



Minority Health Profile

Mortality of Female Ohioans by Race and Ethnicity

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Division of Family and Community Health Services
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Data Bulletin

Please note: Mortality statistics nationwide may significantly underestimate the mortality of minorities, particularly Hispanics, Asian/Pacific Islanders and Native Americans/Alaska Natives.

KEY FINDINGS

- In 2002, black females in Ohio had a significantly higher age-adjusted mortality than white, Asian/Pacific Islander and Hispanic females. Black females had significantly higher age-adjusted mortality rates than white females for heart disease, cancer, cerebrovascular disease (stroke), diabetes, nephritis, nephritic syndrome and nephrosis (kidney disease) and septicemia (blood poisoning). During the periods from 1994-1996 to 2000-2002, age-adjusted mortality rates for black females increased for chronic lower respiratory diseases, diabetes, accidents and septicemia. Rates for heart disease, cancer, stroke, influenza and pneumonia decreased during this period.
- The overall age-adjusted mortality rate for Hispanic females was significantly lower than the rate for white females in 2002. Rates for heart disease and cancer were also significantly lower than those for white females. The age-adjusted mortality rate for Hispanic females for diabetes was 80 percent higher than the rate for white females. Rates for Hispanic females decreased during the periods from 1994-1996 to 2000-2002 for heart disease, cancer, stroke, diabetes and accidents.
- Asian American and Pacific Islander* females had a significantly lower age-adjusted mortality rate than white females in 2002. Rates for heart disease and cancer were also significantly lower than those for white females. Trend data for the periods from 1994-1996 to 2000-2002 indicated decreases in rates for heart disease, cancer and strokes.
- The overall age-adjusted mortality rate for American Indian/Alaska Native* females was significantly lower than the rate for white females in 2002 (168.8 versus 752.9).

** Mortality rates for Asian/Pacific Islander and American Indian/Alaska Native females were analyzed to a very limited degree due to insufficient numbers to calculate stable rates.*

Ten Leading Causes of Death

Ten Leading Causes of Death by Race and Ethnicity, Females, Ohio, 2002

Cause of Death	All Races (Rank)	White (Rank)	Black (Rank)	American Indian/Alaska Native (Rank)*	Asian/Pacific Islander (Rank)*	Hispanic** (Rank)
Diseases of the Heart	16,120 (1)	14,517 (1)	1,561 (1)	2 (3)	40 (1)	81 (1)
Malignant Neoplasms (Cancer)	12,132 (2)	10,802 (2)	1,287 (2)	6 (1)	37 (2)	64 (2)
Cerebrovascular Disease (Stroke)	4,397 (3)	4,005 (3)	382 (3)	2 (4)	8 (3)	17 (4)
Chronic Lower Respiratory Diseases	3,107 (4)	2,934 (4)	173 (6)	---	---	8 (8)
Diabetes	2,062 (5)	1,711 (5)	342 (4)	3 (2)	6 (5)	25 (3)
Alzheimer's Disease	1,832 (6)	1,703 (6)	128 (9)	---	1 (10)	---
Accidents (Unintentional Injuries)	1,520 (7)	1,383 (7)	132 (8)	1 (5)	4 (6)	13 (5)
Influenza/Pneumonia	1,396 (8)	1,295 (8)	101 (10)	---	---	---
Nephritis, Nephrotic Syndrome & Nephrosis	1,044 (9)	866 (9)	174 (5)	---	4 (7)	9 (6)
Septicemia (Blood Poisoning)	920 (10)	778 (10)	139 (7)	1 (6)	2 (9)	9 (7)
Homicide	---	---	---	1 (8)	---	---
Chronic Liver Disease & Cirrhosis	---	---	---	---	3(8)	7 (9)
Congenital Malformations	---	---	---	---	---	7 (10)
Perinatal Conditions	---	---	---	---	7 (4)	---
Suicide	---	---	---	1 (7)	---	---
Meningitis	---	---	---	1 (9)	---	---
All Other Causes	12,318	10,909	1,360	3	33	77
All Causes	56,848	50,903	5,779	21	145	317

* When number of death occurrences within a race were equal, rankings for leading cause of death were determined by assigning a higher ranking number to the death cause that was higher for 10 leading causes of death for all females.

** Hispanics may be of any race.

Source: Ohio Department of Health, 2002 Death Certificates.

- Heart disease and malignant neoplasms (cancer) accounted for nearly 50 percent of total deaths for white and black females (49.7 and 49.3 percent, respectively).
- Cancer was the leading cause of death among Asian/Pacific Islander females in the State of Ohio. Cancer and heart disease accounted for 53.1 percent of total deaths among Asian/Pacific Islander females.
- Approximately 46 percent of deaths among Hispanic females were due to heart disease and cancer. Diabetes was the third most frequent cause of death among Hispanic females.
- Cancer and diabetes were the leading causes of death among females that were American Indian/Alaska Natives. Approximately 62 percent of total deaths among American Indian/Alaska Native females were due to cancer, diabetes, heart disease and cerebrovascular disease (stroke).

Age-adjusted Death Rates* for Ten Leading Causes of Death by Race and Ethnicity, Females, Ohio, 2002

Cause of Death	All Races (Rank)	White (Rank)	Black (Rank)	American Indian/Alaska Native (Rank)	Asian/Pacific Islander (Rank)	Hispanic** (Rank)
Diseases of the Heart	209.4 (1)	204.9 (1)	257.4 (1)	***	103.1 (1)	163.9 (1)
Malignant Neoplasms (Cancer)	174.2 (2)	171.7 (2)	208.5 (2)	***	72.9 (2)	115.6 (2)
Cerebrovascular Disease (Stroke)	56.5 (3)	55.9 (3)	63.0 (3)	***	***	***
Chronic Lower Respiratory Diseases	42.3 (4)	43.8 (4)	28.4 (6)	---	---	***
Diabetes	28.4 (5)	25.9 (5)	56.1 (4)	***	***	46.7 (3)
Alzheimer's Disease	22.4 (6)	22.6 (6)	21.6 (9)	---	***	---
Accidents (Unintentional Injuries)	23.0 (7)	23.6 (7)	19.5 (8)	***	***	***
Influenza/Pneumonia	17.7 (8)	17.8 (8)	16.7 (10)	---	---	---
Nephritis, Nephrotic Syndrome & Nephrosis	13.9 (9)	12.5 (9)	28.7 (5)	---	***	***
Septicemia (Blood Poisoning)	12.4 (10)	11.5 (10)	22.7 (7)	***	***	***
Homicide	---	---	---	***	---	---
Chronic Liver Disease & Cirrhosis	---	---	---	---	***	***
Congenital Malformations	---	---	---	---	---	***
Perinatal Conditions	---	---	---	---	***	---
Suicide	---	---	---	***	---	---
Meningitis	---	---	---	***	---	---
All Other Causes	167.8	162.6	209.3	***	73.6	135.4
All Causes	768.0	752.9	931.9	168.8	329.2	584.7

Highlighted rates are significantly different when compared to the white rate (p<.05)

* Age-adjusted rates are the number of deaths per 100,000 population in specified race and ethnic group.

** Hispanics may be of any race.

*** Rates based on fewer than 20 cases are not presented (figures considered unreliable due to small numbers).

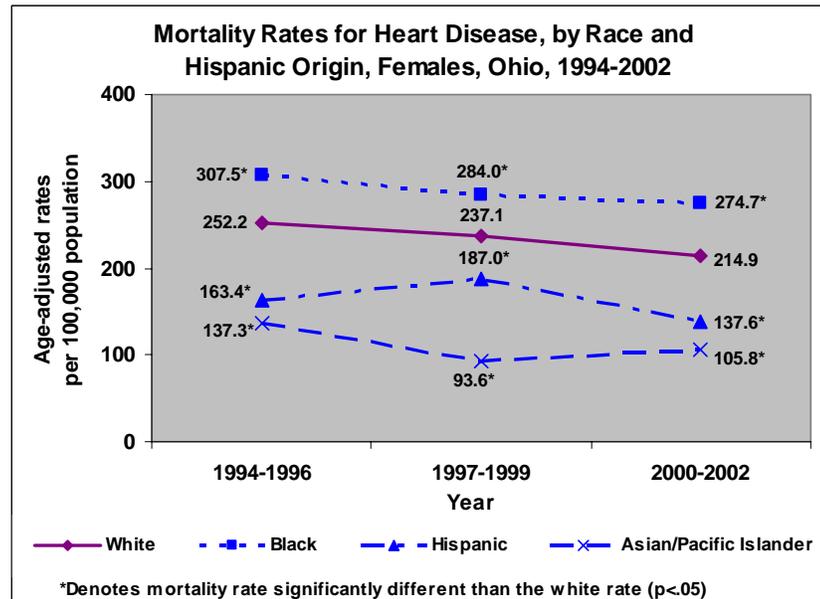
Sources: Ohio Department of Health, 2002 Death Certificates, National Center for Health Statistics. Estimates of the July 1, 2000-July 1, 2002, United States resident population from the Vintage 2002 postcensal series by year, county, age, sex, race and Hispanic origin, prepared under a collaborative arrangement with the U.S. Census Bureau. 2003.

- Black females were the only racial/ethnic group that had a significantly higher age-adjusted mortality rate than white females for all causes of death. Rates for black females were also significantly higher than the rates for white females for six of the 10 leading causes of death for the two groups. Rates for diabetes and nephritis/nephritic syndrome/nephrosis were more than twice the rate for white females and the rate for septicemia was 97.4 percent higher. Rates for heart disease and cancer were more than 20 percent higher while the rate for cerebrovascular disease (stroke) was 12.7 percent higher.
- The overall age-adjusted mortality rate for Asian/Pacific Islander females was less than half the rate for white females. Asian/Pacific Islander females also had significantly lower age-adjusted mortality rates for heart disease and cancer than white females. Rates for heart disease were 49.7 percent lower; cancer rates were 57.5 percent lower.
- The overall age-adjusted mortality rate for Hispanic females was 22.3 percent lower than the rate for white females. The rate for diabetes for Hispanic females was 80.3 percent higher than the rate for white females. Rates for heart disease and cancer were lower for Hispanic women than for white women (20 percent and 32.7 percent, respectively). All of these differences were statistically significant.

Heart Disease

During each three-year interval from 1994 to 2002, the age-adjusted mortality rate for heart disease was significantly higher for black females than for white females. Rates for Hispanic and Asian/Pacific Islander females were significantly lower than the rates for white females during this period.

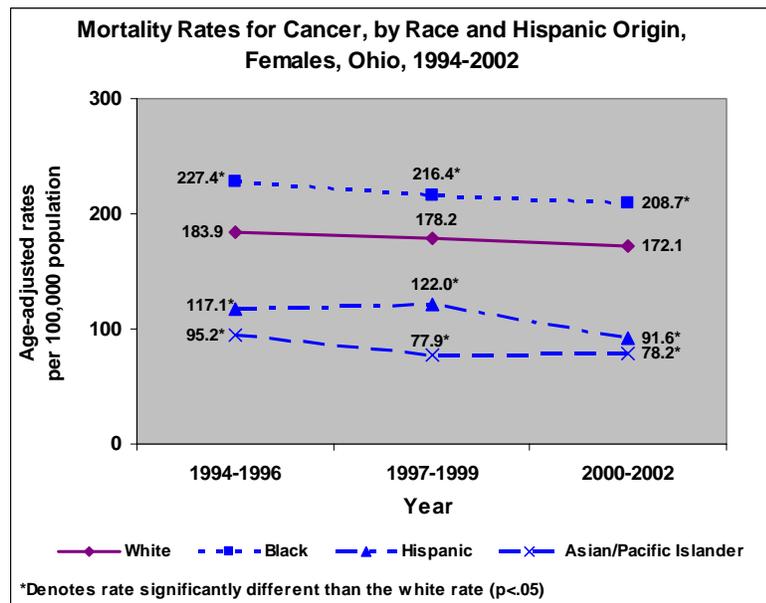
- Rates for all racial/ethnic groups were lower during the 2000-2002 period than the 1994-1996 period. Rates declined by 22.9 percent for Asian/Pacific Islander females, 15.8 percent for Hispanic females, 14.8 percent for white females and 10.7 percent for black females.
- The gap/disparity between black and white female rates for the 1994-1996 and 2000-2002 periods increased from 21.9 percent to 27.8 percent.



Cancer

Age-adjusted mortality rates for cancer were significantly higher for black females than white females during each three-year period from 1994 to 2002. Rates for Hispanic and Asian/Pacific Islander females were significantly lower than rates for white females.

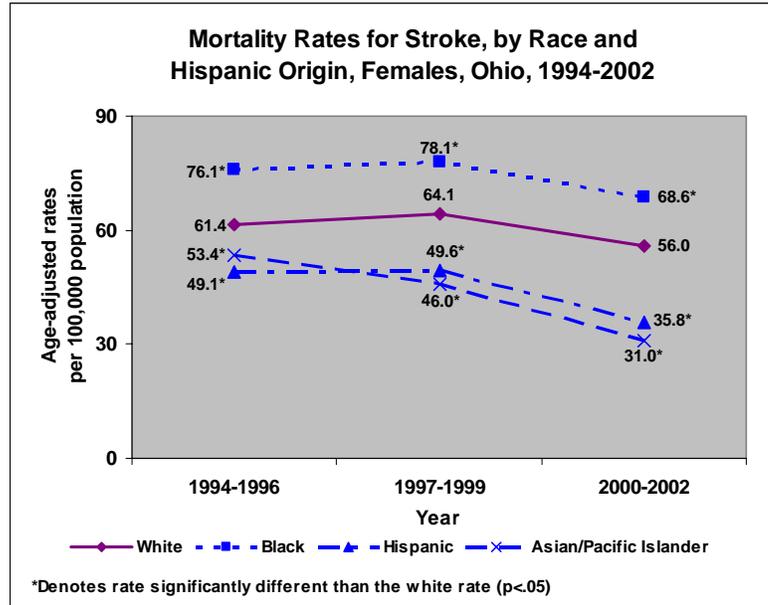
- Cancer mortality rates were lower for all groups during the 2000-2002 period than the 1994-1996 period. Declines ranged from 6.4 percent for white females to 21.8 percent for Hispanic females. Rates for black and Asian/Pacific Islander females decreased by 8.2 percent and 17.9 percent, respectively.



Stroke

During each three-year interval from 1994 to 2002, the age-adjusted mortality rate for strokes was significantly higher for black females than for white females. Rates for Hispanic and Asian/Pacific Islander females were significantly lower than the rates for white females during this period.

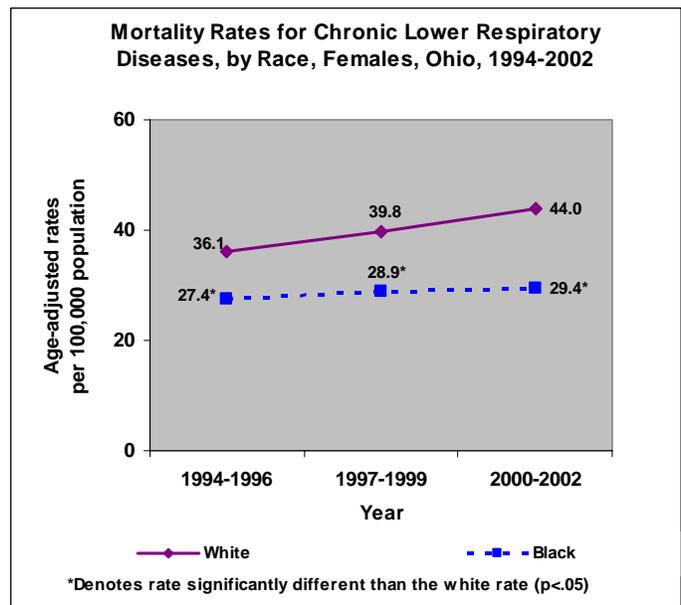
- Rates for all racial/ethnic groups were lower during the 2000-2002 period than the 1994-1996 period. Rates declined by 41.9 percent for Asian/Pacific Islander females, 27.1 percent for Hispanic females, 9.9 percent for black females and 8.8 percent for white females.
- From 2000-2002, the mortality rate for black females was 22.5 percent higher than the rate for white females. Rates for Asian/Pacific Islander and Hispanic females were 44.6 percent and 36.1 percent lower than the rate for white females during this period.



Chronic Lower Respiratory Diseases

White female Ohioans had significantly higher age-adjusted mortality rates for chronic lower respiratory diseases than black females from 1994 to 2002.

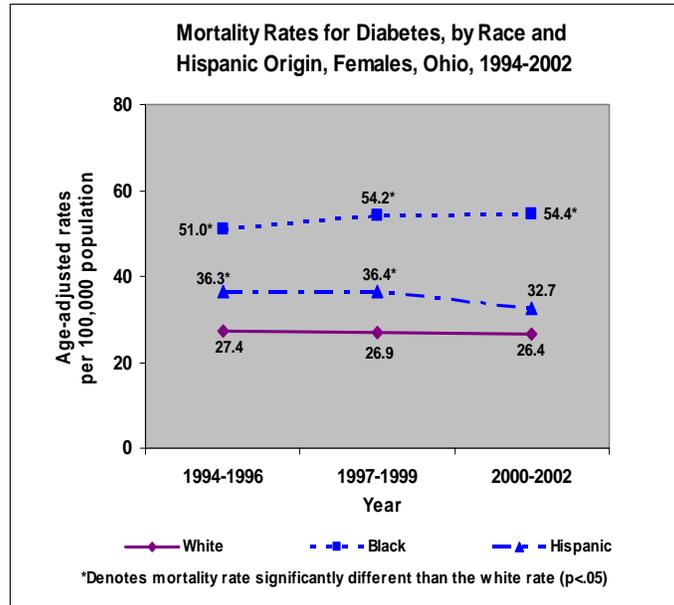
- Mortality rates for chronic lower respiratory disease increased by 21.9 percent for white females and 7.3 percent for black females from 1994-1996 to 2000-2002.
- Mortality rates for chronic lower respiratory disease were 24.1 percent higher for white females than black females from 1994-1996 and 33.2 percent higher from 2000-2002.



Diabetes

Age-adjusted death rates for diabetes were significantly higher for black females than white females for each period from 1994 to 2002. Rates for Hispanic females were significantly higher than rates for white females from 1994 to 1999.

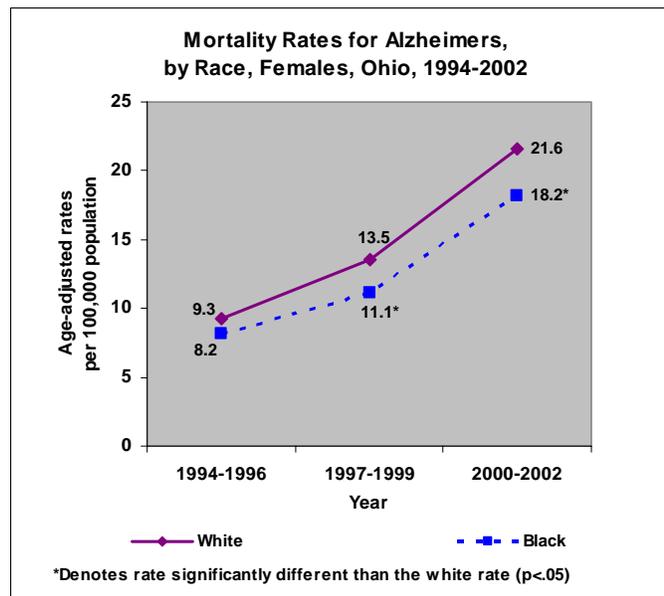
- From 1994 to 1996, the age-adjusted mortality rate for black females was 86.1 percent higher than the rate for white females. This disparity/gap increased to 106.1 percent from 2000-2002.
- The rate for Hispanic females was 32.5 percent higher than the rate for white females from 1994 to 1996. This difference in rates decreased to 23.9 percent in the period from 2000 to 2002.
- The age-adjusted mortality rate for black females increased by 6.7 percent from 1994-1996 to 2000-2002. During this period, rates for Hispanic and white females decreased by 9.9 percent and 3.6 percent, respectively.



Alzheimer's Disease

During the period from 1997 to 1999, the age-adjusted mortality rate for Alzheimer's disease was significantly higher for black females than for white females.

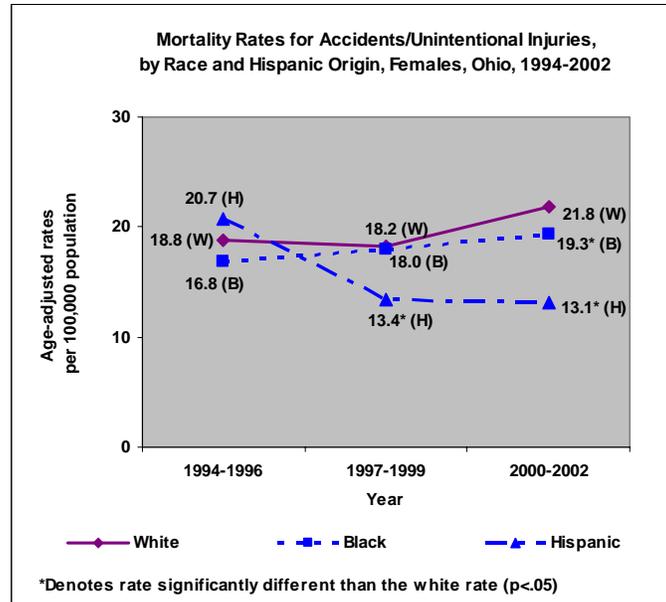
- Although death rates appear to increase considerably for both white and black females from the 1997-1999 to 2000-2002 time period, much of the increase can be attributed to changes that occurred in 1999 due to a shift from ICD-9 to ICD-10 coding. See technical notes for additional details.
- The age-adjusted mortality rate for white females increased by 45.2 percent from 1994-1996 to 1997-1999. During this period, rates for black females increased by 35.4 percent.



Accidents (Unintentional Injuries)

The age-adjusted death rate for accidents was significantly higher for white females than black females from 2000-2002.

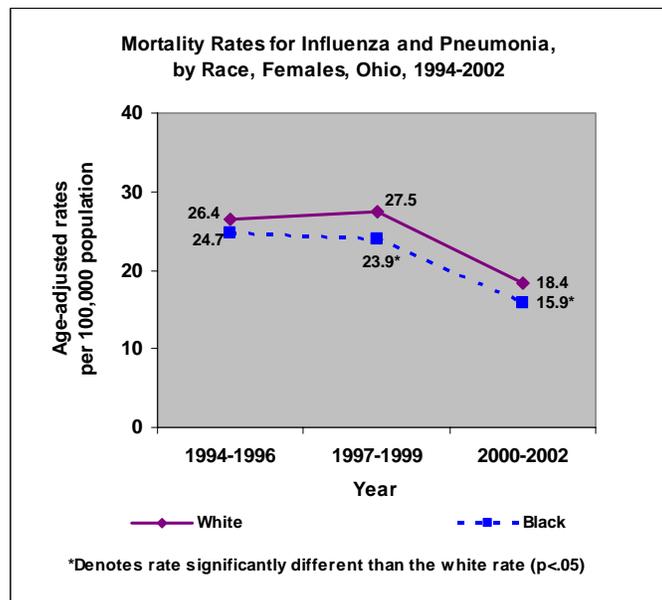
- Mortality rates for Hispanic females were significantly lower than the rates for white females during the 1997-1999 and 2000-2002 periods.
- The age-adjusted mortality rate for white and black females increased by 16 percent and 14.9 percent, respectively, from 1994-1996 to 2000-2002. The rate for Hispanic females decreased by 10.1 percent during this period.



Influenza/Pneumonia

The age-adjusted mortality rate for influenza and pneumonia for black females was significantly lower than the rate for white females during each period.

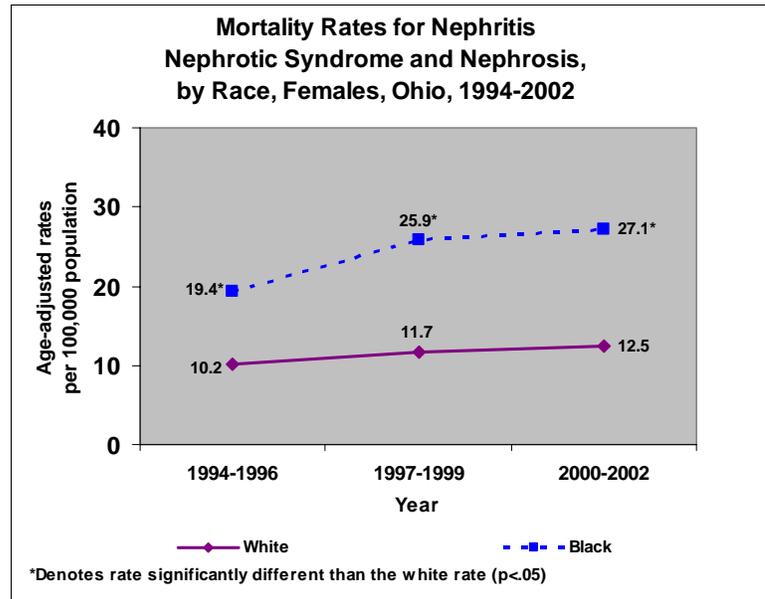
- Although death rates appear to decrease considerably for both white and black females from the 1997-1999 to 2000-2002 time period, much of the decrease can be attributed to changes that occurred in 1999 due to a shift from ICD-9 to ICD-10 coding. See technical notes for additional details.
- Mortality rates for influenza and pneumonia declined by 3.2 percent for black females from 1994-1996 to 1997-1999. Rates increased by 4.2 percent for white females during this period.



Nephritis, Nephrotic Syndrome and Nephrosis (Kidney Disease)

For each three-year interval from 1997 to 2002, the age-adjusted death rate for kidney disease for black females was more than twice the rate for white females. The rate for black females was significantly higher than the rate for white females from 1994-1996 to 2000-2002.

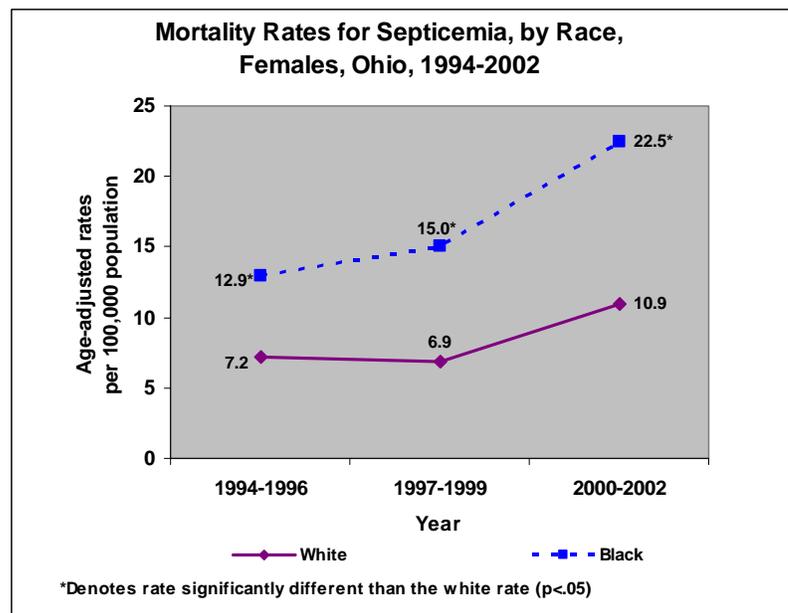
- The age-adjusted mortality rate for black females increased by 39.7 percent from 1994-1996 to 2000-2002. The rate for white females increased by 22.5 percent during this period.
- The gap/disparity between black and white female rates for the 1994-1996 and 2000-2002 periods increased from 90.2 percent to 116.8 percent.



Septicemia (Blood Poisoning)

Age-adjusted death rates for septicemia were significantly higher for black females than white females during each three-year period from 1994-1996 to 2000-2002.

- Although death rates appear to increase considerably for both white and black females from the 1997-1999 to 2000-2002 time period, much of the increase can be attributed to changes that occurred in 1999 due to a shift from ICD-9 to ICD-10 coding. See technical notes for additional details.
- Age-adjusted mortality rates for black females were more than twice the rate for white females during the 1997-1999 and 2000-2002 periods.



NOTES

For this data bulletin, we have chosen to focus on the 10 leading causes of death for females in Ohio. All comparisons between mortality rates for different racial and ethnic groups were made relative to the white rate. Lack of reported disparity in mortality does not imply that the mortality rate of any racial or ethnic Ohio group is good relative to national or other standards. In cases where the racial/ethnic population is particularly small in the state (i.e., American Indian/Alaska Native), the racial/ethnic group may not be representative of that group nationwide. The data presented in this bulletin did not test for significance between minority groups or examine areas that are not among the 10 leading causes of death, but may indeed show significant differences between racial groups (i.e., HIV).

It is important to note that reporting of racial and ethnic status is subject to misclassification. Particularly in the area of mortality, information is often reported by someone other than the individual. For these reasons, combined with small numbers for Ohio, we did not report further breakout of mortality rates for Asian/Pacific Islanders and Hispanics by sub-groups. Mortality statistics nationwide may significantly underestimate the mortality of minorities, particularly Native Americans/Alaska Natives.¹

Based on work from the National Center for Health Statistics and the Census Bureau,² Census 2000 respondents that identified themselves as being of an “other” race or of multiple races were assigned (bridged) to one of the following four race categories specified under the 1997 standards: White, Black, American Indian/Eskimo/Aleut and Asian/Pacific Islander. As in prior years, there was also a separate question to assess ethnicity as either Hispanic or non-Hispanic. Hispanics may be of any race.

All calculated rates are based on populations enumerated in the 2002 estimates of bridged race categories from the Census Bureau. Comparisons with mortality data calculated with the 1990 population standard should not be utilized.

In 1999, the Ninth Revision of the International Classification of Diseases (ICD-9), used to classify causes of death, was replaced with the Tenth Revision (ICD-10). Please note that this change affected the computation of mortality rates and analyses of mortality data over time. More than 55 percent of additional deaths are classified to Alzheimer’s disease in ICD-10 than in ICD-9. These changes are also reflected as increases of more than 19 percent and 23 percent, respectively, in the number of deaths classified to septicemia and kidney disease. The number of deaths classified to influenza and pneumonia decreased by 30 percent.

Recommendations from the National Center for Health Statistics^{3,4} and the Family Health Outcomes Project⁵ were followed to produce the Ohio Mortality results by race. These recommendations included the following:

- In cases where there were fewer than 20 deaths, age-adjusted mortality rates are not presented. When rates are based on small numbers or events, random error can affect the usefulness of the data and associated confidence intervals can be relatively wide. Based on this rule, we did not present age-adjusted rates for American Indian/Alaska Natives for 2002. We were also only able to present age-adjusted mortality rates for two of the leading causes of death for Asian/Pacific Islander females and three of the leading causes for Hispanic females.

- In order to counteract the random error for small numbers (numerator less than 20); multiple-year data were utilized to obtain age-adjusted mortality rates. Three years of mortality data were combined to allow calculation of additional age-adjusted death rates for minority groups such as Hispanics and Asian/Pacific Islanders and American Indian/Alaska Natives.

- To test for statistically significant differences between groups, we employed paired comparison tests using the white race for each paired comparison. In instances where the number of deaths were 100 or more, we utilized a z-test to test for statistically significant differences. To test for statistically significant differences between groups when the number of deaths was less than 100, we utilized the confidence interval overlap method.

- Mortality trends by race were presented by combining three years of mortality data, calculating an age-adjusted rate and comparing the rates over distinct time periods (i.e., 1994-1996, 1997-1999 and 2000-2002).

REFERENCES USED IN THIS DATA BULLETIN

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³Anderson RN, Rosenberg HM. Age Standardization of Death Rates: Implementation of the Year 2000 Standard. National vital statistics reports; vol 47 no 3. Hyattsville, Maryland: National Center for Health Statistics. 1998.

⁴Hoyert DL, Arias E, Smith BL, Murphy SL, Kochanek KD. Deaths: Final Data for 1999. National vital statistics reports; vol 49 no 8. Hyattsville, Maryland: National Center for Health Statistics, 2001.

⁵McCandless RR, Oliva G. Guidelines for statistical analysis of public health data with attention to small numbers. Family Health Outcomes Project at the University of California, San Francisco, 2002.

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