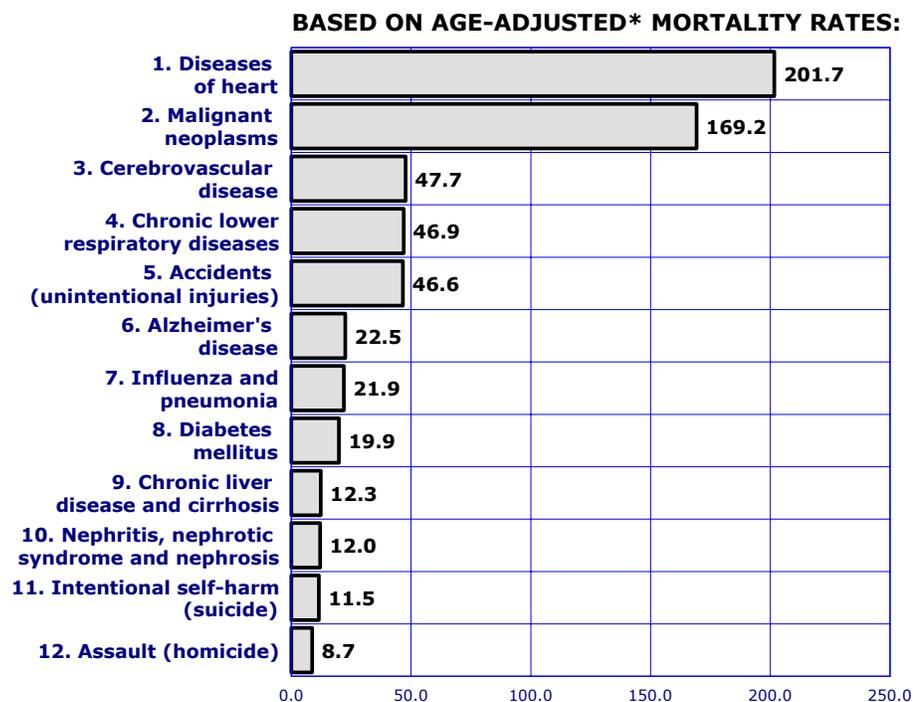


2B. LEADING CAUSES OF DEATH

**Figure 2B-1  
Twelve Leading Causes of Death Among Arizona Residents  
in 2001**



The leading cause of death to Arizona residents in 2001 continued to be *heart disease*, which accounted for 10,312 or 25.2 percent of all deaths (**Figure 2B-1, Table 2B-1, Table 5E-14**). *Cancer* remained the second most frequent cause of death to residents of the state, being responsible for 21.8 percent of all deaths in 2001. Deaths due to *chronic lower respiratory diseases* (a title change from ICD-9 title *chronic obstructive pulmonary disease*) ranked third in 2001, with 2,463 resident deaths reported. In 2001, *chronic lower respiratory diseases* accounted for 6 percent of all deaths. The fourth leading cause of death, *accidents* (unintentional injuries), accounted for 2,430 or 5.9 percent of total deaths. Deaths due to *cerebrovascular disease* ranked fifth in 2001, with 2,416 resident deaths reported. Together, these five causes accounted for 65 percent of total deaths in 2001.



Because the age pattern of mortality varies greatly by cause of death, changes in crude death rates over time can be influenced by the changing composition of the population. In contrast, age-adjusted death rates eliminate the influence of such shifts in the population age structure. Therefore, age-adjusted death rates are better indicators than crude rates for showing changes in mortality risk over time and among causes of death. Beginning with the 2000 report, all age-adjusted mortality rates use the estimated year 2000 population as a standard. In order to provide continuity and ease of interpretation, all age-adjusted mortality rates for years before 2000 have been re-calculated using the year 2000 standard population.

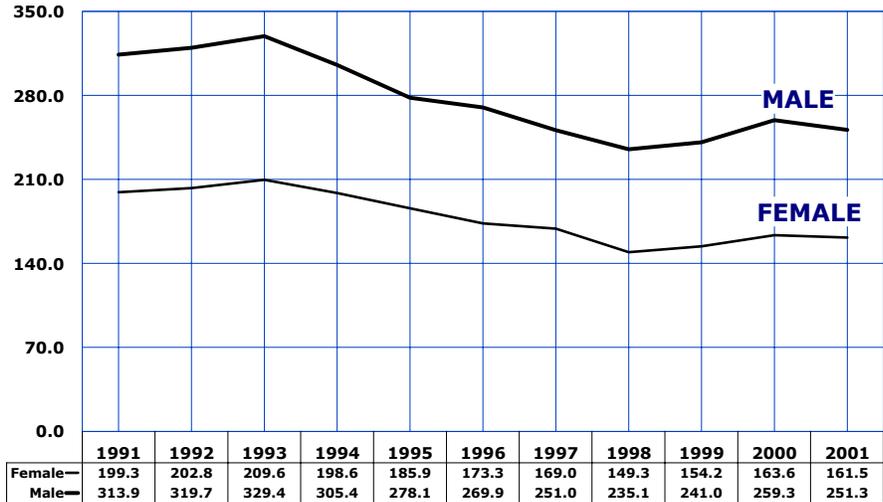
\* Number of deaths per 100,000 population age-adjusted to the 2000 U.S. standard.  
Note: the cause-of-death titles are according to the Tenth Revision of the International Classification of Diseases (ICD-10).

The age-adjusted mortality rates for five of the 12 leading causes of death showed an increase from 2000 to 2001: *accidents, Alzheimer's disease, diabetes, nephritis, and assault* (homicide).

2B. LEADING CAUSES OF DEATH  
**Diseases of heart**

**Figure 2B-2**  
**Age-Adjusted Mortality Rates for Diseases of Heart**  
**by Gender and Year, Arizona, 1991-2001**

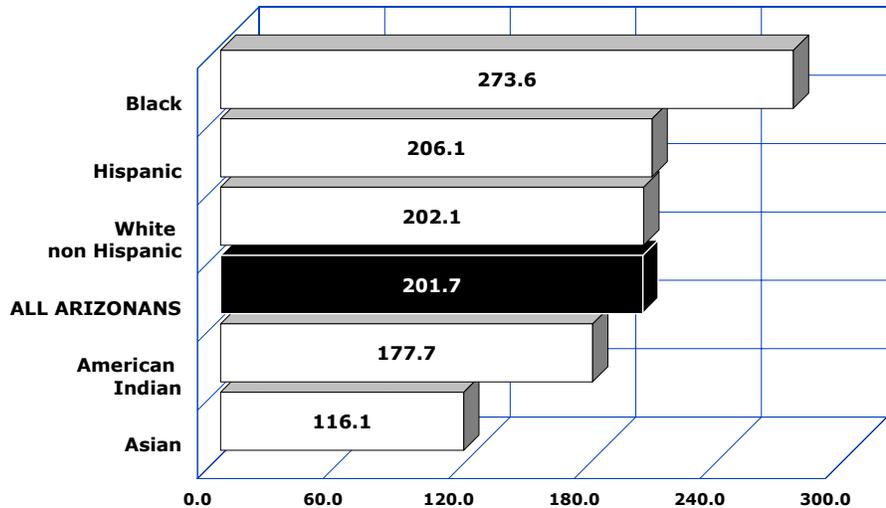
Arizona experienced three consecutive annual increases in mortality from diseases of the heart from 1998 to 2000 (Table 2B-2). Both male and female residents of the State experienced a decline in heart disease mortality rates from 2000 to 2001. The 2001 male mortality risk for a heart disease death (251.3/100,000) exceeded the female risk (161.5/100,000) by 55.6 percent (Figure 2B-2, Table 2B-2).



Number of deaths per 100,000 population  
age-adjusted to the 2000 U.S. standard

**Figure 2B-3**  
**Age-Adjusted Mortality Rates for Diseases of Heart**  
**by Race/Ethnic Group, Arizona, 2001**

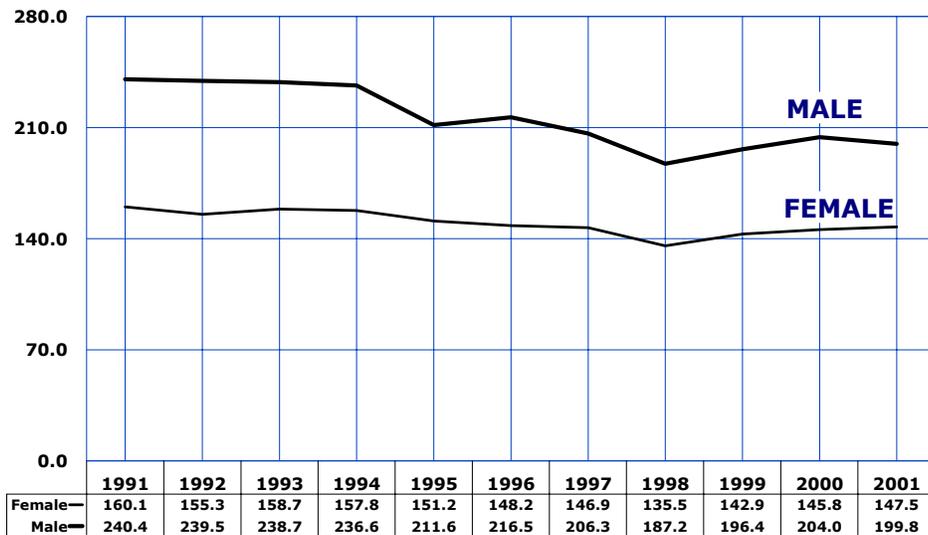
Black residents of Arizona were 2.1 times more likely to die from diseases of heart in 2001 than Asians who were at the lowest risk of death from diseases of the heart among ethnic groups in Arizona (Figure 2B-3, Table 2B-4). Black males had the highest mortality risk for diseases of the heart (300.5/100,000) among the gender by race subgroups (Table 2B-4).



Number of deaths per 100,000 population  
age-adjusted to the 2000 U.S. standard

2B. LEADING CAUSES OF DEATH  
**Malignant neoplasms**

**Figure 2B-4**  
**Age-Adjusted Mortality Rates for Malignant Neoplasms**  
**(cancer) by Gender and Year, Arizona, 1991-2001**

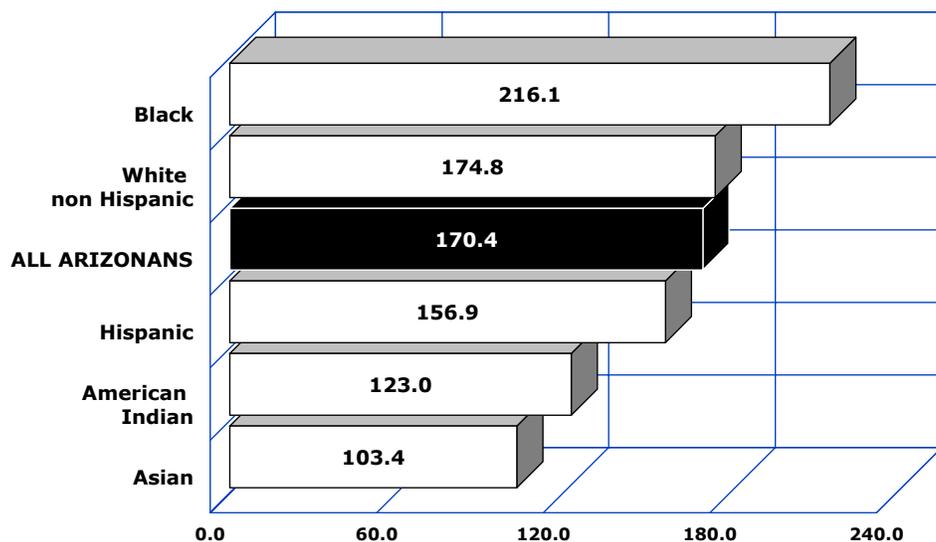


Number of deaths per 100,000 population  
 age-adjusted to the 2000 U.S. standard

The age-adjusted cancer mortality rate decreased for Arizona males from 204 deaths per 100,000 males in 2000 to 198.8/100,000 in 2001. In contrast, the female cancer death rate increased for the third consecutive year from 135.5/100,000 in 1998 to 147.5/100,000 in 2001. The gender gap in cancer mortality narrowed from a 50 percent greater risk for males than females in 1991, to a 35.5 percent greater risk in 2001 (**Figure 2B-4**).

Rural males had the highest cancer mortality rate (204/100,000) among gender by region groups in 2001, exceeding by 38.9 percent the rate for urban females (146.9/100,000; **Table 2B-5**).

**Figure 2B-5**  
**Age-Adjusted Mortality Rates for Malignant Neoplasms**  
**(cancer) by Race/Ethnic Group, Arizona, 2000**



Number of deaths per 100,000 population  
 age-adjusted to the 2000 U.S. standard

Arizona's Blacks were 2.1 times more likely to die from malignant neoplasms in 2001 than Asians, the group at the lowest risk of cancer death among ethnic groups (**Table 2B-4**).

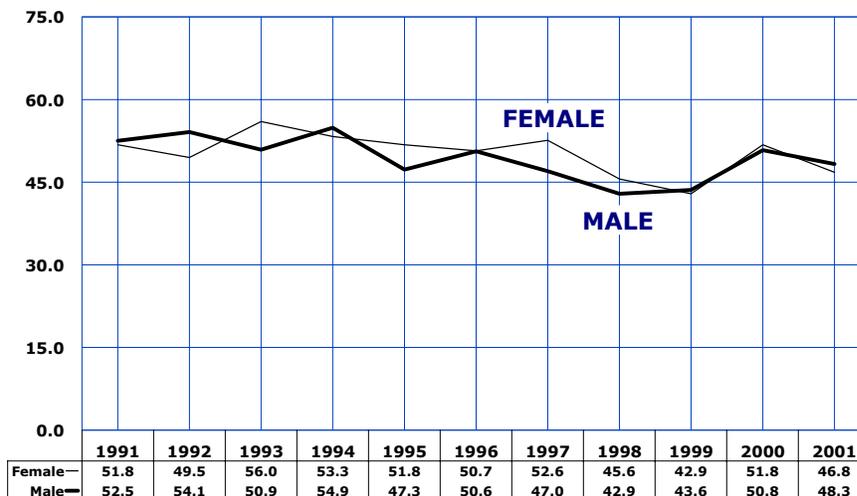
American Indian females had the lowest overall cancer mortality rate (115.4/100,000) among the gender by race subgroups, but the highest death rate for cervical cancer among females (5.4/100,000; **Table 2B-4**).

Black males had the highest mortality rates for lung cancer and colorectal cancer among the gender by race subgroups, and the highest prostate mortality rate among males (**Table 2B-4**).

2B. LEADING CAUSES OF DEATH  
**Cerebrovascular disease**

**Figure 2B-6**  
**Age-Adjusted Mortality Rates for Cerebrovascular Disease**  
**by Gender and Year, Arizona, 1991-2001**

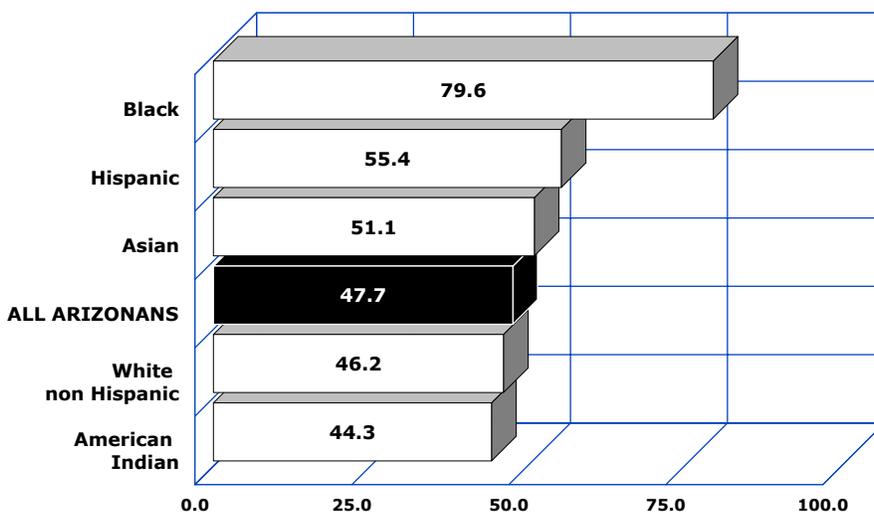
Cerebrovascular disease and diseases of the heart are two of the leading causes of death that share many risk factors such as hypertension, smoking, obesity and high levels of cholesterol. The 2001 male mortality risk for a stroke death (48.3/100,000) exceeded the female risk of 46.8/100,000 by 3.2 percent (**Figure 2B-6, Table 2B-2**). Little difference occurred in stroke death rates from 1991 to 2001 for either gender.



Number of deaths per 100,000 population  
age-adjusted to the 2000 U.S. standard

**Figure 2B-7**  
**Age-Adjusted Mortality Rates for Cerebrovascular**  
**Disease by Race/Ethnic Group, Arizona, 2001**

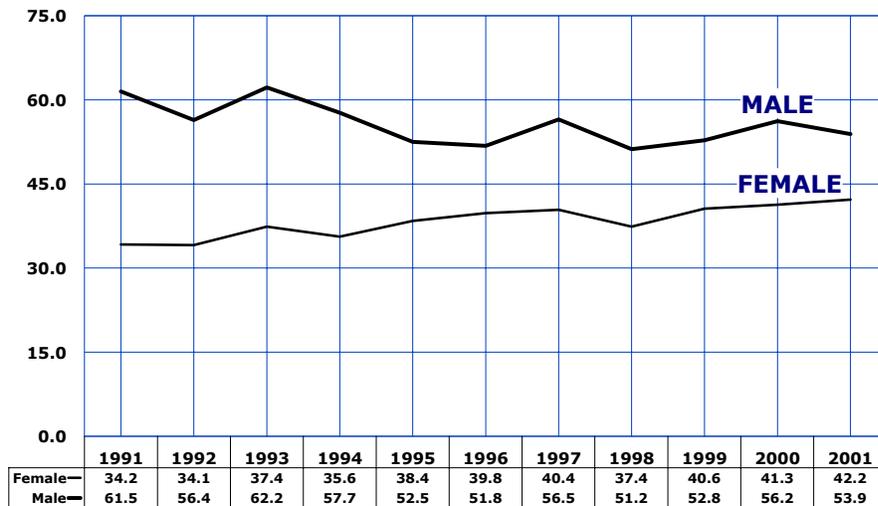
Compared to Arizona's rate, Blacks were 66.9 percent more likely to die from cerebrovascular disease in 2001 (**Figure 2B-7, Table 2B-4**). The 2001 mortality rate for cerebrovascular disease among American Indians (44.3/100,000) was the lowest among racial/ethnic groups.



Number of deaths per 100,000 population  
age-adjusted to the 2000 U.S. standard

2B. LEADING CAUSES OF DEATH  
**Chronic lower respiratory diseases**

**Figure 2B-8**  
**Age-Adjusted Mortality Rates for Chronic Lower\*  
 Respiratory Diseases by Gender and Year,  
 Arizona, 1991-2001**



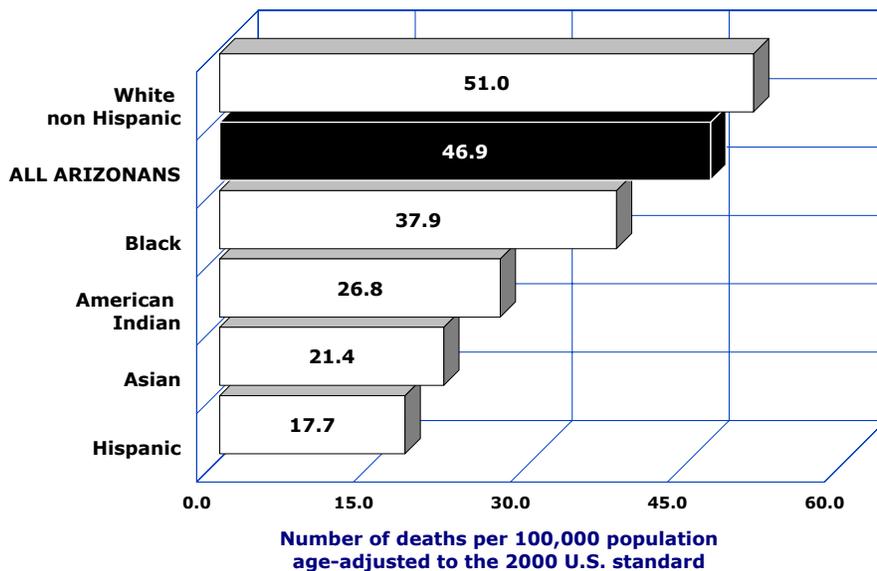
Number of deaths per 100,000 population  
 age-adjusted to the 2000 U.S. standard

\* This ICD-10 title corresponds to Chronic Obstructive Pulmonary Disease (ICD-9 title).

The temporal trends from 1991 to 2001 in mortality from chronic lower respiratory diseases (CLRD) differed for the two genders, increasing by 23.4 percent for females and decreasing by 12.4 percent for males. Still, Arizona males in 2001 were 27.7 percent more likely to die from CLRD than Arizona females (**Figure 2B-8, Table 2B-2**).

Rural females had the lowest mortality rate for CLRD (35.9/100,000) among the gender by region groups (**Table 2B-5**).

**Figure 2B-9**  
**Age-Adjusted Mortality Rates for Chronic Lower Respiratory  
 Diseases by Race/Ethnic Group, Arizona, 2001**



Number of deaths per 100,000 population  
 age-adjusted to the 2000 U.S. standard

Death rates for emphysema, chronic bronchitis, asthma and other lower respiratory disorders were substantially higher among White non-Hispanics (51.0/100,000) than they were among Blacks (37.9), American Indians (26.8), Asians (21.4) and Hispanics (17.7/100,000) (**Figure 2B-9, Table 2B-4**).

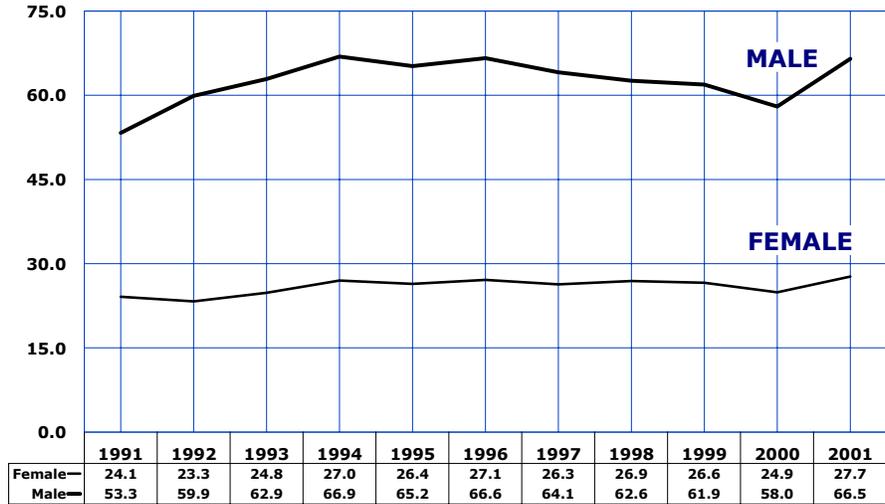
Among the 15 Arizona counties in 2001, Gila, Pinal and Pima had the three highest mortality rates for chronic lower respiratory diseases (**Table 5E-11, Figure 7B-17**).

2B. LEADING CAUSES OF DEATH  
**Accidents (unintentional injuries)**

The mortality rate for unintentional injuries in accidents increased by 13.4 percent from 41.1 deaths per 100,000 population in 2000 to 46.6/100,000 in 2001. In 2001, male compared to female residents of Arizona were 2.4 times more likely to die from unintentional injury (**Figure 2B-10, Table 2B-2**).

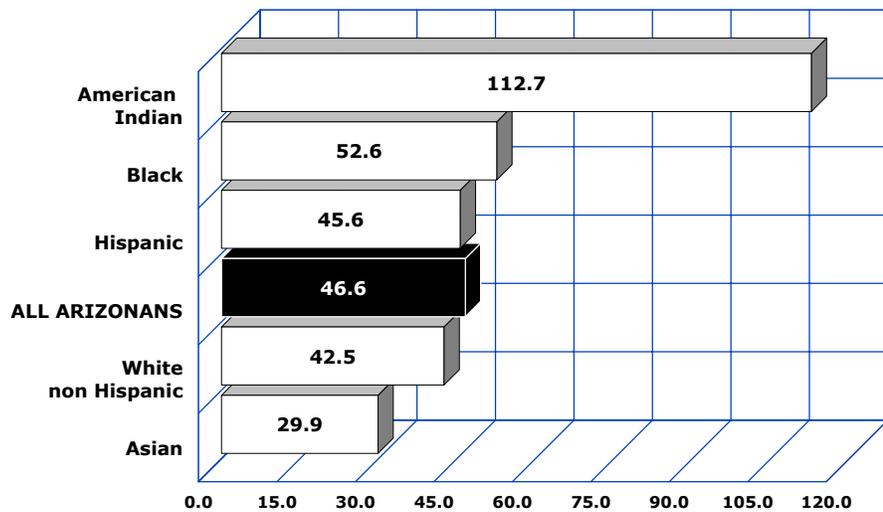
American Indian males had the highest mortality rate for *motor vehicle accidents* (88.8/100,000) among the gender by race groups (Table 2B-4). In 2001, Black males had the highest mortality rate for *accidental poisoning* (18.1/100,000). American Indian males followed by Asian males had the two highest death rates for falls and fall-related injuries among the gender by race groups.

**Figure 2B-10**  
**Age-Adjusted Mortality Rates for Accidents (unintentional injuries) by Gender and Year, Arizona, 1991-2001**



Number of deaths per 100,000 population  
 age-adjusted to the 2000 U.S. standard

**Figure 2B-11**  
**Age-Adjusted Mortality Rates for Accidents (unintentional injuries) by Race/Ethnic Group, Arizona, 2001**



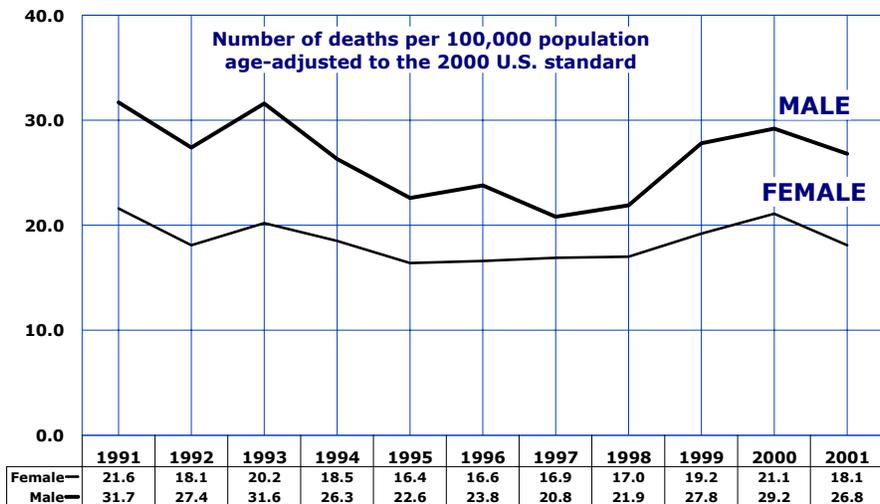
Number of deaths per 100,000 population  
 age-adjusted to the 2000 U.S. standard

The American Indian death rate for unintentional injuries (112.7/100,000) was 3.8 times higher than the rate for Asians (29.9/100,000), the group at the lowest risk of unintentional injury death among racial/ethnic groups in the State (**Figure 2B-11, Table 2B-4**).

The age-adjusted mortality rates accidents varied in Arizona in 2001 from 23.2/100,000 in Greenlee County to 106.3/100,000 in Navajo County (**Table 5E-11, Figure 7B-10**).

2B. LEADING CAUSES OF DEATH  
**Influenza and pneumonia**

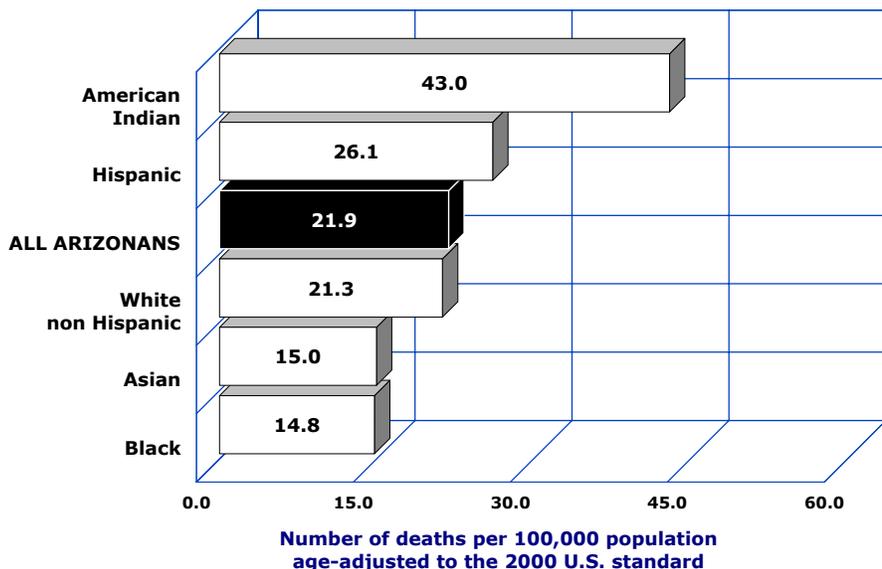
**Figure 2B-12**  
**Age-Adjusted Mortality Rates for Influenza and Pneumonia**  
**by Gender and Year, Arizona, 1991-2001**



Note: the rates for 1991-1999 are based on the number of deaths according to ICD-9. The rate for 2000 and 2001 are based on the number of deaths according to ICD-10. For comparability, the rates for 1991-1999 are adjusted using the preliminary comparability ratio of 0.6982 from NCHS. Comparability ratio of 1.0 indicates that the same number of deaths was assigned to a cause of death whether ICD-9 or ICD-10 was used.

The mortality rate for influenza and pneumonia decreased by 10.2 percent from 24.4/100,000 in 2000 to 21.9/100,000 in 2001 (Table 2B-2). The improvement in survival chances from influenza and pneumonia was greater for females than males, and the influenza and pneumonia mortality disadvantage of Arizona males compared to females increased from 38.4 percent greater in 2000 to 48.1 percent greater in 2001 (Figure 2B-12, Table 2B-2). The largest differential in mortality rates was observed for urban males who, relative to urban females, were 1.5 times more likely to die in 2001 from influenza and pneumonia (Table 2B-5).

**Figure 2B-13**  
**Age-Adjusted Mortality Rates for Influenza and Pneumonia**  
**by Race/Ethnic Group, Arizona, 2001**



The highest among ethnic groups mortality rates from influenza and pneumonia in 2001 were those of American Indians (43/100,000) compared to 26.1/100,000 among Hispanics, 21.3/100,000 among White non-Hispanics, 15/100,000 among Asians and 14.8/100,000 among Blacks (Figure 2B-13, Table 2B-4).

Compared to the state death rate for influenza and pneumonia, Navajo's County rate was 54.8 percent greater, Graham's County 37.4 percent greater and Apache's County 23.3 percent greater (Table 5E-11, Figure 7B-19).

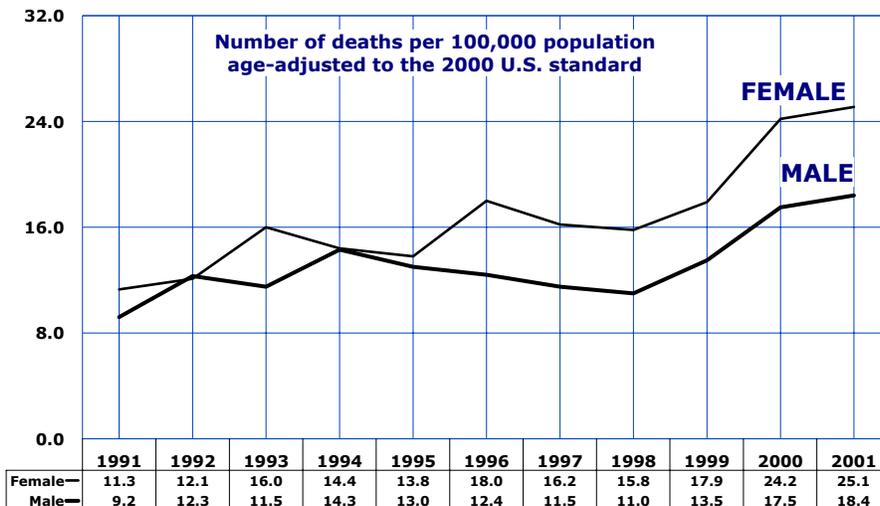
2B. LEADING CAUSES OF DEATH  
**Alzheimer's disease**

The number of deaths from Alzheimer's disease in Arizona in 2001 made Alzheimer's disease the 6<sup>th</sup> leading cause of death for all age groups and 5<sup>th</sup> leading cause for persons 65 years of age or more (Figure 2B-1, Table 2B-1, Table 2C-27).

The comparability-modified age-adjusted mortality rate for Alzheimer's disease among females increased 2.2 times from 11.3/100,000 in 1991 to 25.1/100,000 in 2001 (Figure 2B-14). Among males, the comparability-modified age-adjusted mortality rate for Alzheimer's disease doubled during that time.

The age-adjusted death rate for Alzheimer's disease was 36.5 percent higher in 2001 for females (25.1/100,000) than for males (18.4/100,000).

**Figure 2B-14**  
**Age-Adjusted Mortality Rates for Alzheimer's Disease**  
**by Gender and Year, Arizona, 1991-2001**

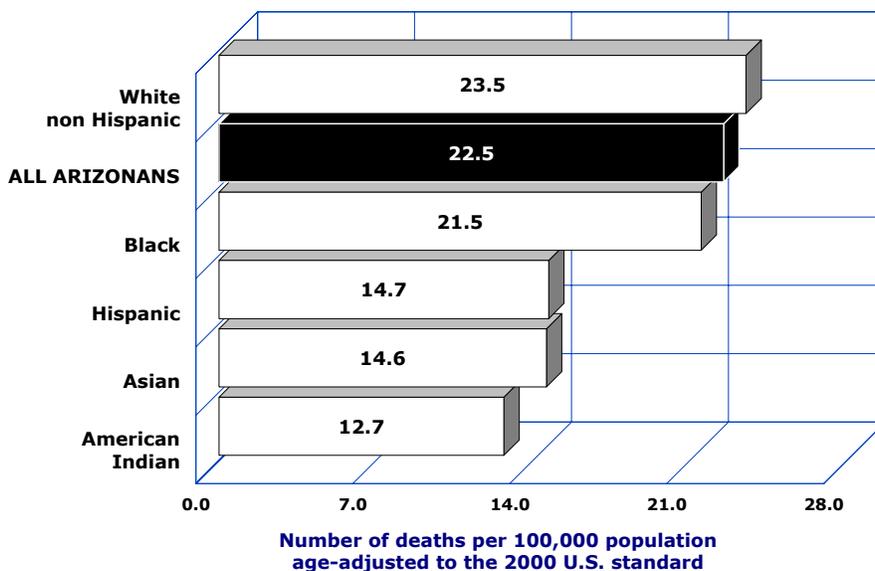


Note: the rates for 1991-1999 are comparability-modified.

The age-adjusted mortality rates for Alzheimer's disease in 2001 were substantially higher among White Non-Hispanic (23.5/100,000) and Black (21.5/100,000) residents of Arizona than they were among Hispanics (14.7/100,000), Asians (14.6/100,000) and American Indians (12.7/100,000) (Figure 2B-15, Table 2B-4).

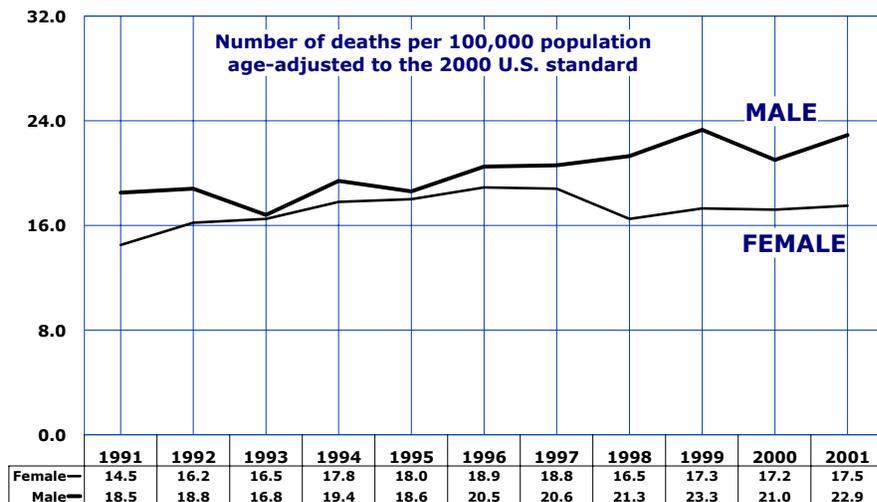
White non-Hispanic residents of Arizona disproportionately contributed to mortality from Alzheimer's disease. In 2001, White non-Hispanics accounted for 63.8 percent of the State's population, but 92.5 percent of all deaths from Alzheimer's disease (Table 2B-4).

**Figure 2B-15**  
**Age-Adjusted Mortality Rates for Alzheimer's Disease**  
**by Race/Ethnic Group, Arizona, 2001**



2B. LEADING CAUSES OF DEATH  
Diabetes

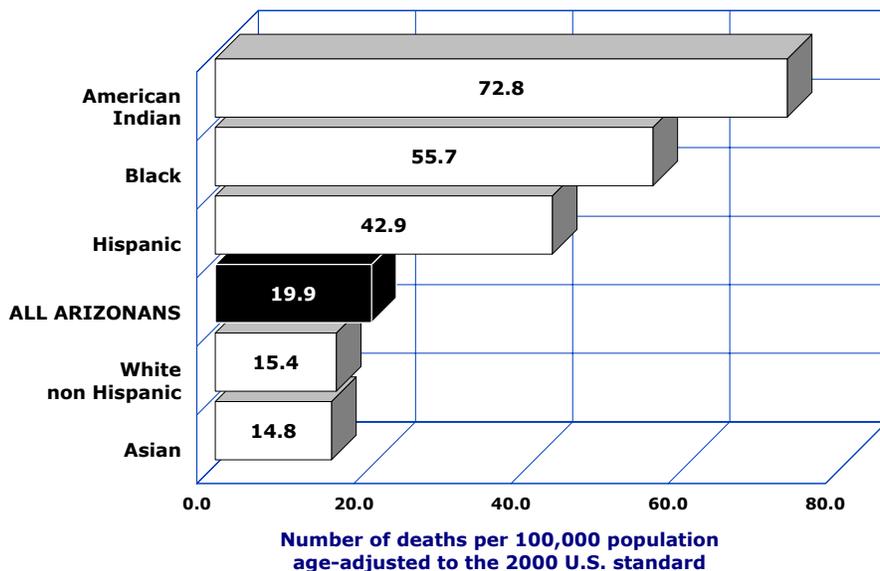
**Figure 2B-16**  
**Age-Adjusted Mortality Rates for Diabetes**  
**by Gender and Year, Arizona, 1991-2001**



The death rate for diabetes increased in Arizona from 19.0/100,000 in 2000 to 19.9/100,000 in 2001 (**Table 2B-2**). The increase from 2000 to 2001 in the death rate for diabetes was substantially greater for males (9 percent) than females (1.7 percent respectively) (**Figure 2B-16**).

In 2001, diabetes was approximately 2.3 as likely to be listed on the death certificates as a multiple cause of death (45.7/100,000, **Table 4F**) than as underlying cause (19.9/100,000, **Table 2B-2**). The rate of diabetes as a multiple cause of death includes all mentions of diabetes on the death certificate.

**Figure 2B-17**  
**Age-Adjusted Mortality Rates for Diabetes**  
**by Race/Ethnic Group, Arizona, 2001**



The age-adjusted mortality rates for diabetes among American Indians were 4.7 times higher than the rate for White non-Hispanics and 4.9 times as high as the diabetes death rates of Asians (**Figure 2B-17, Table 2B-4**).

Among the 15 Arizona counties in 2001, Apache, Santa Cruz, Graham, Gila, and Greenlee counties had the highest mortality rates for diabetes (**Table 5E-11, Figure 7B-18**).

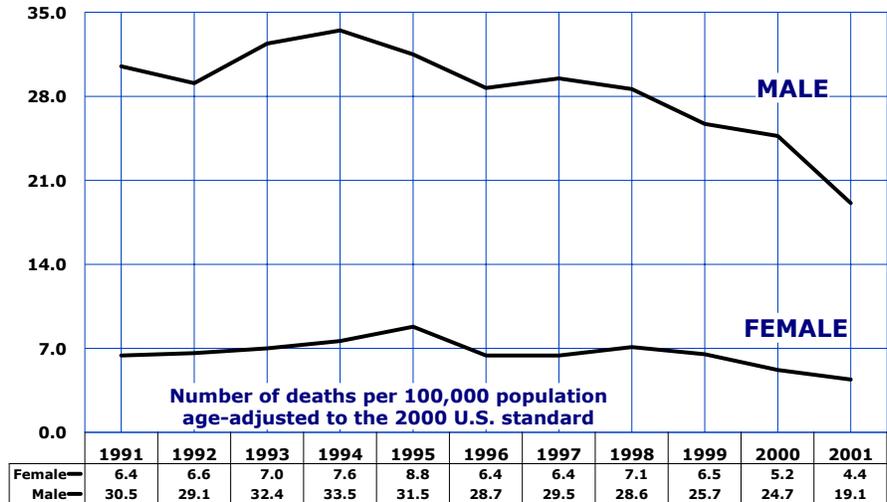
2B. LEADING CAUSES OF DEATH  
**Intentional self-harm (suicide)**

Between 1994 and 2001 the Arizona suicide mortality rate declined by 43.1 percent to 11.5 suicides per 100,000 persons, the lowest rate in two decades (**Table 2B-2, Table 2B-3**).

Among males, the age-adjusted mortality rate for suicide decreased from a rate of 33.5/100,000 in 1994 to a rate of 19.1/100,000 in 2001. Among females the suicide death rate declined from a high of 8.8/100,000 in 1995, to 4.4/100,000 in 2001 (**Figure 2B-18**).

The 2001 male mortality risk for intentional self-harm (19.1/100,000) exceeded 4.3 times the female risk of 4.4/100,000.

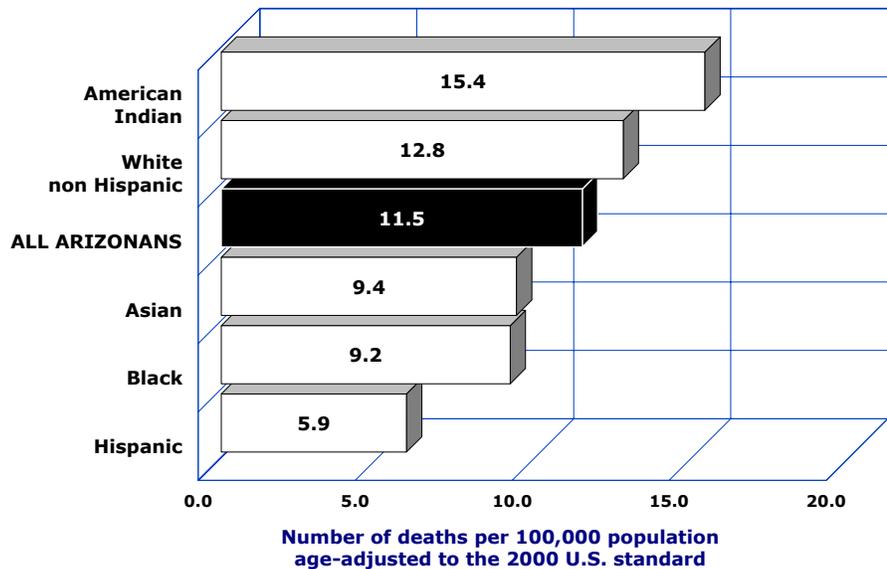
**Figure 2B-18**  
**Age-Adjusted Mortality Rates for Intentional Self-Harm (suicide) by Gender and Year, Arizona, 1991-2001**



Suicide rates in 2001 were substantially higher among American Indians and White non-Hispanics (15.4/100,000 and 11.8/100,000, respectively) than they were among Asians (9.4/100,000), Blacks (9.2/100,000) and Hispanics (5.9/100,000) (**Figure 2B-19, Table 2B-4**).

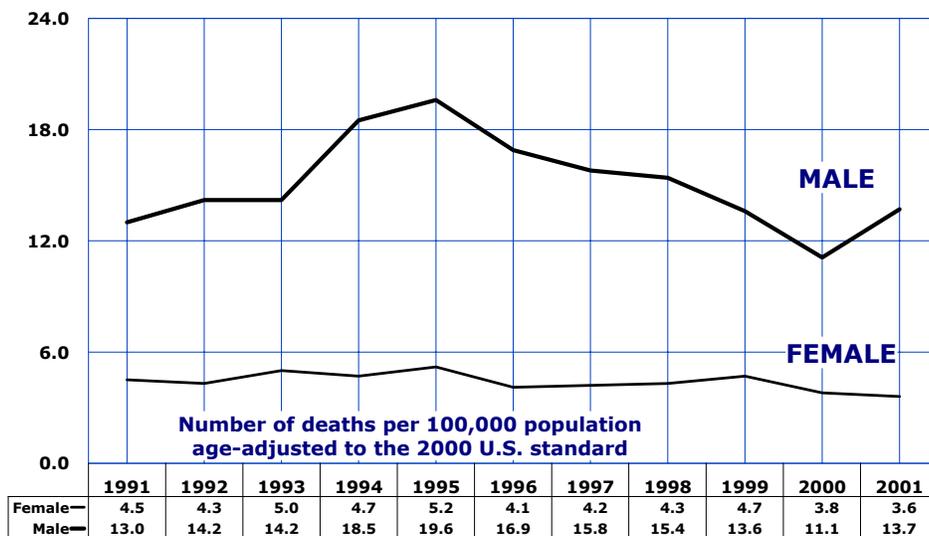
The age-adjusted mortality rates varied in Arizona in 2001 from zero (no suicides) in La Paz County to 38 suicides per 100,000 residents of Greenlee County (**Table 5E-11, Figure 7B-15**). Navajo County ranked second highest in the State with the suicide mortality rate of 27.8/100,000.

**Figure 2B-19**  
**Age-Adjusted Mortality Rates for Intentional Self-Harm (suicide) by Race/Ethnic Group, Arizona, 2001**



2B. LEADING CAUSES OF DEATH  
**Assault (homicide)**

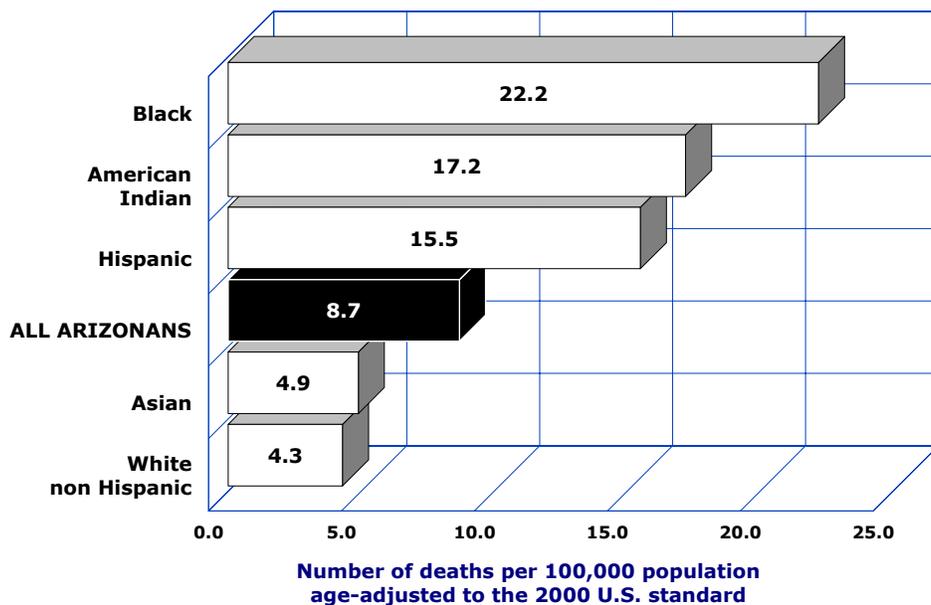
**Figure 2B-20**  
**Age-Adjusted Mortality Rates for Assault (homicide)**  
**by Gender and Year, Arizona, 1991-2001**



Arizona experienced four consecutive annual increases in homicide mortality from 1991 to 1995 (**Table 2B-2**). From 1995 to 2000, the homicide mortality declined by 39.2 percent to a rate of 7.6/100,000, and then it increased 14.5 percent between 2000 and 2001.

Among males, the age-adjusted mortality rate for assault increased 23.4 percent from 11.1/100,000 in 2000 to 13.7/100,000 in 2001. In contrast, the female rate for homicide dropped for the second consecutive year from 4.7/100,000 to 3.6/100,000 in 2001 (**Figure 2B-20**).

**Figure 2B-21**  
**Age-Adjusted Mortality Rates for Assault (homicide)**  
**by Race/Ethnic Group, Arizona, 2001**



The 2001 homicide rates were substantially higher among Black, American Indian and Hispanic residents of the state compared to homicide rates among White non-Hispanics and Asians. Blacks were 5.2 times more likely, while American Indians 4 times and Hispanics 3.6 times more likely to die from assault than White non-Hispanics whites (**Figure 2B-21, Table 2B-4**).

Among the 15 counties in 2001, Gila and Apache counties had the two highest homicide death rates, while Graham and Yuma counties had the two lowest rates (**Table 5E-11, Figure 7B-16**). There were no homicides reported in 2001 for Greenlee and La Paz counties.

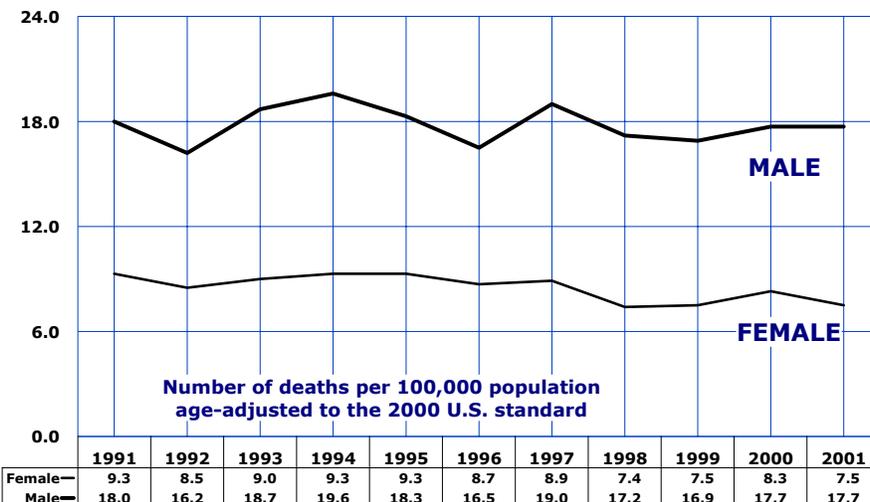
2B. LEADING CAUSES OF DEATH  
**Chronic liver disease and cirrhosis**

Chronic liver disease and cirrhosis was the 9<sup>th</sup> leading cause of death in Arizona in 2001 (**Figure 2B-1**).

Arizona males were 2.4 times more likely to die in 2001 from chronic liver disease and cirrhosis than Arizona females (17.7/100,000 vs. 7.5/100,000) (**Table 2B-3**).

American Indian males had the highest mortality rate for chronic liver disease and cirrhosis (51.1/100,000) among the gender by race groups (**Table 2B-4**).

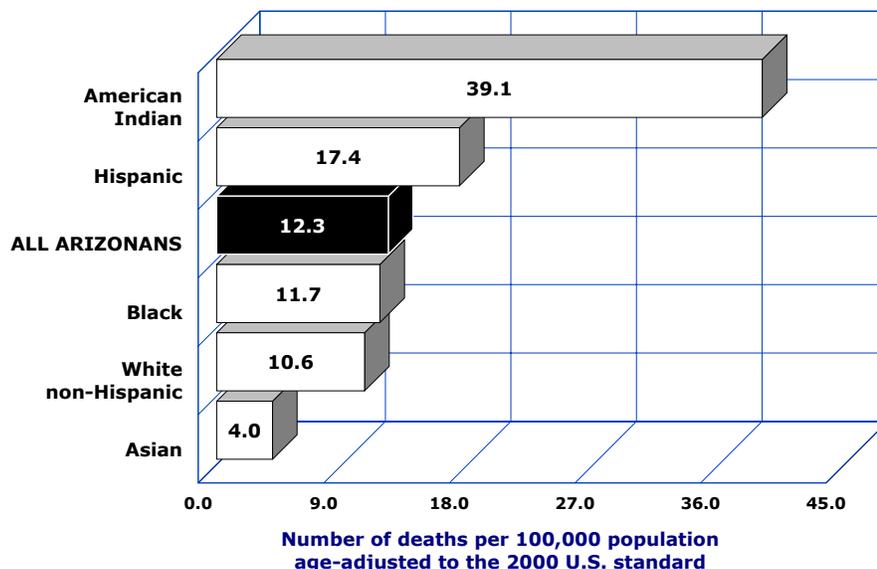
**Figure 2B-22**  
**Age-Adjusted Mortality Rates for Chronic Liver Disease and Cirrhosis by Gender and Year, Arizona, 1991-2001**



The 2001 death rate for chronic liver disease and cirrhosis among American Indians (39.1/100,000) was 9.8 times greater than the rate among Asians (4.0/100,000) (**Table 2B-4**). The rate for Hispanics (17.4/100,000) was the second highest among racial/ethnic groups in the State.

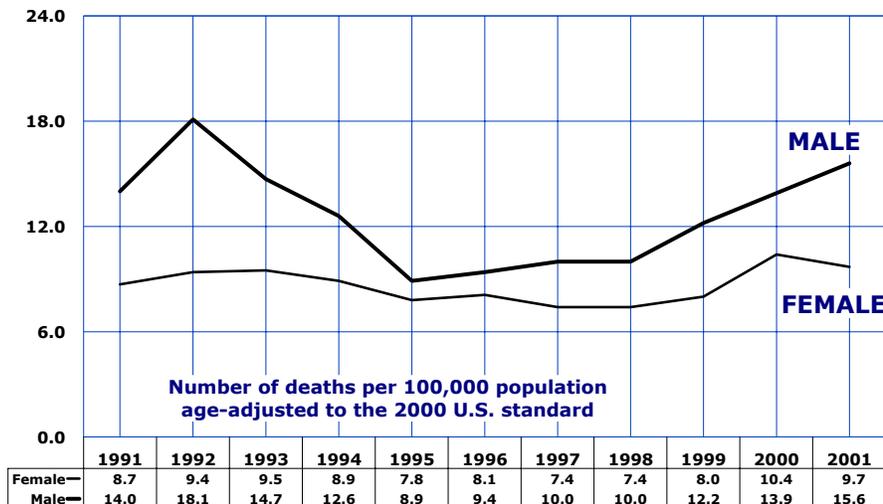
The 2001 mortality rates for chronic liver disease and cirrhosis in Navajo, Gila and Mohave counties exceeded the statewide rate by at least 55 percent (**Table 5E-11, Figure 7B-22**).

**Figure 2B-23**  
**Age-Adjusted Mortality Rates for Chronic Liver Disease and Cirrhosis by Race/Ethnic Group, Arizona, 2001**



2B. LEADING CAUSES OF DEATH  
**Nephritis, nephritic syndrome and nephrosis**

**Figure 2B-24**  
**Age-Adjusted Mortality Rates for Nephritis, Nephrotic Syndrome and Nephrosis by Gender and Year, Arizona, 1991-2001**

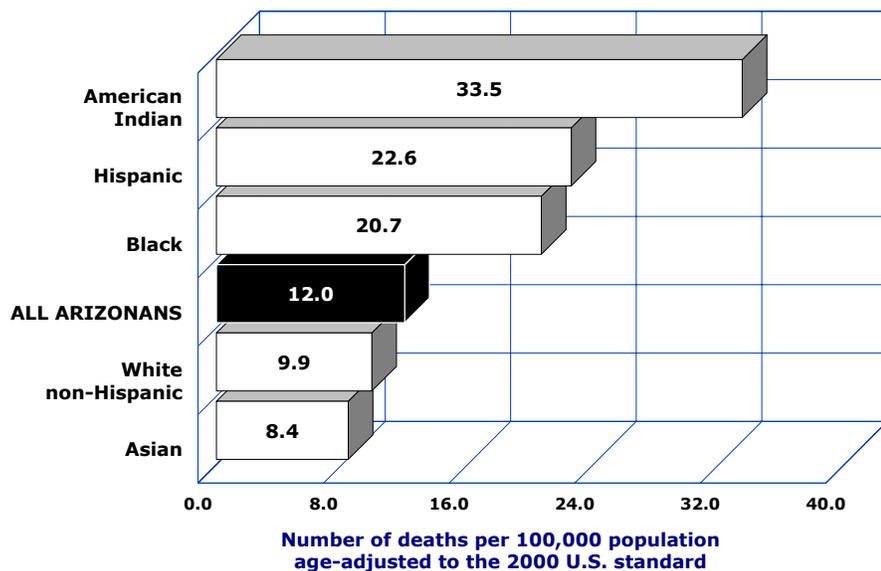


Note: the rates for 1991-1999 are comparability-modified.

Kidney disease (nephritis, nephrotic syndrome and nephrosis) was the 10<sup>th</sup> leading cause of death in Arizona in 2001 (**Figure 2B-1**).

The male mortality rate for kidney disease rose from 13.9/100,000 in 2000 to 15.6/100,000 in 2001 (**Figure 2B-24**). In contrast, the female mortality rate decreased from 10.4/100,000 in 2000 to 9.7/100,000 in 2001. In 2001, the mortality rate for nephritis, nephritic syndrome and nephrosis among males exceeded by 60.8 percent the female death rate for this cause (**Table 2B-2**).

**Figure 2B-25**  
**Age-Adjusted Mortality Rates for Nephritis, Nephrotic Syndrome and Nephrosis by Race/Ethnic Group, Arizona, 2001**



The 2001 nephritis death rates were substantially higher among American Indian (33.5/100,000), Hispanic (22.6/100,000), and Black (20.7/100,000) residents of the state compared to nephritis rates among White non-Hispanics (9.9/100,000) and Asians (8.4/100,000) (**Figure 2B-25, Table 2B-4**).

Black males followed by Hispanic males and American Indian males had the three highest mortality rates for kidney disease among the gender by race groups (**Table 2B-4**).