CDC's Enhanced State Opioid Overdose Surveillance (ESOOS) Program

Archived Provisional Data Report from April 2019

All data are preliminary and may change as more data are received from state and jurisdiction health departments. Over time, methodology may be refined and impact these provisional percent change estimates. Please refer to the most recent data available at: cdc.gov/drugoverdose/data/nonfatal/cdc-esoos.html.

CDC's Enhanced State Opioid Overdose Surveillance (ESOOS) program captures different types of data for both fatal and nonfatal overdoses. Twelve states were initially funded in September 2016, and an additional 20 states and the District of Columbia were funded in September 2017, to share data on nonfatal overdoses with CDC on a quarterly basis. The most current data available come from the most recent state data received during April 2019. CDC's ESOOS program captures some data via CDC's National Syndromic Surveillance Program (NSSP)'s BioSense platform.

ESOOS collects hospital billing data, which are collected by hospitals and shared with state and local partners. Hospital billing data include a standardized discharge diagnostic code (i.e., International Classification of Diseases, Tenth Edition, Clinical Modification, ICD-10-CM) used to categorize a visit as an overdose. The time lag between the date of a particular ED visit and the availability of billing data varies widely by state (e.g., monthly to annually).

ESOOS also collects syndromic surveillance data, which include information on the purpose of an ED visit using the chief complaint free text field and a standardized discharge diagnostic code (i.e., ICD-10-CM) typically included in hospital billing data. These data can serve as an early warning system. They have become an important resource for tracking public health outbreaks, and can provide value in uncovering trends in suspected overdoses quickly.

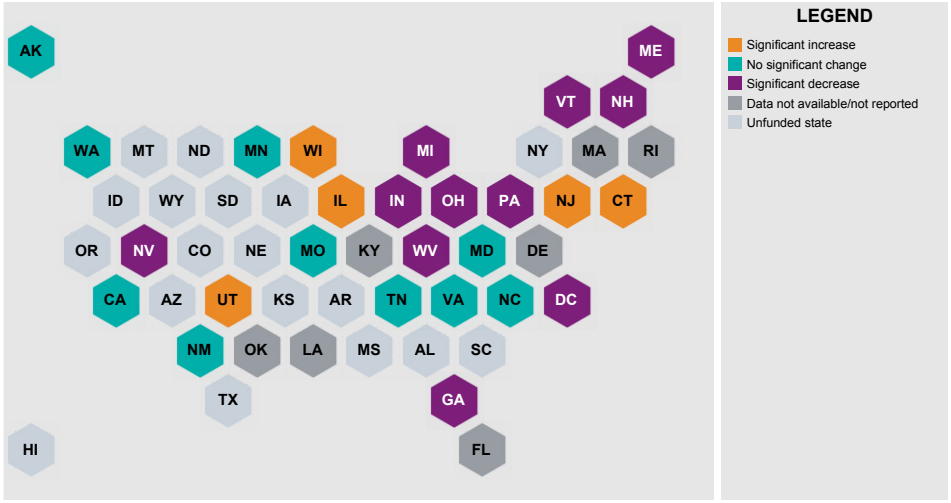
ALL DRUGS

Suspected overdose estimates for a given point in time may change as information on the ED visit is updated, so data should be interpreted with caution. For the most recent quarter change, the third quarter (July–September) of 2018 to the fourth quarter (October–December) of 2018, ESOOS states, including the District of Columbia, reported a 5% decrease in all drug overdoses.

Overall, suspected drug overdoses in ESOOS states, including the District of Columbia, remained stable from the fourth quarter of 2017 to the fourth quarter of 2018. Ten states (Georgia, Indiana, Maine, Michigan, Nevada, New Hampshire, Ohio, Pennsylvania, Vermont, and West Virginia) and the District of Columbia reported a significant annual decrease in all drug overdoses during this time period. Significant increases in all drug overdoses during this time period occurred in five states (Connecticut, Illinois, New Jersey, Utah, and Wisconsin).[1]

Trends in Emergency Department Visits for Suspected Drug Overdose, Q4 2017 to Q4 2018

CDC s Enhanced State Opioid Overdose Surveillance Program, Data Current as of April 15, 2019



Centers for Disease Control and Prevention
National Center for Injury Prevention and Control

CDC's Enhanced State Opioid Overdose Surveillance (ESOOS) Program:[*] Trends[†] in Emergency Department Visits for Suspected Drug Overdose[§] for Selected States Providing Data, Q4 2016 (October 1, 2016–December 31, 2016) to Q4 2018 (October 1, 2018–December 31, 2018),[¶] by State

	Yearly Percent Change						Quarterly Percent Change							
	Q4 2016 to Q4 2017 (20 states)	Q1 2017 to Q1 2018 (23 states)	Q2 2017 to Q2 2018 (23 states)	Q3 2017 to Q3 2018 (24 states)	Q4 2017 to Q4 2018 (26 states)	Category, Q4 2017 to Q4 2018 (26 states)	Q4 2016 to Q1 2017 (19 states)	Q1 2017 to Q2 2017 (24 states)	Q2 2017 to Q3 2017 (24 states)	Q3 2017 to Q4 2017 (25 states)	Q4 2017 to Q1 2018 (29 states)	Q1 2018 to Q2 2018 (27 states)	Q2 2018 to Q3 2018 (28 states)	Q3 2018 to Q4 2018 (26 states)
Overall	0.64	**-5.65**	**-6.89**	**-3.23**	0.17	No significant change	**2.25**	**9.28**	**-1.79**	**-8.29**	**-4.14**	**7.85**	**2.08**	**-5.07**
State														
Alaska	n/a	n/a	n/a	n/a	-5.74	No significant change	n/a	n/a	n/a	n/a	-1.17	-0.87	-10.83	7.89
California	-0.71	**4.49**	0.38	3.01	2.12	No significant change	**-4.48**	**9.7**	0.28	**-5.5**	0.52	**5.38**	2.9	**-6.32**
Connecticut	n/a	n/a	n/a	n/a	**14.12**	Significant increase	n/a	n/a	n/a	n/a	**-7.02**	**33.93**	1.29	**-9.53**
Delaware[††]	n/a	n/a	n/a	n/a	n/a	Data not available/ not reported	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
District of Columbia	-0.11	**-18.06**	**-23.18**	2.32	**-13.37**	Significant decrease	2.61	**13.99**	**-7.55**	**-7.62**	**-15.83**	6.87	**23.14**	**-21.78**
Florida[§§]	n/a	n/a	n/a	n/a	n/a	Data not available/ not reported	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Georgia	-2.95	**-7.38**	**-10.66**	**-5.37**	**-7.41**	Significant decrease	-0.43	**8.88**	**-6.81**	-3.93	**-4.98**	5.01	-1.29	**-6**
Illinois	**5.16**	2.71	-0.43	**-7.52**	**9.66**	Significant increase	1.36	**6.91**	**10.34**	**-12.05**	-1	**3.64**	2.49	**4.29**
Indiana	**20**	**5.78**	**9.07**	-0.23	**-8.41**	Significant decrease	**3.89**	**3.98**	**7.18**	3.65	**-8.43**	**7.21**	-1.95	**-4.85**
Kentucky	5.21	**-19.16**	**-28.39**	n/a	n/a	Data not available/ not reported	**20.38**	**6.07**	**-11.11**	**-7.3**	**-7.51**	**-6.05**	n/a	n/a
Louisiana[**]	n/a	n/a	n/a	n/a	n/a	Data not available/ not reported	n/a	n/a	n/a	n/a	**105.37**	**-7.26**	**-8.53**	n/a
Maine	8.69	1.91	**-9.03**	**-11.89**	**-11.18**	Significant decrease	1.34	**10.44**	-0.92	-1.98	-4.98	-1.42	-4.04	-1.2
Maryland	-1.03	1.78	**-8.68**	**-7.27**	1.33	No significant change	0.85	**20.23**	**-12.94**	**-6.25**	3.72	**7.87**	**-11.6**	2.45
Massachusetts[††]	n/a	n/a	n/a	n/a	n/a	Data not available/ not reported	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Michigan	n/a	n/a	n/a	n/a	**-3.63**	Significant decrease	n/a	n/a	n/a	n/a	**-5.6**	**6.56**	**3.77**	**-7.68**

Table of trends continues on next page.

Minnesota	n/a	-3.1	-1.42	**-10.42**	3.34	No significant change	n/a	-1.2	**13.95**	-2.54	**-11.69**	0.51	3.55	**12.43**
Missouri	-5.92	-6.14	1.09	-2.42	2.82	No significant change	-0.04	1.7	3.45	**-10.54**	-0.28	**9.53**	-0.13	-5.74
Nevada	-3.09	1.08	1.45	**-11.15**	**-10.72**	Significant decrease	**-8.35**	7.72	3.73	-5.38	-4.4	**8.12**	**-9.16**	-4.91
New Hampshire	-4.46	-7.83	**-30.02**	**-19.22**	**-16.9**	Significant decrease	-8.32	**25.83**	**-9.61**	-8.38	**-11.55**	-4.46	4.34	-5.76
New Jersey	0.12	**-5.01**	**7.64**	**13.59**	**13.94**	Significant increase	**6.08**	**7.14**	-3.58	**-8.64**	0.64	**21.41**	1.75	**-8.36**
New Mexico	-5.85	-6.68	5.69	2.35	-2.94	No significant change	-0.44	4.07	-6.53	-2.78	-1.31	**17.86**	**-9.49**	**-7.8**
North Carolina	-0.54	-2.9	**-8.79**	**-10.78**	-3.11	No significant change	-2.21	**11.45**	**3.75**	**-12.04**	**-4.53**	**4.69**	1.48	**-4.47**
Ohio	**-9.3**	**-33.91**	**-38.43**	**-19.22**	**-14.82**	Significant decrease	**12.16**	**15.95**	**-18.63**	**-14.3**	**-18.27**	**8.02**	**6.76**	**-9.64**
Oklahoma[§§]	n/a	n/a	n/a	n/a	n/a	Data not available/ not reported	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Pennsylvania	**-5.55**	**-17.38**	**-16.05**	**-6.7**	**-4.23**	Significant decrease	-0.98	**12.14**	-1.16	**-13.94**	**-13.38**	**13.95**	**9.84**	**-11.66**
Rhode Island	9.96	12	**22.67**	**23.83**	n/a	Data not available/ not reported	-3.04	6.71	-3	9.56	-1.24	**16.87**	-2.08	n/a
Tennessee	n/a	n/a	n/a	**10.29**	3.52	No significant change	n/a	n/a	n/a	**7.34**	-2.72	**5.78**	-0.15	0.75
Utah	n/a	**10.62**	**10.54**	**27.14**	**12.21**	Significant increase	n/a	-0.69	**-11.37**	**20.75**	4.08	-0.76	1.94	6.57
Vermont	n/a	-8.36	-14.72	-4.94	**-16.29**	Significant decrease	n/a	-0.12	-5.74	10.45	-11.88	-7.05	5.07	-2.74
Virginia	**4.94**	**-6.61**	**-6.22**	**6.43**	-4	No significant change	1.2	**9.82**	**-5.08**	-0.52	**-9.94**	**10.28**	**7.72**	**-10.26**
Washington	n/a	n/a	n/a	**-7.94**	0.97	No significant change	n/a	n/a	n/a	-4.15	-3.98	5.06	-4.78	**5.13**
West Virginia	**-27.46**	**-22.8**	**-24.2**	-0.51	**-11.1**	Significant decrease	**-11.29**	-2.16	**-10.54**	-6.57	-5.59	-3.94	**17.41**	**-16.51**
Wisconsin	**8.01**	**-23.81**	**-18.64**	**-24.37**	**10.57**	Significant increase	**29.4**	3.92	3.54	**-22.43**	**-8.71**	**10.98**	-3.76	**13.41**

[*] Data come from states participating in CDC's Enhanced State Opioid Overdose Surveillance (ESOOS) program and are current as of April 15, 2019. Every three months, states share overdose data from emergency department (ED) visits to CDC, including syndromic or hospital billing data to identify all drug, opioid, and/or heroin overdoses that presented in the ED and demographic characteristics of those who overdosed, such as sex, age, and county of patient residence. States have several options for how they relay their ED data to CDC. States choose to share ED visits for suspected overdoses (e.g., all drug, opioid, and heroin) either directly with CDC using a secure server or they can allow CDC to have access to their states' data in the National Syndromic Surveillance Program's (NSSP) BioSense platform. The number of states included in the calculations of quarterly and yearly change will vary and will increase over time as additional states share data with CDC. Comparisons between states should not be made due to variations in data quality, completeness, and reporting across states.

[†] To account for changes occurring across time, quarterly and yearly trends for the rate of ED visits involving suspected drug overdoses (e.g., ED visits involving drug overdoses divided by total ED visits and multiplied by 10,000) were analyzed by U.S. state. Yearly change, controlling for seasonal effects, was estimated as the change from the final quarter of previous year to the final quarter of the current year (e.g., fourth quarter 2017 to fourth quarter 2018). Quarterly rate changes were calculated for all quarters. Significance testing was conducted using chi-square tests. Data table provides the yearly and quarterly rate changes by state. Bolded estimates indicate statistically significant results between quarters.

[§] The case definitions used by states draw from multiple fields within emergency department (ED) data. For states with ED billing or discharge data visits assigned *International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM*) codes, *International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM)* codes, or SNOMED (Systematized Nomenclature of Medicine—Clinical Terms) codes consistent with any drug, opioid, or heroin overdose were included. In addition, states using syndromic ED data could use the ICD-9-CM, ICD-10-CM, or SNOMED codes to identify overdoses, along with free text fields such as chief complaint, clinical impression, or triage notes. Free text searches included text strings indicating an overdose or poisoning and text strings indicating the involvement of a drug (e.g., "drug overdose"). Common misspellings of key search terms were also included to increase specificity and sensitivity. States either developed their own definitions to capture the specific text and diagnoses used in their facilities or relied on pre-set queries developed by CDC (see March 2018 Vital Signs).

[¶] The following are several important caveats to consider when interpreting the data presented: (1) Data sent from facilities to health departments may be delayed or may stop for a period of time. When facilities begin sharing data again, information about visits during the lapse may never be shared; (2) For syndromic data, information from ~70% of visits arrive within 48 hours as the chief complaint of the visit. However, the chief complaint field may be incomplete. As updates to visits arrive weeks later, relevant overdose discharge diagnosis codes or revised chief complaint text may be received. Therefore, rates may change over time as the visit records are completed and new drug overdose visits are identified; (3) Because these data are not finalized based on toxicological results, they are not considered confirmed cases, but "suspected" overdoses. Data collected from syndromic surveillance should not be interpreted or represented as exact counts; and (4) Data likely represent an undercount, given inaccuracies in coding and missing chief complaint information.

[**] The funded ESOOS state did not provide CDC enough quarters of data to calculate yearly percent change. Some states provided enough data to calculate some quarterly changes.

[††] The funded ESOOS state does not provide CDC estimates for emergency department visits for suspected all drug overdose.

[§§] The funded ESOOS state does not provide CDC emergency department data.

Annual Percent Changes in All Drug Overdoses for Selected States Providing Data, Q4 2016 to Q4 2018, by Sex and Age Group

CDC's Enhanced State Opioid Overdose Surveillance Program, Data Current as of April 15, 2019

Decrease / Increase		Q4 2016 to Q4 2017 (20 states)	Q1 2017 to Q1 2018 (23 states)	Q2 2017 to Q2 2018 (23 states)	Q3 2017 to Q3 3018 (24 states)	Q4 2017 to Q4 2018 (26 states)
Overall		0.64	-5.65*	-6.89*	-3.23*	0.17
Sex	Male	-0.48	-8.54*	-9.17*	-5.02*	-0.18
	Female	0.40	-2.38*	-4.24*	-1.36*	0.21
Age Group	11 to 24 years	-0.92	-3.15*	-5.65*	-0.28	0.96
	25 to 34 years	2.32*	-6.56*	-9.42*	-6.78*	-5.04*
	35 to 54 years	2.31*	-5.67*	-4.92*	-2.44*	2.23*
	55 years and up	0.90	-2.48*	-4.23*	-1.32	6.25*

*Statistically Significant

CDC's Enhanced State Opioid Overdose Surveillance (ESOOS) Program:* Annual Percent Changes† in All Drug Overdoses§ for Selected States Providing Data,¶ Q4 2016 (October 1, 2016–December 31, 2016) to Q4 2018 (October 1, 2018–December 31, 2018) by Sex and Age Group

	Yearly Percent Change				
	Q4 2016 to Q4 2017 (20 states)	Q1 2017 to Q1 2018 (23 states)	Q2 2017 to Q2 2018 (23 states)	Q3 2017 to Q3 2018 (24 states)	Q4 2017 to Q4 2018 (26 states)
Overall	0.64	**-5.65**	**-6.89**	**-3.23**	0.17
Sex					
Male	-0.48	**-8.54**	**-9.17**	**-5.02**	-0.18
Female	0.4	**-2.38**	**-4.24**	**-1.36**	0.21
Age group					
11–24	-0.92	**-3.15**	**-5.65**	-0.28	0.96
25–34	**2.32**	**-6.56**	**-9.42**	**-6.78**	**-5.04**
35–54	**2.31**	**-5.67**	**-4.92**	**-2.44**	**2.23**
55 and up	0.9	**-2.48**	**-4.23**	-1.32	**6.25**

* Data come from states participating in CDC's Enhanced State Opioid Overdose Surveillance (ESOOS) program. Every three months, states share overdose data from emergency department (ED) visits to CDC, including syndromic or hospital billing data to identify all drug, opioid, and/or heroin overdoses that presented in the ED and demographic characteristics of those who overdosed, such as sex, age, and county of patient residence. States have several options for how they relay their ED data to CDC. States choose to share ED visits for suspected overdoses (e.g., all drug, opioid, and heroin) either directly with CDC using a secure server or they can allow CDC to have access to their states' data in the National Syndromic Surveillance Program's (NSSP) BioSense platform. The number of states included in the calculations of quarterly and yearly change will vary and will increase over time as additional states share data with CDC. Comparisons between states should not be made due to variations in data quality, completeness, and reporting across states.

† To account for changes occurring across time, quarterly and yearly trends for the rate of ED visits involving suspected drug overdoses (e.g., ED visits involving drug overdoses divided by total ED visits and multiplied by 10,000) were analyzed overall and by sex, age group, and U.S. state. Quarterly rate changes were calculated for all quarters. Yearly change, controlling for seasonal effects, was estimated as the change from the final quarter of previous year to the final quarter of the current year (e.g., fourth quarter 2017 to fourth quarter 2018). Significance testing was conducted using chi-square tests. Data table provides quarterly and yearly estimates of change for all ESOOS states with available data overall, and by sex and age. Bolded estimates indicate statistically significant results between quarters.

§ The case definitions used by states draw from multiple fields within emergency department (ED) data. For states with ED billing or discharge data visits assigned *International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM)* codes, *International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM)* codes, or SNOMED (Systematized Nomenclature of Medicine—Clinical Terms) codes consistent with any drug, opioid, or heroin overdose were included. In addition, states using syndromic ED data could use the ICD-9-CM, ICD-10-CM, or SNOMED codes to identify overdoses, along with free text fields such as chief complaint, clinical impression, or triage notes. Free text searches included text strings indicating an overdose or poisoning and text strings indicating the involvement of a drug (e.g., "drug overdose"). Common misspellings of key search terms were also included to increase specificity and sensitivity. States either developed their own definitions to capture the specific text and diagnoses used in their facilities or relied on pre-set queries developed by CDC (see March 2018 Vital Signs).

¶ The following are several important caveats to consider when interpreting the data presented: (1) Data sent from facilities to health departments may be delayed or may stop for a period of time. When facilities begin sharing data again, information about visits during the lapse may never be shared; (2) For syndromic data, information from ~70% of visits arrive within 48 hours as the chief complaint of the visit. However, the chief complaint field may be incomplete. As updates to visits arrive weeks later, relevant overdose discharge diagnosis codes or revised chief complaint text may be received. Therefore, rates may change over time as the visit records are completed and new drug overdose visits are identified; (3) Because these data are not finalized based on toxicological results, they are not considered confirmed cases, but "suspected" overdoses. Data collected from syndromic surveillance should not be interpreted or represented as exact counts; and (4) Data likely represent an undercount, given inaccuracies in coding and missing chief complaint information.

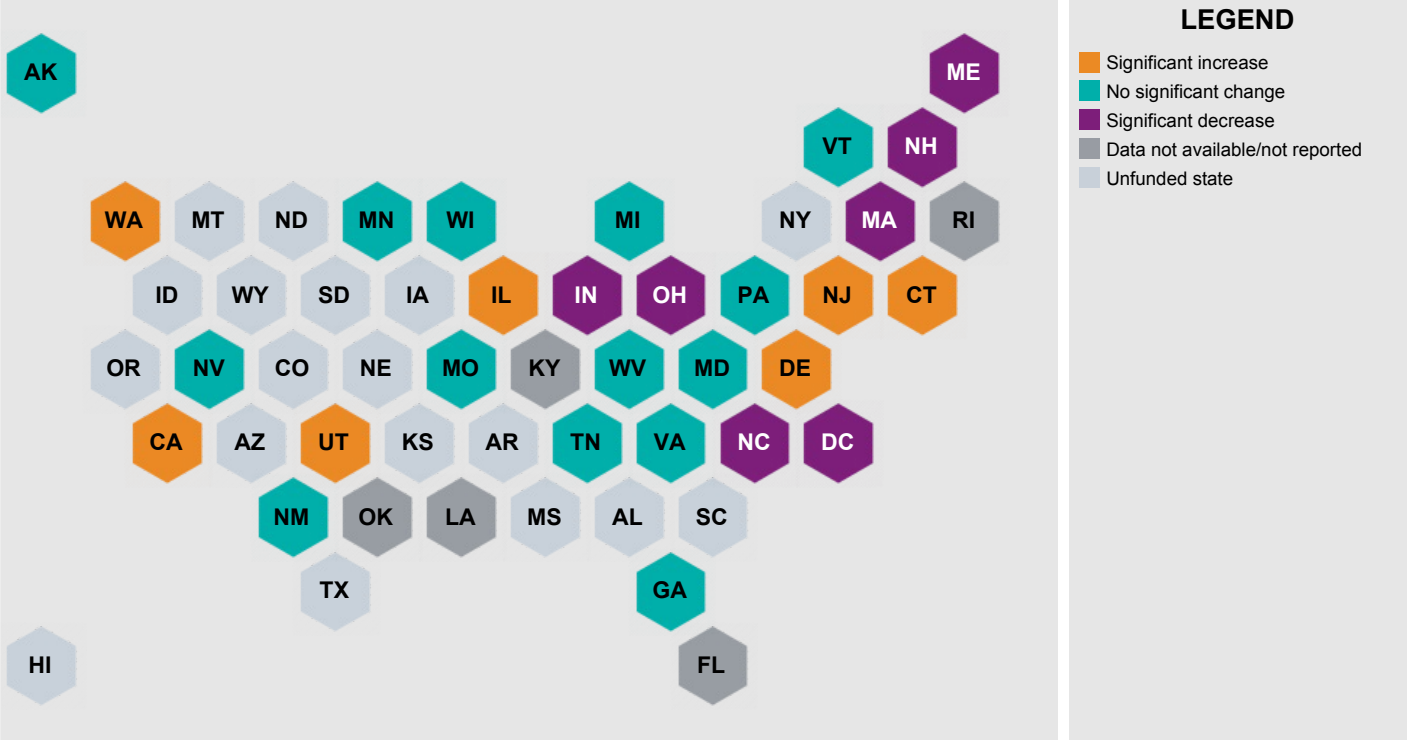
ALL OPIOIDS

Suspected overdose estimates for a given point in time may change as information on the ED visit is updated, so data should be interpreted with caution. For the most recent quarter change, the third quarter (July–August) of 2018 to the fourth quarter (October–December) of 2018, ESOOS states, including the District of Columbia, reported a 2% decrease in opioid overdoses.

Overall, suspected opioid overdoses in ESOOS states, including the District of Columbia, remained stable from the fourth quarter of 2017 to the fourth quarter of 2018. Six states (Indiana, Maine, Massachusetts, New Hampshire, North Carolina, and Ohio) and the District of Columbia reported a significant annual decrease in opioid overdoses during this time period. Significant increases in opioid overdoses during this time period occurred in seven states (California, Connecticut, Delaware, Illinois, New Jersey, Utah, and Washington).[1]

Trends in Emergency Department Visits for Suspected Opioid Overdose, Q4 2017 to Q4 2018

CDC s Enhanced State Opioid Overdose Surveillance Program, Data Current as of April 15, 2019



CDC's Enhanced State Opioid Overdose Surveillance (ESOOS) Program:* Trends† in Emergency Department Visits for Suspected Opioid Overdose§ for Selected States Providing Data, Q4 2016 (October 1, 2016–December 31, 2016) to Q4 2018 (October 1, 2018–December 31, 2018),¶ by State

	Yearly Percent Change						Quarterly Percent Change							
	Q4 2016 to Q4 2017 (19 states)	Q1 2017 to Q1 2018 (24 states)	Q2 2017 to Q2 2018 (22 states)	Q3 2017 to Q3 2018 (26 states)	Q4 2017 to Q4 2018 (28 states)	Category, Q4 2017 to Q4 2018 (26 states)	Q4 2016 to Q1 2017 (19 states)	Q1 2017 to Q2 2017 (24 states)	Q2 2017 to Q3 2017 (24 states)	Q3 2017 to Q4 2017 (25 states)	Q4 2017 to Q1 2018 (29 states)	Q1 2018 to Q2 2018 (27 states)	Q2 2018 to Q3 2018 (30 states)	Q3 2018 to Q4 2018 (28 states)
Overall	**4.02**	**-12.18**	**-12.13**	**-10.14**	1.28	No significant change	**5.82**	**12.75**	0	**-12.81**	**-10.66**	**12.81**	**2.26**	**-1.73**
State														
Alaska	n/a	n/a	n/a	n/a	9.04	No significant change	n/a	n/a	n/a	n/a	**-32.77**	30.38	1.83	22.16
California	-1.33	**12.86**	1.57	**7.71**	**14.37**	Significant increase	**-12.08**	**23.98**	2.62	**-11.79**	0.56	**11.58**	**8.82**	**-6.34**
Connecticut	n/a	n/a	n/a	n/a	**29.16**	Significant increase	n/a	n/a	n/a	n/a	-8.99	**49.67**	1.81	-6.87
Delaware	n/a	**35.36**	**21.24**	**25.96**	**19.08**	Significant increase	n/a	**35.49**	**15.36**	-6.14	-7.73	**21.36**	**19.85**	**-11.26**
District of Columbia	2.72	**-26.06**	**-49.71**	**-43.31**	**-33.03**	Significant decrease	-2.61	**51.36**	-12.96	**-19.94**	**-29.9**	2.95	-1.89	-5.42
Florida§§	n/a	n/a	n/a	n/a	n/a	Data not available/ not reported	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Georgia	-4.83	**-15.07**	-3.47	-10.05	9.63	No significant change	-2.87	-8.84	0.4	7.06	**-13.33**	3.62	-6.44	**30.48**
Illinois	**16.29**	**7.03**	**11.27**	**-8.57**	**17.05**	Significant increase	3.88	1.82	**29.16**	**-14.87**	**-4.39**	**5.85**	**6.13**	**8.98**
Indiana	**81.36**	**34.82**	**31.34**	4.08	**-20.33**	Significant decrease	**10.41**	**10.48**	**21.98**	**21.88**	**-17.92**	7.63	-3.34	-6.7
Kentucky	**17.61**	**-25.72**	**-27.85**	n/a	n/a	Data not available/ not reported	**43.21**	-1.68	**-10.65**	-6.51	**-9.56**	-4.49	n/a	n/a
Louisiana**	n/a	n/a	n/a	n/a	n/a	Data not available/ not reported	n/a	n/a	n/a	n/a	-0.49	-2.46	2.39	n/a
Maine	**22.39**	8.35	-4.85	**-21.88**	**-24.01**	Significant decrease	-4.14	**18.66**	5.87	1.63	**-15.14**	4.21	-13.08	-1.15
Maryland	**-13.53**	**-6.74**	**-25.77**	**-25.31**	1.62	No significant change	-1.16	**24.83**	**-18.97**	**-13.51**	6.6	-0.65	**-18.47**	**17.67**
Massachusetts	**-14.39**	**-7.58**	2.92	**-17.85**	**-5.79**	Significant decrease	**-11.69**	3.1	**18.98**	**-20.98**	**-4.66**	**14.81**	**-5.03**	**-9.38**
Michigan	n/a	n/a	n/a	n/a	3.69	No significant change	n/a	n/a	n/a	n/a	-3.06	**8.77**	4.56	-5.94

Table of trends continues on next page.

Minnesota	n/a	-3.38	-1.03	**-17.38**	8.34	No significant change	n/a	-2.5	**33.27**	-1.44	**-24.56**	-0.13	11.26	**29.24**
Missouri	-1.42	1.62	7.02	-4.9	1.26	No significant change	-2.07	**10.25**	7.02	**-14.68**	0.94	**16.12**	-4.9	**-9.15**
Nevada	-6.62	3.34	1.71	-9.81	-7.78	No significant change	-8.5	10.86	1.82	-9.59	1.26	9.11	-9.71	-7.56
New Hampshire	**-13.43**	-7.06	**-32.46**	**-23.82**	**-23.83**	Significant decrease	**-17.91**	**29.67**	-8.76	-10.86	-11.87	-5.77	2.91	-10.86
New Jersey	1.47	**-7.19**	**12.65**	**22.16**	**16.16**	Significant increase	**9.48**	**6**	**-6.25**	**-6.73**	0.14	**28.66**	1.66	**-11.32**
New Mexico	-10.48	-12.35	10.88	7.51	-12.81	No significant change	3.28	-5.55	-9.64	1.56	1.11	**19.49**	-12.39	**-17.63**
North Carolina	**13.55**	2.96	-2.74	**-11.14**	**-7.86**	Significant decrease	2.27	**14.35**	**12.69**	**-13.84**	**-7.27**	**8.02**	2.96	**-10.66**
Ohio	-4.3	**-49.41**	**-54.18**	**-19.69**	**-26.98**	Significant decrease	**25.85**	**21.66**	**-31.99**	**-8.1**	**-33.46**	**10.18**	**19.2**	**-16.44**
Oklahoma[§§]	n/a	n/a	n/a	n/a	n/a	Data not available/ not reported	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Pennsylvania	**19.95**	**-22.01**	**-20.43**	**-5.44**	-1.16	No significant change	**18.29**	**25.23**	**-5.85**	**-14**	**-23.09**	**27.78**	**11.88**	**-10.11**
Rhode Island	10.01	-9.33	1.66	6.2	n/a	Data not available/ not reported	0.24	1.69	6.97	0.9	-17.38	14.01	11.75	n/a
Tennessee	n/a	n/a	n/a	**15.6**	3.25	No significant change	n/a	n/a	n/a	**19.42**	**-8.05**	5.49	-0.2	6.65
Utah	n/a	**161.24**	**128.37**	**100.11**	**36.9**	Significant increase	n/a	15.72	14.45	**57.12**	**25.54**	1.16	0.29	7.49
Vermont	n/a	-2.22	**33.23**	-5.16	-20.33	No significant change	n/a	-14.02	**33.46**	-7.42	-7.96	17.15	-4.99	-22.23
Virginia	7.65	**-15.61**	-2.41	5	0.25	No significant change	8.09	**11.27**	-4.47	-6.31	**-15.26**	**28.68**	2.78	**-10.55**
Washington	n/a	n/a	n/a	-2.32	**11.85**	Significant increase	n/a	n/a	n/a	-4.07	-7.93	**15.7**	-4.42	**9.85**
West Virginia	**-42.04**	**-39.17**	**-35.35**	9.57	1.55	No significant change	**-14.46**	-0.6	**-19.98**	**-14.81**	-10.22	5.63	**35.62**	**-21.05**
Wisconsin	**14.25**	**-39.45**	**-23.41**	**-40.51**	3.83	No significant change	**64.48**	0.38	-2.38	**-29.12**	**-12.84**	**26.99**	**-24.18**	**23.73**

[*] Data come from states participating in CDC's Enhanced State Opioid Overdose Surveillance (ESOOS) program and are current as of April 15, 2019. Every three months, states share overdose data from emergency department (ED) visits to CDC, including syndromic or hospital billing data to identify all drug, opioid, and/or heroin overdoses that presented in the ED and demographic characteristics of those who overdosed, such as sex, age, and county of patient residence. States have several options for how they relay their ED data to CDC. States choose to share ED visits for suspected overdoses (e.g., all drug, opioid, and heroin) either directly with CDC using a secure server or they can allow CDC to have access to their states' data in the National Syndromic Surveillance Program's (NSSP) BioSense platform. The number of states included in the calculations of quarterly and yearly change will vary and will increase over time as additional states share data with CDC. Comparisons between states should not be made due to variations in data quality, completeness, and reporting across states.

[†] To account for changes occurring across time, quarterly and yearly trends for the rate of ED visits involving suspected drug overdoses (e.g., ED visits involving drug overdoses divided by total ED visits and multiplied by 10,000) were analyzed by U.S. state. Yearly change, controlling for seasonal effects, was estimated as the change from the final quarter of previous year to the final quarter of the current year (e.g., fourth quarter 2017 to fourth quarter 2018). Quarterly rate changes were calculated for all quarters. Significance testing was conducted using chi-square tests. Data table provides the yearly and quarterly rate changes by state. Bolded estimates indicate statistically significant results between quarters.

[§] The case definitions used by states draw from multiple fields within emergency department (ED) data. For states with ED billing or discharge data visits assigned *International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM*) codes, *International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM)* codes, or SNOMED (Systematized Nomenclature of Medicine—Clinical Terms) codes consistent with any drug, opioid, or heroin overdose were included. In addition, states using syndromic ED data could use the ICD-9-CM, ICD-10-CM, or SNOMED codes to identify overdoses, along with free text fields such as chief complaint, clinical impression, or triage notes. Free text searches included text strings indicating an overdose or poisoning and text strings indicating the involvement of a drug (e.g., "drug overdose"). Common misspellings of key search terms were also included to increase specificity and sensitivity. States either developed their own definitions to capture the specific text and diagnoses used in their facilities or relied on pre-set queries developed by CDC (see March 2018 Vital Signs).

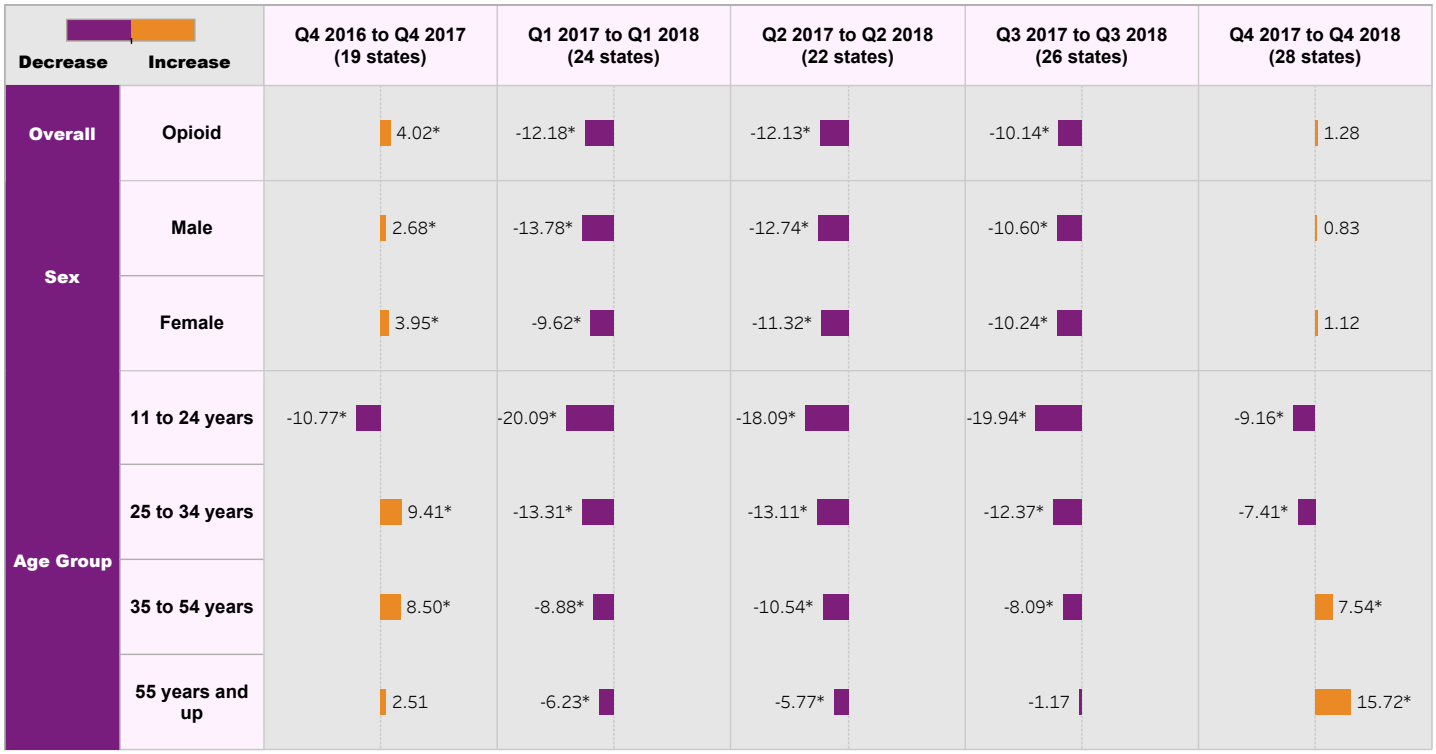
[¶] The following are several important caveats to consider when interpreting the data presented: (1) Data sent from facilities to health departments may be delayed or may stop for a period of time. When facilities begin sharing data again, information about visits during the lapse may never be shared; (2) For syndromic data, information from ~70% of visits arrive within 48 hours as the chief complaint of the visit. However, the chief complaint field may be incomplete. As updates to visits arrive weeks later, relevant overdose discharge diagnosis codes or revised chief complaint text may be received. Therefore, rates may change over time as the visit records are completed and new drug overdose visits are identified; (3) Because these data are not finalized based on toxicological results, they are not considered confirmed cases, but "suspected" overdoses. Data collected from syndromic surveillance should not be interpreted or represented as exact counts; and (4) Data likely represent an undercount, given inaccuracies in coding and missing chief complaint information.

[**] The funded ESOOS state did not provide CDC enough quarters of data to calculate yearly percent change. Some states provided enough data to calculate some quarterly changes.

[§§] The funded ESOOS state does not provide CDC emergency department data.

Annual Percent Changes in Opioid Overdoses for Selected States Providing Data, Q4 2016 to Q4 2018, by Sex and Age Group

CDC s Enhanced State Opioid Overdose Surveillance Program, Data Current as of April 15, 2019



*Statistically Significant

CDC's Enhanced State Opioid Overdose Surveillance (ESOOS) Program:[*] Annual Percent Changes[†] in Opioid Overdoses[§] for Selected States Providing Data,[¶] Q4 2016 (October 1, 2016–December 31, 2016) to Q4 2018 (October 1, 2018–December 31, 2018), by Sex and Age Group

	Yearly Percent Change				
	Q4 2016 to Q4 2017 (19 states)	Q1 2017 to Q1 2018 (24 states)	Q2 2017 to Q2 2018 (22 states)	Q3 2017 to Q3 2018 (26 states)	Q4 2017 to Q4 2018 (28 states)
Overall	**4.02**	**-12.18**	**-12.13**	**-10.14**	1.28
Sex					
Male	**2.68**	**-13.78**	**-12.74**	**-10.6**	0.83
Female	**3.95**	**-9.62**	**-11.32**	**-10.24**	1.12
Age group					
11–24	**-10.77**	**-20.09**	**-18.09**	**-19.94**	**-9.16**
25–34	**9.41**	**-13.31**	**-13.11**	**-12.37**	**-7.41**
35–54	**8.5**	**-8.88**	**-10.54**	**-8.09**	**7.54**
55 and up	2.51	**-6.23**	**-5.77**	-1.17	**15.72**

[*] Data come from states participating in CDC's Enhanced State Opioid Overdose Surveillance (ESOOS) program. Every three months, states share overdose data from emergency department (ED) visits to CDC, including syndromic or hospital billing data to identify all drug, opioid, and/or heroin overdoses that presented in the ED and demographic characteristics of those who overdosed, such as sex, age, and county of patient residence. States have several options for how they relay their ED data to CDC. States choose to share ED visits for suspected overdoses (e.g., all drug, opioid, and heroin) either directly with CDC using a secure server or they can allow CDC to have access to their states' data in the National Syndromic Surveillance Program's (NSSP) BioSense platform. The number of states included in the calculations of quarterly and yearly change will vary and will increase over time as additional states share data with CDC. Comparisons between states should not be made due to variations in data quality, completeness, and reporting across states.

[†] To account for changes occurring across time, quarterly and yearly trends for the rate of ED visits involving suspected drug overdoses (e.g., ED visits involving drug overdoses divided by total ED visits and multiplied by 10,000) were analyzed overall and by sex, age group, and U.S. state. Quarterly rate changes were calculated for all quarters. Yearly change, controlling for seasonal effects, was estimated as the change from the final quarter of previous year to the final quarter of the current year (e.g., fourth quarter 2016 to fourth quarter 2017). Significance testing was conducted using chi-square tests. Data table provides quarterly and yearly estimates of change for all ESOOS states with available data overall, and by sex and age. Bolded estimates indicate statistically significant results between quarters.

[§] The case definitions used by states draw from multiple fields within emergency department (ED) data. For states with ED billing or discharge data visits assigned *International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM)* codes, *International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM)* codes, or SNOMED (Systematized Nomenclature of Medicine—Clinical Terms) codes consistent with any drug, opioid, or heroin overdose were included. In addition, states using syndromic ED data could use the ICD-9-CM, ICD-10-CM, or SNOMED codes to identify overdoses, along with free text fields such as chief complaint, clinical impression, or triage notes. Free text searches included text strings indicating an overdose or poisoning and text strings indicating the involvement of a drug (e.g., "drug overdose"). Common misspellings of key search terms were also included to increase specificity and sensitivity. States either developed their own definitions to capture the specific text and diagnoses used in their facilities or relied on pre-set queries developed by CDC (see March 2018 Vital Signs).

[¶] The following are several important caveats to consider when interpreting the data presented: (1) Data sent from facilities to health departments may be delayed or may stop for a period of time. When facilities begin sharing data again, information about visits during the lapse may never be shared; (2) For syndromic data, information from ~70% of visits arrive within 48 hours as the chief complaint of the visit. However, the chief complaint field may be incomplete. As updates to visits arrive weeks later, relevant overdose discharge diagnosis codes or revised chief complaint text may be received. Therefore, rates may change over time as the visit records are completed and new drug overdose visits are identified; (3) Because these data are not finalized based on toxicological results, they are not considered confirmed cases, but "suspected" overdoses. Data collected from syndromic surveillance should not be interpreted or represented as exact counts; and (4) Data likely represent an undercount, given inaccuracies in coding and missing chief complaint information.

REFERENCE

1. CDC's Enhanced State Opioid Overdose Surveillance (ESOOS) Program, 32 states and the District of Columbia reporting, April 2019.