

Supplemental Online Content

Mariño-Ramírez L, Jordan IK, Nápoles AM, Pérez-Stable EJ. Comparison of US firearm-related deaths among children and adolescents by race and ethnicity, 1999-2020. *JAMA*. Published December 20, 2022. doi:10.1001/jama.2022.19508

eAppendix. Supplementary Methods

eTable. Causes of Death as Reported Here With Their Corresponding ICD-10 Codes and Descriptions

This supplemental material has been provided by the authors to give readers additional information about their work.

eAppendix. Supplementary Methods

The CDC Wonder database uses World Health Organization (WHO) ICD-10 codes and the WHO underlying cause of death definition: “the disease or injury which initiated the train of events leading directly to death, or the circumstances of the accident or violence which produced the fatal injury.” The underlying cause of death is selected from the information provided by the physician on the death certificate, and each death certificate denotes a single underlying cause of death. Death certificates also include physician provided demographic data, including decedent race and ethnicity.

The ICD-10 mortality codes used in this study are shown in the eTable. It should be noted that ICD-10 codes are less granular than US ICD-10-CM codes and thus do not allow for lower level classification for cause of death. Thus, several of the categories used here may include deaths from paintball and gas, air or spring-operated guns: Assault by other and unspecified firearm discharge (X95), Intentional self-harm by other and unspecified firearm discharge (X74), Discharge from other and unspecified firearms (W34), and Other and unspecified firearm discharge, undetermined intent (Y24).

Confidence intervals (CI) for crude death rates (R) are calculated as $CI = R \pm 1.96 * S(R)$. $S(R)$ = standard error of rate R. $S(R) = R * (RSE(R) / 100)$. $RSE(R)$ = relative standard error of rate of $R = 100 * \text{square root of } (1/D)$. D = total number of deaths on which rate (R) is based. Percent change in crude death rates (R) from time 0 (t_0) to time 1 (t_1) are calculated as: $[(t_1 - t_0)/t_0] * 100$.

This study relies on National Center for Health Statistics bridged-race population estimates of the recent US resident population for the purpose of calculating mortality rates. Bridged-race estimates bridge race and ethnicity categories specified by the 1997 Office of Management and Budget (OMB) standards for the collection of data on race and ethnicity to the four race categories specified in the 1977 OMB standards, since vital statistics continue to use the 1977 OMB standards.

Additional details on the CDC Wonder database methods can be found at:

<https://wonder.cdc.gov/wonder/help/ucd.html>

Additional details on Vital Statistics mortality calculations can be found at:

https://wonder.cdc.gov/wonder/sci_data/mort/mcmort/type_txt/mcmort05/techap99.pdf

eTable. Causes of Death as Reported Here With Their Corresponding ICD-10 Codes and Descriptions

Firearm-related deaths include firearm homicide, firearm suicide, unintentional firearm death, and undetermined intent firearm death. Accidents, assault, and intentional-self harm causes reported here do not include firearm-related deaths.

Cause of Death Name	ICD-10 codes and descriptions
Firearm-related deaths	<p>Homicide: Terrorism involving firearms (U01.4); Assault by handgun discharge (X93); Assault by rifle, shotgun and larger firearm discharge (X94); Assault by other and unspecified firearm discharge (X95); Legal intervention involving firearm discharge (Y35.0)</p> <p>Suicide: Intentional self-harm by handgun discharge (X72); Intentional self-harm by rifle, shotgun and larger firearm discharge (X73); Intentional self-harm by other and unspecified firearm discharge (X74)</p> <p>Unintentional: Handgun discharge (W32); Rifle, shotgun and larger firearm discharge (W33); Discharge from other and unspecified firearms (W34);</p> <p>Undetermined: Handgun discharge, undetermined intent (Y22); Rifle, shotgun and larger firearm discharge, undetermined intent (Y23); Other and unspecified firearm discharge, undetermined intent (Y24)</p>
Accidents (unintentional injuries)	Transport accidents (V01-V99,Y85); Falls (W00-W19); Accidental drowning and submersion (W65-W74); Accidental exposure to smoke, fire and flames (X00-X09); Accidental poisoning and exposure to noxious substances (X40-X49); Other and unspecified nontransport accidents and their sequelae (W20-W31,W35-W64,W75-W99,X10-X39,X50-X59,Y86)
Malignant neoplasms	Malignant neoplasms (C00-C97)
Assault (homicide)	Assault (homicide) by other and unspecified means and their sequelae (*U01.0-*U01.3,*U01.5-*U01.9,*U02,X85-X92,X96-Y09,Y87.1)
Intentional self-harm (suicide)	Intentional self-harm (suicide) by other and unspecified means and their sequelae (*U03,X60-X71,X75-X84,Y87.0)
Congenital malformations, deformations and chromosomal abnormalities	Congenital malformations, deformations and chromosomal abnormalities (Q00-Q99)