

Health E-Stat 101: Changes in Drug Overdose Mortality and Selected Drug Type by State: United States, 2022 to 2023

by Matthew F. Garnett, M.P.H., and Arialdi M. Miniño, M.P.H.

Between 2022 and 2023, deaths from drug overdose (drug poisoning) in the United States decreased (1,2). Drug overdoses are a persistent health problem and a large contributor to unintentional injury, which is the fourth leading cause of death in the United States (3–5). This report describes changes in age-adjusted drug overdose death rates between 2022 and 2023 by state (and the District of Columbia) and selected type of drug.

The age-adjusted rate of drug overdose deaths in the United States decreased 4.0% from 2022 (32.6 deaths per 100,000 standard population) to 2023 (31.3) (Table). The jurisdictions with the highest rates in 2023 were West Virginia (81.9) and the District of Columbia (60.7), and the states with the lowest rates were Nebraska (9.0) and South Dakota (11.2) (Figure 1, Table).

Between 2022 and 2023, age-adjusted rates of drug overdose deaths decreased in 20 states and did not change significantly in 25 states (Figure 2, Table). The rate increased between 2022 and 2023 in 6 states: Alabama, Alaska, California, Nevada, Oregon, and Washington.

Nationally, between 2022 and 2023, the age-adjusted rate of drug overdose deaths decreased for deaths involving any opioid and synthetic opioids other than methadone (which includes fentanyl), and increased for deaths involving psychostimulants with abuse potential (which includes methamphetamine) and cocaine (Table). Changes in rates varied by jurisdiction across drug type. Between 2022 and 2023, rates for drug overdose deaths involving any opioid decreased in 20 states and increased in 9 states. Rates for deaths involving synthetic opioids other than methadone decreased in 17 states and increased in 11 states. Rates for deaths involving psychostimulants with abuse potential other than methadone decreased in 9 states and increased in 6 states. Rates for deaths involving cocaine decreased in 3 states and increased in 13 states.

Data source and methods

Data are from the National Vital Statistics System multiple cause-of-death files for 2022 and 2023 (2). Drug poisoning (overdose) deaths were identified using *International Statistical Classification of Diseases, 10th Revision* (ICD–10) underlying cause-of-death codes X40–X44, X60–X64, X85, and Y10–Y14 (6). The type of drug(s) involved was indicated by ICD–10 multiple cause-of-death codes: any opioid (T40.1–T40.4 or T40.6), synthetic opioids other than methadone (T40.4), cocaine (T40.5), and psychostimulants with abuse potential (T43.6).

Age-adjusted death rates were calculated using the direct method and adjusted to the 2000 U.S. standard population (7). Population estimates for 2022 and 2023 were estimated as of July 1, based on the blended base produced by the U.S. Census Bureau. The blended base consists of the blend of vintage 2020 postcensal population estimates based on the 2010 population census, 2020 demographic analysis estimates, and the 2020 decennial census total counts. Statistical significance was assessed using *z* tests with an alpha level of 0.05 (8). For mapping, jurisdiction-specific rates were ranked and classified according to the percentile distribution of all the values. Rates and rate decreases may be underestimated for jurisdictions where the percentage of records with a cause of death pending investigation is higher than in previous years (9).

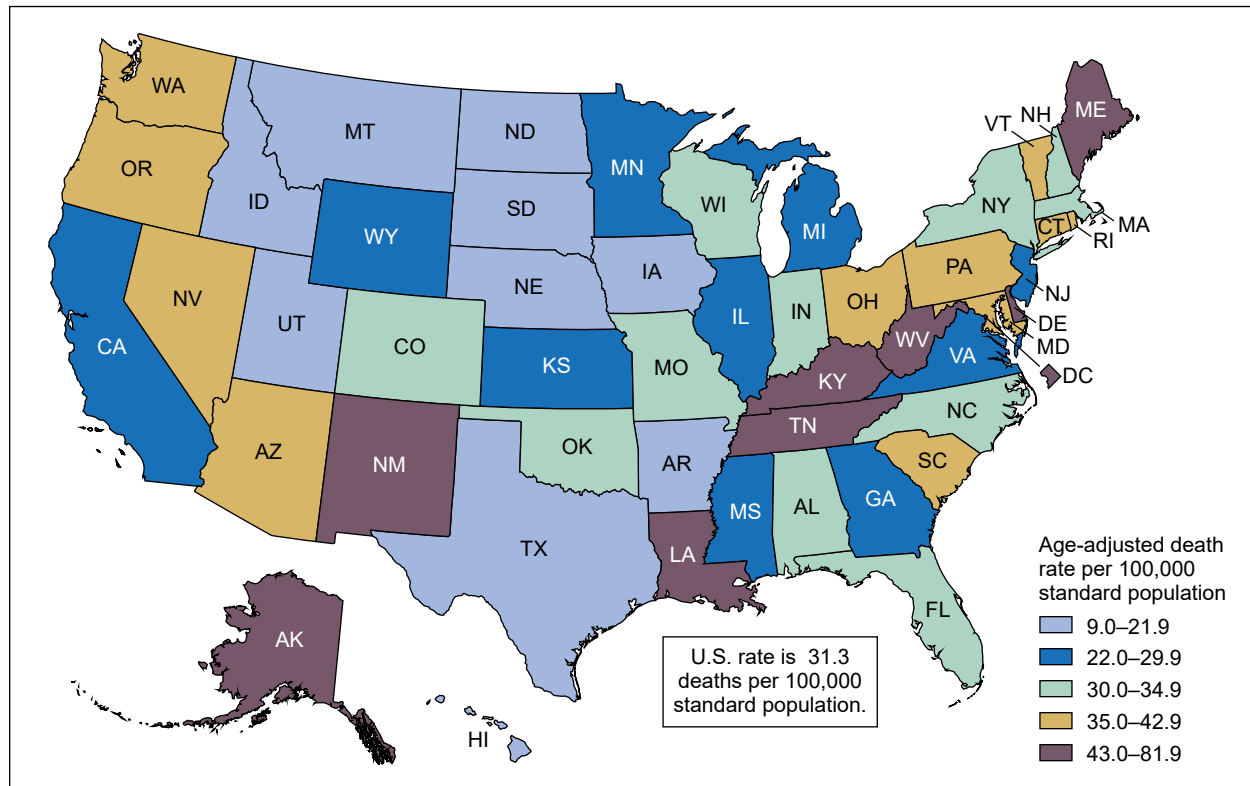
References

1. Garnett MF, Miniño AM. Drug overdose deaths in the United States, 2003–2023. NCHS Data Brief, no 522. Hyattsville, MD: National Center for Health Statistics. 2024. DOI: <https://dx.doi.org/10.15620/cdc/170565>.
2. National Center for Health Statistics. Mortality multiple cause files. 2022–2023.
3. Centers for Disease Control and Prevention. CDC WONDER. 2018–2022 underlying cause of death by single-race categories. 2023.
4. U.S. Department of Health and Human Services, Office of Disease Prevention and Health Promotion. Healthy People 2030 objectives and data: Injury prevention. 2022.
5. Harris KM, Woolf SH, Gaskin DJ. High and rising working-age mortality in the US: A report from the National Academies of Sciences, Engineering, and Medicine. *JAMA* 325(20):2045–6. 2021. Available from: <https://doi.org/10.1001/jama.2021.4073>.
6. World Health Organization. International statistical classification of diseases and related health problems, 10th revision. 2008 ed. 2009.
7. Kochanek KD, Murphy SL, Xu JQ, Arias E. Deaths: Final data for 2020. National Vital Statistics Reports; vol 72 no 10. Hyattsville, MD: National Center for Health Statistics. 2023. DOI: <https://dx.doi.org/10.15620/cdc:131355>.
8. Ingram DD, Malec DJ, Makuc DM, Kruszon-Moran D, Gindi RM, Albert M, et al. National Center for Health Statistics guidelines for analysis of trends. National Center for Health Statistics. *Vital Health Stat* 2(179). 2018.
9. Ahmad FB, Cisewski JA, Rossen LM, Sutton P. Provisional drug overdose death counts. National Center for Health Statistics. 2024.

Suggested citation

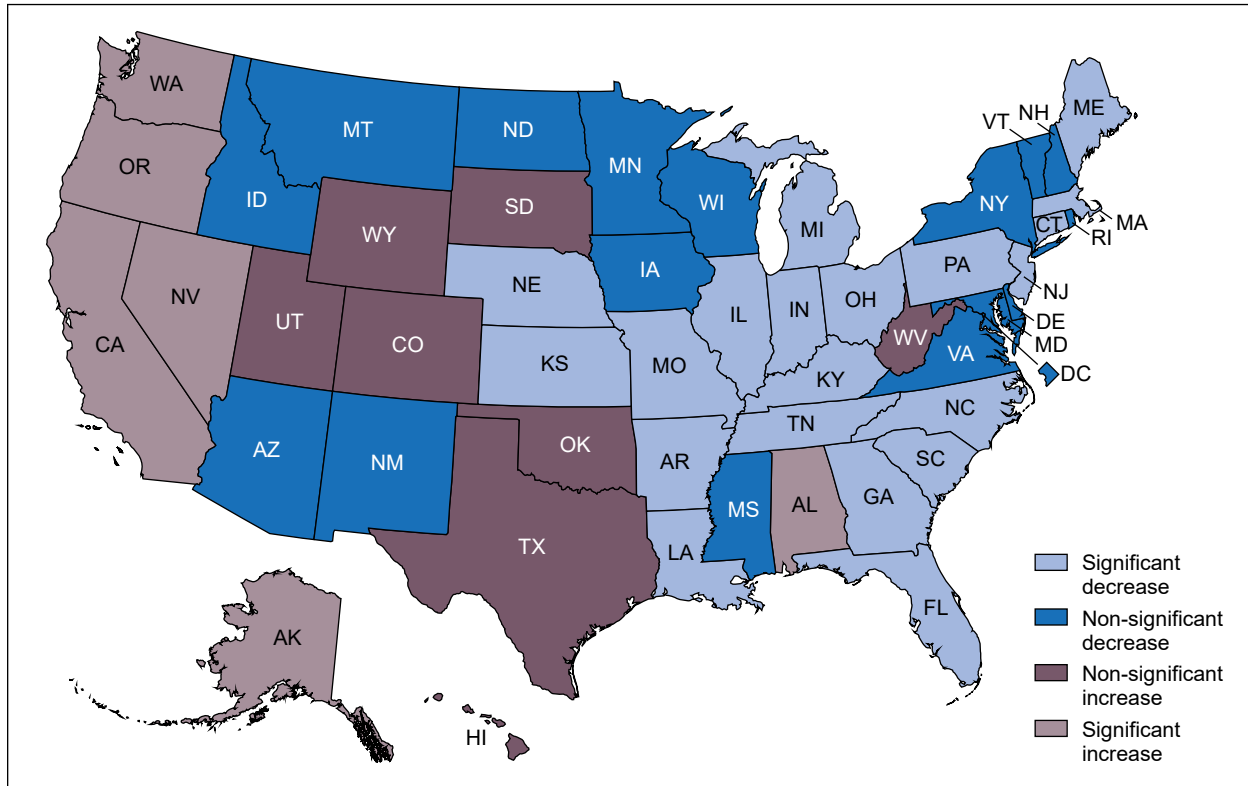
Garnett MF, Miniño AM. Changes in drug overdose mortality and selected drug type by state: United States, 2022 to 2023. NCHS Health E-Stats. 2025. DOI: <https://dx.doi.org/10.15620/cdc/174578>.

Figure 1. Age-adjusted rate of drug overdose deaths in the United States, by state: 2023



NOTES: Drug overdose deaths are identified using the *International Classification of Diseases, 10th Revision* underlying cause-of-death codes X40–X44, X60–X64, X85, and Y10–Y14. Age-adjusted death rates were calculated using the direct method and the 2000 U.S. standard population. Rates and rate decreases may be underestimated for states where the percentage of records with a cause of death pending investigation is higher than in previous years.

SOURCE: National Center for Health Statistics, National Vital Statistics System, mortality data file.

Figure 2. Change in age-adjusted rate of drug overdose deaths, by state: United States, 2022 to 2023

NOTES: Drug overdose deaths are identified using the *International Classification of Diseases, 10th Revision* underlying cause-of-death codes X40–X44, X60–X64, X85, and Y10–Y14. Age-adjusted death rates were calculated using the direct method and the 2000 U.S. standard population. The U.S. age-adjusted rate significantly decreased from 32.6 deaths per 100,000 standard population in 2022 to 31.3 in 2023. Rates and rate decreases may be underestimated for states where the percentage of records with a cause of death pending investigation is higher than in previous years.

SOURCE: National Center for Health Statistics, National Vital Statistics System, mortality data file.

Table. Change in age-adjusted rate of drug overdose deaths, by state and selected drug type: United States, 2022 to 2023

Area	Drug overdose		Any opioid		Synthetic opioids other than methadone		Psychostimulants with abuse potential		Cocaine	
	2022	2023	2022	2023	2022	2023	2022	2023	2022	2023
U.S. total	32.6	\$31.3	25.0	\$24.0	22.7	\$22.2	10.4	†10.6	8.2	†8.6
Alabama	31.5	†33.9	23.4	†25.7	21.1	†23.8	13.0	‡13.2	5.2	†6.2
Alaska	34.3	†49.4	25.1	†40.1	21.5	†38.2	19.6	†27.0	2.9	‡4.1
Arizona	37.2	‡36.1	27.4	‡27.3	24.9	‡25.1	18.8	‡19.0	3.3	‡3.4
Arkansas	21.7	\$17.7	13.8	\$10.9	11.4	\$9.4	9.4	\$6.8	2.5	\$1.7
California	26.9	†27.9	18.4	†19.7	16.4	†18.1	14.2	†15.0	3.3	†3.8
Colorado	29.8	†30.6	19.4	†21.6	16.1	†19.0	11.8	†13.3	4.3	†4.7
Connecticut	40.3	\$35.2	36.8	\$31.9	34.3	\$30.1	2.3	‡2.5	15.9	‡16.8
Delaware	55.3	‡53.0	50.2	‡47.0	47.1	‡44.6	7.6	‡6.5	22.0	†26.5
District of Columbia	64.3	‡60.7	48.9	‡49.6	46.4	‡48.7	*	3.3	32.0	‡31.9
Florida	35.2	\$31.7	26.5	\$23.3	24.3	\$21.5	9.2	\$8.5	9.8	\$8.9
Georgia	24.9	\$23.6	18.7	\$17.5	16.4	‡15.7	9.2	‡9.1	5.3	‡5.3
Hawaii	18.6	‡21.4	7.1	†9.4	5.4	†8.1	11.8	‡12.9	2.1	‡2.1
Idaho	20.7	‡20.5	14.7	‡14.4	11.2	‡11.8	7.5	‡8.4	*	1.2
Illinois	30.0	\$27.3	24.9	\$22.5	22.8	\$20.6	4.5	‡4.6	11.4	‡11.1
Indiana	41.0	\$34.2	32.0	\$26.4	29.9	\$24.7	14.9	\$12.5	7.1	†7.1
Iowa	15.3	‡14.9	7.9	‡8.4	6.9	‡7.0	6.9	‡7.3	1.5	‡1.2
Kansas	26.5	\$22.8	18.2	\$14.9	15.4	\$12.8	12.1	\$9.8	2.9	‡2.5
Kentucky	53.2	\$48.0	41.8	\$38.1	38.5	\$35.0	24.2	\$21.2	5.7	†6.8
Louisiana	54.5	\$50.6	31.6	\$26.0	28.1	\$24.1	15.3	‡14.5	7.5	‡6.9
Maine	54.3	\$44.9	48.2	\$39.3	44.7	\$37.7	18.0	‡15.0	16.7	‡17.6
Maryland	40.3	‡39.3	35.3	‡34.1	32.7	‡31.8	2.4	‡2.4	15.5	‡16.7
Massachusetts	37.4	\$33.6	33.1	\$30.0	31.8	\$28.7	3.3	‡3.1	17.4	‡17.5
Michigan	30.7	\$28.9	24.9	\$23.4	23.0	‡22.0	5.4	‡5.5	10.9	‡11.6
Minnesota	24.8	‡23.6	18.7	‡18.1	17.3	‡17.0	9.4	‡9.9	3.7	‡4.2
Mississippi	27.6	‡25.3	20.0	‡18.1	18.0	‡16.6	12.0	‡11.0	3.8	‡4.1
Missouri	36.9	\$33.5	27.1	\$25.0	25.3	\$23.4	12.7	‡12.5	5.2	‡5.1
Montana	19.4	†17.1	12.3	†12.0	9.6	†9.5	8.6	†8.5	*	*
Nebraska	11.8	\$9.0	6.6	\$4.3	5.5	\$3.3	4.1	‡3.2	*	*
Nevada	30.3	†38.1	20.0	†26.5	14.4	†22.2	15.6	†21.2	3.1	†4.3
New Hampshire	36.0	‡32.7	32.1	‡30.2	31.1	‡29.0	8.1	\$5.4	4.8	‡5.6
New Jersey	31.6	\$28.3	28.1	\$25.0	26.5	\$23.4	4.0	\$3.1	12.4	‡12.5
New Mexico	50.3	‡48.9	36.5	‡35.9	32.4	‡33.0	24.7	‡25.1	9.4	‡8.2
New York	31.4	‡31.1	26.7	‡26.2	24.7	‡24.5	3.5	‡3.7	14.1	†15.7
North Carolina	41.8	\$33.7	35.7	\$28.4	33.2	\$26.8	12.9	\$10.8	14.6	\$12.3
North Dakota	19.8	†16.4	13.4	†11.7	11.9	†10.2	5.8	‡5.4	*	*
Ohio	45.6	\$41.6	38.0	\$34.0	35.9	\$32.2	12.8	‡12.0	14.2	‡15.1
Oklahoma	30.7	‡32.4	19.8	‡21.7	17.0	†19.7	15.8	‡16.6	2.2	†3.0
Oregon	31.1	†40.8	22.4	†32.1	19.8	†29.8	17.1	†24.4	2.7	†3.5
Pennsylvania	40.9	\$37.1	31.8	\$28.4	29.9	\$26.7	7.9	\$7.1	13.8	‡13.6
Rhode Island	38.1	‡37.5	30.7	‡32.2	28.5	‡29.5	3.6	‡4.2	18.2	‡20.5

See footnotes at end of table.

Table. Change in age-adjusted rate of drug overdose deaths, by state and selected drug type: United States, 2022 to 2023—Con.

Area	Drug overdose		Any opioid		Synthetic opioids other than methadone		Psychostimulants with abuse potential		Cocaine	
	2022	2023	2022	2023	2022	2023	2022	2023	2022	2023
South Carolina	44.7	§41.3	36.6	§33.4	33.2	§30.7	16.4	†15.1	10.5	†11.0
South Dakota	11.3	†11.2	5.5	†5.7	4.6	†5.1	5.1	†3.9	*	*
Tennessee	56.0	§52.3	45.3	§42.9	42.2	†40.8	23.2	†22.5	10.3	†12.4
Texas	18.2	†18.5	10.6	†10.5	8.2	†8.7	7.5	†7.7	4.6	†5.0
Utah	19.8	†21.4	13.5	†15.4	6.7	†10.3	8.6	†9.2	1.2	†2.1
Vermont	45.9	†42.3	40.9	†38.2	38.8	†36.4	4.6	†3.5	17.6	†21.4
Virginia	28.8	†28.5	24.6	†24.1	23.1	†22.8	6.8	†6.6	10.2	†11.2
Washington	33.7	†42.4	25.9	†35.0	23.5	†33.0	17.0	†23.3	4.4	†7.1
West Virginia	80.9	†81.9	70.5	†71.6	67.0	†69.2	44.3	†46.2	10.2	†12.3
Wisconsin	31.8	†30.6	25.9	†25.1	23.9	†23.3	7.3	†7.2	11.7	†12.9
Wyoming	21.9	†23.7	14.4	†15.0	10.9	†10.3	8.8	†9.3	*	*

† Significant increase between 2022 and 2023.

‡ No significant change between 2022 and 2023.

§ Significant decrease between 2022 and 2023.

* Estimate does not meet National Center for Health Statistics reliability criteria of 20 deaths or more and, as a result, is not reported.

NOTES: Drug overdose deaths are identified using the *International Classification of Diseases, 10th Revision* underlying cause-of-death codes X40–X44, X60–X64, X85, and Y10–Y14. Drug overdose deaths involving selected drug categories are identified by specific multiple cause-of-death codes: any opioid, T40.0–T40.4 or T40.6; cocaine, T40.5; psychostimulants, T43.6; and synthetic opioids other than methadone, T40.4. Deaths involving more than one drug category are counted in both categories. Rates and rate decreases may be underestimated for states where the percentage of records with a cause of death pending investigation is higher than in previous years. Age-adjusted death rates were calculated using the direct method and the 2000 U.S. standard population. Rates are per 100,000 standard population.

SOURCE: National Center for Health Statistics, National Vital Statistics System, mortality data file.