

SECTION IV. E.

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Leading Causes of Death and Premature Mortality, 1989 - 1998

Connecticut male residents

During the 1990s, heart disease was the leading cause of death and premature mortality for Connecticut males, followed by all cancers. Heart disease and cancer, together, accounted for 57% of all deaths and 39% of all premature mortality under age 75 in 1996-98. Cerebrovascular disease was the third leading cause of death and the eighth leading cause of premature mortality under age 75. Other leading causes of death that contributed most to premature mortality among Connecticut males during the decade included unintentional injuries, suicide, HIV infection, and homicide and legal intervention. The leading causes of death and premature mortality by gender for 1996-98 are displayed in Table 25.1.

Between 1989 and 1998, age-adjusted death rates for all causes of death and for heart disease decreased significantly for all Connecticut male residents, as well as for both the white and black male populations. Age-adjusted death rates for all cancers, lung cancer, colorectal cancer, prostate cancer, HIV infection, and motor vehicle crashes decreased significantly for all Connecticut males and for white males, while there were significant decreases in age-adjusted cerebrovascular disease and COPD death rates for black male residents. COPD-related death rates also decreased significantly for all Connecticut males during the 1990s (Table 25.2). There were significant increases in age-adjusted death rates due to diabetes mellitus and hypertension-related causes for all Connecticut males and for white males, while age-adjusted death rates due to drug-induced causes increased among white males only (Table 25.3).

Premature mortality rates (under age 75) for all causes of death decreased significantly during the 1990s. Decreases were significant for both white and black males. Between 1989 and 1998, premature mortality for heart disease, all cancers, lung and other respiratory cancer, and HIV infection declined significantly for both white and black males. Premature mortality due to prostate cancer and motor vehicle crashes declined significantly for all males and for white males only. Premature mortality due to septicemia-related causes declined significantly for all males and for black males only (Table 25.2). The only increasing trend in premature mortality during the decade occurred in drug-induced causes among white males (Table 25.3).

Connecticut female residents

Heart disease was the leading cause of death and the second leading cause of premature mortality for Connecticut females during the 1990s. Cancer was the second leading cause of death and the leading cause of premature mortality. Heart disease and cancer accounted for 57% of all deaths and 46% of all premature mortality under age 75 among Connecticut females for 1996-98 (Table 25.1). Cerebrovascular disease was the third leading cause of death and the fifth leading cause of premature mortality under age 75 in 1996-98 (it was the fourth leading cause of death in 1989-91). Other leading causes of death that contributed most to premature mortality among Connecticut females

Table 25.1 Leading Causes of Death and Premature Mortality¹ by Gender, All Connecticut Residents, 1996-98

| Cause of Death | Number of Deaths | Rank – Deaths ² | Deaths Under Age 75 | YPLL ³ Under Age 75 | Rank – Premature Mortality |
|-------------------------------------|------------------|----------------------------|---------------------|--------------------------------|----------------------------|
| <i>All Residents</i> | | | | | |
| All cancer | 21,300 | 2 | 11,315 | 144,516 | 1 |
| Diseases of the heart | 29,251 | 1 | 8,916 | 107,235 | 2 |
| Unintentional injuries | 3,158 | 6 | 2,186 | 74,610 | 3 |
| HIV infection | 755 | 13 | 754 | 25,610 | 4 |
| Suicide | 835 | 11 | 755 | 25,408 | 5 |
| Homicide and legal intervention | 452 | 15 | 444 | 19,523 | 6 |
| Cerebrovascular disease | 5,786 | 3 | 1,302 | 15,271 | 7 |
| Chronic liver disease and cirrhosis | 882 | 10 | 682 | 12,402 | 8 |
| COPD | 3,700 | 4 | 1,283 | 11,537 | 9 |
| Diabetes mellitus | 1,991 | 7 | 903 | 10,918 | 10 |
| <i>All Males</i> | | | | | |
| Diseases of the heart | 13,582 | 1 | 5,782 | 73,125 | 1 |
| All cancer | 10,602 | 2 | 5,855 | 72,322 | 2 |
| Unintentional injuries | 2,016 | 4 | 1,564 | 54,812 | 3 |
| Suicide | 647 | 8 | 585 | 19,883 | 4 |
| HIV infection | 551 | 9 | 550 | 18,186 | 5 |
| Homicide and legal intervention | 346 | 13 | 343 | 15,251 | 6 |
| Chronic liver disease and cirrhosis | 548 | 10 | 462 | 8,817 | 7 |
| Cerebrovascular disease | 2,132 | 3 | 684 | 8,238 | 8 |
| Diabetes mellitus | 933 | 7 | 481 | 5,993 | 9 |
| Pneumonia & influenza | 1,621 | 6 | 399 | 5,686 | 10 |
| <i>All Females</i> | | | | | |
| All cancer | 10,698 | 2 | 5,460 | 72,194 | 1 |
| Diseases of the heart | 15,669 | 1 | 3,134 | 34,110 | 2 |
| Unintentional injuries | 1,142 | 6 | 622 | 19,798 | 3 |
| HIV infection | 204 | 13 | 204 | 7,424 | 4 |
| Cerebrovascular disease | 3,654 | 3 | 618 | 7,033 | 5 |
| COPD | 2,005 | 4 | 670 | 6,077 | 6 |
| Suicide | 188 | 14 | 170 | 5,525 | 7 |
| Diabetes mellitus | 1,058 | 7 | 422 | 4,925 | 8 |
| Homicide and legal intervention | 106 | 15 | 101 | 4,273 | 9 |
| Chronic liver disease and cirrhosis | 334 | 12 | 220 | 3,585 | 10 |

Notes:

1. Premature mortality is defined as the total number of years of potential life lost (YPLL) before age 75. See Section V—Appendix II of this report for a discussion of the YPLL measure.
2. These ranks are based on the National Center for Health Statistics (NCHS) leading causes of death list. See Section V—Appendix V for a complete list of leading causes of death in Connecticut.
3. “YPLL before age 75” indicates the total number of potential life years lost before age 75 and is the basis for ranking premature mortality.

**Table 25.2 Significant Decreasing Mortality Trends¹
Connecticut Residents, from 1989-91 to 1996-98**

Decreases in Age-Adjusted Mortality Rates

- All causes (all residents, all males, white males, black males)³
- Diseases of the heart (all residents, all males, white males, black males, all females, white females)
- Cerebrovascular disease (black males)
- All cancer (all residents, all males, white males)
- Lung & other respiratory cancer (all males, white males)
- Colorectal cancer (all residents, all males, white males, all females, white females)
- Breast cancer (all females, white females)
- Prostate cancer (all males, white males)
- COPD (black males)
- COPD-related (all males)
- Motor vehicle crashes (all males, white males)
- Pneumonia & influenza (all residents, all females, white females)
- Septicemia (all residents, all females, white females)
- Septicemia-related (all residents, all males, white males, all females, white females)
- HIV (all residents, all males, white males)

Decreases in Premature Mortality Rates²

- All causes (all residents, white males, black males)³
- Diseases of the heart (all residents, all males, white males, black males)
- All cancer (all residents, all males, white males, black males, all females)
- Lung & other respiratory cancer (all residents, all males, white males, black males)
- Colorectal cancer (all residents, white females)
- Breast cancer (all females, white females)
- Prostate cancer (all males, white males)
- Motor vehicle crashes (all residents, all males, white males)
- Pneumonia & influenza (all residents, white females)
- Septicemia (all residents)
- Septicemia-related (all residents, all males, black males)
- HIV (all residents, all males, white males, black males)

Notes:

1. Decreasing trends reflect causes of death that showed statistically significant changes between the 1989-91 and 1996-98 time periods.
2. Premature mortality is defined as the total number of years of potential life lost (YPLL) before age 75. This table reflects decreases in age-adjusted premature mortality, or age-adjusted YPLL under age 75.
3. Black and white Connecticut residents include persons of Hispanic ethnicity.

**Table 25.3 Significant Increasing Trends in Mortality¹
Connecticut Residents, from 1989-91 to 1996-98**

| <i>Increases in Age-Adjusted Mortality Rates</i> | <i>Increases in Premature Mortality Rates²</i> |
|---|---|
| <ul style="list-style-type: none"> • Hypertension-related (all residents, all males, white males, all females, white females)³ • Diabetes (all residents, all males, white males, all females, white females) • Lung & other respiratory cancers (all females, white females) • COPD (all residents, all females, white females) • COPD-related (all residents, all females, white females) • Unintentional injuries (all residents, white females) • Poisoning (all females, white females)⁴ • Drug-induced (all residents, white males, all females, white females)⁴ | <ul style="list-style-type: none"> • Diabetes (all residents, all females, white females) • COPD (all females, white females) • COPD-related (all females, white females) • Unintentional injuries (white females) • Poisoning (all females, white females)⁴ • Drug-induced (all residents, white males, all females, white females)⁴ |

Notes:

1. Increasing trends reflect causes of death that showed statistically significant changes between the 1989-91 and 1996-98 time periods.
2. Premature mortality is defined as the total number of years of potential life lost (YPLL) before age 75. This table reflects increases in age-adjusted premature mortality, or age-adjusted YPLL under age 75.
3. Black and white Connecticut residents include persons of Hispanic ethnicity.
4. Comparison periods are 1992-94 vs. 1996-98.

during the 1990s include unintentional injuries, HIV infection, cerebrovascular disease, and COPD.

Between 1989 and 1998, age-adjusted death rates for heart disease, breast cancer, colorectal cancer, septicemia, septicemia-related, and pneumonia and influenza decreased significantly for all Connecticut female residents and for white females (Table 25.2). There were significant increases in age-adjusted death rates due to diabetes mellitus, hypertension-related causes, lung and other respiratory cancers, COPD, COPD-related causes, poisoning, and drug-induced causes for all Connecticut females and for white females during the 1990s, while unintentional injury death rates increased among white females only (Table 25.3).

Premature mortality rates (under age 75) due to all cancers decreased significantly for Connecticut females during the 1990s. Premature mortality due to breast cancer decreased for all females and for white females, while premature mortality due to colorectal cancer and pneumonia and influenza decreased for white females only (Table 25.2). Premature mortality due to diabetes, COPD, COPD-related causes, poisoning, and drug-induced causes increased in the 1990s for all

females and for white females. Premature mortality due to unintentional injuries increased for white females only (Table 25.3).

Gender differences in mortality

Compared with females, Connecticut male residents experienced significantly higher age-adjusted mortality from all causes of death and from 22 of the 23 non-sex-specific categories of death considered in this report. For the period 1996-98, the Connecticut male resident age-adjusted death rate from all causes was about fifty percent higher than that of females (Table 25.4). Connecticut male excess deaths (the additional deaths that would not have occurred if males had the same mortality rate as females) for all causes are estimated at more than 4,000 per year for the period 1996-98 (Table 25.4). For one cause, cerebrovascular disease, there was not a significant difference in male and female mortality rates for the 1996-98 period. About 35% of all male excess deaths were due to cardiovascular diseases, 24% were due to cancer, and 14% were due to injuries.

Among the leading causes of death, the greatest male-female differences in age-adjusted death rates (1996-1998) were found in suicide, followed by homicide and legal intervention, and HIV infection (Table 25.4). These findings parallel national trends that show male to female risk ratios being highest for suicide, followed by homicide and HIV infection (MMWR 1999). The numbers of estimated excess male deaths were greatest for heart disease, all cancers (of which 78% were attributed to lung cancer), unintentional injuries (of which 29% were motor vehicle crashes), and pneumonia and influenza (Table 25.4).

Time Trend Analyses

The male-female mortality disparity decreased significantly for several causes of death during the 1990s. Between 1989-91 and 1996-98, the age-adjusted all-cause mortality rate decreased significantly for Connecticut males, but remained unchanged for Connecticut females (Figure 25.1). The male-female mortality disparity for heart disease, all cancers, lung and other respiratory cancers, COPD and COPD-related causes also decreased significantly ($p < .05$) during this period (Figure 25.1). There were no increases in the male-female mortality disparity for any causes of death considered in this report between 1989-91 and 1996-98.

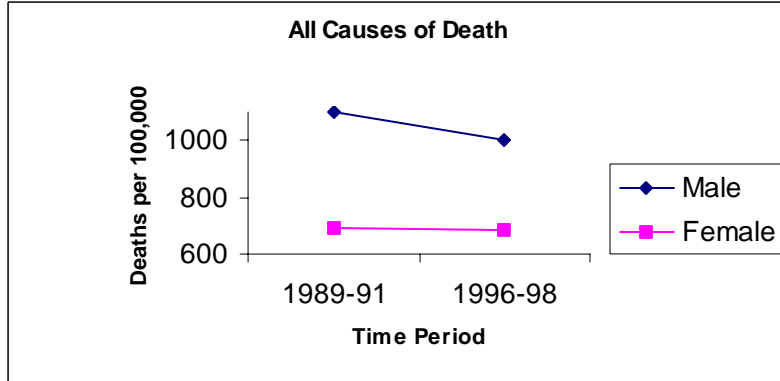
**Table 25.4 Summary Table of Male-Female Mortality Disparities¹
Connecticut Residents, 1989-91 and 1996-98**

| Cause of Death | 1989-91 | | 1996-98 | |
|-----------------------------------|---|------------------------------------|---|------------------------------------|
| | Male-Female Relative Risk ^{2,3} | Excess Male Deaths ⁴ | Male-Female Relative Risk ^{2,3} | Excess Male Deaths ⁴ |
| All Causes | 1.6** | 5,181 | 1.5** | 4,428 |
| Chronic Diseases | | | | |
| Heart disease | 1.7** | 1,852 | 1.5** | 1,526 |
| Cerebrovascular | 1.1** | 69 | 1.1 | 36 |
| Hypertension-related | 1.1 | 44 | 1.1** | 91 |
| Diabetes | 1.2* | 35 | 1.3** | 80 |
| Diabetes-related | 1.4** | 250 | 1.5** | 375 |
| All cancer | 1.5** | 1,237 | 1.4** | 1,042 |
| Lung & other respiratory cancer | 2.2** | 614 | 1.7** | 815 |
| Colorectal cancer | 1.5** | 139 | 1.4** | 100 |
| COPD | 1.9** | 180 | 1.4** | 153 |
| COPD-related | 2.1** | 679 | 1.6** | 385 |
| Chronic liver disease & cirrhosis | 2.1** | 102 | 2.1** | 95 |
| Injury | | | | |
| Unintentional injuries | 2.4** | 346 | 2.3** | 382 |
| Motor vehicle crashes | 2.7** | 165 | 2.1** | 109 |
| Fall & fall-related injuries | 1.6** | 29 | 2.0** | 54 |
| Suicide | 4.4** | 191 | 3.7** | 159 |
| Homicide & legal intervention | 3.5** | 103 | 3.5** | 83 |
| All poisoning | 2.7** | 60 | 2.8** | 137 |
| Alcohol-induced | 2.6** | 77 | 3.1** | 78 |
| Drug-induced | 2.2** | 30 | 2.6** | 112 |
| Infectious Diseases | | | | |
| Pneumonia & influenza | 1.6** | 171 | 1.6** | 200 |
| Septicemia | 1.3** | 43 | 1.4** | 45 |
| Septicemia-related | 1.4** | 195 | 1.4** | 178 |
| HIV infection | 4.0** | 179 | 2.8** | 119 |

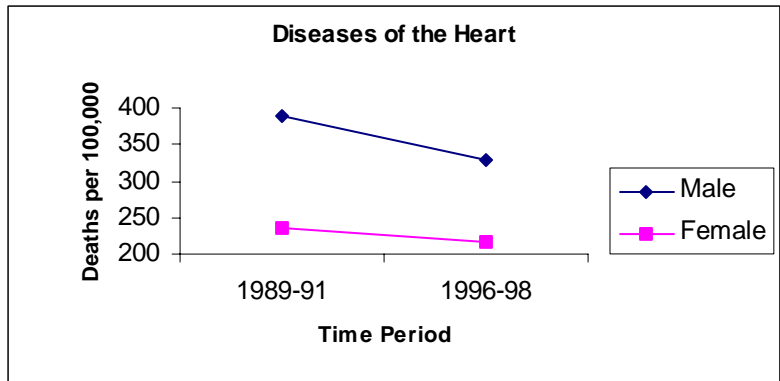
Notes:

- Includes all Connecticut male and female residents.
- Relative risk is the ratio of the male Connecticut resident age-adjusted mortality rate (AAMR) to the female Connecticut resident AAMR (2000 U.S. standard population). Relative risks are not calculated for fewer than 15 deaths in either the male or female population.
- Statistical tests were conducted to evaluate differences in male and female resident AAMRs. Following are explanations of the notations:
* Significantly different than the female resident rate at $p < .05$.
** Significantly different than the female resident rate at $p < .01$.
- Excess deaths are those deaths that would not have occurred if the male population had the same rate as the female population, and are presented on an annualized or per year basis.

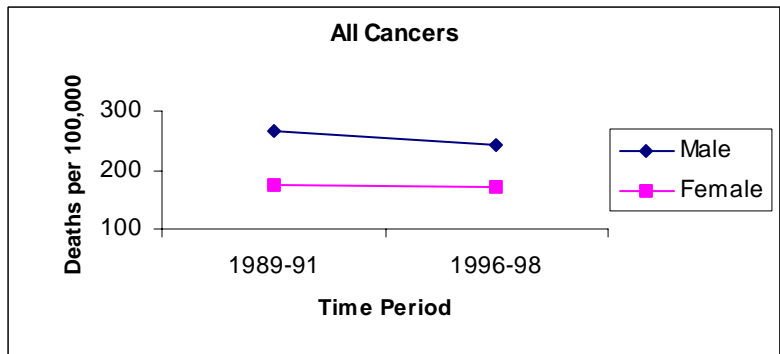
Figure 25.1. Age-Adjusted Mortality Rates by Gender, Connecticut Residents – causes of death for which the male-female mortality disparity changed significantly from 1989-91 to 1996-98



The male-female mortality disparity for all causes of death decreased significantly from 409.4 to 314.7 during this time period.

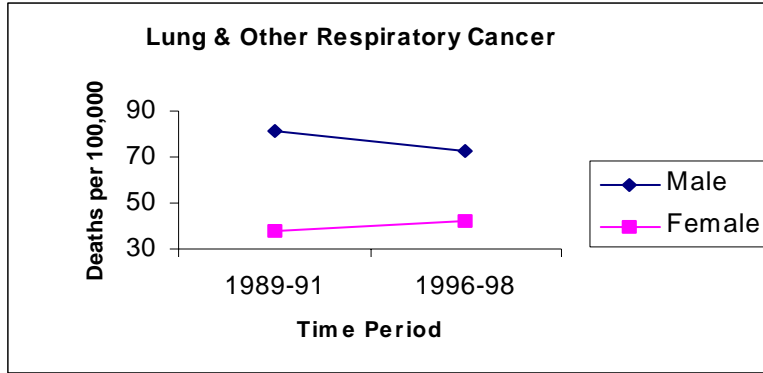


The male-female mortality disparity for heart disease decreased significantly from 152.9 to 110.7 during this time period.

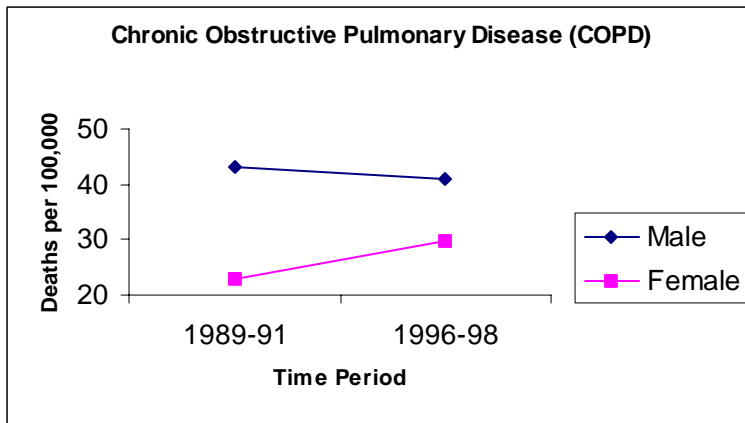


The male-female mortality disparity for all cancers decreased significantly from 92.8 to 71.9 during this time period.

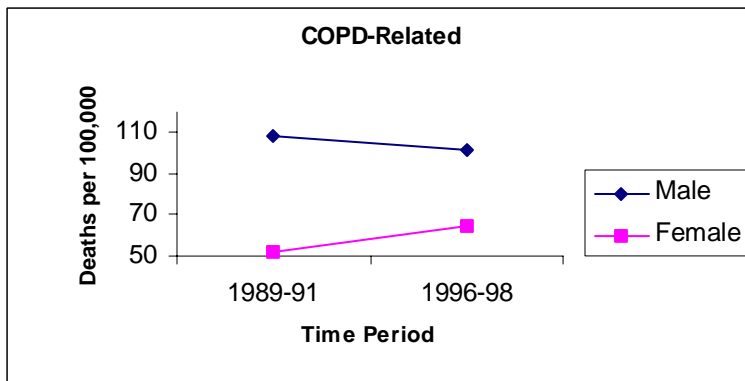
Figure 25.1. Age-Adjusted Mortality Rates by Gender, Connecticut Residents – causes of death for which the male-female mortality disparity changed significantly from 1989-91 to 1996-98 (continued)



The male-female mortality disparity for lung & other respiratory cancers decreased significantly from 44.2 to 30.7 during this time period.



The male-female mortality disparity for COPD decreased significantly from 20.2 to 11.1 during this period.



The male-female mortality disparity for COPD-related causes decreased significantly from 56.9 to 37.3 during this period.

Discussion

The trend of higher mortality among Connecticut males compared with females follows a similar pattern nationwide and in other industrialized countries (Nathanson 1990, 1995; Wingard 1984; Doyal 1995; Lorber 1997; Waldron 1995a, 1995b; Nikiforov and Mamaev 1998; Hemstrom 1999). Gender differences in mortality may be the result of social and biological factors that interact to produce discernable patterns. Relevant biological factors include the effects of sex differences in reproductive anatomy and physiology, sex hormones, and chromosomally-linked genes. Social factors include cultural influences that produce gender differences in risk-taking behavior and differences in access to societal resources such as nutrition and health care, and environmental exposures (Nathanson 1977, 1990, 1995; Wingard 1982, 1984; Doyal 1995; Lorber 1997; Waldron 1995a, 1995b; Bird and Rieker 1999). Technological and economic changes in the home and workplace have also affected the mortality risks to which males and females are differentially susceptible (Waldron 1995a; Bird and Rieker 1999).

Gender differences in mortality and life expectancy have varied historically and across cultures. Women live longer than men do in contemporary economically developed nations, yet at the beginning of the twentieth century this female advantage was much smaller than it is today (Waldron 1995a). In contrast, males in contemporary developing nations tend to have lower mortality and greater life expectancy than do females (Santow 1995; Waldron 1995a; United Nations 1998).

Research has established that gender differences in behavior are a major cause of gender differences in mortality (Nathanson 1977, 1990, 1995; Wingard 1984; Doyal 1995; Lorber 1997; Waldron 1995a, 1995b, 1996; Bird and Rieker 1999). Men's earlier adoption and higher rate of cigarette smoking compared to women is considered the key factor of the male mortality disadvantage due to chronic diseases of coronary heart disease, lung cancer, chronic obstructive pulmonary disease (USDHHS 1989; USDHHS 1990; Waldron 1986; Waldron 1995a). It is estimated that men's higher smoking-related mortality accounts for up to half of all gender differences in mortality in the United States including 30% of gender differences in coronary heart disease and 90% of gender differences in lung cancer (Waldron 1986; Waldron 1995a). Women's adoption of the smoking habit in the past half-century most likely accounts for the observed increases in female lung cancer, COPD, and COPD-related deaths in the 1990s and the relative decreases in the male-female disparity for these causes of death.

Gender differences in behavior influence gendered patterns in mortality. U.S. data indicate that men's diets have higher ratios of saturated to polyunsaturated fat and lower vitamin C intake compared with women's which could contribute to higher coronary heart disease mortality (Waldron 1995a, 1995b). Men are more likely than women to engage in vigorous exercise, which likely contributes to a decreased risk for heart disease mortality (Waldron 1995a, 1995b). Some studies report that men score higher on psychological measures of hostility and mistrust, both of which are psychological characteristics associated with increased risk of coronary heart disease (Waldron 1995a, 1995b). U.S. data show that women visit physicians more often than do men (Nathanson 1977; Verbrugge 1985; Verbrugge and Wingard 1987) and, oftentimes, this fact is advanced as an explanation for women's lower mortality rates. Women, however, tend to delay medical care for

various types of cancer and heart disease compared with men. For most types of cancer and heart attacks, women do not have a better prognosis than men (Waldron 1995a, 1995b). It is therefore unclear, if and how much women's health-care seeking behaviors actually contribute to their lower mortality.

Males' heavier drinking patterns contribute to their higher mortality due to liver disease and cirrhosis, motor vehicle accidents, homicide, and suicide compared with females (Waldron 1986; Waldron 1995a). Men are more likely to use guns and take other physical risks that contribute to higher mortality due to violent and accidental deaths. Men are more likely to inject drugs that contribute to higher HIV and drug-related mortality. Drug use is also associated with higher rates of homicide (USDHHS 1990). Men are also more likely than women to be employed outside the home in more hazardous occupations. Their greater exposure to occupational hazards contributes to their higher rates of accident and lung cancer mortality (Nathanson 1990; Doyal 1995; Lorber 1997; Waldron 1995a, 1995b, 1996; Bird and Rieker 1999).

Biological differences also contribute to gender differences in mortality. Clearly, sex-specific conditions such as prostate, cervical, ovarian, and breast cancer as well as reproductive (i.e. childbearing) capacity, are biological factors directly linked to higher mortality risk. Research suggests that female sex hormones may confer a protective effect on women's risk while men's tendency to accumulate fat in the upper abdomen may increase their risk for coronary heart disease. Female sex hormones are believed to contribute to higher HDL (high-density lipoprotein) and lower LDL (low-density lipoprotein) cholesterol levels in pre-menopausal women. This fact may confer a protective effect on pre-menopausal women's risk for coronary heart disease (Waldron 1995b; Bird and Rieker 1999). Limited evidence suggests that higher levels of HDL cholesterol in females could account for up to half of the sex differences in coronary heart disease mortality. The female mortality advantage due to lower LDL cholesterol levels, however, appears to reverse at older ages (Waldron 1995b).

Although biologically-based explanations for men's greater risk-taking and aggressive behaviors are advanced occasionally in the popular media, such reasoning is not well supported by scientific evidence. Specifically, studies advancing the ideas that males' possession of higher testosterone levels and/or a y chromosome might predispose them to higher levels of physical aggression have been methodologically flawed and/or inconclusive (Bleier 1988; Rosoff 1991; Sunday 1991; Fausto-Sterling 1992). Rather, gender differences in risk-taking behavior can be viewed in the context of accepted cultural values that encourage males to behave in more physically aggressive ways and in riskier activities compared with females (Rosoff 1991; Fausto-Sterling 1992; Stillion 1995). Males, more than females, are encouraged to express individual aggression, and male images in the popular media reinforce the social acceptability of violent and risk-taking behaviors. Programs that aim to reduce premature male mortality due to injury should first address the societal costs of what are considered acceptable male behaviors such as physical aggression and gun use (Stillion 1995).

The magnitude of the male-female mortality differential in the U.S. (and other industrialized countries) has varied over time. At the beginning of the twentieth century, the female mortality advantage was small. In the mid-twentieth century female mortality decreased more dramatically than male's due primarily to decreases in deaths affecting women--maternal mortality and uterine

cancer. At the same time, male lung cancer and coronary heart disease mortality, both closely linked to the widespread adoption of smoking behaviors by males, increased (Verbrugge 1980; Wingard 1984; Waldron 1995a).

Beginning in the 1970s, the trend toward increasing gender differentials in mortality in the U.S. reversed (Waldron 1995a). Between 1970 and 1989, male mortality decreased more than female and the corresponding mortality ratio decreased as well. Trend changes in several causes of death have contributed to the changing gender differential. Lung cancer and COPD mortality increased for females but not males, while males showed greater decreases in coronary heart disease and motor vehicle crash mortality than did females. Increasing lung cancer and COPD mortality among women are closely linked to the widespread adoption of smoking behaviors among American women beginning in the post-World War II era (USDHHS 1990).

Summary of Connecticut Black Resident Mortality

Leading Causes of Death and Premature Mortality, 1989 - 1998

Heart disease was the leading cause of death for black males during the 1990s, followed by all cancers and HIV infection. Heart disease was the leading cause of premature mortality, accounting for 13.2% of black male deaths under age 75 in the 1996-98 period, followed by homicide and legal intervention (12.9%) and cancer (12.1%) [Table 26.1].

Heart disease was the leading cause of death for black females during the 1990s, followed by all cancers and cerebrovascular disease. Cancer was the leading cause of premature mortality, accounting for 17.7% of all black female deaths under age 75 in the 1996-98 period, followed by heart disease (16.8%) and HIV infection (9.0%) [Table 26.1].

1996-1998 Deaths, Black Connecticut Residents

- Heart disease was the leading cause of death for black males and females followed by cancer.
- Heart disease was the leading cause of premature mortality under age 75 for black males followed by homicide and legal intervention.
- Cancer was the leading cause of premature mortality under age 75 for black females followed by heart disease.
- Compared with black females, black males had significantly higher mortality rates for all causes of death, heart disease, all cancers, lung and other respiratory cancer, chronic liver disease & cirrhosis, COPD-related causes, HIV infection, septicemia-related causes, unintentional injuries, motor vehicle crashes, homicide and legal intervention, all poisoning, and drug-induced causes.
- Compared with white males, black males had significantly higher mortality due to HIV infection, septicemia, septicemia-related causes, unintentional injuries, homicide and legal intervention, poisoning, drug-induced causes, all cancers, lung and other respiratory cancer, prostate cancer, hypertension-related, diabetes, and diabetes-related causes.
- Compared with white females, black females had significantly higher mortality due to HIV infection, septicemia, septicemia-related causes, homicide and legal intervention, heart disease, cerebrovascular disease, hypertension-related causes, diabetes, diabetes-related causes, and breast cancer.
- Compared with white males and females, black males and females had significantly lower mortality due to COPD and COPD-related causes.

**Table 26.1 Leading Causes of Premature Mortality¹ by Gender
Connecticut Black² Residents, 1996-98**

| Cause of Death | Number of Deaths | Rank – Deaths ³ | Deaths Under Age 75 | YPLL ⁴ Before Age 75 | Rank |
|---------------------------------|------------------|----------------------------|---------------------|---------------------------------|------|
| <i>All Black Residents</i> | | | | | |
| Diseases of the heart | 1,612 | 1 | 971 | 15,225 | 1 |
| All cancer | 1,329 | 2 | 939 | 14,851 | 2 |
| HIV infection | 314 | 3 | 313 | 10,521 | 3 |
| Homicide and legal intervention | 221 | 6 | 220 | 10,273 | 4 |
| Unintentional injuries | 281 | 5 | 260 | 9,435 | 5 |
| Suicide | 66 | 11 | 64 | 2,710 | 6 |
| Cerebrovascular disease | 287 | 4 | 153 | 2,457 | 7 |
| Diabetes mellitus | 215 | 7 | 142 | 1,980 | 8 |
| Pneumonia & influenza | 178 | 8 | 92 | 1,873 | 9 |
| Septicemia | 97 | 10 | 58 | 1,309 | 10 |
| <i>All Black Males</i> | | | | | |
| Diseases of the heart | 748 | 1 | 523 | 8,539 | 1 |
| Homicide and legal intervention | 179 | 5 | 178 | 8,328 | 2 |
| All cancer | 715 | 2 | 518 | 7,819 | 3 |
| Unintentional injuries | 201 | 4 | 192 | 7,017 | 4 |
| HIV infection | 213 | 3 | 212 | 6,946 | 5 |
| Suicide | 54 | 9 | 53 | 2,338 | 6 |
| Cerebrovascular disease | 105 | 6 | 74 | 1,357 | 7 |
| Pneumonia & influenza | 87 | 8 | 55 | 1,314 | 8 |
| Diabetes mellitus | 100 | 7 | 70 | 1,080 | 9 |
| Septicemia | 45 | 11 | 31 | 755 | 10 |
| <i>All Black Females</i> | | | | | |
| All cancer | 614 | 2 | 421 | 7,032 | 1 |
| Diseases of the heart | 864 | 1 | 448 | 6,686 | 2 |
| HIV infection | 101 | 5 | 101 | 3,575 | 3 |
| Unintentional injuries | 80 | 7 | 68 | 2,418 | 4 |
| Homicide and legal intervention | 42 | 11 | 42 | 1,945 | 5 |
| Cerebrovascular disease | 182 | 3 | 79 | 1,100 | 6 |
| Diabetes mellitus | 115 | 4 | 72 | 900 | 7 |
| COPD | 50 | 10 | 33 | 720 | 8 |
| Pneumonia & influenza | 91 | 6 | 37 | 560 | 9 |
| Septicemia | 52 | 9 | 27 | 555 | 10 |

Notes:

1. Premature mortality is defined as the total number of years of potential life lost (YPLL) before age 75. See Section V—Appendix II of this report for a discussion of the YPLL measure.
2. Black Connecticut residents include persons of Hispanic ethnicity.
3. These ranks are based on the National Center for Health Statistics (NCHS) leading causes of death list. See Section V—Appendix V for a complete list of leading causes of death in Connecticut.
4. “YPLL before age 75” indicates the total number of potential life years lost before age 75.

Gender differences in mortality

Compared with black females, black male residents experienced significantly higher age-adjusted mortality from all causes of death. For the period 1996-98, the age-adjusted all-cause death rate for black males was 50% higher than that of black female residents. The largest mortality gaps between black males and females exist in homicide and legal intervention, drug-induced deaths, poisoning, alcohol-induced deaths, unintentional injuries, motor vehicle crashes, and HIV infection (Table 26.2).

Black male excess deaths were calculated in comparison with black female deaths. Excess deaths are those that would not have occurred if the black male population had the same rate as the black female population, and are presented on an annualized or per year basis. It is estimated that black males had 347 excess deaths per year compared with females from 1996 to 1998. The largest numbers of excess deaths among black males were in all cancers, lung and other respiratory cancer, heart disease, homicide and legal intervention, HIV infection, and unintentional injuries. Excess male deaths due to suicide, falls and fall-related injuries, and alcohol-induced deaths were not calculated because of the small number of female deaths in these categories (Table 26.2).

Black vs. White Mortality by Gender

Black vs. white differences in mortality are summarized in Table 26.3. Black residents had significantly higher age-adjusted all-cause mortality compared with white residents of Connecticut with an estimated 438 excess deaths per year for the 1996-1998 period.

In 1996-1998, black male Connecticut residents had significantly higher mortality due to HIV infection, septicemia, septicemia-related causes, unintentional injuries, homicide and legal intervention, poisoning, drug-induced causes, all cancers, lung and other respiratory cancer, prostate cancer, hypertension-related causes, diabetes, and diabetes-related causes compared with white males. There were no statistically significant differences between black and white males in age-adjusted death rates due to heart disease, cerebrovascular disease, colorectal cancer, chronic liver disease and cirrhosis, motor vehicle crashes, suicide, alcohol-induced causes, and pneumonia and influenza deaths (Table 26.3).

Black female Connecticut residents had significantly higher mortality due to HIV infection, septicemia, septicemia-related causes, homicide and legal intervention, heart disease, cerebrovascular disease, hypertension-related causes, diabetes, diabetes-related causes, and breast cancer compared with white females. There were no statistically significant differences between black and white females in age-adjusted death rates due to all cancers, lung and other respiratory cancers, colorectal cancer, chronic liver disease and cirrhosis, unintentional injuries, motor vehicle crashes, poisoning, drug-induced causes, and pneumonia and influenza deaths (Table 26.3).

Black males and females had significantly lower mortality due to COPD and COPD-related causes compared with white males and females in Connecticut.

**Table 26.2 Summary Table of Black Male and Female Mortality¹
Connecticut Residents, 1996-98**

| Cause of Death | Black Males | | Black Females | | Male-Female Relative Risk ^{3,4} | Male Excess Deaths ⁵ |
|-----------------------------------|-------------|-------------------|---------------|-------------------|---|------------------------------------|
| | Deaths | AAMR ² | Deaths | AAMR ² | | |
| All Causes | 3,118 | 1,270.9 | 2,780 | 846.9 | 1.5** | 347 |
| Chronic Diseases | | | | | | |
| Heart disease | 748 | 356.5 | 864 | 282.5 | 1.3** | 52 |
| Cerebrovascular | 105 | 50.1 | 182 | 62.1 | 0.8 | (8) |
| Hypertension-related | 243 | 113.1 | 331 | 106.0 | 1.1 | 5 |
| Diabetes | 100 | 48.0 | 115 | 36.3 | 1.3 | 8 |
| Diabetes-related | 283 | 131.3 | 416 | 134.2 | 1.0 | (2) |
| All cancer | 715 | 332.8 | 614 | 187.3 | 1.8** | 104 |
| Lung & other respiratory cancer | 221 | 100.7 | 126 | 37.9 | 2.7** | 46 |
| Colorectal cancer | 64 | 27.3 | 65 | 19.9 | 1.4 | 6 |
| COPD | 45 | 22.0 | 50 | 15.1 | 1.5 | 5 |
| COPD-related | 155 | 83.4 | 129 | 41.5 | 2.0** | 16 |
| Chronic liver disease & cirrhosis | 36 | 12.6 | 22 | 5.5 | 2.3* | 7 |
| Injury | | | | | | |
| Unintentional injuries | 201 | 57.2 | 80 | 19.3 | 3.0** | 44 |
| Motor vehicle crashes | 74 | 18.8 | 26 | 5.8 | 3.2** | 17 |
| Fall & fall-related injuries | 12 | — | 3 | — | — | |
| Suicide | 54 | 12.5 | 12 | — | — | |
| Homicide & legal intervention | 179 | 38.4 | 42 | 8.3 | 4.5** | 46 |
| All poisoning | 71 | 18.6 | 24 | 5.1 | 3.6** | 17 |
| Alcohol-induced | 36 | 11.7 | 13 | — | — | |
| Drug-induced | 67 | 17.3 | 21 | 4.5 | 3.8** | 17 |
| Infectious Diseases | | | | | | |
| Pneumonia & influenza | 87 | 44.0 | 91 | 30.9 | 1.4 | 9 |
| Septicemia | 45 | 20.0 | 52 | 16.5 | 1.2 | 3 |
| Septicemia-related | 188 | 85.7 | 190 | 58.8 | 1.5* | 20 |
| HIV infection | 213 | 56.1 | 101 | 21.1 | 2.7** | 44 |

Notes:

- Black race includes persons of any ethnicity.
- Age-adjusted Mortality Rates (AAMR) are per 100,000 based on race and ethnicity specific population estimates. Age-adjusted rates were calculated by the direct method using the 2000 U.S. standard population. Rates were not calculated for fewer than 15 events.
- Relative risk is the ratio of the Connecticut black male resident age-adjusted mortality rate (AAMR) to the black female resident AAMR (2000 U.S. standard population). Relative risks are not calculated for fewer than 15 deaths in either the black male or female population.
- Statistical tests were conducted to evaluate differences in black male and female resident AAMRs. Following are explanations of the notations:
 - * Significantly different at $p < .05$.
 - ** Significantly different at $p < .01$.
 - Rate (and relative risk) were not calculated due to small numbers.
- Excess deaths are those deaths that would not have occurred if the black male population had the same rate as the black female population, and are presented on an annualized or per year basis. Parentheses indicate fewer deaths.

**Table 26.3 Summary Table of Black-White Mortality Disparities by Gender¹
Connecticut Residents, 1996-98**

| Cause of Death | All | | Males | | Females | |
|-----------------------------------|---|--|---|--|---|--|
| | Black-White Relative Risk ^{2,3} | Excess (Fewer) Deaths ⁴ | Black-White Relative Risk ^{2,3} | Excess (Fewer) Deaths ⁴ | Black-White Relative Risk ² | Excess (Fewer) Deaths ⁴ |
| All Causes | 1.3** | 438 | 1.3** | 240 | 1.3** | 192 |
| Chronic Diseases | | | | | | |
| Heart disease | 1.2** | 90 | 1.1 | 20 | 1.3** | 70 |
| Cerebrovascular | 1.1 | 10 | 0.9 | (2) | 1.3* | 12 |
| Hypertension-related | 2.0** | 98 | 2.0** | 40 | 2.1** | 58 |
| Diabetes | 2.4** | 41 | 2.3** | 19 | 2.4** | 22 |
| Diabetes-related | 2.0** | 117 | 1.6** | 35 | 2.4** | 82 |
| All cancer | 1.2** | 83 | 1.4** | 66 | 1.1 | 17 |
| Lung & other respiratory cancer | 1.1 | 16 | 1.4** | 21 | 0.9 | (5) |
| Colorectal cancer | 1.1 | 5 | 1.1 | 2 | 1.1 | 3 |
| Breast cancer (females only) | — | — | — | — | 1.3* | 11 |
| Prostate cancer (males only) | — | — | 2.4** | 23 | — | — |
| COPD | 0.5** | (31) | 0.5** | (14) | 0.5** | (17) |
| COPD-related | 0.7** | (37) | 0.8* | (12) | 0.6** | (25) |
| Chronic liver disease & cirrhosis | 1.0 | 1 | 1.1 | 1 | 1.0 | 0 |
| Injury | | | | | | |
| Unintentional injuries | 1.2* | 16 | 1.3* | 16 | 1.0 | 0 |
| Motor vehicle crashes | 1.1 | 5 | 1.4 | 7 | 0.8 | (2) |
| Fall & fall-related injuries | 0.5** | — | — | — | — | — |
| Suicide | 0.9 | (2) | 0.9 | (2) | — | — |
| Homicide & legal intervention | 8.7** | 66 | 10.1** | 54 | 5.9** | 12 |
| All poisoning | 1.3 | 8 | 1.5* | 7 | 1.1 | 1 |
| Alcohol-induced | 1.5 | 5 | 1.6 | 5 | — | — |
| Drug-induced | 1.4* | 8 | 1.6* | 8 | 1.0 | 0 |
| Infectious Diseases | | | | | | |
| Pneumonia & influenza | 1.1 | 5 | 1.1 | 1 | 1.2 | 4 |
| Septicemia | 1.8** | 14 | 1.7* | 6 | 1.9** | 8 |
| Septicemia-related | 1.9** | 59 | 1.9** | 30 | 1.8** | 29 |
| HIV infection | 7.5** | 92 | 7.5** | 62 | 9.2** | 30 |

Notes:

- Black and white race includes persons of Hispanic ethnicity.
- Relative risk is the ratio of the black Connecticut resident age-adjusted mortality rate (AAMR) to the white Connecticut resident AAMR (2000 U.S. standard population). Relative risks are not calculated for fewer than 15 deaths in either the black or white population.
- Statistical tests were conducted to evaluate differences in black and white resident AAMRs. Following are explanations of the notations:
 - * Significantly different than the white resident rate at $p < .05$.
 - ** Significantly different than the white resident rate at $p < .01$.
 - Not calculated due to small numbers of deaths or no deaths.
- Excess deaths are those deaths that would not have occurred if the black population had the same rate as the white population, and are presented on an annualized or per year basis. Parentheses indicate fewer events. The total number of excess deaths is the sum of the total excess deaths of males and females.

These figures are generally consistent with national statistics showing that black Americans have higher age-adjusted mortality rates for all causes, all cancer, cardiovascular diseases, diabetes, chronic liver disease and cirrhosis, HIV infection, septicemia, homicide and legal intervention, and unintentional injuries compared with white Americans. Black Americans tend to have lower age-adjusted mortality due to COPD and suicide compared with white Americans (Centers for Disease Control and Prevention 2004).

Black vs. White Mortality by Age Group

There are some important differences in the black-white mortality differential by age group. The disparity in black-white Connecticut male all-cause mortality (1996-1998 period) differed significantly by age group ($p < .0014$). For black compared with white males under age 65, the relative risk of death was consistent at 2.3 ($p < .001$), while the disparity for black compared with white males aged 65-84 lessened. Among males aged 85 and over, the all-cause mortality rate was significantly lower for blacks compared with whites. The disparity in black-white female all-cause mortality (1996-1998 period) also differed by age group ($p < .0014$). For black compared with white females under age 65, the relative risk of death was consistent at 2.0 ($p < .001$), while the disparity for black compared with white females aged 65-84 lessened. The all-cause mortality rate was significantly lower for black compared with white females aged 85 and over. These findings are consistent with other studies showing that racial and socioeconomic differences in mortality tend to be most prominent in the middle-adult (35-64 years) age groups (Geronimus 2001; Adler, Boyce, Chesney, et al. 1993; House, Kessler, Herzog et al. 1990; Elo and Preston 1996).

Black vs. White Premature Mortality

Age-adjusted all-cause *premature* mortality under age 75 was significantly higher for black residents of Connecticut compared with white residents. Black males had 2.3 times the all-cause premature mortality rate of white males (1996-98 period) with heart disease, homicide and legal intervention, all cancers, HIV infection, and unintentional injuries contributing to greater overall rates of premature mortality (Table 26.4). Black females had 2.0 times the all-cause premature mortality rate of white females (1996-98 period) with all cancers, heart disease, HIV infection, homicide and legal intervention, and cerebrovascular disease contributing to greater overall premature mortality under age 75 (Table 26.4).

Poverty and lower socioeconomic status (SES) are the most common explanatory factors for black-white disparities in mortality. Poverty and lower SES have been consistently linked to poor health outcomes and higher mortality, and black Americans have consistently had higher poverty rates and lower SES than white Americans (Williams and Collins 1995; Budrys 2003). Some research suggests, however, that adjustment for SES reduces but does not eliminate the racial disparity in mortality (Otten, Teutsch, Williamson, et al. 1990).

**Table 26.4 Summary Table of Black-White Premature Mortality¹
Disparities by Gender² Connecticut Residents, 1996-98**

| Cause of Death | All Residents | Males | Females |
|-----------------------------------|---|---|---|
| | Black-White Relative Risk ^{3,4} | Black-White Relative Risk ^{3,4} | Black-White Relative Risk ^{3,4} |
| All Causes | 2.1** | 2.3** | 2.0** |
| Chronic Diseases | | | |
| Heart disease | 2.0** | 1.7** | 2.8** |
| Cerebrovascular | 2.3** | 2.5** | 2.1** |
| Hypertension-related | 4.1** | 3.6** | 5.3** |
| Diabetes | 2.8** | 3.0** | 2.7** |
| Diabetes-related | 2.7** | 2.4** | 3.2** |
| All cancer | 1.4** | 1.6** | 1.2* |
| Lung & other respiratory cancer | 1.3** | 1.7** | 1.1 |
| Colorectal cancer | 1.9** | 1.8* | 1.9* |
| Breast cancer (females only) | | | 1.4* |
| Prostate cancer (males only) | | 3.3** | |
| COPD | 1.3 | 1.2 | 1.4 |
| COPD-related | 1.3* | 1.3 | 1.3 |
| Chronic liver disease & cirrhosis | 1.2 | 1.1 | 1.4 |
| Injury | | | |
| Unintentional injuries | 1.3** | 1.5** | 1.2 |
| Motor vehicle crashes | 1.1 | 1.4 | 0.7 |
| Fall & fall-related injuries | 0.6 | — | — |
| Suicide | 1.1 | 1.2 | — |
| Homicide & legal intervention | 9.2** | 10.3** | 6.8** |
| All poisoning | 1.2 | 1.3 | 1.1 |
| Alcohol-induced | 1.5 | 1.6 | — |
| Drug-induced | 1.3 | 1.4 | 1.1 |
| Infectious Diseases | | | |
| Pneumonia & influenza | 2.8** | 3.3** | 2.2* |
| Septicemia | 3.7** | 4.0** | 3.5** |
| Septicemia-related | 2.9** | 3.1** | 2.7** |
| HIV infection | 7.1** | 6.9** | 8.5** |

Notes:

- Premature mortality is measured by the “years of potential life lost” (YPLL) below a specified age. In this table, the YPLL represents the number of years of potential life lost by each death before age 75.
- Black and white racial groups include persons of Hispanic ethnicity.
- Relative risk is the ratio of the black Connecticut resident age-adjusted Years of Potential Life Lost (YPLL) rate to the white Connecticut resident YPLL (2000 U.S. standard population). Relative risks are not calculated for fewer than 15 deaths in either the black or white population.
- Statistical tests were conducted to evaluate differences in black and white resident YPLLs. Following are explanations of the notations:
 - * Significantly different than the white resident rate at $p < .05$.
 - ** Significantly different than the white resident rate at $p < .01$.
 - Rate not calculated due to small numbers.

Recent studies have also examined the impact of place of residence on the black-white mortality disparity (Polednak 1996; Polednak 1997; Geronimus, Bound, and Waidmann 1999; Jackson, Anderson, Johnson, et al. 2000). Polednak found that black residential segregation was associated with all-cause mortality after adjusting for poverty (Polednak 1996). Jackson et al. found that black residential segregation affected mortality independently of individual-level measures of socioeconomic status (Jackson, Anderson, Johnson, et al 2000). Geronimus et al. found that specific conditions in various poor communities (e.g. rural vs. urban poverty) appeared to explain differences in causes and levels of excess black mortality (Geronimus, Bound, and Waidmann 1999). Residential segregation of black Americans is associated with inequities in household and neighborhood living conditions, local services, and medical care, which are all factors that may influence health status, morbidity, and mortality.

Time Trend Analyses

We assessed changes in the mortality rates of black male and female Connecticut residents from 1989-1991 to 1996-1998. For both black and white males, there were significant decreases in age-adjusted mortality rates for all causes of death and heart disease. Cerebrovascular disease and COPD mortality rates decreased significantly for black males only. There were no statistically significant increases among black males in age-adjusted death rates for any other causes of death considered in this report. There were no statistically significant changes in age-adjusted death rates of black females for any causes of death during the 1990s.

Changes in Disparities over Time

We assessed changes in black-white mortality disparities over time and found that the black-white male disparity in alcohol-induced deaths decreased significantly from 1989-91 to 1996-98 (BW RR, 1989-91 = 2.7; BW RR, 1996-98 = 1.6). There were no statistically significant increases in black-white male mortality disparity from 1989-91 to 1996-98. There were no statistically significant changes in the black-white female mortality disparity during the 1990s for any of the causes of death considered in this report.

The Connecticut black resident mortality trends presented here reinforce previous findings that significant disparities exist in the major causes of death for black residents compared with white residents (Hynes, Mueller, Hofmann, et al. 1999). Better understanding of the underlying causes of these disparities requires that we pay attention to the specific conditions in local communities that put black residents at risk for premature mortality. Elimination of these disparities, a goal of *Healthy People 2010*, will require the implementation of broad-based social policy initiatives that improve the living conditions in local Connecticut communities and address racial disparities in health care access and quality.

Summary of Connecticut Hispanic Resident Mortality

Leading Causes of Death and Premature Mortality, 1989 - 1998

Heart disease was the leading cause of death for Hispanic males during the 1990s, followed by all cancers, unintentional injuries, HIV infection, and homicide and legal intervention (Table 27.1). Unintentional injuries were the leading cause of premature mortality accounting for 19% of Hispanic male deaths under age 75, followed by HIV infection (13%), and heart disease (10%) in the 1996-98 period.

Heart disease was the leading cause of death for Hispanic females during the 1990s, followed by all cancers, cerebrovascular disease, HIV infection, and unintentional injuries (Table 27.1). Cancer was the leading cause of premature mortality, accounting for 15% of all Hispanic female deaths under age 75, followed by heart disease (13%), and HIV infection (11%) in the 1996-98 period.

1996-1998 Deaths, Hispanic Connecticut Residents

- Heart disease was the leading cause of death for Hispanic males and females followed by cancer.
- Unintentional injuries were the leading cause of premature mortality under age 75 for Hispanic males followed by HIV infection.
- Heart disease was the leading cause of premature mortality under age 75 for Hispanic females followed by cancer.
- Compared with Hispanic females, Hispanic males had significantly higher mortality from all causes of death.
- Compared with white males, Hispanic males had significantly lower mortality due to heart disease, hypertension-related conditions, all cancers, lung and other respiratory cancer, prostate cancer, COPD and COPD-related conditions, and pneumonia and influenza.
- Compared with white males, Hispanic males had significantly higher mortality due to chronic liver disease and cirrhosis, HIV infection, unintentional injuries, homicide and legal intervention, all poisoning, and alcohol-induced and drug-induced conditions.
- Compared with white females, Hispanic females had significantly lower mortality due to heart disease, cerebrovascular disease, hypertension-related causes, all cancers, lung and other respiratory cancer, colorectal cancer, breast cancer, COPD and COPD-related conditions.
- Compared with white females, Hispanic females had significantly higher mortality due to diabetes-related causes and HIV.

Table 27.1 Leading Causes of Death and Premature Mortality¹ by Gender Connecticut Hispanic² Residents, 1996-98

| Cause of Death | Number of Deaths | Rank – Deaths ³ | Deaths Under Age 75 | YPLL ⁴ Under Age 75 | Rank - Premature Mortality |
|-------------------------------------|------------------|----------------------------|---------------------|--------------------------------|----------------------------|
| <i>All Hispanic Residents</i> | | | | | |
| Unintentional injuries | 212 | 3 | 204 | 8,441 | 1 |
| HIV infection | 182 | 4 | 182 | 6,427 | 2 |
| Diseases of the heart | 499 | 1 | 290 | 5,682 | 3 |
| All cancer | 389 | 2 | 287 | 5,540 | 4 |
| Homicide and legal intervention | 69 | 8 | 69 | 3,252 | 5 |
| Suicide | 39 | 11 | 39 | 1,593 | 6 |
| Chronic liver disease and cirrhosis | 77 | 6 | 71 | 1,573 | 7 |
| Cerebrovascular disease | 114 | 5 | 65 | 1,260 | 8 |
| COPD | 63 | 9 | 38 | 1,044 | 9 |
| Diabetes mellitus | 75 | 7 | 54 | 745 | 10 |
| <i>All Hispanic Males</i> | | | | | |
| Unintentional injuries | 164 | 3 | 159 | 6,574 | 1 |
| HIV infection | 131 | 4 | 131 | 4,473 | 2 |
| Diseases of the heart | 251 | 1 | 170 | 3,415 | 3 |
| All cancer | 208 | 2 | 149 | 2,860 | 4 |
| Homicide and legal intervention | 60 | 5 | 60 | 2,805 | 5 |
| Suicide | 34 | 9 | 34 | 1,375 | 6 |
| Chronic liver disease and cirrhosis | 55 | 6 | 53 | 1,233 | 7 |
| Cerebrovascular disease | 55 | 7 | 38 | 772 | 8 |
| COPD | 32 | 10 | 20 | 677 | 9 |
| Diabetes mellitus | 42 | 8 | 32 | 465 | 10 |
| <i>All Hispanic Females</i> | | | | | |
| All cancer | 181 | 2 | 138 | 2,680 | 1 |
| Diseases of the heart | 248 | 1 | 120 | 2,267 | 2 |
| HIV infection | 51 | 4 | 51 | 1,955 | 3 |
| Unintentional injuries | 48 | 5 | 45 | 1,868 | 4 |
| Cerebrovascular disease | 59 | 3 | 27 | 488 | 5 |
| Homicide and legal intervention | 9 | 12 | 9 | 447 | 6 |
| COPD | 31 | 8 | 18 | 367 | 7 |
| Chronic liver disease and cirrhosis | 22 | 9 | 18 | 340 | 8 |
| Diabetes mellitus | 33 | 6 | 22 | 280 | 9 |
| Pneumonia & Influenza | 32 | 7 | 10 | 242 | 10 |

Notes:

1. Premature mortality is defined as the total number of years of potential life lost (YPLL) before age 75. See Section V.—Appendix II of this report for a discussion of the YPLL measure.
2. Hispanic ethnicity includes persons of any race.
3. These ranks are based on the National Center for Health Statistics (NCHS) leading causes of death list. See Section V, Appendix V for a complete list of leading causes of death in Connecticut.
4. “YPLL before age 75” indicates the total number of potential life years lost before age 75.

Limitations on time trend analyses

Before the early 1990s, there was substantial missing information on Hispanic ethnicity of deceased persons. Reporting of Hispanic ethnicity on the Connecticut death certificate improved during the decade particularly after 1989 and 1990 when 67% and 23% of all decedents, respectively, were missing information on Hispanic ethnicity. By 1998 and 1999, only 3% of all death records were missing information on Hispanic ethnicity (see Appendix II “Hispanic origin” for a detailed discussion of data quality).

During the 1990s, age-adjusted death rates for all causes of death and the leading causes of death did not appear to change significantly for Connecticut Hispanic residents; however, because there was substantial missing information regarding Hispanic ethnicity until the mid-1990s, we consider these time trend analyses inconclusive.

Gender differences in mortality

Compared with Hispanic females, Hispanic male residents experienced significantly higher age-adjusted mortality from all causes of death. For the period 1996-98, the age-adjusted all-cause death rate for Hispanic males was 68% higher than that of Hispanic female residents. This represents a larger gender gap in mortality compared with all state residents, in which male all-cause mortality is about 50% higher than all-cause female mortality. Connecticut Hispanic males had higher age-adjusted death rates compared with Hispanic females for most causes of death considered in this report. The largest mortality gaps between Hispanic males and females exist in drug-induced, alcohol-induced, and poisoning deaths, unintentional injuries and motor vehicle crashes, homicide and legal intervention, HIV infection, septicemia-related conditions, heart disease, all cancers, colorectal cancer, lung and other respiratory cancer, chronic liver disease and cirrhosis, diabetes, and COPD-related conditions (Table 27.2).

Hispanic male excess deaths were calculated in comparison with Hispanic female deaths. Excess deaths are those that would not have occurred if the Hispanic male population had the same rate as the Hispanic female population, and are presented on an annualized or per year basis. It is estimated that Hispanic males had 185 excess deaths per year from 1996 to 1998. The largest numbers of excess deaths among Hispanic males were in unintentional injuries, HIV infection, and all cancers. Excess male deaths due to suicide, homicide and legal intervention, alcohol-induced, and drug-induced causes were not calculated because of the small number of female deaths in these categories (Table 27.2).

Hispanic vs. White Non-Hispanic Mortality by Gender

Mortality differences between Hispanics and non-Hispanic whites are summarized in Table 27.3. Overall, Hispanics had significantly lower age-adjusted all-cause mortality compared with white residents of Connecticut with an estimated 280 fewer deaths per year. Hispanic males had significantly lower age-adjusted mortality due to heart disease, all cancers, lung and other respiratory

**Table 27.2 Summary Table of Hispanic Male and Female Mortality¹
Connecticut Residents, 1996-98**

| Cause of Death | Hispanic Males | | Hispanic Females | | Male-Female Relative Risk ^{3,4} | Male Excess Deaths ⁵ |
|-----------------------------------|----------------|-------------------|------------------|-------------------|---|---------------------------------------|
| | Deaths | AAMR ² | Deaths | AAMR ² | | |
| All Causes | 1,351 | 729.3 | 934 | 434.7 | 1.7** | 185 |
| Chronic Diseases | | | | | | |
| Heart disease | 251 | 184.8 | 248 | 136.9 | 1.3* | 19 |
| Cerebrovascular | 55 | 39.7 | 59 | 32.9 | 1.2 | 3 |
| Hypertension-related | 51 | 40.8 | 62 | 36.5 | 1.1 | 2 |
| Diabetes | 42 | 30.3 | 33 | 17.8 | 1.7 | 6 |
| Diabetes-related | 133 | 98.1 | 133 | 73.3 | 1.3 | 10 |
| All cancer | 208 | 148.3 | 181 | 86.2 | 1.7** | 29 |
| Lung & other respiratory cancer | 40 | 28.2 | 25 | 13.6 | 2.1 | 7 |
| Colorectal cancer | 25 | 17.4 | 15 | 7.2 | 2.4 | 5 |
| Breast cancer (females only) | | | 33 | 13.2 | | |
| Prostate cancer (males only) | 15 | — | | | | |
| COPD | 32 | 21.7 | 31 | 16.2 | 1.3 | 2 |
| COPD-related | 79 | 66.5 | 65 | 34.6 | 1.9* | 12 |
| Chronic liver disease & cirrhosis | 55 | 25.8 | 22 | 10.3 | 2.5** | 11 |
| Injury | | | | | | |
| Unintentional injuries | 164 | 50.2 | 48 | 13.9 | 3.6** | 39 |
| Motor vehicle crashes | 55 | 16.6 | 21 | 5.5 | 3.0** | 12 |
| Fall & fall-related injuries | 8 | — | 3 | — | — | |
| Suicide | 34 | 8.9 | 5 | — | — | |
| Homicide & legal intervention | 60 | 14.6 | 9 | — | — | |
| All poisoning | 73 | 19.5 | 15 | 3.7 | 5.3** | 18 |
| Alcohol-induced | 34 | 14.1 | 10 | — | — | |
| Drug-induced | 72 | 19.4 | 15 | — | 5.2** | 18 |
| Infectious Diseases | | | | | | |
| Pneumonia & influenza | 30 | 24.9 | 32 | 18.4 | 1.4 | 3 |
| Septicemia | 15 | — | 18 | 9.6 | 1.1 | 0 |
| Septicemia-related | 74 | 46.7 | 51 | 26.0 | 1.8* | 11 |
| HIV infection | 131 | 40.6 | 51 | 13.4 | 3.0** | 29 |

Notes:

- Hispanic ethnicity includes persons of any race.
- Age-adjusted Mortality Rates (AAMR) are per 100,000 based on race and ethnicity specific population estimates. Age-adjusted rates were calculated by the direct method using the 2000 U.S. standard population. Rates were not calculated for fewer than 15 events.
- Relative risk is the ratio of the Connecticut Hispanic male resident age-adjusted mortality rate (AAMR) to the Hispanic female resident AAMR (2000 U.S. standard population). Relative risks are not calculated for fewer than 15 deaths in either the Hispanic male or female population.
- Statistical tests were conducted to evaluate differences in Hispanic male and female resident AAMRs. Following are explanations of the notations:
 * Significantly different at $p < .05$.
 ** Significantly different at $p < .01$.
 — Rate (and relative risk) were not calculated due to small numbers.
- Excess deaths are those deaths that would not have occurred if the Hispanic male population had the same rate as the Hispanic female population, and are presented on an annualized or per year basis.

cancer, prostate cancer, COPD, and pneumonia and influenza compared with white males. Hispanic males had significantly higher age-adjusted mortality due to chronic liver disease and cirrhosis, HIV infection, unintentional injuries, homicide and legal intervention, poisoning, alcohol-induced, and drug-induced causes compared with white, non-Hispanic males.

Hispanic females had significantly lower age-adjusted mortality due to heart disease, cerebrovascular disease, hypertension-related causes, all cancer, lung and other respiratory cancer, colorectal cancer, breast cancer, COPD and COPD-related causes compared with white, non-Hispanic females. Hispanic females had significantly higher age-adjusted mortality due to diabetes-related causes and HIV infection compared with white, non-Hispanic females (Table 27.3).

These figures parallel national statistics showing that Hispanics have lower age-adjusted and income-adjusted mortality rates for all causes, cancer, and cardiovascular diseases compared with white non-Hispanics (Sorlie, Blacklund, Johnson, et al. 1993). *Lower* socioeconomic status has long been associated with *higher* mortality across various population groups, and so the phenomenon of lower all-cause mortality among U.S. Hispanics who also tend to have lower socioeconomic status compared with white, non-Hispanics has been referred to as the “Hispanic mortality paradox” (Abraído-Lanza, Dohrenwend, Ng-Mak, et al. 1999). Various explanations have been offered for the observed Hispanic mortality advantage over white, non-Hispanics. Some researchers have suggested that the Hispanic mortality advantage is not real but rather an artifact, which may result from misclassification of ethnicity on the death certificates or return migration to the country of origin in later years, both of which would bias Hispanic mortality downward (Swallen and Guend 2003; Abraído-Lanza, Dohrenwend, Ng-Mak, et al. 1999). Other researchers have suggested that the Hispanic mortality advantage in cardiovascular diseases and cancer may be real and related to more favorable health behaviors practiced by Hispanics relative to non-Hispanics (Abraído-Lanza, Dohrenwend, Ng-Mak, et al. 1999). These patterns in Hispanic mortality warrant further study, particularly because Hispanics in the United States and Connecticut are the fastest growing ethnic subpopulation in terms of overall numbers.

Hispanic vs. White Mortality by Age Group

Our analyses of Connecticut Hispanic vs. white resident all-cause mortality suggest that there are some important differences in the all-cause mortality differential by age group in the 1996-98 period. Hispanic males aged 25 to 49 had significantly higher all-cause mortality rates compared with white males. HIV infection, unintentional injuries, and homicide and legal intervention accounted for 49% of all Hispanic male deaths in these age groups compared with 32% of white male deaths. There were no significant differences between Hispanic and white males aged 50 through 69 in all-cause mortality; while there was significantly lower all-cause mortality for Hispanic compared with white males aged 70 and older. Hispanic females have significantly lower mortality than white females (RR=0.7, $p < .001$ for all ages) and this difference is fairly consistent across age groups with a few exceptions. Hispanic females ages 40-44 have similar all-cause mortality rates to white females, while Hispanic females aged 80 and over have a substantially lower mortality rate than their white counterparts (ages 80-84, RR=0.5, $p < .001$; ages 85 and over, RR=0.4, $p < .001$).

Table 27.3 Summary Table of Hispanic and White, Non-Hispanic Mortality Disparities by Gender¹ Connecticut Residents, 1996-98

| Cause of Death | All | | Males | | Females | |
|-----------------------------------|--|------------------------------------|--|------------------------------------|--|------------------------------------|
| | Hispanic-Non-Hispanic White Relative Risk ^{2,3} | Excess (Fewer) Deaths ⁴ | Hispanic-Non-Hispanic White Relative Risk ^{2,3} | Excess (Fewer) Deaths ⁴ | Hispanic-Non-Hispanic White Relative Risk ^{2,3} | Excess (Fewer) Deaths ⁴ |
| All Causes | 0.7** | (280) | 0.8** | (127) | 0.7** | (153) |
| Chronic Diseases | | | | | | |
| Heart disease | 0.6** | (104) | 0.6** | (61) | 0.7** | (43) |
| Cerebrovascular | 0.7** | (14) | 0.8 | (5) | 0.7** | (9) |
| Hypertension-related | 0.7** | (15) | 0.7* | (7) | 0.7* | (8) |
| Diabetes | 1.4* | 7 | 1.6 | 5 | 1.2 | 2 |
| Diabetes-related | 1.3** | 20 | 1.2 | 8 | 1.4** | 12 |
| All cancer | 0.6** | (99) | 0.6** | (41) | 0.5** | (58) |
| Lung & other respiratory cancer | 0.4** | (39) | 0.4** | (21) | 0.3** | (18) |
| Colorectal cancer | 0.6** | (10) | 0.7 | (3) | 0.4** | (7) |
| Breast cancer (females only) | — | — | — | — | 0.5** | (13) |
| Prostate cancer (males only) | — | — | 0.5** | (5) | — | — |
| COPD | 0.5** | (18) | 0.5** | (9) | 0.5** | (9) |
| COPD-related | 0.6** | (33) | 0.7** | (14) | 0.5** | (19) |
| Chronic liver disease & cirrhosis | 2.3** | 15 | 2.4** | 11 | 2.0 | 4 |
| Injury | | | | | | |
| Unintentional injuries | 1.2 | 9 | 1.3* | 13 | 0.8 | (4) |
| Motor vehicle crashes | 1.3 | 5 | 1.5 | 6 | 0.9 | (1) |
| Fall & fall-related injuries | — | — | — | — | — | — |
| Suicide | 0.6** | (9) | 0.7 | (6) | — | — |
| Homicide & legal intervention | 4.6** | 18 | 6.1** | 17 | — | — |
| All poisoning | 1.4* | 9 | 1.7** | 10 | 0.8 | (1) |
| Alcohol-induced | 2.0** | 7 | 2.2** | 6 | — | — |
| Drug-induced | 1.6** | 11 | 2.0** | 12 | 0.9 | (1) |
| Infectious Diseases | | | | | | |
| Pneumonia & influenza | 0.7** | (10) | 0.6** | (6) | 0.7 | (4) |
| Septicemia | 1.0 | 1 | 0.9 | 0 | 1.2 | 1 |
| Septicemia-related | 0.9 | (2) | 1.1 | 2 | 0.8 | (4) |
| HIV infection | 9.0** | 55 | 8.5** | 39 | 12.2** | 16 |

Notes:

- Hispanic ethnicity includes persons of any race. White race excludes persons of Hispanic ethnicity.
- Relative risk is the ratio of the Hispanic Connecticut resident age-adjusted mortality rate (AAMR) to the white, non-Hispanic Connecticut resident AAMR (2000 U.S. standard population). Relative risks are not calculated for fewer than 15 deaths in either the Hispanic or white population.
- Statistical tests were conducted to evaluate differences in Hispanic and non-Hispanic white resident AAMRs. Following are explanations of the notations:
 - * Significantly different than the white resident rate at $p < .05$.
 - ** Significantly different than the white resident rate at $p < .01$.
 - Not calculated due to small numbers of deaths or no deaths.
- Excess deaths are those deaths that would not have occurred if the Hispanic population had the same rate as the white population, and are presented on an annualized or per year basis. Parentheses indicate fewer deaths. The total number of excess deaths is the sum of the total excess deaths of males and females

Table 27.4 Summary Table of Hispanic – White, Non-Hispanic Premature Mortality¹ Disparities by Gender² Connecticut Residents, 1996-98

| Cause of Death | All Residents | Males | Females |
|-----------------------------------|--|--|--|
| | Hispanic - Non-Hispanic White Relative Risk ^{3,4} | Hispanic - Non-Hispanic White Relative Risk ^{3,4} | Hispanic - Non-Hispanic White Relative Risk ^{3,4} |
| All Causes | 1.4** | 1.5** | 1.2** |
| Chronic Diseases | | | |
| Heart disease | 1.0 | 0.9 | 1.3 |
| Cerebrovascular | 1.8** | 2.2** | 1.5 |
| Hypertension-related | 1.0 | 1.0 | 1.1 |
| Diabetes | 1.8* | 2.1* | 1.4 |
| Diabetes-related | 1.9** | 1.9** | 1.9** |
| All cancer | 0.7** | 0.8* | 0.7** |
| Lung & other respiratory cancer | 0.4** | 0.5** | 0.3** |
| Colorectal cancer | 1.0 | 1.0 | 0.8 |
| Breast cancer (females only) | | | 0.8 |
| Prostate cancer (males only) | | 0.7 | |
| COPD | 1.5 | 1.9 | 1.1 |
| COPD-related | 1.1 | 1.2 | 1.0 |
| Chronic liver disease & cirrhosis | 2.6** | 3.0** | 1.8 |
| Injury | | | |
| Unintentional injuries | 1.5** | 1.7** | 1.2 |
| Motor vehicle crashes | 1.2 | 1.4 | 1.0 |
| Fall & fall-related injuries | — | — | — |
| Suicide | 0.7 | 0.8 | — |
| Homicide & legal intervention | 5.0** | 6.4** | — |
| All poisoning | 1.5* | 1.8** | 0.9 |
| Alcohol-induced | 2.4** | 2.5** | — |
| Drug-induced | 1.6** | 2.0** | 1.0 |
| Infectious Diseases | | | |
| Pneumonia & influenza | 1.3 | 1.3 | 1.2 |
| Septicemia | 2.0 | 1.8 | 2.1 |
| Septicemia-related | 1.7** | 2.1** | 1.3 |
| HIV infection | 8.7** | 8.1** | 11.7** |

Notes:

- Premature mortality is measured by the “years of potential life lost” (YPLL) below a specified age. In this table, the YPLL represents the number of years of potential life lost by each death before age 75.
- Hispanic ethnicity includes persons of any race. White racial group excludes persons of Hispanic ethnicity.
- Relative risk is the ratio of the Hispanic Connecticut resident age-adjusted Years of Potential Life Lost (YPLL) rate to the white, non-Hispanic Connecticut resident YPLL (2000 U.S. standard population). Relative risks are not calculated for fewer than 15 deaths in either the Hispanic or white, non-Hispanic population.
- Statistical tests were conducted to evaluate differences in Hispanic and white, non-Hispanic resident YPLLs. Following are explanations of the notations:
 - * Significantly different than the white, non-Hispanic resident rate at $p < .05$.
 - ** Significantly different than the white, non-Hispanic resident rate at $p < .01$.
 - Rate not calculated due to small numbers of Hispanic deaths.

Hispanic vs. White Premature Mortality

Age-adjusted all-cause *premature* mortality under age 75 was significantly higher for Connecticut Hispanics compared with white, non-Hispanic residents. Hispanic males had 1.5 times the all-cause premature mortality rate of white, non-Hispanic males with HIV infection, diabetes, cerebrovascular disease, chronic liver disease and cirrhosis, unintentional injuries, and homicide and legal intervention contributing to greater overall rates of premature mortality. Hispanic males had significantly lower premature mortality due to all cancers and lung and other respiratory cancer compared with white, non-Hispanic males (Table 27.4). Hispanic females had 1.2 times the all-cause premature mortality rate of white, non-Hispanic females (1996-98 period) with HIV infection accounting for most of the difference in premature mortality under age 75. Hispanic females had significantly lower premature mortality due to all cancers and lung and other respiratory cancer compared with white females (Table 27.4).

These Connecticut Hispanic resident mortality trends warrant further study over time, particularly as this population group ages, as its migration patterns change, and as the composition of Hispanic ethnic subpopulation groups in Connecticut diversifies.

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