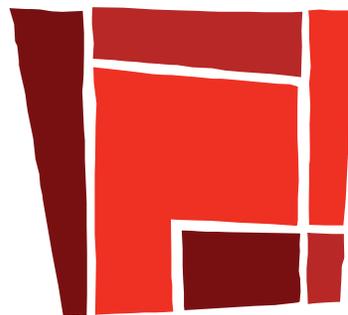


2016 Arizona Opioid Report

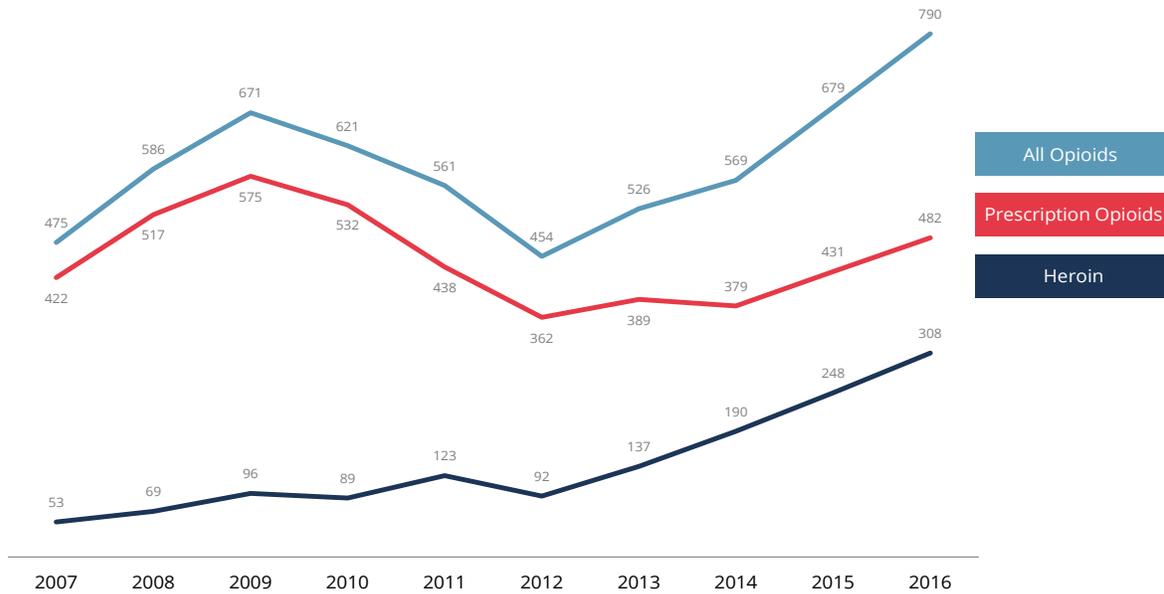


ARIZONA DEPARTMENT
OF HEALTH SERVICES

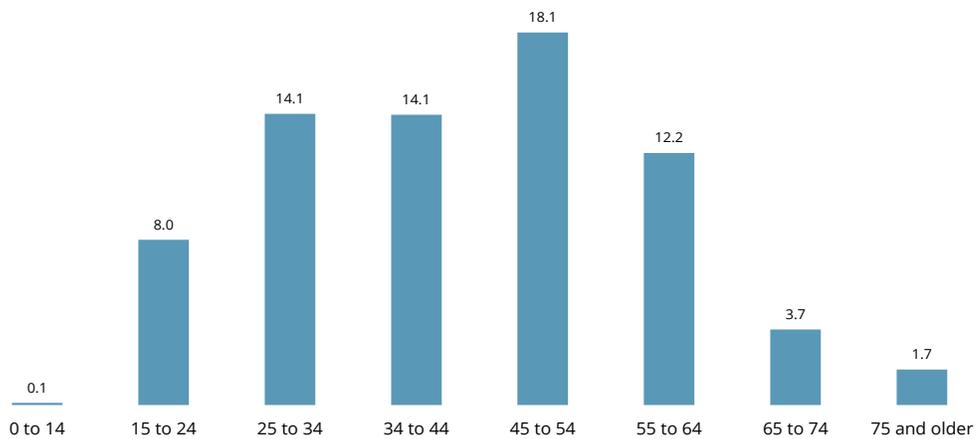
azhealth.gov/opioid

The number of reported 2016 deaths directly attributed to opioids among Arizona residents, or non-residents within Arizona, is 790. This represents a 16.3% increase in opioid deaths since 2015, and a 74% increase since 2012. Sixty-four percent of the growth in opioid deaths over the last four years, and nearly 54% in the last two years have been heroin deaths. Heroin has increased from 11% of opioid deaths in 2007 to 39% in 2016. Data also show increasing deaths due to prescription/synthetic opioids since 2014, reversing a declining trend since 2009. If current trends are sustained, by 2019 the number of annual opioid deaths in Arizona will exceed 1,000, of which nearly 50% will be due to heroin. 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 as of 6/1/2017, and the final count may exceed 800 for 2016.

Opioid death counts among Arizona residents and non-residents in Arizona from 2007 to 2016.

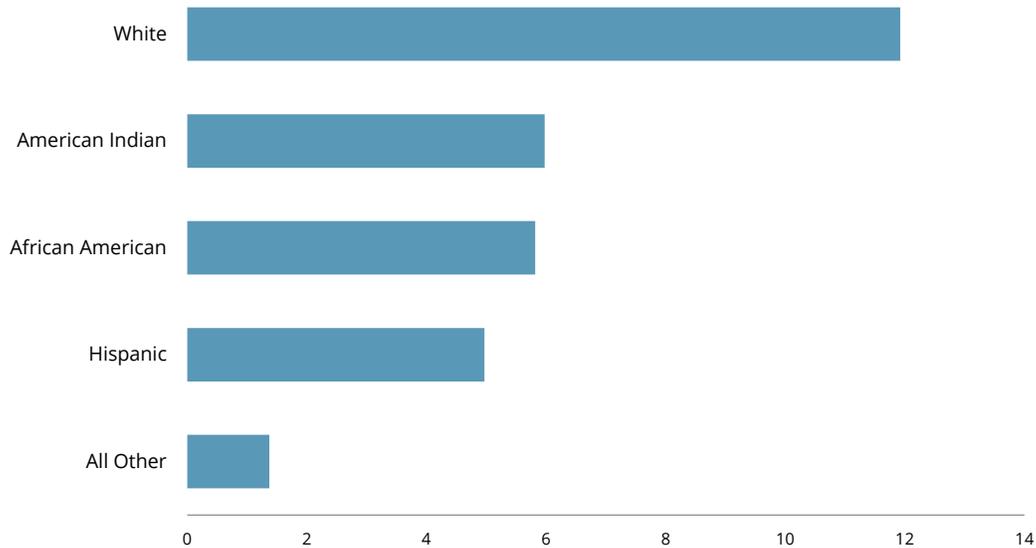


Opioid average 10-Year death rate per 100,000 population by age group from 2007 to 2016.



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. Above age 65 the opioid death rate drops significantly. Deaths due to opioids among persons under age 55 have constituted 80% of all opioid deaths in Arizona during the last 10 years.

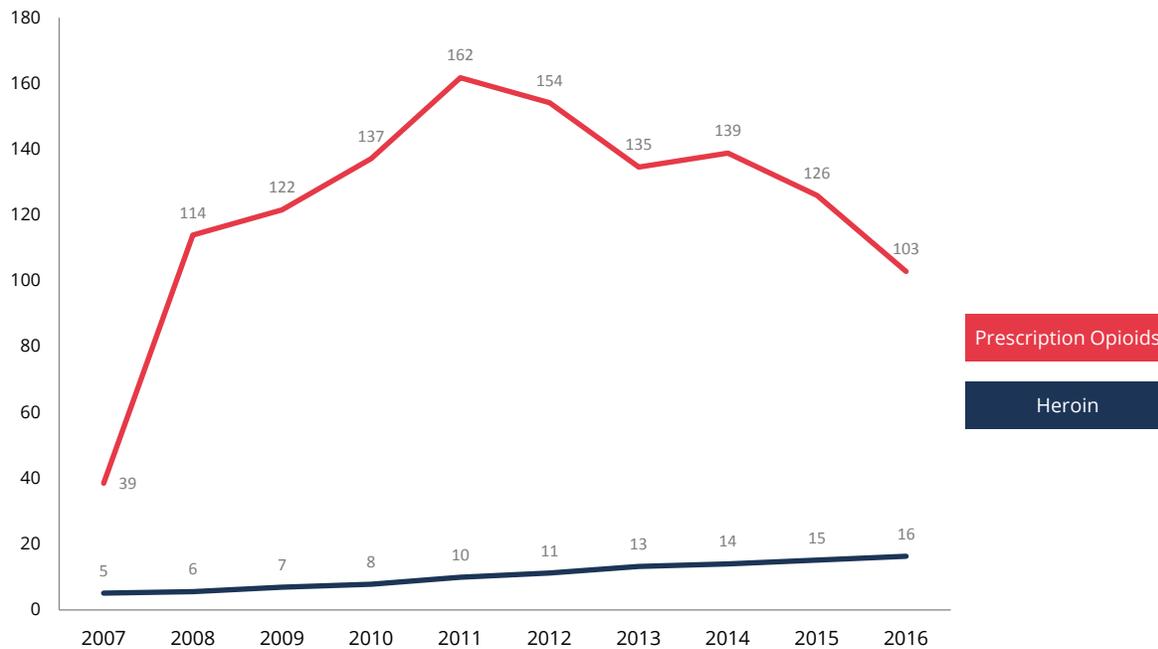
Rate per 100,000 population of opioid death by race/ethnicity group in Arizona from 2007 to 2016.



Among different race/ethnicity groups, rates of death from opioids differ greatly. From 2007-2016 77.5% 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.

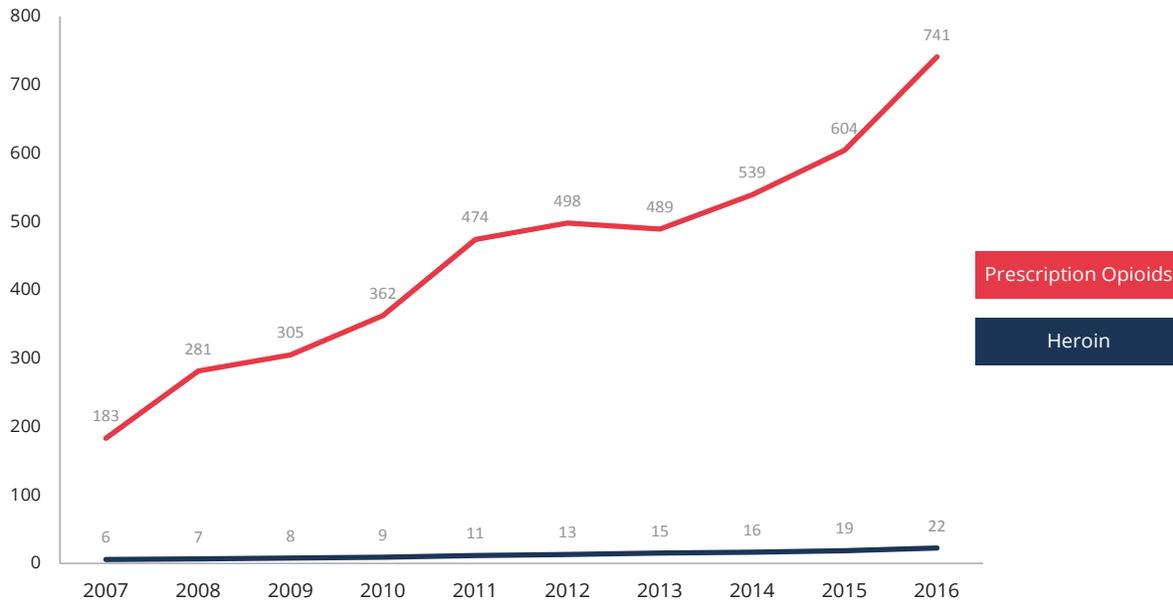
Historical analysis has revealed significant trends and patterns among persons who died from opioids. Nearly 86% of all deaths directly resulting from opioids involved other non-opioid drugs. While 82% of persons who died from opioids had been seen by a hospital or emergency medical provider during the 5 year period prior to their death, only 32% of those persons were seen for an opioid-related encounter.

Hospital opioid unique encounter rates per 100,000 population - Primary cause from 2007 to 2016.



Opioids have a significant impact upon Arizona’s medical care system due to the volume of encounters involving opioids, and the costs of these encounters. 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 opioids as the principal diagnosis, as shown above, has declined since 2012, while the rate due to heroin has increased. However, this is only part of the full burden that opioids present to the healthcare system. A comprehensive measure of burden upon the healthcare system should also include the additional burden of encounters that are associated with opioids, but are not the principal diagnosis. Such encounters are referred to as ‘opioid-related’ events. When ‘opioid-related’ events are considered, an entirely different picture emerges.

Hospital opioid-related unique encounter rate per 100,000 population from 2007 to 2016.

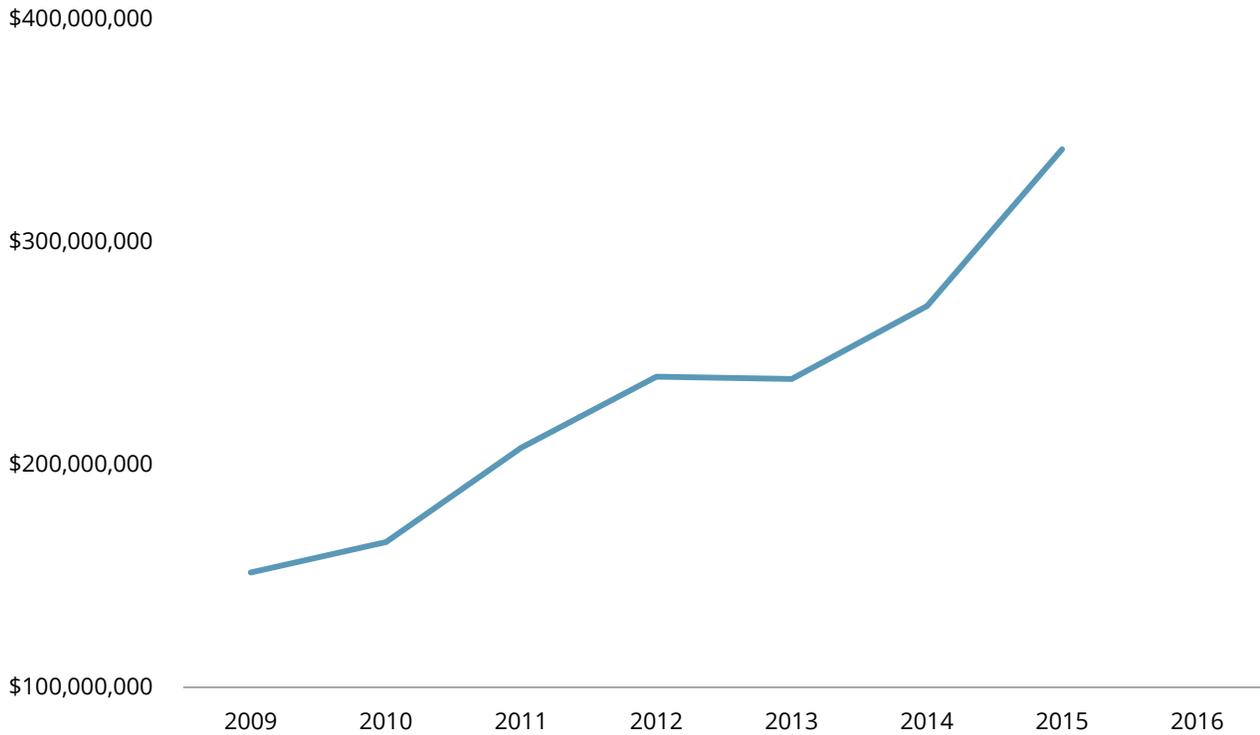


The full economic burden of opioids upon the healthcare system is difficult to precisely calculate, but a reasonable measure may be derived using hospital reported charges adjusted using national cost to charges ratios provided by the Department of Health and Human Services. Using this approach the cost of all 'opioid-related' encounters in Arizona from 2009 – 2015 has increased by 125%.*

<u>Year</u>	Number of Opioid-Related Encounters	Estimated Costs for Opioid-Related Encounters	Net Annual Change
2009	20,365	\$151,535,815	5%
2010	23,437	\$165,227,531	9%
2011	30,865	\$207,568,031	26%
2012	32,751	\$239,380,805	15%
2013	32,684	\$238,423,028	0%
2014	36,459	\$271,082,562	14%
2015	41,434	\$341,457,011	26%
2016	51,473	Not Available	N/A

In 2015 there were 41,434 unique 'opioid-related' encounters in Arizona hospitals, with an estimated cost of \$341.5 million. The average cost per opioid-related unique encounter was \$8,241. In 2009 there were 20,365 unique opioid encounters, with an estimated cost of \$151.5 million and an average cost per encounter of \$7,441. The net increase in 'opioid-related' encounter costs from 2009 – 2015 is primarily driven by the doubling numbers of 'opioid-related' encounters, not rising medical service charges.

The cost of all opioid-related encounters has increased 125% from 2009 to 2015.

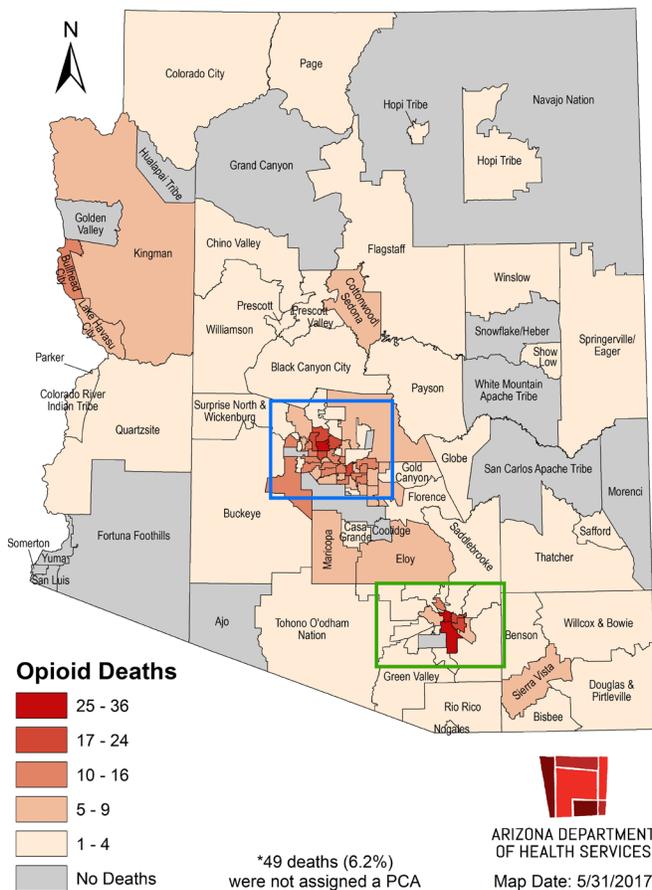


* Cost for encounters are calculated by applying the annual cost-to-charges ratio (produced by the Agency for Healthcare Research and Quality, Healthcare Cost Utilization Project) to reported encounter charges. This will estimate the actual cost paid to the provider for the healthcare services of the encounter. For this report, 2015 costs were estimated using the 2010-2014 average cost-to-charges-ratio by facility since 2015 and 2016 ratios were not available. When facility-specific ratios were not provided, the group ratio was used, or the state average ratio. These estimated costs are reasonable, estimates of actual cost, and are a more accurate measure than reported charges.

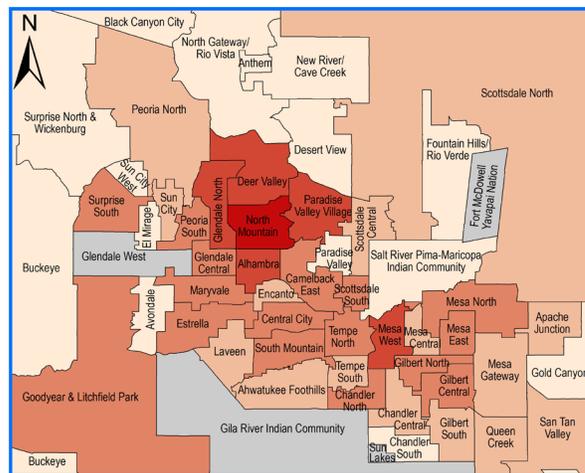
Another significant impact which 'opioid-related' events will have upon the healthcare system has to do with emergency response and care. Not all regions within Arizona have equal capacity for emergency response and care, and deaths due to opioids show considerable regional variation as well.

The greatest burden of death from opioids occurs within urbanized centers of Arizona. However, some rural communities also see significant death counts as well. Considering that resources are more dispersed outside of urbanized centers, the ratio of deaths to total unique hospital encounters will highlight areas where persons experiencing opioid overdose would have the greatest risk of death. A different picture emerges, demonstrating that the regional impact of the opioid epidemic is a complex tapestry of regional variations in events, resources, and response strategies.

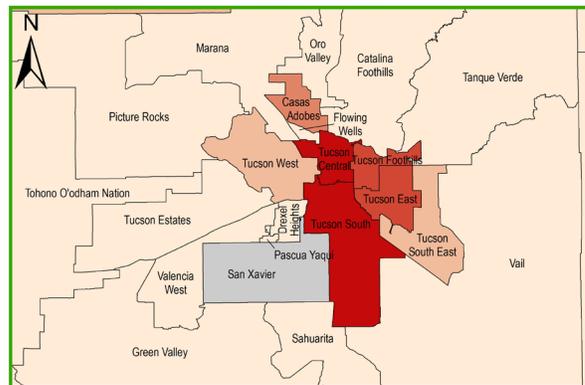
Opioid Deaths by Count by Primary Care Area (PCA), 2016*



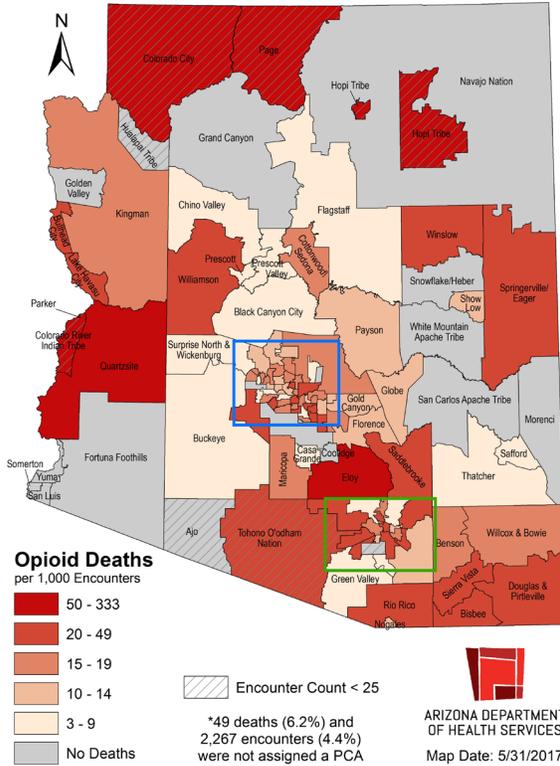
Metro Phoenix



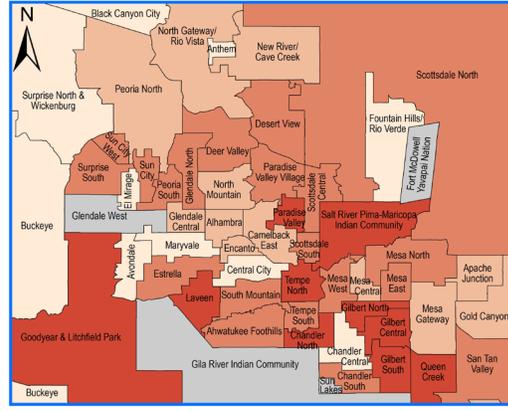
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Opioid Deaths per 1,000 Encounters by Primary Care Area (PCA), 2016*



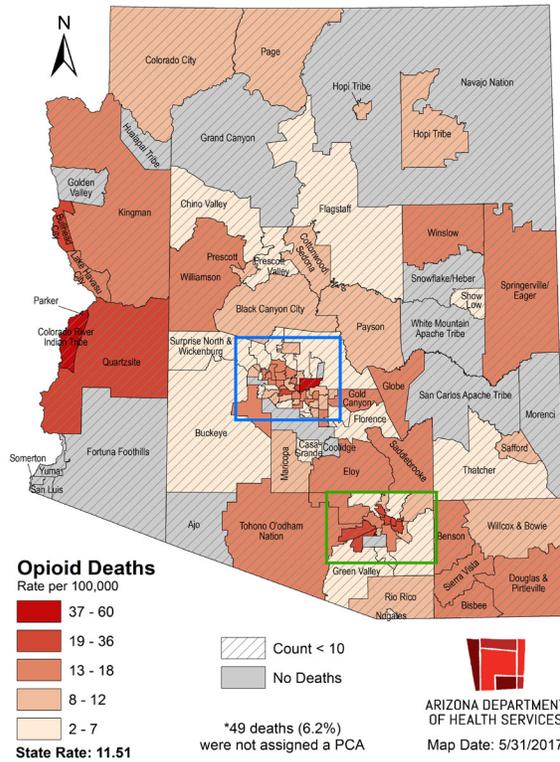
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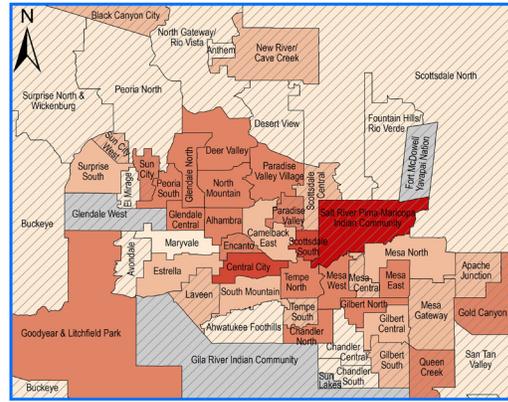
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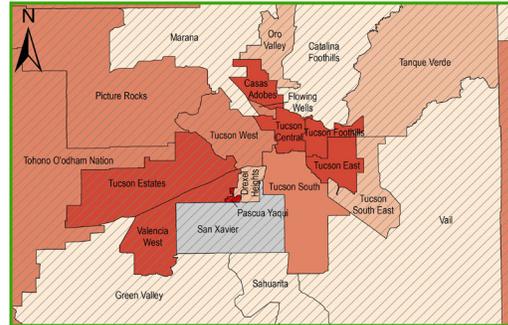
Opioid Deaths per 100,000 Persons by Primary Care Area (PCA), 2016*



Metro Phoenix



Metro Tucson



Driven response strategies will vary between regions in response to different needs. These response strategies must involve elements of the medical, emergency medical services, and first-responder groups, including law enforcement. Many of these groups contribute data to the State EMS Registry, from which data important indicators are monitored to describe the size and nature of opioid overdose in different regions. The number of patients receiving naloxone before arrival at a hospital is an important indicator that assists policy makers in describing the regional frequency of opioid overdose. Another important indicator is the number of doses of naloxone a patient receives from EMS and Law Enforcement personnel.

Naloxone works by displacing opioid drugs from the brain centers that control breathing and other vital functions. Smaller doses of naloxone can displace drugs like morphine and heroin. Once administered, naloxone stays in the blood stream for a limited time. Morphine and heroin can sometimes stay in the blood for longer than naloxone. Even though an individual has received naloxone they may still be at risk of reoccurring overdose if the naloxone wears out before the other drug.

Recently, synthetic opioids and opioids mixed with other powerful drugs like fentanyl have created large clusters of overdose in a number of communities and states. The entrance of these powerful mixtures into a community is signaled by an increase in overdose deaths in the active drug user community not accustomed to a more potent formulation and by an increase in the number of patients who receive multiple doses of naloxone by the EMS and Law Enforcement providers. Arizona is experiencing a worrisome increase in patients that require multiple doses of naloxone, possibly indicative of these more lethal mixtures. In January, 2016 18% of patients received multiple doses of naloxone by EMS and Law Enforcement personnel. That percentage has increased steadily, and as of 6/1/2017, 27% of patients received multiple doses of naloxone during May.

The number of patients who received naloxone by EMS or law enforcement in 2017 ranged from 460 to 517.

