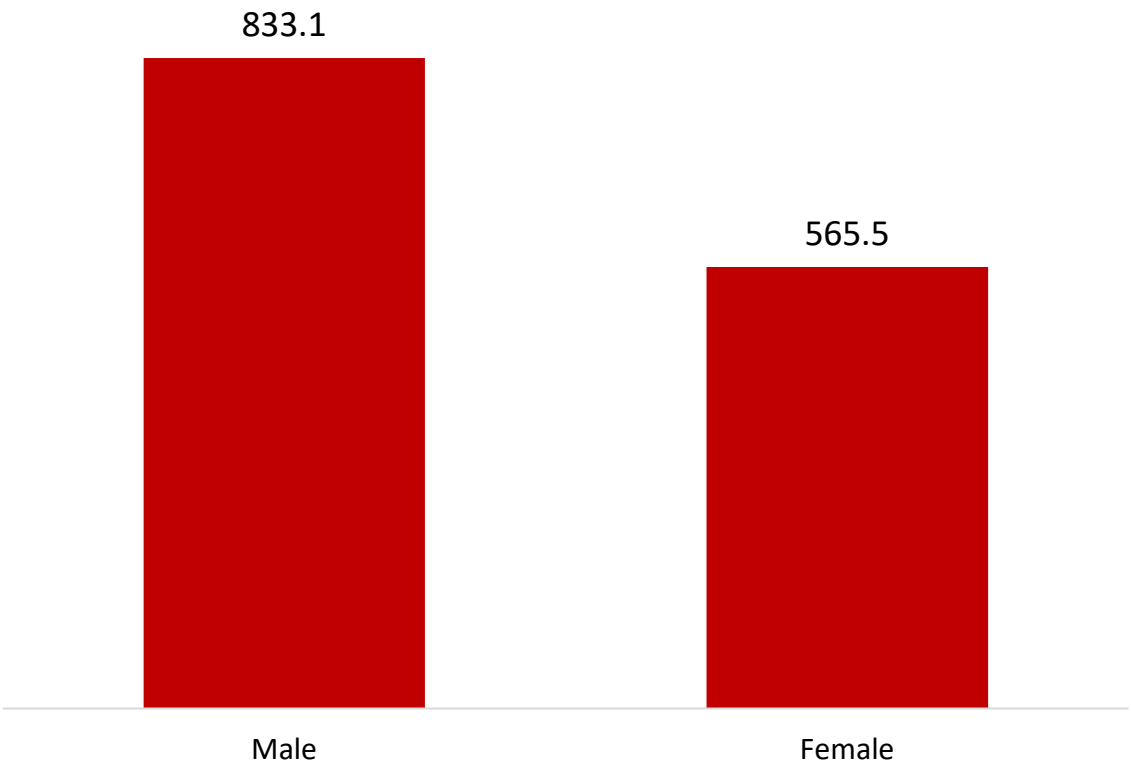
Data Source: Hospital Discharge Data. Notes: Total charges abbreviated as millions of dollars (e.g., "$500.0 M" is equal to $500,000,000); Includes Arizona residents and non-residents; includes relevant ICD-10 codes in any position (not just first (primary) diagnosis); total reported charges not adjusted to estimate the actual amount paid to the provider for healthcare services received

Demographic Comparisons

Sex

The rate of opioid-related hospitalization and emergency department visits was higher among males (833.1 per 100,000) compared to females (565.5 per 100,000).

Figure 2. Opioid-Related Hospitalization and Emergency Department Visits Rate Per 100,000 by Sex, Arizona, 2022 (n=51,760)

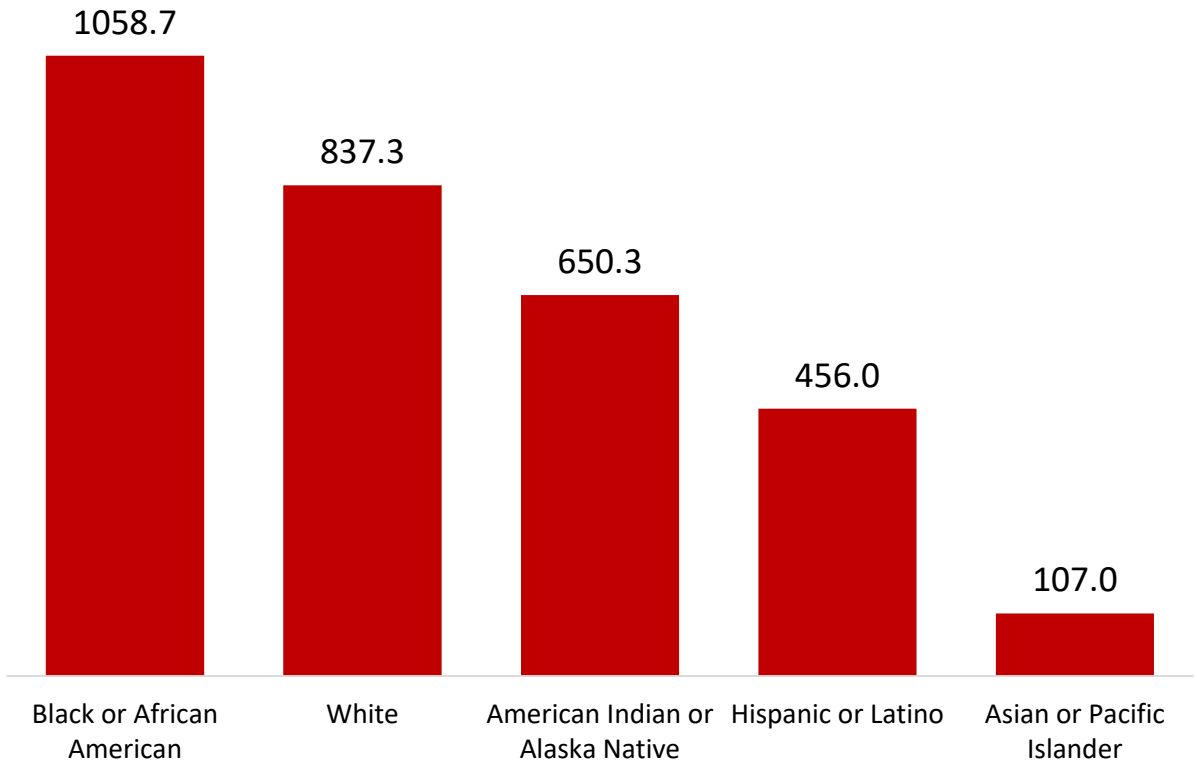


Data Source: Hospital Discharge Data.

Race and Ethnicity

The rate of opioid-related hospitalization and emergency department visits was highest among Black of African American individuals (1058.7 per 100,000), followed by White (837.3 per 100,000), and American Indian or Alaska Native individuals (650.3 per 100,000).

Figure 3. Opioid-Related Hospitalization and Emergency Department Visits Rate Per 100,000 by Race and Ethnicity, Arizona, 2022 (n=51,760)

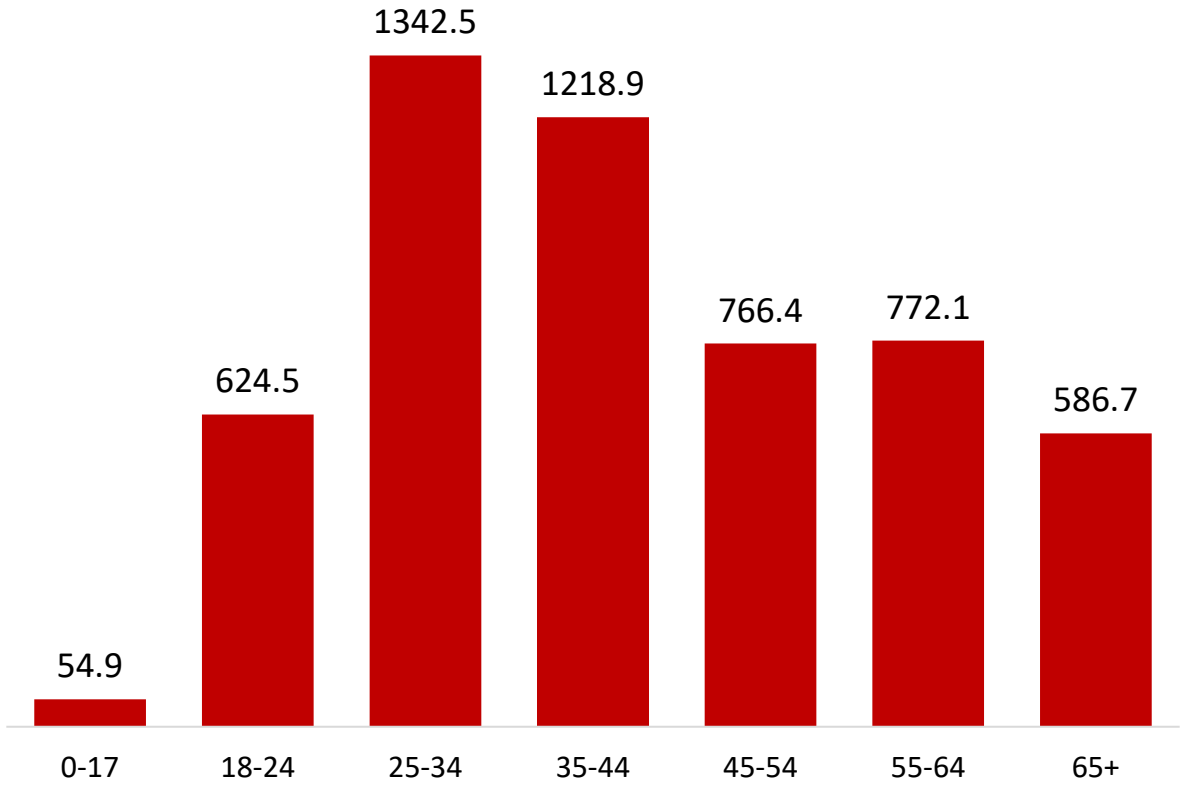


Data Source: Hospital Discharge Data.

Age

The rate of opioid-related hospitalization and emergency department visits was highest among individuals aged 25-34 years (1342.5 per 100,000), followed by 35-44 years (1218.9 per 100,000), and 55-64 years (772.1 per 100,00).

Figure 4. Opioid-Related Hospitalization and Emergency Department Visits Rate Per 100,000 by Age Group, Arizona, 2022 (n=51,760)

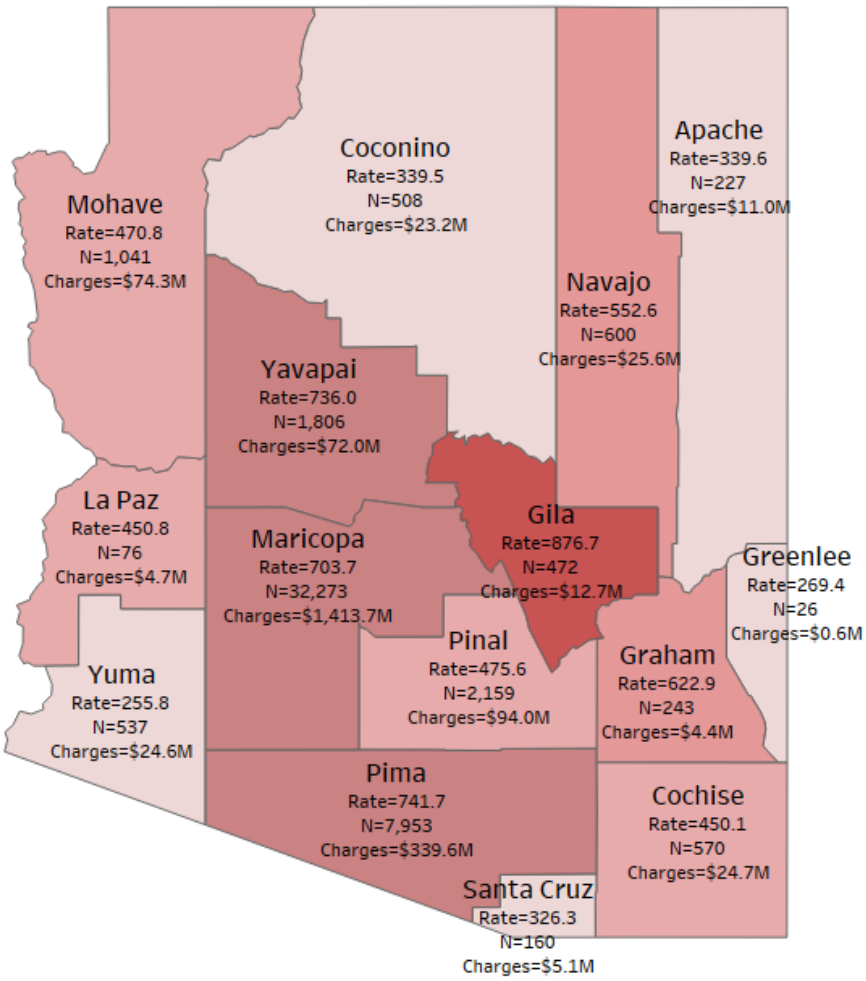


Data Source: Hospital Discharge Data.

County Comparison

The overall state annual rate of opioid-related hospitalizations and ED visits (2022) was 698.6 per 100,000 population. The average annual rate of opioid-related hospitalizations and ED visits (2022) was highest (and higher than the overall state average) in Gila, Pima, Yavapai, and Maricopa Counties.

Figure 5. Rate per 100,000, Number of Opioid-Related Hospitalization and Emergency Department Visits, and Total Charges (in Millions), Arizona, 2022

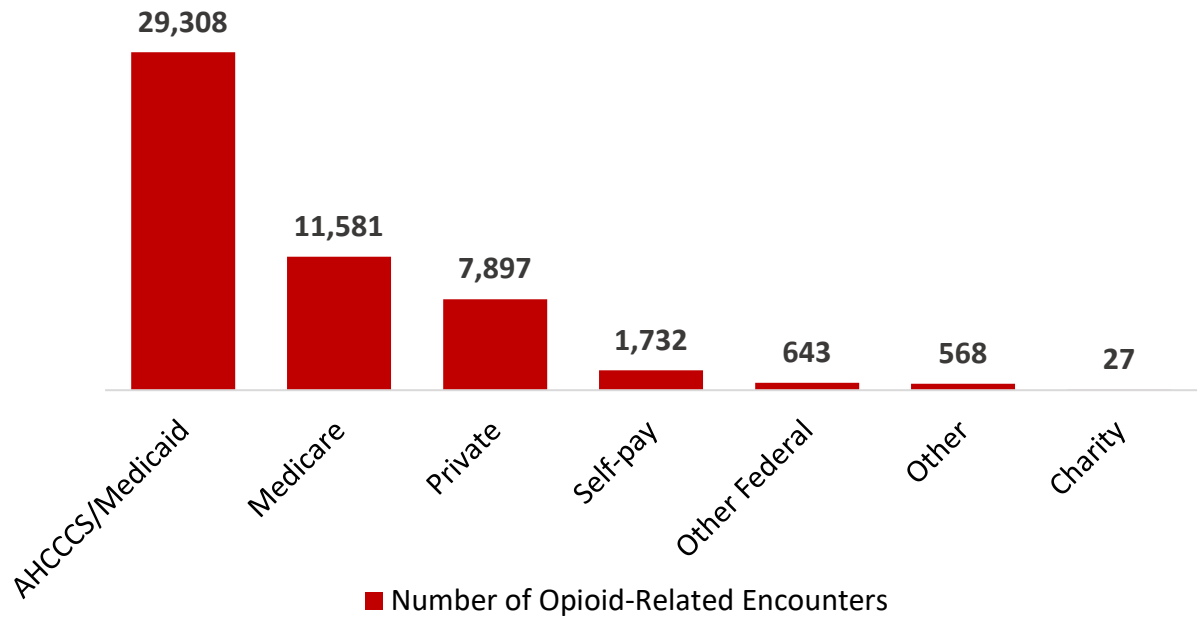


Data Source: Hospital Discharge Data. Notes: Total charges abbreviated as millions of dollars (e.g., "$500.0 M" is equal to $500,000,000); County reflects person place of residence.

Payer Type Comparisons

The most common payers for ED visits and hospitalizations were AHCCCS/Medicaid (29,308), Medicare (11,581), and Private Insurance (7,897). The average length of stay was highest for visits paid for by Other Federal* (6.5 days), Medicare (5.9 days), and Private (5.8 days). The overall length of stay for all visits was 4.7 days.

Figure 6. Number of Opioid-Related Hospitalization and Emergency Department Visits, by Payer Type, Arizona, 2022



Data Source: Hospital Discharge Data. Notes: Other payer types include worker's compensation, foreign national, automobile policy due to injury sustained in motor vehicle accident, Border Patrol for care of illegal immigrants.
*Other Federal payer type includes Tricare and IHS payer type

Table 1. Average Length of Stay (LOS) for Opioid-Related Hospitalization and Emergency Department Visits by Payer Type, Arizona, 2022

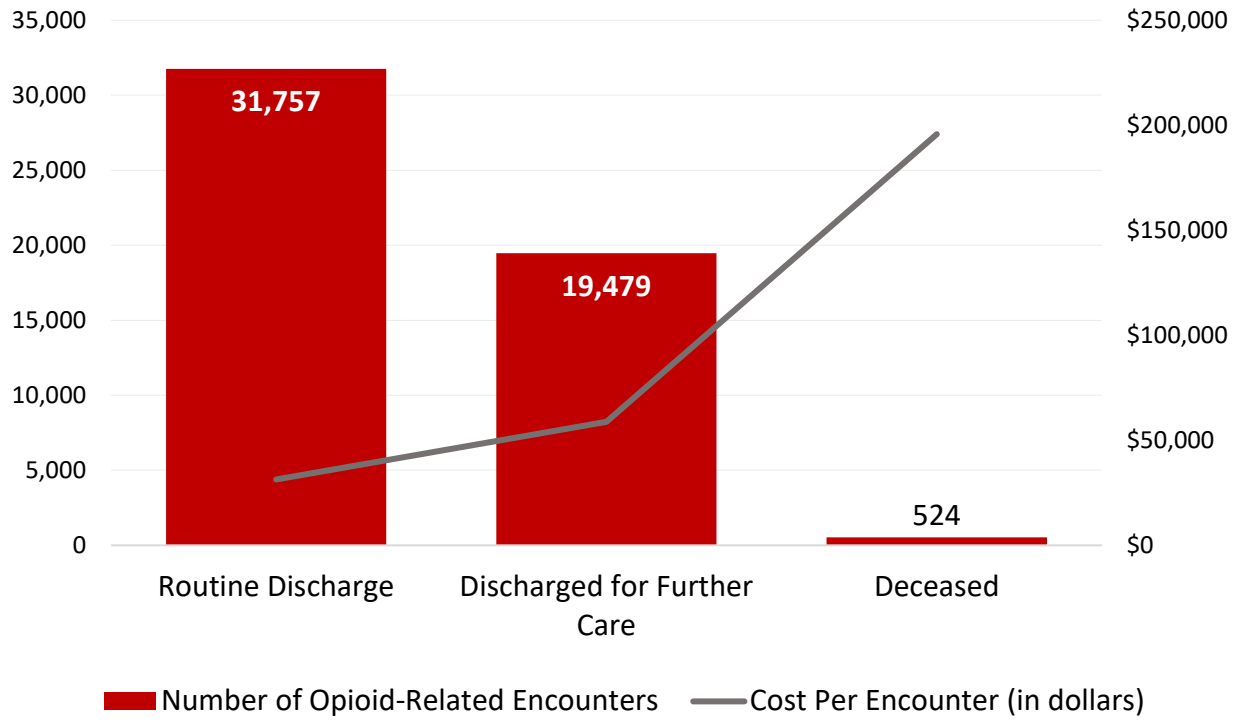
Insurance Category	Other Federal	Medicare	Private	Charity	AHCCCS/ Medicaid	Self-pay	Other
Average LOS (days)	6.5	5.9	5.8	5.0	4.5	2.5	2.4

Data Source: Hospital Discharge Data. Notes: Length of stay for individuals admitted and discharged on same date are calculated as 1 day.

Disposition Status Comparisons

The majority of opioid-related hospitalizations and ED visits had a disposition status of routine discharge (31,757, 61.4%) or discharged for further care (19,479, 38.2%). Visits with a disposition resulting in death (524, 1.0%) were associated with higher costs per encounter and a longer length of stay (8.6 days).

Figure 7. Number of Opioid-Related Hospitalization and Emergency Department Visits, Cost Per Encounter, and Average Length of Stay (LOS), by Disposition, Arizona, 2022



Data Source: Hospital Discharge Data. Notes: Disposition is defined as the location or facility to where the patient left following a hospital encounter; Routine discharge includes home or self-care; discharged for further care includes inpatient, other care facility (short- or long-term), hospice, and left against medical advice

Table 2. Average Length of Stay (LOS) for Opioid-Related Hospitalization and Emergency Department Visits by Disposition Status, Arizona, 2022

Disposition Status	Routine Discharge	Discharged for Further Care	Deceased
Average LOS (days)	4.2	6.0	8.6

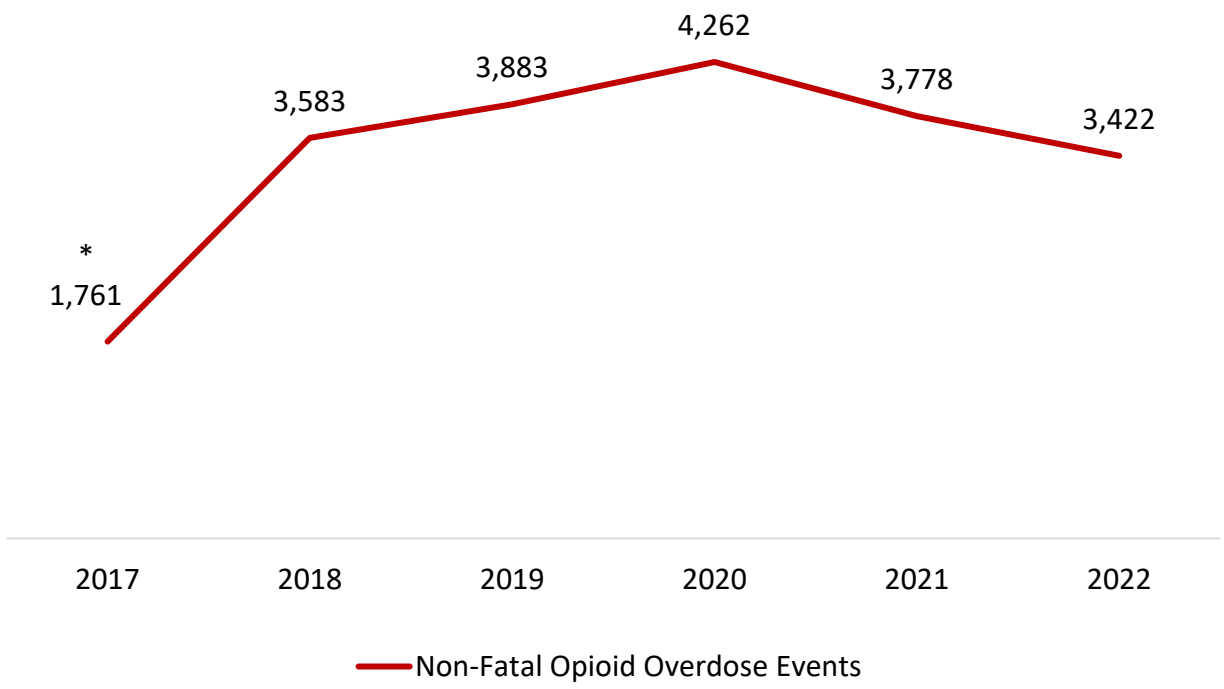
Data Source: Hospital Discharge Data. Notes: Length of stay for individuals admitted and discharged on same date are calculated as 1 day.

Reportable Non-Fatal Opioid Overdose Events (Data: MEDSIS)

Trends 2017-2022

June 2022 marked five years since Governor Ducey declared a State of Emergency due to the opioid overdose epidemic. In the period from June 2017 to December 2020, the total number of non-fatal opioid overdose events among Arizona residents increased since reporting was mandated in June 2017 (+142.0%), with a decrease from 2020 to 2022 (-19.7%).

Figure 8. Number of Non-Fatal Opioid Overdose Events, Arizona, 2017-2022 (n=20,689)



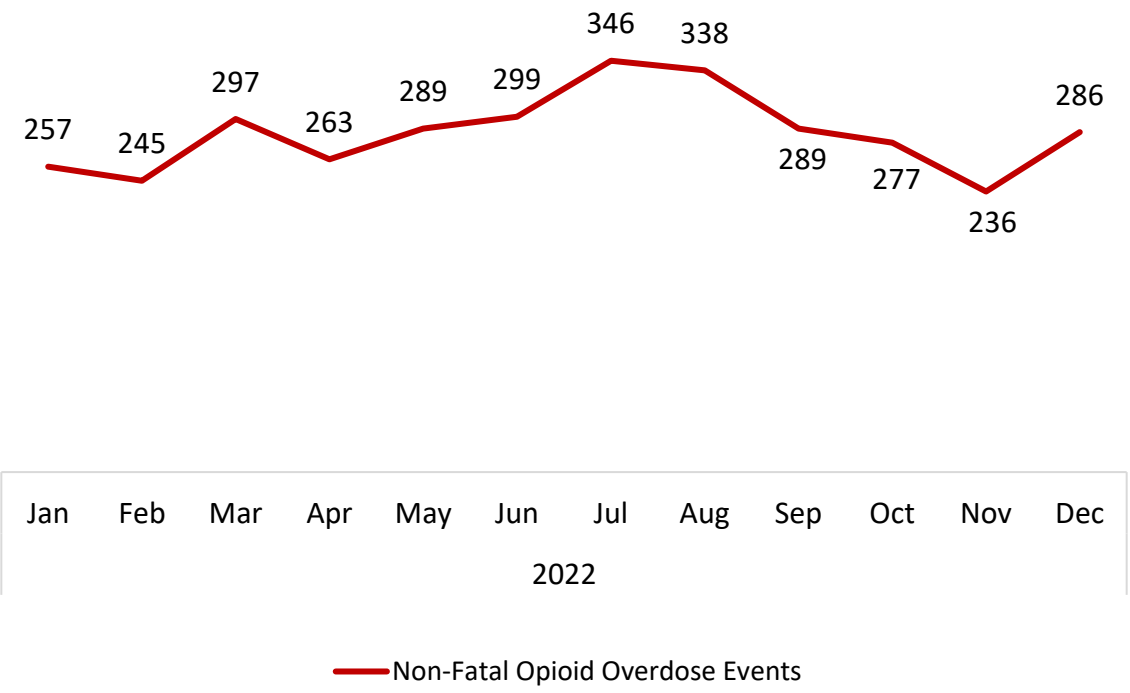
Data Source: MEDSIS.

*Please note data collection for non-fatal opioid overdose events began in June 2017 with the issue of the public health emergency declaration to reduce opioid deaths. As a result, data for 2017 is incomplete, and only includes data reported in MEDSIS from June through December of 2017.

Trends 2022

The number of non-fatal opioid overdose events peaked in the summer months (July-August) of 2022, followed by a gradual decline, but increased again in December.

Figure 9. Number of Non-Fatal Opioid Overdose Events (Monthly), Arizona, 2022 (n=3,422)



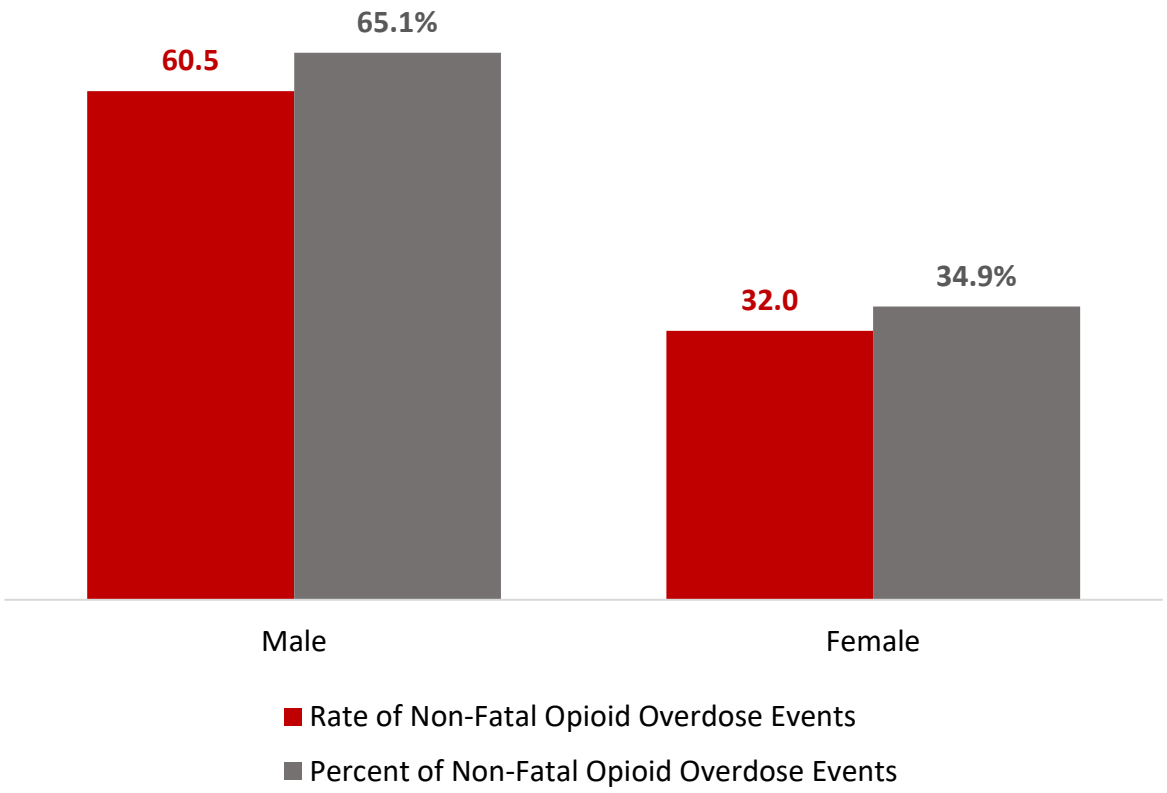
Data Source: MEDSIS

Demographic Comparisons

Sex

The percent and rate of non-fatal opioid overdose events was higher among males (65.1%, rate 60.5 per 100,000) compared with females (34.9%, rate 32.0 per 100,000).

Figure 10. Rate per 100,000 Population, and Percentage of Non-Fatal Opioid Overdose Events by Sex, Arizona, 2022 (n=3,422)

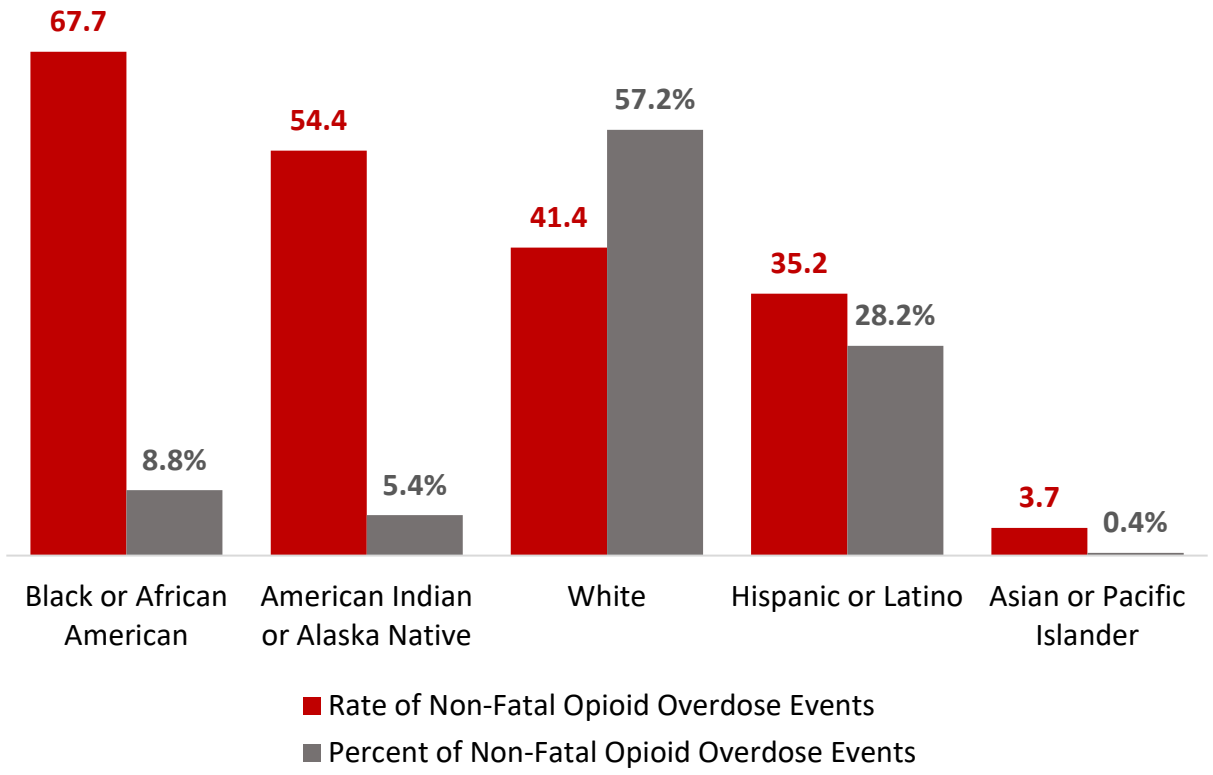


Arizona overall combined annual (2022) rate was 46.2 per 100,000 population.
Data Source: MEDSIS. Notes: Individuals with 'Unknown' sex (n=1; 0.03%) have been excluded from this graphic. 'Unknown' sex may include unidentified individuals.

Race and Ethnicity

While the percent of non-fatal opioid overdose events was highest among Whites (57.2%) and Hispanic or Latino (28.2%) individuals, the highest rate of non-fatal opioid overdose events was among Black or African American (67.7 per 100,000) and American Indian or Alaska Native (54.4 per 100,000) individuals.

Figure 11. Rate per 100,000 Population, and Percentage of Non-Fatal Opioid Overdose Events by Race and Ethnicity, Arizona, 2022 (n=3,422)

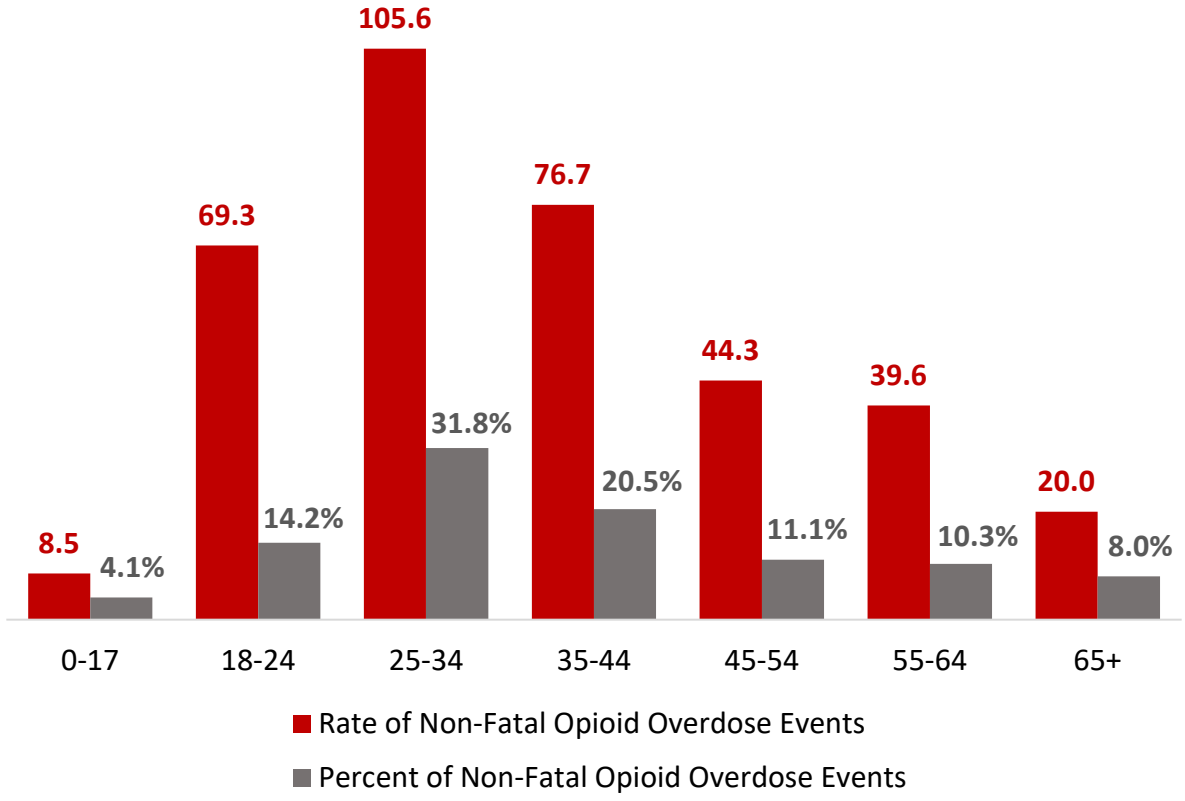


Arizona overall combined annual (2022) rate was 46.2 per 100,000 population.
Data Source: MEDSIS. Notes: Individuals with 'Unknown' race and ethnicity (n=444; 13.0%) and 'Other' race (n=31; 0.9%) have been excluded from this graphic.

Age

The percent of non-fatal opioid overdose events was highest among individuals aged 25-34 years (31.8%), 35-44 years (20.5%), and 18-24 years (14.2%). The rate of non-fatal overdose events was also highest among individuals aged 25-34 years (105.6 per 100,000), 35-44 years (76.7 per 100,000), and 18-24 years (69.3 per 100,000).

Figure 12. Rate per 100,000 Population, and Percentage of Non-Fatal Opioid Overdose Events by Age Group, Arizona, 2022 (n=3,422)

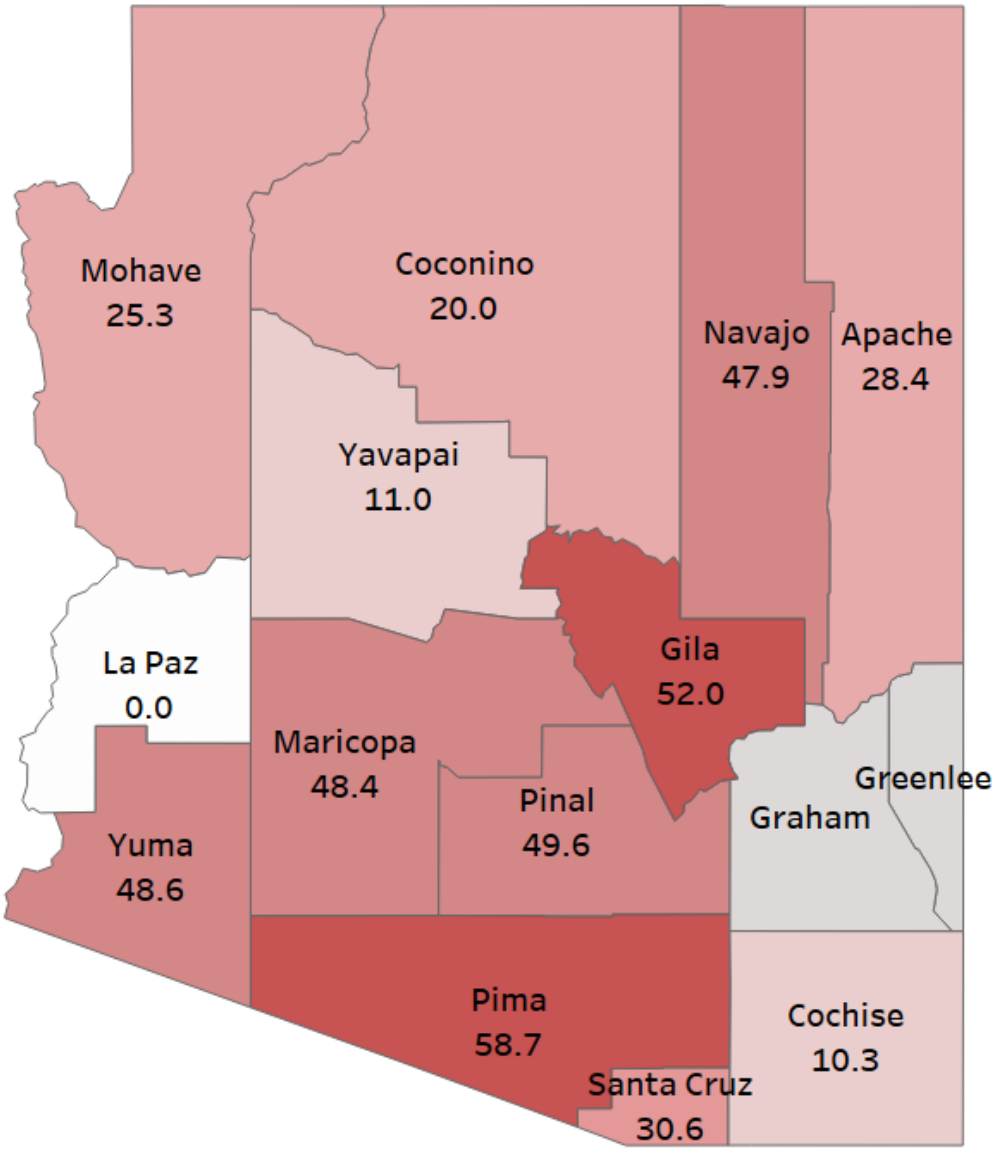


Arizona overall combined annual (2022) rate was 46.2 per 100,000 population.
Data Source: MEDSIS. Notes: Individuals with 'Unknown' age (n=1; 0.03%) have been excluded from this graphic.

County

The Arizona overall annual rate of non-fatal opioid overdoses in 2022 was 46.2 per 100,000. The rate of non-fatal opioid overdose events was highest (and higher than the overall rate) in Pima, Gila, Pinal, Yuma, Maricopa, and Navajo Counties.

Figure 13. Rate per 100,000 Population of Non-Fatal Opioid Overdose Events by County, Arizona, 2022 (n=3,422)



Arizona overall combined annual (2022) rate was 46.2 per 100,000 population.
Data Source: MEDSIS. Notes: To prevent the public disclosure of personally identifying information, data points based on fewer than 10 counts are not displayed (indicated in gray). County reflects patient's county of residence. No non-fatal cases were reported for La Paz County.

Primary Care Areas (PCAs)

In 2022, the rate of non-fatal opioid overdose events was highest in Central City Village (369.5 per 100,000), followed by Mesa West (240.2 per 100,000), and Tucson South (196.1 per 100,000).

Table 3. Rate of Non-Fatal Opioid Overdose Events Per 100,000 by Top 15 Primary Care Areas, Arizona, 2022 (n=3,422)

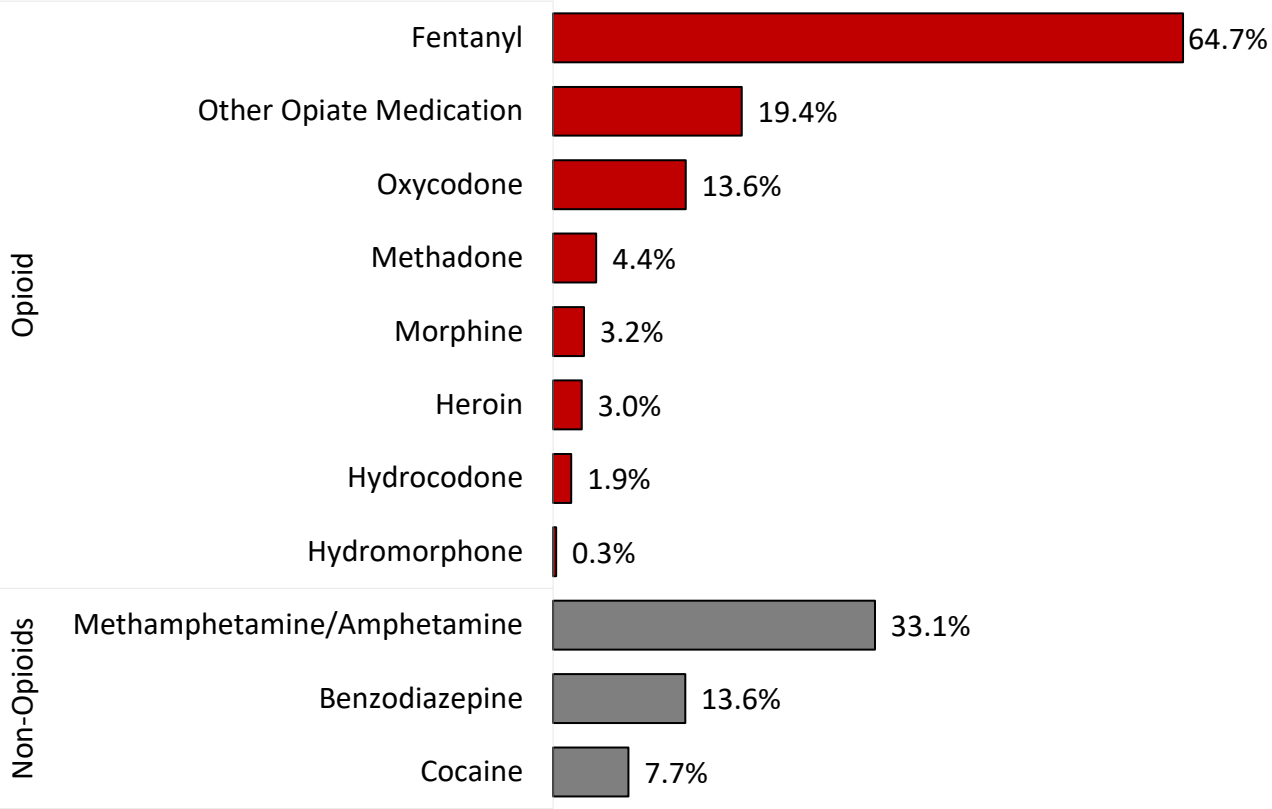
Primary Care Area	Non-Fatal Opioid Overdose events	Non-Fatal Opioid Overdose Events Rate per 100,000
Central City Village	241	369.5
Mesa West	324	240.2
Tucson South	335	196.1
Peoria South	138	154.0
Tucson Central	188	152.9
Mesa Central	128	139.1
Tempe North	153	131.6
Tucson Foothills	117	126.2
Glendale Central	122	117.9
North Mountain Village	182	108.0
Alhambra Village	145	106.4
Glendale North	129	100.5
Chandler Central	126	97.5
South Mountain Village & Guadalupe	125	92.5
Maryvale Village	140	64.6

Data Source: MEDSIS

Drugs Involved in Non-Fatal Opioid Overdose Events

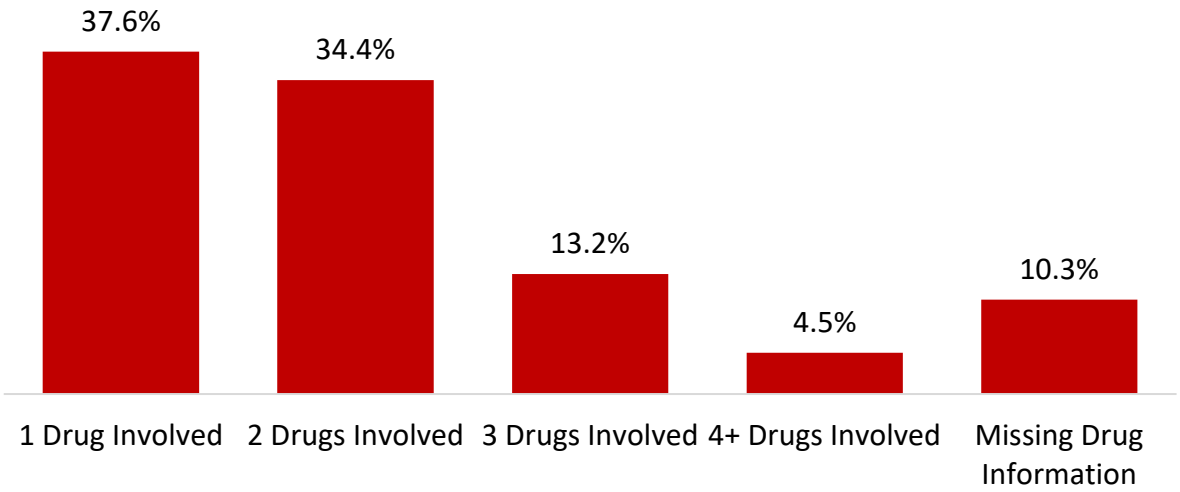
Fentanyl was the most common drug involved in non-fatal opioid overdose events during 2022. Polydrug use (typically defined as the consumption of more than one drug at once) was reported in about half (52.1%) of non-fatal opioid overdose events during 2022. Fentanyl and methamphetamine/amphetamine was the most common drug combination in majority (16.8%) of non-fatal opioid overdose events in Arizona.

Figure 14. Percent of Non-Fatal Opioid Overdose Events Involving Selected Drugs, Arizona, 2022 (n=3,422)



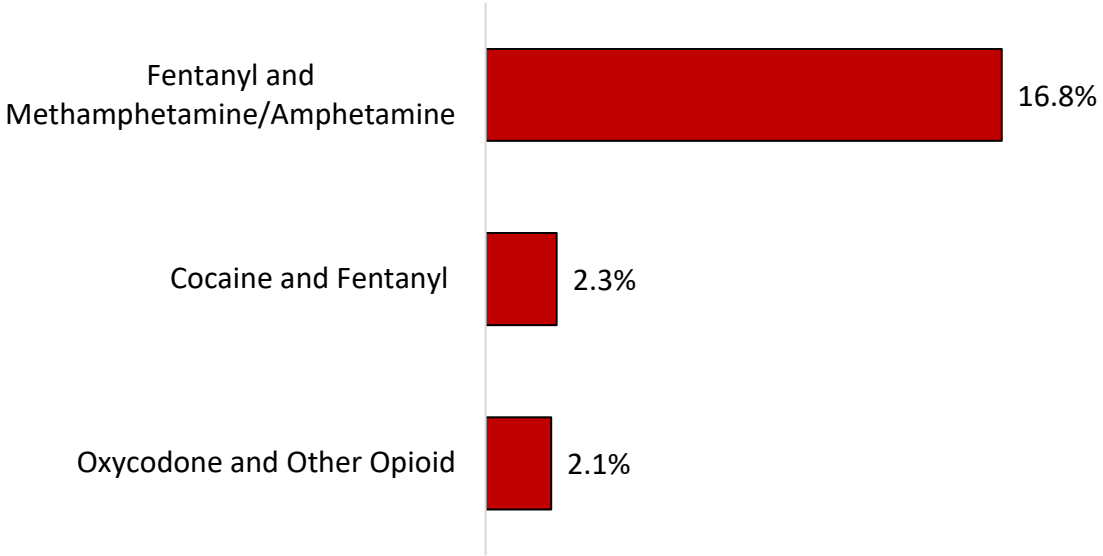
Data Source: MEDSIS. Notes: Non-opioid drugs are included because they were identified along with an opioid. ADHS does not have a requirement for reporting any drug overdoses other than opioids (e.g., all methamphetamine overdoses that are happening in Arizona are not identified nor represented). The percentages do not add up to 100% as one overdose event may involve multiple drugs. The percentage indicates the proportion of overdose events in which the drug was identified.

Figure 15. Percentage of Non-Fatal Opioid Overdose Events by Number of Drugs Involved, Arizona, 2022 (n=3,422)



Data Source: MEDSIS. Notes: Non-opioid drugs are included because they were identified along with an opioid. ADHS does not have a requirement for reporting any drug overdoses other than opioids (e.g., all methamphetamine overdoses that are happening in Arizona are not identified nor represented). List of drugs collected is shown in Figure 14.

Figure 16. Percentage of Non-Fatal Opioid Overdose Events Involving Top 3 Two Drug Combination, 2022 (n=3,422)



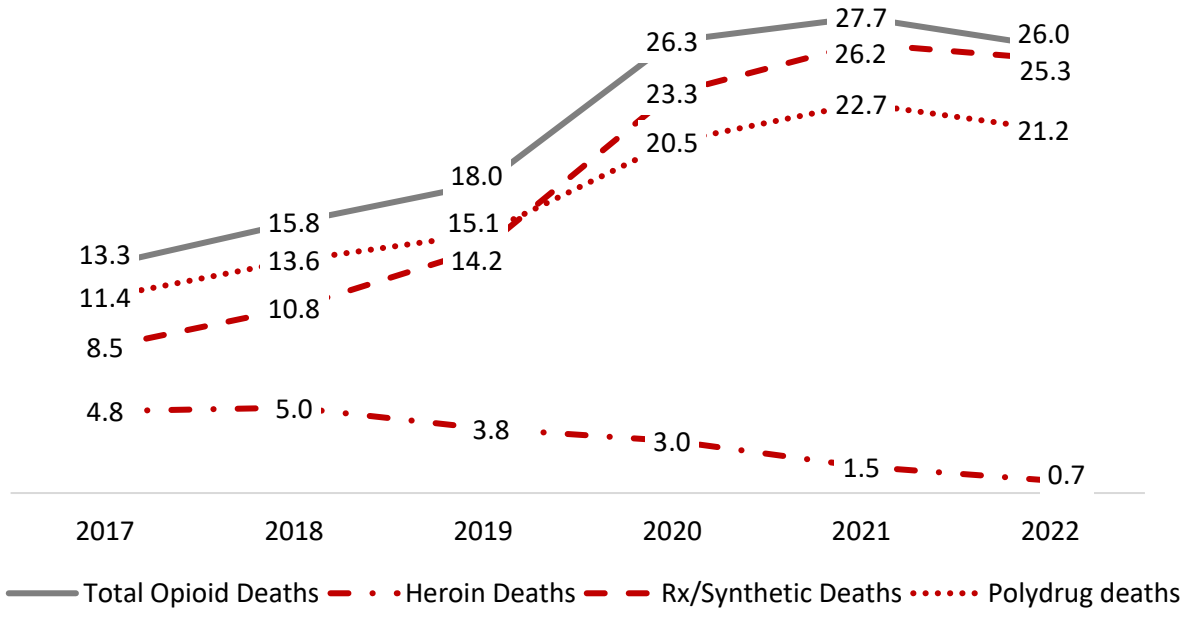
Data Source: MEDSIS. Notes: Non-opioid drugs are included because they were identified along with an opioid. Other Opioid category includes other opioid drugs (e.g., opiates, tramadol, codeine, etc.) that are not listed under fentanyl, oxycodone, heroin, methadone, morphine, hydrocodone, and hydromorphone.

Opioid Overdose Deaths Among Arizona Residents (Data: Death Certificates)

Trends 2017-2022

June 2022 marked five years since Governor Ducey declared a State of Emergency due to the opioid overdose epidemic. In the period from 2017-2021, the rate of opioid overdose deaths per 100,000 increased (+108.3%) among Arizona residents, with a slight decrease from 2021 to 2022 (-6.1%). The rate of deaths per 100,000 attributed to prescription/synthetic drugs increased from 2017-2021, and slightly decreased from 2021-2022, as did the rate attributed to polydrug use. The rate of heroin drug deaths per 100,000 decreased from 2017-2022.

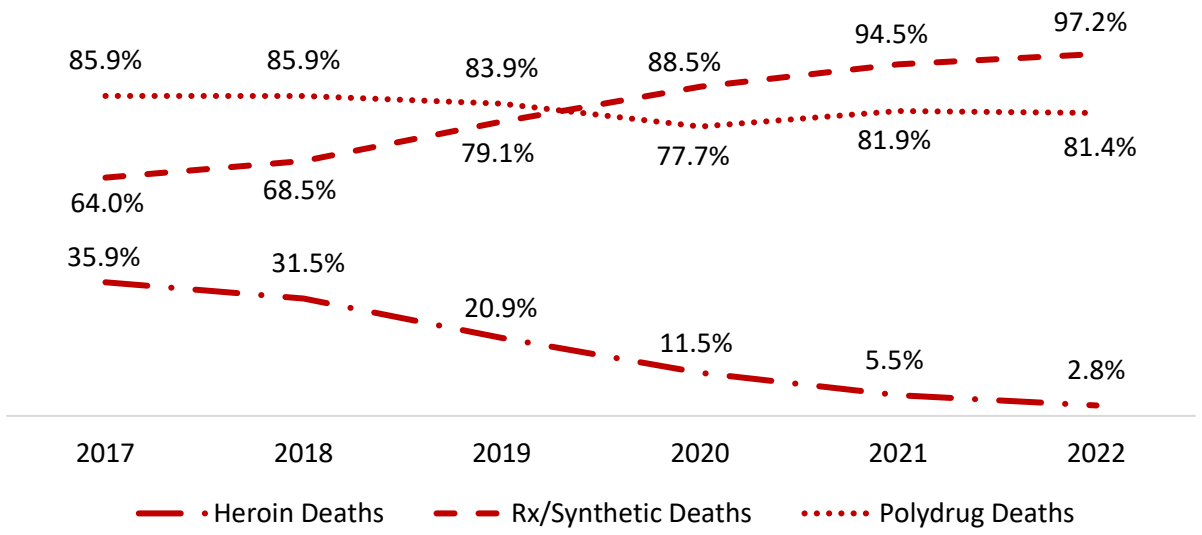
Figure 17. Opioid Overdose Fatality Rate per 100,000 Population, Arizona, 2017-2022 (n=9,171)



Data Source: Arizona Vital Statistics, Death Certificates. Notes - Heroin: Opioid deaths involving heroin (T40.1); Rx/Synthetic: Opioid deaths involving all "other opioids" except heroin (T40.2, T40.3, T40.4, and T40.6); Polydrug: Opioid deaths involving opioids in combination with other non-opioid substances. All polydrug deaths are also counted in either the Heroin or Rx/Synthetic Drug Category.

The percent of opioid overdose deaths involving prescription/synthetic drugs increased steadily each year from 2017-2022. The percent of opioid overdose deaths involving polydrug use has remained fairly stable from 2021-2022. The percent of opioid overdose deaths involving heroin decreased from 2017-2022.

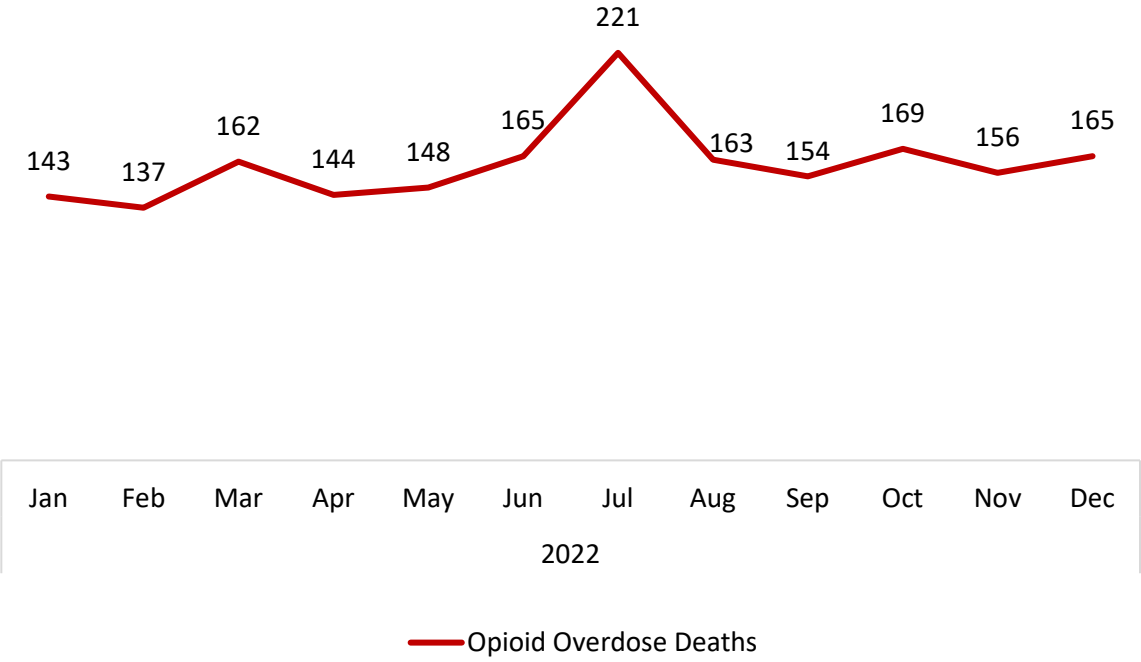
Figure 18. Percent of Opioid Deaths Involving Selected Drugs, Arizona, 2017-2022 (n=9,171)



Data Source: Arizona Vital Statistics, Death Certificates. Notes - Heroin: Opioid deaths involving heroin (T40.1); Rx/Synthetic: Opioid deaths involving all "other opioids" except heroin (T40.2, T40.3, T40.4, and T40.6); Polydrug: Opioid deaths involving opioids in combination with other non-opioid substances. All polydrug deaths are also counted in either the Heroin or Rx/Synthetic Drug Category

The number of opioid overdose deaths remained relatively stable in 2022 except for a peak recorded in July (221 deaths).

Figure 19. Number of Opioid Overdose Deaths (Monthly), Arizona, 2022 (n=1,927)

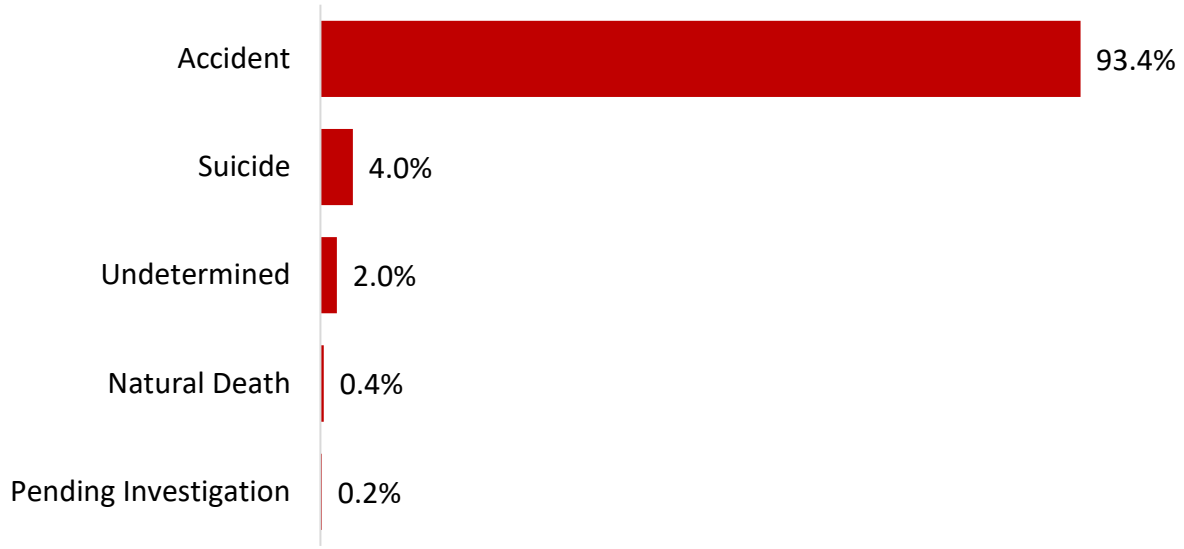


Data Source: Arizona Vital Statistics, Death Certificates.

Manner of Death

The majority of opioid overdose deaths (93.4%) were classified as an Accident.

Figure 20. Percent of Opioid Overdose Deaths by Manner of Death, Arizona, 2022 (n=1,927)



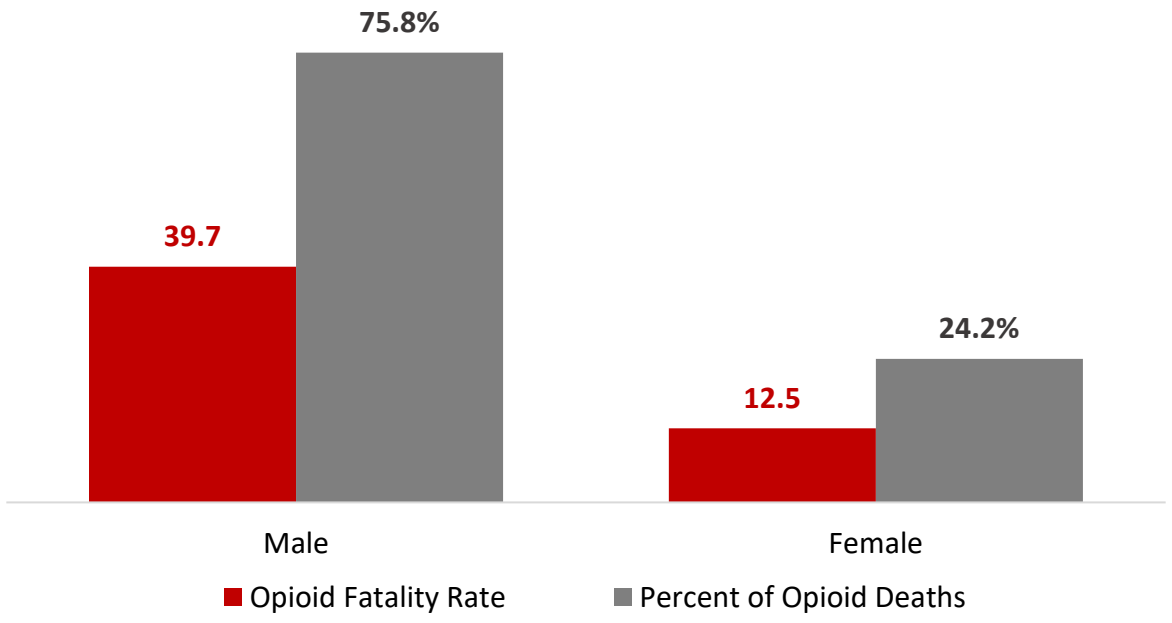
Data Source: Arizona Vital Statistics, Death Certificates

Demographic Comparisons

Sex

The percent and rate of opioid overdose deaths was higher among males (75.8%, rate 39.7 per 100,000) compared with females (24.2%, rate 12.5 per 100,000).

Figure 21. Opioid Overdose Fatality Rate per 100,000 Population, and Percent of Opioid Deaths by Sex, Arizona, 2022 (n=1,927)

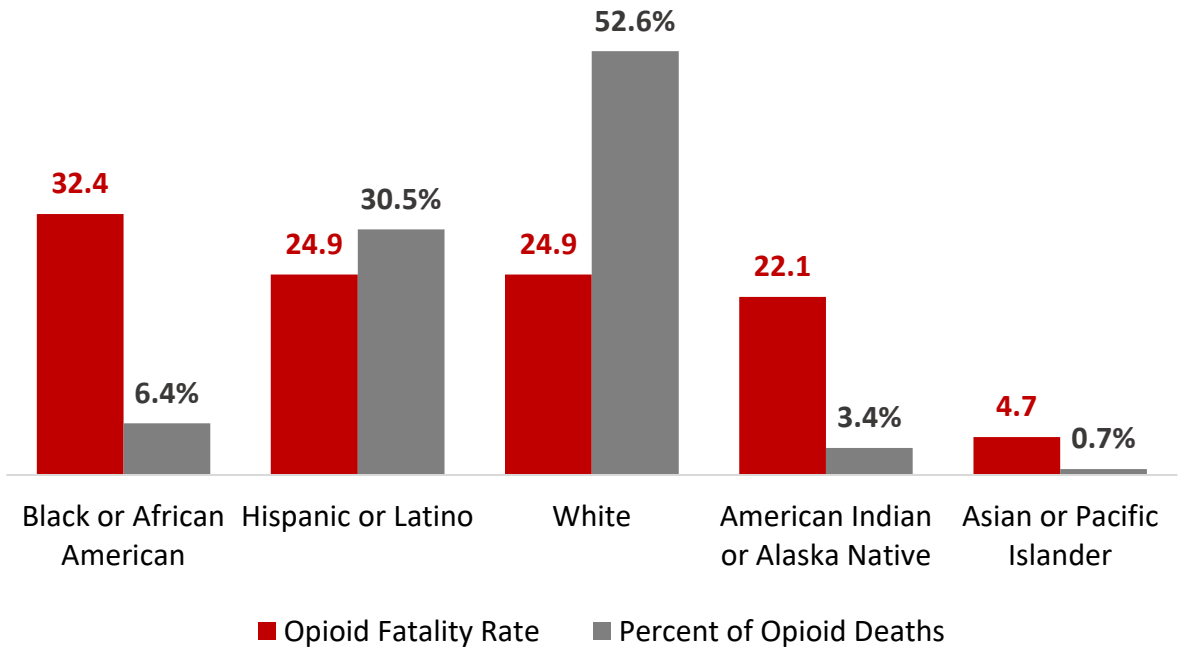


Arizona overall combined annual 2022 was 26.0 per 100,000.
Data Source: Arizona Vital Statistics, Death Certificates. Notes: There were no missing data for Sex.

Race and Ethnicity

While the percent of opioid overdose deaths was highest among Whites (52.6%) and Hispanic or Latino (30.5%) individuals, the highest rate of opioid overdose deaths was among Black or African American (32.4 per 100,000), Hispanic or Latino (24.9 per 100,000), and White (24.9 per 100,000) individuals.

Figure 22. Opioid Overdose Fatality Rate per 100,000 Population, and Percent of Opioid Deaths by Race/Ethnicity, Arizona, 2022 (n=1,927)

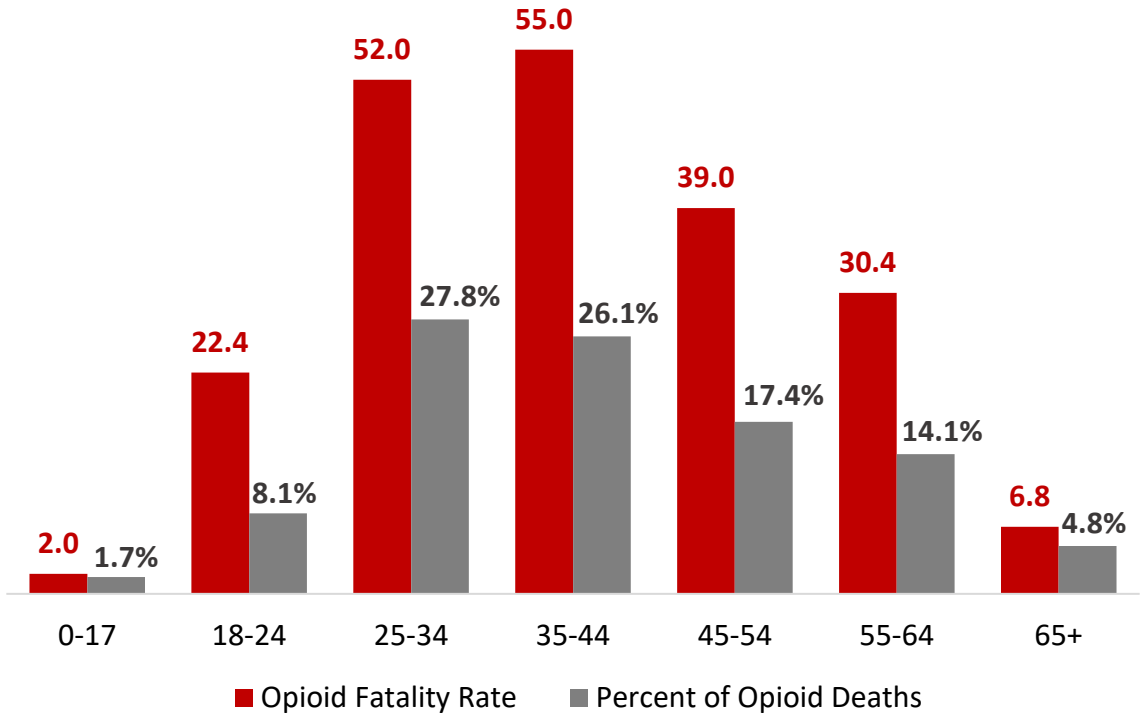


Arizona overall combined annual 2022 was 26.0 per 100,000.
Data Source: Arizona Vital Statistics, Death Certificates. Notes: There were no missing data for Race/Ethnicity. 'Unknown' and 'Other Race' categories are not shown here.

Age

The percent of opioid overdose deaths was highest among individuals 25-34 years (27.8%), 35-44 years (26.1%), 45-54 years (17.4%), and 55-64 years (14.1%). The rate of opioid overdose deaths was highest among individuals 35-44 years (55.0 per 100,000), 25-34 years (52.0 per 100,000), 45-54 years (39.0 per 100,000), and 55-64 years (30.4 per 100,000).

Figure 23. Opioid Overdose Fatality Rate per 100,000 Population, and Percent of Opioid Deaths by Age Group, Arizona, 2022 (n=1,927)

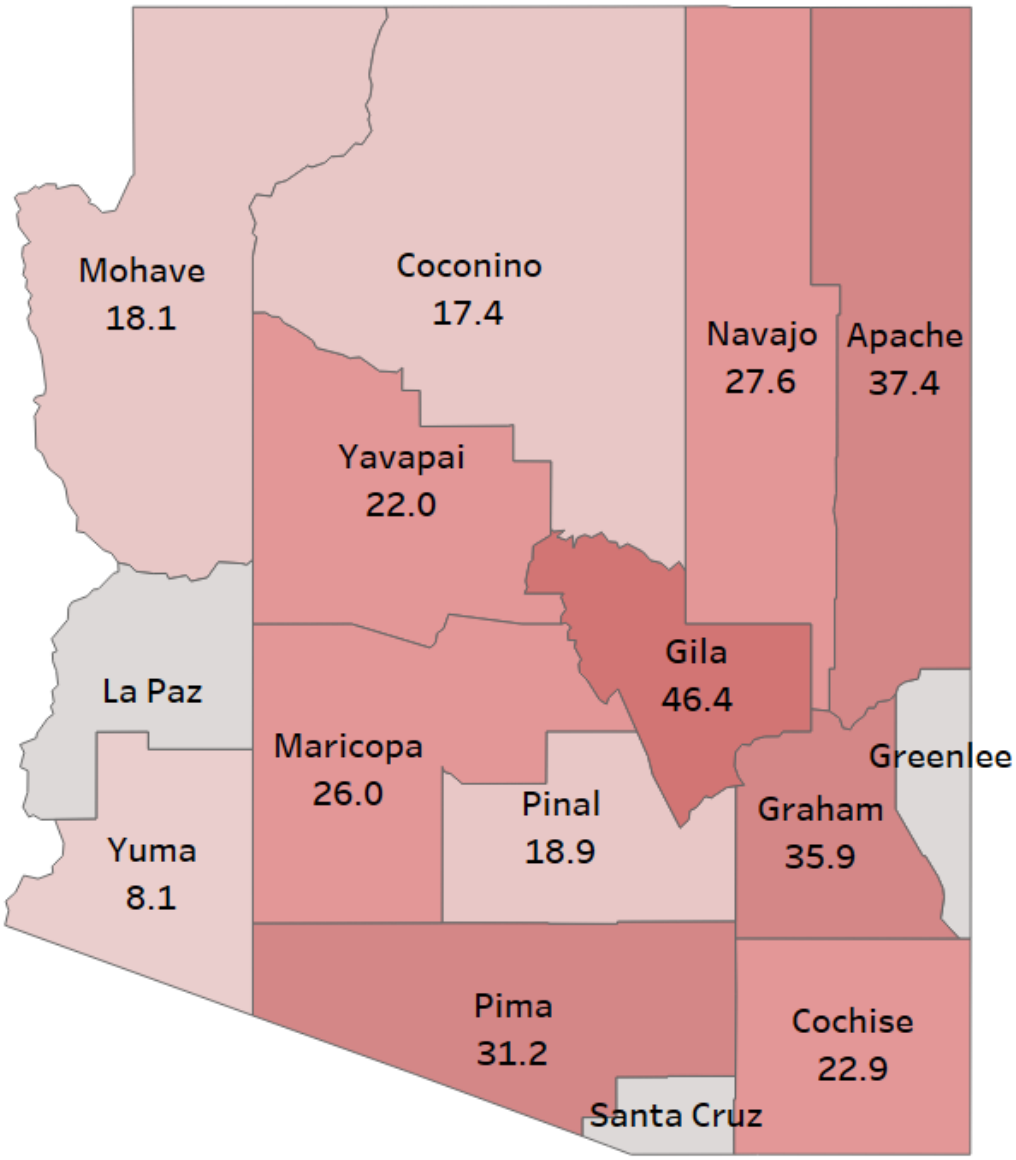


Arizona overall combined annual 2022 was 26.0 per 100,000.
Data Source: Arizona Vital Statistics, Death Certificates. Notes: There were no missing data for Age Group.

County

The Arizona annual opioid-related fatality rate in 2022 was 26.0 per 100,000. The rate of opioid overdose deaths was highest (and higher than the state combined annual rate) in Gila, Apache, Graham, and Pima Counties.

Figure 24. Opioid Fatality Rate per 100,000 Population by County, Arizona, 2022 (n=1,927)



Data Source: Arizona Vital Statistics, Death Certificates. Notes: To prevent the public disclosure of personally identifying information, data points based on fewer than 10 counts are not displayed (indicated in gray). County reflects person place of residence.

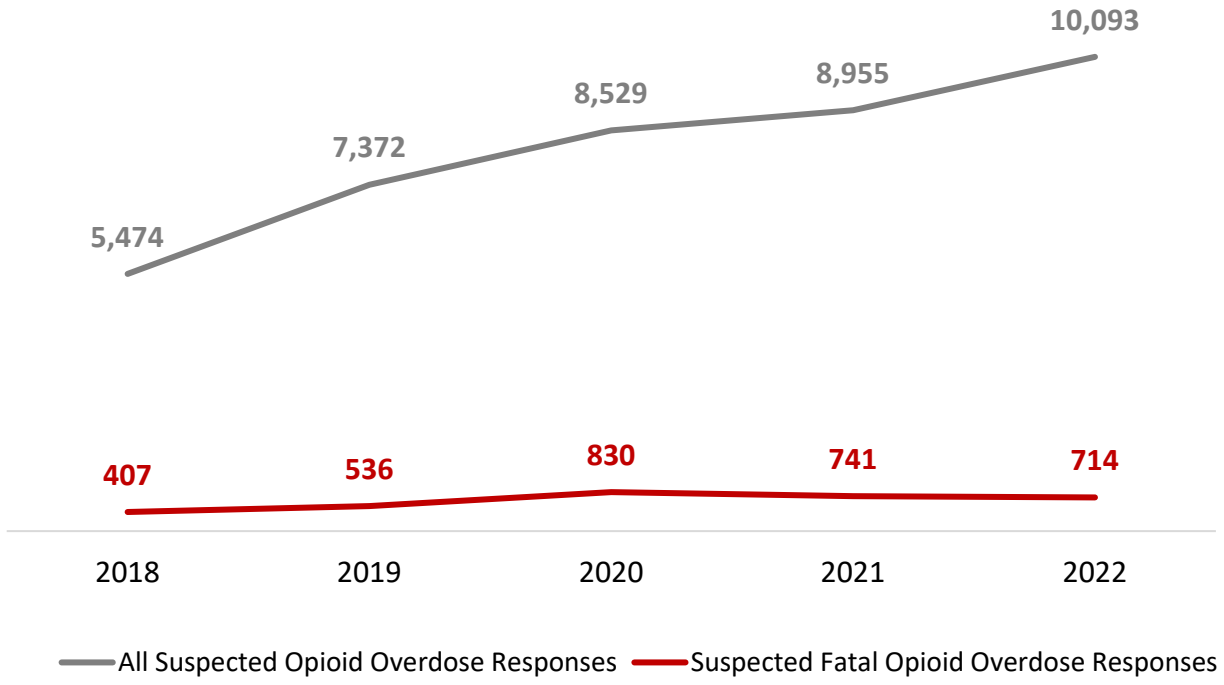
EMS/Law Enforcement Responses for Suspected Opioid Overdose (Data: AZ-PIERS)

Out-of-hospital suspected opioid overdoses, suspected opioid overdose deaths, and out-of-hospital use of naloxone to treat opioid overdoses is reported through the web-based prehospital patient care data repository (AZ-PIERS).

Trends 2018-2022

From 2018-2022, the number of EMS/law enforcement responses for all (fatal and non-fatal) suspected opioid overdoses has increased significantly by 84.4% (from 5,474 to 10,093). The number of fatal suspected opioid overdose responses increased from 2018-2020 (103.9% increase), and decreased from 2020-2022 (14.0% decrease).

Figure 25. EMS/Law Enforcement Responses for Suspected Opioid Overdoses, Arizona, 2018-2022 (n=40,423)

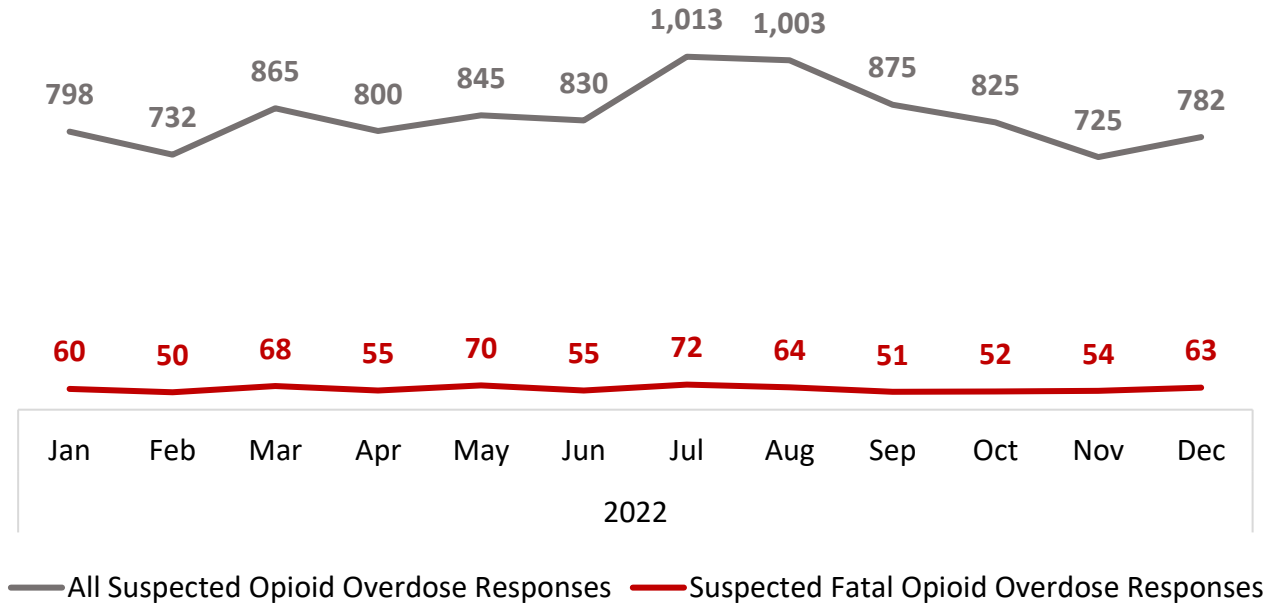


Data Source: Arizona Pre-Hospital Information & EMS Registry System (AZ-PIERS)

Trends 2022

The number of EMS/law enforcement responses for total (and fatal) suspected opioid overdoses was fairly stable in 2022, with highest responses in the summer months (July-August).

Figure 26. EMS/Law Enforcement Responses for Suspected Opioid Overdoses (Monthly), Arizona, 2022 (n=10,093)



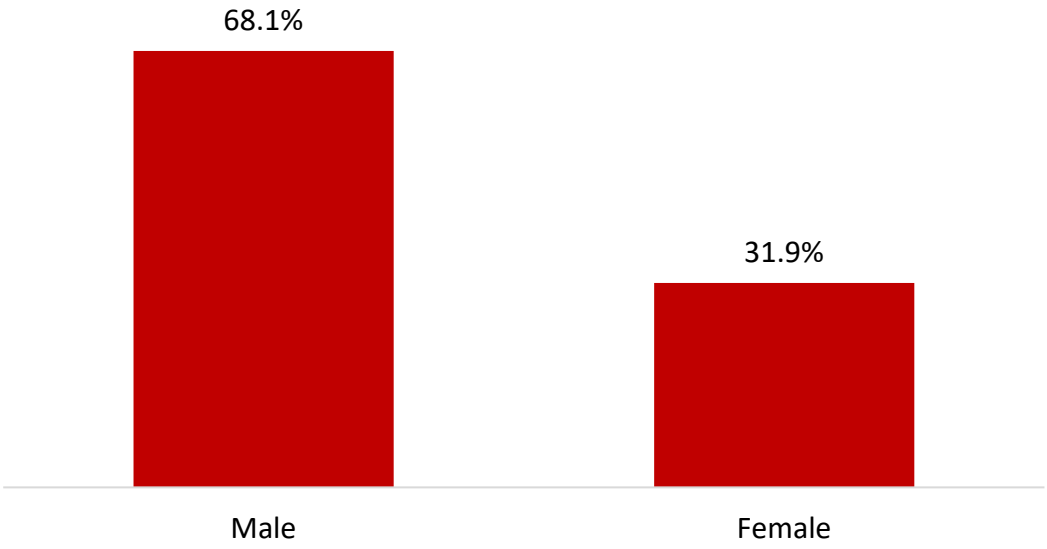
Data Source: Arizona Pre-Hospital Information & EMS Registry System (AZ-PIERS)

Demographic Comparisons

Sex

The percent of EMS/law enforcement responses for total suspected opioid overdoses was higher among males (68.1%) compared with females (31.9%).

Figure 27. Percentage of EMS/Law Enforcement Responses for Suspected Opioid Overdoses by Sex, Arizona, 2022 (n=10,093)

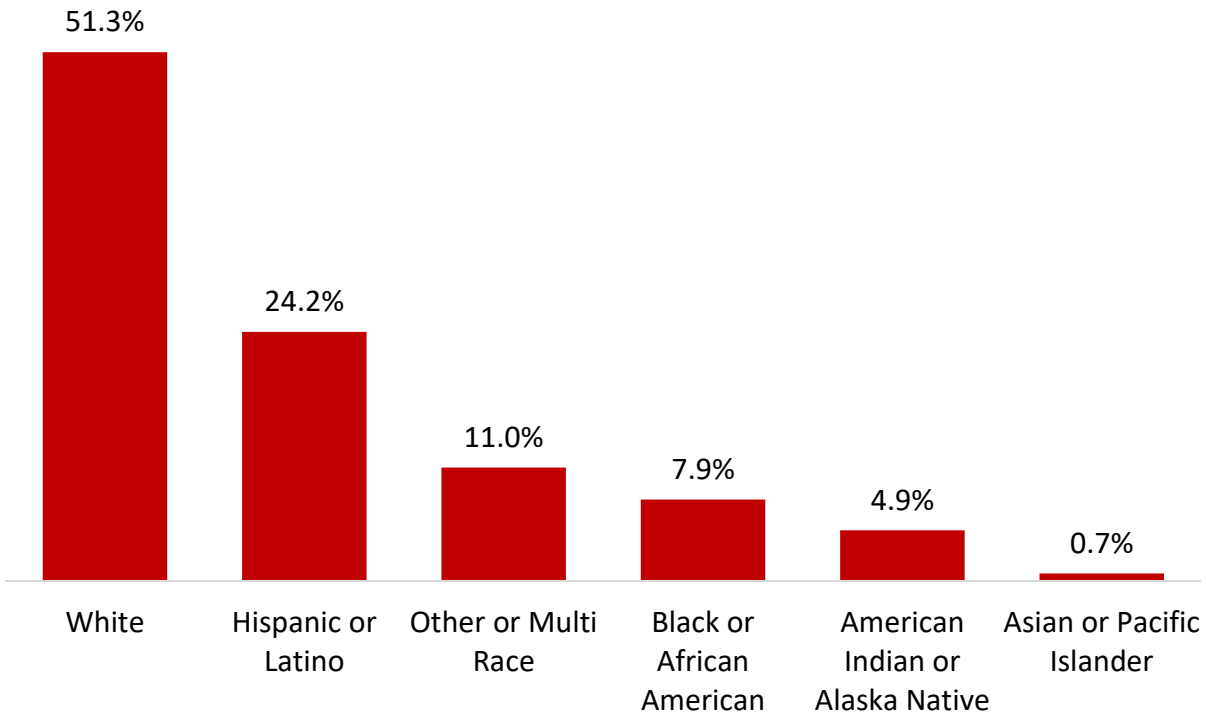


Data Source: Arizona Pre-Hospital Information & EMS Registry System (AZ-PIERS). Notes: Missing values for sex (n=21; 0.2%) are excluded from this graph. Unknown sex may include unidentified individuals.

Race and Ethnicity

The percent of EMS/law enforcement responses for suspected opioid overdoses was highest among White (51.3%) and Hispanic or Latino (24.2%) individuals.

Figure 28. Percentage of EMS/Law Enforcement Responses for Suspected Opioid Overdoses by Race/Ethnicity, Arizona, 2022 (n=10,093)

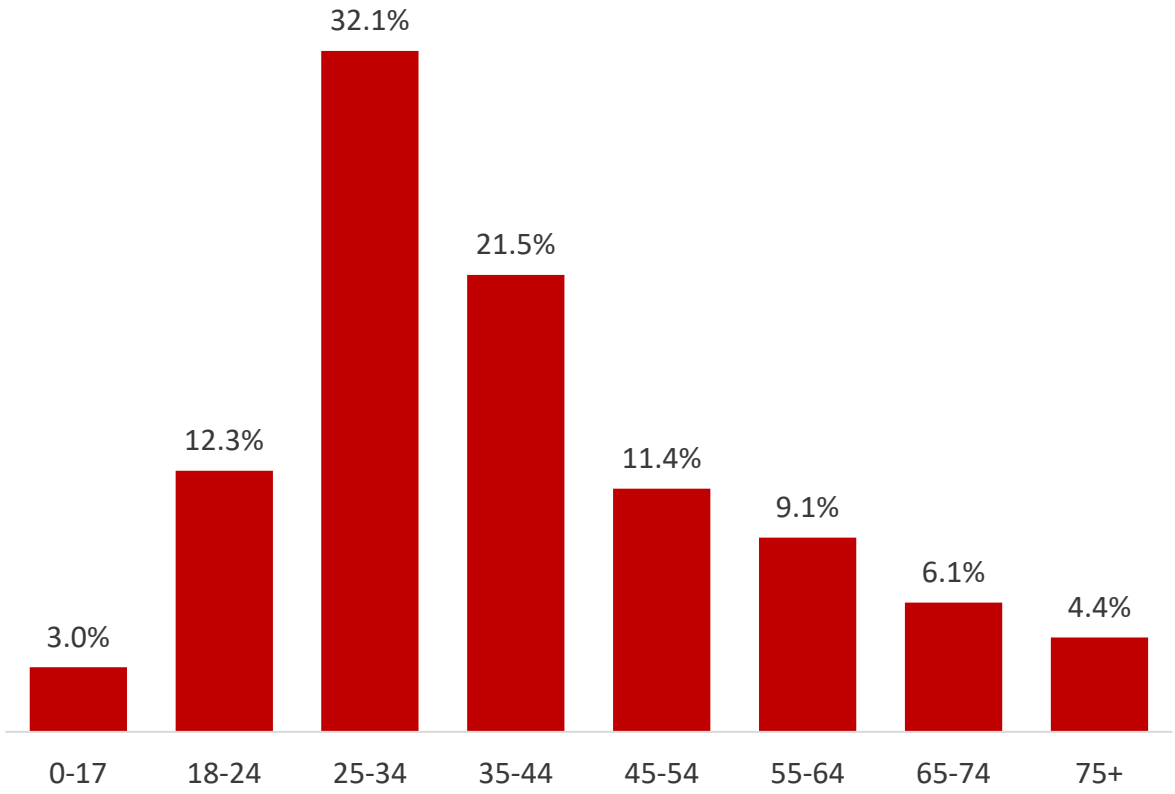


Data Source: Arizona Pre-Hospital Information & EMS Registry System (AZ-PIERS). Notes: Missing values for race/ethnicity (n=5,074; 50.3%) are excluded from this graph. 'Other or Multi Race' includes all other race and ethnicity groups, including individuals who reported more than one race.

Age

Individuals 18-44 years account for 65.9% of EMS/law enforcement responses for suspected opioid overdoses, with individuals aged 25-34 years (32.1%), 35-44 years (21.5%), and 18-24 years (12.3%) making up the highest percentages by age groups.

Figure 29. Percentage of EMS/Law Enforcement Responses for Suspected Opioid Overdoses by Age Group, Arizona, 2022 (n=10,093)



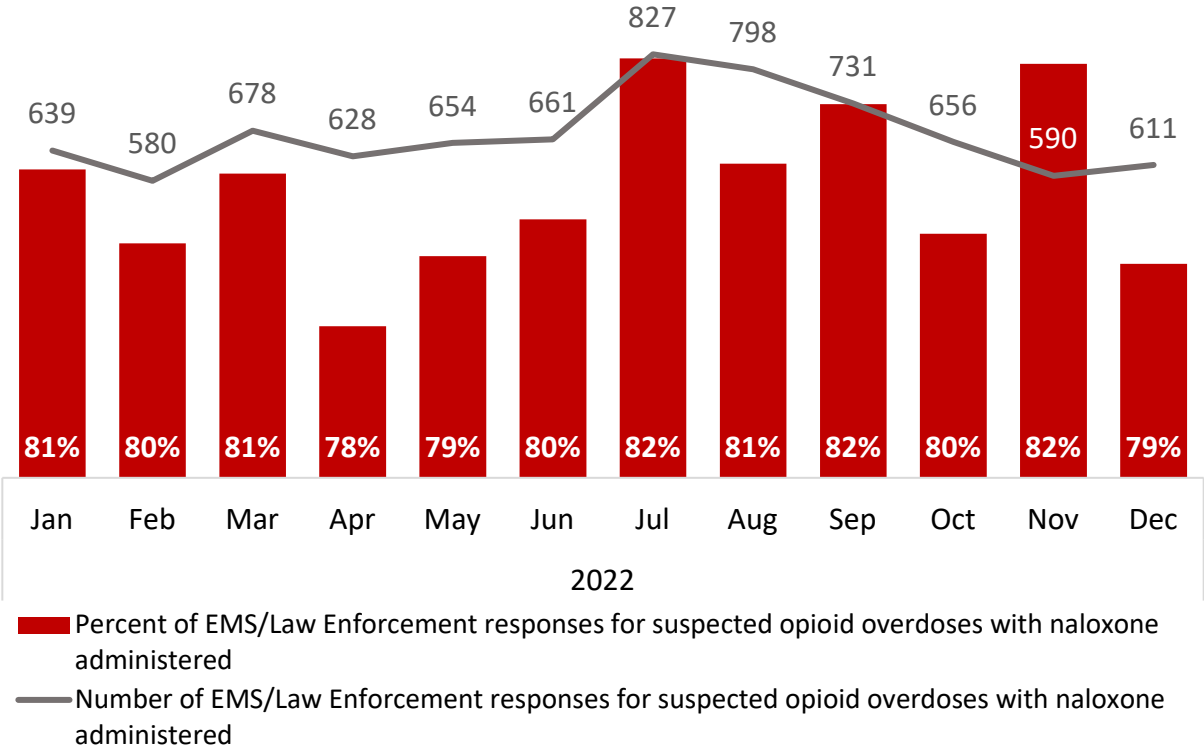
Data Source: Arizona Pre-Hospital Information & EMS Registry System (AZ-PIERS). Notes: Missing values for age (n=49; 0.5%) are excluded from this graph.

EMS/Law Enforcement Administered Naloxone

ADHS provides naloxone free of charge to EMS and law enforcement agencies to equip their personnel with a limited supply for use in the field.

The number of EMS/law enforcement responses for suspected opioid overdoses with naloxone administered varied monthly in 2022 (total doses = 8,053), coinciding with the months when the number of suspected opioid overdoses are highest and lowest, except in November. The percent of EMS/law enforcement responses for suspected opioid overdoses with naloxone administered was fairly consistently above 78% (range 78-82%) during 2022. There are situations where naloxone does not need to be administered, and thus the goal for naloxone administration is not 100%.

Figure 30. EMS/Law Enforcement Responses for Suspected Non-Fatal Opioid Overdoses with Naloxone Administered (Monthly), Arizona, 2022 (n=8,053)

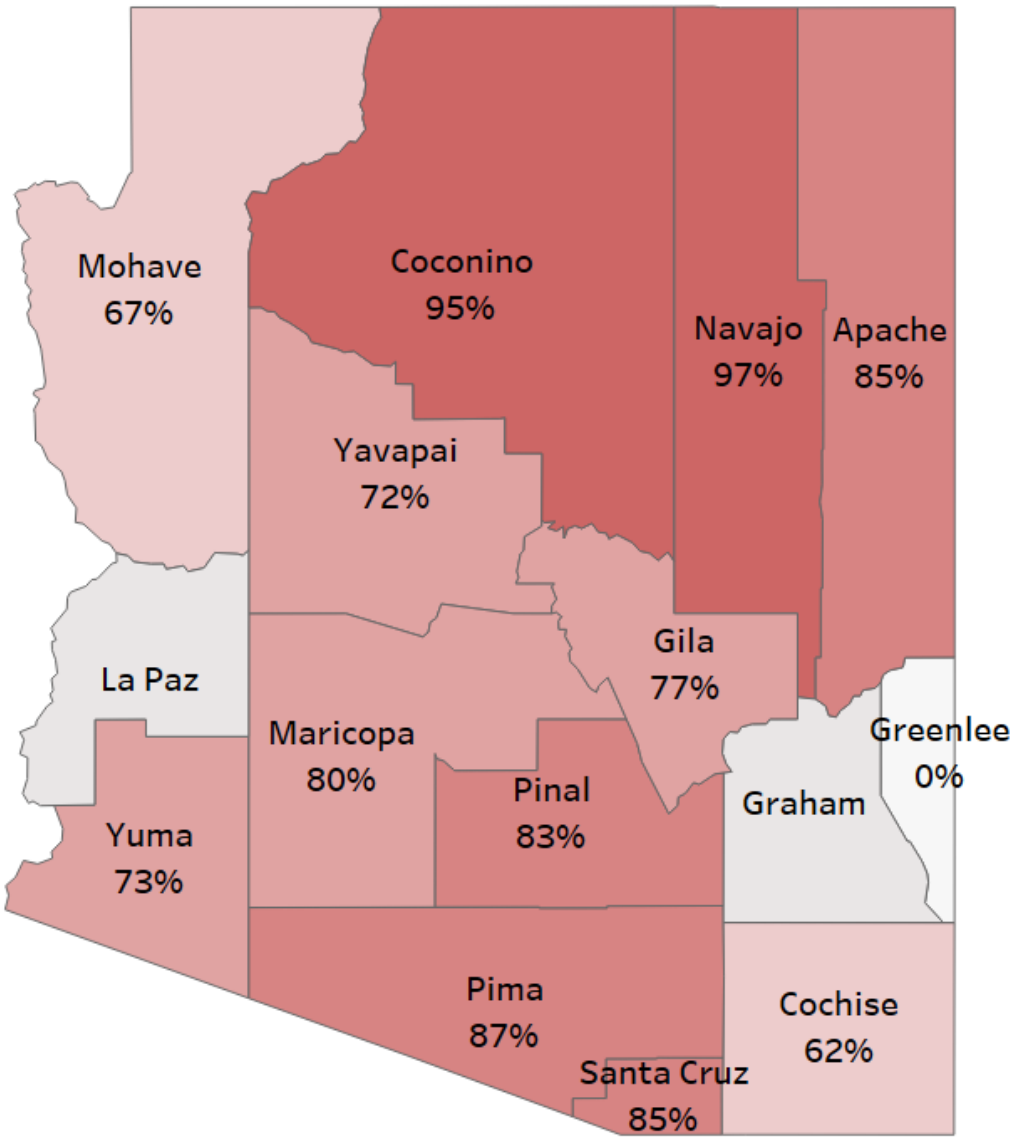


Data Source: Arizona Pre-Hospital Information & EMS Registry System (AZ-PIERS). Majority of the naloxone were administered by Emergency Medical Services (78%), followed by Law Enforcement (15%), or a bystander (5%).

County

The percent of EMS/law enforcement responses for suspected opioid overdoses with naloxone administered was highest in Navajo, Coconino, Pima, Apache, Santa Cruz, and Pinal Counties.

Figure 31. Percent of EMS/Law Enforcement Responses for Suspected Non-Fatal Opioid Overdoses with Naloxone Administered by County, Arizona, 2022 (n=8,053)



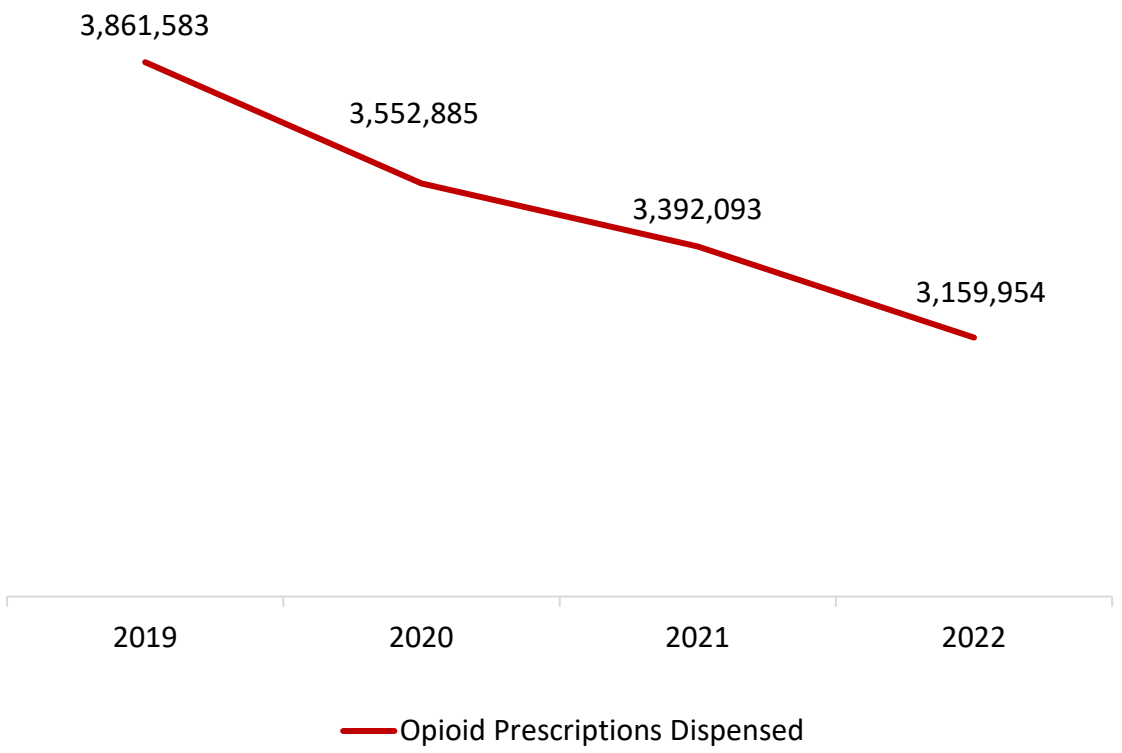
Data Source: Arizona Pre-Hospital Information & EMS Registry System (AZ-PIERS). Notes: To prevent the public disclosure of personally identifying information, data points based on fewer than 10 counts are not displayed (indicated in gray). County reflects patient's place of overdose. No EMS/Law Enforcement responses were reported for Greenlee county in 2022.

Prescription Opioid Data (Data: PDMP)

Trends 2019-2022

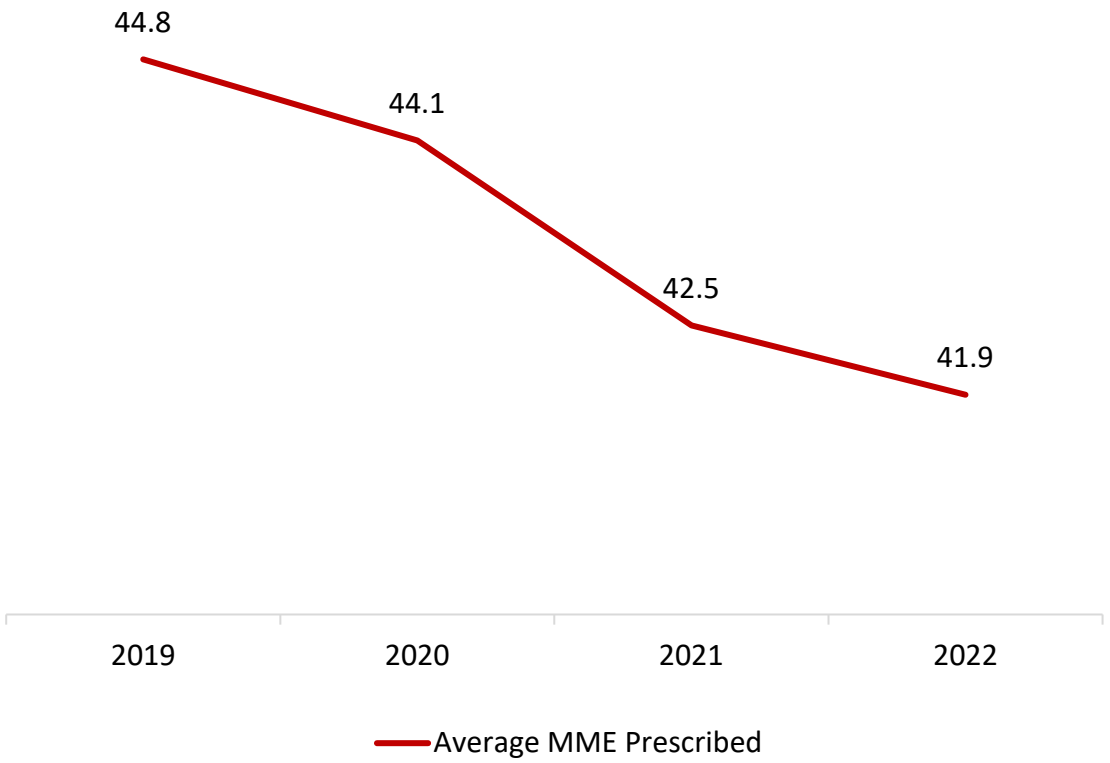
The number of opioid prescriptions and average morphine milligram equivalents (MME) dispensed in Arizona decreased by 18.2% and 6.4%, respectively, from 2019-2022.

Figure 32. Opioid Prescriptions Dispensed by Year, Arizona, 2019-2022 (n= 13,966,515)



Data Source: Arizona Prescription Drug Monitoring Program. Note: Only opioid prescriptions dispensed among Arizona residents are included in the graph.

Figure 33. Average Morphine Milligram Equivalent (MME) Prescribed, Arizona, 2019-2022 (n= 13,966,515)

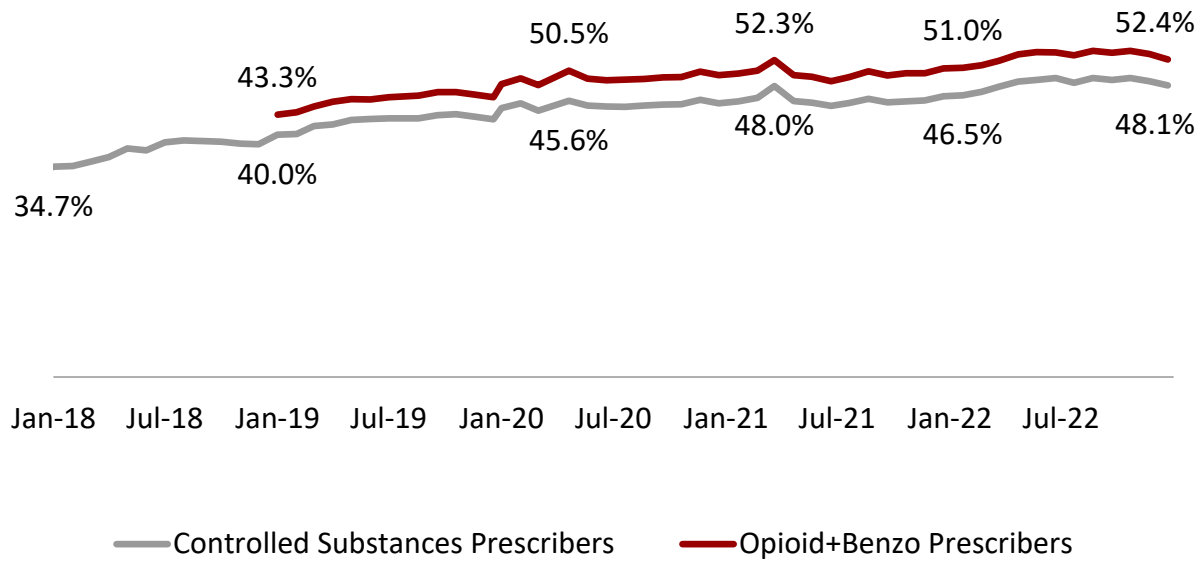


Data Source: Arizona Prescription Drug Monitoring Program. Notes: Only opioid prescriptions dispensed among Arizona residents are included in the graph. MME are values that represent the potency of an opioid dose relative to morphine.

CSPMP Prescriber Lookups

The percent of prescribers who checked the Prescription Drug Monitoring Program (PMP)[10] has increased from 2018-2022 for prescribers of all controlled substances (34.7% to 48.1%) and from 2019-2021 for prescribers of opioids and benzodiazepines (43.3% to 52.4%).

Figure 34. Percentage of Controlled Substances and Opioid/Benzodiazepine Prescribers who Checked PMP, 2018-2022



Data Source: Controlled Substance Prescription Monitoring Program (CSPMP)

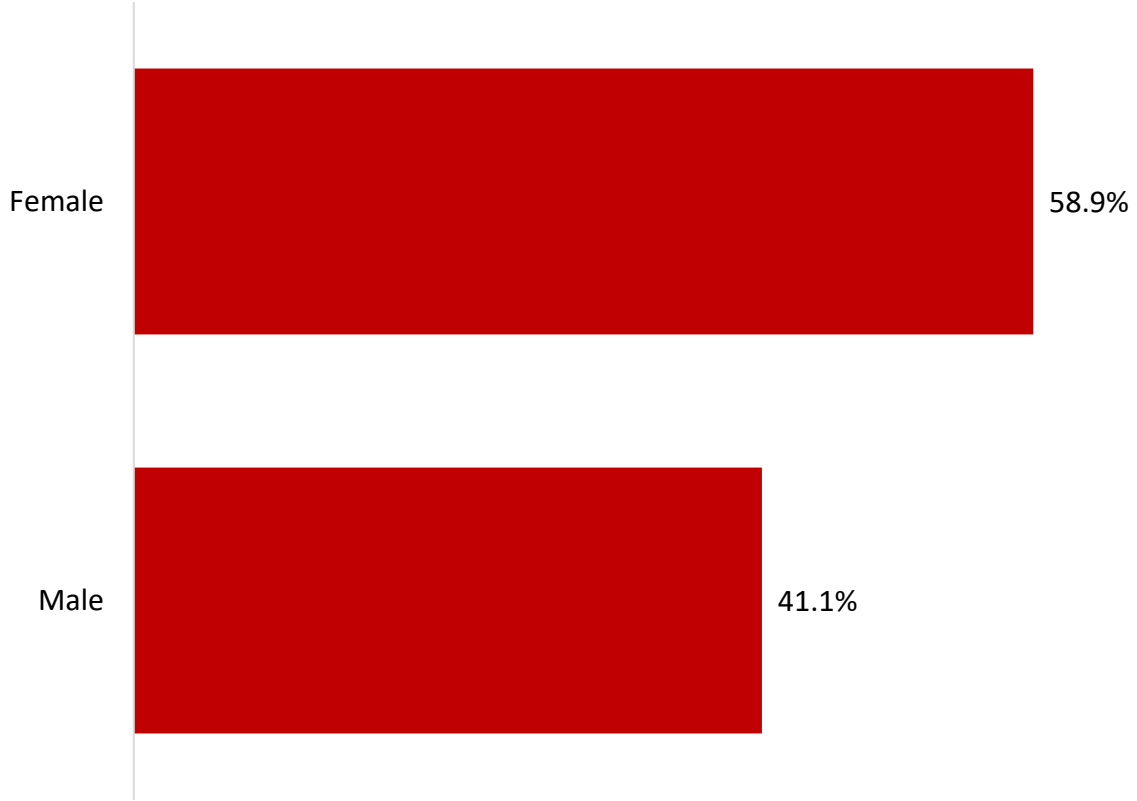
[10] As of October 16, 2017, prescribers are required to check the Prescription Monitoring Program (PMP) before prescribing an opioid analgesic or benzodiazepine-controlled substance listed in schedule II, III or IV for a patient, shall obtain a patient utilization report regarding the patient for the preceding 12 months from the controlled substances prescription monitoring program's central database tracking system at the beginning of each new course of treatment and at least quarterly while that prescription remains a part of the treatment. For information on exemptions, review Arizona Revised Statutes (A.R.S.) § 36-2606.

Demographic Comparisons

Sex

The percent of opioid prescriptions dispensed for females (58.9%) was higher than compared with males (41.1%).

Figure 35. Percentage of Opioid Prescriptions Dispensed by Sex, Arizona, 2022 (n= 3,159,954)

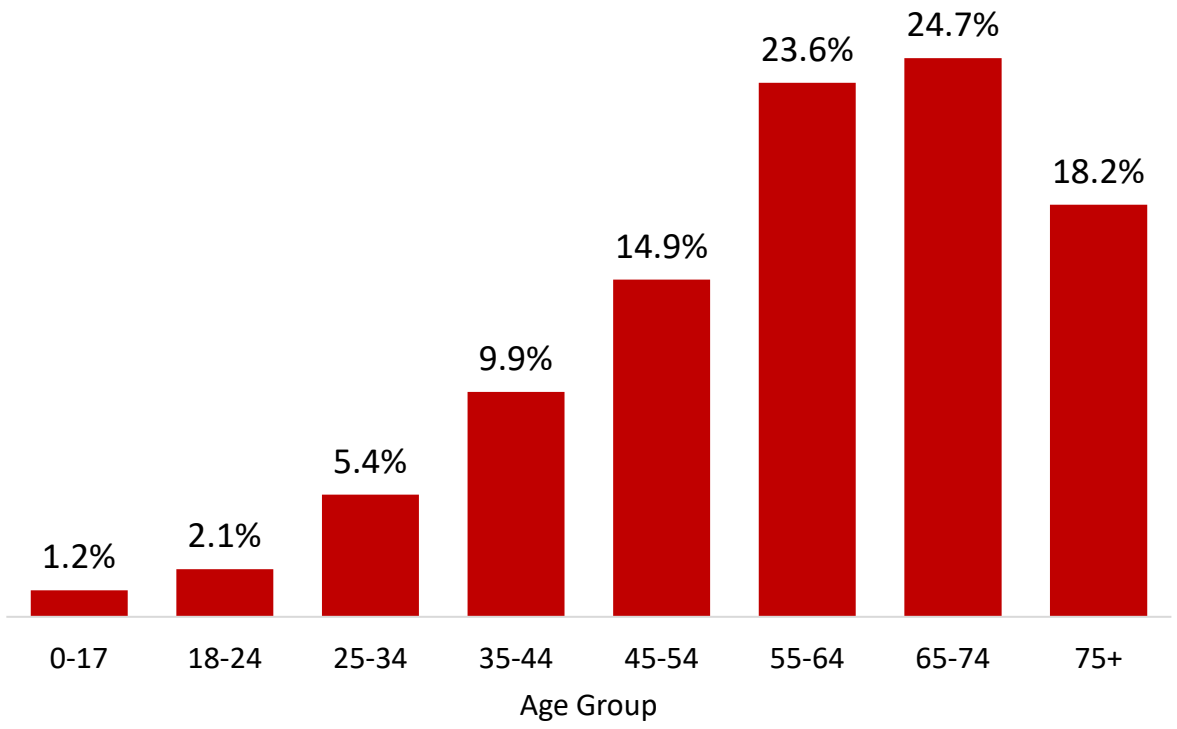


Data Source: Arizona Prescription Drug Monitoring Program. Notes: Missing values for sex (n=713; 0.02%) are excluded from this graph. Unknown sex may include unidentified individuals. Only opioid prescriptions dispensed among Arizona residents are included in the graph.

Age

The percent of opioid prescriptions dispensed for individuals aged 65-74 years (24.7%), 55-64 years (23.6%), and 75+ years (18.2%) was higher than compared with individuals of other ages.

Figure 36. Percentage of Opioid Prescriptions Dispensed by Age Group, Arizona, 2022 (n= 3,159,954)

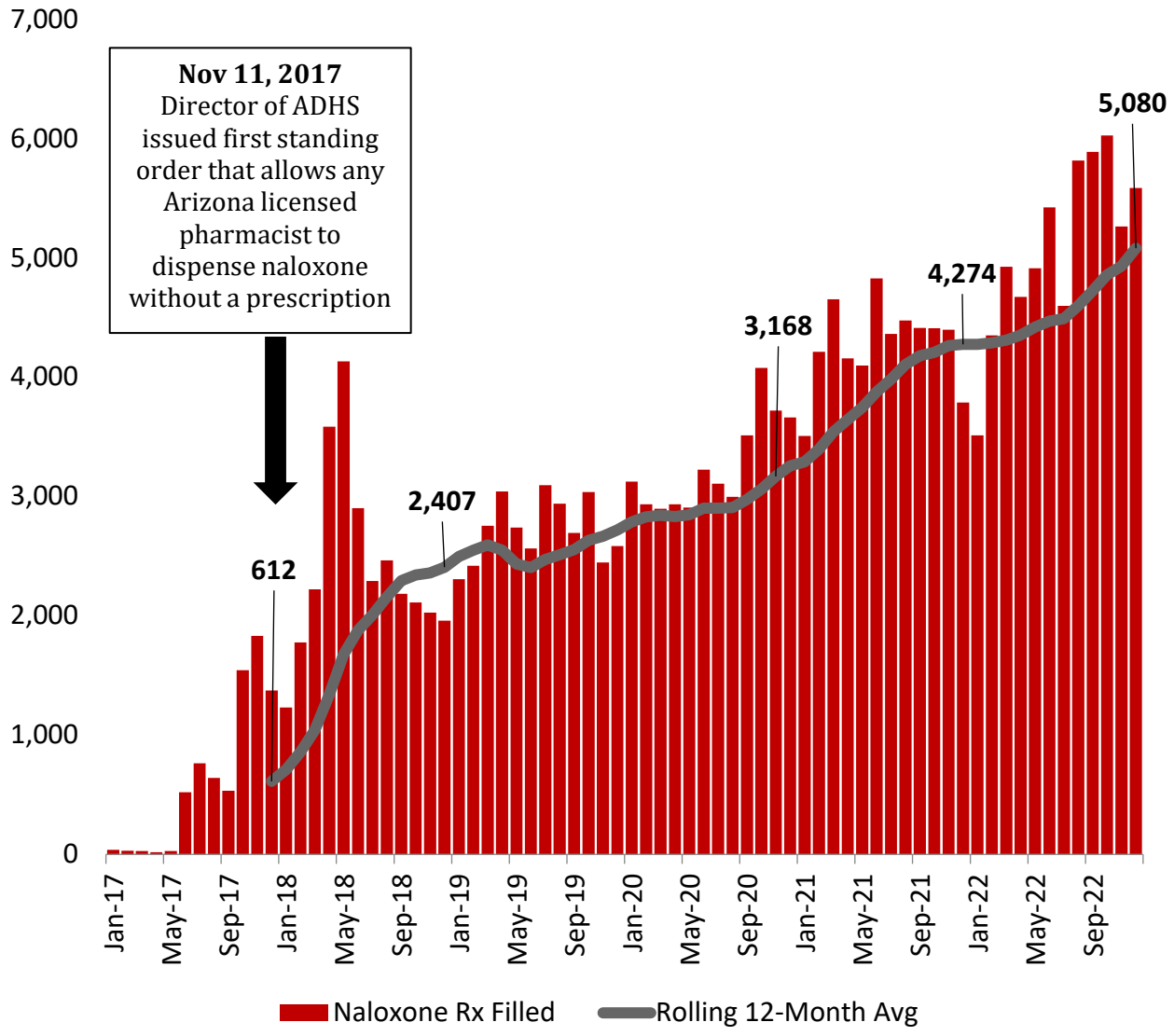


Data Source: Arizona Prescription Drug Monitoring Program. Notes: Individuals with 'Unknown' age (n=1) have been excluded from this graphic. Only opioid prescriptions dispensed among Arizona residents are included in the graph.

Naloxone Dispensed by Pharmacies

The ADHS began issuing a standing order on November 11, 2017 that allowed any Arizona licensed pharmacist to dispense naloxone without a prescription. The number of prescriptions dispensed by pharmacies in Arizona has increased significantly from 2017-2022 by 730.1%.

Figure 37. Naloxone Dispensed by Pharmacies, Arizona, 2017-2022 (n=60,964)



Data Source: Controlled Substance Prescription Monitoring Program (CSPMP). Notes: Rolling average calculated as average number of events in previous 12 months.

Limitations

Several limitations should be kept in mind when reviewing data included in this report.

Rate Calculations

The number of fatal opioid overdoses were provisional at the time of report development. Other rates throughout are calculated using different denominators depending on the particular source of data (e.g., hospital discharge uses total number of visits, AZ-PIERS uses total number of responses). This report is a cross-sectional analysis of events and rates for 2022, with no additional statistical testing to quantify the significance of relationships between various factors and outcomes. As such, data should be interpreted with caution in identifying potential associations, and without conclusions about cause and effect.

Reporting Completeness

It's important to acknowledge that while reporting of suspected opioid overdose events is mandatory under Arizona Administrative Code R9-4, Article 6, there is a notable prevalence of underreporting in MEDSIS. Consequently, the counts of non-fatal opioid overdose events are likely underestimated in this report.

Timeliness of Data

Data for this report were pulled from July-November, 2023. Several data source data from 2022 may update slightly from what was reported as they become more complete. For this reason, data reported may differ slightly from what is reported elsewhere, and specifically on the ADHS Opioid Dashboard.

Classification of Opioid Overdoses

Case classification of opioid overdoses is complex and differs significantly between data sources. Most data and data systems (with the exception of MEDSIS for non-fatal overdoses) used for the surveillance of opioid overdoses were not created for the express purpose of capturing opioid overdoses. Estimates are likely a slight underrepresentation of the true prevalence of events in Arizona.

Toxicology Data

This report does not include any data from Arizona State Public Health Laboratory (ASPHL). As part of the strategic plan for OD2A, ADHS is collaborating with ASPHL to collect and analyze biological specimens from suspected overdoses. The goal of this biological

surveillance is to identify opioids, stimulants, and other drugs of abuse. These data will be incorporated into future reports once this initiative is implemented.

Other Contributing Factors for Opioid Overdoses

Most of this analysis could not consider social determinants of health that may have played a role in any particular opioid overdose, such as economic stability, access to health providers or behavioral health care, or other environmental impacts. These can be important contributors of opioid overdoses that are often overlooked. The Annual State Drug Overdose Fatality Review Report contains more information on contributing factors related to drug overdose deaths.

Conclusions

The Arizona Department of Health Services (ADHS) is one of many organizations throughout Arizona committed to ending the opioid epidemic. ADHS enacts that commitment through multiple cross-agency programs and initiatives. The continuing Overdose Data to Action (OD2A) cooperative agreement with CDC and State Opioid Response (SOR) contract with AHCCCS allow ADHS to build upon the Arizona Health Improvement Plan: Mental Well Being Action Plan, Annual Overdose Fatality Review Report recommendations, and Annual Overdose Surveillance Report recommendations. The Data to Action Framework in particular, paired with CDC funding recently renewed to continue through 2028, will enable ADHS to strengthen its understanding and therefore prevention of the opioid epidemic in Arizona. Data-related activities anticipated for 2024-2028 are described further in the Future Directions for Data Collection and Analysis section.

Within ADHS the work of addressing the opioid crisis is integrated throughout the agency. The Office of Injury and Violence Prevention leads the implementation of OD2A and SOR programming supporting local interventions through funding to 13 county health departments (and collaboration with the two counties funded directly by CDC), county overdose fatality review teams, the Opioid Assistance and Referral (OAR) Line in partnership with the Arizona Poison Control Center, enhancement of the Prescription Drug Monitoring Program in partnership with the Arizona Board of Pharmacy, targeted local treatment engagement activities, prescribing and pain and addiction resources for providers, and distribution of naloxone to more than 600 state and local agencies and community organizations across the state. The Bureau of EMS and Trauma works with first responders to establish naloxone-leave behind programs and with law enforcement. The Office of HIV and Hep C Services manages the Overdose and Disease Prevention Program serving community-based organizations. The ASPHL provides toxicology expertise. The Bureau of Assessment & Evaluation and the Business Intelligence Office work together to produce, analyze, and disseminate opioid-related data such as this report. Staff from multiple Bureaus and other state and local agencies participate in monthly state Overdose Fatality Review team meetings in order to review fatal overdose cases from counties without their own review teams, identify ways in which fatal overdoses may be prevented in the future, and compile recommendations from the state and local teams into an annual report of data and prevention recommendations for policy-makers and advocates.

Future Directions for Data Collection and Analysis

Beginning in 2024, ADHS will collaborate with the ASPHL to collect and analyze biological specimens from suspected overdoses in select emergency departments statewide and link results with existing Drug Overdose Surveillance and Epidemiology (DOSE) syndromic surveillance data for Arizona. Specimens will be analyzed to identify opioids, stimulants, and other drugs of abuse and the resulting data will allow ADHS to identify trends in drugs of abuse and types of analytes (opioids/stimulants) involved as well as geographic hotspots involved in non-fatal overdoses across the state. Reporting on these results will begin in late 2024.

In 2024, ADHS also seeks to increase understanding of the drug overdose crisis and Arizona trends, improve identification of the factors contributing to overdoses, and improve the identification of populations disproportionately affected by overdoses involving opioids and/or stimulants by using linked datasets. ADHS also plans to incorporate drug overdose death data from the CDC's State Unintentional Drug Overdose Reporting System (SUDORS) to offer a more comprehensive overview of the drug overdose crisis. These projects will in turn enhance dissemination of drug overdose data to various public health partners and ultimately improve prevention and response efforts to decrease overdose-related morbidity and mortality.