

NON-FATAL OPIOID AND ALL DRUG OVERDOSE SURVEILLANCE REPORT

Florida, Q4-2019



Florida Drug Overdose Surveillance and Epidemiology

FL-DOSE

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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 Florida's Drug Overdose Surveillance and Epidemiology (FL-DOSE) system showed that men, Whites, and adults ages 25–34 were most likely to non-fatally overdose on opioids and all drugs. The purpose of this report is to provide current estimates of non-fatal opioid and all drug overdoses in Florida using data from FL-DOSE. Estimates of drug overdoses in this report include rates of non-fatal overdoses across demographic and contextual groups.

METHODS

The number of non-fatal opioid and all drug overdoses and related data were derived from Florida's Emergency Medical Services Tracking and Reporting System (EMSTARS) database, which receives information from EMS agencies throughout the state and represented 98 percent of Florida prehospital EMS runs. All drug overdoses include opioids, as well as drugs such as heroin, cocaine, stimulants, and others. Rates per 100,000 persons were estimated using data from the 2017 United States Census Bureau, 2013–2017 American Community Survey Five-Year Estimates. Demographic information included sex, race and ethnicity, and age. Percent of non-fatal opioid overdose cases where naloxone was administered was calculated. County overdose rates were calculated using direct age-adjustment to facilitate comparisons. Overdose rates were also calculated across time since 2015.

RESULTS

Florida experienced 4,152 and 10,464 non-fatal opioid and all drug overdoses respectively between October and December of 2019. A total of 20.47 and 51.60 non-fatal opioid and all drug overdoses occurred per 100,000 individuals during these three months. Males were more likely than females to experience non-fatal overdoses. Whites were more likely than other racial and ethnic groups to experience non-fatal overdoses. Adults ages 30–39 were the most likely age group to experience non-fatal overdoses. Pinellas, Manatee, and Brevard experienced the highest age-adjusted opioid overdose rates. Marion, Alachua, and Manatee counties experienced the highest age-adjusted all drug overdose rates. Over time, opioid and all drug overdose rates started the lowest in 2015, spiked in the first half of 2017, and partially dropped through 2019. Adults ages 25–39 experienced less of a decrease in rates and a renewed increase during the second half of 2019.

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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 Opioid abusers accumulate 12 times the health care costs of a similar individual who does not abuse opioids.⁴ The cost to society in the United States from opioid abuse through increased health care, workplace, and criminal justice costs was estimated as \$66.5 billion (2019 dollars) in 2007. This number has likely only increased with the increase in opioid abuse in the United States. Though opioids are involved in the most drug overdoses in the United States, all drug overdoses remain a high concern.

People prescribed higher doses of opioids compared to lower doses for pain management are more likely to experience fatal and non-fatal opioid overdoses.^{5,6} These relationships hold even after controlling for demographic and health factors. A total of 3,879 non-fatal opioid overdoses were recorded in Florida's drug overdose surveillance system for the third quarter of 2019. An additional 5,829 non-fatal overdoses on other drugs meant that a total of 9,708 non-fatal drug overdoses occurred in reporting EMS jurisdictions. The same data showed that men, Whites, and adults ages 25–34 were most likely to fatally overdose on opioids.⁷ Pinellas, Manatee, and Palm Beach counties experienced the three highest rates of non-fatal age-adjusted opioid overdoses during this time period.⁷

Naloxone is a medication that can reverse the fatal effects of an opioid overdose, such as failed breathing and loss of consciousness.⁸ Naloxone has been distributed in many states to medical professionals, and even to lay individuals in some states.⁹ Distributing naloxone and training lay people in its use have been found to effectively reduce fatal opioid overdoses and to be cost effective.¹⁰⁻¹² 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.^{13,14} Drug users are the laypeople most often given naloxone. Besides medical professionals, drug users have reversed the most opioid overdoses.¹⁵ Increasing distribution of naloxone in Florida would help reduce the number of fatal opioid overdoses in the state. 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 and over time estimates of the number of non-fatal opioid and all drug overdoses in Florida with data from the Florida Drug Overdose Surveillance and Epidemiology (FL-DOSE) system. Rates of overdoses are presented for various demographic and contextual groups are also presented. Those groups most at risk are identified to characterize the epidemic, as well as highlight those most at need of targeted interventions.

METHODS

Details of the surveillance system, sample, and measures are outlined below. The number of nonfatal opioid and all drug overdoses and related data were derived from Florida’s EMSTARS (Emergency Medical Services Tracking and Reporting System) database, which receives information from state EMS agencies and represents over 95 percent of Florida prehospital EMS runs. All analyses were conducted in SAS 9.4 for Windows¹⁶ by a Florida Department of Health surveillance epidemiologist.

Data received from EMS agencies must meet the following two criteria to be included in these analyses: 1) is a response to an emergency medical situation (e.g., response to 9-1-1 call) where the patient is transported to a hospital or receives treatment and refuses transport to the hospital, and 2) excludes EMS transfers when a patient is transferred between hospitals or medical care facilities.

Case definitions for opioid and all drug overdoses and how they changed between early and recent versions of EMSTARS are shown in Table 1. The current version of EMSTARS uses any presence of ICD-10-CM codes that list poisoning by drugs of interest as the case definition of an all drug or opioid-involved overdose. The T and F ICD-10-CM codes used in the case definitions refer to poisoning by various types of drugs: T36–T50 (range includes all drugs), T40.1 (heroin), T40.2 (other opioids), T40.3 (methadone), T40.4 (other synthetic narcotics), T40.60 (unspecified narcotics), T40.69 (other narcotics), F11 (opioid related), F12 (cannabis related), F13 (sedative, hypnotic, or anxiolytic related), F14 (cocaine related), F15 (other stimulant related), F16 (hallucinogen related), F18 (inhalant related), and F19 (other psychoactive substance related).

Table 1: Case Definitions

Overdose Type	EMSTARS v1.4	EMSTARS v3
<i>All drug</i>	The primary or secondary impression is “Poisoning/Drug Ingestion,” or any case where the medication administered is naloxone, and the patient exhibits a positive response, no matter the primary or secondary impression listed.	The primary or secondary impression is any of the following ICD-10-CM codes: T36–T50, F11–F16, F18, and F19.
<i>Opioid-involved</i>	The medication administered is naloxone and patient exhibits positive response, no matter the primary or secondary impression listed.	The primary or secondary impression is any of the following ICD-10-CM codes: T40.1–T40.4, T40.60, T40.69, and F11.

SAMPLE

This report represents data from 199 reporting EMS agencies throughout Florida during the fourth quarter of 2019, and 219 agencies since 2015. These EMS agencies reporting data to EMSTARS represent 98 percent of EMS runs in Florida during the fourth quarter of 2019. The percent coverage of EMS runs in EMSTARS was determined by combining the counts from EMSTARS with counts from Florida’s AGGREGATE EMS reporting system. EMS agencies not

reporting event level data to EMSTARS, instead report aggregate quarterly data to AGGREGATE. Most, or 58 of Florida's 67, counties had all EMS runs reported to EMSTARS. Only Santa Rosa County reported less than 70 percent of EMS runs to EMSTARS and did not have its results included in county level analyses. Only four counties reported less than 90 percent. These data are presented in Table 2.

Table 2: EMSTARS Percent Representation of All EMS Runs; Oct–Dec, 2019; Florida

County	EMSTARS	AGG	Rep %	County	EMSTARS	AGG	Rep %
Alachua	14,351	3,989	78%	Lee	32,558	857	97%
Baker	1,232	0	100%	Leon	17,145	0	100%
Bay	5,816	0	100%	Levy	1,786	0	100%
Bradford	1,262	0	100%	Liberty	164	0	100%
Brevard	28,478	2,216	93%	Madison	664	0	100%
Broward	60,871	0	100%	Manatee	15,740	0	100%
Calhoun	213	0	100%	Marion	31,775	0	100%
Charlotte	7,352	1	100%	Martin	5,796	0	100%
Citrus	4,106	0	100%	Miami-Dade	125,646	0	100%
Clay	9,418	0	100%	Monroe	3,420	0	100%
Collier	13,147	0	100%	Nassau	2,943	0	100%
Columbia	2,854	0	100%	Okaloosa	7,541	0	100%
DeSoto	1,003	0	100%	Okeechobee	1,748	0	100%
Dixie	865	0	100%	Orange	70,820	10,450	87%
Duval	75,396	0	100%	Osceola	11,825	0	100%
Escambia	5,423	0	100%	Palm Beach	82,136	281	100%
Flagler	4,410	0	100%	Pasco	23,823	0	100%
Franklin	274	0	100%	Pinellas	104,186	0	100%
Gadsden	2,441	63	97%	Polk	32,957	0	100%
Gilchrist	754	0	100%	Putnam	3,941	0	100%
Glades	250	0	100%	Santa Rosa	211	571	27%
Gulf	323	0	100%	Sarasota	17,186	0	100%
Hamilton	609	0	100%	Seminole	16,249	0	100%
Hardee	879	0	100%	St. Johns	5,896	0	100%
Hendry	1,497	0	100%	St. Lucie	10,902	0	100%
Hernando	7,827	0	100%	Sumter	8,318	0	100%
Highlands	5,956	0	100%	Suwannee	2,473	0	100%
Hillsborough	80,447	0	100%	Taylor	612	0	100%
Holmes	321	0	100%	Union	471	0	100%
Indian River	7,294	0	100%	Volusia	20,872	5,303	80%
Jackson	43	0	100%	Wakulla	637	0	100%
Jefferson	671	0	100%	Walton	1,914	0	100%
Lafayette	130	0	100%	Washington	170	0	100%
Lake	2,407	0	100%	Florida	1,026,317	23,731	98%

'AGG': Florida's AGGREGATE reporting system, 'Rep %': EMSTARS percent representation of all EMS events (i.e., EMSTARS and AGGREGATE data)

The total population from the included geographic area, used to calculate rates per 100,000 persons, was estimated using data from the 2013–2017 American Community Survey Five-Year Estimates.¹⁷ The 2013–2017 five-year estimate was the most up-to-date population and demographic estimates of county level data in Florida. The estimated population of Florida between 2013 and 2017 was 20,278,447.

MEASURES

Measures were collected for demographic variables and county where overdose occurred. These data were used to calculate counts and rates by demographics and geographic areas. The sections below explain how the measures were created.

Demographics and Naloxone Administration

Demographic information including sex, race and ethnicity, age, and naloxone administration was collected for decedents. Frequencies and percentages of decedents from demographic categories were calculated.

Sex was recorded as male or female. Racial and ethnic categories were those recommended by the National Institutes of Health.¹⁸ People were categorized as American Indian or Alaska Native, Asian, Black or African American, Hispanic or Latino, Native Hawaiian or other Pacific Islander, or White. All groups apart from Hispanic or Latino were non-Hispanic or Latino. Those who were not recorded as Hispanic or Latino, but had two or more racial groups recorded, were counted as multiracial. Age was originally measured in years for all participants except for very young individuals whose age was measured in minutes, hours, days, or months. All ages were converted to categories used in reporting by the Centers for Disease Control and Prevention (CDC). Age was also categorized in five-year ranges to further explore overdose rates by age.

Percent of non-fatal opioid overdose cases where naloxone was administered was calculated across Florida. This analysis was limited to those patients recorded in Version 3 of EMSTARS, as a positive response to naloxone was used as the case definition for an opioid overdose in the previous version of EMSTARS.

Non-Fatal Overdose Rates

Non-fatal opioid and all drug overdose rates for the current quarter were calculated by age range, sex, race and ethnicity, and county. County level overdose rates were directly age-adjusted to facilitate county comparisons without concern for differences in ages across counties.¹⁹ Age-adjusted non-fatal opioid and all drug overdose rates were mapped by Florida counties. Maps were created in ArcGIS pro and used Jenks Natural Breaks.

Non-fatal opioid and all drug overdose rates were also calculated over time and across age range, sex, and race and ethnicity. Rates that varied substantially over time are presented. Rates were averaged across six-month periods. Six-month periods were selected to increase the frequency of reporting, while accounting for the cycle in Florida where non-fatal overdose rates are lowest in the winter months and highest in the summer months.

Rates over time were adjusted by dividing the percent of EMS events reported to EMSTARS for that half year period. This adjustment facilitates comparisons across time by not making certain time periods appear larger simply due to more data being reported but removes the ability to interpret any specific number objectively. These results should be used to interpret data patterns over time instead of specific data values.

RESULTS

The findings of this report are detailed below. Findings are divided into sections for the demographics of overdose patients, overdose rates by geography, and non-fatal opioid and all drug overdose rates over time.

DEMOGRAPHICS AND NALOXONE ADMINISTRATION

This section details the demographic breakdowns of non-fatal opioid and all drug overdoses in Florida's areas between October 1, 2019 and December 31, 2019. Frequency and percentage values for all demographic variables are found in Tables 3 and 4. Visual presentation of these data are found in Figures 1–4.

Males were about 1.9 and 1.7 times more likely to experience non-fatal opioid and all drug overdoses compared to females. Whites were more likely to experience non-fatal opioid and all drug overdoses than other races and ethnicities. Asians experienced the least non-fatal overdoses compared to all other race and ethnicities.

EMSTARS data showed substantially higher rates of non-fatal opioid and all drug overdoses among Pacific Islanders and American Indians compared to all other races. However, a large majority of Pacific Islander cases were from Palm Beach County and American Indian cases were from Hillsborough County. These counties did not have meaningfully higher numbers of these population groups. In turn, these counties had very extreme overdose rates among these racial groups, while other areas of Florida showed relatively similar overdose rates compared to other races. This anomaly, along with these racial groups not experiencing significantly higher fatal opioid overdoses, led to the decision to not include these data in the results.

Adults ages 25–34 were the most likely CDC age range to experience non-fatal opioid and all drug overdoses. However, separating age ranges by five-year intervals revealed that adults ages 30–34 were the most likely age range and 30–39 the most likely ten-year age range to experience non-fatal opioid and all drug overdoses. Naloxone was administered to 64.2 percent of non-fatal opioid overdoses in Florida during this time period.

Table 3: Demographics of Non-Fatal Opioid Overdose Patients; Oct–Dec, 2019; Florida

<i>Variable</i>	<i>Frequency</i>	<i>Percent</i>	<i>Rate per 100,000</i>
Sex			
<i>Female</i>	1,497	36.09%	14.44
<i>Male</i>	2,651	63.91%	26.74
<i>Unknown</i>	4	–	–
Race/Ethnicity			
<i>White</i>	3,241	81.31%	29.13
<i>Hispanic or Latino</i>	266	6.67%	5.30
<i>Black or African American</i>	359	9.01%	11.47
<i>Asian</i>	10	0.25%	1.87
<i>Hawaiian or other Pacific Islander</i>	†	†	†
<i>American Indian or Alaska Native</i>	†	†	†
<i>Multiracial</i>	25	0.63%	6.93
<i>Unknown</i>	166	–	–
CDC Age Range			
0–9	3	0.07%	0.13
10–14	4	0.10%	0.34
15–24	301	7.27%	12.09
25–34	1,386	33.45%	53.26
35–44	1,105	26.67%	44.82
45–54	588	14.19%	21.36
55–64	479	11.56%	18.09
65–74	179	4.32%	8.25
75–84	62	1.50%	5.02
85+	36	0.87%	6.89
<i>Unknown</i>	9	–	–

*Valid percent values presented which exclude missing values; †Data not shown due to anomalies in results, see text for further details

Table 4: Demographics of Non-Fatal All Drug Overdose Patients; Oct–Dec, 2019; Florida

<i>Variable</i>	<i>Frequency</i>	<i>Percent</i>	<i>Rate per 100,000</i>
Sex			
<i>Female</i>	4,025	38.50%	38.84
<i>Male</i>	6,430	61.50%	64.86
<i>Unknown</i>	9	–	–
Race/Ethnicity			
<i>White</i>	7,264	73.91%	65.29
<i>Hispanic or Latino</i>	960	9.77%	19.14
<i>Black or African American</i>	1,338	13.61%	42.76
<i>Asian</i>	41	0.42%	7.68
<i>Hawaiian or other Pacific Islander</i>	†	†	†
<i>American Indian or Alaska Native</i>	†	†	†
<i>Multiracial</i>	60	0.61%	16.64
<i>Unknown</i>	636	–	–
Age			
0–9	100	0.96%	4.48
10–14	100	0.96%	8.62
15–24	1,346	12.89%	54.05
25–34	3,052	29.23%	117.27
35–44	2,398	22.96%	97.28
45–54	1,475	14.13%	53.58
55–64	1,173	11.23%	44.29
65–74	494	4.73%	22.77
75–84	191	1.83%	15.47
85+	113	1.08%	21.63
<i>Unknown</i>	22	–	–

*Valid percent values presented which exclude missing values; †Data not shown due to anomalies in results, see text for further details

Figure 1: Non-Fatal Opioid and All Drug Overdose Rates by CDC Age Ranges in Years; Oct–Dec, 2019; Florida

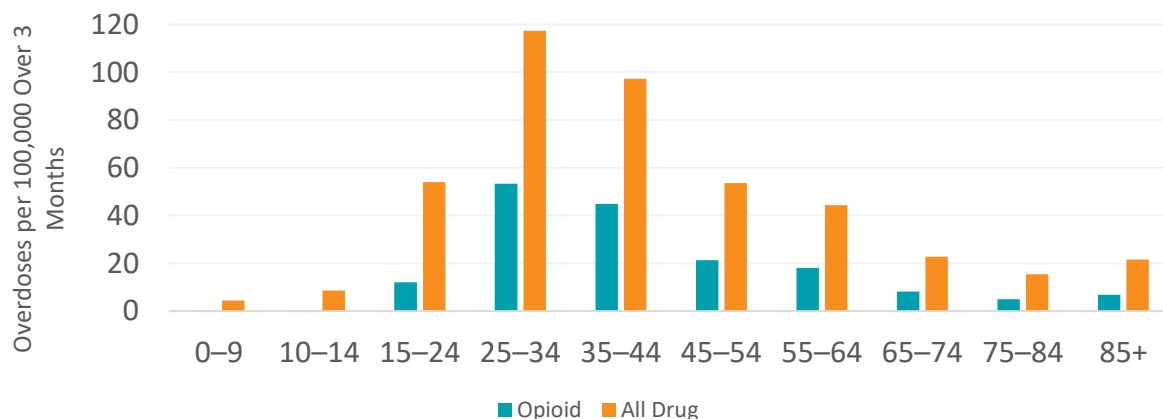


Figure 2: Non-Fatal Opioid and All Drug Overdose Rates by 5-Year Age Ranges in Years; Oct–Dec, 2019; Florida

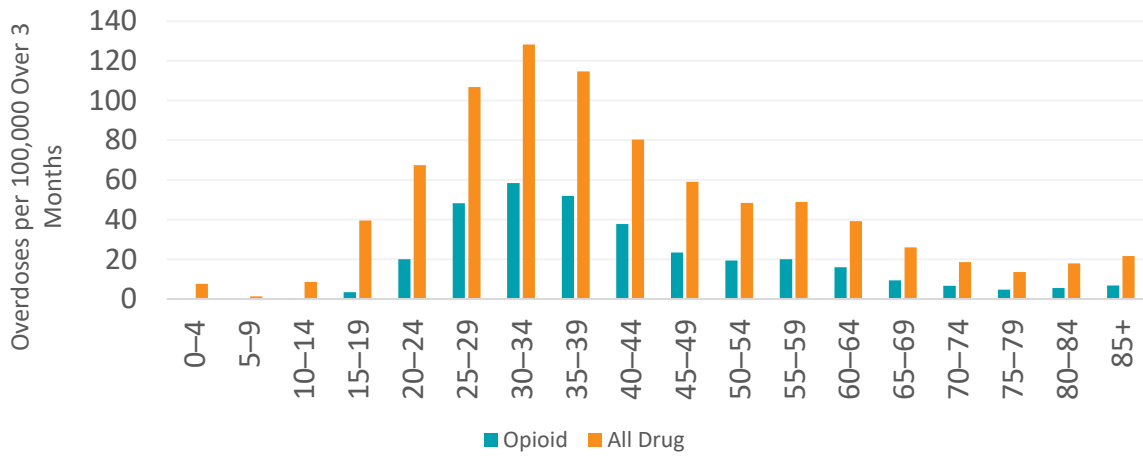


Figure 3: Non-Fatal Opioid and All Drug Overdose Rates by Sex; Oct–Dec 2019; Florida

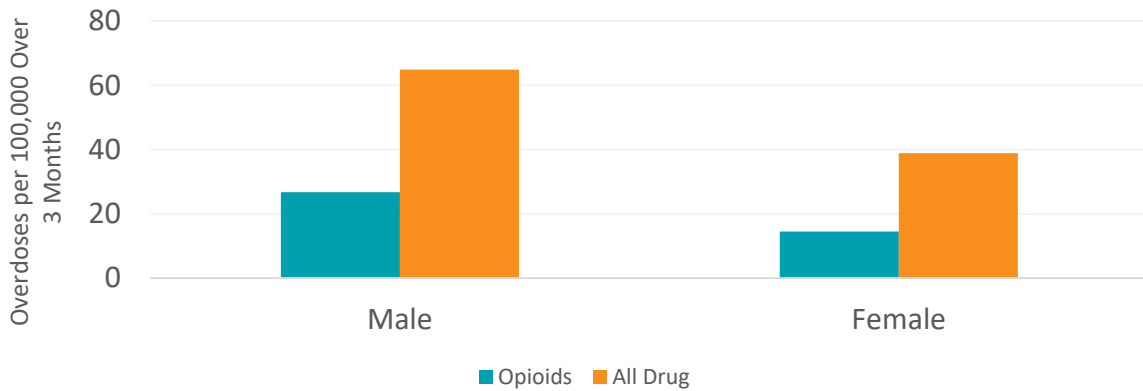
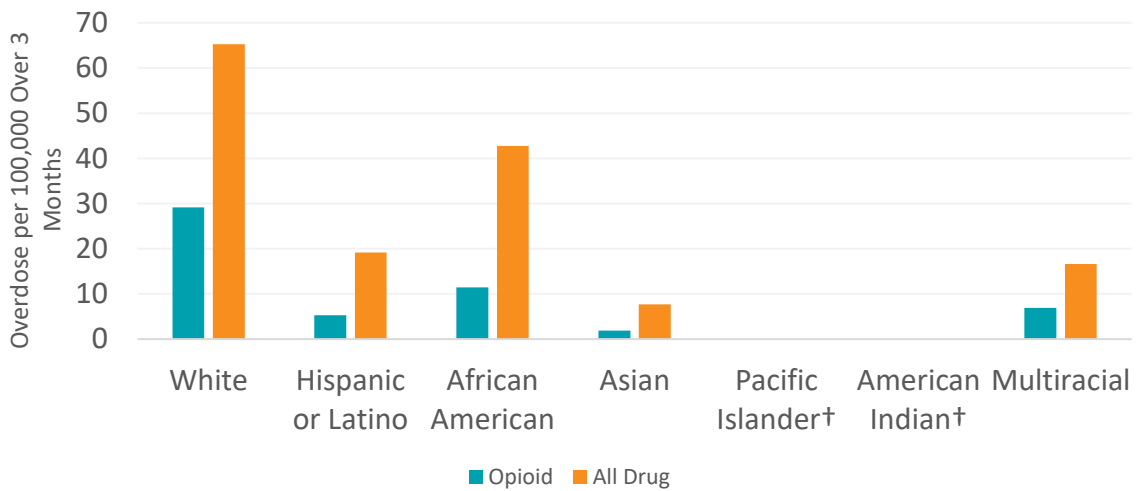


Figure 4: Non-Fatal Overdose Rates by Racial/Ethnic Groups; Oct–Dec, 2019; Florida



†Data not shown due to anomalies in results, see text for further details

NON-FATAL OVERDOSE RATES BY GEOGRAPHY

Florida experienced 4,152 opioid and 10,464 all drug non-fatal overdoses in the reporting EMS agencies between July and September of 2019. A total of 20.47 and 51.60 non-fatal opioid and all drug overdoses occurred per 100,000 individuals during these three-months. This section shares non-fatal opioid and all drug overdose counts and rates by Florida counties.

Florida reported 4,152 opioid and 10,464 all drug non-fatal overdoses between October and December of 2019

Counts as well as crude and age-adjusted non-fatal opioid and all drug overdose rates in all reporting Florida counties are presented in Tables 5 and 6. Age-adjusted non-fatal opioid and all drug overdose rates are mapped by Florida counties in Figures 5 and 6. Six counties experienced age-adjusted non-fatal opioid overdose rates above 35 per 100,000 population. In descending order, they were Pinellas, Manatee, Brevard, Palm Beach, Duval, and Marion counties. Six counties experienced age-adjusted non-fatal all drug overdose rates above 90 per 100,000 population. In descending order, they were Marion, Alachua, Manatee, Brevard, Sumter, and Pasco counties. Non-fatal overdose rates in counties with low overall counts and population levels should be interpreted cautiously as they can change dramatically from quarter to quarter due to small amounts of error or underreporting.

Table 5: Non-Fatal Opioid Overdose Counts and Rates Per 100,000 People by County; Oct–Dec, 2019; Florida

<i>County</i>	<i>Count</i>	<i>Crude</i>	<i>Age-Adjusted</i>	<i>County</i>	<i>Count</i>	<i>Crude</i>	<i>Age-Adjusted</i>
Alachua	40	15.39	18.26	Lee	7	1.00	1.20
Baker	4	14.53	17.83	Leon	7	2.45	2.98
Bay	29	16.10	15.81	Levy	2	5.04	5.26
Bradford	2	7.47	6.90	Liberty	0	0.00	0.00
Brevard	325	57.20	62.91	Madison	2	10.80	10.43
Broward	305	15.92	15.40	Manatee	214	58.87	66.72
Calhoun	0	0.00	0.00	Marion	138	39.56	46.31
Charlotte	0	0.00	0.00	Martin	33	21.20	25.71
Citrus	1	0.71	1.07	Miami-Dade	69	2.55	2.53
Clay	32	15.74	16.56	Monroe	2	2.61	2.07
Collier	91	25.51	30.15	Nassau	14	17.85	17.78
Columbia	14	20.44	21.86	Okaloosa	42	21.26	21.40
DeSoto	0	0.00	0.00	Okeechobee	7	17.40	17.82
Dixie	1	6.13	7.06	Orange	281	21.70	20.06
Duval	486	53.29	49.80	Osceola	73	22.45	22.22
Escambia	57	18.39	18.90	Palm Beach	766	53.69	56.92
Flagler	23	21.90	28.35	Pasco	22	4.42	4.75
Franklin	0	0.00	0.00	Pinellas	659	69.38	70.15
Gadsden	1	2.17	1.96	Polk	2	0.31	0.31
Gilchrist	0	0.00	0.00	Putnam	15	20.71	23.38
Glades	1	7.58	7.50	Santa Rosa	–	–	–
Gulf	0	0.00	0.00	Sarasota	10	2.47	2.91
Hamilton	1	7.02	6.78	Seminole	32	7.12	6.60
Hardee	2	7.32	9.44	St. Johns	0	0.00	0.00
Hendry	3	7.68	7.78	St. Lucie	18	6.02	6.61
Hernando	10	5.58	6.03	Sumter	4	3.43	5.71
Highlands	3	2.99	1.95	Suwannee	1	2.28	2.60
Hillsborough	248	18.36	18.16	Taylor	5	22.37	24.71
Holmes	0	0.00	0.00	Union	3	19.61	21.92
Indian River	23	15.54	18.84	Volusia	0	0.00	0.00
Jackson	0	0.00	0.00	Wakulla	0	0.00	0.00
Jefferson	1	7.10	6.32	Walton	3	4.73	4.54
Lafayette	0	0.00	0.00	Washington	0	0.00	0.00
Lake	5	1.53	1.83	Florida	4,152	20.47	–

**Santa Rosa County reported less than 70 percent of EMS runs to EMSTARS and did not have its results included in county level analyses*

Figure 5: Age-Adjusted Non-Fatal Opioid Overdose Rates per 100,000 People; Oct–Dec, 2019; Florida

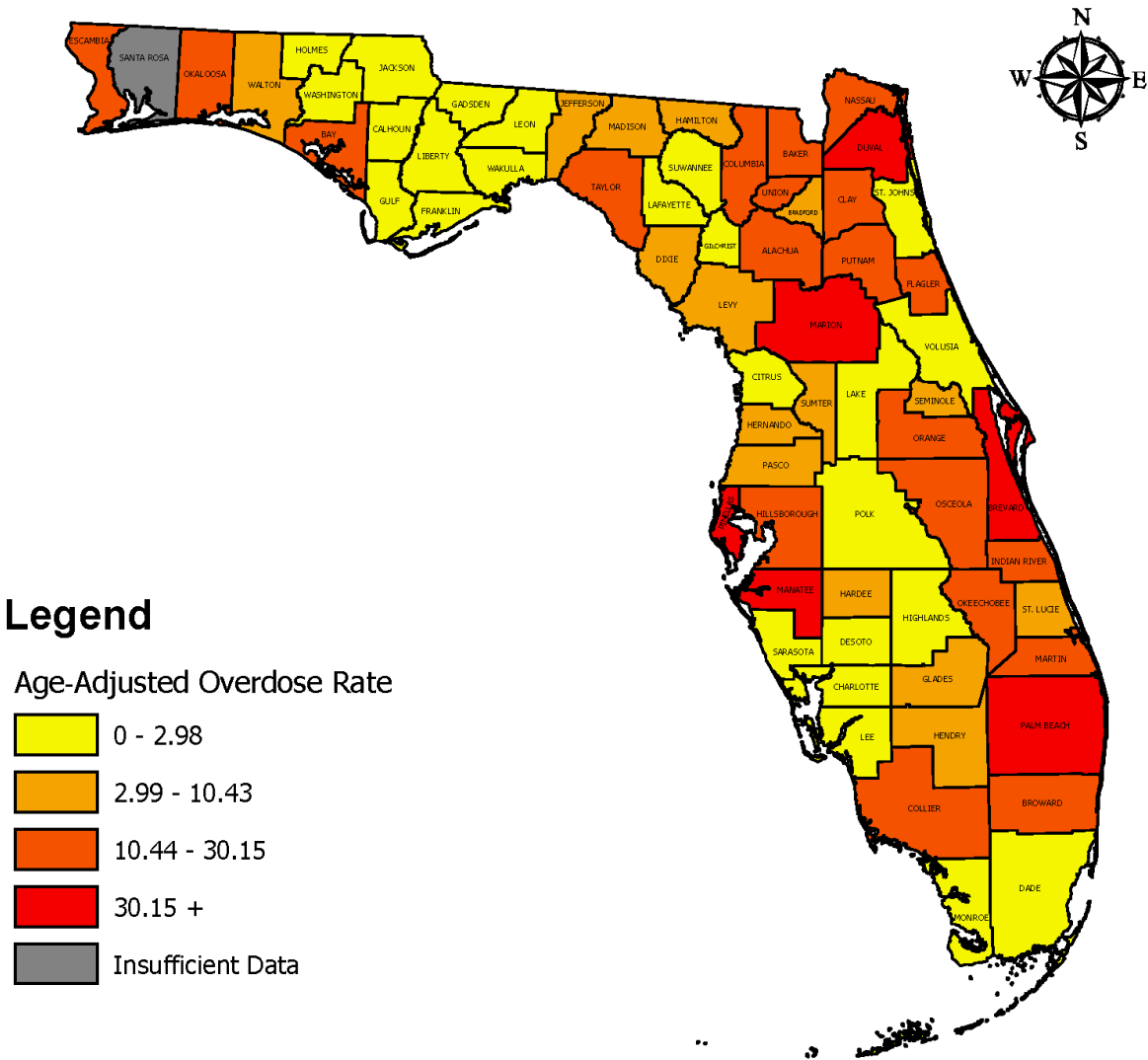
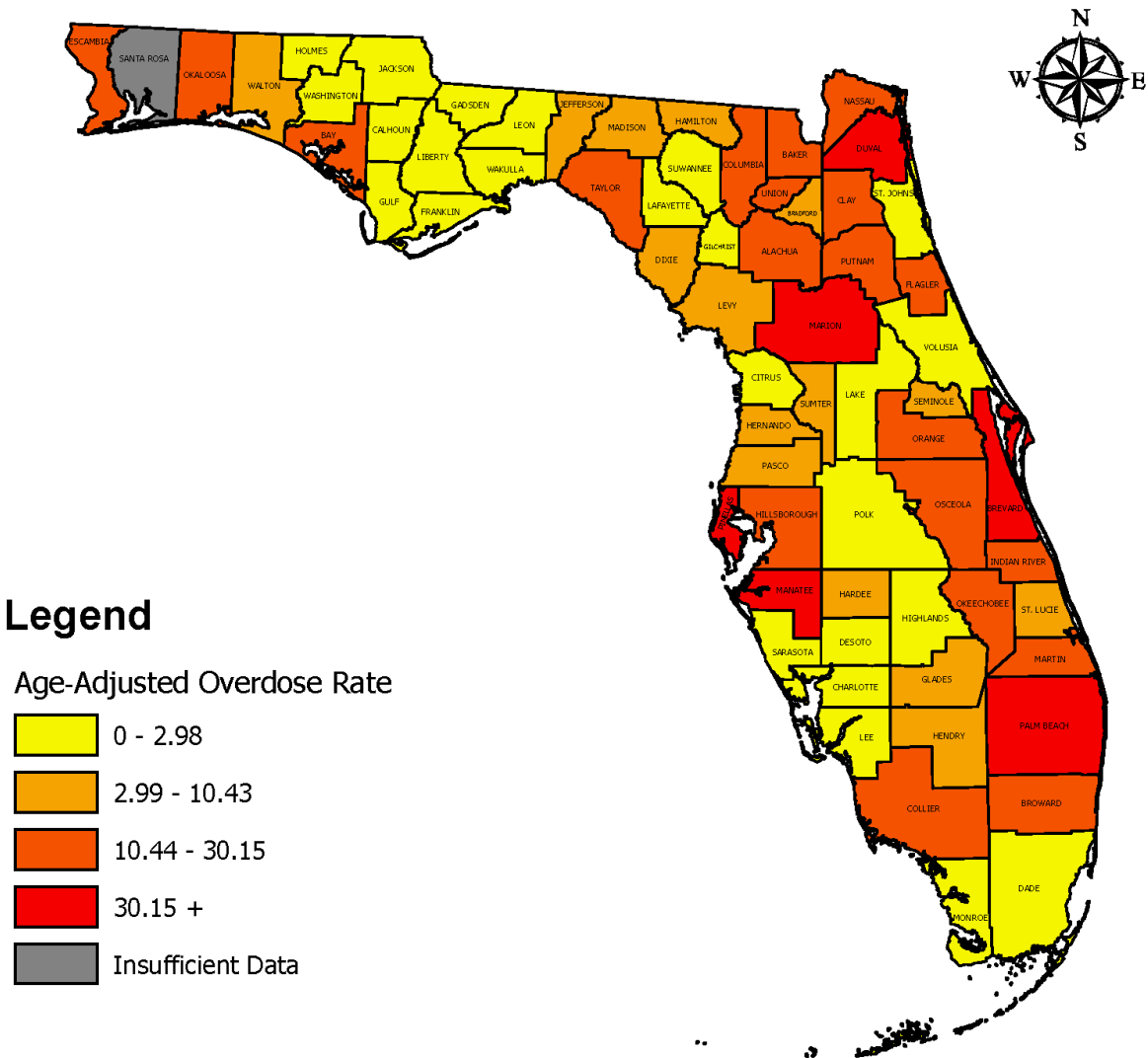


Table 6: Non-Fatal All Drug Overdose Counts and Rates Per 100,000 People by County; Oct–Dec, 2019; Florida

<i>County</i>	<i>Count</i>	<i>Crude</i>	<i>Age-Adjusted</i>	<i>County</i>	<i>Count</i>	<i>Crude</i>	<i>Age-Adjusted</i>
Alachua	401	154.31	146.41	Lee	263	37.56	41.44
Baker	15	54.47	56.79	Leon	66	23.09	20.41
Bay	62	34.42	33.60	Levy	18	45.33	51.20
Bradford	13	48.55	48.77	Liberty	0	0.00	0.00
Brevard	577	101.20	109.58	Madison	5	27.00	26.98
Broward	959	50.36	49.08	Manatee	418	114.98	129.90
Calhoun	0	0.00	0.00	Marion	446	128.57	146.47
Charlotte	5	2.89	2.80	Martin	70	44.95	54.57
Citrus	36	25.47	29.54	Miami-Dade	781	28.90	28.33
Clay	55	27.06	28.21	Monroe	20	26.06	24.93
Collier	99	27.47	32.39	Nassau	27	34.42	34.99
Columbia	19	27.74	29.09	Okaloosa	84	42.51	41.55
DeSoto	1	2.80	2.62	Okeechobee	10	24.86	25.58
Dixie	11	67.39	74.00	Orange	1,080	83.55	76.92
Duval	734	80.48	75.41	Osceola	237	72.58	72.36
Escambia	145	46.46	47.45	Palm Beach	1,079	75.62	79.83
Flagler	55	52.37	60.15	Pasco	454	91.14	96.86
Franklin	2	17.13	17.73	Pinellas	666	70.12	70.90
Gadsden	14	30.36	29.21	Polk	34	5.21	5.25
Gilchrist	6	34.90	41.97	Putnam	36	49.70	54.47
Glades	3	22.73	25.08	Santa Rosa	–	–	–
Gulf	1	6.24	5.76	Sarasota	48	11.86	14.01
Hamilton	7	49.16	49.06	Seminole	72	16.02	15.10
Hardee	8	29.28	32.58	St. Johns	128	56.49	59.56
Hendry	7	17.92	16.91	St. Lucie	152	50.88	54.43
Hernando	27	15.07	17.08	Sumter	70	59.96	104.66
Highlands	26	25.95	27.25	Suwannee	24	50.21	52.88
Hillsborough	680	50.33	48.76	Taylor	12	53.69	52.71
Holmes	1	5.13	5.09	Union	14	91.50	87.90
Indian River	50	33.79	38.97	Volusia	21	4.05	4.45
Jackson	0	0.00	0.00	Wakulla	6	19.00	19.61
Jefferson	7	49.70	49.51	Walton	21	33.09	33.18
Lafayette	3	34.55	30.66	Washington	1	4.09	4.07
Lake	17	5.21	5.62	Florida	10,464	51.60	–

**Santa Rosa County reported less than 70 percent of EMS runs to EMSTARS and did not have its results included in county level analyses*

Figure 6: Age-Adjusted Non-Fatal All Drug Overdose Rates per 100,000 People; Oct–Dec, 2019; Florida



NON-FATAL OVERDOSE RATES OVER TIME

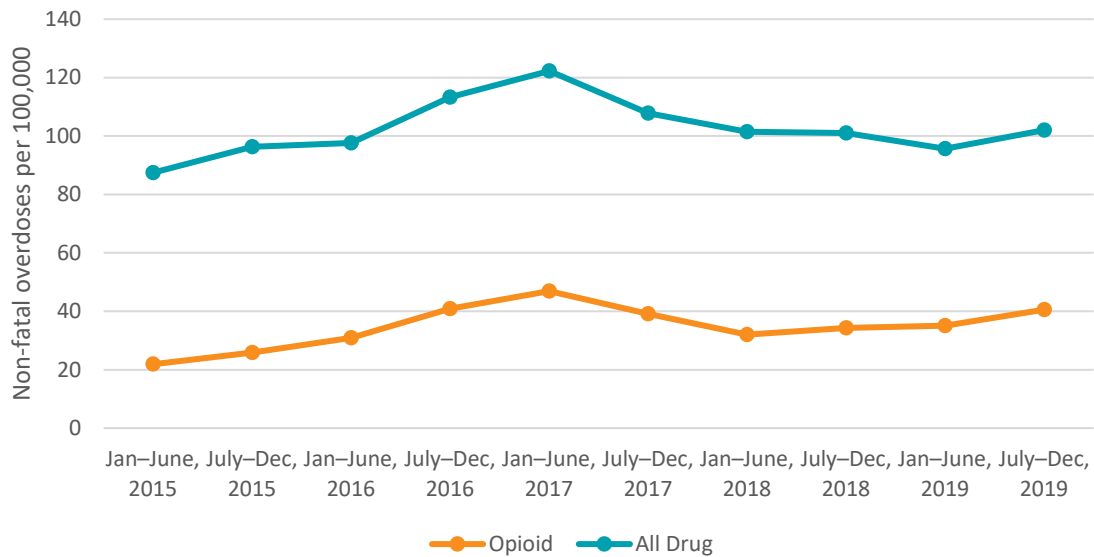
There appeared to be a rise in non-fatal opioid and all drug overdose related EMS events rates during the second half of 2019 compared to the first half of 2019. However, these rates remain lower than the peak observed during the first half of 2017. These trends can be found in Figure 7.

Non-fatal opioid and all drug overdoses trends tended to not drastically differ over time across most demographic groups. However, different age groupings experienced markedly different trends since 2015. The four age groups presented in Figures 8 and 9 represent groupings of the

five-year age ranges that had similar trends. These groupings were done to improve readability of the figure.

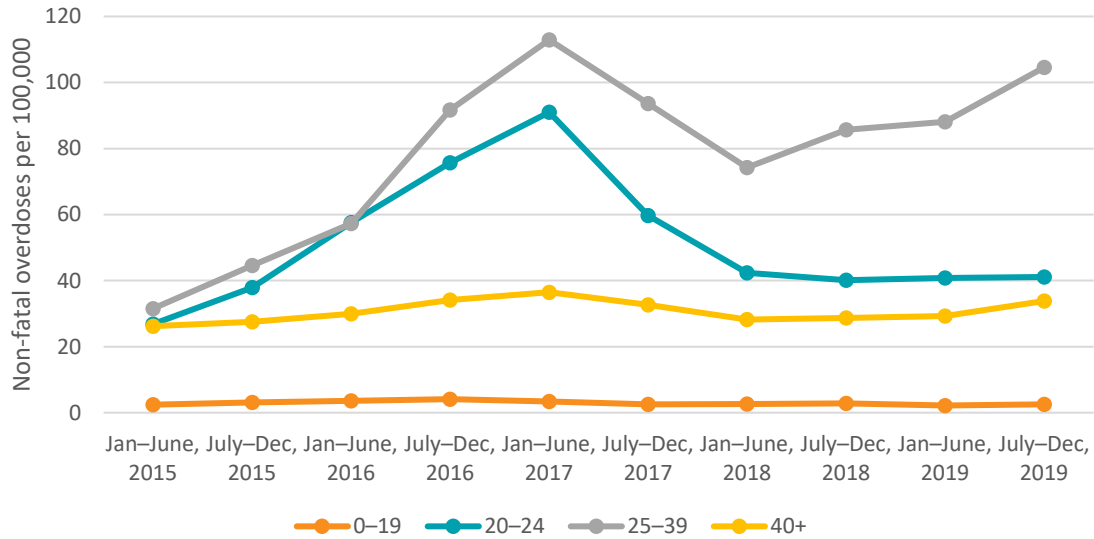
Children ages 0–19 experienced very low rates of non-fatal opioid overdoses since 2015. Adults ages 40 and over experienced low rates of non-fatal opioid overdoses since 2015. These two age groups did not experience the large rise and fall in overdoses around 2017. Young adults ages 20–24 experienced a large spike through 2017 in non-fatal opioid and all drug overdose related EMS event rates. However, non-fatal opioid and all drug overdose rates in young adults have dropped through 2019 and are nearly the same rates as those in 2015. Adults ages 25–39 experienced similar rates in 2015 as those ages 20–24 but a larger increase through 2017. Of most concern, adults ages 25–39 were similarly declining with young adults through the first half of 2018 but are now experiencing a marked increase in non-fatal overdose rates through 2019.

Figure 7: Non-Fatal Overdose Rates Over Time from 2015–2019; Florida



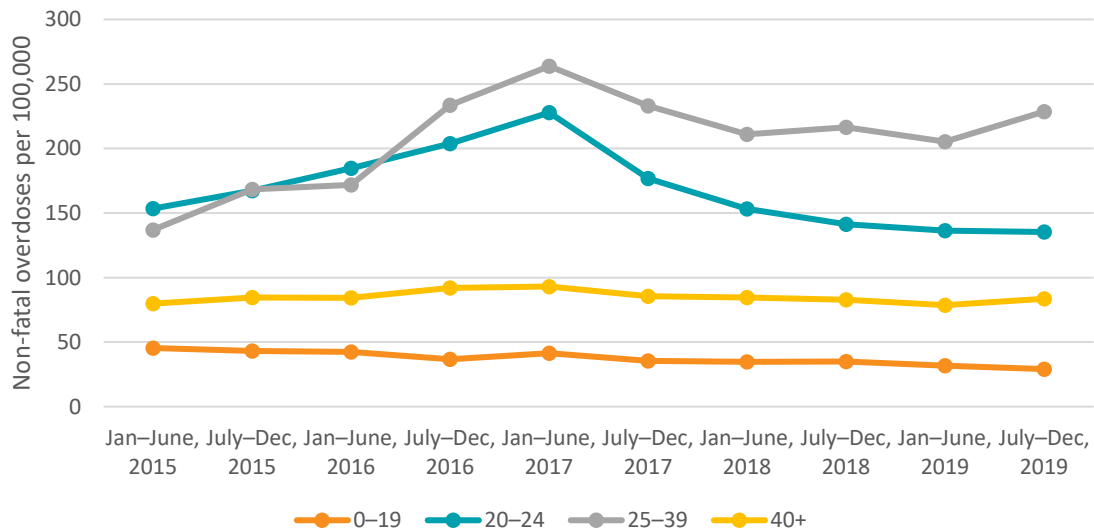
**These data are adjusted for percent of EMS events reported to EMSTARS to facilitate comparisons across time. This chart should be used to interpret patterns over time, but not Individual numbers.*

Figure 8: Non-Fatal Opioid Overdose Rates Over Time from 2015–2019 by Age Groups; Florida



**These data are adjusted for percent of EMS events reported to EMSTARS to facilitate comparisons across time. This chart should be used to interpret patterns over time, but not Individual numbers.
 †Jan-Mar, 2019 value multiplied by two to help comparison against other six month periods.*

Figure 9: Non-Fatal All Drug Overdose Rates Over Time from 2015–2019 by Age Groups; Florida



**These data are adjusted for percent of EMS events reported to EMSTARS to facilitate comparisons across time. This chart should be used to interpret patterns over time, but not Individual numbers.*

DISCUSSION

Though not all Florida's population is included in this report, it is likely these results are generally representative of the state of Florida given that EMSTARS included 98 percent of all EMS events for this quarter, at least 70 percent of EMS runs were collected from all but one Florida county, and all but four counties reported at least 90 percent of their EMS events. The section below identifies the most salient points of the report and discusses areas of opportunity for the state.

Men and Whites were more likely to experience non-fatal opioid and all drug overdoses than women or other races and ethnicities. These findings are similar to previous reporting in the state from the third quarter of 2019 in that men and Whites were at greater risk of non-fatal opioid and all drug overdoses.⁷ For age, finding those ages 30–39 were most at risk were similar to results from the first and second quarters of 2019, but slightly older than the ages 25–34 found during the third quarter of 2019.^{7,20,21} Some counties in Florida were burdened with markedly higher non-fatal opioid and all drug overdose rates compared to the rest of the state. Overdose prevention efforts should target these groups to maximize impacts.

Data from this report were not able to accurately inform opioid and all drug overdose rates among American Indians and Pacific Islanders. Anomalies in the data led to their exclusion from the race and ethnicity reporting. Future work should revisit overdose rates in these groups to accurately characterize the situation, and possibly explain noted patterns in the data. It is possible that alternate data sources or subsequent time periods of EMSTARS might better inform the issue.

Over time, non-fatal opioid and all drug overdose rates were at the lowest in 2015, spiked in the first half of 2017, and partially dropped through 2019. Though the situation is better than 2017 concerning non-fatal opioid and all drug overdoses in Florida, more work still needs to be done. Adults ages 20–24 have largely returned to 2015 levels; however, adults ages 25–39 experienced less of a decrease in rates and experienced a renewed spike during the second half of 2019. Prevention efforts should be targeted toward those ages 25–39 to maximize impacts and help those who are still experiencing elevated overdose rates.

Naloxone administration during non-fatal opioid overdoses increased from 60.1% to 64.2% between from the third to fourth quarter of 2019. With the goal to approach 100% administration when naloxone is needed, it is encouraging to see the rise in naloxone use by Florida EMS agencies for opioid overdoses.

Some organizations have successfully distributed naloxone to laypersons to combat fatal opioid overdoses in settings where medical professionals are not present.^{9–12} Naloxone is highly effective at rapidly reversing the effects of an opioid overdose, presents minimal risks, and is cost-effective.^{8,11} The 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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