

## SECTION 3. HEALTH CONDITIONS AND HEALTH CARE

**Health Care**

**Health Conditions**



### HC 3.1 Infant Mortality

Infancy is defined as the first year of life and is commonly divided into two periods. The first is the neonatal period which is the first 27 days of life. The second is the postnatal period which is 28 days to 1 year. The infant mortality rate is an important measure of the well-being of infants and children because it is associated with a variety of factors such as maternal health, access to medical care, socioeconomic factors, and public health practices.<sup>1</sup> Despite advances in neonatology that have greatly improved the chances infants will survive the neonatal period, about two-thirds of infant deaths occur during this time and are due mostly to health problems of the infant or the pregnancy, such as preterm delivery or birth defects.

The United States infant mortality rate has decreased rapidly over the past three decades, largely due to medical developments over this time. Between 1960 and 2000, the rate fell from 26.0 to 6.9 infant deaths per 1,000 live births (Figure HC 3.1.A). There was also a steep decline in the rate of neonatal deaths (from 18.7 to 4.6 infant deaths per 1,000 live births) and a smaller, more gradual decline in the rate of postnatal deaths (from 7.3 to 2.3 infant deaths per 1,000 live births).

The three leading causes of death to infants, overall, are congenital anomalies, disorders relating to a short gestation period and low birthweight, and sudden infant death syndrome (SIDS).<sup>2</sup> In 1994, SIDS dropped from the second to the third leading cause of infant mortality. The SIDS decline accounted for nearly one-third of the total drop in infant mortality in 1995 and 1996.<sup>3</sup> Infant deaths due to SIDS have been declining since 1989, including nearly a 12 percent drop between 1996 and 1997.<sup>4</sup>

Despite declines in recent decades, the United States infant mortality rate ranks among the highest of industrialized nations. For example, in 1995, the rate of infant deaths per 1,000 live births was 3.9 in Finland, 4.3 in Japan, 5.3 in Germany, and 6.1 in England and Wales, compared with 7.6 deaths per 1,000 live births in the United States. The Russian Federation, in contrast, had an infant mortality rate of 18.2 deaths per 1,000 live births in 1995.<sup>5</sup>

<sup>1</sup> Klannion, J.C. & Kiely, J.L. (1991) Infant Mortality. *Healthy People 2000*. Hyattsville, MD: National Center for Health Statistics.

<sup>2</sup> Ventura, S. J., Anderson, R. N., Martin, J. A., & Smith, B. L. (1998). Births and Deaths: Preliminary Data for 1997. *National Vital Statistics Report*, 47(4).

<sup>3</sup> Singh, G. K., Kochanek, K. D., & MacDorman, M. F. (1994). Advance Report of Final Mortality Statistics, 1994. *Monthly Vital Statistics Report*, 45(3 Supp.).

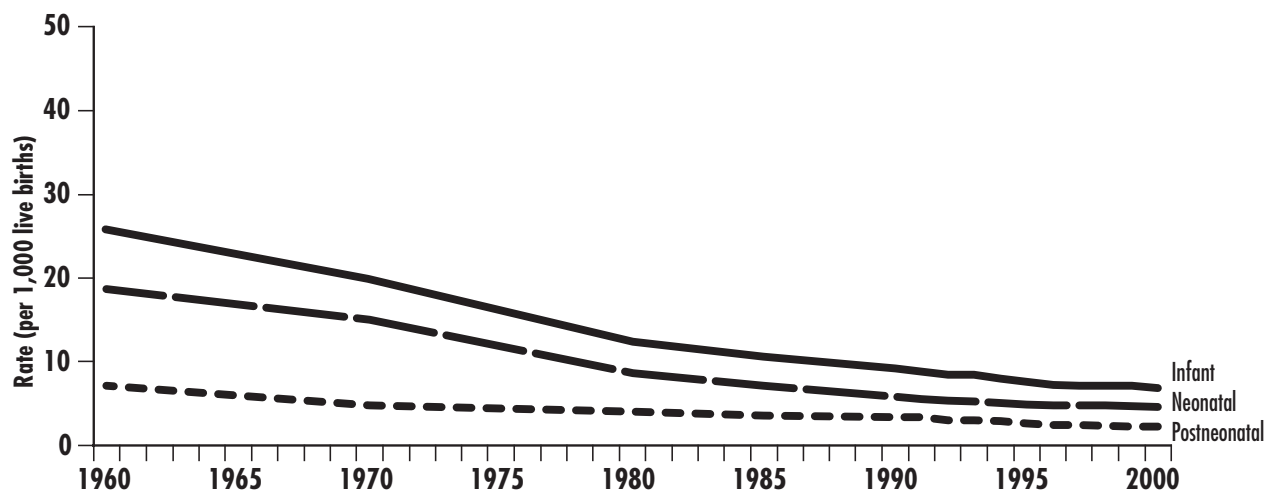
<sup>4</sup> Ventura, S. J., Anderson, R. N., Martin, J. A., & Smith, B. L. (1998). Births and Deaths: Preliminary Data for 1997. *National Vital Statistics Report*, 47(4).

<sup>5</sup> U.S. Public Health Service (1996). *Vital Statistics of the United States, 1991*. Washington, DC: National Center for Health Statistics; United Nations (1996). *Demographic Yearbook 1996*. New York, NY: Centers for Disease Control and Prevention.

**Differences by Race and Hispanic Origin.**<sup>6</sup> While infant mortality rates have declined for all races and ethnic groups in the United States, there is nevertheless, considerable variation by race and Hispanic origin (Figure HC 3.1.B). The infant mortality rate declined most noticeably for White and Black infants between the years 1960 and 1999. Specifically, the number of Black infant deaths decreased from 44.3 to 13.5 deaths per 1,000 live births and the number of White infant deaths decreased from 22.9 to 5.7 per 1,000 live births (Table HC 3.1.A). Among all Hispanics, Puerto Ricans have the highest infant mortality rates with 8.2 deaths per 1,000 live births in 2000 (Table HC 3.1.B).

**Figure HC 3.1.A**

Infant,<sup>a</sup> neonatal,<sup>b</sup> and postneonatal<sup>c</sup> mortality rates: 1960<sup>d</sup>-2000



<sup>a</sup> Under one year old.

<sup>b</sup> Under 28 days old.

<sup>c</sup> Twenty-eight days to 1 year old.

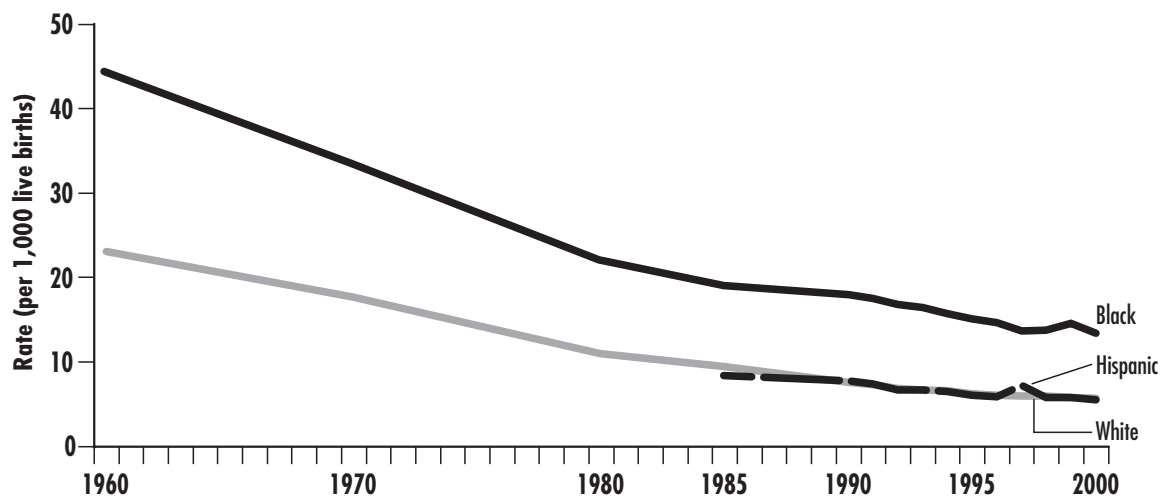
<sup>d</sup> Includes births and deaths of persons who were not residents of the 50 states and the District of Columbia.

Sources: Ventura, S. J., Anderson, R. N., Martin, J. A., & Smith, B. L. (1998). Births and Deaths: Preliminary Data for 1997. *National Vital Statistics Report*, 47(4); Anderson, R. N., Kochanek, K. D., & Murphy, S. L. (1997). Report of Final Mortality Statistics, 1995. *Monthly Vital Statistics Report*, 45(11(Supp. 2)); U.S. Department of Health and Human Services, National Center for Health Statistics (2002). *Health, United States, 2002*. Hyattsville, MD: National Center for Health Statistics; U.S. Department of Health and Human Services, National Center for Health Statistics (1988). *Vital Statistics of the United States, 1985*. Washington, DC: U.S. Government Printing Office.

<sup>6</sup> Persons of Hispanic origin may be of any race. Estimates for Whites and Blacks include Hispanics of those races. Infant mortality data for Asians/Pacific Islanders and American Indians/Alaska Natives are presented from the National Linked Files of Live Births and Infant Deaths. Rather than relying solely on death certificate data, which may underestimate mortality for infants of Hispanic origin or of races other than White and Black, data from the National Linked Files of Live Births and Infant Deaths use race from birth certificates and, therefore, provide more accurate data for these populations. The National Linked Files of Live Births and Infant Deaths data are available for 1983-1991, 1995-1996, and 1998.

**Figure HC 3.1.B**

Infant mortality rates by race and Hispanic origin:<sup>a</sup> 1960<sup>b</sup>-2000



<sup>a</sup> Persons of Hispanic origin may be of any race. Estimates for Whites and Blacks include Hispanics of those races. Hispanic rates not available prior to 1985. Infant mortality by Hispanic origin was reported by 17 states and the District of Columbia in 1985; 45 states, New York State (excluding New York City), and the District of Columbia in 1990; 47 states, New York State (excluding New York City), and the District of Columbia in 1991; 48 states and the District of Columbia in 1992; 49 states and the District of Columbia from 1993 to 1996; and all 50 states and the District of Columbia in 1997.

<sup>b</sup> Includes births and deaths of persons who were not residents of the 50 states and the District of Columbia. Data for 1960 are by race of child; all other years are by race of mother.

Sources: U.S. Department of Health and Human Services, National Center for Health Statistics (2002). *Health, United States, 2002*. Hyattsville, MD: National Center for Health Statistics; U.S. Department of Health and Human Services, National Center for Health Statistics (1988). *Vital Statistics of the United States, 1985*. Washington, DC: U.S. Government Printing Office.

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**Table HC 3.1.A**

Infant,<sup>a</sup> neonatal,<sup>b</sup> and postneonatal<sup>c</sup> mortality rates (deaths per 1,000 live births), by race and Hispanic origin:<sup>d</sup> Selected years, 1960-2000

	1960 <sup>e</sup>	1970	1980	1985	1990	1995	1996	1997	1998	1999	2000
<b>Infant</b>	26.0	20.0	12.6	10.6	9.2	7.6	7.3	7.2	7.2	7.0	6.9
White	22.9	17.6	10.9	9.2	7.6	6.3	6.1	6.0	6.0	5.8	5.7
Black	44.3	33.3	22.2	19.0	18.0	15.1	14.7	14.2	13.8	14.0	13.5
Hispanic	—	—	—	8.6	7.8	6.1	5.9	6.0	5.8	5.7	5.6
<b>Neonatal</b>	18.7	15.1	8.5	7.0	5.8	4.9	4.8	4.8	4.8	4.7	4.6
White	17.2	13.7	7.4	6.0	4.8	4.1	4.0	4.0	4.0	3.9	3.8
Black	27.8	23.2	14.6	12.6	11.6	9.8	9.6	9.4	9.4	9.5	9.1
Hispanic	—	—	—	5.4	5.0	4.0	3.8	3.9	3.9	3.9	3.8
<b>Postneonatal</b>	7.3	4.9	4.1	3.7	3.4	2.7	2.5	2.5	2.4	2.3	2.3
White	5.7	4.0	3.5	3.2	2.8	2.2	2.1	2.0	2.0	1.9	1.9
Black	16.5	10.1	7.6	6.4	6.4	5.3	5.1	4.8	4.4	4.5	4.3
Hispanic	—	—	—	3.2	2.8	2.1	2.1	2.0	1.9	1.8	1.8

<sup>a</sup> Under one year old.

<sup>b</sup> Under 28 days old.

<sup>c</sup> Twenty-eight days to 1 year old.

<sup>d</sup> Persons of Hispanic origin may be of any race. Estimates for Whites and Blacks include Hispanics of those races. Hispanic rates not available prior to 1985. Infant mortality by Hispanic origin was reported by 17 states and the District of Columbia in 1985; 45 states, New York State (excluding New York City), and the District of Columbia in 1990; 47 states, New York State (excluding New York City), and the District of Columbia in 1991; 48 states and the District of Columbia in 1992; 49 states and the District of Columbia from 1993 to 1996; and all 50 states and the District of Columbia in 1997.

<sup>e</sup> Includes births and deaths of persons who were not residents of the 50 states and the District of Columbia. Data for 1960 are by race of child; all other years are by race of mother.

— Data not available.

Sources: U.S. Department of Health and Human Services, National Center for Health Statistics (2002). *Health, United States, 2002*. Hyattsville, MD: National Center for Health Statistics; U.S. Department of Health and Human Services, National Center for Health Statistics (1988). *Vital Statistics of the United States, 1985*. Washington, DC: U.S. Government Printing Office.

## Mortality

**Table HC 3.1.B**

Infant<sup>a</sup> mortality rates (deaths per 1,000 live births), by race and Hispanic origin:<sup>b</sup> Selected years, 1983-2000

	1983-1985 <sup>c</sup>	1986-1988 <sup>c</sup>	1989-1991 <sup>c</sup>	1995	1996	1997	1998	1999	2000
<b>Infant mortality rate</b>	10.6	9.8	9.0	7.6	7.3	7.2	7.2	7.0	6.9
White	9.0	8.2	7.4	6.3	6.1	6.0	6.0	5.8	5.7
Black	18.7	17.9	17.1	14.6	14.1	13.7	13.8	14.0	13.5
American Indian/Alaska Native	13.9	13.2	12.6	9.0	10.0	8.7	9.3	9.3	8.3
Asian/Pacific Islander	8.3	7.3	6.6	5.3	5.2	5.0	5.5	4.8	4.9
Chinese	7.4	5.8	5.1	3.8	3.2	3.1	4.0	2.9	3.5
Japanese	6.0	6.9	5.3	5.3	4.2	5.3	3.5	3.4	4.6
Filipino	8.2	6.9	6.4	5.6	5.8	5.8	6.2	5.8	5.7
Hawaiian and part Hawaiian	11.3	11.1	9.0	6.6	5.6	9.0	10.0	7.1	9.1
Other Asian or Pacific Islander	8.6	7.6	7.0	5.5	5.7	5.0	5.7	5.1	4.8
Hispanic	9.2	8.3	7.5	6.3	6.1	6.0	5.8	5.7	5.6
Mexican American	8.8	7.9	7.2	6.0	5.8	5.8	5.6	5.5	5.4
Puerto Rican	12.3	11.1	10.4	8.9	8.6	7.9	7.8	8.3	8.2
Cuban	8.0	7.3	6.2	5.3	5.1	5.5	3.6	4.7	4.5
Central and South American	8.2	7.5	6.6	5.5	5.0	5.5	5.3	4.7	4.6
Other and unknown Hispanic	9.8	9.0	8.2	7.4	7.7	6.2	6.5	7.2	6.9

<sup>a</sup> Under 1 year old.

<sup>b</sup> Persons of Hispanic origin may be of any race. Estimates are based on specified race or national origin of mother.

Estimates for separate race groups include Hispanics of those races.

<sup>c</sup> Rates based on unweighted birth cohort data.

Sources: U.S. Department of Health and Human Services, National Center for Health Statistics (2002). *Health, United States, 2002*. Hyattsville, MD: National Center for Health Statistics.

## SECTION 3. HEALTH CONDITIONS AND HEALTH CARE

## HC 3.2 Death Rates

The majority of deaths, almost 70 percent, of children and youth ages 1 to 24 are due to injuries, both unintentional and intentional, and therefore largely preventable.<sup>1</sup> The proportion of deaths due to injury increases with age from 44 percent for children 1 to 4 years old to 77 percent for youth 15 to 24 years old.<sup>2</sup> Similarly, older youth (ages 15 to 19) are more than 8 times more likely to die as a result of a firearms injury than younger youth (ages 10 to 14). Death due to firearms includes homicide, suicide, legal intervention, and unintentional death by firearms.

**Differences by Age.** Children 1 to 4 years old are more likely to die of unintentional injuries or homicide, while youth ages 15 to 24 are more likely to die of traffic accidents or firearm-related injuries. The most dramatic decline in death rates occurred among children under age 15, with decreases of 67 percent among children ages 1 to 4, 62 percent among children ages 5 to 9, and 48 percent among children ages 10 to 14 since 1960 (Figure HC 3.2.A). Most of the decline in the death rate for these groups occurred between 1960 and 1990.

**Differences by Race and Hispanic Origin.**<sup>3</sup> Multiyear data from the National Center for Health Statistics are used to examine the differences in the death rate of children and youth for several racial and ethnic groups across four time periods spanning 1992 to 1999 (Table HC 3.2.A). For children ages 1 to 24, Black children and youth have the highest death rate, while Asian and Pacific Islander children have had the lowest death rates. Comparing the death rates of Black and White youth (ages 15 to 19) since 1970, the disparity was substantial in 1970 but had disappeared in the early 1980s (Figure HC 3.2.B). However, the death rate for Black youth grew rapidly in the early 1990s before starting a new downward trend in the late 1990s. Much of this increase in Black youth deaths reflected a substantial increase in Black youth male homicide rates.

The rate of death due to injury by firearms is also higher for Blacks than for Whites. In 2000, the rate of firearm-related deaths for Black males ages 15 to 19 is more than 4 times the rate for their White male peers. However, this disparity has decreased since 1993, when the rate was over 5 times higher than that of White males (Figure HC 3.2.C and Table HC 3.2.B).

**Differences by Sex.** Among Blacks and Whites in both age groups, firearm-related deaths are more prevalent among males; for example, the death rate for Black females ages 15 to 19 was 5.8 per 100,000 in 2000, while the rate for Black males was nearly 10 times greater (62.2 per 100,000). Among Whites ages 15 to 19, females experience firearm-related deaths at approximately one-seventh the rate of males (Table HC.3.2.B).

<sup>1</sup> U.S. Department of Health and Human Services, National Center for Health Statistics (2001). *Health, United States, 2001 with Urban and Rural Health Chartbook*. Hyattsville, MD: National Center for Health Statistics.

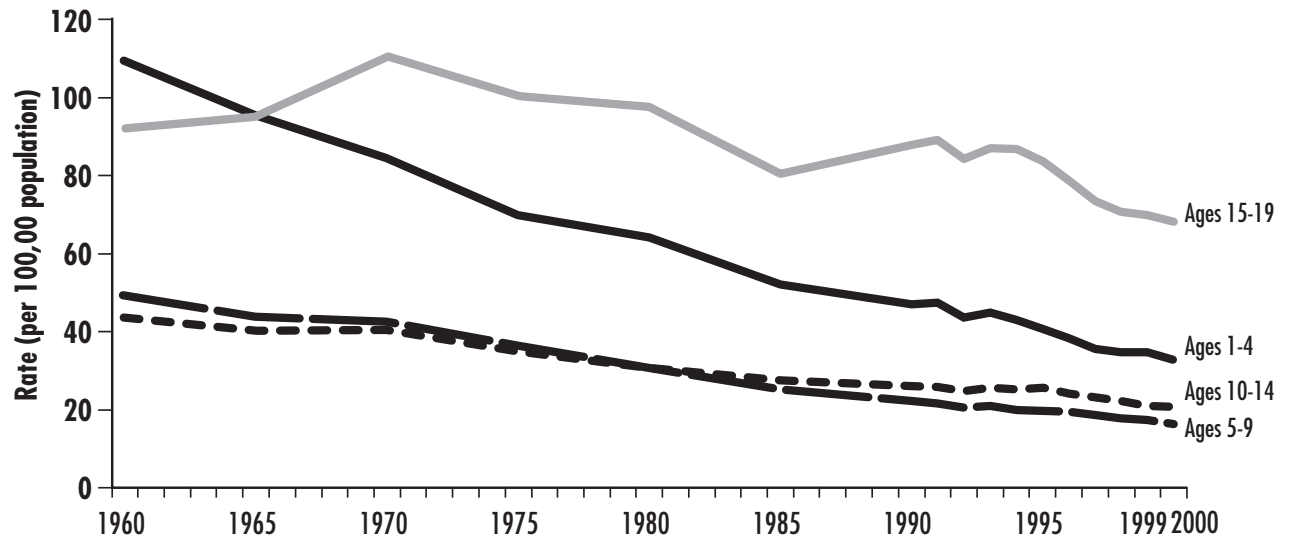
<sup>2</sup> Ibid.

<sup>3</sup> Persons of Hispanic origin may be of any race. Estimates for Whites, Blacks, Asians and American Indians include Hispanics of those races.



**Figure HC 3.2.A**

Child and youth death rates by age group: 1960-2000



Source: Minino, Arialdi M., Elizabeth Arias, Kenneth D. Kochanek, Sherry L. Murphy, Betty L. Smith (2002). Deaths: Final Data for 2000. *National Vital Statistics Report*, 50(15). Hoyert, Donna L., Elizabeth Arias, Betty L. Smith, Sherry L. Murphy, Kenneth D. Kochanek (2001). Deaths: Final Data for 1999. *National Vital Statistics Report*, 49(8). Center for Disease Control and Prevention. National Center for Health Statistics. Division National Vital Statistics. Additional Mortality Tables – Table HIST002A.

**Table HC 3.2.A**

Child and youth death rates (per 100,000 population in each age group) by age group, sex, and race and Hispanic origin:<sup>a</sup> Selected years, 1992-1999

	Combined Years 1992-1993			Combined Years 1994-1996			1998			1999		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
<b>Ages 1-14</b>	29.3	33.7	24.6	27.6	31.7	23.3	24.0	27.3	20.5	23.5	26.7	20.2
White <sup>b</sup>	26.1	30.3	21.7	24.5	28.3	20.6	21.5	24.4	18.5	21.3	24.0	18.4
Black <sup>b</sup>	47.1	53.4	40.7	44.7	51.2	38.0	38.1	44.6	31.4	36.6	42.9	30.2
Asian/ Pacific Islander <sup>c</sup>	20.3	23.1	17.4	18.7	21.3	16.0	16.2	17.6	14.7	15.5	16.9	13.9
American Indian/ Alaska Native <sup>c</sup>	38.9	47.0	30.6	40.0	45.1	34.8	33.4	38.4	28.2	29.8	32.3	27.2
Hispanic <sup>c</sup>	28.4	32.4	24.2	25.6	29.6	21.4	21.5	24.4	18.4	21.7	24.1	19.3
<b>Ages 15-24</b>	97.0	144.0	47.9	94.3	139.0	47.5	82.3	119.3	43.5	81.2	115.9	44.7
White <sup>b</sup>	84.2	122.3	44.1	83.0	120.2	43.8	75.4	107.6	41.2	74.5	104.9	42.2
Black <sup>b</sup>	174.8	279.5	70.6	161.5	253.3	69.7	126.5	194.6	58.0	123.1	185.6	60.1
Asian/ Pacific Islander <sup>c</sup>	56.1	80.1	31.1	55.6	79.0	31.9	44.4	59.9	28.8	43.9	58.7	29.1
American Indian/ Alaska Native <sup>c</sup>	129.4	184.2	71.4	127.2	188.5	63.6	115.6	166.4	64.1	125.9	183.5	67.5
Hispanic <sup>c</sup>	107.5	167.3	40.2	102.1	158.1	39.9	83.3	128.8	34.0	82.4	124.9	36.4

<sup>a</sup> Persons of Hispanic origin may be of any race. Death figures for Hispanic persons are based on data from 44 states and the District of Columbia that reported Hispanic origin on the death certificate in 1989, 47 states and the District of Columbia in 1990, 48 states and the District of Columbia in 1991 and 1992, and 49 states and the District of Columbia in 1993-1996.

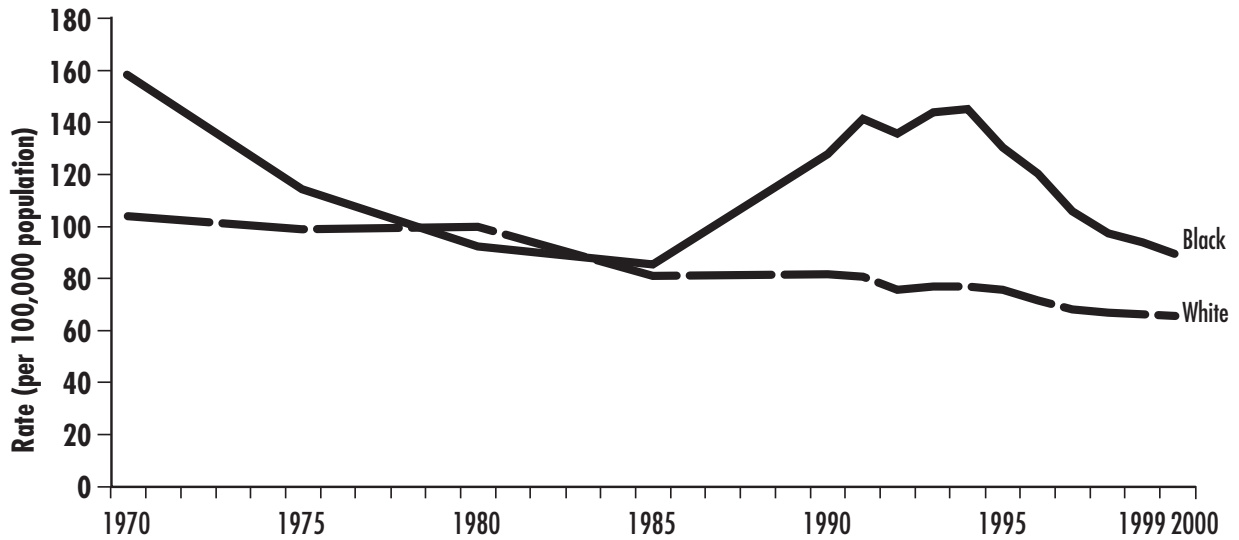
<sup>b</sup> Includes persons of Hispanic origin.

<sup>c</sup> Death rates reported for White and Black persons are based on highly consistent information. However, persons identified as American Indian, Asian, or Hispanic origin in the data from the Census Bureau (denominator of death rates) are sometimes misreported as White or non-Hispanic on the death certificate (numerator), resulting in underestimates of about 22 percent to 30 percent for death rates of American Indians, about 12 percent for death rates of Asians, and about 7 percent for persons of Hispanic origin. (National Center for Health Statistics, Health, United States, 1993, (Table 33); Sorlie, P.D., Rogot E., and Johnson, N.J. (1992). Validity of Demographic Characteristics on the Death Certificate. *Epidemiology*, 3(2):181-184.

Sources: U.S. Department of Health and Human Services, National Center for Health Statistics. (2002). Unpublished work; Murphy, S. L. (1999). *National Vital Statistics Report*. (Issue No. 11). Hyattsville, MD: National Center for Health Statistics; U.S. Department of Health and Human Services, National Center for Health Statistics (1994). *Health*. Hyattsville, MD: National Center for Health Statistics.

Figure HC 3.2.B

Youth death rates for ages 15 to 19, by race:<sup>a</sup> 1970-2000

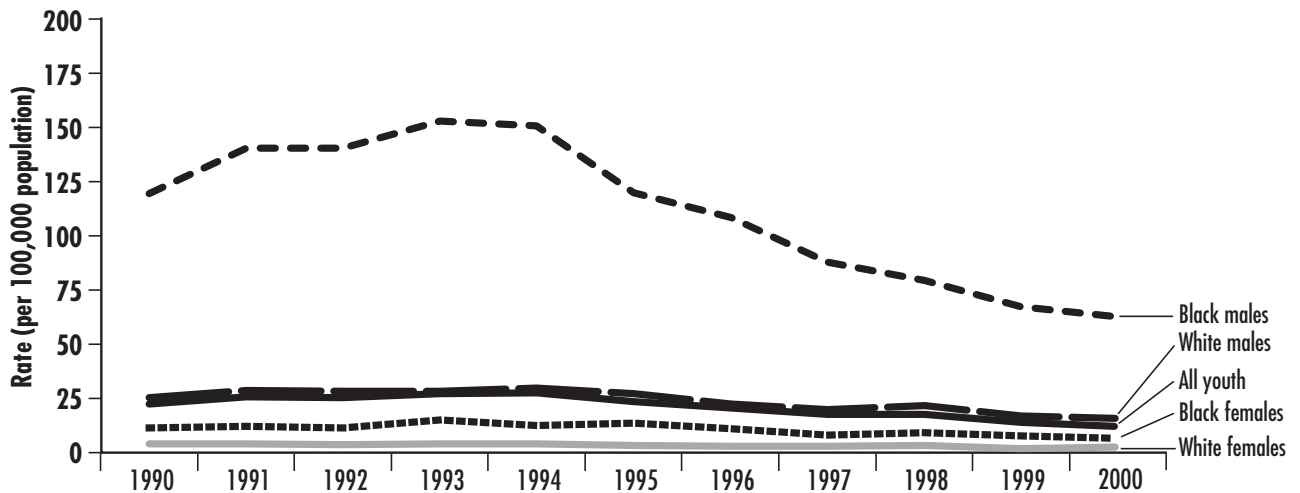


<sup>a</sup> Persons of Hispanic origin may be of any race. Data for Whites and Blacks include Hispanics of those races.

Sources: Peters, K. D., Kochanek, K. D., & Murphy, S. L. (1998). Deaths: Final Data for 1996. *National Vital Statistics Report*, 47(4); Anderson, R. N., Kochanek, K. D., & Murphy, S. L. (1997). Report of Final Mortality Statistics, 1995. *Monthly Vital Statistics Report*, 45(11(Supp. 2)).

Figure HC 3.2.C

Deaths due to injury by firearms for youth ages 15 to 19 by sex and race:<sup>a</sup> 1990-2000



<sup>a</sup> Persons of Hispanic origin may be of any race. Data for Whites and Blacks include Hispanics of those races.

Source: Minino, A.M., Avias, E., Kochanok, K.D., Murphy, S.L., & Smith, B.L. (2002). Deaths: Final Data for 2000. *National Vital Statistics Report*, 50(5). Hoyert, D.L., Arias, E., Smith, B.L., Murphy, S.L., Kochanek, K.D. (2001). Deaths: Final Data for 1999. *National Vital Statistics Report*, 49(8); Murphy, S.L., (2000). Deaths: Final Data for 1998. *National Vital Statistics Report* 48(11); Hoyert, D.L., Kochanek, M.A., & Murphy, S.L., (1999). Deaths: Final Data for 1997. *National Vital Statistics Report*, 49(17); Peters, K.D., Kochanek, M.A., & Murphy, S.L., (1998). Deaths: Final Data for 1996. *National Vital Statistics Report*, 47(9); Anderson, R.N., Kochanek, M.A., & Murphy, S.L., (1997). Deaths: Final Data for 1995. *Monthly Vital Statistics Report*, 41(11(Supp. 2)); Kochanek, K.D., & Hudson, B.L., (1995). Advance Report of Final Mortality Statistics, 1992. *Monthly Vital Statistics Report*, 43(6(Supp.)).

## Mortality

**Table HC 3.2.B**

Youth deaths due to injury by firearms (rate per 100,000) by age, sex, and race:<sup>a</sup> Selected years, 1980-2000

	1980	1985	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
<b>All youth firearms deaths</b>													
Ages 10-14	2.4	2.8	3.3	3.5	3.7	3.8	3.5	3.4	2.7	2.2	2.3	1.7	1.5
Ages 15-19	14.7	13.3	23.3	26.4	26.2	27.8	28.2	24.5	21.2	18.2	16.3	14.7	13.1
<b>White males</b>													
Ages 10-14	3.6	4.5	4.2	4.6	4.5	4.4	4.3	4.4	3.6	3.1	3.1	2.4	2.4
Ages 15-19	20.9	18.4	26.2	29.1	28.8	28.8	30.2	27.9	23.1	20.8	19.4	17.6	15.8
<b>White females</b>													
Ages 10-14	1.0	1.0	1.0	1.0	1.3	1.2	1.2	1.2	1.0	0.6	1.0	0.8	0.5
Ages 15-19	4.1	3.5	4.6	4.6	4.3	4.9	4.7	4.2	3.8	3.5	3.1	2.6	2.4
<b>Black males</b>													
Ages 10-14	4.7	4.8	10.2	11.5	11.6	13.4	11.2	10.1	7.8	6.2	4.6	3.6	3.8
Ages 15-19	46.7	46.5	119.7	140.5	140.9	153.1	151.1	120.3	108.7	88.2	75.5	67.9	62.2
<b>Black females</b>													
Ages 10-14	1.5	—	3.7	3.0	3.9	3.9	3.5	2.5	2.2	2.3	2.0	—	—
Ages 15-19	7.5	6.1	12.1	12.7	12.4	15.8	13.3	14.2	11.7	8.8	8.0	8.4	5.8

<sup>a</sup> Persons of Hispanic origin may be of any race. Data for Whites and Blacks include Hispanics of those races.

— Data not available.

Sources: Minino, A.M., Avias, E., Kochanok, K.D., Murphy, S.L., & Smith, B.L. (2002). Deaths: Final Data for 2000. *National Vital Statistics Report*, 50(5). Hoyert, D.L., Arias, E., Smith, B.L., Murphy, S.L., Kochanek, K.D. (2001). Deaths: Final Data for 1999. *National Vital Statistics Report*, 49(8); Murphy, S.L., (2000). Deaths: Final Data for 1998. *National Vital Statistics Report* 48(11); Hoyert, D.L., Kochanek, M.A., & Murphy, S.L., (1999). Deaths: Final Data for 1997. *National Vital Statistics Report*, 49(17); Peters, K.D., Kochanek, M.A., & Murphy, S.L., (1998). Deaths: Final Data for 1996. *National Vital Statistics Report*, 47(9); Anderson, R.N., Kochanek, M.A., & Murphy, S.L., (1997). Deaths: Final Data for 1995. *Monthly Vital Statistics Report*, 41(11(Supp. 2)); Kochanek, K.D., & Hudson, B.L., (1995). Advance Report of Final Mortality Statistics, 1992. *Monthly Vital Statistics Report*, 43(6(Supp.)). Fingerhut, L.A., Kleinman, J.C., Godfrey, E.G., Rosenberg, H. (1991). Firearm Mortality Among Children, Youth and Young Adults 1-34 Years of Age, Trends and Current Status: United States, 1979-88. *Monthly Vital Statistics Report*, 39(11, Supp.).

## SECTION 3. HEALTH CONDITIONS AND HEALTH CARE

### HC 3.3 Motor Vehicle Crash Deaths

Youth ages 15 to 24 had the highest fatality and injury rates of any age group in 1998 due to motor vehicle crashes.<sup>1</sup> Such crashes are among the major causes of injury-related deaths<sup>2</sup> for 15- to 19-year-olds, accounting for 36 percent of injury deaths in 1996;<sup>3</sup> however, as a fraction of all violent deaths to youth, motor vehicle crashes have declined. Data for 1999 show that motor vehicle crashes claimed 26.8 lives per 100,000 youth ages 15 to 19, compared with 43.6 per 100,000 youth in 1970 (Figure HC 3.3). The rate of motor vehicle crash deaths among youth has been relatively constant since 1992.

**Differences by Sex and Race.** For youth under age 20, the decrease in the rate of youth motor vehicle deaths between 1970 and 1999 has been greatest among White males ages 15 to 19, falling from 67.1 to 38.6 deaths per 100,000 and among Black males, which declined from 43.4 to 30.7 deaths per 100,000 (Table HC 3.3). While the rate of deaths resulting from motor vehicle crashes are lower for females than males at both age groups, the rate for females has not decreased as sharply as males. Among White females, ages 15 to 19, the rate of deaths due to motor vehicle crashes has decreased to 7.3 per 100,000 in 1999, compared with 24.4 deaths per 100,000 in 1970. Furthermore, after a drop from 11.1 deaths per 100,000 in 1970 to 6.7 deaths per 100,000 in 1980, rates have increased for Black females, to 12.1 deaths per 100,000 in 1999.

**Differences by Age.** Among youth ages 10 to 14, motor vehicle death rates are quite low in comparison to older youth and dropped from 9.6 to 4.5 per 100,000 between 1970 and 1999. This decline was evident for both White and Black males and females.

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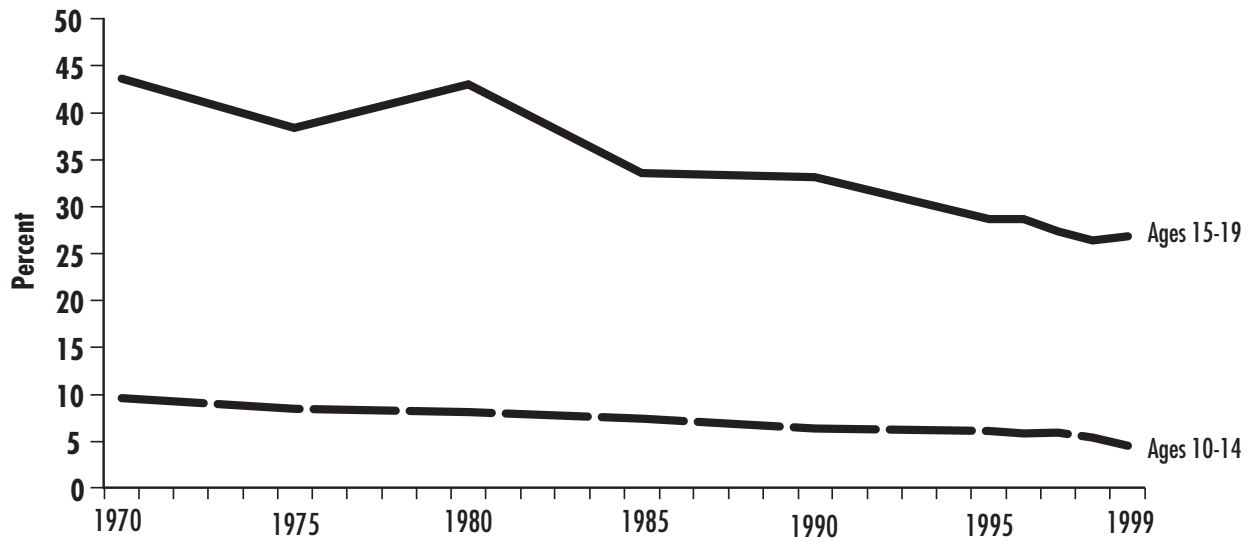
<sup>1</sup> Murphy, S. L. (2000). Deaths: Final Data for 1998. *National Vital Statistics Report*, 48(11).

<sup>2</sup> Injury-related deaths include deaths from motor vehicle crashes, fires and burns, drowning, suffocation, and unintentional injuries caused by firearms and other explosive materials, as well as homicides, suicides, and other external causes of death.

<sup>3</sup> Peters, K. D., Kochanek, K. D., & Murphy, S. L. (1998). Deaths: Final Data for 1996. *National Vital Statistics Report*, 47(4).

**Figure HC 3.3**

Youth motor vehicle crash deaths by age: Selected years, 1970-1999



Source: U.S. Department of Health and Human Services, National Center for Health Statistics, Mortality Statistics Branch Division of Vital Statistics. (2002).

**Table HC 3.3**Youth motor vehicle crash deaths (rate per 100,000) by age, sex, and race:<sup>a</sup> Selected years, 1970-1999

	1970	1975	1980	1985	1990	1995	1996	1997	1998	1999
<b>All youth</b>										
Ages 10-14	9.6	8.4	8.1	7.4	6.4	6.1	5.8	5.9	5.4	4.5
Ages 15-19	43.6	38.4	43.0	33.5	33.1	28.6	28.6	27.3	26.4	26.3
<b>White males</b>										
Ages 10-14	12.6	10.9	10.9	9.8	7.7	7.2	7.2	6.8	6.4	5.2
Ages 15-19	67.1	61.7	69.1	51.3	49.3	38.9	39.5	36.6	36.2	38.6
<b>White females</b>										
Ages 10-14	6.6	5.8	5.7	5.6	5.3	5.0	4.8	4.9	4.3	3.7
Ages 15-19	24.4	20.6	25.6	22.6	22.2	22.1	21.2	21.4	20.9	17.3
<b>Black males</b>										
Ages 10-14	11.9	9.6	7.9	8.9	7.9	7.7	6.8	7.4	7.8	6.5
Ages 15-19	43.4	24.6	24.4	22.1	28.7	29.0	28.2	28.7	26.0	30.7
<b>Black females</b>										
Ages 10-14	6.4	4.2	4.0	3.0	3.8	4.2	3.0	4.8	3.1	4.2
Ages 15-19	11.1	7.1	6.7	7.5	9.7	10.7	12.4	10.4	8.5	12.1

<sup>a</sup> Persons of Hispanic origin may be of any race. Data for Whites and Blacks include Hispanics of those races.

Source: U.S. Department of Health and Human Services, National Center for Health Statistics, Mortality Statistics Branch Division of Vital Statistics. (2002).

### HC 3.4 Homicides

After more than a decade of sharp increases, the youth homicide rate decreased between 1993 and 1999. The rate of death from homicide for youth ages 15 to 19 more than doubled between 1970 and 1993, increasing from 8.1 to 20.7 per 100,000 (Table HC 3.4.A). Virtually all of this increase occurred after 1985. Since 1993, rates have decreased steadily to 10.6 deaths per 100,000 in 1999. Firearms have been involved in the majority of youth homicides since 1980 (Figure HC 3.4.A). Deaths to youth ages 15 to 19 involving firearms accounted for 66 percent of the total deaths due to homicide in 1980 (7.0 firearm deaths per 100,000 out of a total of 10.6 deaths per 100,000 due to homicide). The percentage of firearm-related homicides increased to 95 percent by 1999 for this same age group.

**Differences by Sex and Race and Hispanic Origin.**<sup>1</sup> The trend in the death rate due to homicide for Black males largely dominates the rate of youth homicides for ages 15 to 19. Since 1990, the rate of death due to homicide for Black males has been about 7 to 9 times higher than for their White peers. While the homicide rate for White males of the same age group (15 to 19) is substantially less than that of Black males, similar fluctuations in this rate can be seen over time, with the largest increases occurring between 1985 and the early 1990s and decreases in recent years. Overall, this rate has increased significantly, going from 5.2 deaths per 100,000 in 1970 to 8.7 deaths per 100,000 in 1999 (Table HC 3.4.A).

Homicides due to firearms are more likely among Black youth than among White youth and most particularly among Black males ages 15 to 19 (Table HC 3.4.B). In 1999, 90 percent of homicides among older male Black youth (ages 15 to 19) involved a firearm, compared with 80 percent among older White male youth. The rate of death due to firearms among Black males ages 15 to 19 has decreased since 1993, serving as one explanation for the decline in the overall homicide rate among this group.

Homicide rates for females ages 15 to 19 are considerably lower than among similarly aged males within the same race groups (rates for Black females have actually been higher than rates for White males). For example, the rate for Black females was 10.2 per 100,000 in 1999, one-sixth the rate for Black males. The sex disparity in homicide rates is also large for Whites, although it is not as great as that between Black males and females. In 1999, the homicide rate for White females ages 15 to 19 was 2.4 deaths per 100,000, just over a quarter of that for White males. As is the case for males, the youth homicide rate for Black females is higher than the rate for White 4 times higher in 1999 (Table HC 3.4.A). Homicides among female youth involve a firearm less often, although firearms are still the means of the majority of female homicides.

**Differences by Age.** The homicide rate for youth ages 10 to 14 was 1.3 per 100,000 in 1999—substantially lower than the rate for older youth (Figure HC 3.4.B). The disparity between males and females is not as pronounced in this age group as the difference for older youth ages 15 to 19. However, the homicide rates for Black males ages 10 to 14 have been approximately twice those of Black females in recent years.

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<sup>1</sup> Persons of Hispanic origin may be of any race.



## SECTION 3. HEALTH CONDITIONS AND HEALTH CARE

**Table HC 3.4.A**

Youth homicides<sup>a</sup> (rate per 100,000) by age, sex, and race:<sup>b</sup> Selected years, 1970-1999

	1970	1975	1980	1985	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
<b>All youth</b>														
Ages 10-14	1.2	1.2	1.4	1.5	2.1	2.2	2.4	2.5	2.2	2.1	1.8	1.5	1.5	1.3
Ages 15-19	8.1	9.6	10.6	8.6	17.0	19.6	19.3	20.7	20.3	18.2	15.7	13.7	11.8	10.6
<b>White males</b>														
Ages 10-14	0.6	1.0	1.1	1.4	1.7	1.8	2.0	1.9	1.8	2.0	1.5	1.4	1.3	1.2
Ages 15-19	5.2	8.1	10.9	7.2	12.5	14.4	15.2	15.2	15.4	14.7	12.2	11.1	10.2	8.7
<b>White females</b>														
Ages 10-14	0.6	0.8	1.1	0.9	0.9	0.9	1.0	1.2	0.9	1.0	0.9	0.6	1.0	0.8
Ages 15-19	2.1	3.2	3.9	2.7	3.6	3.6	3.6	3.6	3.4	3.9	2.9	2.9	2.4	2.4
<b>Black males</b>														
Ages 10-14	6.8	4.1	3.9	4.2	8.1	9.1	9.6	10.5	9.1	8.2	6.0	5.6	4.4	3.5
Ages 15-19	65.2	51.4	48.8	46.7	115.7	134.6	128.5	140.7	135.8	110.5	100.9	85.3	71.0	63.2
<b>Black females</b>														
Ages 10-14	2.3	2.3	2.4	1.7	4.8	3.8	5.1	5.2	4.6	3.0	3.1	2.3	2.6	1.6
Ages 15-19	10.6	15.3	11.0	10.4	15.6	15.6	14.2	18.4	15.1	16.4	12.9	10.6	9.8	10.2

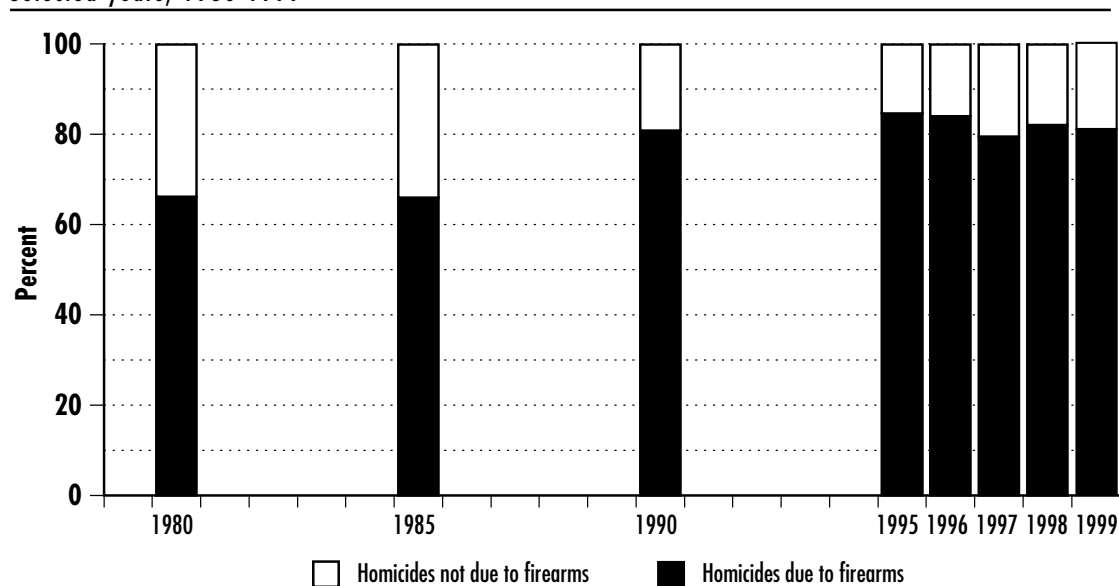
<sup>a</sup> Homicide includes death by legal intervention.

<sup>b</sup> Persons of Hispanic origin may be of any race. Data for Blacks and Whites include Hispanics of those races.

Source: U.S. Department of Health and Human Services, National Center for Health Statistics, (2002). Unpublished work.

**Figure HC 3.4.A**

Youth homicides due to firearms<sup>a</sup> as a percent of all youth homicides for youth ages 15 through 19: Selected years, 1980-1999



<sup>a</sup> Includes assault by handguns and all other and unspecified firearms.

Sources: U.S. Department of Health and Human Services, National Center for Health Statistics, (2002). Unpublished work. Murphy, S. L. (2000). Deaths: Final Data for 1998. *National Vital Statistics Report*, 48(11).

## Mortality

**Table HC 3.4.B**

Youth homicides due to firearms<sup>a</sup> (rate per 100,000) by age, sex, and race:<sup>b</sup> Selected years, 1980-1999

	1980	1985	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
<b>All youth</b>												
Ages 10-14	0.8	0.8	1.5	1.6	1.9	1.9	1.7	1.6	1.3	1.0	1.0	0.8
Ages 15-19	7.0	5.7	13.8	16.4	16.7	17.8	17.7	15.4	13.2	10.9	9.7	8.6
<b>White males</b>												
Ages 10-14	0.7	0.9	1.3	1.4	1.6	1.5	1.5	1.6	1.2	1.1	1.0	0.8
Ages 15-19	7.2	4.9	9.4	11.7	12.9	12.6	12.9	12.3	10.0	8.3	8.0	7.0
<b>White females</b>												
Ages 10-14	0.5	0.4	0.4	0.5	0.6	0.6	0.5	0.5	0.5	0.3	0.5	0.4
Ages 15-19	1.7	1.2	2.0	2.1	2.3	2.2	2.4	2.2	1.7	1.5	1.3	1.3
<b>Black males</b>												
Ages 10-14	3.2	3.0	6.9	8.2	8.4	9.8	7.7	7.4	5.2	4.1	3.1	2.9
Ages 15-19	38.4	36.6	104.4	122.6	118.8	130.1	126.6	101.7	91.7	75.2	64.5	57.0
<b>Black females</b>												
Ages 10-14	1.0	0.6	3.2	2.7	3.4	3.3	3.3	2.0	1.8	1.5	1.6	—
Ages 15-19	6.2	5.0	10.4	11.2	10.5	14.3	11.1	12.3	9.9	7.2	6.7	7.2

<sup>a</sup> Includes assault by handguns and all other and unspecified firearms.

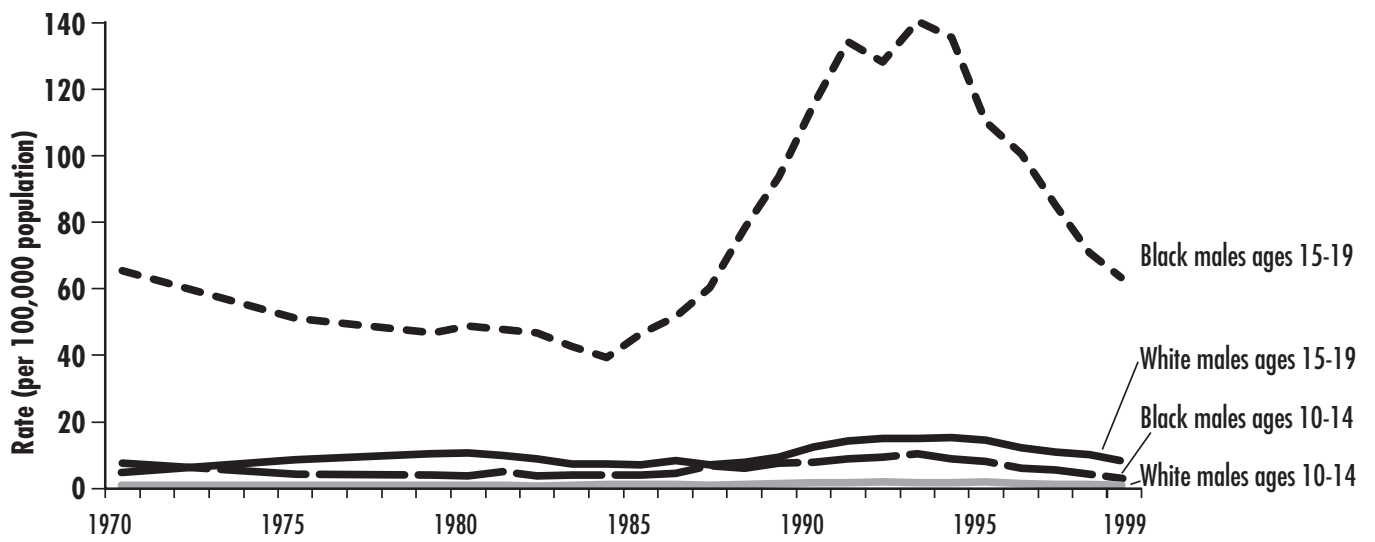
<sup>b</sup> Persons of Hispanic origin may be of any race. Data for Blacks and Whites include Hispanics for those races.

— Data not available.

Sources: U.S. Department of Health and Human Services, National Center for Health Statistics. (2002). Unpublished work; Murphy, S. L. (2000). Deaths: Final Data for 1998. *National Vital Statistics Report*, 48(11).

Figure HC 3.4.B

Youth homicide<sup>a</sup> of males by age and race:<sup>b</sup> 1970-1999



<sup>a</sup> Homicide includes death by legal intervention.

<sup>b</sup> Persons of Hispanic origin may be of any race. Data for Blacks and Whites include Hispanics of those races.

Source: U.S. Department of Health and Human Services, National Center for Health Statistics. (2002). Unpublished work.

### HC 3.5 Suicides

Suicide, like homicide, has come to play a proportionately larger role in youth deaths over the past several decades. Between 1970 and 1990, the suicide rate for youth ages 15 to 19 nearly doubled. After remaining stable from 1990 to 1994, the rate had decreased slightly by 1999 (Figure HC 3.5).

**Differences by Sex.** Males are more likely than females to commit suicide (Table HC 3.5). The suicide rate for White males ages 15 to 19 was 13.9 per 100,000 in 1999, more than 5 times the rate of 3.1 per 100,000 for White females. Among Blacks, males had a rate almost 6 times that of females for youth ages 15 to 19 in 1999. The data indicate that males die by suicide at a higher rate than females, but females attempt suicide more often and report higher rates of depression. The gender difference is most likely associated with suicide methods. Males are more likely to use firearms, which lead to a fatal outcome 78 to 90 percent of the time.

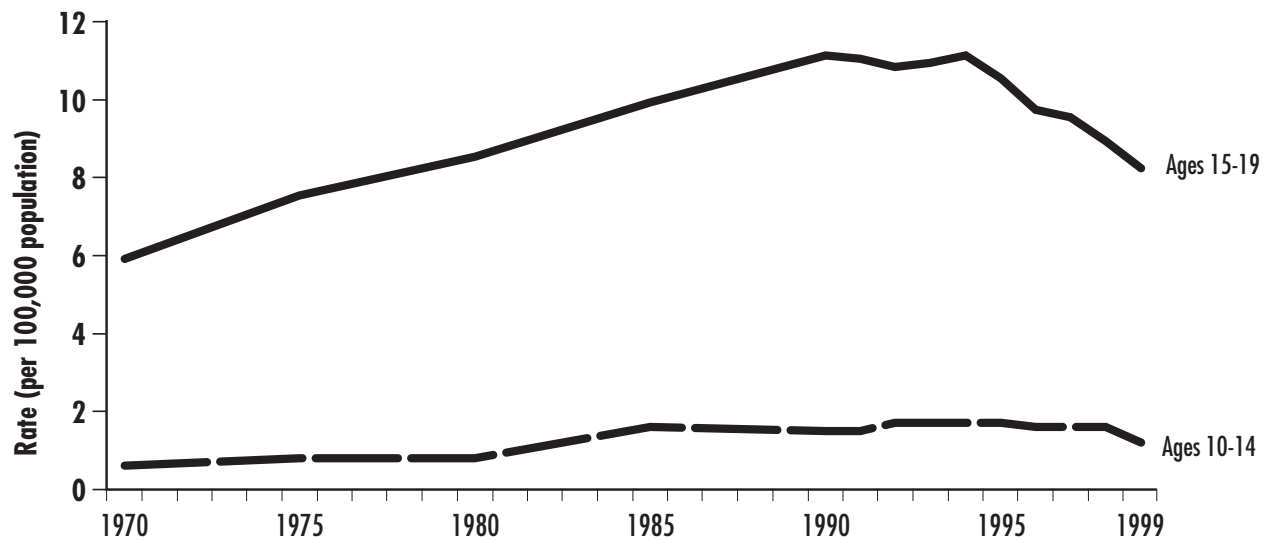
**Differences by Race.** White males ages 15 to 19 have long had a higher suicide rate than their Black male peers (Table HC 3.5). In 1970, White males ages 15 to 19 were twice as likely as Black males to commit suicide. However, the gap between White and Black male suicide rates has narrowed in recent years, with suicide rates of 13.9 and 10.0 per 100,000, respectively, in 1999.<sup>1</sup> Among females ages 15 to 19, Whites and Blacks were equally likely to commit suicide in 1970, with rates of 2.9 per 100,000. By 1975, White female suicide rates were more than twice that of their Black peers and White female suicide rates have remained higher than Blacks since then.

**Differences by Age.** While considerably lower, suicide rates for youth ages 10 to 14 have followed trends similar to those among older youth, with males having higher rates of suicide than females and Whites having higher suicide rates than Blacks (Table HC 3.5). In this age group, suicide is infrequent for both sexes and races, making these differences small as well. Younger youth may be less likely to complete suicide because they do not have the cognitive ability to plan and carry out a suicide attempt, but research also suggests that the increase in suicide rates with age may be due to the increased likelihood of exposure to critical risk factors, such as serious depression, drugs, and alcohol.

<sup>1</sup> The race disparity in the suicide rate between all White youth ages 10 to 19 and all Black youth ages 10 to 19 narrowed substantially between 1980 and 1995, largely due to the increase of suicide among Black youth. In 1980, White youth (ages 10 to 19) had a suicide rate that was 157 percent greater than that of their Black peers; by 1995, the rate among Whites was 42 percent greater than the rate among Blacks. These data, not shown here, can be found in Centers for Disease Control and Prevention (1996). Suicide among Black Youths—United States, 1980–1995. *Morbidity and Mortality Weekly Report*, 47(10).

**Figure HC 3.5**

Youth suicides (rate per 100,000) by age: 1970-1999



Source: U.S. Department of Health and Human Services, National Center for Health Statistics. (2002) Unpublished work. Murphy, S. L. (1999). *National Vital Statistics Report*. (Issue No. 11). Hyattsville, MD: National Center for Health Statistics.

**Table HC 3.5**Youth suicides (rate per 100,000) by age, sex, and race:<sup>a</sup> Selected years, 1970-1999

	1970	1975	1980	1985	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
<b>Youth suicide rate</b>														
Ages 10-14	0.6	0.8	0.8	1.6	1.5	1.5	1.7	1.7	1.7	1.7	1.6	1.6	1.6	1.2
Ages 15-19	5.9	7.5	8.5	9.9	11.1	11.0	10.8	10.9	11.1	10.5	9.7	9.5	8.9	8.2
<b>White males</b>														
Ages 10-14	1.1	1.4	1.4	2.5	2.3	2.4	2.6	2.4	2.5	2.8	2.3	2.5	2.6	2.1
Ages 15-19	9.4	12.9	15.0	17.1	19.3	19.1	18.4	18.5	18.7	18.4	16.3	16.0	15.3	13.9
<b>White females</b>														
Ages 10-14	0.3	0.4	0.3	0.9	0.9	0.8	1.1	1.0	1.0	0.9	0.9	0.8	0.9	0.6
Ages 15-19	2.9	3.1	3.3	4.1	4.0	4.2	3.7	4.2	3.5	3.3	3.8	3.5	3.0	2.9
<b>Black males</b>														
Ages 10-14	0.3	0.2	0.5	—	1.6	2.0	2.0	2.3	2.1	1.6	1.9	1.9	1.4	1.4
Ages 15-19	4.7	6.1	5.6	8.2	11.5	12.2	14.8	14.4	16.6	13.8	11.5	11.4	10.7	10.0
<b>Black females</b>														
Ages 10-14	0.4	0.3	0.1	—	—	—	—	—	—	—	—	—	—	—
Ages 15-19	2.9	1.5	1.6	1.5	1.9	—	1.9	—	2.4	2.3	1.8	2.7	1.8	1.6

<sup>a</sup> Persons of Hispanic origin may be of any race. Data for Blacks and Whites include Hispanics of those races.  
 — Data not calculated because of unreliability due to infrequency of the event.

Source: U.S. Department of Health and Human Services, National Center for Health Statistics. (2002) Unpublished work. Murphy, S. L. (2000). Deaths: Final Data for 1998. *National Vital Statistics Report*. 48(11).