**FATAL OPIOID OVERDOSE SURVEILLANCE REPORT**

Florida Q3–Q4, 2018



Drug Overdose Surveillance and Epidemiology

FLDOSE.com

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# EXECUTIVE SUMMARY

## BACKGROUND

Opioid overdose rates have increased dramatically since the turn of the century and have continued to rise in recent years. Previous data from the Florida Drug Overdose Surveillance and Epidemiology (FL-DOSE) project reported 1,224 fatal opioid overdoses for the first half of 2018. The same data showed that males, adults ages 35–44, and Whites were most likely to fatally overdose on opioids. Lee, Volusia, and Palm Beach counties previously had the highest rates of fatal opioid overdoses among those reporting. The purpose of this report is to provide current estimates of the number of fatal opioid overdoses in Florida and rates of fatal overdoses across demographic and contextual groups, using data from FL-DOSE.

## METHODS

The number of fatal overdoses and related data were derived from Florida’s Vital Statistics death records and information provided by Florida medical examiners. Data in this report covered 50 of Florida’s 67 counties, or 74.8 percent of the population. Rates per 100,000 persons were estimated using data from the 2018 United States (U.S.) Census Bureau, 2014–2018 American Community Survey 5-Year Estimates. The population estimates were limited to counties reporting fatal opioid overdose data to FL-DOSE, and most analyses were limited to those ages 10 and older. Demographic information including sex, race and ethnicity, age, education, homelessness, and residence in Florida were collected for all decedents. County death rates were calculated using direct age-adjustment to facilitate comparisons.

## RESULTS

Analyses suggested these results are reasonably representative of Florida as a whole. Florida experienced 1,164 fatal opioid overdoses in the reporting counties between July and December of 2018, and a fatal opioid overdose rate of 8.59 per 100,000 individuals ages 10 and older. Most fatal overdoses occurred among Florida residents and not those visiting the state. Brevard, Okaloosa, and Palm Beach experienced the highest rates of fatal opioid overdoses. Adults ages 25–34 were the most likely age group to experience a fatal opioid overdose. Those with lower education as well as homeless individuals were at greater risk of fatal opioid overdose. Males were 2.2 times more likely than females and Whites were 3.1 times more likely than non-Whites to experience a fatal opioid overdose.

# TABLE OF CONTENTS

[BACKGROUND 1](#_Toc17788947)

[METHODS 2](#_Toc17788948)

[SAMPLE 2](#_Toc17788949)

[MEASURES 3](#_Toc17788950)

[Demographics 3](#_Toc17788951)

[Overdose Characteristics 4](#_Toc17788952)

[Fatal Opioid Overdose Rates 4](#_Toc17788953)

[SAMPLE REPRESENTATIVENESS 5](#_Toc17788954)

[RESULTS 6](#_Toc17788955)

[DEMOGRAPHICS 6](#_Toc17788956)

[OVERDOSE CHARACTERISTICS 7](#_Toc17788957)

[FATAL OPIOID OVERDOSE RATES 9](#_Toc17788958)

[DISCUSSION 15](#_Toc17788959)

[REFERENCES 16](#_Toc17788960)

# BACKGROUND

Opioid overdose rates have increased dramatically since the turn of the century and have continued to rise in recent years.1–3 In 2010, opioid analgesic overdose deaths represented 75 percent of all pharmaceutical overdose deaths. While opioid overdoses have been on the rise in general, overdoses from illegally produced fentanyl and synthetic opioid pain relievers are particularly on the rise.2 Between 2017 and 2018 the opioid overdose death rate decreased by 2 percent nationwide, but still remained high with 46,802 deaths.4 Opioid abusers accumulate 12 times the health care costs of a similar individual who does not abuse opioids.5

People prescribed higher doses of opioids compared to lower doses for pain management are more likely to experience both fatal and non-fatal opioid overdoses.6,7 These relationships hold even after controlling for demographic and health factors. Previous data from Florida’s opioid overdose surveillance system reported 1,224 fatal opioid overdoses for the first half of 2018. The same data showed that Whites, males, and adults ages 35–44 were most likely to fatally overdose on opioids.8 Lee, Volusia, and Palm Beach counties had the highest rates of fatal opioid overdoses among those counties reporting during the first half of 2018.8

Naloxone is a medication that can reverse the fatal effects of an overdose, such as failed breathing and loss of consciousness.9 Naloxone has been distributed in many states to medical professionals, and even to lay individuals in some states.10 Distributing naloxone and training lay people in its use have been found to effectively reduce fatal opioid overdoses and to be cost effective.11–13 The World Health Organization and other medical groups recommend expansion of naloxone to lay persons in contact with opioid users and thus in a position to administer during opioid overdoses.14,15 Of laypeople to whom naloxone is distributed, drug users are the most frequent recipients and have reversed the most opioid overdoses.16 Increasing distribution of naloxone in Florida would help reduce the number of fatal opioid overdoses in the state. States with naloxone access laws making naloxone available without a prescription experienced reductions in fatal opioid overdoses.17,18 Florida implemented a naloxone access law starting in 2016.19 The Florida Department of Children and Families and the Florida Department of Health are involved in efforts to distribute naloxone for use by first responders and members of the community.

The purpose of this report is to provide current estimates of the number of fatal opioid overdoses in Florida with data from the Florida Drug Overdose Surveillance and Epidemiology (FL-DOSE) project. It also presents rates of fatal overdoses across various demographic and contextual groups. Those groups most at risk are identified to characterize the epidemic, as well as highlight those most in need of targeted interventions.

# METHODS

The methods of this report are outlined below, including details of the sample, representativeness of data, and measures. The number of fatal overdoses and related data were derived from Florida’s Vital Statistics death records and information provided by Florida medical examiners for this surveillance project. Florida Department of Health data abstractors were trained in accurate data abstraction methods and follow specific protocols to promote data accuracy and consistent practices. All analyses were conducted in SAS Enterprise 9.4 by a Florida Department of Health epidemiologist.

Data abstracted for the FL-DOSE project must meet the case definition presented in Table 1. Decedents must meet the three criteria to be considered a fatal opioid overdose case: be labeled a drug poisoning death, have an opioid or opiate as a contributing cause of death on the death certificate, and have an opioid or opiate listed as a contributing cause of death on the toxicology report.

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| **Table 1: Case Definition for Fatal Opioid Overdose Meets Three Criteria** | | |
| ***Death Certificate ICD-10 CM COD*** | ***Death Certificate Contributing COD*** | ***Toxicology*** |
| **X40:** Unintentional drug poisoning  **X41:** Unintentional drug poisoning  **X42:** Unintentional drug poisoning  **X43:** Unintentional drug poisoning  **X44:** Unintentional drug poisoning  **Y10:** Undetermined intent drug poisoning  **Y11:** Undetermined intent drug poisoning  **Y12:** Undetermined intent drug poisoning  **Y13:** Undetermined intent drug poisoning  **Y14:** Undetermined intent drug poisoning | **T40.0:** Poisoning by opium  **T40.1:** Poisoning by heroin  **T40.2:** Poisoning by other opioids  **T40.3:** Poisoning by methadone  **T40.4:** Poisoning by synthetic narcotics  **T40.6:** Poisoning by other unspecified narcotics | **Substance class:** Opioid or opiate |

## SAMPLE

Data in this report represent 22 Medical Examiner (ME) Districts covering 50 of Florida’s 67 counties, accounting for 74.8 percent of Florida’s population. A list of all participating ME Districts and their respective counties are in Table 2. The only counties not to participate were Broward, Calhoun, Citrus, Collier, Hendry, Hernando, Indian River, Lake, Lee, Leon, Marion, Martin, Okeechobee, St. Lucie, Sumter, Suwanee, and Wakulla.

The total population from the included geographic area, used to calculate rates per 100,000 persons, were estimated using data from the 2014–2018 American Community Survey 5-Year Estimates.20 The 2014-2018 5-year estimate was the most up-to-date population and demographic estimates of county level data in Florida. The estimated population of Florida between 2014 and 2018 was 20,598,139; however, for the purpose of these analyses the population estimates were limited to those counties reporting fatal opioid overdose data to FL-DOSE. A total of 15,402,670 individuals were estimated to live in Florida’s reporting counties between 2014 and 2018, and 13,556,979 for those ages 10 years and older.

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| **Table 2: Participating Districts and Counties** | | | |
| ***District*** | ***County*** | ***2014–2018 Population*** | |
| *1* | Escambia, Okaloosa, Santa Rosa, and Walton | 748,559 |  |
| *2* | Franklin, Gadsden, Jefferson, Liberty, and Taylor | 102,321 |  |
| *3* | Columbia, Dixie, Hamilton, and Lafayette | 127,029 |  |
| *4* | Clay, Duval, and Nassau | 1,212,098 |  |
| *6* | Pasco and Pinellas | 1,468,468 |  |
| *7* | Volusia | 527,634 |  |
| *8* | Alachua, Baker, Bradford, Gilchrist, Levy, and Union | 390,727 |  |
| *9* | Orange | 1,321,194 |  |
| *10* | Hardee, Highlands, and Polk | 798,000 |  |
| *11* | Miami-Dade | 2,715,516 |  |
| *12* | Desoto, Manatee, and Sarasota | 822,396 |  |
| *13* | Hillsborough | 1,378,883 |  |
| *14* | Bay, Gulf, Holmes, Jackson, and Washington | 291,005 |  |
| *15* | Palm Beach | 1,446,277 |  |
| *16* | Monroe | 76,325 |  |
| *18* | Brevard | 576,808 |  |
| *21* | Glades | 13,363 |  |
| *22* | Charlotte | 176,954 |  |
| *23* | Flagler, Putnam, St. Johns | 415,408 |  |
| *24* | Seminole | 455,086 |  |
| *25* | Osceola | 338,619 |  |

## MEASURES

Measures were created for a collection of related variables. Variables can be categorized as the decedent demographics, characteristics of the overdose, and fatal opioid overdose rates. The sections below explain how the measures were created.

### Demographics

Demographic information including sex, race and ethnicity, age, education, homelessness, and residence in Florida were collected for all decedents. Frequencies and percentages of decedents for each category were calculated.

Sex was recorded as male or female. Reporting on sexual orientations and the percentages of transgender people was considered, but these data were either missing or unreliable given the focus of medical examiner reports on assigned sex. Racial and ethnic categories were those recommended by the National Institutes of Health.21 People were categorized as White for persons with origins among any of the original peoples of Europe, North Africa, or the Middle East; Black for persons with origins among any of the Black racial groups of Africa; Asian for persons with origins among any of the original peoples of the Far East, Southeast Asia, or the Indian subcontinent; American Indian for persons with origins among any of the original people of North America and who maintains cultural identification through tribal affiliation or community recognition (includes Alaska Natives); and Hispanic for persons reporting their ethnicity as Hispanic no matter their reported race. Those with a reported race, but a missing Hispanic status were counted as non-Hispanic. People reporting multiple races were categorized as multiracial. Unknown race/ethnicity was also an option. Age was originally measured in years but was grouped for this report to match reporting by the Centers for Disease Control and Prevention. All analyses excluded anyone below the age of 10, which during this time period was one child 11 months old, unless stated otherwise.

Education was originally recorded using census categories, but some groups were collapsed to facilitate in reporting. Education was categorized as less than high school, high school graduate, some college, bachelor’s degree, graduate or professional degree, or unknown. Yes, no, and unknown categories were applied to homelessness, military experience, and Florida residence. Recent release from an institution was coded as yes or no for whether an individual had been admitted to or released from one of the following institutions in the month before death: jail, prison, or a detention facility; hospital; psychiatric hospital, other psychiatric institution; long-term residential health facility (e.g., nursing home); supervised residential facility related to alcohol or substance abuse treatment (e.g., residential treatment facility, sober house or group home); and supervised residential facilities not related to alcohol or substance abuse treatment (e.g., halfway houses or work-release homes).

### Overdose Characteristics

A measure was created of whether a decedent fatally abused an opiate from a collection of sources. Decedents were coded for whether they had fatally abused an opiate prescribed to themselves, an unprescribed opiate other than heroin (e.g., illicitly obtained or created), heroin, an opiate prescribed to an intimate partner, an opiate prescribed to a family member, a prescribed opiate from another source, or an opiate from an unknown source. Frequencies and percentages of decedents for each category were calculated. Frequency of the presence of 4-ANPP in all decedents and by drug source was also conducted. Though not found in all illicitly manufactured fentanyl, when 4-ANPP is detected it is a strong indication that fentanyl was illicitly manufactured.

Polysubstance drug abuse was tested for each decedent by checking what other substances were listed as a cause of death in addition to opioids, as measured by toxicology testing. Commonly found substances that are not generally overdose related, such as caffeine and nicotine, were excluded from these analyses. The five most common substances are presented in this report. Percentage of all decedents and demographic groups who fatally overdosed on the five substances in addition to opioids were calculated.

Institution type was collected for decedents who had recently been released from a treatment center or other institution. Institutions included residential facilities both related and not related to substance abuse treatment; jail, prison, or a detention facility; hospital; psychiatric hospital; or other institution. Frequencies and percentages of decedents for each institution were calculated. Lastly, the location of death for each decedent was recorded. Locations included hospital inpatient, emergency department or clinic, decedent’s home, or other location. Counts for each location were calculated, as well as the percent of decedents who died in each location who were administered naloxone.

### Fatal Opioid Overdose Rates

Fatal opioid overdose rates were calculated by age range, sex, and county. County-level overdose rates were directly age-adjusted to facilitate comparisons across counties without concern for differences in ages across counties.22 Population estimates for county rates were limited to individuals ages 10 and older to reflect inclusion of decedents ages 10 and older.

Fatal opioid overdose rates were calculated by education categories. To more accurately represent the education levels instead of age of a community, only individuals ages 25 and older were included as decedents and in population estimates when calculating rates by education. Missing education values for decedents were proportionally added to the other education category frequencies.

Fatal opioid overdose rates were calculated by homelessness status. Population estimates for rates involving homelessness included all ages. A point-in-time estimate of homelessness on January 1st of 2018 was used as the estimate of the Florida population who is homeless on a given day during the second half of 2018.23 These point-in-time estimates are likely an underestimate of homelessness, but this effect on calculated relative risk would be mitigated by missing FL-DOSE data on homelessness and lack of representation in all Florida counties. Some data were missing due to FL-DOSE not having record of the decedent’s homelessness status. Most overdoses occur at home, and identifying addresses would be easier than identifying homelessness, so it is likely that the presence of missing homelessness data for decedents would make a relative risk for fatal opioid overdoses more conservative. Lastly, population estimates of homelessness were for all of Florida while overdose numbers were only included from those counties reporting data to FL-DOSE.

## SAMPLE REPRESENTATIVENESS

Demographic differences were assessed between the 50 counties reporting data to FL-DOSE and the entire state of Florida, or what this report would include if all counties were reporting data. Table 3 presents the demographic breakdowns as well as the differences between the reporting counties and the entire state for sex, race/ethnicity, age, and education. All categories of the reporting counties were within one percent of the entire state of Florida except for there was more representation of Hispanic or Latino individuals. Though only 74.8 percent of Florida’s population is included in this report, the demographic similarities suggest it is likely the report’s results are generally representative of the state of Florida with only a slight over representation of Hispanic or Latino individuals.

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| **Table 3: Demographic Variables of Reporting Counties and the State of Florida** | | | | | | | |
| ***Variable*** | ***% of Reporting Counties*** | | ***% of Florida*** | | | ***Difference*** | |
| Sex |  |  |  |  |  | |  |
| *Female* | 51.07% |  | 51.10% |  | 0.03 | |  |
| *Male* | 48.93% |  | 48.90% |  | -0.03 | |  |
| Race/Ethnicity |  |  |  |  |  | |  |
| *White* | 53.40% |  | 54.36% |  | 0.96 | |  |
| *Hispanic or Latino* | 26.60% |  | 25.17% |  | -1.43 | |  |
| *Black or African American* | 14.75% |  | 15.38% |  | 0.63 | |  |
| *Asian* | 2.78% |  | 2.66% |  | -0.12 | |  |
| *American Indian or Alaska Native* | 0.20% |  | 0.20% |  | 0.00 | |  |
| *Pacific Islander* | 0.06% |  | 0.05% |  | -0.01 | |  |
| *Other* | 0.33% |  | 0.33% |  | 0.00 | |  |
| *Multiracial* | 1.89% |  | 1.84% |  | -0.05 | |  |
| Age |  |  |  |  |  | |  |
| *10–14* | 5.68% |  | 5.71% |  | 0.03 | |  |
| *15–24* | 12.08% |  | 12.07% |  | -0.01 | |  |
| *25–34* | 13.18% |  | 12.94% |  | -0.24 | |  |
| *35–44* | 12.18% |  | 12.11% |  | -0.07 | |  |
| *45–54* | 13.32% |  | 13.35% |  | 0.03 | |  |
| *55–64* | 12.96% |  | 13.18% |  | 0.22 | |  |
| *65–74* | 10.29% |  | 10.91% |  | 0.62 | |  |
| *75–84* | 5.84% |  | 6.22% |  | 0.38 | |  |
| *85+* | 2.48% |  | 2.60% |  | 0.12 | |  |
| Education of those 25 and Older |  |  |  |  |  | |  |
| *Less than high school* | 12.14% |  | 12.05% |  | -0.09 | |  |
| *High school graduate* | 28.46% |  | 28.81% |  | 0.35 | |  |
| *Some college* | 30.00% |  | 29.97% |  | -0.03 | |  |
| *Bachelor’s degree* | 18.80% |  | 18.53% |  | -0.27 | |  |
| *Graduate or professional degree* | 10.60% |  | 10.63% |  | 0.03 | |  |

# RESULTS

The findings of this report are detailed below. Findings are divided into sections for the demographics of decedents, characteristics of the overdoses, and fatal opioid overdose rates.

## DEMOGRAPHICS

This section details the demographic breakdowns of all opioid overdose decedents in Florida’s reporting counties between July 1, 2018 and December 31, 2018. Frequency and percentage values for all demographic variables are found in Table 4. A majority of fatal opioid overdoses were in males, Whites, and high school graduates. Most fatal overdoses occurred in Florida residents as opposed to those visiting the state.

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| **Table 4: Demographic Variables** | | | | |
| ***Variable*** | ***Frequency*** | | ***Percent*** | |
| Sex |  |  |  |  |
| *Female* | 381 |  | 32.73% |  |
| *Male* | 783 |  | 67.27% |  |
| Race/Ethnicity |  |  |  |  |
| *White* | 907 |  | 77.92% |  |
| *Hispanic or Latino* | 165 |  | 14.18% |  |
| *Black or African American* | 73 |  | 6.27% |  |
| *Asian* | 6 |  | 0.52% |  |
| *American Indian or Alaska Native* | 3 |  | 0.26% |  |
| *Multiracial* | 6 |  | 0.52% |  |
| *Unknown* | 4 |  | 0.34% |  |
| Age |  |  |  |  |
| *10*–*14* | 1 |  | 0.09% |  |
| *15*–*24* | 78 |  | 6.70% |  |
| *25*–*34* | 357 |  | 30.67% |  |
| *35*–*44* | 311 |  | 26.72% |  |
| *45*–*54* | 214 |  | 18.38% |  |
| *55*–*64* | 176 |  | 15.12% |  |
| *65*–*74* | 24 |  | 2.06% |  |
| *75-84* | 2 |  | 0.17% |  |
| *85+* | 1 |  | 0.09% |  |
| Education |  |  |  |  |
| *Less than high school* | 201 |  | 17.27% |  |
| *High school graduate* | 538 |  | 46.22% |  |
| *Some college* | 265 |  | 22.77% |  |
| *Bachelor’s degree* | 79 |  | 6.79% |  |
| *Graduate or professional degree* | 21 |  | 1.80% |  |
| *Unknown* | 60 |  | 5.15% |  |
| Homelessness |  |  |  |  |
| *Homeless* | 73 |  | 6.27% |  |
| *Not Homeless* | 652 |  | 56.01% |  |
| *Unknown* | 439 |  | 37.71% |  |
| Military Experience |  |  |  |  |
| *Yes* | 73 |  | 6.27% |  |
| *No* | 1,037 |  | 89.09% |  |
| *Unknown* | 54 |  | 4.64% |  |
| Florida Residence |  |  |  |  |
| *Resident* | 1,081 |  | 92.87% |  |
| *Non-resident* | 62 |  | 5.33% |  |
| *Unknown* | 21 |  | 1.80% |  |

## OVERDOSE CHARACTERISTICS

This section details the characteristics of all fatal opioid overdoses in Florida’s reporting areas between July 1, 2018 and December 31, 2018. Characteristics include abuse of own prescription opioid, polysubstance drug abuse, recent release from institution, and naloxone administration by location.

A large portion of fatal opioid overdoses involves illicit drugs

Frequency and the percent of decedents who fatally overdosed on drugs from different sources are presented in Table 5. Including only the substances where the sources were known, only 3.69 percent of decedents fatally overdosed on an opiate prescribed to themselves. A little over half of decedents fatally overdosed on illicit non-prescribed opiates other than heroin.

A total of 197 decedents tested positive for 4-ANPP, or 17 percent of the sample. Though not found in all illicitly manufactured fentanyl, when 4-ANPP is detected it is a strong indication that fentanyl was illicitly manufactured. Checking for the percentage of decedents who tested positive for 4-ANPP by source found 21 percent of decedents who fatally overdoses on a non-prescription drug other than heroin, 12 percent of decedents who fatally overdosed on heroin, and 2 percent of those who fatally overdoses on an opiate prescribed to themselves.

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| **Table 5: Frequency and Percent of Decedents Who Fatally Overdosed on an Opiate from Different Sources** | | | | | |
| ***Prescription Type*** | ***Frequency*** | | ***Percent*** | | |
| Non-prescribed drug, other than heroin | 616 |  | 52.92% |  |
| Non-prescribed drug, heroin | 239 |  | 20.53% |  |
| Prescribed to decedent | 43 |  | 3.69% |  |
| Intimate Partner | 0 |  | 0.00% |  |
| Family (non-intimate partner) | 1 |  | 0.09% |  |
| Other | 3 |  | 0.26% |  |
| Unknown | 651 |  | 55.93% |  |
| *\*Percentages do not add to 100% because decedents could exhibit one or more of fatal overdose prescription types* | | | |  |

Polysubstance drug abuse was also frequent among decedents. The five most common substances that caused a decedent’s death in addition to opioids were alcohol, amphetamines, antidepressants, benzodiazepines, and cocaine. The percentage of decedents and demographic groups whose deaths were caused by a given substance in addition to opioids can be found in Table 6. Cocaine and benzodiazepines were listed most often as a cause of death in addition to opioids. About half of decedents, 49.23 percent, had at least one of the five substances in Table 6 listed as the cause of death in addition to opioids.

While specific numbers are available in Table 6, the following section points out some of the most notable differences in other substances that caused deaths among demographic groups. Females tended to have antidepressants, benzodiazepines, and cocaine listed as an additional cause of death while males were slightly more likely to have alcohol listed. Black individuals in comparison to Whites and Hispanics or Latinos were more likely to have alcohol and cocaine listed as causes of death. Hispanics were more likely to have benzodiazepines listed, but less likely to have amphetamines and antidepressants listed compared to Whites and Blacks. Whites were less likely than Blacks and Hispanics or Latinos to have cocaine listed as an additional cause of death.

Those ages 15–24 were the most likely to have benzodiazepines listed as a cause of death, those ages 25–34 were the most likely to have amphetamines and cocaine listed as a cause of death, and those ages 55–64 were the most likely to have alcohol and antidepressants listed as a cause of death. Each group with higher education was more likely to have benzodiazepines listed as a cause of death. Those with a bachelor’s degree were the most likely to have cocaine listed as an additional cause of death.

Homeless individuals were more likely to have alcohol, amphetamines, and cocaine listed as an additional cause of death, while those who were not homeless were more likely to have antidepressants and benzodiazepines listed. Those with military experience compared to those who did not were more likely to have benzodiazepines listed as an additional cause of death.

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| **Table 6: Percentage of Decedents and Demographic Groups Whose Deaths Were Caused by a Given Substance in Addition to Opioids** | | | | | |
| ***Substance Type*** | ***Alcohol*** | ***Amphetamine*** | ***Antidepressant*** | ***Benzodiazepine*** | ***Cocaine*** |
| All Decedents | 9.97% | 12.03% | 2.23% | 16.58% | 24.83% |
| Sex |  |  |  |  |  |
| *Female* | 8.66% | 12.86% | 4.46% | 21.26% | 28.35% |
| *Male* | 10.60% | 11.62% | 1.15% | 14.30% | 23.12% |
| Race/Ethnicity |  |  |  |  |  |
| *White* | 9.48% | 12.02% | 2.54% | 15.66% | 20.84% |
| *Hispanic/Latino* | 8.48% | 9.70% | 0.61% | 22.42% | 38.18% |
| *Black* | 17.81% | 13.70% | 2.74% | 10.96% | 42.47% |
| Age |  |  |  |  |  |
| *15*–*24* | 7.69% | 11.54% | 1.28% | 23.08% | 21.79% |
| *25*–*34* | 9.80% | 15.41% | 0.84% | 16.53% | 28.01% |
| *35*–*44* | 10.93% | 14.79% | 2.25% | 15.11% | 24.12% |
| *45*–*54* | 9.81% | 9.35% | 2.80% | 13.55% | 23.83% |
| *55*–*64* | 11.36% | 5.11% | 5.11% | 21.02% | 24.43% |
| Education |  |  |  |  |  |
| *< HS* | 10.45% | 14.93% | 1.99% | 10.95% | 26.37% |
| *HS grad* | 8.92% | 12.27% | 2.04% | 17.10% | 23.42% |
| *Some college* | 9.81% | 8.30% | 2.64% | 17.36% | 21.89% |
| *Bach. degree* | 12.66% | 11.39% | 1.27% | 24.05% | 31.65% |
| Homelessness |  |  |  |  |  |
| *Homeless* | 16.44% | 21.92% | 0.00% | 9.59% | 34.25% |
| *Not homeless* | 9.66% | 9.36% | 1.84% | 18.87% | 21.93% |
| Military Experience |  |  |  |  |  |
| *Yes* | 10.96% | 9.59% | 1.37% | 23.29% | 26.03% |
| *No* | 9.64% | 11.76% | 2.22% | 16.20% | 23.92% |
| Florida Residence |  |  |  |  |  |
| *Resident* | 9.53% | 14.52% | 9.53% | 14.52% | 9.53% |
| *Non-resident* | 11.93% | 11.29% | 11.93% | 11.29% | 11.93% |

Data showed that 7.69 percent of decedents were recently released from some institution (e.g., detention facility, hospital, residential facility). Table 7 details the percentage of decedents released from the most common institutions among the 82 decedents who had recently been released.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Table 7: Most Common Institutions from which Decedents were Recently Released** | | | | | |
| ***Institution Type*** | ***Frequency*** | | ***Percent*** | | |
| Hospital  Jail, prison, or a detention facility  Supervised residential facility related to alcohol or substance abuse treatment  Supervised residential facilities not related to alcohol or substance abuse treatment | 29  28  18  3 |  | 35.37%  34.15%  21.95%  3.66% |  |
| Other institution | 4 |  | 4.88% |  |

After the overdose, decedents were most likely to have died in their own home, at an emergency department or outpatient facility, or at a hospital. Naloxone was administered to 15.25 percent of all decedents. These deaths could stem from cases where the drug was administered too late, multiple drugs were in their system, or an insufficient dose was given. Table 8 shows the percent of naloxone administration by most common location of death.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Table 8: Percent of Naloxone Administration by Most Common Locations of Death** | | | | |
| ***Death Location*** | ***Total Decedents*** | | ***Naloxone Administered*** | |
| Hospital inpatient | 92 |  | 29.35% |  |
| ED/Outpatient | 181 |  | 48.33% |  |
| Decedent’s home | 565 |  | 5.14% |  |
| Dead on arrival | 6 |  | 33.33% |  |
| Hospice facility | 8 |  | 12.50% |  |
| Other | 264 |  | 9.50% |  |
|  | | | | |

## FATAL OPIOID OVERDOSE RATES

Florida experienced 1,164 fatal opioid overdoses in the reporting counties between July and December of 2018. A total of 8.59 per 100,000 individuals ages 10 and older died of opioid overdoses in the reporting counties during these six months. This section shares fatal opioid overdose count and rates by categories of interest: county, sex, age, education, race/ethnicity, and homelessness.

1,164 fatal opioid overdoses in Florida’s reporting counties between July and December of 2018

Age-adjusted fatal opioid overdose rates in all reporting Florida counties can be found in Table 9 and Figure 1. Eight counties experienced an age-adjusted fatal opioid overdose rate greater than 10 per 100,000. In descending order, they were Brevard, Okaloosa, Palm Beach, Duval, Clay, Osceola, Pinellas, and Volusia counties. Fatal opioid overdose rates based on counts of less than 16 were suppressed to avoid interpreting unstable rates.24

Fatal opioid overdose rates by age ranges among people ages 10 and older are presented in Figure 2. During these months, people ages 25–34 had the highest death rate of 17.59 deaths per 100,000. Narrowing in more specifically, people ages 30–34 had the highest death rate with 20.31 deaths per 100,000.

Fatal opioid overdose rates for males and females ages 10 and older are presented in Figure 3. During these months, males and females had 10.39 and 4.84 fatal opioid overdoses respectively per 100,000. Males were 2.15 times more likely than females to fatally overdose on opioids.

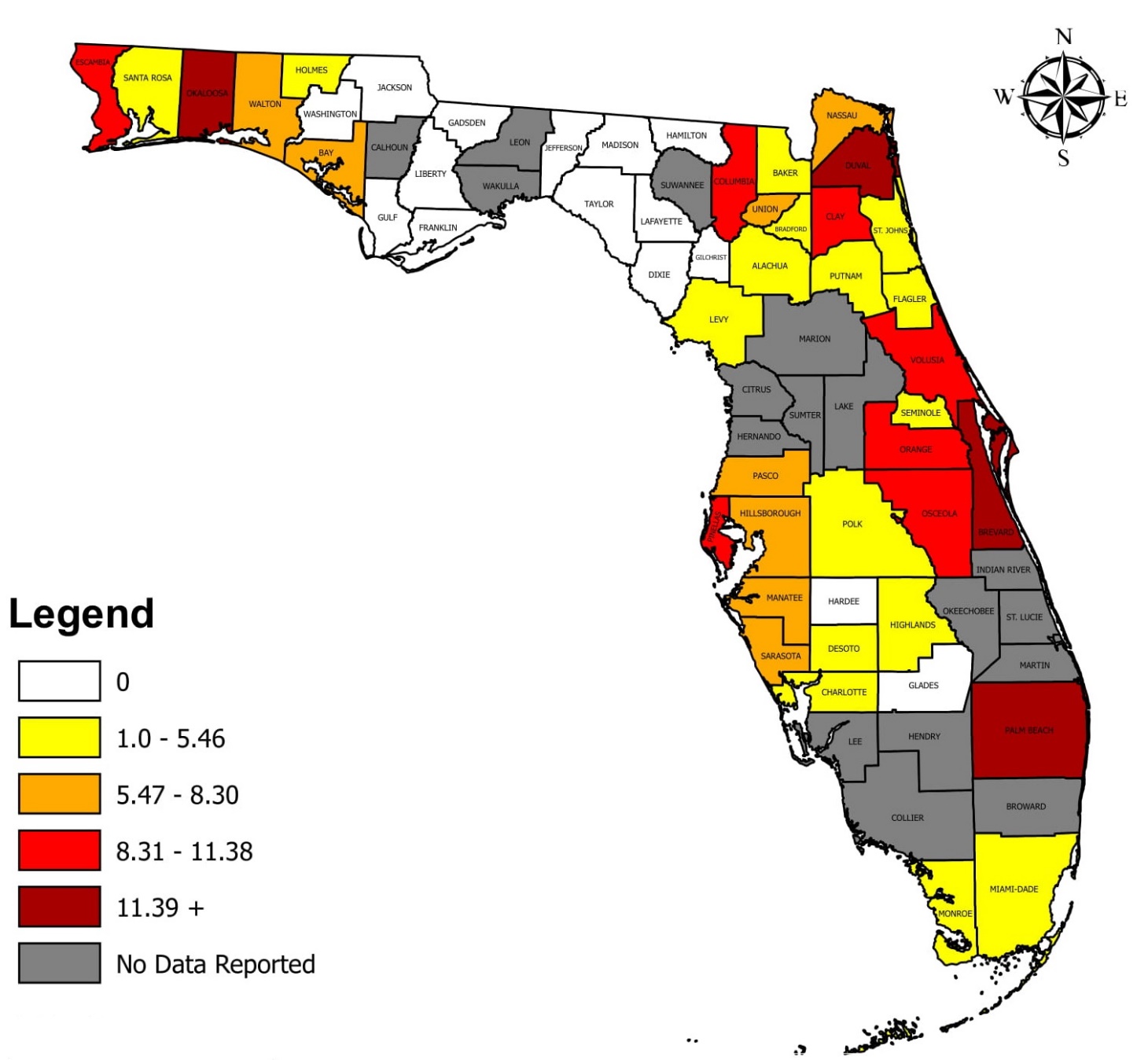
Fatal opioid overdose rates by education groups among people ages 25 and older are presented in Figure 4. High school graduates were the most at-risk for fatal opioid overdose with 17.31 deaths per 100,000 people ages 25 and older over the six months. A dose response was observed with more education being related to less risk of fatal opioid overdose. The only exception was those with less than a high school degree were less likely to fatally overdose than those with a high school degree. It is possible that this anomaly is due to more older individuals not having graduated from high school, with older age being related to lower opioid overdose risk.

Fatal opioid overdose rates by race and ethnicity among people of all ages are presented in Figure 5. Whites were the most at risk of fatal opioid overdose with 11.03 deaths per 100,000 individuals over the six months. Whites were 3.08 times more likely than all other race and ethnicities to experience a fatal opioid overdose.

A very small percentage of Florida residents are estimated to be homeless. It is estimated that 0.14 percent of Florida residents were homeless on January 1 of 2018, or 29,717 individuals.23 However, this group has a much larger risk of fatal opioid overdose. Homeless individuals were well over 10 times more likely to experience a fatal opioid overdose compared to non-homeless individuals.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Table 9: Fatal Opioid Overdose Rates Per 100,000 People Ages 10+ by County, July–December 2018** | | | | | | | | | | | | | | |
| ***County*** | ***Count*** | | ***Raw*** | ***Age-Adjusted*** | | | ***County*** | ***Count*** | | ***Raw*** | | | ***Age-Adjusted*** | |
| Alachua | 4 |  | \* |  | \* |  | Lee | – |  | | – |  | – |  |
| Baker | 1 |  | \* |  | \* |  | Leon | – |  | | – |  | – |  |
| Bay | 14 |  | \* |  | \* |  | Levy | 1 |  | | \* |  | \* |  |
| Bradford | 1 |  | \* |  | \* |  | Liberty | 0 |  | | 0.00 |  | 0.00 |  |
| Brevard | 104 |  | 19.92 |  | 22.19 |  | Madison | 0 |  | | 0.00 |  | 0.00 |  |
| Broward | – |  | – |  | – |  | Manatee | 24 |  | | 7.16 |  | 7.97 |  |
| Calhoun | – |  | – |  | – |  | Marion | – |  | | – |  | – |  |
| Charlotte | 3 |  | \* |  | \* |  | Martin | – |  | | – |  | – |  |
| Citrus | – |  | – |  | – |  | Miami-Dade | 95 |  | | 3.94 |  | 3.69 |  |
| Clay | 21 |  | 11.58 |  | 11.38 |  | Monroe | 4 |  | | \* |  | \* |  |
| Collier | – |  | – |  | – |  | Nassau | 5 |  | | \* |  | \* |  |
| Columbia | 6 |  | \* |  | \* |  | Okaloosa | 29 |  | | 16.58 |  | 15.52 |  |
| DeSoto | 1 |  | \* |  | \* |  | Okeechobee | – |  | | – |  | – |  |
| Dixie | 0 |  | 0.00 |  | 0.00 |  | Orange | 119 |  | | 10.28 |  | 9.33 |  |
| Duval | 130 |  | 16.19 |  | 15.20 |  | Osceola | 35 |  | | 11.90 |  | 11.17 |  |
| Escambia | 28 |  | 10.18 |  | 9.72 |  | Palm Beach | 183 |  | | 14.13 |  | 15.21 |  |
| Flagler | 4 |  | \* |  | \* |  | Pasco | 34 |  | | 7.46 |  | 7.63 |  |
| Franklin | 0 |  | 0.00 |  | 0.00 |  | Pinellas | 92 |  | | 10.56 |  | 11.16 |  |
| Gadsden | 0 |  | 0.00 |  | 0.00 |  | Polk | 22 |  | | 3.74 |  | 3.84 |  |
| Gilchrist | 0 |  | 0.00 |  | 0.00 |  | Putnam | 1 |  | | \* |  | \* |  |
| Glades | 0 |  | 0.00 |  | 0.00 |  | Santa Rosa | 4 |  | | \* |  | \* |  |
| Gulf | 0 |  | 0.00 |  | 0.00 |  | Sarasota | 20 |  | | 7.32 |  | 7.90 |  |
| Hamilton | 0 |  | 0.00 |  | 0.00 |  | Seminole | 7 |  | | \* |  | \* |  |
| Hardee | 0 |  | 0.00 |  | 0.00 |  | St. Johns | 7 |  | | \* |  | \* |  |
| Hendry | – |  | – |  | – |  | St. Lucie | – |  | | – |  | – |  |
| Hernando | – |  | – |  | – |  | Sumter | – |  | | – |  | – |  |
| Highlands | 1 |  | \* |  | \* |  | Suwannee | – |  | | – |  | – |  |
| Hillsborough | 109 |  | 9.05 |  | 8.30 |  | Taylor | 0 |  | | 0.00 |  | 0.00 |  |
| Holmes | 1 |  | \* |  | \* |  | Union | 1 |  | | \* |  | \* |  |
| Indian River | – |  | – |  | – |  | Volusia | 46 |  | | 9.64 |  | 10.59 |  |
| Jackson | 0 |  | 0.00 |  | 0.00 |  | Wakulla | – |  | | – |  | – |  |
| Jefferson | 0 |  | 0.00 |  | 0.00 |  | Walton | 4 |  | | \* |  | \* |  |
| Lafayette | 0 |  | 0.00 |  | 0.00 |  | Washington | 0 |  | | 0.00 |  | 0.00 |  |
| Lake | – |  | – |  | – |  |  |  |  | |  |  |  |  |
| *‘–‘ signifies no data reported by county; ‘ \* ’ signifies a suppressed rate due to insufficient case counts (i.e., <16)* | | | | | | | | | | | | | | |

**Figure 1: Age-Adjusted Fatal Opioid Overdose Rates per 100,000 People Ages 10+ by County, July–December 2018**



**Figure 2: Fatal Opioid Overdose Rate by Age in Years; People Ages 10+; Florida’s Reporting Counties; July–December 2018**

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**Figure 3: Fatal Opioid Overdose Rate by Sex; People Ages 10+; Florida’s Reporting Counties; July–December 2018**

**Figure 4: Fatal Opioid Overdose Rate by Education; Adults 25+; Florida’s Reporting Counties; July–December 2018**

**Figure 5: Fatal Opioid Overdose Rate by Racial/Ethnic Groups; All Ages; Florida’s Reporting Counties; July–December 2018**

\* \* \*

# DISCUSSION

Though not all Florida’s population is included in this report, the demographic similarities of the sample suggest it is likely the report’s results are generally representative of the state of Florida. The section below identifies the most salient points of the report and discusses areas of particular opportunity for the state.

Florida experienced 1,164 fatal opioid overdoses in the reporting counties between July and December of 2018. Florida experienced 8.6 deaths per 100,000 individuals ages 10 and older during these months. Combining this death rate with that observed during the first half of the year found that Florida experienced 16.9 fatal opioid overdoses per 100,000 population in 2018.8 The 16.9 overdoses per 100,000 is only slightly higher than the national average of 14.6 per 100,000.25 Though Florida does not have as large of a problem per population as many states, Florida as the third most populous state in the U.S. represents a large proportion of the opioid epidemic in the U.S.

The most affected counties in Florida experienced significant age-adjusted fatal opioid overdose rates. During all of 2018 Brevard, Palm Beach, and Duval counties had the highest age-adjusted opioid overdose rates in Florida. These county rates are similar to the rates for some of the most affected U.S. states (e.g., Maryland at fifth, Massachusetts at seventh).25

As public health resources are often limited, it is imperative to make the largest impacts possible in these most at-risk groups. The groups that have presented as most at-risk of overdosing on opioids are young to middle aged adults, males, Whites, the homeless, and those with lower education. These findings are similar to previous reporting in the state that males, Whites, and those with lower education were at greater risk of fatal opioid overdose.8 While targeting the most at-risk individuals, interventions can also be tailored to focus on the types of drugs that different groups use in combination with opioids. Among all these demographic groups, cocaine was the drug most commonly combined with opioids.

A large portion of fatal opioid overdoses involves illicit drugs. Careful prescribing and education to people prescribed opioids can help many, but there is still a large problem of illicitly manufactured and distributed opioids. Finding higher percentages of decedents testing positive for 4-ANPP who fatally overdosed on a non-prescription opiate other than heroin compared to those from an opiate prescribed to themselves provided a convergent validity check of the two measures. It is expected that 4-ANPP presence would be associated with the use of non-prescribed opiates. More could be done to prevent people from accessing other’s prescriptions and combating illicitly manufactured opioids.

Naloxone was not administered in almost all cases where deaths occurred outside medical settings (e.g., decedent’s home). Many areas have successfully distributed naloxone to laypersons to combat fatal opioid overdoses in settings where medical professionals are not present.10–13 Though better, naloxone was administered in less than half of cases where deaths occurred in medical settings (i.e., hospital, emergency department, outpatient). More work should be done in the state to distribute naloxone to both medical professionals and laypersons alike. Naloxone is highly effective at rapidly reversing the effects of an opioid overdose, presents minimal risks, and is cost-effective.9,12

Florida Department of Health implements the Helping Emergency Responders Obtain Support (HEROS) Program where Florida agencies who employ emergency responders and agree to report naloxone administrations through approved systems, can receive free naloxone. Eligible applicants can visit http://www.floridahealth.gov/licensing-and-regulation/ems-system/heros.html to learn more and enroll in the program.

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