

The following appendix is part of a Commonwealth Fund blog post, Evan D. Gumas, “U.S. Overdose Deaths Remain Higher Than in Other Countries – Trend-Tracking and Harm-Reduction Policies Could Help,” *To the Point* (blog), Commonwealth Fund, Jan. 9, 2025. <https://www.commonwealthfund.org/blog/2025/us-overdose-deaths-remain-higher-other-countries-trend-tracking-and-harm-reduction>

APPENDIX

Source Notes: Drug-Related Deaths

Country	Mortality type	Overdose/ drug- related deaths	Total population*	Deaths per 1,000,000 total population (unadjusted)	Overdose/ drug- related deaths	Deaths per 1,000,000 total population (unadjusted)	Overdose/ drug- related deaths	Deaths per 1,000,000 total population (unadjusted)	Overdose/ drug- related deaths	Deaths per 1,000,000 total population (unadjusted)	Percent change in mortality total	Percent change in mortality total	Deaths (any age) per 1,000,000 population ages 15–64 (unadjusted)
		2022	2022	2022	2021	2021	2020	2020	2019	2019	2021 to 2022	2019 to 2022	2022
Argentina	Drug overdose deaths	135	46,234,830	2.9	97	2.1	85	1.9	59	1.3	39%	129%	4.6
<p>Sources: Mortality – Ministerio de Salud de la Nación, Argentina (received Apr. 15, 2024). Population – <i>Estimated population as of July 1 of each calendar year by sex. Years 2010–2040</i> (National projections, Instituto Nacional de Estadística y Censos).</p>													
Australia	Drug overdose deaths	1,765	26,014,399	67.8	1,732	67.4	1,897	74.0	1,921	75.8	2%	-8%	88.0
<p>Sources: Mortality – <i>Trends in Overdose and Other Drug-Induced Deaths in Australia, 2003–2022</i> (National Illicit Drug Indicators Project, May 2024). Population – <i>National, state and territory population</i> (Australian Bureau of Statistics, Dec. 2023).</p>													
Botswana	Drug overdose deaths	22	2,359,609	9.3	23	9.5	Suppressed	Unreliable	Suppressed	Unreliable	-4%	–	14.8
<p>Sources: Mortality – Statistics Botswana (received Oct. 15, 2024). Population – <i>Population & Housing Census of Botswana</i> (Statistics Botswana, Aug. 2022).</p>													
Brazil	Drug overdose deaths	1,882	212,583,750	8.9	1,807	8.5	1,684	8.0	1,454	6.9	4%	29%	12.5
<p>Sources: Mortality – <i>ICD-10 Mortality Monitoring Panel</i> (Department of Epidemiological Analysis and Surveillance of Noncommunicable Diseases, Mortality Information System, Mar. 2024). Population – <i>Population Estimates</i> (IBGE, 2024).</p>													
Canada**	Apparent opioid toxicity deaths	7,525	38,939,056	193.3	8,006	209.4	6,423	168.9	3,711	98.6	-6%	103%	295.0
<p>Sources: Mortality – <i>Opioid and Stimulant-Related Harms in Canada</i> (Public Health Agency of Canada, Dec. 2023). Population – <i>Population Estimates on July 1, by age and gender</i> (Statistics Canada, Feb. 2024).</p>													

Country	Mortality type	Overdose/ drug- related deaths	Total population*	Deaths per 1,000,000 total population (unadjusted)	Overdose/ drug- related deaths	Deaths per 1,000,000 total population (unadjusted)	Overdose/ drug- related deaths	Deaths per 1,000,000 total population (unadjusted)	Overdose/ drug- related deaths	Deaths per 1,000,000 total population (unadjusted)	Percent change in mortality total	Percent change in mortality total	Deaths (any age) per 1,000,000 population ages 15–64 (unadjusted)
		2022	2022	2022	2021	2021	2020	2020	2019	2019	2021 to 2022	2019 to 2022	2022
Colombia	Drug overdose deaths	319	51,874,032	6.1	291	5.7	302	6.0	298	6.0	10%	7%	8.8
<p>Sources: Mortality – National Administrative Department of Statistics, Colombia (received Apr. 16, 2024). Population – <i>Standard Population Projections</i> (United Nations Department of Economic and Social Affairs Population Division, 2024).</p>													
Estonia	Drug-related deaths***	80	1,331,796	60.1	39	29.3	31	23.3	27	20.4	105%	196%	95.0
<p>Sources: Mortality – Tervise Arengu Instituut, Estonia (received Sept. 18, 2024). Population – <i>Statistical Database</i> (Statistics Estonia, May 2024).</p>													
Egypt	Drug overdose deaths	463	102,872,283	4.5	524	5.2	291	2.9	254	2.6	-12%	82%	7.3
<p>Sources: Mortality – Central Agency for Public Mobilization and Statistics, Egypt (received Oct. 8, 2024). Population – <i>Annual Bulletin: Egypt in Figures, Population 2022</i> (CAPMAS, Mar. 2024).</p>													
Finland	Drug overdose deaths	397	5,563,970	71.4	420	75.7	433	78.2	413	74.7	-5%	-4%	115.8
<p>Sources: Mortality – <i>Causes of Death</i> (Statistics Finland, 2023). Population – <i>Population and society</i> (Statistics Finland, Apr. 2024).</p>													
France	Drug-induced deaths	638	68,034,996	9.4	627	9.2	567	8.4	503	7.5	2%	27%	15.2
<p>Sources: Mortality – <i>Deaths Related to Drug and Substance Abuse</i> (Agence nationale de sécurité du médicament et des produits de santé DRAMES Survey, May 2024). Population – <i>Demography – Average population of the year</i> (French National Institute of Statistics and Economic Studies, Jan. 2023).</p>													
Georgia	Drug overdose deaths	44	3,712,502	11.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	18.6
<p>Sources: Mortality – Commonwealth Fund analysis of World Health Organization Mortality Database (Feb. 2024). Population – <i>Population</i> (National Statistics Office of Georgia, 2024).</p>													
Germany	Drug-related deaths***	1,990	84,079,811	23.7	1,826	22.0	1,581	19.0	1,398	16.8	9%	42%	37.1
<p>Sources: Mortality – <i>Commissioner of the Federal Government for Drug and Addiction Policy</i> (May 2023). Population – <i>Population by nationality and sex 2023 (quarterly figures)</i> (Statistisches Bundesamt, Destatis, 2023).</p>													

Country	Mortality type	Overdose/ drug- related deaths	Total population*	Deaths per 1,000,000 total population (unadjusted)	Overdose/ drug- related deaths	Deaths per 1,000,000 total population (unadjusted)	Overdose/ drug- related deaths	Deaths per 1,000,000 total population (unadjusted)	Overdose/ drug- related deaths	Deaths per 1,000,000 total population (unadjusted)	Percent change in mortality total	Percent change in mortality total	Deaths (any age) per 1,000,000 population ages 15–64 (unadjusted)
		2022	2022	2022	2021	2021	2020	2020	2019	2019	2021 to 2022	2019 to 2022	2022
Guam (Guåhan)	Drug overdose deaths	Suppressed	165,180	Unreliable	Suppressed	Unreliable	Suppressed	Unreliable	Suppressed	Unreliable	–	–	–
<p>Sources: Mortality – <i>U.S. Territories Mortality Multiple Cause Files</i> (National Center for Health Statistics, Dec. 2024). Population – <i>Population, total – Guam</i> (World Bank Group, 2024).</p>													
Hungary	Drug overdose deaths	314	9,689,010	32.4	299	30.7	295	30.2	315	32.2	5%	0%	99.4
<p>Sources: Mortality – Commonwealth Fund analysis of World Health Organization Mortality Database (Feb. 2024). Population – <i>Population and vital events</i> (Hungarian Central Statistical Office, 2024).</p>													
Iceland	Drug overdose deaths	34	364,917	93.2	47	131.2	37	104.5	30	85.8	-28%	13%	141.9
<p>Sources: Mortality – <i>A number of deaths (ICD-10) 1996–2022</i> (Directorate of Health Iceland, Oct. 2023). Population – <i>Population – key figures 1703–2024</i> (Statistics Iceland, 2024).</p>													
Japan	Drug overdose deaths	771	124,947,000	6.2	762	6.1	670	5.3	706	5.6	1%	9%	8.4
<p>Sources: Mortality – <i>Vital Statistics / Vital Statistics of Japan, Final data, General mortality</i> (Statistics of Japan, Sept. 2023). Population – <i>Population Estimates, Annual Report, Yearly</i> (Statistics of Japan, Feb. 2024).</p>													
Lithuania	Drug overdose deaths	137	2,834,340	48.3	118	42.0	87	30.9	104	36.9	16%	32%	74.9
<p>Sources: Mortality – Commonwealth Fund analysis of World Health Organization Mortality Database (Feb. 2024). Population – <i>Detailed Statistics</i> (Official Statistics Portal, 2024).</p>													
Netherlands	Drug overdose deaths	332	17,811,291	18.6	298	16.9	295	16.9	252	14.5	11%	32%	29.2
<p>Sources: Mortality – <i>5.7.3 Mortality in the Netherlands</i> (National Drug Monitor, Feb. 2024). Population – <i>Population dynamics; month and year</i> (CBS Netherlands, Feb. 2024).</p>													
New Zealand	Drug overdose deaths	163	5,124,100	31.8	171	33.5	150	29.5	124	24.9	-5%	31%	49.1
<p>Sources: Mortality – <i>Preventing overdoses in Aotearoa</i> (NZ Drug Foundation, 2023). Population – <i>Population</i> (Stats NZ, Tatauranga Aotearoa, Dec. 2023).</p>													

Country	Mortality type	Overdose/ drug- related deaths	Total population*	Deaths per 1,000,000 total population (unadjusted)	Overdose/ drug- related deaths	Deaths per 1,000,000 total population (unadjusted)	Overdose/ drug- related deaths	Deaths per 1,000,000 total population (unadjusted)	Overdose/ drug- related deaths	Deaths per 1,000,000 total population (unadjusted)	Percent change in mortality total	Percent change in mortality total	Deaths (any age) per 1,000,000 population ages 15–64 (unadjusted)
		2022	2022	2022	2021	2021	2020	2020	2019	2019	2021 to 2022	2019 to 2022	2022
Norway	Drug- induced deaths***	321	5,425,270	59.2	247	45.8	331	61.7	275	51.6	30%	17%	91.2
<p>Sources: Mortality – <i>Drug-induced deaths in Norway</i> (Norwegian Institute of Public Health, June 2023). Population – <i>Population</i> (Statistics Norway, 2022).</p>													
Panama	Drug overdose deaths	Suppressed	4,395,414	Unreliable	Suppressed	Unreliable	Suppressed	Unreliable	Suppressed	Unreliable	–	–	–
<p>Sources: Mortality – Instituto Nacional de Estadística y Censo, Estadísticas Vitales, Panama (received Oct. 28, 2024). Population – <i>Vital Statistics – Volume III – Deaths 2022</i> (Instituto Nacional de Estadística y Censo, Jan. 2024).</p>													
Philippines	Drug overdose deaths	134	110,939,849	1.2	131	1.2	67	0.6	102	1.0	2%	31%	1.9
<p>Sources: Mortality – <i>Vital Statistics</i> (Philippine Statistics Authority, Oct. 2023). Population – <i>Population Projection Statistics</i> (Philippine Statistics Authority, Jan. 2024).</p>													
Portugal	Drug overdose deaths	69	10,467,366	6.6	74	7.1	51	4.9	63	6.1	-7%	10%	10.4
<p>Sources: Mortality – <i>Yearly Report 2022: The Situation of the Country in Matters of Drugs and Drug Addictions</i> (ICAD, Jan. 2024). Population – <i>Demographic Statistics – 2022</i> (Instituto Nacional de Estatística, Statistics Portugal, 2023).</p>													
Puerto Rico	Drug overdose deaths	792	3,221,789	245.8	639	195.8	156	47.9	175	54.8	24%	353%	384.2
<p>Sources: Mortality – <i>U.S. Territories Mortality Multiple Cause Files</i> (National Center for Health Statistics, Dec. 2024). Population – <i>Puerto Rico</i> (United States Census Bureau, 2024).</p>													
Qatar	Drug overdose deaths	Suppressed	2,932,241	Unreliable	Suppressed	Unreliable	Suppressed	Unreliable	Suppressed	Unreliable	–	–	–
<p>Sources: Mortality – Commonwealth Fund analysis of World Health Organization Mortality Database (Feb. 2024). Population – <i>Population</i> (National Planning Council, 2023).</p>													
Saudi Arabia	Drug overdose deaths	105	32,175,224	3.3	63	2.0	N/A	N/A	N/A	N/A	67%	N/A	4.5
<p>Sources: Mortality – Commonwealth Fund analysis of World Health Organization Mortality Database (Feb. 2024). Population – <i>Population 2010–2022</i> (Saudi Census, 2024).</p>													

Country	Mortality type	Overdose/ drug- related deaths	Total population*	Deaths per 1,000,000 total population (unadjusted)	Overdose/ drug- related deaths	Deaths per 1,000,000 total population (unadjusted)	Overdose/ drug- related deaths	Deaths per 1,000,000 total population (unadjusted)	Overdose/ drug- related deaths	Deaths per 1,000,000 total population (unadjusted)	Percent change in mortality total	Percent change in mortality total	Deaths (any age) per 1,000,000 population ages 15–64 (unadjusted)
		2022	2022	2022	2021	2021	2020	2020	2019	2019	2021 to 2022	2019 to 2022	2022
Serbia	Drug overdose deaths	66	6,797,105	9.7	75	10.9	80	11.5	86	12.3	-12%	-23%	15.3
<p>Sources: Mortality – Commonwealth Fund analysis of World Health Organization Mortality Database (Feb. 2024). Population – <i>Estimates of population</i> (Statistical Office of the Republic of Serbia, 2024).</p>													
Spain	Drug overdose deaths	1,472	48,085,361	30.6	1,339	27.8	1,333	28.1	1104	23.3	10%	33%	46.2
<p>Sources: Mortality – <i>Death statistics according to cause of death. Results</i> (Instituto Nacional de Estadística, Dec. 2023). Population – <i>Population Continuous Statistics. Latest data</i> (Instituto Nacional de Estadística, Jan. 2024).</p>													
Sweden	Drug overdose deaths	860	10,521,556	81.7	774	74.1	830	80.0	905	87.6	11%	-5%	131.4
<p>Sources: Mortality – <i>Sweden Statistical Database, Cause of Death</i> (Socialstyrelsen, June 2023). Population – <i>Population and Population Changes 1749–2023</i> (Statistics Sweden, Feb. 2024).</p>													
Switzerland	Drug-related deaths	160	8,815,385	18.2	147	16.8	142	16.4	141	16.4	9%	13%	27.6
<p>Sources: Mortality – <i>Drug-related deaths</i> (Federal Office of Public Health, Nov. 2023). Population – <i>Population</i> (Swiss Federal Statistical Office, Aug. 2023).</p>													
United Kingdom (England)	Drug poisoning deaths	4,585	57,112,500	80.3	4,538	80.2	4,320	76.7	4,129	73.4	1%	11%	125.3
<p>Sources: Mortality – <i>Deaths related to drug poisoning in England and Wales: 2021 registrations</i> (Office for National Statistics, Dec. 2023). Population – <i>Population and household estimates, England and Wales: mid-2022</i> (Office for National Statistics, Nov. 2023).</p>													
United Kingdom (Wales)	Drug poisoning deaths	319	3,132,700	101.8	322	103.7	224	72.2	243	78.7	-1%	31%	163.9
<p>Sources: Mortality – <i>Deaths related to drug poisoning in England and Wales: 2021 registrations</i> (Office for National Statistics, Dec. 2023). Population – <i>Population and household estimates, England and Wales: mid-2022</i> (Office for National Statistics, Nov. 2023).</p>													
United Kingdom (Northern Ireland)	Drug-related deaths	154	1,910,543	80.6	213	111.8	218	114.7	191	100.6	-28%	-19%	127.3
<p>Sources: Mortality – <i>Drug-related and drug-misuse deaths in Northern Ireland, 2012 to 2022</i> (Northern Ireland Statistics and Research Agency, Jan. 31, 2024). Population – <i>2022 Mid-Year Population Estimates for Northern Ireland</i> (Northern Ireland Statistics and Research Agency, Aug. 2023).</p>													

Country	Mortality type	Overdose/ drug- related deaths	Total population*	Deaths per 1,000,000 total population (unadjusted)	Overdose/ drug- related deaths	Deaths per 1,000,000 total population (unadjusted)	Overdose/ drug- related deaths	Deaths per 1,000,000 total population (unadjusted)	Overdose/ drug- related deaths	Deaths per 1,000,000 total population (unadjusted)	Percent change in mortality total	Percent change in mortality total	Deaths (any age) per 1,000,000 population ages 15–64 (unadjusted)
		2022	2022	2022	2021	2021	2020	2020	2019	2019	2021 to 2022	2019 to 2022	2022
United Kingdom (Scotland)	Drug poisoning deaths	1,193	5,447,700	219.0	1,444	266.5	1,461	269.9	1,406	259.7	-17%	-15%	339.2
<p>Sources: Mortality – <i>Drug-related deaths in Scotland in 2023</i> (National Records of Scotland, Dec. 2024). Population – <i>Mid-2022 population estimates</i> (National Records of Scotland, Mar. 2024).</p>													
U.S. Virgin Islands	Drug overdose deaths	Suppressed	105,413	Unreliable	Suppressed	Unreliable	Suppressed	Unreliable	Suppressed	Unreliable	–	–	–
<p>Sources: Mortality – <i>U.S. Territories Mortality Multiple Cause Files</i> (National Center for Health Statistics, Dec. 2024). Population – <i>Population, total – Virgin Islands (U.S.)</i> (World Bank Group, 2024).</p>													
United States	Drug overdose deaths	107,941	333,271,411	323.9	106,699	321.3	91,799	276.9	70,630	215.2	1%	53%	499.0
<p>Sources: Mortality – <i>Drug Overdose Deaths in the United States, 2001–2021</i> (National Center for Health Statistics, Dec. 2022). Population – <i>National Population Totals and Components of Change: 2020–2022</i> (United States Census Bureau, Mar. 2023).</p>													

* Population reflects the total population in the country for the mortality data year used (end of year if available, otherwise population measured from midyear point).

** Deaths in Canada include only those related to opioids (see notes below).

DRUG MORTALITY COUNTRY NOTES

Unless noted otherwise, “drug overdose deaths” under the “mortality type” column are matched to the U.S. Centers for Disease Control and Prevention’s ICD-10 definition of overdose. In line with the CDC, death rates and counts are not shown in tables and figures when the death counts are below 16.

European Union Drugs Agency (EUDA) (formerly the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA))

*** Reflects EUDA definition of “drug-induced deaths;” EUDA generally defines drug-induced deaths as “people who die directly due to use of illegal substances, although these often occur in combination with other substances such as alcohol or psychoactive medicines. The deaths generally occur shortly after the consumption of the substance and are commonly referred to as overdoses or poisonings.”

Importantly, this definition/number may not include overdose deaths from certain drugs that contribute to totals reported by individual countries.

EUDA methodology counts mortality cases with underlying cause of death ICD-10 codes of F11/F12/F14/F15/F16/F19; X41/X42/61/62 and Y11/Y12 in combination with particular T codes; and X44/64 and Y14 in combination with particular T codes.

For a full EUDA methodology description with further details, see: https://www.euda.europa.eu/statistical-bulletin-2024-methods-and-definitions_en; also see EUDA notes by country indicating potential small differences between national definitions: https://www.euda.europa.eu/data/stats2024_en#level-1-section0.

Individual Countries

Australia: The National Drug and Alcohol research center defines drug overdose deaths as “all deaths where the acute toxic effect of a drug was determined by the coroner, forensic pathologist or forensic toxicologist to be the UCOD (i.e., ICD-10 codes for accidental poisoning X40-X44, intentional poisoning X60-X64, undetermined intent of poisoning Y10-Y14 and assault by drugs X85).

Canada: An “apparent drug toxicity death” as defined by the Public Health Agency of Canada is caused by “intoxication/toxicity (poisoning) resulting from substance use, where one or more of the substances is an opioid or a stimulant, regardless of how it was obtained (e.g. illegally or through personal prescription).” **Because Canada does not report a total mortality number for deaths related to opioids or stimulants (i.e. one that is mutually exclusive), in this figure we only use the PHAC estimate for “apparent opioid toxicity deaths.” Thus, while “apparent drug toxicity deaths” likely capture the majority of all drug-related deaths, the full mortality estimate for Canada is higher. For more detail, see: <https://health-infobase.canada.ca/substance-related-harms/opioids-stimulants/technical-notes.html>.

France: DRAMES Survey data uses drug and substance abuse-related deaths that meet the EUDA definition of direct drug-induced deaths. Suicide deaths are excluded. DRAMES aims to identify and quantify the substances involved by means of blood tests, though the register is not exhaustive as deaths must be reported to DRAMES in order to be counted.

New Zealand: Drug overdose deaths are made up of both active and closed cases from the New Zealand coroner’s office. There is a large backlog of cases dating back a number of years, so overall numbers are underestimates and only show the number of deaths processed by the coroner’s office at the most recent release of data. Suicides are excluded from New Zealand’s reporting though overdose death counts include those attributed to alcohol. For more details on definitions, see: <https://www.drugfoundation.org.nz/news-media-and-events/overdose-report-2017-2022>.

Portugal: Drug overdose deaths are composed of deaths where drug use is the direct cause of mortality and medicolegal etiology; for more detail, see: <https://www.icad.pt/DocumentList/GetFile?id=603&languageId=1>.

Switzerland: As defined by the Federal Office of Public Health, drug-related deaths are “the number of directly drug related deaths due to intoxication or overdose;” defined by ICD-10 codes (World Health Organization version): F11/F12/F14/F15/F16/F19; X42; X62; Y12; for more detail, see: <https://ind.obsan.admin.ch/en/indicator/monam/drug-related-deaths>.

United Kingdom (England & Wales): As defined by the Office for National Statistics, drug poisoning deaths “involve a broad spectrum of substances, including controlled and non-controlled drugs, prescription medicines (either prescribed to the individual or obtained by other means) and over-the-counter medications. As well as deaths from drug abuse and dependence, figures include accidents and suicides involving drug poisonings, and complications of drug abuse such as deep vein thrombosis or septicaemia from intravenous drug use.” Drug poisoning deaths include the following ICD-10 codes: F11-F16, F18-F19, X40-X44, X60-X64, Y10-Y14, X85. More details of the definition, including ICD codes used, can be found at: <https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/deaths/methodologies/deathsrelatedtodrugpoisoninginenglandandwalesqmi>. Of note, the ONS reports based on year of death registration and indicates that “because of registration delays, around half of these deaths will have occurred in previous years.”

United Kingdom (Northern Ireland): As defined by the Northern Ireland Statistics and Research Agency, drug-related deaths are defined as “when the underlying cause of death recorded on the death certificate is drug poisoning, drug abuse or drug dependence.” It includes the following ICD-10 codes: F11-F16, F18-F19, X40-X44, X60-X64, Y10-Y14, X85. Using only ICD-10 codes X40-X44, X60-X64, X85, and Y10-Y14, the totals are 153 deaths for 2022; 212 deaths for 2021; 216 for 2020 and 191 for 2019. More details of the definition can be found at: <https://www.nisra.gov.uk/sites/nisra.gov.uk/files/publications/Drug%20Deaths%20in%20NI%202022.pdf>. Northern Ireland statistics are also based on death registration year.

United Kingdom (Scotland): The Office for National Statistics and National Records of Scotland use the following ICD-10 codes to create the “drug poisoning death” total: F11-F16, F18-F19, X40-X44, X60-X64, Y10-Y14, X85. More details of the definition can be found at: <https://www.nrscotland.gov.uk/media/m4gnm12s/drug-related-deaths-23-annex-b.pdf>. Scotland statistics are also based on registration year.

United States: As defined by the Centers for Disease Control and Prevention, drug poisoning (overdose) deaths include “deaths resulting from unintentional or intentional overdose of a drug, being given the wrong drug, taking a drug in error, or taking a drug inadvertently;” drug overdose deaths are identified using the ICD-10 underlying cause of death codes X40-X44, X60-X64, X85, and Y10-Y14. Northern Mariana Islands not shown due to no deaths in 2022. See: <https://www.cdc.gov/nchs/products/databriefs/db457.htm#Definitions>.