



Dying Young in the United States

What's Driving High Death Rates Among Americans
Under Age 25 and What Can Be Done?

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Executive Summary

Young Americans under age 25 face lower life expectancies and higher death rates than their peers in other affluent countries. In this *Population Bulletin* we explore these differences, examining who in the United States is most at risk of early death and why. We also discuss economic, social, and health policies that may reduce U.S. deaths before age 25.

We use nationally representative data from the National Center for Health Statistics and other sources (see Box 1). Although high-quality data on deaths under age 25 during the COVID-19 pandemic are not yet available, we expect that the key patterns we identify will continue and likely intensify in the wake of the pandemic's financial, health, and social tolls.

KEY FINDINGS

- Compared with other high-income countries, the United States has the highest mortality rates for all age groups under age 25.
- Between 2013 and 2019, all U.S. age groups under age 25 experienced stagnant or increasing mortality rates while other high-income countries saw steady declines.
- Unintentional injuries, suicides, and homicides are the leading causes of death among children and young adults. Premature birth and congenital abnormalities top the list among infants.
- Males are more likely to die before age 25 than females, largely due to greater risk-taking behavior among adolescent and young adult males.
- Residents of U.S. southern states under age 25 tend to have higher rates of early life mortality than residents of states in other regions.
- Children and young adults have a higher risk of death before age 25 if they live in low-income households or if their parents do not have college degrees.
- Black and Mexican American children and young adults ages 1 to 24 face higher death rates than their white peers mainly due to lower levels of family socioeconomic status based on mother's education levels, household income, and other factors.
- Infants born to Black women who have earned at least a bachelor's degree face a higher infant mortality rate (IMR, deaths per 1,000 live births) than infants born to white women without a bachelor's degree, reflecting wide differences in economic resources between groups and exposure to racism-related stress across the life course for Black women.
- Children and young adults who live in married, two-parent households are the least likely to die before age 25.
- More than 50,000 young adults would still be alive today had the United States achieved a modest annual reduction (2%) in early life mortality among the age group 20 to 24 between 2000 and 2017.
- Mental health and substance use problems have increased during the COVID-19 pandemic and have the potential for both immediate and long-term harm for American children and young adults.
- As a society, aggressive action is required to reduce early life mortality, such as prioritizing social, economic, and health policies and programs that increase the survival of infants, children, and young adults.

Young Americans under age 25 face lower life expectancies and higher death rates than their peers in other affluent countries.

The patterns and trends we document suggest that U.S. society could do much more to reduce deaths in early life, especially because so many of these deaths are due to injuries—homicides, suicides, and unintentional injuries—that can be prevented. We find that such high early life death rates are strongly related to social and economic inequality that will persist without intervention, continuing to contribute to premature deaths. Guided by our findings and recent social science research, we suggest the following social and health policy goals to better prioritize the well-being of the youngest members of the U.S. population and ultimately lower rates of early life mortality.

POLICY ACTIONS

- Reduce child poverty and the percentage of parents without a high school degree.
- Reduce racial/ethnic inequality.
- Reduce gender differences in mortality.
- Support quality, accessible health care.
- Enact broad safety measures.

Although U.S. life expectancy at birth was 78.8 years as of 2019, 59,865 people under age 25 died that year, including 20,921 infants under age 1.¹

The deaths of infants, children, and young adults are very premature relative to current U.S. life expectancy at birth. The infant mortality rate has long been a benchmark of societal well-being because it is dependent on women's health and reflects access to quality medical care during labor and delivery. Similarly, mortality rates between the ages of 1 and 25 are strong indicators of overall population health because they are largely comprised of injuries that are preventable through social and health policy initiatives. Most of these deaths leave behind parents, siblings, friends, and other family members. It is in society's best interest, and surely individuals' best interest, to reduce early life mortality to the lowest possible level.

BOX 1

HOW WE CONDUCTED OUR ANALYSIS

This *Population Bulletin* focuses on early life mortality, that is, death that occurs before age 25. We examine the following age groups: under 1, 1 to 4, 5 to 9, 10 to 14, 15 to 19, and 20 to 24. *Infants* are defined as those under age 1. We use *children and young adults* to refer to groups ages 1 to 24. When we use *children* alone, we are referring to ages 1 to 17.

The results draw on three data sources: the National Vital Statistics System, the National Center for Health Statistics (NCHS) National Health Interview Survey Linked Mortality Files (NHIS-LMF), and the Human Mortality Database (HMD).

To identify who is most at risk of early death and why, we used the large, nationally representative NHIS-LMF dataset, which includes detailed background characteristics for the individuals in the study. In this dataset, we followed more than 377,000 individuals ages 1 to 17 at the time of the survey until the end of the follow-up period (2011 or 2015), their 25th birthday, or death (whichever occurred first). Most often, mothers provided the survey data for their children. For those who died, the dataset includes detailed information on mortality, including cause of death.

We analyzed the data in two ways—first by accounting for sex and age (partially adjusted model) and second by also accounting for race and ethnicity, nativity status (foreign or U.S. born), geography, socioeconomic status, family structure, and the health of family members (fully adjusted model).

We used a statistical technique, Cox proportional hazard models, to calculate the risk of death in one group and compare it to the risk of death in another group (often the group with the most favorable outcome, known as the reference group). We then converted these ratios into a proportion of increased or decreased risk. We note below selected figures in this report the number of records analyzed and the number of deaths that occurred over the follow-up period.

For additional background on the methodology, see these sources:

David B. Braudt et al., "Family Socioeconomic Status and Early Life Mortality Risk in the United States," *Maternal and Child Health Journal* 23, no. 10 (2019): 1382-91.

Richard G. Rogers et al., "Family Structure and Early Life Mortality in the United States," *Journal of Marriage and Family* 82, no. 4 (2020): 1159-77.

Richard G. Rogers et al., "Racial/Ethnic Differences in Early Life Mortality in the United States," *Biodemography and Social Biology* 63, no. 3 (2017): 189-205.

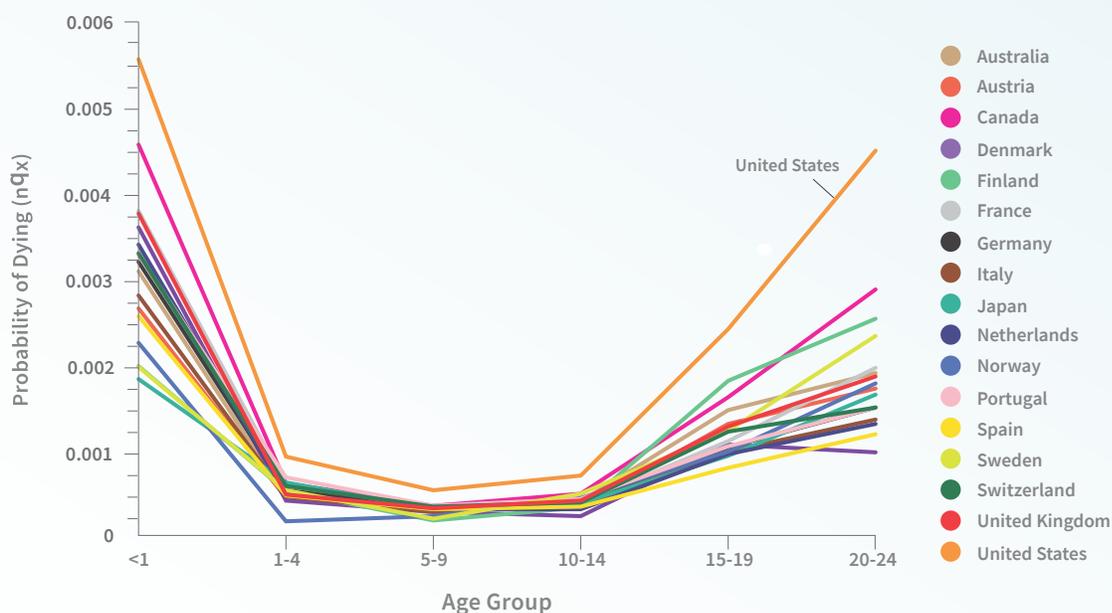
U.S. Early Life Mortality Is High Compared With Other High-Income Countries

Compared with other high-income countries, the United States has low life expectancy due in part to relatively high mortality at younger ages, despite relatively low mortality at ages 85 and older.² Figure 1 vividly illustrates that compared with 16 other high-income peer countries, the United States has the highest age-specific mortality rates for every age group under age 25. Other countries are more tightly clustered and jockey for the lowest age-specific mortality rates, with Japan having the lowest infant mortality rate, Norway the lowest for ages 1 to 4, Finland the lowest for ages 5 to 9, Denmark the lowest for ages 10 to 14 and 20 to 24, and Spain the lowest for ages 15 to 19.

FIGURE 1

AMERICANS HAVE A HIGHER LIKELIHOOD OF DYING IN EVERY AGE GROUP UNDER 25 THAN THEIR PEERS IN OTHER HIGH-INCOME COUNTRIES

Probability of Dying in the United States and Peer Countries by Age Group, 2018



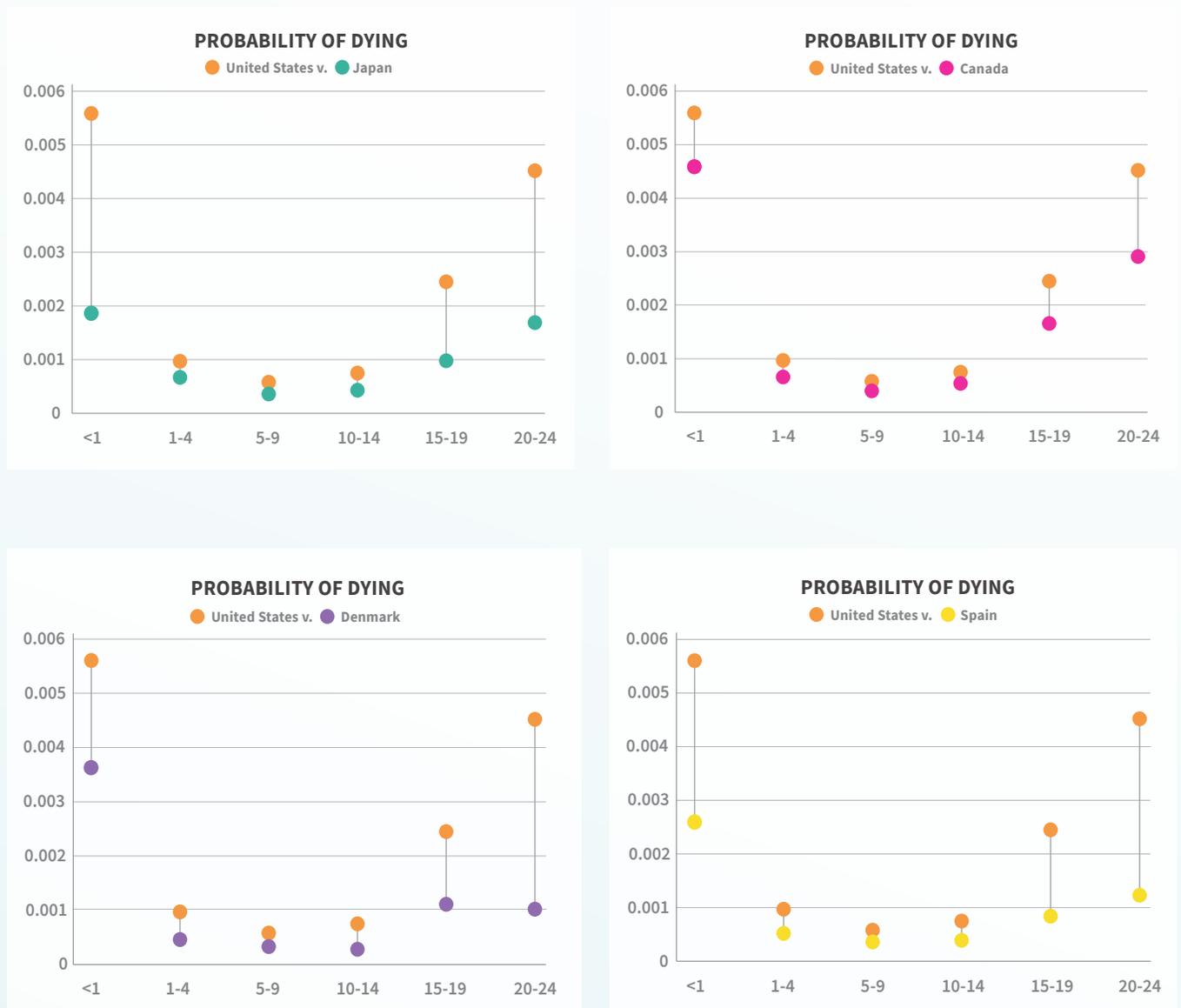
Notes: Data for Germany are for 2017.

Source: University of California, Berkeley (USA) and Max Planck Institute for Demographic Research (Germany), Human Mortality Database, data downloaded Aug. 16, 2021.

FIGURE 1A

AMERICANS HAVE A HIGHER LIKELIHOOD OF DYING IN EVERY AGE GROUP UNDER 25 THAN THEIR PEERS IN OTHER HIGH-INCOME COUNTRIES

Probability of Dying in the United States and Selected Peer Countries by Age Group, 2018



Source: University of California, Berkeley (USA) and Max Planck Institute for Demographic Research (Germany), Human Mortality Database, data downloaded Aug. 16, 2021.

U.S. Infant Mortality Is Higher Than in Other Affluent Countries

In the United States, the infant mortality rate (IMR) is high relative to rates in other high-income countries. Significantly higher percentages of preterm births (before 37 weeks of gestation) in the United States are a key factor driving this difference.³

The United States stands apart from other wealthy countries by coupling high income levels with one of the highest IMRs. Figure 2 shows that high national income, as indicated by gross national income (GNI) per capita, was related to low IMRs across Organisation for Economic Co-operation and Development (OECD) member countries in 2016.

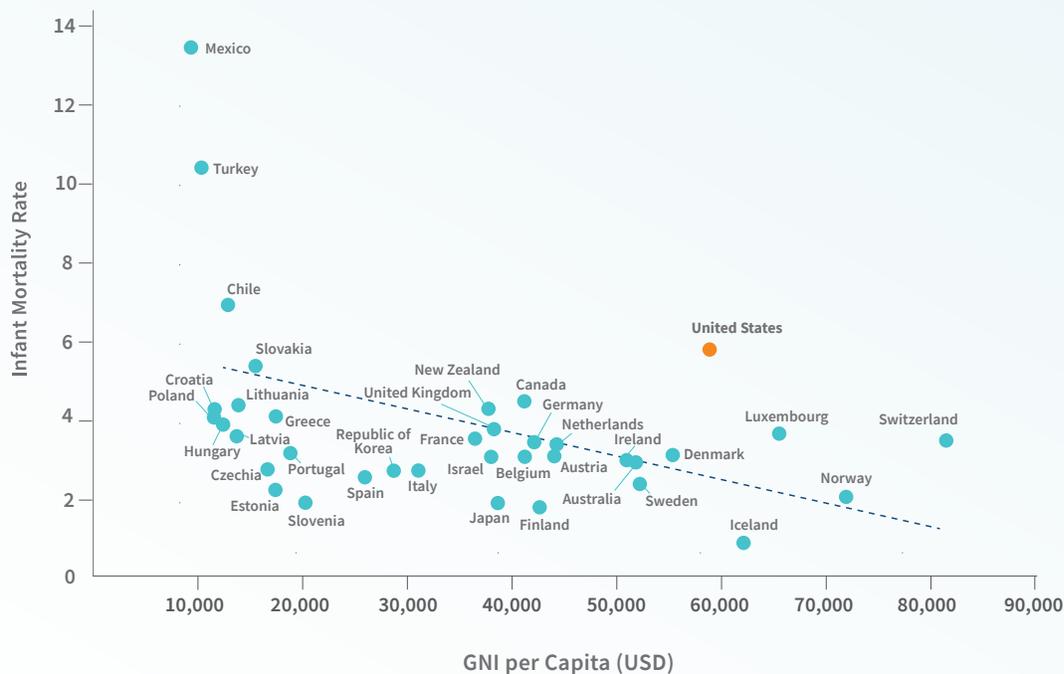
Despite the United States' high GNI per capita (\$59,055), its IMR of 5.9 was higher than all but three fellow OECD member countries (Mexico, Turkey, and Chile). Remarkably, the U.S. GNI per capita is three to six times higher than the GNI per capita in each of those three countries. The IMR is higher in the United States than in all European, Northern American, and Oceanian OECD member countries.

The U.S. IMR is about three times as high as the rates in such OECD countries as Finland, Japan, and Slovenia, even though the United States has a higher GNI per capita than those countries. The most comparable countries to the United States in IMR are former Warsaw Pact states (Hungary, Lithuania, Poland, and Slovakia), non-European countries (Canada, Chile, and New Zealand), and

FIGURE 2

MANY COUNTRIES WITH LOWER INCOMES THAN THE UNITED STATES HAVE MUCH LOWER INFANT MORTALITY RATES

Infant Mortality Rate and Gross National Income Across OECD Countries, 2016



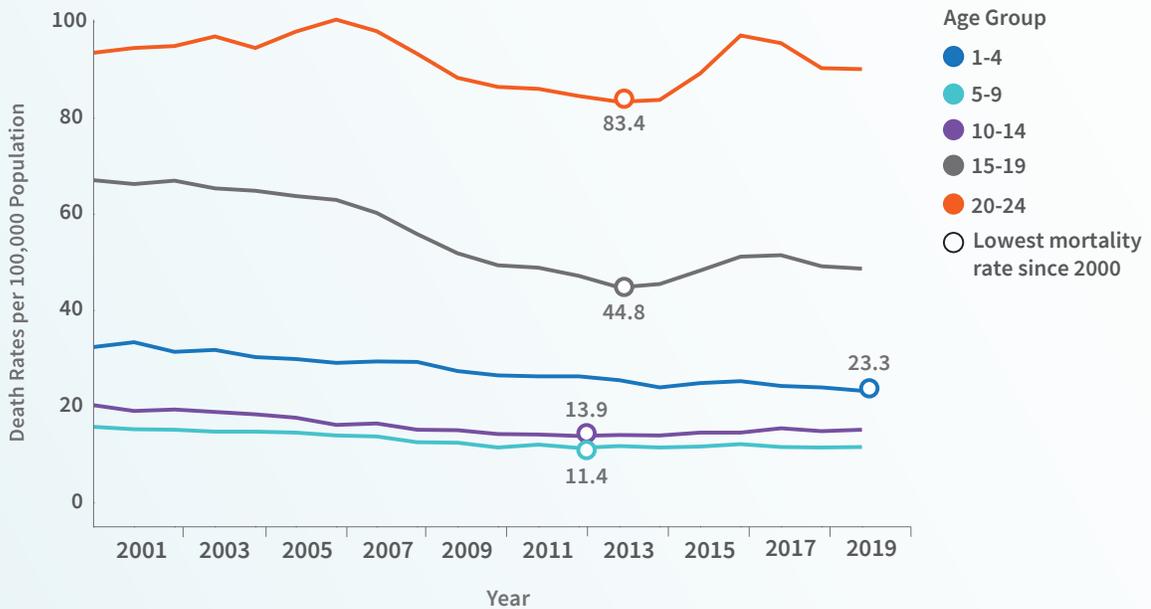
Notes: The dotted blue line represents the correlation between national IMRs and GNI per capita. Countries with higher GNI per capita tend to have lower IMRs. OECD is Organisation for Economic and Co-operative Development.

Sources: UN Inter-Agency Group for Child Mortality Estimation, "Data and Estimates," 2019; United Nations Statistics Division, "National Accounts Estimates of Main Aggregates," 2020; and University of California, Berkeley (USA) and Max Planck Institute for Demographic Research (Germany), Human Mortality Database.

FIGURE 3

DEATH RATES INCREASED AMONG OLDER ADOLESCENTS AND YOUNG ADULTS AFTER 2013

Age-Specific Death Rates in the United States, 2000-2019



Note: The lowest mortality rates for specific age groups are marked with open circles.

Source: Centers for Disease Control and Prevention, CDC Wonder, Underlying Cause of Death 1999-2019.

southeastern European countries (Croatia and Greece). Yet, with the exception of Canada and New Zealand, the U.S. GNI per capita is more than twice as high as the income levels in these countries. Northern European social democracies (Finland, Iceland, Norway, and Sweden), advanced democracies in Asia (Japan and South Korea), and several southern European states (Italy, Slovenia, and Spain) have particularly low IMRs.

The high rate of U.S. infant mortality, relative to its high-income peer countries, is coupled with much higher rates of preterm birth compared with other countries. In the United States, 10% of babies were born preterm in 2018; more than one-quarter of them (2.75%) were born at less than 34 weeks of gestation in 2018, or early preterm.⁴ As just one comparison, 8% of infants in Canada were born preterm in 2018, a rate of prematurity about 20% lower than in the United States.⁵

In Recent Years, U.S. Early Life Mortality Has Stagnated or Increased

U.S. deaths in early life have not continued to fall steadily as they have in almost all other high-income countries. Focusing on trends between 2000 and 2019, we found each U.S. age group experienced periods when death rates declined, but also periods when death rates stagnated or even increased, especially since 2013. (See Figure 3; the open circles indicate the lowest mortality rates for specific age groups.) The age group 1 to 4 attained its lowest mortality rate in 2019 after modest but relatively steady declines that were periodically interrupted with slight increases. The age groups 15 to 19 and 20 to 24 experienced lower mortality in 2013 than in 2019. And the age groups 5 to 9 and 10 to 14 experienced lower mortality in 2012 than in 2019. In fact, the mortality rate for the age group 20 to 24 in 2019, at 90.2 per 100,000 persons, was higher than the mortality rate for this age group in 2009, a decade earlier.

Who Is Most at Risk of Early Death and Why?

We find strong patterns in the risk of early death by age group; across geographic areas; and by race/ethnicity, gender, education and income levels, and family structure. An understanding of these dynamics can inform economic, social, and health policies to prevent early deaths.

The Leading Causes of Early Death Include Premature Births, Unintentional Injuries, Suicides, and Homicides

Causes of death vary dramatically by age (see Figure 4). Whereas most U.S. adults die of chronic and degenerative diseases, most young people die from injuries (unintentional injuries, intentional self-harm or suicides, and homicides), and many infants die from diseases related to prematurity and congenital malformations.

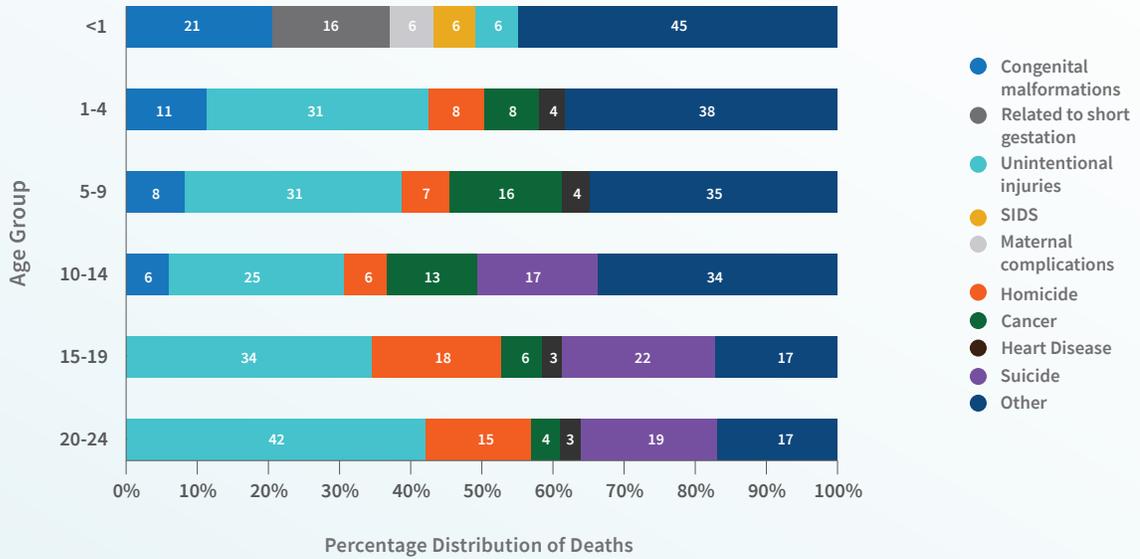
Nationally, the top-five causes of infant death in 2019 were congenital malformations, deformations, and chromosomal abnormalities; disorders related to short gestation and low birth weight not elsewhere classified; unintentional injuries; sudden infant death syndrome (SIDS); and newborns affected by maternal complications of pregnancy.⁶ Congenital malformations, deformations, and chromosomal abnormalities are the leading cause of death among infants, the second leading cause of death at ages 1 to 4, the third leading cause at ages 5 to 9, and the fifth leading cause at ages 10 to 14.

Injuries (unintentional injuries, homicides, and suicides) contribute to about half of all deaths among people ages 10 to 14 and about three-quarters of all deaths among those ages 15 to 24. For example, among people ages 15 to 19, 34% of all deaths are due to unintentional injuries, 22% to suicides, and 18% to homicides.⁷ Deaths from unintentional injuries include motor vehicle traffic deaths (for example, as a vehicle occupant, pedestrian, pedal cyclist, or motorcyclist), drownings, drug overdoses (called poisonings), falls, suffocations, and other accidents. We use the term *unintentional injuries* rather than *accidents* to indicate that many of the events are not random and are preventable. Suicide is the second leading cause of death at ages 10 to 24. Homicide is the fourth leading cause of death at ages 1 to 14 and the third leading cause at ages 15 to 24. Among all ages, including adults, the age group with the highest proportion of unintentional injuries—at 42%—is 20 to 24. Suicides and homicides make up a combined 40% of deaths among people ages 15 to 19, more than any other age group.

FIGURE 4

UNINTENTIONAL INJURIES ARE THE LEADING CAUSE OF DEATH FOR AMERICANS AGES 1 TO 24

The Five Leading Causes of Early Life Death in the United States by Age Group, 2019



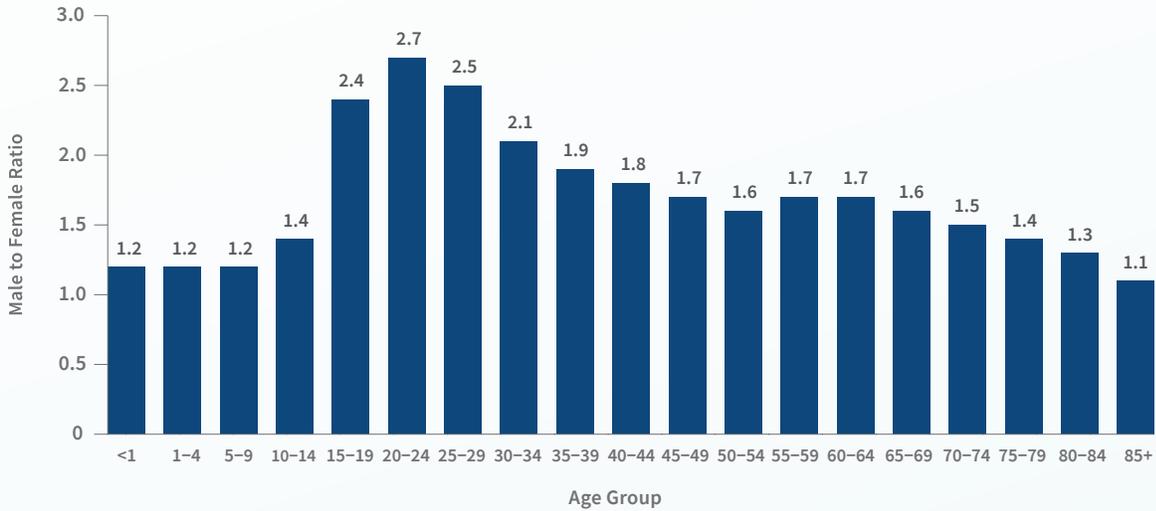
Source: Melonie Heron, “Deaths: Leading Causes for 2019,” *National Vital Statistics Reports* 70, no. 9 (2021): 1-114.

Whereas most U.S. adults die of chronic and degenerative diseases, most young people die from injuries (unintentional injuries, intentional self-harm or suicides, and homicides), and many infants die from diseases related to prematurity and congenital malformations.

FIGURE 5

MALES HAVE AN INCREASED RISK OF DEATH COMPARED WITH FEMALES, ESPECIALLY AT AGES 20 TO 24

Age-Specific Ratio of Death Rates for Males v. Females in the United States, 2019

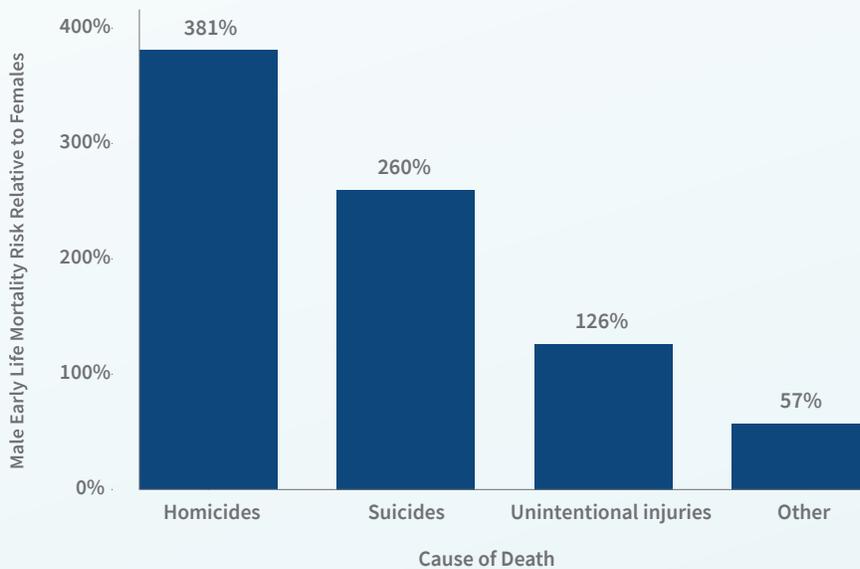


Source: Jiaquan Xu et al., “Deaths: Final Data for 2019,” *National Vital Statistics Reports* 70, no. 8 (2021): 1-87.

FIGURE 6

MALES ARE MORE THAN TWICE AS LIKELY AS FEMALES TO DIE OF HOMICIDE OR SUICIDE BEFORE AGE 25

U.S. Early Life Mortality Risk for Males v. Females Ages 1 to 24 by Cause of Death, 1998-2015



Source: David B. Braudt et al., “Family Socioeconomic Status and Early Life Mortality Risk in the United States,” *Maternal and Child Health Journal* 23, no. 10 (2019): 1382-91.

Males Are More Likely Than Females to Die Early

Like mortality among adults, early life mortality rates differ by sex, with males facing higher death rates than females, reflecting, in part, greater risk-taking behavior among adolescent and young adult males.⁸ This relative gap in mortality by sex is greater in early adulthood than in any other age group. Figure 5 shows that the male-to-female ratio of death rates is smallest at the age extremes (ages 9 and under, and ages 85 and older) and largest in young adulthood. Specifically, the death rates for males ages 20 to 24 are nearly three times higher than their female counterparts.

Males are not just more likely than females to die before age 25; they are also much more likely to die from certain causes—injuries, suicides, and homicides. Compared with females, we found that males had a 134% higher risk of all-cause mortality, a 126% higher risk of unintentional injuries, a 260% higher risk of suicides, and a whopping 381% higher risk of homicides over the follow-up period, while accounting for demographic and socioeconomic factors (see Figure 6). (See Box 1, page 5 for additional discussion on how to interpret higher risk of death.)

Sex differences in early life mortality are due to a variety of factors, including genetic and hormonal differences and gender norms and socialization. Sex chromosomes (XX for females, XY for males) may partly explain the higher mortality rates from congenital malformations among young males than females. With only one copy of the X chromosome, males are more vulnerable to genetic mutations related to X-linked conditions. Testosterone levels are higher in males, typically increase from puberty to late adolescence or early adulthood, and are associated with more aggressive and risk-taking behaviors, although gender socialization, norms, and other social factors differentially constrain or promote behaviors.

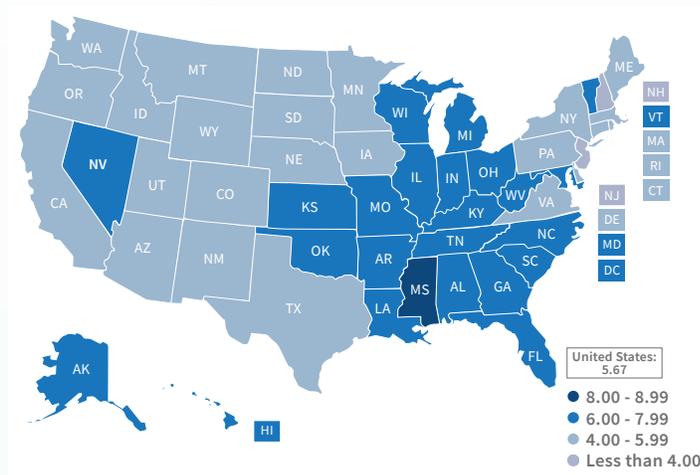
Compared with girls, boys tend to be socialized to engage in more risky, dangerous, and aggressive behavior; are more likely to disregard safety and health safeguards; more often deny pain and suffering; and are more apt to associate with other males who do likewise. Young men are expected to stoically “tough it out” rather than seek help for medical conditions, including emotional and psychological problems. Boys and men may receive social rewards for risk-taking behaviors associated with masculinity and sanctions for behaving in ways that are associated with femininity or homosexuality. Some men personally struggle with depression rather than seek professional help or take antidepressants, which could be seen as “unmanly” or as a sign of weakness.⁹

Compared with girls, boys tend to be socialized to engage in more risky, dangerous, and aggressive behavior; are more likely to disregard safety and health safeguards; more often deny pain and suffering; and are more apt to associate with other males who do likewise.

FIGURE 7

INFANT MORTALITY RATES ARE HIGHEST IN SOUTHEASTERN STATES

U.S. Infant Mortality Rate by State, 2018

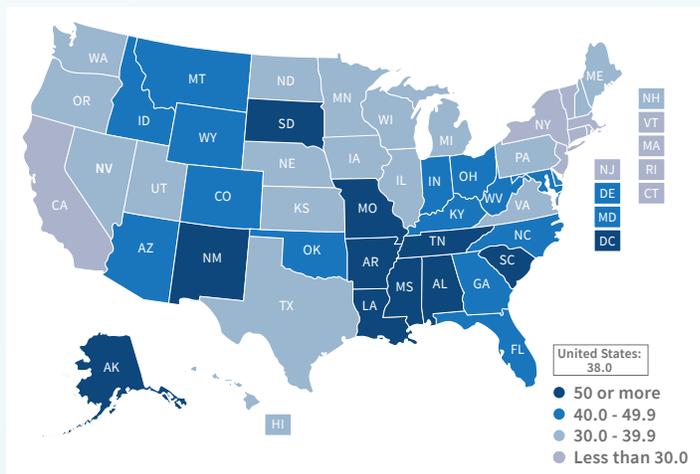


Source: Danielle M. Ely and Anne K. Driscoll, “Infant Mortality in the United States, 2018: Data From the Period Linked Birth/Infant Death File,” *National Vital Statistics Reports* 69, no. 7 (2020): 1-18.

FIGURE 8

EARLY LIFE MORTALITY TENDS TO BE HIGHEST IN PARTS OF THE SOUTH

U.S. Early Life (Ages 1 to 24) Age-Adjusted Death Rate by State, 2019



Source: Centers for Disease Control and Prevention, CDC Wonder, Multiple Cause of Death Files, 1999-2019.

Thus, compared with women, men are more likely to engage in violent acts, drive more miles on average and drive more recklessly, drink more alcohol and consume more when they drink, use illegal drugs, have been arrested for driving under the influence, and have more emergency room visits.¹⁰ Nevertheless, the sex gaps in most risky behaviors are closing. Later in this report, we explore the policy implications of such wide cause-specific mortality differences between young U.S. males and females.

The Highest Early Death Rates Are Concentrated in the South

U.S. southern states have some of the nation’s highest death rates for all age groups, including those under age 25; the leading causes are motor vehicle traffic deaths, homicides, and suicides among children and young adults. Figure 7 reveals that IMRs are generally lower in the West and Northeast and higher in the South. In 2018, New Hampshire’s nation-best 3.5 IMR was dwarfed by Mississippi’s IMR of 8.4. Infant mortality also varies substantially by race/ethnicity within states. Nationally, while non-Hispanic whites and Hispanics have comparable IMRs of 4.6 and 4.9, respectively, the non-Hispanic Black IMR is over twice as high, at 10.8.¹¹

Like infant mortality, deaths in other early life age groups are higher in southern states (see Figure 8). Six of the 10 states with the highest age-adjusted death rates for ages 1 to 24 are in the South: Alabama, Arkansas, Louisiana, Mississippi, South Carolina, and Tennessee. Early life mortality is lower in the Northeast. For example, Massachusetts and Rhode Island have the lowest death rates among those under age 25. The magnitude of the differences is striking, with the highest rate triple the lowest rate. Further, these state-level gaps in death rates among those under age 25 appear to be widening, as they have among people of all ages, underscoring the need for swift policy responses.¹²

Many of the state-level differences in early life death rates are due to specific causes of death. The most severe disparities are in motor vehicle traffic deaths, homicides by firearm, and suicides. Because most of these deaths have preventable causes, namely motor

vehicle crashes and firearm-related homicides, the disparities may be amenable to policy interventions.

Socioeconomic Differences Help Explain High Early Death Risks for Certain Racial and Ethnic Groups

Inequalities in socioeconomic resources help explain racial/ethnic disparities in early life mortality, our analysis shows. Compared with non-Hispanic white children and young adults ages 1 to 24, the risk of death before age 25 is 60% higher among non-Hispanic Black children and young adults, and 32% higher among their Mexican American counterparts, accounting for sex and age (see Figure 9).

In analyzing racial/ethnic differences in early life mortality, we were able to account for demographic characteristics, family relationships, geography of residence, and family socioeconomic status (SES), which is based on mother's education, parental income, homeownership, and health insurance. Importantly, racial/ethnic gaps in early deaths narrowed substantially once we statistically accounted for group differences in family SES.

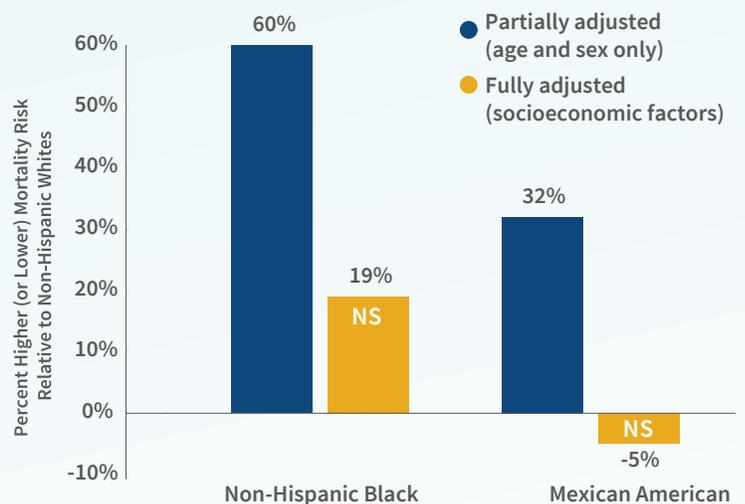
Compared with non-Hispanic white children, non-Hispanic Black and Hispanic children tend to live in families with lower SES, with substantially higher percentages living in poverty. In addition, compared with non-Hispanic white children, a lower proportion of Hispanic children have health insurance coverage.¹³ Our research shows that the mortality gap between Mexican American children and young adults and their non-Hispanic white peers closes completely when we account for mother's education. The mortality gap between Black and white children and young adults is no longer statistically significant (NS) in our model that accounts for multiple socioeconomic factors, including mother's education and household income.

We found higher early life death rates among Mexican American children and young adults relative to their non-Hispanic white peers.¹⁴ By contrast, researchers find that older Hispanic adults have death rates equal to or lower than non-Hispanic white adults despite Hispanic adults having lower incomes and less access to health care. This pattern, known as the Hispanic paradox, is not evident among Hispanic children and young adults.

FIGURE 9

NON-HISPANIC BLACK CHILDREN AND YOUNG ADULTS FACE A GREATER RISK OF EARLY LIFE DEATH THAN THEIR PEERS

Risk of Death Before Age 25 Compared With Non-Hispanic White Peers in the United States, 1999-2011



Notes: The reference group—and baseline at 0—is non-Hispanic white children and young adults. The analysis (using Cox proportional hazard models) is based on 1999-2011 National Health Interview Survey Linked Mortality Files records for 234,046 individuals, of whom 683 died. The partially adjusted model takes into account age and sex. The fully adjusted model accounts for age and sex as well as socioeconomic factors including nativity, region, mother's education, health insurance, homeownership status, and income-to-needs ratio (a measure of poverty based on family size).

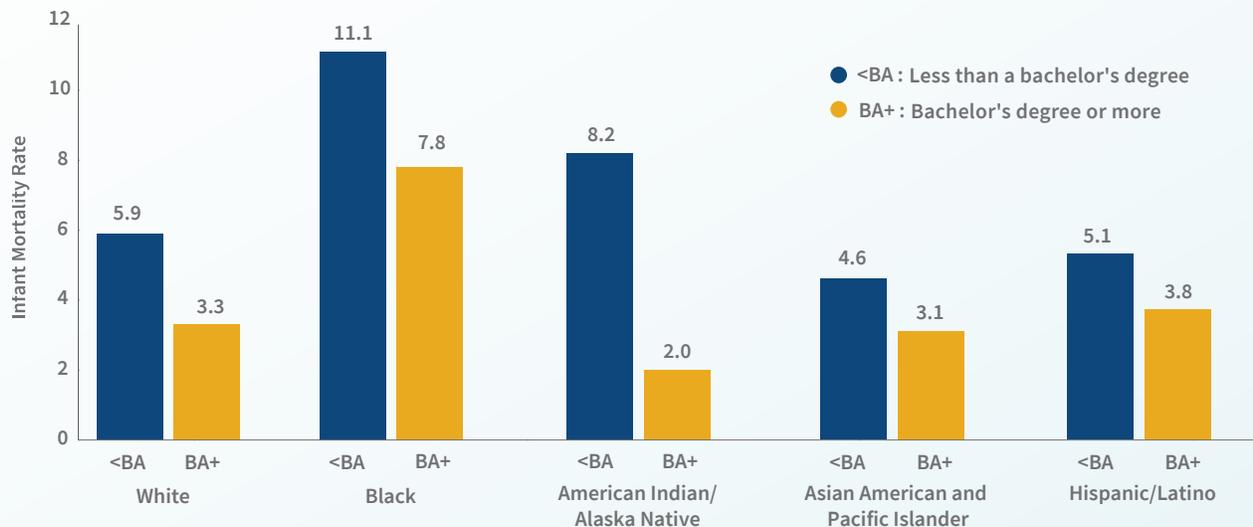
Definition: NS means not significant—that is, after taking demographic and/or socioeconomic factors into account, the differences between the two groups (Black and white children, and Mexican American and white children) were no longer meaningful.

Source: Richard G. Rogers et al., "Racial/Ethnic Differences in Early Life Mortality in the United States," *Biodemography and Social Biology* 63, no. 3 (2017): 189-205.

FIGURE 10

BLACK MOTHERS HAVE THE HIGHEST INFANT MORTALITY RATES AMONG ALL GROUPS WITH AND WITHOUT A COLLEGE DEGREE

U.S. Infant Mortality Rate by Race/Ethnicity and Maternal Education, 2013



Note: Based on 3,515,242 births.

Source: Centers for Disease Control and Prevention, Vital Statistics Online Data Portal, 2013 cohort linked file public-use record format, Hyattsville, MD: Department of Health and Human Services.

The proportion of deaths from different causes also varies dramatically by both race/ethnicity and sex. At ages 15 to 19, suicides account for 22% of all deaths (for both sexes and all racial/ethnic groups), but almost one-third of deaths of non-Hispanic white males (32%) and over one-third of non-Hispanic American Indian and Alaska Native male deaths (36%). Within this same age group, homicides account for 17% of all deaths (both sexes, all racial/ethnic groups), but more than half (53%) of non-Hispanic Black male deaths. And at ages 20 to 24, unintentional injuries cause 42% of all deaths (both sexes, all racial/ethnic groups), but 50% of non-Hispanic white male deaths.¹⁵

Figure 10 displays stark differences in infant mortality by both race/ethnicity and mother’s education, with infants born to Black women facing very high risks. Across all racial/ethnic groups presented, infants born to women who have earned at least a bachelor’s degree (BA) have lower IMRs than infants born to women without a bachelor’s

degree. Moreover, the association between education and infant mortality is stronger for some population groups than others. For example, infants born to white women with at least a BA have an IMR of 3.3, whereas infants born to white women without a BA have a rate almost twice as high (5.9). In contrast, infants born to Black women with at least a BA have an IMR of 7.8, whereas infants born to Black women without a BA have a 42% higher rate of death (11.1). Strikingly—and indicative of the vast resource differences between Black and white women—infants born to Black women with at least a BA have a higher IMR than infants born to white women without a BA.

Our recent research on this topic suggests a wide variety of social stressors as possible reasons for Black-white IMR disparities, even among highly educated women.¹⁶ These include low levels of income among Black women compared with white women, more stressful neighborhood contexts for Black women, and more prevalent psychosocial

stressors among Black women, including exposure to a lifetime of discrimination. Stressors, including discrimination and structural barriers, can induce premature births, which contribute to racial/ethnic disparities in infant mortality. Infants born to American Indian and Alaska Native women with less than a BA—who comprise most of the births in this group—also have very high IMRs, likely because of stressors similar to those experienced by Black women in the United States.

Other racial/ethnic minorities have more favorable IMR profiles. Infants born to Asian American and Pacific Islander (API) and Hispanic women with less than a BA have lower IMRs (4.6 and 5.1, respectively) than white women with the same education level. Meanwhile, infants born to API and Hispanic/Latino women with a BA or more have similar or even lower IMRs than infants born to white women with the same education level. Healthy immigrant

selection—the finding that recent immigrants tend to be healthier than the population in their host country—is proposed as the primary explanation for Hispanic infants' relatively low IMRs and may also explain the low IMRs in the API population.¹⁷

As the U.S. population becomes increasingly diverse, closing the mortality gaps among racial and ethnic groups becomes more urgent. U.S. racial/ethnic diversity is greater among infants and children than among adults, including young adults. Partly owing to immigration and higher fertility, Hispanics are the largest U.S. minority group, with Mexican Americans comprising the largest Hispanic subgroup. African Americans are the second-largest minority group. Asian Americans and Pacific Islanders, American Indians and Alaska Natives, individuals identifying as multiracial, and other groups comprise smaller percentages of the U.S. population.



FIGURE 11

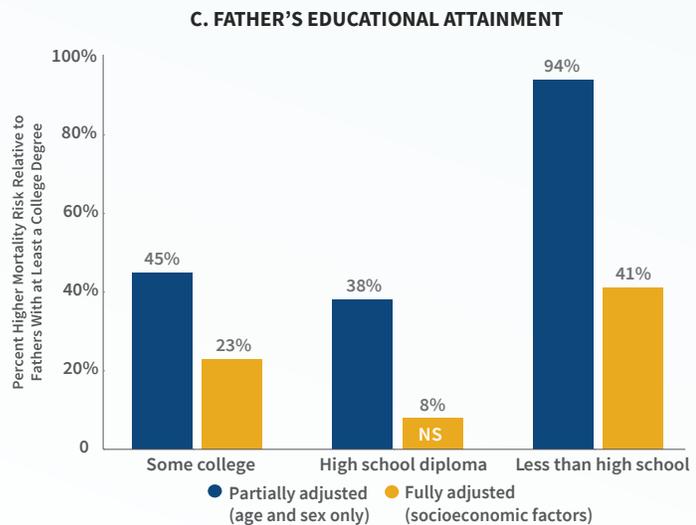
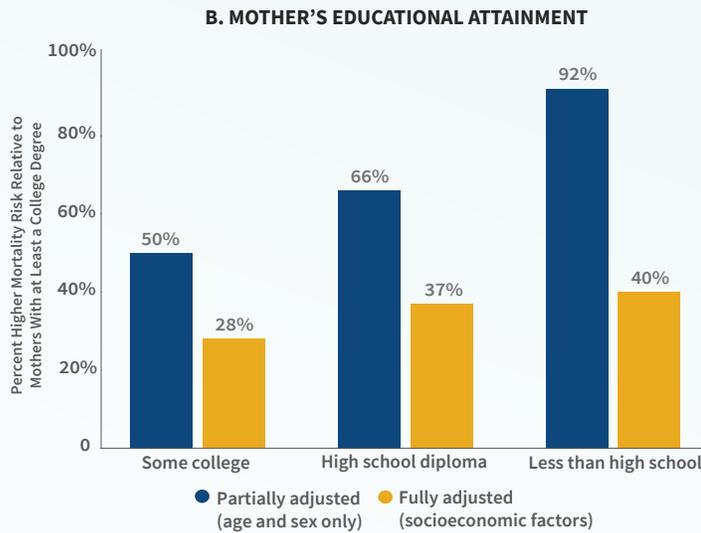
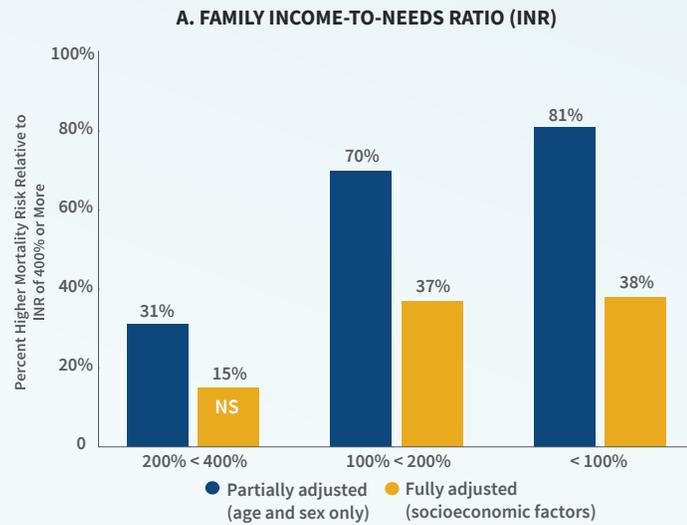
CHILDREN IN FAMILIES WITH LOW INCOME AND LESS EDUCATION FACE A HIGHER RISK OF EARLY DEATH

U.S. Early Life (Ages 1 to 24) Mortality Risk Compared With Having a Family Income-to-Needs Ratio of 400%+ and Parents Who Completed College, 1998-2015

Notes: The reference groups—baseline at 0—are those with at least four times the income they need (income-to-needs ratios 400% or more) and those who completed college. The analysis (using Cox proportional hazard models) is based on 1999–2011 National Health Interview Survey Linked Mortality Files records for 377,252 individuals, of whom 2,009 died. The partially adjusted model takes into account age and sex. The fully adjusted model accounts for age and sex as well as socioeconomic factors including race/ethnicity, nativity, and region.

Definition: NS means not significant—that is, after taking demographic and/or socioeconomic factors into account, the differences between the two groups (the group being displayed and those with the highest income or college graduates) were no longer meaningful.

Source: David B. Braudt et al., “Family Socioeconomic Status and Early Life Mortality Risk in the United States,” *Maternal and Child Health Journal* 23, no. 10 (2019): 1382-91.



Living in a Low-Income Household or With Parents Who Have Low Education Levels Increases the Risk of Early Death

Residing in households with a low or relatively low income or with parents who have low education levels substantially increases the risk of death among children and young adults compared with their peers living in more affluent households or with college-educated parents. Figure 11 (panel A) documents the relationship between household income and early life mortality. Our results examine family income-to-needs ratios (INRs), a measure based on poverty thresholds defined by year and household size. Panel A shows that compared with children living in affluent households (with an INR of 400% or more), children living in households with an INR of 200% to less than 400% have a 15% higher risk of death (but not significant), those with an INR of 100% to less than 200% have a 37% higher risk of death, and those with an INR of less than 100% have a 38% higher risk of death over the follow-up period, after accounting for demographic, socioeconomic, and geographic factors.

Our research also shows the relationship between parents' educational attainment and their offspring's mortality risk, with those whose parents have lower levels of education facing higher risks of early death. Compared with children and young adults with mothers who have a college degree or more, those whose mothers have had some college education experience 28% higher mortality risk, those whose mothers have only a high school diploma experience 37% higher risk, and those whose mothers have not finished high school experience 40% higher risk over the follow-up period, accounting for demographic, socioeconomic, and geographic characteristics (see Figure 11, panel B). The association between father's education and early death displays similar patterns (see Figure 11, panel C). Thus, two

socioeconomic factors—family income and parents' educational attainment—are strongly related to early life mortality in the United States.

Our findings echo a large body of research that demonstrates that early life mortality risk is deeply connected to family socioeconomic status. Unfortunately, U.S. children are much more likely to live in poverty, some in extreme poverty, than any other age group. In the 1960s, poverty rates were highest among older adults (ages 65 and older) followed by children (under age 18); working-age adults (ages 18 to 64) were least likely to be poor.¹⁸ From the 1960s to the present, poverty rates have remained high among children but have fallen dramatically among people ages 65 and older, largely because of social policy initiatives that tied Social Security income to the cost of living. Since then, from the mid-1970s to the present, children have been the age group with the highest poverty rates. In 2019, U.S. poverty rates were 8.9% among adults ages 65 and older, 9.4% among working-age adults, and noticeably higher, at 14.4%, among children. Millions more children live in families that are only slightly above the poverty line. Alternative measures, including the Supplemental Poverty Measure, identify smaller proportions of poor children once they factor in government programs that help low-income families.¹⁹ Even so, child poverty is unacceptably high in the United States and addressing child poverty is increasingly important and timely given the large numbers of families with young children that lost employment, income, and housing during the pandemic.

Children who live in poverty or in households near the poverty threshold may lack high-quality physical and mental health care and so may be at greater risk of death, particularly from injuries. As such, alleviating child poverty is critically important because financial stress in childhood can result in health problems in subsequent years, including higher rates of mortality.

Early life mortality risk is deeply connected to family socioeconomic status. Unfortunately, U.S. children are much more likely to live in poverty, some in extreme poverty, than any other age group.

Living in a Married, Two-Parent Household Reduces the Risk of Early Death

When we examined the connection between family structure and early life mortality, we found that children living in married, two-parent households had the lowest risk of early death.²⁰ We conducted the analysis in two ways—first by accounting for sex and age (partially adjusted model) and second by also accounting for geography, parental socioeconomic status, and the health or disability of children and other family members (fully adjusted model). We looked at the risks for children living in several kinds of households: two-parent households; two parents plus other adults; single-parent households; multigenerational households; households with at least one parent plus another adult; and households with no parents but with other adults present, such as guardians or foster parents. Compared with children living in married, two-parent households, those living with two parents plus other adults experience 21% higher risk of death, those living with single fathers experience 47% higher risk, and those living in multigenerational families (with parents and grandparents) experience 54% higher risk over the follow-up period, accounting for socioeconomic, geographic, and health factors (see Figure 12).

Our analysis shows these differences in the risk of early death between children in married two-parent households and other household types were strongly influenced by family socioeconomic status. The adults in both single-parent and multigenerational households tend to be older

and Black or Hispanic, and report lower levels of health insurance coverage, income, and educational attainment compared with those in two-parent families. Among single-mother households, accounting for socioeconomic status reduces the risk of early death by well over half; thus, policies that focus on increasing household income or improving access to health insurance may help reduce early life mortality risks among children and adolescents who live in single-parent and multigenerational households.

Family structure is related to socioeconomic factors: Parents with low incomes and education levels are much more likely than other parents to break up and have children with more than one partner.²¹ Their children are more likely to experience frequent changes in family structure as their parents separate and form new relationships; family ties are more complex, and households are more likely to include stepsiblings, grandparents, or other adults. Investing time and money in their children living in another household is more challenging for parents, and nonresident parents' financial and social support tends to be limited.

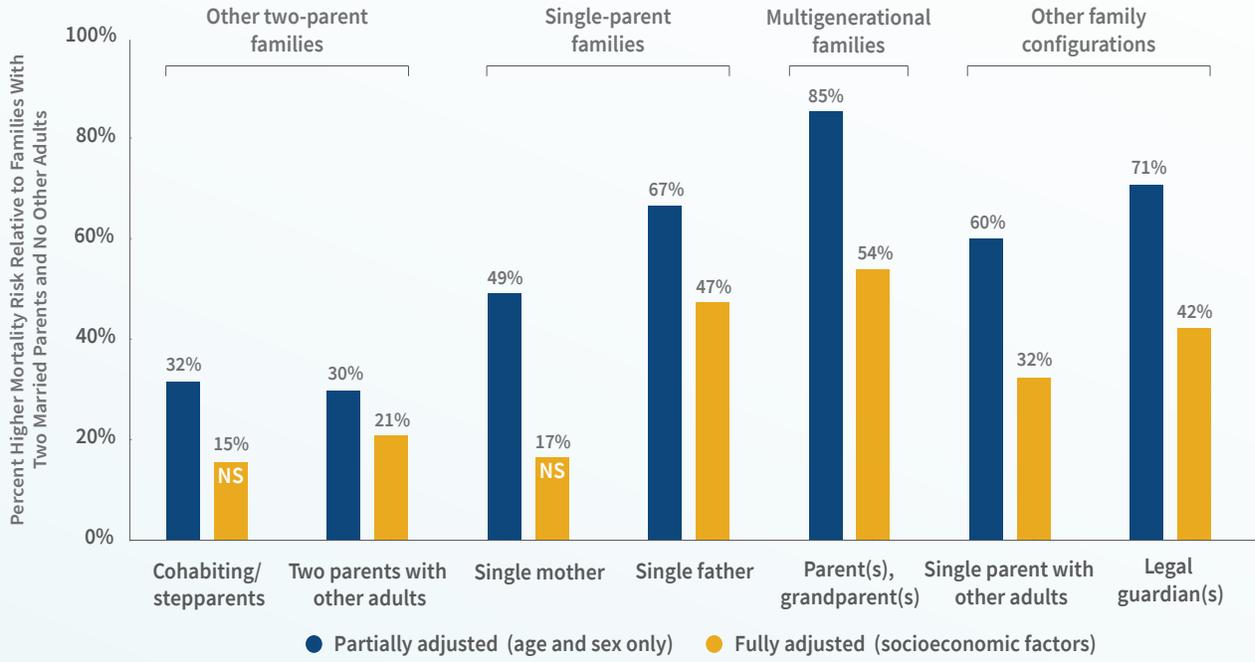
The increased risk of early death among children and young adults who are not living in households with two married parents is concerning because the share of children residing in cohabiting, single-parent, and extended and more complex family types has risen in the past half century.²² For example, between 1970 and 2020, the percentage of children under age 18 living with their two married parents declined from 85% to 70%, whereas the percentage living solely with their mothers increased from 11% to 21%.²³

Policies that focus on increasing household income or improving access to health insurance may help reduce early life mortality risks among children and adolescents who live in single-parent and multigenerational households.

FIGURE 12

FAMILY LIVING ARRANGEMENTS AMONG CHILDREN AND YOUNG ADULTS INFLUENCE THEIR RISK OF EARLY DEATH

U.S. Early Life (Ages 1 to 24) Mortality Risk by Family Structure, 1999-2015



Notes: The family types for cohabiting/stepparents; single mother; single father; parent(s), grandparent(s); and legal guardian(s) have no other adults present. The reference group—baseline at 0—is married parents (no other adults present). The analysis (using Cox proportional hazard models) is based on 1999–2011 National Health Interview Survey Linked Mortality Files records for 353,418 individuals, of whom 1,761 died. The partially adjusted model takes into account age and sex. The fully adjusted model accounts for age and sex as well as socioeconomic factors including race/ethnicity, nativity, region, family socioeconomic status, and the health or disability of children and other family members.

Definition: NS means not significant—that is, after taking demographic and/or socioeconomic factors into account, the differences between the two groups were no longer meaningful.

Source: Richard G. Rogers et al., “Family Structure and Early Life Mortality in the United States,” *Journal of Marriage and Family* 82, no. 4 (2020): 1159-77.

How Can the United States Reduce Early Life Mortality?

It is vital that we study and craft policies tailored to reducing preventable early deaths, which differ from adult mortality in important ways.

- Infants, children, adolescents, and even young adults are dependent on parents and older adults for their health and survival.
- Many deaths during infancy are related to prematurity and congenital malformations, and during older childhood and young adulthood to unintentional and intentional injuries, while deaths at older adult ages are primarily due to chronic and degenerative diseases.
- Older adults may suffer from the culmination of years of risky behaviors (overeating, inactivity, smoking, drinking, and drug abuse) that result in chronic and degenerative conditions (such as heart disease, cancer, diabetes, cirrhosis of the liver, and lung cancer), whereas individuals in early life tend to suffer from the immediate and acute effects of risky behaviors, such as unintentional injuries and violence.
- Early life is often characterized by experimentation, inexperience, and a sense of invincibility (for example, in drug and alcohol use and risky driving), which can result in unintentional injuries (including drug and alcohol overdoses and motor vehicle, recreational, and gun-related injuries; see Box 2).
- Some of the largest mortality disparities across groups occur in early life, such as wide sex disparities in mortality; socioeconomic disparities in early death; and racial/ethnic disparities in infant, child, and young adult mortality.

Reducing high levels of early life mortality is a patently solvable problem. For example, given a realistic goal of 2% annual reduction, the mortality rate for the age group 20 to 24 should have declined from 93.6 in 2000 to 66.4 in 2017; instead, it increased to 95.6. To grasp the importance of this trend, more than 50,000 young adults would still be alive today had we achieved this modest annual reduction goal among the age group 20 to 24 between 2000 and 2017.

As a society, then, aggressive action is required to reduce early life mortality, such as prioritizing social, economic, and health policies and programs that increase the survival rates of infants, children, and young adults. This prioritization of improved early life survival is a policy choice. From an optimistic perspective, the United States can markedly reduce early life mortality and narrow or eliminate mortality disparities. Doing so may involve adopting proven strategies that have worked in other high-income countries and/or in certain areas of the United States. Compared with other high-income countries, U.S. social and health policies are generally more decentralized, often relying on states or local areas, and less generous in many areas, including housing and income support.²⁴ From a pessimistic perspective, the United States could continue to experience excessively high early life mortality and thereby continue to lag behind and potentially further diverge from other high-income countries. Prioritizing and dedicating resources to the safety and well-being of our youth are particularly important during the COVID-19 pandemic and the social and economic recovery in the coming years.

Gun-Related Deaths in Early Life

The United States has disproportionately high numbers of firearm-related deaths compared with most of its peer countries.²⁵ In 2016, the United States experienced 37,200 gun-related deaths, compared with 455 in Japan, 274 in Australia, and 54 in New Zealand. The United States has extraordinarily high numbers of both single-event homicides and mass shootings, both of which often involve children. Handguns are the most common means of suicide and homicide in the United States. Gun violence killed 7,580 U.S. children and young adults under age 25 in 2019; 39% of these deaths were suicides, while 61% were homicides. In fact, individuals under age 25 accounted for almost one-third (32%) of all U.S. homicides by firearm in 2019.²⁶

Common explanations for the high rate of U.S. gun-related deaths are the prevalence of gun ownership (an estimated 32% of individuals or 44% of households), lax regulation of specific types of weapons, exposure to violence in the media, and insufficient mental health care.²⁷ Many American gun owners keep their firearms loaded, unlocked, and easily accessible in their homes and cars and on their person.²⁸ Removing immediate access to firearms reduces suicide rates. Gun regulations differ across states, which further challenges safety measures.²⁹

What Can We Learn From Other Countries?

Other nations have enacted—by American standards—relatively stringent gun laws. For instance, following a shooting that left 14 people dead, Canada “imposed a twenty-eight-day waiting period for purchases; mandatory safety training courses; more detailed background checks; bans on large-capacity magazines; and bans or greater restrictions on military-style firearms and ammunition.”³⁰ More recently, Canada moved to ban military-style assault weapons outright, prohibiting their purchase, sale, use, and importation within national borders. Japan and Israel limit civilians to shotguns and air rifles and require extensive safety training, licensing, and mental health screening. Australia, New Zealand, and the United Kingdom have national registries and policies that require individuals to demonstrate their need to own a firearm.

Mandatory gun buybacks and outright bans akin to those implemented in New Zealand and the United Kingdom are likely to be less well received in the United States, largely because many Americans are reluctant to sell their guns to the government and perceive gun culture as tied to the country’s revolutionary origins and frontier history. Nevertheless, most Americans support further regulation of gun ownership.³¹ States that have passed more restrictive gun laws have lower firearm-related mortality rates.³²

Potential Policy Solutions

- Institute universal background checks, waiting periods, and gun safety training.
- Establish a robust federal database of gun owners.
- Create a national firearm licensing system.
- Repeal concealed-carry licenses.
- Ban assault weapons, high-capacity magazines, and bump stocks.
- Restrict gun ownership by persons with criminal records.
- Increase the legal age to buy a gun.
- Offer gun buyback programs.
- Pass extreme risk protection order laws, and use restraining and *ex parte* orders to reduce gun access among youth and people at risk of harming themselves or others (for example, in cases of domestic abuse).
- Integrate focused deterrence interventions and community policing practices into local law enforcement agencies, and hospital-based interventions at the national level.
- Fund research into the risk factors for and effects of gun violence.
- Promote media reporting guidelines designed to stop sensationalizing coverage of shootings.
- Expand access to high-quality mental health care.

For additional resources, please see James Densley and Jillian Patterson, “Opinion: We Analyzed 53 Years of Mass Shooting Data. Attacks Aren’t Just Increasing, They’re Getting Deadlier,” *Los Angeles Times*, Sept. 1, 2019; Chris Murphy, *The Violence Inside Us: A Brief History of an Ongoing American Tragedy* (New York: Random House, 2020); and Judith Palfrey and Sean Palfrey, “Preventing Gun Deaths in Children,” *New England Journal of Medicine* 368 (2013): 401-3.

Addressing foundational inequalities and structural vulnerabilities for early life mortality is an important social investment that could reap benefits in both the short and long term.

Most generally, the United States could focus on reducing early deaths through structural-level initiatives that are informed by the research studies described above. Our review documented much higher early life mortality rates in the United States compared with other high-income countries, and wide disparities in early death by family socioeconomic status, family structure, race/ethnicity, sex, and geographic area. Individual-level solutions (such as instructing children not to take drugs or use guns or urging parents to seek medical care for their children) to problems that are broad in scope are insufficient; major structural initiatives are necessary. Similarly, ensuring the health and socioeconomic well-being of U.S. women of childbearing age, especially Black and Hispanic women and those with low education and income levels, will have important impacts on reducing infant mortality and the disparities that underlie it. We highlight here five fundamental policy-oriented goals for reducing early life mortality throughout the population and ameliorating disparities in early death.

Goal 1: Reduce Child Poverty and the Percentage of Parents Without a High School Degree

Our research findings described above plainly show a strong relationship between family income and U.S. early life mortality: Children who live in families with lower incomes have higher risks of death, especially due to unintentional injuries and homicides. This higher mortality risk is troubling because more than four in 10 U.S. children in our analysis, which spanned from 1998 to 2015, were living in families that were either poor (19% reported an income-to-needs ratio of less than 100%) or near poor (23% reported an INR of 100 to less than 200%).³³ In fact, compared with other high-income countries, the United States has among the highest poverty rates for children overall and for children living with single mothers.³⁴ Moreover, after taking into account taxes and government benefits such as food assistance and housing vouchers, the U.S. child poverty rate was the second highest out of 35 advanced economies, lower than only Romania.³⁵ These child poverty levels expose a

significant share of children to a high risk of death in one of the wealthiest countries in the world.

The American Rescue Plan Act of 2021, signed into law in March 2021, sought to mitigate the impacts of the COVID-19 pandemic. This law provided families with direct payments and expanded tax credits, alongside funding for education, housing, and health care, and is expected to halve the number of children living in poverty. The law's provisions built on existing programs (such as the Earned Income Tax Credit) and established new initiatives, as suggested by a 2019 National Academies of Sciences, Engineering, and Medicine (NASEM) report on reducing child poverty.³⁶ However, most of the provisions were temporary, ending before 2022. Lowering child poverty in the long term will require enhanced and sustained policy efforts. The effects of the American Rescue Plan will be challenging to assess since it was enacted amidst the COVID-19 pandemic, yet we are optimistic that reductions in poverty and greater support for education, housing, and health care will benefit American children. The Biden administration's American Families Plan, presented to Congress in spring 2021, offered direct support to families through paid leave, child care, preschool, and nutritional programs. It also proposed to make the tax credits from the American Rescue Plan permanent. The provisions of this plan are also in line with NASEM recommendations and would reduce child poverty and promote youth well-being generally.

Additionally, our work showed that low educational attainment among parents—both mothers and fathers—is strongly associated with a higher risk of early life mortality, even after taking family income into account.³⁷ This association between parents' education levels and early death is especially strong among children of parents without a high school degree. Building on earlier research by other scholars working on issues of parents' education and child well-being, we argue that the United States could reduce early life mortality and socioeconomic disparities in early death rates through policies focused on reducing the percentage of parents who do not complete a high school education.³⁸ From a practical perspective, it may be far easier and quicker to reduce deaths before age 25 by focusing on child poverty in comparison to improving parents' education. A substantial percentage of U.S. young adults ages 25 to 34 (7% in 2019) still lack a high school degree, a level of educational attainment that is associated with significantly worse health among their children and considerably higher rates of early

death compared with children of parents with more education.³⁹ Increasing education levels among the U.S. population, with particular attention to reducing the percentage of people who do not receive a high school degree, is another policy avenue that, in the long term, could reduce early life mortality and the socioeconomic disparities therein.⁴⁰

Goal 2: Reduce Racial/Ethnic Inequality

Our results documented wide racial/ethnic disparities in infant mortality and mortality due to unintentional injuries and violence, which are all amenable to policy interventions. The single most important factor related to racial/ethnic disparities in early life mortality is socioeconomic status. Thus, as discussed above in Goal 1, it is critical to reduce poverty among young American families and decrease the percentage of parents who do not have a high school degree among all racial/ethnic groups. Doing so could have the critical spillover effect of reducing racial/ethnic disparities in early death because of the links among race/ethnicity, socioeconomic status, and early life mortality.

Beyond socioeconomic status, disparities in early life mortality reflect racial/ethnic inequality that is partly the result of multiple, interlocking systems of discrimination, and will persist until systemic changes produce equality in all domains of American life. One important step would be to address the use of force by police against children and young adults. A recent study published in the journal *Pediatrics* finds that compared with non-Hispanic white children ages 12 to 17, non-Hispanic Black children face a six-fold and Hispanic children face an almost three-fold higher risk of death from shootings related to police intervention.⁴¹ Although these deaths may be few in the context of national patterns, they can have diffuse effects on individuals and their communities. We therefore recommend the action steps outlined by the American Public Health Association for treating law enforcement violence as a critical public health issue.⁴²

Furthermore, addressing racial/ethnic discrimination in health care settings should be a priority because high-quality health care can save lives and is a key factor for infant survival. Racism in the operations of health care systems and in patient-provider interactions reduces access to and quality of care for people of color. Measures such as

increasing diversity among health care providers, providing full funding for community health centers and workers, and facilitating stronger enforcement of civil rights violations can increase equality in health care settings.⁴³

Goal 3: Reduce Gender Differences in Early Life Mortality

The United States could simultaneously strive to provide healthy and long lives for both men and women while reducing gender disparities in early life mortality. Many social and health scientists expect the sex differential in mortality to close over the next several decades, as more highly educated men engage in more preventive behaviors and fewer risky behaviors compared with previous cohorts.⁴⁴ The gender gap in mortality may also close as some women take up more unhealthy and risky behaviors. Because males have a higher risk of most causes of death in early life than females, most successful interventions may disproportionately benefit males. Higher testosterone levels among males explain part of the sex differential in mortality, although they do not address why the gender differential varies over time and geographic area. Instead, many sex differences in early life mortality are due to differences in social and cultural factors, health behaviors, and contextual factors.

Some excessive male mortality, especially among those ages 15 to 24, results from gendered socialization, with more men than women engaging in such unhealthy behaviors as fighting and driving too fast.⁴⁵ Driving while intoxicated is more common among men than women and places the driver and others at risk. However, norms around masculinity vary over time and by geographic area and are shaped by norms and values at local, regional, and national levels. Thus, cultural and policy shifts and interventions could change social norms by encouraging positive and nonviolent ways to deescalate and resolve conflict.⁴⁶ Practically, this change may be achieved by additional investments in providing counselors and social workers in schools and implementing specific interventions geared toward males.

Increased health care services and access could also close the sex gap in early life mortality and reduce deaths before age 25 (see Goal 4 below). Untreated depression, other mental health problems, overuse of alcohol, and use of firearms form a dangerous combination and partly account for the higher risks

of unintentional injuries and violence among young men compared with young women. Health care professionals in schools, clinics, and medical offices provide a range of health care services, including support for emotional and physical health. Some youth benefit from treatment for substance abuse. Public service messages and educational institutions could work to destigmatize counseling, especially for boys and young men. Policies aimed at mental health awareness and treatment could alleviate much of the needless death among young men and women.

Goal 4: Support Quality, Accessible Health Care

The United States could increase health care access for all children and parents, including people of color, undocumented immigrants, and those in poverty. Many children start life at a disadvantage. For example, Medicaid, a government program that helps low-income individuals pay for medical care, was the source of payment for the delivery of 42% of U.S. babies in 2018.⁴⁷ Lack of private health insurance may result in limited or no prenatal care, no usual source of care, and fewer doctor visits for health check-ups and preventive care, including vaccinations. Increased access to health care can reduce deaths before age 25. Compared with peer countries, the United States spends the most on health care per capita, but has “the most costly, inefficient, wasteful, and inequitable health care system in the industrialized world”; worse health; and comparatively low life expectancies.⁴⁸ Children have access to a patchwork of health care and health insurance that varies by state. All states should adopt Medicaid expansion under the Affordable Care Act, which has improved infant and child health outcomes.⁴⁹

Reproductive health programs that help couples plan and time pregnancies by improving access to reliable and effective contraceptives, including long-acting reversible contraceptives (LARCs) such as intrauterine devices and injectables, can reduce mistimed and unplanned pregnancies; reduce abortions; reduce obstacles to and increase opportunities for women’s educational attainment; and ultimately improve children’s SES, health,

and survival prospects.⁵⁰ LARCs can contribute to healthier birth outcomes (including fewer low birthweight babies and longer intervals between births), more stable and supportive families, and higher parental SES, which lay the foundation for strong, supportive, nurturing families and support networks for children. Among individuals and couples with children, parental leave policies and affordable, high-quality child care could further support social ties between parents and children and improve the health of children. President Biden’s proposed legislation to expand government services such as universal preschool, tax breaks for families, paid family and medical leave, and access to affordable child care could substantially improve child health and survival prospects.

Health care access should incorporate effective treatment for and prevention of mental illness and substance use. High early life mortality rates may represent a particularly malevolent form of social contagion that can spill over to impact the broader community. The death of a child may strain families and neighborhoods and lead to poorer mental and physical health, and a higher risk of death among survivors.⁵¹ Violence often begets violence. Copycats may mimic previous adolescent and young adult suicides and homicides.

Mental health and substance use problems have increased during the COVID-19 pandemic and have the potential for immediate and long-term harm for American youth. COVID-19 has contributed to increased illness, and the pandemic has affected parental job and income loss and caregiving burdens, which can impact child psychological well-being.⁵² Although recent reports show that national suicide rates were lower in 2020 compared with previous years, overdose deaths were higher.⁵³ Effective care for mental health and substance use disorders will be particularly important as we cope with the effects of social isolation, financial pressures, school closures, and other COVID-19-related events and stressors.

Goal 5: Enact Broad Safety Measures

The United States could create additional policies and programs to reduce injury-related deaths among infants, children, and young adults. Unintentional injuries can be reduced by making residences, neighborhoods, cars, roads, parks, and swimming pools safer.⁵⁴ Ensuring that families have access to the knowledge and resources to provide their children with a safe environment may help reduce early life mortality. Alleviating poverty and other forms of social deprivation may reduce disparities in this access, but additional public safety programs targeting specific groups will likely also prove advantageous.

Motor vehicle crashes account for most accidental deaths in early life. While innovations and policies for car seats, seatbelts, and other safety measures have improved crash outcomes, there is ample room for further improvement, including reducing impaired driving and properly restraining youth while driving. About one in five child passenger deaths involves a driver impaired by alcohol, and nearly one-third of children who die in motor vehicle crashes are not restrained.⁵⁵ Regulations

and enforcement for child passenger safety and driver impairment differ across states; consistent implementation and enforcement of policies across states may reduce both early deaths and disparities therein.⁵⁶ For example, programs that help families obtain and install car seats can save lives. Social policies could also lower speed limits, require seat belt use and motorcycle helmets, actively enforce the minimum drinking age, and require ignition locks for individuals who have been convicted of drunk driving offenses.

The United States could drastically reduce mortality in early life and at other ages by reducing gun-related deaths. Compared with other high-income countries, the United States has the highest prevalence of gun ownership and the most lax gun laws, which the data show is a lethal combination. In a 2019 analysis of 29 high-income countries, Erin Grinshteyn and David Hemenway found that the United States accounted for 97% of the firearm deaths among children ages 0 to 4 and 92% of firearm deaths for those ages 5 to 14.⁵⁷ Box 2, page 23, offers several policy solutions that could substantially reduce gun-related deaths in the United States.

High early life mortality rates may represent a particularly malevolent form of social contagion that can spill over to impact the broader community. The death of a child may strain families and neighborhoods and lead to poorer mental and physical health, and a higher risk of death among survivors.

Conclusion

In the United States, far too many lives end far too early every year. Early life deaths are strongly patterned by gender, race/ethnicity, family socioeconomic status, family structure, and residential geography. Many of today's infants, children, and young adults experience substantial and sometimes life-threatening instability in families, housing, schools, and neighborhoods, along with parental instability in employment and income. Early life can be especially hard for the millions of U.S. children living in poverty, with unaffordable or inaccessible health care, and with single-parent or complex family structures.

After decades of improvement, U.S. early life mortality is no longer declining, and now registers well above rates in other high-income countries. We expect that early life mortality will rise as we assess the toll of COVID-19 and its social and economic consequences, highlighting the importance of ongoing research on the well-being of American children and young adults (see Box 3). Unlike older adults, who die mostly of chronic and degenerative

diseases, our children, adolescents, and young adults are at greater risk of death from injuries, which are often preventable and amenable to public policy initiatives and interventions. Given the problems we have identified, the United States needs to rethink and retool some of its social and health policy decisions and investments to better target young families, infants, children, and young adults. As outlined above, such policy initiatives include those focused on socioeconomic and racial/ethnic inequality, as well as those specifically targeting excess male mortality. Other needed initiatives are more general and focus on ensuring health care access for all, gun safety, and transportation safety. All told, the United States has a substantial need to reduce child poverty, eliminate racial/ethnic inequalities, improve the health behavior of children and young adults, and increase health care access for everyone. More purposefully supporting infants, children, young adults, and young families is an essential way to ensure a brighter future for all Americans.

The United States needs to rethink and retool some of its social and health policy decisions and investments to better target young families, infants, children, and young adults.

BOX 3

Future Research Directions

We have documented early life mortality using the most recent data available. Future research should continue to monitor, and national and international agencies should regularly publish, patterns and trends in deaths before age 25, including those reported in this Bulletin. Evaluating the effects of policies is also a feasible and fruitful area of research, and geographic and temporal variations in policies provide valuable opportunities for identifying which policies work, for whom they work, and why. Those with the most resources are often the first to benefit from social or technological changes; policies or interventions that are neutral to social characteristics can often exacerbate inequalities.⁵⁸ Identifying heterogeneity in policy effects, as well as in early life mortality patterns and trends, is therefore a laudable research goal.

It will be particularly important to consider how dynamic contexts shape early death. While COVID-19 mortality rates among young people ages 0 to 24 are low to date, the risks and disparities described in this Bulletin will likely persist and potentially amplify during and after the COVID-19 pandemic. The challenges of the pandemic have brought into stark relief the racial/ethnic and socioeconomic inequalities underlying the patterns we document here. The social isolation, uncertainty, and economic effects of the pandemic can heighten mental health and substance use issues, at the same time as services and facilities become less available. Monitoring these patterns and trends, alongside evaluating the effects of harm reduction and other evidence-based policies, will be crucial research efforts in the coming years.

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Dying Young in the United States

What's Driving High Death Rates Among Americans Under Age 25 and What Can Be Done?

Although deaths in early life (before age 25) are relatively rare, young Americans face lower life expectancies and higher death rates than individuals in other affluent countries. In this *Population Bulletin* we explore these differences, examining who in the United States is most at risk of early death and why. We also discuss economic, social, and health policies that may reduce U.S. deaths before age 25.



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