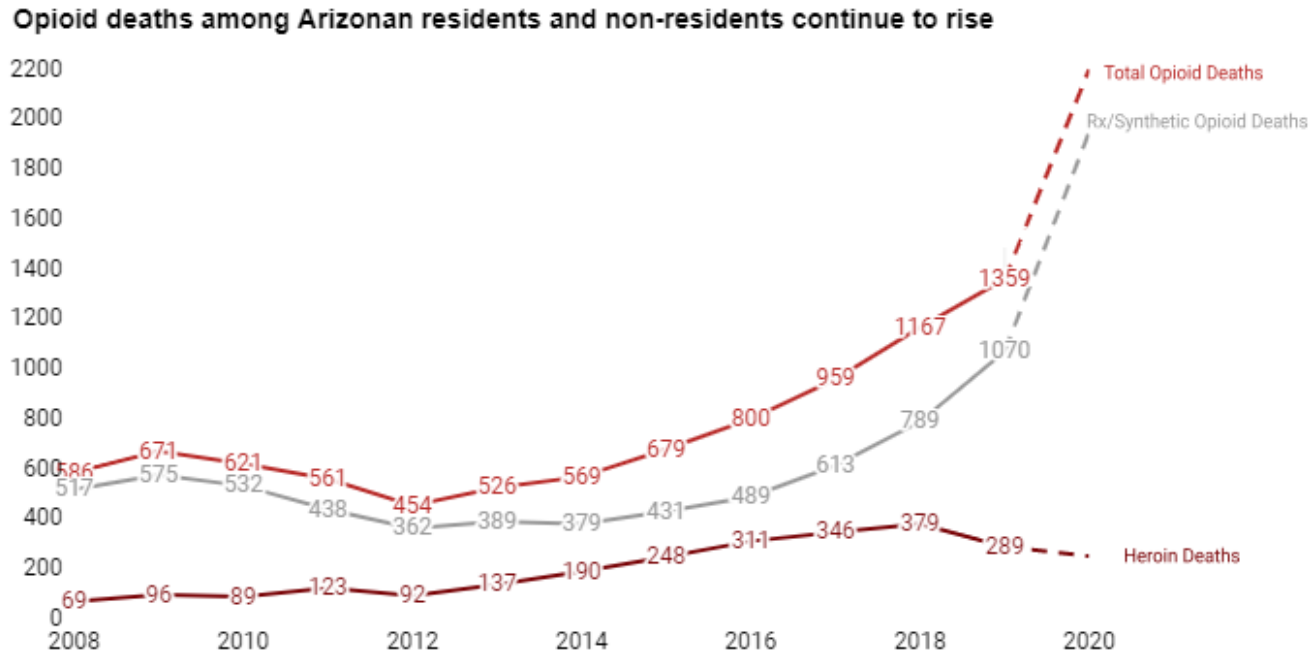
2019 Opioid Deaths & Hospitalizations

ARIZONA DEPARTMENT
OF HEALTH SERVICES

azhealth.gov/opioid

Opioid death 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, F117-F119 are always considered opioid deaths. Underlying causes coded Y11-Y14, X41-X44, X61-X64, X85 together with an external cause code of T40.0-T40.4, or T40.6 are also considered opioid deaths. These definitions align with opioid coding definitions published by the Centers for Disease Control and Prevention (CDC).

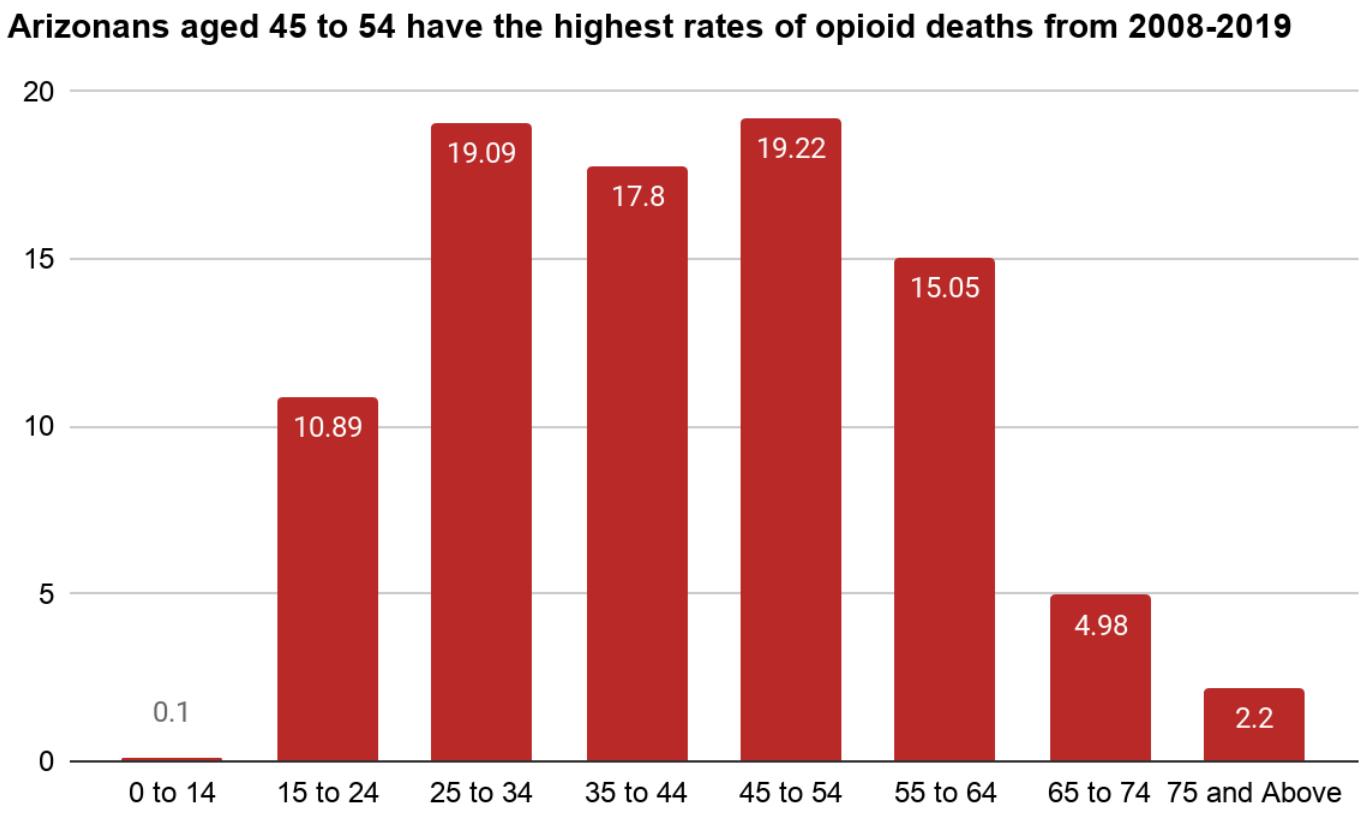
The number of reported 2019 deaths directly attributed to opioids among Arizona residents, or non-residents in Arizona is 1,351. Over 1,000 (1,286) of these deaths were among Arizona residents, resulting in an opioid induced Arizona resident crude death rate of 17.89/100,000 residents. The rising number of deaths represent a 15.8% increase in total opioid deaths since 2017, and a 198% 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 2019 heroin deaths declined by 24% to 288 total deaths, down from 379 deaths in 2018. Prescription or synthetic opioids are currently the driving force behind rising opioid deaths in Arizona. 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 2019 prescription or synthetic opioid deaths rose 35% from 2018, to a total of 1,063 deaths, accounting for 79% of the total burden of opioid death in 2019. As of the date of this report, the latest data for 2020, which is still incomplete, indicate there has been a significant rise in opioid deaths above those in 2019. Consistent with recent trends, these increases have primarily been driven by increases in deaths associated with synthetic opioids. Current 2020 projections are included on the figure below.



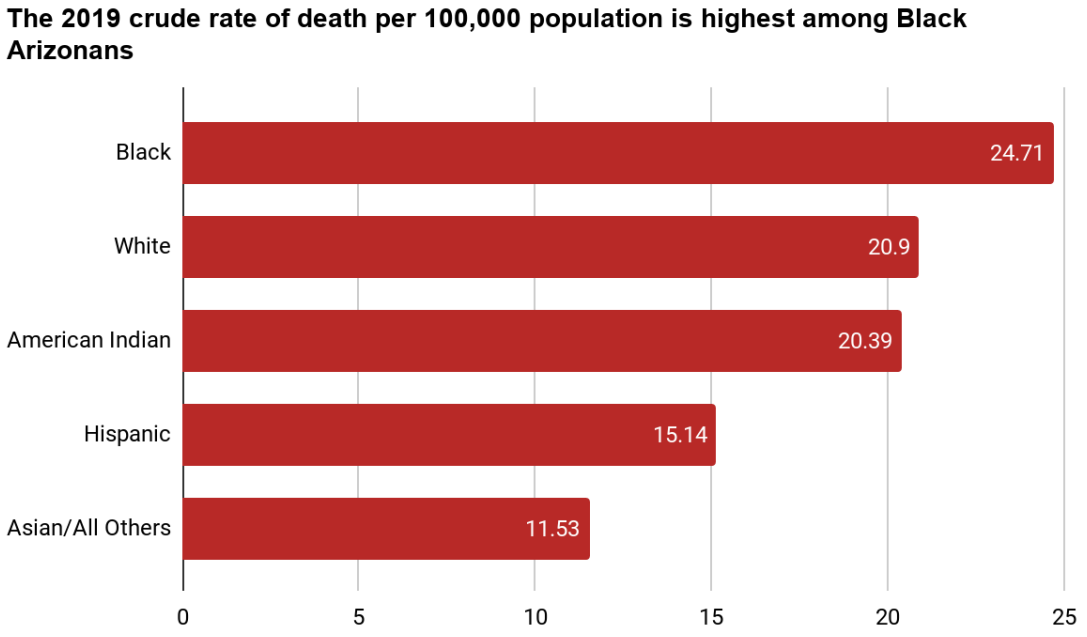
These trends are not explained by changes in the Arizona population since 2007. Due to well established factors delaying reporting, new opioid death reports continue to be received for many months after the close

of each calendar year, and opioid death counts continue to rise until July or August of the following year. The significant increase projected in 2020 is likely influenced by factors associated with the COVID-19 pandemic.

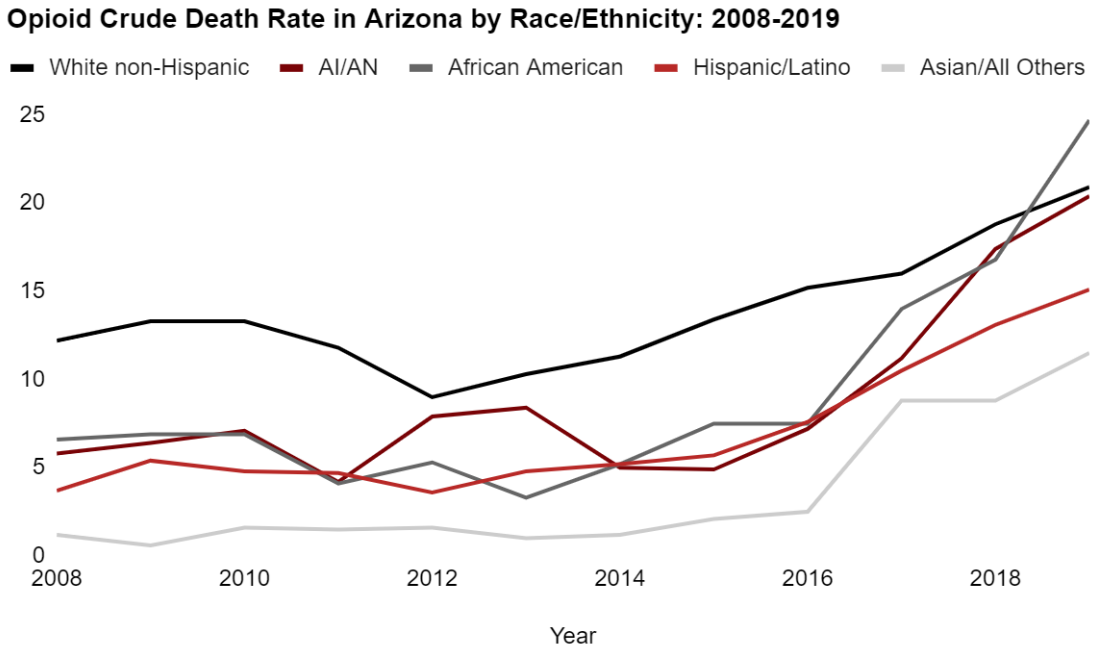
Opioid deaths are not uniformly distributed among different population groups in Arizona. By age, opioid death rates rise beginning in the late teens until they peak at age 45-54. More recent trends show that opioid deaths are occurring in greater numbers at earlier ages. In 2019 the highest rate of opioid death was among 25-34 year olds. 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.



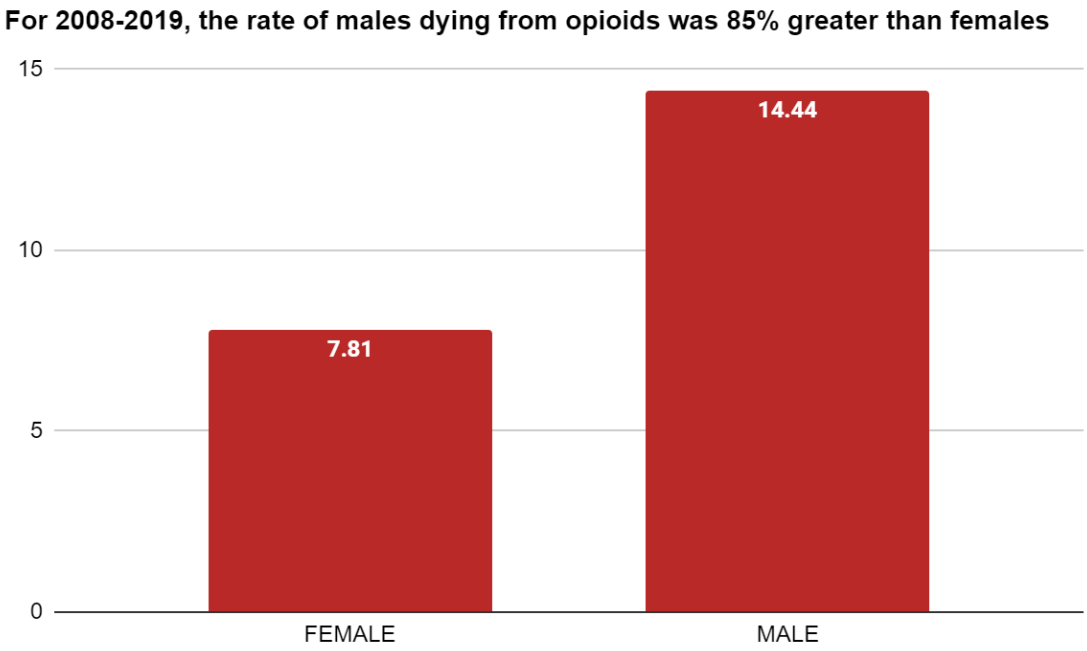
Among different race/ethnicity groups, rates of death from opioids differ greatly. From 2008-2019 71.9% of all opioid deaths were among White non-Hispanics.



The 2019 opioid crude death rate is highest among African Americans, among whom the rate of death due to opioids has risen by nearly 330%, from 7.5 per 100,000 in 2016 to 24.7 per 100,000 in 2019.



The rate of opioid induced death is not evenly distributed by sex in Arizona. Males die at a rate that is 85% higher than females.



There is also considerable variance in both deaths and death rates observed among Arizona counties.

County	2019 Deaths	2019 Death Rate per 100,000
Apache	*	*
Cochise	16	12.23
Coconino	11	7.47
Gila	*	*
Graham	*	*
Greenlee	*	*
La Paz	*	*
Maricopa	894	20.47
Mohave	31	14.29
Navajo	11	9.75
Pima	200	19.14
Pinal	51	11.20
Santa Cruz	*	*
Yavapai	51	21.95
Yuma	*	*
Unknown/Other	65	N/A
Total Arizona	1,350	18.78

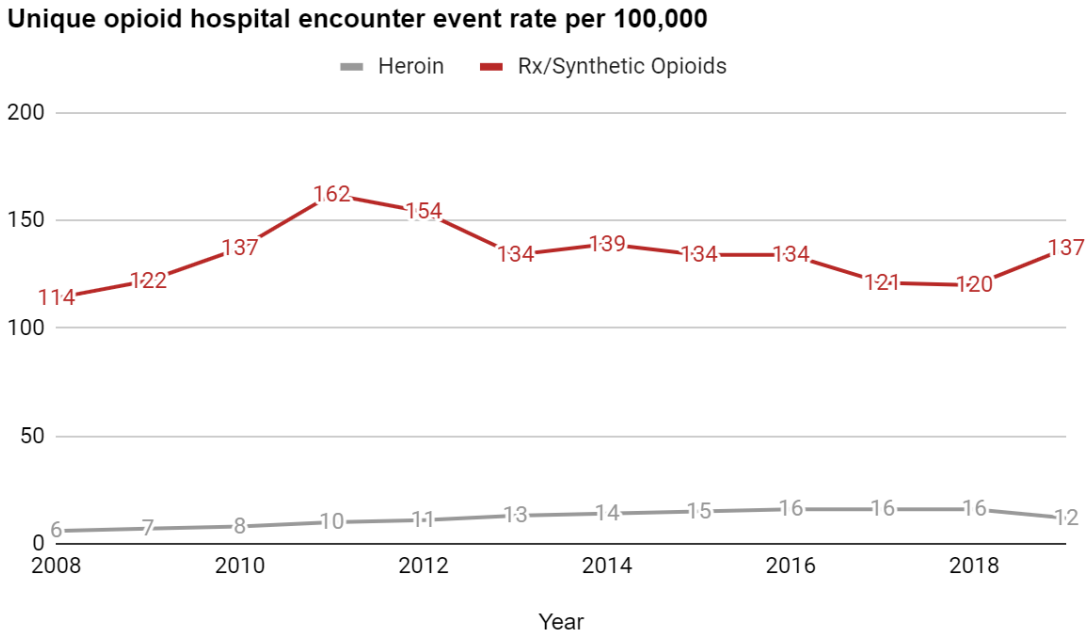
*Values for counts below 8 have been suppressed.

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 also 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. But the frequency of the involvement of other drugs together with opioids can also 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 2008-2019, an average of 91% of opioid-

induced deaths involved more than one drug, including 74% involving other non-opioid drugs. This pattern was further confirmed by toxicity testing conducted in 2018. Of 333 decedents in 2018 for which toxicity 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 illicit drug such as cocaine or methamphetamine. Of note, heroin was excluded from the classification of illicit drugs in this analysis because of difficulty distinguishing its presence based solely upon the presence of analytes.

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 6 times greater cost burden upon the Arizona healthcare system than heroin encounters.

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 the 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 2008-2019 has increased by 74% since 2018, and by 471% since 2008.* Hospital data indicates that in 2019 there were 56,623 unique opioid-related encounters in Arizona hospitals, totaling an estimated $676 million in healthcare costs, an average of $11,942 per opioid-related unique encounter. In 2008 there were 18,592 unique opioid encounters, costing $143.6 million. The cost per encounter has risen slightly more than 54% since 2008 after adjusting for inflation when compared to the cost per opioid related encounter in 2019 ($11,942). Since the number of encounters per year has increased by 305% during the same time period, the observed increase in cost is primarily due to the increasing numbers of opioid-related encounters, not rising healthcare costs.

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	$383,864,126	26%
2017	52,134	$403,927,097	5%
2018	52,970	$388,297,035	-4%
2019	56,623	$676,198,555	74%

*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, 2019 costs were estimated using the 2018 cost-to-charges-ratio by facility because 2019 ratios were not yet 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.