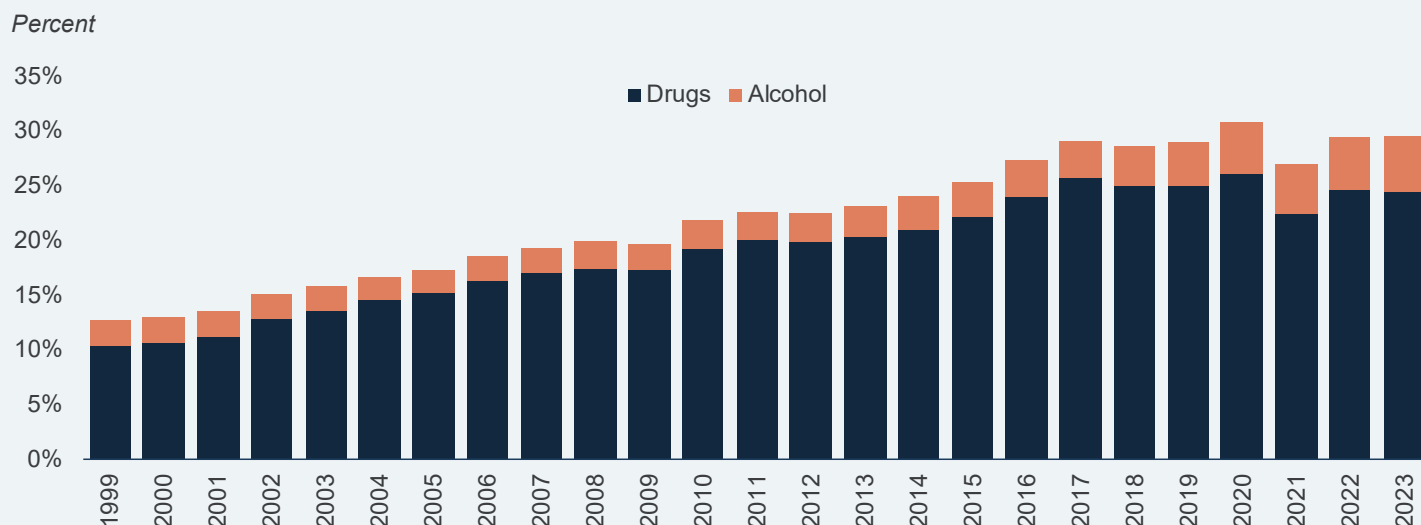


The following appendix is part of a Commonwealth Fund publication, Nicole Amodio, Marie Thoma, and Eugene Declercq, “How the U.S. Can Better Understand – and Prevent – Maternal Deaths Related to Substance Use,” *To the Point* (blog), Commonwealth Fund, June 3, 2025. <https://www.commonwealthfund.org/blog/2025/how-us-can-better-understand-and-prevent-maternal-deaths-related-substance-use>

APPENDIX EXHIBIT 1

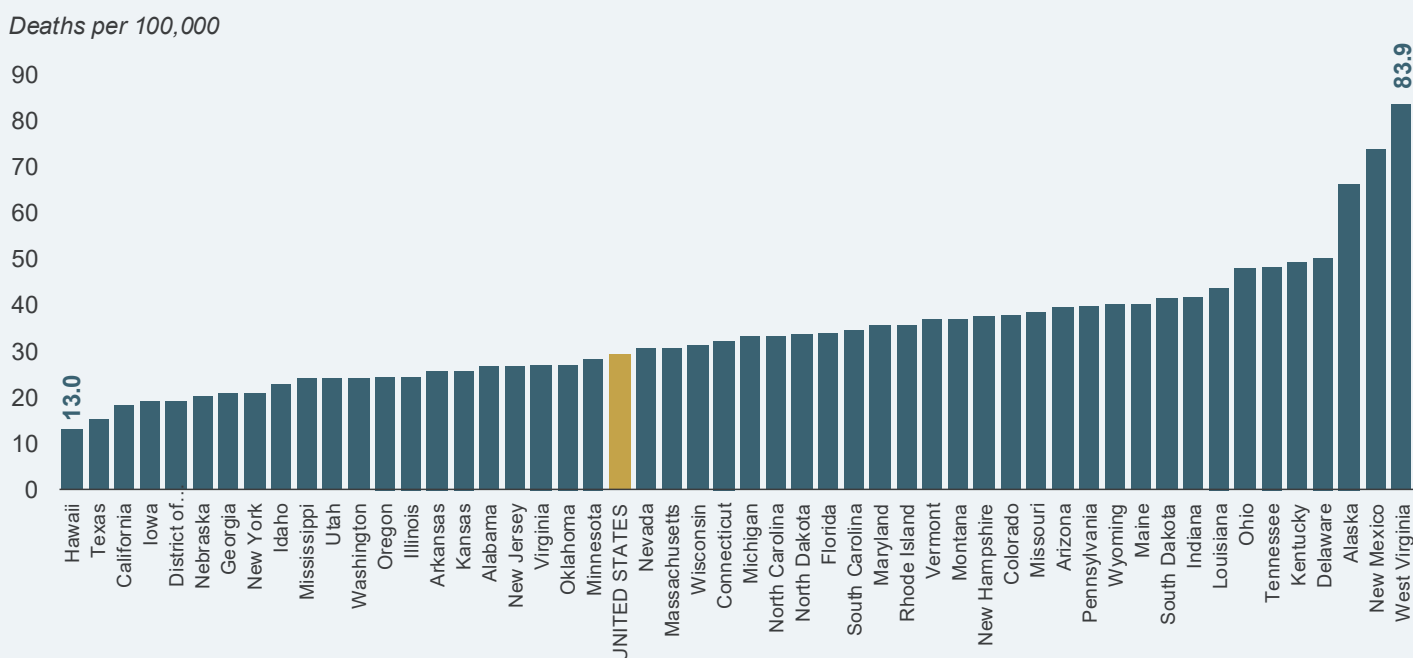
Rapidly Increasing Proportions of Deaths with Drug and Alcohol Use as Underlying Cause, Women Ages 15–44, United States, 1999–2023



Data: CDC, NCHS, NVSS, Provisional Mortality on CDC WONDER Online Database. Final Multiple Cause of Death Files, 2018–2022. Includes Drug poisonings (overdose) Unintentional (X40–X44); Suicide (X60–X64); Undetermined (Y10–Y14); and Alcohol-induced causes. Accessed at <http://wonder.cdc.gov/mcd-icd10-provisional.html> on Jan. 29, 2025.

APPENDIX EXHIBIT 2

State Variation in Deaths per 100,000 Women Ages 15–44, with Drug- and Alcohol-Induced Causes, United States, 2019–2021



Data: CDC, NCHS, NVSS, Provisional Mortality on CDC WONDER Online Database. Final Multiple Cause of Death Files, 2018–2022. Includes Drug poisonings (overdose) Unintentional (X40–X44); Suicide (X60–X64); Undetermined (Y10–Y14); and Alcohol-induced causes. Accessed at <http://wonder.cdc.gov/mcd-icd10-provisional.html> on Jan. 9, 2025.

APPENDIX EXHIBIT 3

State MMRC Report Data Related to Substance Use

| State and years reported | Pregnancy-related | |
|--------------------------|---|---|
| | Substance use/overdose cause of death N (% of all deaths) (29 states reporting) | Substance use contributing factor N (% of all deaths) (21 states reporting) |
| Alabama 2018–2019 | n=1 (4.2%) | n=5 (20.1%) |
| Alaska 2015–2019 | | |
| Arizona 2018–2019 | n=14 (32.6%)* | n=18 (41.9%) |
| Arkansas 2018–2020 | | n=9 (23.7%) |
| California 2008–2016 | | |
| Colorado 2016–2020 | n=11 (13.8%) | n=32 (40.0%) |
| Connecticut 2015–2020 | n=13 (41.9%)* | n=11 (35.5%) |
| Delaware 2019–2023 | n=4 (33.3%) | n=5 (45.5%) |
| Florida 2020 | | |
| Georgia 2018–2020 | n=7 (6.2%) | n=14 (12.4%) |
| Hawaii 2021–2022 | | |
| Idaho 2021 | 2021: n=2 (22.2%) 2018–2021: n=11 (44.0%)* | |
| Illinois 2018–2020 | n=36 (31.9%) | |
| Indiana 2018–2021 | n=6 (10.5%)* | |
| Iowa July 2018–2019 | | |
| Kansas 2016–2020 | n=3 (10.3%)* | n=8 (27.6%) |
| Kentucky 2017–2020 | | |
| Louisiana 2020 | n=3 (20.0%) | n=4 (26.7%) |
| Maine 2018–2021 | | |
| Maryland 2020 | n=4 (23.5%) | |
| Massachusetts 2020–2021 | n=9 (36.0%) | n=14 (56.0%) |
| Michigan 2016–2020 | n=12 (11.3%) | |
| Minnesota 2017–2019 | n=2 (11.1%)* | |
| Mississippi 2016–2020 | | n=26 (40.0%) |
| Missouri 2017–2021 | n=15 (13.0%) | n=36 (31.3%) |
| Montana 2003–2009 | | |
| Nebraska 2017–2021 | | |
| Nevada 2020–2021 | | |
| New Hampshire 2018–2022 | n=11 (52.4%) | n=11 (52.4%) |
| New Jersey 2016–2018 | | |
| New Mexico 2015–2018 | n=6 (26.0%)* | n=10 (40.0%) |
| New York 2018–2020 | n=18 (14.9%)* | n=14 (11.6%) |
| North Carolina 2018–2019 | n=20 (26.3%) | n=29 (38.2%) |
| North Dakota 2022–2023 | | |
| Ohio 2017–2018 | n=32 (44.4%) | |
| Oklahoma 2017–2021 | | |
| Oregon 2018–2020 | n=4 (23.5%) | n=7 (41.2%) |
| Pennsylvania 2020 | n=14 (45.2%)* | n=14 (45.2%) |
| Rhode Island 2018–2023 | | |
| South Carolina 2018–2020 | 15.0%* | 25.0% ^c |
| South Dakota 2012–2021 | | |
| Tennessee 2017–2021 | n=18 (10.8%) | 2021: n=17 (32.1%) |
| Texas 2020 | 2020: n=6 (7.1%)* 2019–2020: n=20 (13.5%)* | 2020: n=6 (7.1%) |
| Utah 2015–2016 | n=10 (38.5%) | |
| Vermont 2012–2023 | | |
| Virginia 2021 | | |
| Washington 2014–2020 | n=7 (7.2%) | |
| West Virginia 2018–2019 | | |
| Wisconsin 2020 | n=7 (33.3%) | |
| Wyoming 2018–2020 | | n=6 (100%) |

Notes: The “Substance use/Overdose cause of death” column includes deaths that had an overdose or substance use cause of pregnancy-related death. Substance use deaths were predominantly categorized as an underlying cause of death. Not every report specified what type of overdose occurred, but among those that did, reports predominately identified unintentional overdose or undetermined intent overdose. Missouri includes both poisonings and overdoses in this category, and Utah specifies these as “accidental drug deaths.” South Carolina did not include the number of substance use causes or contributing factors and authors were not able to calculate the number.

* In Arizona, Connecticut, Idaho, Indiana, Kansas, Minnesota, New Mexico, New York, Pennsylvania, South Carolina, and Texas, these values are instances where the underlying cause of death listed by states was mental health conditions. This category includes substance use deaths but also includes other mental health conditions.

Data: Authors’ analysis of state MMRC reports. In some states, either no percentage or no number of substance related deaths was listed; therefore, the remaining percentage or number was a calculation by the authors.