2018 Opioid Deaths & Hospitalizations

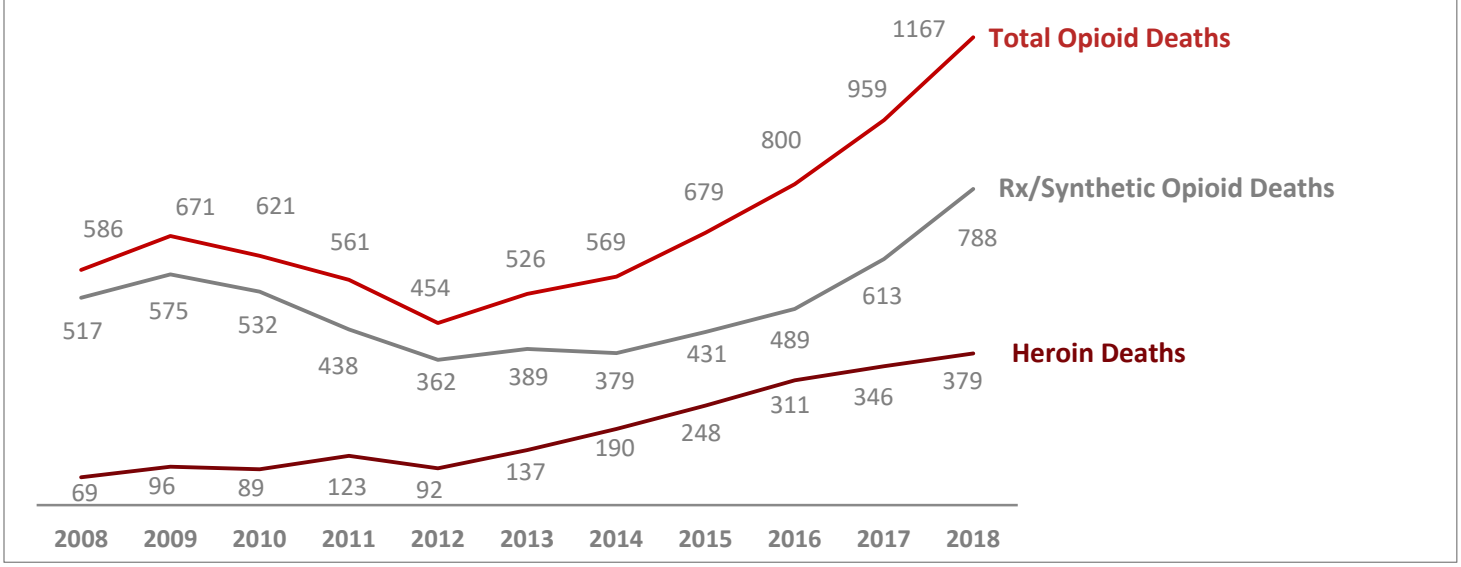
ARIZONA DEPARTMENT
OF HEALTH SERVICES

azhealth.gov/opioid

Opioid deaths events reported in Arizona are based upon final determination of cause of death as reported in the official certificate of death. The underlying cause code used in opioid overdose deaths may not always be specific to opioids. General codes for drug poisonings are interpreted to be opioid deaths when the general code occurs together with an opioid-specific external cause code in any of the external cause code fields. Underlying causes coded F110-F115 and F117-F119 are always considered opioid deaths. Underlying causes coded Y11-Y14, X41-X44, X61-X64, or X85 together with an external cause code of T40.0-T40.4 or T40.6 are also opioid deaths. These definitions align with opioid coding definitions published by the Centers for Disease Control and Prevention (CDC).

The number of reported 2018 deaths directly attributed to opioids among Arizona residents, or non-residents in Arizona is 1,167. Over 1,000 (1,109) of these deaths were among Arizona residents, resulting in an opioid-induced Arizona resident crude death rate of 15.7/100,000 residents. The rising number of deaths represents 21.7% increase in opioid deaths since 2017, and a 157% increase since 2012. The increase in heroin deaths has been slowing since 2013 when heroin deaths increased 49% from the year before, and accounted for 63% of the total increase in opioid deaths that year. In 2018, heroin deaths increased just 10% to 379 deaths, accounting for only 16% of the total increase in Opioid deaths from 2017. Prescription or synthetic opioids[1] are increasingly the driving force behind rising opioid deaths. In 2013, deaths from prescription or synthetic opioids increased just 7.5% from the year before, accounting for 37% of the total increase in opioid deaths that year. In 2018, prescription or synthetic opioids deaths rose 29% from 2017, to a total of 788 deaths accounting for 84% of the total increase in opioid deaths from 2017. According to the CDC, Arizona's opioid induced age-adjusted death rate in 2017, the most current year for which data are published, was 13.5/100,000 population, ranking Arizona 23rd among the 34 states for which opioid rates were reported.

Opioid deaths among Arizona residents and non-residents in Arizona continue to rise.

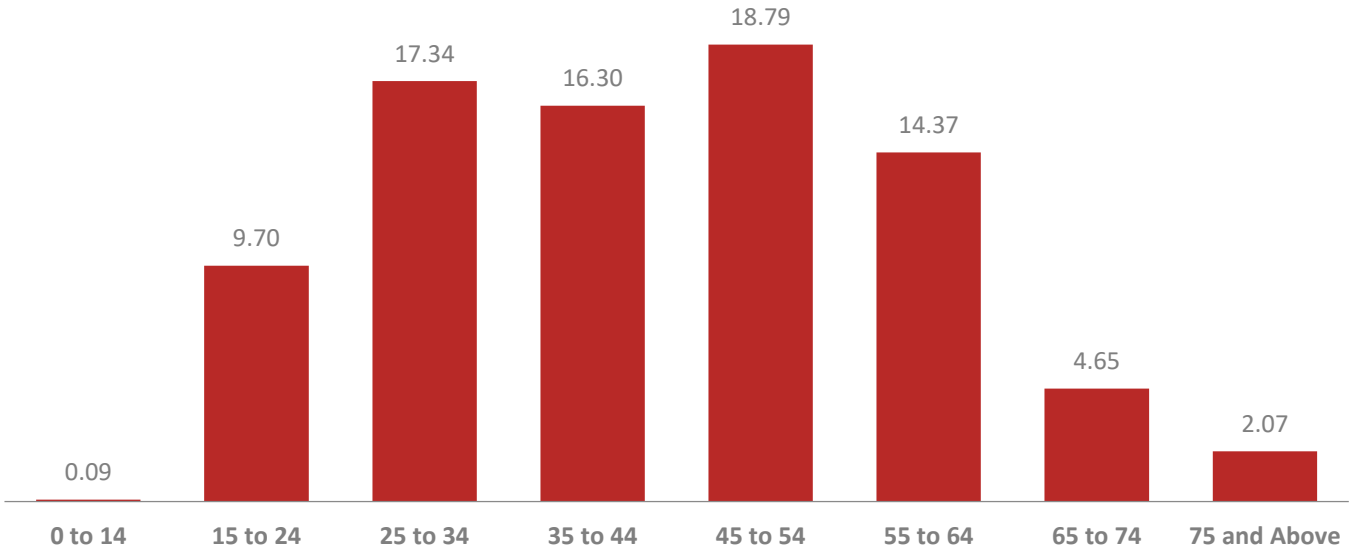


These trends are not explained by changes in the Arizona population since 2007. Due to well established factors delaying reporting, new opioid death reports continue to be received for many months after the close of each calendar year.

[1] The only opioids that have a defined ICD10 code are heroin, opium, and methadone. All others are grouped into a general category called Prescription/Synthetic Opioids, which includes all synthetically manufactured opioids, including those intended to be used for medical applications such as Fentanyl, Oxycontin, Codeine, etc. The Rx/Synthetic category of opioids does not distinguish whether that drug was used legally or illegally.

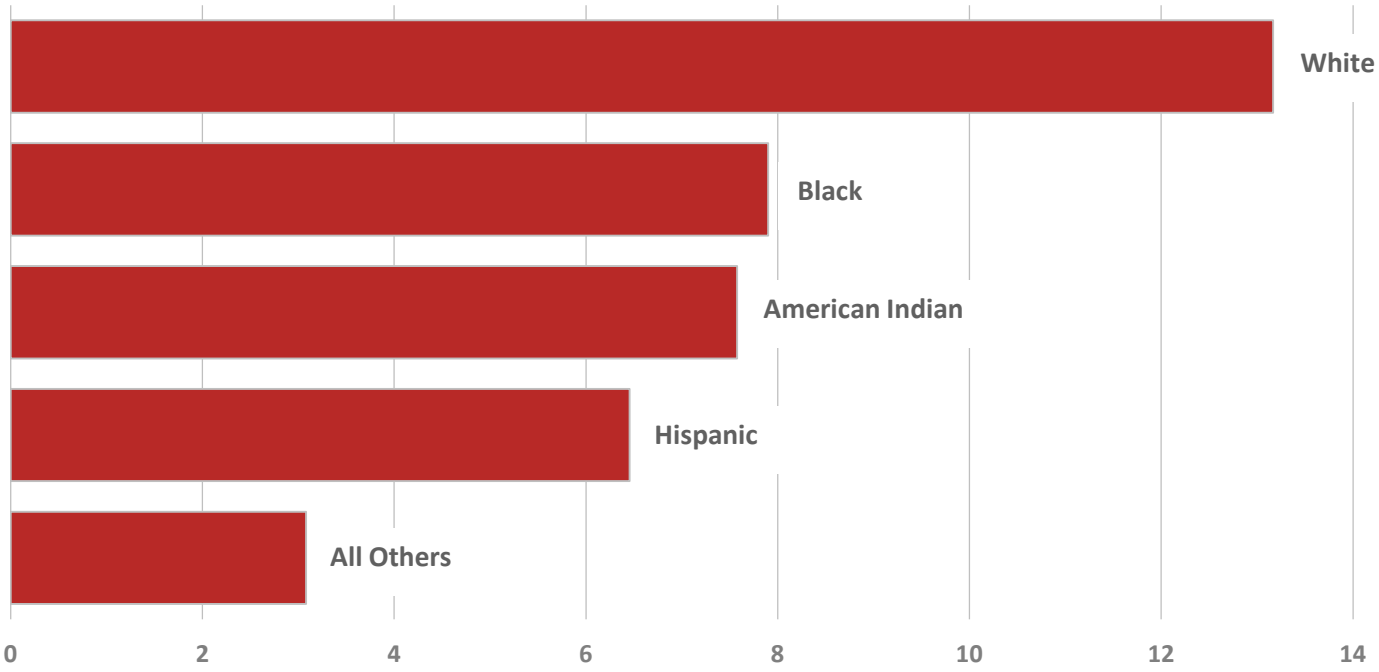
Opioid deaths are not uniformly distributed among different population groups in Arizona. By age, opioid death rates rise beginning in the late teens until they peak at ages 45-54. Above age 65, the opioid death rate drops significantly. Deaths due to opioids among persons under age 55 have constituted 79% of all opioid deaths in Arizona since 2008.

Arizonans aged 45 to 54 have the highest rates of opioid deaths over the last ten years.



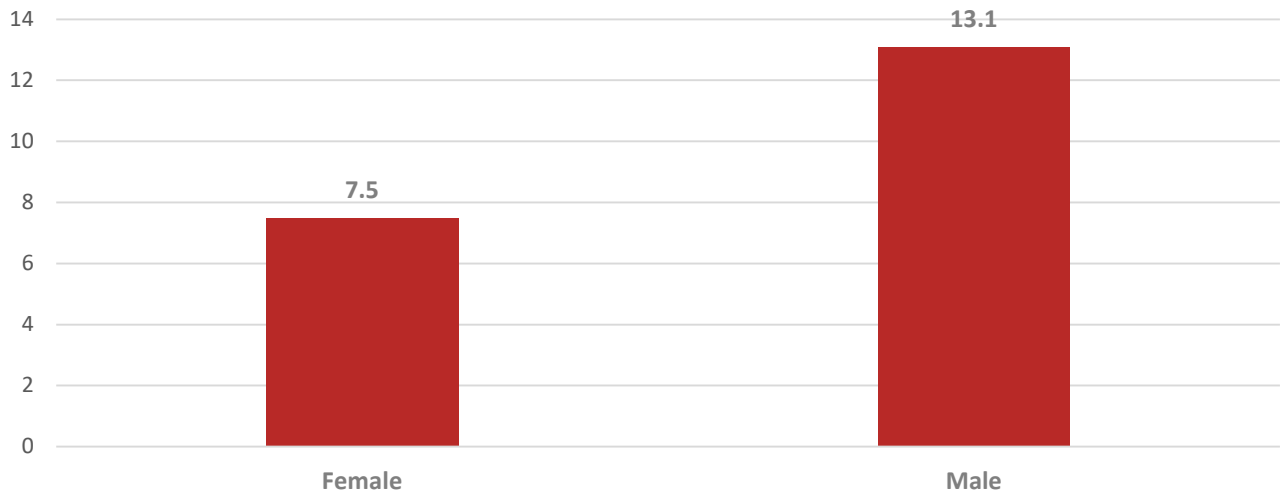
Among different race/ethnicity groups, rates of death from opioids differ greatly. From 2008-2018, 73.8% of all opioid deaths were among White non-Hispanics, among whom the rate of death is nearly twice that of any other race/ethnicity group.

From 2008-2018, the death rate of White non-Hispanics is significantly greater than any other race/ethnicity group.



Deaths due to opioids are not evenly distributed by sex in Arizona. Males die at a rate that is 75% higher than in females.

From 2008-2018, the rate of males dying from opioids was 75% greater than females.



There is also considerable variance in both deaths and death rates observed among Arizona counties. The following table provides information about the county in which an opioid death occurred.

County	Deaths, 2018	Rate per 100,000, 2018
Apache	<10	n/a
Cochise	15	11.51
Coconino	24	16.49
Gila	<10	n/a
Graham	<10	n/a
Greenlee	<10	n/a
La Paz	<10	n/a
Maricopa	776	18.07
Mohave	24	11.27
Navajo	<10	n/a
Pima	175	16.92
Pinal	37	8.40
Santa Cruz	<10	n/a
Yavapai	27	11.79
Yuma	<10	n/a
Unknown	58	n/a
Total Arizona	1167	15.67

Arizona death certification includes a single underlying cause, and can include up to 20 additional secondary causes of death. The description of the causes of death is determined by the person certifying death, such as a physician, or medical examiner. The causes of death are coded to ICD-10 standards by the National Center for Health Statistics based upon the underlying and secondary causes described in the death certificate. A particular death may be determined to be caused by an opioid, but usually secondary causes of death and external cause codes will mention other drugs as well. The role that these other drugs played, and the extent

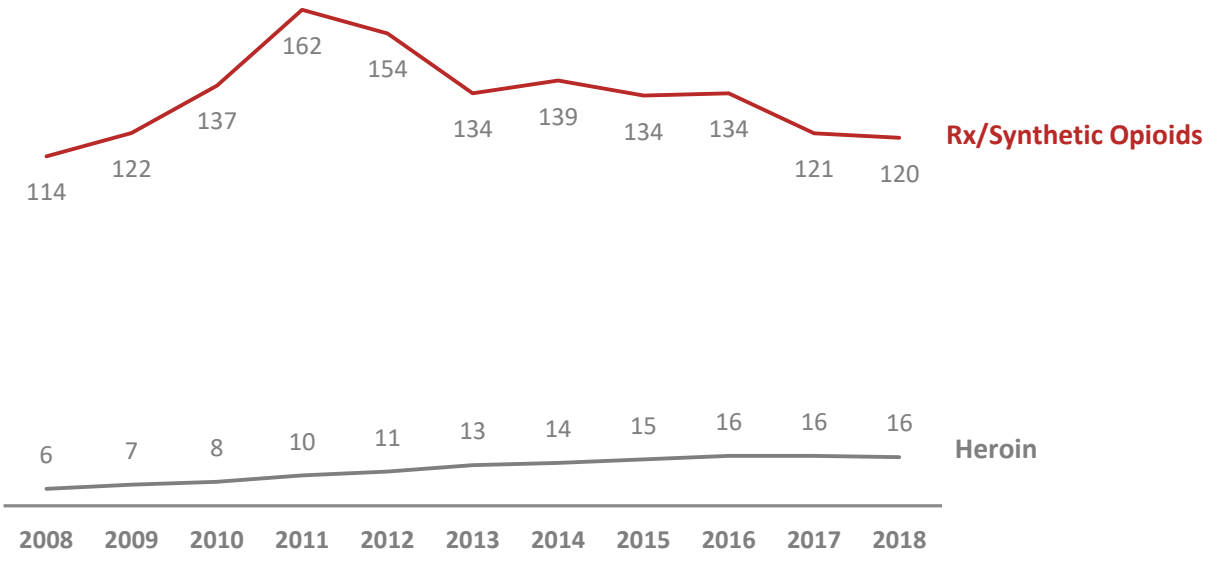
to which they contributed to the death, is a complex matter. The Department relies upon the determinations of the medical professional who certified the death, because they are best qualified to evaluate the medical and physical evidence. The frequency of the involvement of other drugs together with opioids can be informative if for no other reason than to demonstrate how complex the dynamics of opioid-induced death can be.

Other drugs, including the presence together of multiple other drugs, are a consistent factor in deaths from opioids. Based upon death certificate information alone, from 2008-2018, an average of 74% of opioid-induced deaths also reported the involvement of other non-opioid drugs. This is confirmed by toxicology data available at the time of this report. Of 333 decedents in 2018 for which toxicology data was available and opioids were the underlying cause of death (28.6% of all opioid-induced deaths in 2018), 64.3% tested positive for analytes of both an opioid and a non-opioid drug, 57.7% tested positive for analytes of fentanyl, and 23.7% tested positive for a non-opioid[2] illicit drug such as cocaine or methamphetamine.

Other significant factors include the patterns of prior medical history among persons who die from opioid overdose. Historical analysis completed in 2017 found that just 36% of persons who died from opioids had any prior opioid-related encounter at a hospital or emergency medical provider during the 5-year period prior to their death. An additional 46% of those who died from opioids had some kind of hospital or emergency medical encounter not related to opioids.

Opioids have a significant impact upon Arizona's medical care system due to the volume of encounters involving opioids. Unique encounters are events for a single person involving either hospital admission or an emergency department encounter without admission. The rate of unique encounters due to prescription/synthetic opioids as the principal diagnosis has declined since 2011 after reaching a peak of 162 per 100,000 population in 2011. The rate due to heroin, while much lower, has remained at 16 per 100,000 population since 2016. Prescription/synthetic opioid encounter rates currently have a six times greater cost burden upon the Arizona healthcare system than heroin encounters.

Unique opioid hospital encounter event rate per 100,000.



[2] Heroin was excluded from the classification of illicit drugs in this classification because of difficulty in reliably distinguishing its presence based solely upon the presence of analytes.

The best comprehensive measure of the economic cost of opioids in the healthcare system is to consider all encounters involving opioids, not just those in which opioids are the principal diagnosis. The cost of all such encounters may be reasonably estimated using national cost to charges adjustments provided by the U.S. Department of Health and Human Services. These indicate that the cost of all opioid-related encounters in Arizona from 2008-2018 has increased by 321%.[3] Hospital data indicates that in 2018 there were 52,970 unique opioid-related encounters in Arizona hospitals, totaling an estimated $461 million in healthcare costs, an average of $8,711 per opioid-related unique encounter. In 2008 there were 18,592 unique opioid encounters, costing $143.6 million - only marginally less per encounter than in 2018 ($7,726). The observed increase in cost is not primarily due to rising healthcare costs, but the increasing numbers of opioid-related encounters.

Year	Number of Opioid-Related Encounters	Estimated Cost for Opioid-Related Encounters	Net Annual Change in Costs
2008	18,592	$143,639,592	N/A
2009	20,365	$151,535,815	5%
2010	23,437	$161,172,385	6%
2011	30,865	$198,374,505	23%
2012	32,751	$226,127,368	14%
2013	32,684	$231,131,469	2%
2014	36,459	$260,725,158	13%
2015	41,434	$305,408,447	17%
2016	51,532	$402,596,263	32%
2017	52,134	$434,285,621	8%
2018	52,970	$461,440,155	6%

[3] Actual cost for encounters are calculated by applying the annual cost-to-charges ratio (produced by the Agency for Healthcare Research and Quality, Healthcare Cost Utilization Project) to reported encounter charges for each reporting facility. The encounter charges are adjusted to estimate the actual cost paid to the provider for the healthcare services received. For this report, 2018 costs were estimated using the 2016 cost-to-charges-ratio by facility because 2017 and 2018 ratios were not available. As a result, these charge estimates are likely to be below actual costs. If facility-specific ratios were not provided, the facility group ratio was used for that facility. If a facility group ratio was not able to be defined, the state-wide average ratio was used. These estimated costs are therefore reasonable, not precise, estimates of actual cost, and a far more accurate measure than reported charges.