



2B.

LEADING CAUSES OF DEATH

Beginning with the 2000 data year in Arizona (1999 nationally) two major changes have occurred that affect the computation of mortality rates, tabulation of leading causes of death and analyses of mortality data over time. First, a new revision of the International Classification of Diseases (ICD), used to classify causes of death, was implemented. The Tenth Revision (ICD-10) has replaced the Ninth Revision (ICD-9), which was in effect since 1979. Second, a new population standard for the age adjustment of mortality rates has replaced the standard based on the 1940 population and used since 1943. The new set of age-adjustment weights uses the year 2000 estimated U.S. population as a standard.

Both changes have profound effects on the comparability of mortality data and continuity in statistical trends. Age-adjusted rates can only be compared to other age-adjusted rates that use the same population standard. In this report, ALL age-adjusted mortality rates (including those for 1980, 1990, and 1997-2007) are based on the (new) 2000 standard, and they CANNOT BE compared to rates using the 1940 standard population. This is because the age structures of the 1940 and year 2000 populations differ. From 1940 to 2000 the U.S. population "aged" considerably. The age-adjusted rates based on the year 2000 standard are different because the year 2000 population standard, which has an older age structure, gives more weight than the 1940 standard to death rates at older ages where mortality is higher. More than 1,800 age-adjusted mortality rates in this report were recomputed for the new population standard so that mortality rates can be compared over time.

Breaks in comparability of mortality statistics effective with deaths occurring in 2000 also result from the implementation of ICD-10. ICD-10 is far more detailed than ICD-9, with about 8,000 categories compared with about 5,000 categories. Some of the coding rules and rules for selecting the underlying cause of death have been changed. Moreover, cause-of-death titles have been changed and the cause-of-death categories regrouped.

The new population standard and the revision of the ICD are not the only factors affecting the comparability of cause of death and the continuity of statistical trends in mortality. The mortality data for Arizona residents for 1999-2007 are not quite as complete as they used to be. There seems to be a problem with the out-of-State deaths of the residents of Arizona: their records (copies of death certificates from other states) are not always sent to the Office of Vital Records of the Arizona Department of Health Services:

Data year	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Reported out-of-State deaths of AZ residents	1,431	1,569	792	844	1,009	678	640	714	553	493	518

Since mortality rates express the likelihood (or risk) of death in a specified population (i.e., all Arizona residents) regardless of the place of occurrence, missing data about the number of events in the numerator (i.e., resident deaths occurring out-of-State) continue to contribute to misrepresentation of mortality risks for Arizonans.

In particular, mortality rates for 1999-2007 were understated because the numerators used to calculate them were too small.

Another disturbing peculiarity of the mortality data collection in 2000 – 2007, are records where cause of death is missing. The majority of those records are, again, for Arizonans who died outside Arizona. Unfortunately, missing cause of death accounted for 970 records in 2001, almost as many as diabetes (1,040 deaths), and the eight leading cause of death in 2001.

Data year	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Missing cause of death	30	12	11	197	970	704	532	118	37	0	36

As a result, the cause-of-death-specific numbers and rates for 2000-2007 also have been understated.

Last but not least, before data for 2000, mortality medical information was based on manual coding of an underlying death for each certificate in accordance with WHO rules, and done locally by the Office of Vital Records. Effective with the 2000 data year, cause-of-death data presented in this publication were coded by the National Center for Health Statistics, using computerized procedures of SuperMICAR (Mortality Medical Indexing and Retrieval) and ACME (Automated Classification of Medical Entities) systems.

The conversion to computerized coding contributed to at least some of the breaks in comparability over time of cause-of-death statistics for *drug-induced deaths*, *intentional self-harm (suicide)*, *firearm-suicide*, and *accidental discharge of firearms*:

Data year	1999	2000	2001	2002	2003	2004	2005	2006	2007
Drug-induced deaths	543	331	577	645	646	745	799	903	940
Suicide	773	737	600	855	807	854	915	948	986
Suicide by firearms	495	486	358	544	476	498	507	554	541
Accidental discharge of firearms	7	11	114	26	13	13	15	9	13

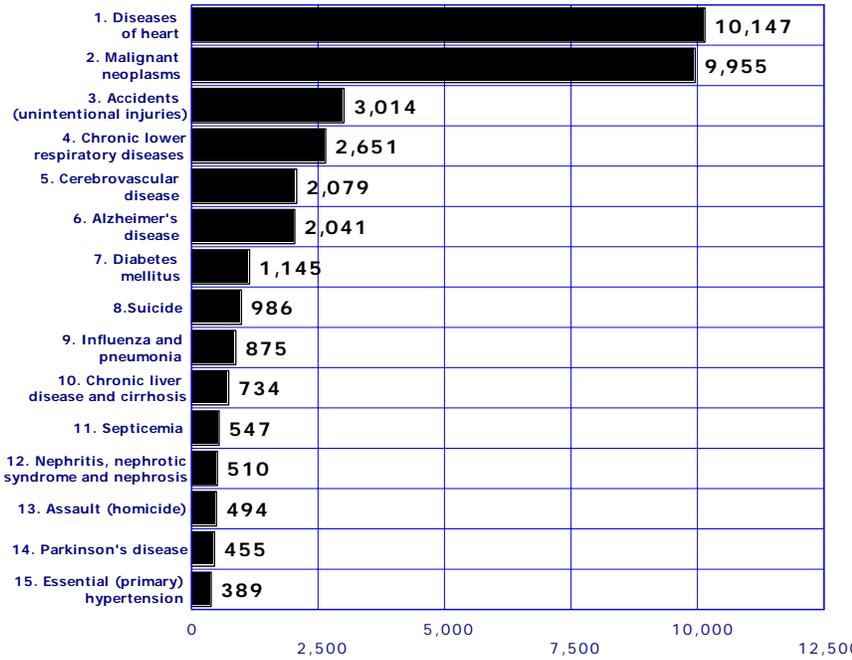
Unprecedented decline in 2001 in the number of suicides and the equally unprecedented increase in the number of firearm deaths classified as accidental are obviously associated. Approximately 100 firearm fatalities, that would have been classified as suicides had the manual coding system been in place, were classified as accidents in 2001 because the "manner of death" was not indicated and the automated coding system defaulted to accidental injury.

Coding of "non-alcoholic" conditions as "alcoholic" is another (discovered in June 2007) and now corrected problem with SuperMICAR.

Some experience is usually necessary before the data is collected and coded as accurately and completely as possible in changed circumstances. Data in future years will indicate if this assumption is reasonable.

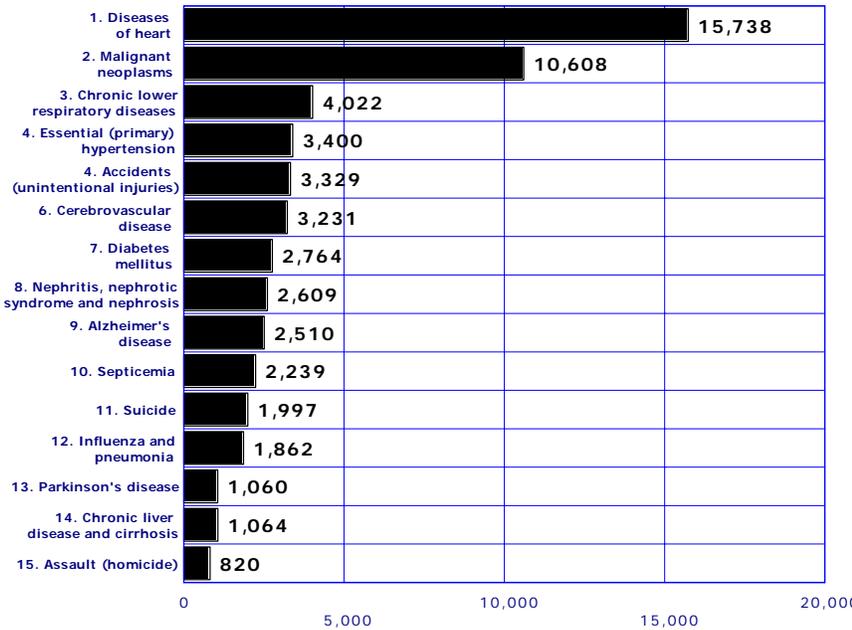
2B. LEADING CAUSES OF DEATH

Figure 2B-1A
Leading Causes of Death among Arizona Residents in 2007
BASED ON THE NUMBER OF DEATHS DUE TO THE UNDERLYING CAUSE:



The leading underlying cause of death to Arizona residents in 2007 continued to be *heart disease*, which accounted for 10,147 or 22.7 percent of all deaths (Figure 2B-1A, Table 2B-1, Table 5E-14). *Cancer* remained the second most frequent cause of death to residents of the state, being responsible for 22.3 percent of all deaths in 2007. Deaths due to *accidents (unintentional injuries)* ranked third in 2007, with 3,014 resident deaths reported. The fourth leading cause of death, *chronic lower respiratory diseases* (a title change from ICD-9 title *chronic obstructive pulmonary disease*) accounted for 2,651 or 5.9 percent of total deaths. Deaths due to *cerebrovascular disease* ranked fifth in 2007, with 2,079 resident deaths reported. In 2007, *cerebrovascular disease* accounted for 4.7 percent of all deaths. Together, these five causes accounted for 62.4 percent of total deaths in 2007. The fifteen leading causes accounted for 80.7 percent of all deaths among Arizona residents.

Figure 2B-1B
Leading Causes of Death among Arizona Residents in 2007
BASED ON THE NUMBER OF DEATHS DUE TO ANY MENTION OF A CAUSE:



For the purpose of mortality statistics, every death is attributed to one underlying condition or underlying cause of death. The underlying cause is defined as the disease or injury that initiated the chain of events leading directly to death. It is selected from up to 20 causes and conditions entered by the physician on the death certificate. The totality of all these conditions is known as multiple cause of death.

In addition to 10,147 deaths that had diseases of the heart assigned as the underlying cause, another 5,591 deaths had diseases of the heart assigned as the other than underlying cause. The sum of these two counts (15,738, Figure 2B-1B) is the total number of deaths that had any mention of diseases of the heart on the 2007 death certificates. The ranking based on any mention of the 15 diagnostic categories is different from ranking of the leading causes of death based on the underlying cause. In particular, essential (primary) hypertension ranked 15th as the underlying cause but ranked 4th when any mention of it is counted.

2B. LEADING CAUSES OF DEATH
Five Leading Causes by Gender

Figure 2B-2
Age-Adjusted¹ Mortality Rates for the Five Leading Causes of Death for Both Genders by Race/Ethnicity, Arizona, 2007

In 2007, diseases of the heart were the leading cause of death for three of the five race/ethnic groups in Arizona: American Indians, Blacks or African Americans, and Hispanics or Latinos (**Figure 2B-2, Table 2B-4**). Cancer was the number one cause among Asians or Pacific Islanders and White non-Hispanics. Unintentional injury was the third leading cause for each group except Asians. For Asians, stroke was the 3rd leading cause of death in 2007. Diabetes was among the top five causes of death among American Indians, Blacks, and Hispanics, but not among Asians and White non-Hispanics (**Table 2B-4**).

Alzheimer's disease was the fifth leading cause of death only among White non-Hispanics and Asians. Chronic liver disease and cirrhosis was the fifth leading cause of death specific to American Indians. Stroke was the fourth leading cause of death among both Hispanics or Latinos and Blacks or African Americans. Chronic lower respiratory diseases were the fourth leading cause of death specific to White non-Hispanics.

Rank	Asian or Pacific Islander	American Indian or Alaska Native	Black or African American	Hispanic or Latino	White non-Hispanic
1	Cancer 84.2	Diseases of heart 115.2	Diseases of heart 171.3	Diseases of heart 131.5	Cancer 154.6
2	Diseases of heart 58.6	Cancer 113.9	Cancer 153.4	Cancer 118.6	Diseases of heart 153.2
3	Stroke 37.7	Unintentional injury 95.0	Unintentional injury 48.1	Unintentional injury 40.6	Unintentional injury 44.9
4	Unintentional injury 20.3	Diabetes 51.1	Stroke 34.1	Stroke 34.9	Chronic lower respiratory diseases 43.7
5	Alzheimer's disease 12.9	Chronic liver disease and cirrhosis 36.8	Diabetes 30.3	Diabetes 30.8	Alzheimer's disease 30.9

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

Figure 2B-3
Age-Adjusted¹ Mortality Rates for the Five Leading Causes of Death by Race/Ethnicity among Females, Arizona, 2007

Cancer, not diseases of the heart, was the number one cause of death among White non-Hispanic, Asian or Pacific Islander, and American Indian females (**Figure 2B-3, Table 2B-4**). Diseases of the heart followed by cancer were the two top causes of female mortality among Blacks or African Americans and Hispanics or Latinos. Unintentional injury was the third leading causes of death among American Indian females. It was the fourth leading cause of death among both Asian and fifth leading cause among Hispanics and White non-Hispanic females.

Rank	Asian or Pacific Islander	American Indian or Alaska Native	Black or African American	Hispanic or Latino	White non-Hispanic
1	Cancer 81.6	Cancer 100.1	Diseases of heart 182.5	Diseases of heart 107.7	Cancer 131.1
2	Diseases of heart 56.4	Diseases of heart 94.7	Cancer 135.2	Cancer 99.0	Diseases of heart 120.0
3	Stroke 40.0	Unintentional injury 50.3	Alzheimer's disease 41.7	Stroke 37.8	Chronic lower respiratory diseases 40.7
4	Unintentional injury 20.3	Diabetes 42.1	Stroke 36.5	Diabetes 28.9	Alzheimer's disease 35.6
5	Alzheimer's disease 15.7	Influenza & pneumonia 31.7	Diabetes 30.0	Unintentional injury 27.5	Unintentional injury 32.2

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

2B. LEADING CAUSES OF DEATH Five Leading Causes by Gender

Figure 2B-4
Age-Adjusted* Mortality Rates for the Five Leading Causes of Death
by Race/Ethnicity among Males, Arizona, 2007

Rank	Asian or Pacific Islander	American Indian or Alaska Native	Black or African American	Hispanic or Latino	White non-Hispanic
1	Cancer 248.1	Unintentional injury 143.9	Cancer 178.3	Diseases of heart 158.9	Diseases of heart 191.3
2	Diseases of heart 152.9	Diseases of heart 140.5	Diseases of heart 160.4	Cancer 144.3	Cancer 184.4
3	Stroke 85.6	Cancer 135.0	Unintentional injury 62.8	Unintentional injury 53.5	Unintentional injury 57.7
4	Unintentional injury 72.6	Diabetes 61.1	Assault (homicide) 32.3	Diabetes 32.6	Chronic lower respiratory disease 47.9
5	Intentional self-harm (suicide) 49.2	Chronic liver disease and cirrhosis 46.9	Diabetes 32.0	Stroke 30.0	Intentional self-harm (suicide) 29.4

Diseases of the heart followed by cancer were the two leading causes of death among Hispanic and White non-Hispanic males (**Figure 2B-4; Table 2B-4**). Unintentional injury was the first leading cause of death among American Indian males, followed by diseases of the heart. In 2007, cancer was the number one cause of deaths among Asian males.

In 2007, the age-adjusted mortality rates for diabetes were essentially identical for Black and Hispanic males (approximately 32 deaths per 100,000 persons). The age-adjusted mortality rate for diabetes among American Indian males was almost twice as high (61.1/100,000).

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

Figure 2B-5
Age-Adjusted* Mortality Rates for the Five Leading Causes of Death
by Gender in Urban and Rural Areas, Arizona, 2007**

Rank	Urban male	Urban female	Rural male	Rural female
1	Diseases of heart 180.1	Cancer 123.6	Diseases of heart 200.5	Cancer 134.6
2	Cancer 175.1	Diseases of heart 118.5	Cancer 182.2	Diseases of heart 122.7
3	Unintentional injury 56.6	Chronic lower respiratory diseases 36.4	Unintentional injury 82.9	Unintentional injury 40.2
4	Chronic lower respiratory diseases 40.9	Alzheimer's disease 36.1	Chronic lower respiratory diseases 53.9	Chronic lower respiratory diseases 34.4
5	Stroke 26.6	Stroke 32.1	Suicide 33.3	Stroke 33.4

In 2007, the profile of the leading causes of death differed by gender for the residents of the urban (Maricopa, Pima, Pinal, and Yuma counties) and rural (all the remaining counties) areas of the State (**Figure 2B-5, Table 2B-5**). For both urban and rural males, diseases of the heart were the leading cause of death with cancer, unintentional injuries, and chronic lower respiratory diseases in second, third, and fourth positions respectively. Cancer exceeded diseases of the heart as the leading cause of death among both urban and rural females. Suicide, not stroke, was the fifth leading cause of death among rural males. Alzheimer's disease was the fourth leading cause of death among urban females.

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

**Urban = Maricopa, Pima, Pinal and Yuma counties. The remaining counties comprise Arizona's rural areas.

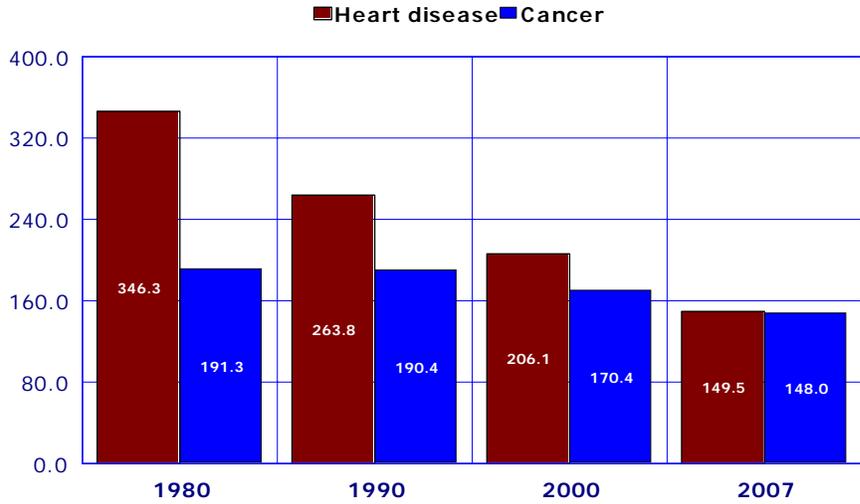
2B. LEADING CAUSES OF DEATH
 Diseases of heart and malignant neoplasm (cancer)

Figure 2B-6
 Comparison of Age-Adjusted* Mortality Rates for Heart Disease and Cancer
 (Malignant Neoplasm), Arizona, 1980, 1990, 2000 and 2007

The age-adjusted mortality rate for diseases of the heart decreased by 56.8 percent from 346.3 deaths per 100,000 population in 1980 to 149.5/100,000 in 2007 (Figure 2B-6). The age-adjusted mortality rate for cancer declined substantially less by 22.6 percent during 1980-2007. In Arizona, the relative risk of death from the two leading causes narrowed from 81 percent greater for heart disease in 1980 to 1.4 percent greater in 2007. Nationally, the relative risk of death narrowed from 98 percent greater for diseases of the heart in 1980 to 16.6 percent greater in 2005 (the latest year for which the U.S. data are available).

In 2000, 1,436 more Arizonans died from diseases of the heart than cancer (Table 2B-1). In 2007, the number of deaths from heart disease exceeded the number of cancer deaths by 192.

The unintended consequence of the reduction in heart disease mortality is that cancer, in the near future, will replace diseases of the heart as the leading cause of death.

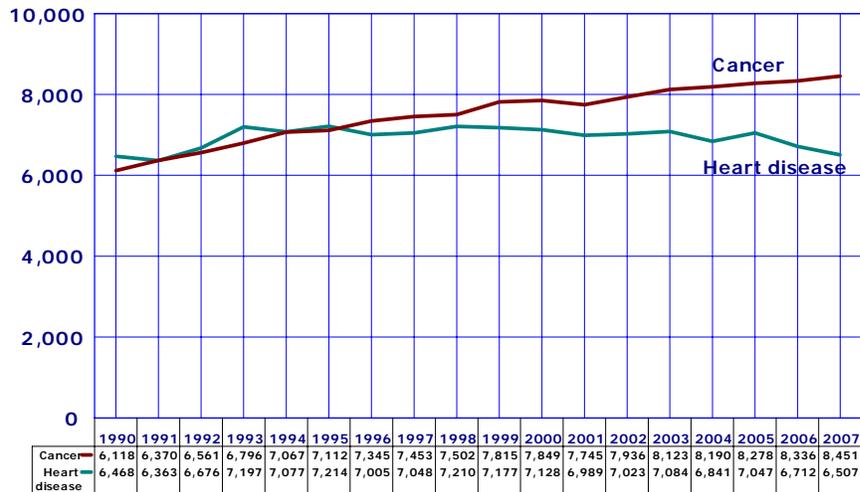


*Adjusted to the 2000 standard U.S. population.

Figure 2B-7
 Number of Deaths from Heart Disease and Cancer among
 Arizonans 0-84 Years, 1990-2007

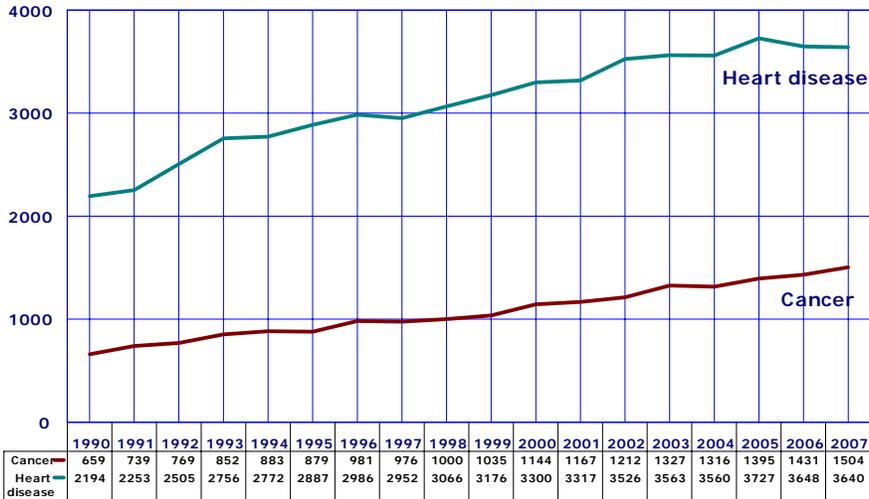
The prediction, that "in the early 21st century cancer will displace heart disease as the leading cause of death", was originally published in the 1990 edition of the *Arizona Health Status and Vital Statistics* report (p.90).

In fact, for the past ten years cancer has already been the number one cause of death among Arizonans aged 0-84 years (Figure 2B-7). Beginning in 1996, the annual number of cancer deaths exceeded the number of deaths from heart disease. In 2007, 1,944 more Arizonans 0-84 years old died from cancer (8,451) than heart disease (6,507).



2B. LEADING CAUSES OF DEATH
Diseases of heart and malignant neoplasm (cancer)

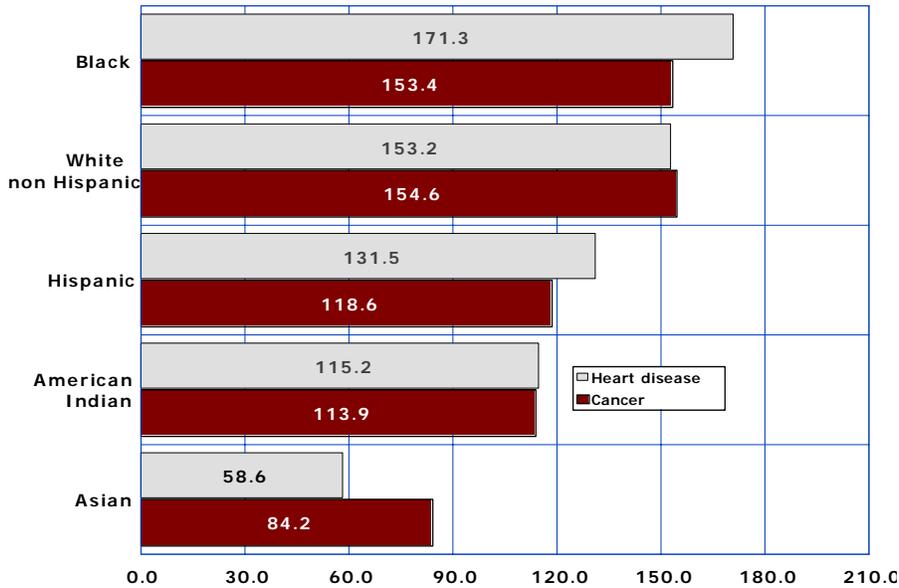
Figure 2B-8
Deaths from Heart Disease and Cancer among Arizonans
85+, 1990-2007



It is only among the oldest, 85 or older, that heart disease continues to be the number one cause of death (**Figure 2B-8**). In 2007, the elderly aged 85 years or older accounted for 15.1 percent of all deaths from cancer but 35.8 percent of all deaths from heart disease. In 2007, the median age at death from heart disease was 80 years (**Table 2D-3**) and only a minority of deaths (42.4 percent, **Table 2D-4**) was premature, i.e., before reaching the expected years of life at birth for all U.S. residents (77.8 years in 2005).

From 1990 to 2007, the number of deaths from cancer more than doubled (an increase of 128.2 percent) among Arizonans 85 years or older, a 2 times greater rise than the one seen for diseases of the heart (a 65.9 percent increase).

Figure 2B-9
Age-Adjusted Mortality Rates for Heart Disease and Cancer by
Race/Ethnicity, Arizona, 2007



Arizona's Blacks were 2.9 times more likely to die from diseases of the heart and 1.8 times more likely to die from malignant neoplasms in 2007 than Asians, the group at the lowest risk of both heart disease and cancer death among race/ethnic groups (**Figure 2B-9**, **Table 2B-4**).

Among Asians and White non-Hispanics, the relative risk of death from cancer exceeded the mortality risk of death from heart disease in 2007 (**Table 2B-3**).

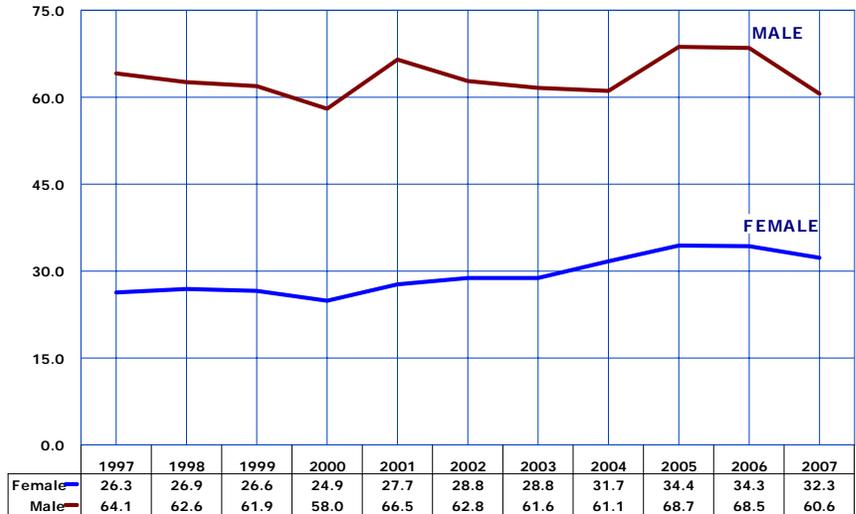
Number of deaths per 100,000 population age-adjusted to the 2000 U.S. standard.

2B. LEADING CAUSES OF DEATH
Accidents (unintentional injury)

Figure 2B-10
Age-Adjusted Mortality Rates for Accidents (unintentional injuries) by Gender and Year, Arizona, 1997-2007

The number of deaths from unintentional injuries decreased by 4.5 percent from 3,156 in 2006 to 3,014 in 2007 (Table 2B-1). In 2007, based on age-adjusted mortality rates, accidents ranked third in leading cause of death for males and fifth for females. From 2006 to 2007 the age-adjusted mortality for accidents decreased by 11.5 percent for males and by 5.8 percent for females (Figure 2B-10).

Both males and females experienced particularly large increases from 1997 to 2007 in the number of accidental drug overdoses and fatal fall-related injuries. Among females, the number of drug poisoning deaths increased 4.5 times from 52 in 1997 to 232 in 2007. The number of drug overdoses doubled among males from 237 in 1997 to 489 in 2007. For both genders, the number of deaths from falls also doubled from 359 in 1997 to 720 in 2007 (Table 2B-9).

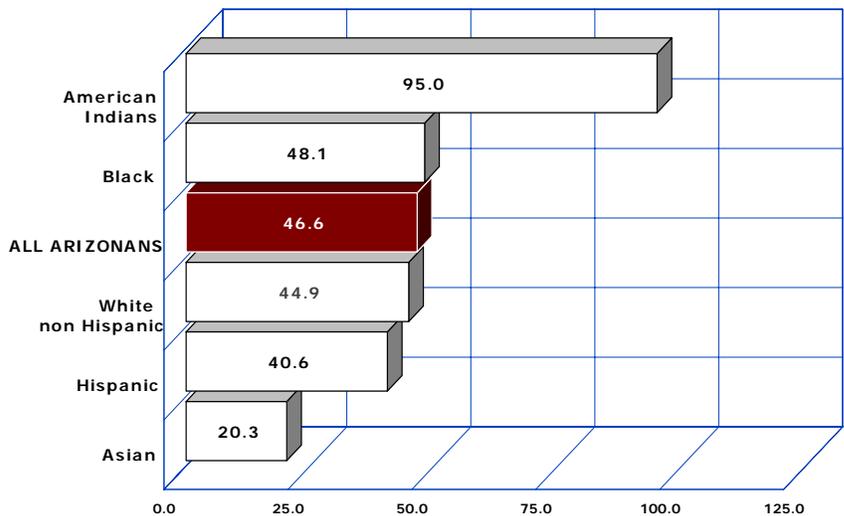


Number of deaths per 100,000 population age-adjusted to the 2000 U.S. standard.

Figure 2B-11
Age-Adjusted Mortality Rates for Accidents (unintentional injuries) by Race/Ethnicity, Arizona, 2007

The American Indian death rate for unintentional injuries (95.0/100,000) was 4.7 times greater than the rate for Asians (20.3/100,000), the group at the lowest risk of unintentional injury death among race/ethnic groups in the State (Figure 2B-11, Table 2B-4).

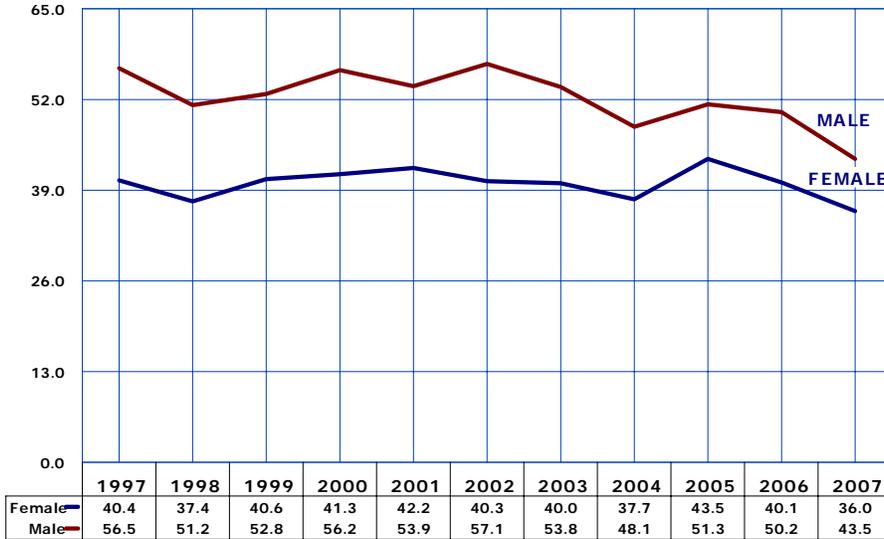
In 2007, Apache (143.0/100,000) and Navajo (105.2/100,000) counties had the two highest age-adjusted mortality rates for unintentional injuries (Table 5E-11).



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-12
Age-Adjusted Mortality Rates for Chronic Lower* Respiratory Diseases by Gender and Year, Arizona, 1997-2007

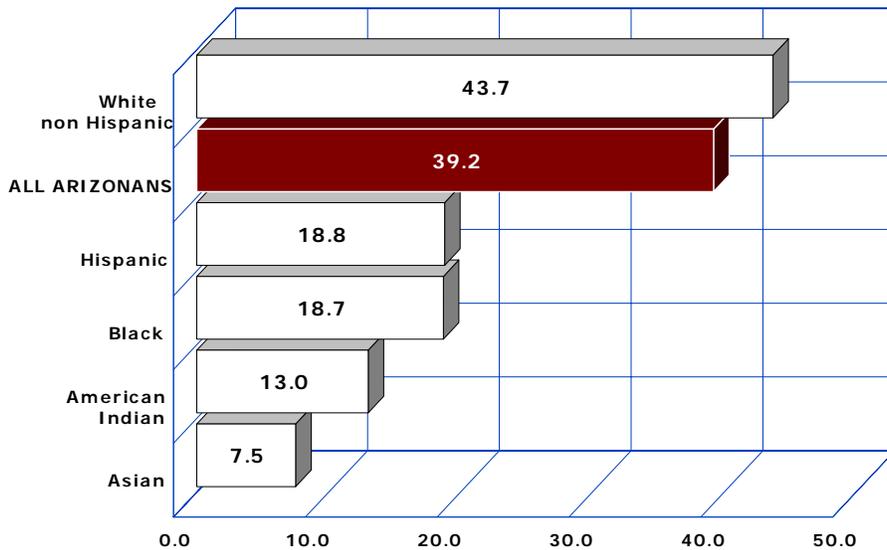


In 2007, chronic lower respiratory diseases (bronchitis, emphysema, asthma) were the 4th leading cause of death among Arizona residents (Table 2B-1). From 2005 to 2007, the mortality rates for chronic lower respiratory diseases (CLRD) decreased for both genders (Figure 2B-12, Table 2B-2). The gender gap in CLRD mortality narrowed from 39.9 percent greater risk for males than females in 1997, to a 20.8 percent greater risk in 2007.

Rural females had the lowest mortality rate for CLRD (34.4/100,000) among the gender by region groups (Table 2B-5). Rural males, the group at the highest mortality risk for CLRD (53.9/100,000), were 57 percent more likely in 2007 to die from this cause than rural females.

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)

Figure 2B-13
Age-Adjusted Mortality Rates for Chronic Lower* Respiratory Diseases by Race/Ethnicity, Arizona, 2007



Death rates for emphysema, chronic bronchitis, asthma and other lower respiratory disorders were substantially higher among White non-Hispanics (43.7 deaths per 100,000) than they were among Hispanics (18.8/100,000), Blacks (18.7/100,000), American Indians (13.0/100,000), and Asians (7.5/100,000; Figure 2B-13, Table 2B-4).

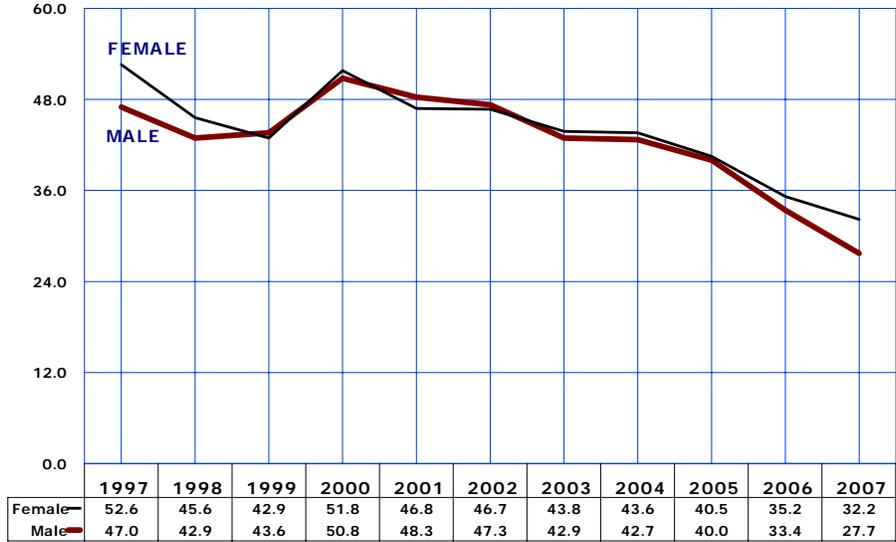
Number of deaths per 100,000 population age-adjusted to the 2000 U.S. standard.

2B. LEADING CAUSES OF DEATH
Cerebrovascular disease

Figure 2B-14
Age-Adjusted Mortality Rates for Cerebrovascular Disease by Gender and Year, Arizona, 1997-2007

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 age-adjusted mortality rate for stroke decreased by 40.8 percent from 51.7 deaths per 100,000 population in 2000 to 30.6/100,000 in 2007 (Figure 2B-14).

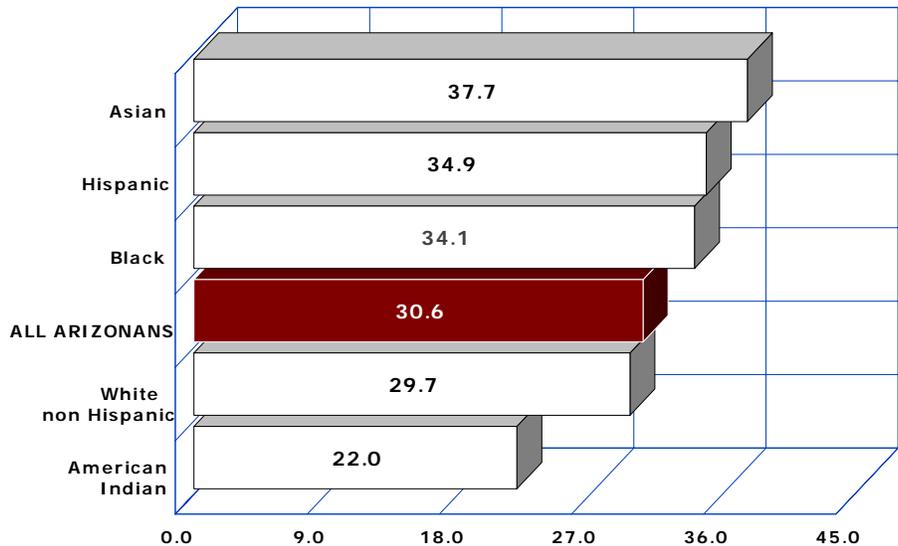
In 2007, the number of deaths from cerebrovascular disease was greater among females (1,265) than males (814, Table 2B-4). The 2005 female mortality risk for a stroke death (40.5/100,000) exceeded the male risk of 40.0/100,000 by a mere 1.3 percent. In 2007 the gender differential, i.e. the ratio of female to male mortality rates was 1.162 or, the female mortality rate for stroke exceeded the male rate by 16.2 percent (Figure 2B-14, Table 2B-2).



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

Figure 2B-15
Age-Adjusted Mortality Rates for Cerebrovascular Disease by Race/Ethnicity, Arizona, 2007

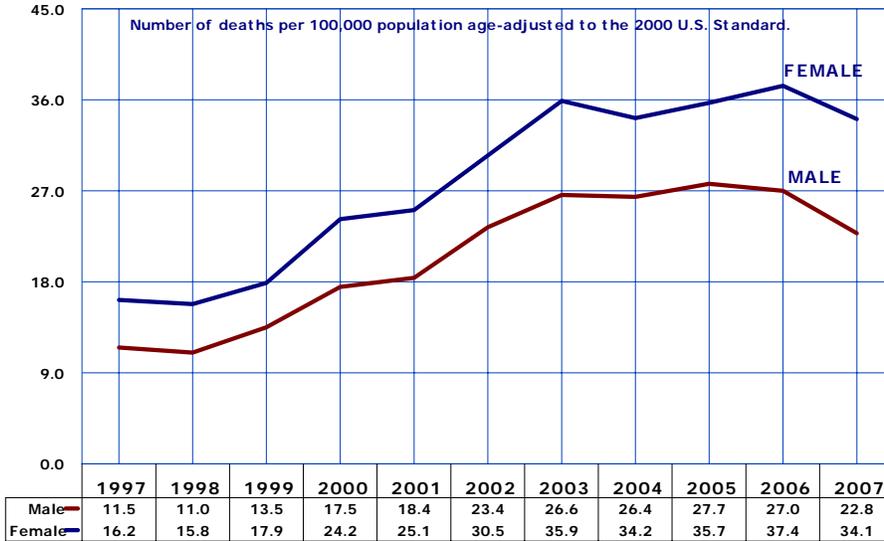
Compared to Arizona's rate, Asians were 23.2 percent more likely to die from cerebrovascular disease in 2007 (Figure 2B-15, Table 2B-4). The 2007 mortality rate for cerebrovascular disease among American Indians (22.0/100,000) was the lowest among race/ethnic groups. American Indian females had the lowest mortality rate for cerebrovascular disease among gender by race subgroups (20.3 deaths per 100,000, Figure 2B-4), while Asian males had the highest rate of 85.6 /100,000.



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

2B. LEADING CAUSES OF DEATH
Alzheimer's disease

Figure 2B-16
Age-Adjusted Mortality Rates for Alzheimer's Disease by
Gender and Year, Arizona, 1997-2007



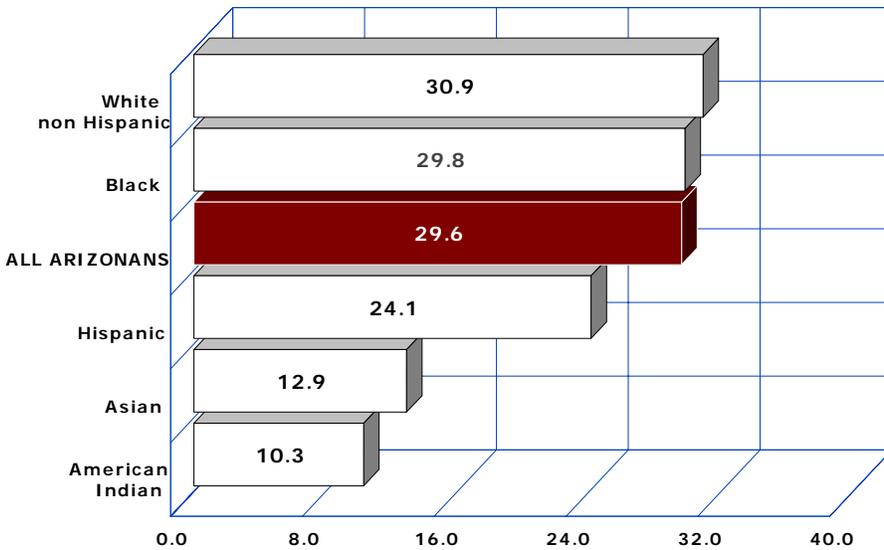
Based on the number of deaths in 2007, Alzheimer's disease was the 3rd leading cause of death for females and 7th leading cause for males (Table 2B-4).

The age-adjusted mortality rate for Alzheimer's disease among females decreased by 8.8 percent from 37.4/100,000 in 2006 to 34.1/100,000 in 2007 (Figure 2B-16). The age-adjusted mortality rate for Alzheimer's disease also decreased for males by 15.5 percent during that time.

In 2007, the age-adjusted death rate for Alzheimer's disease was 49.6 percent higher for females than for males.

Note: The rates for 1997-1999 are comparability-modified.

Figure 2B-17
Age-Adjusted Mortality Rates for Alzheimer's Disease by
Race/Ethnicity, Arizona, 2007



The age-adjusted mortality rates for Alzheimer's disease in 2007 were higher among White non-Hispanic (30.9 deaths per 100,000) than they were among Black (29.8 deaths per 100,000), Hispanic (24.1/100,000), Asian (12.9/100,000), and American Indian (10.3/100,000) residents of Arizona (8.3/100,000; Figure 2B-17, Table 2B-4).

White non-Hispanic residents of Arizona disproportionately contributed to mortality from Alzheimer's disease. In 2007, White non-Hispanics accounted for 60.2 percent (Table 10C-1) of the State's population, but 90 percent of all deaths from Alzheimer's disease (1,836 out of 2,041; Table 2B-4).

In 2007, the median age at death from Alzheimer's disease was 88 for females and 85 for males (Table 2D-3).

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

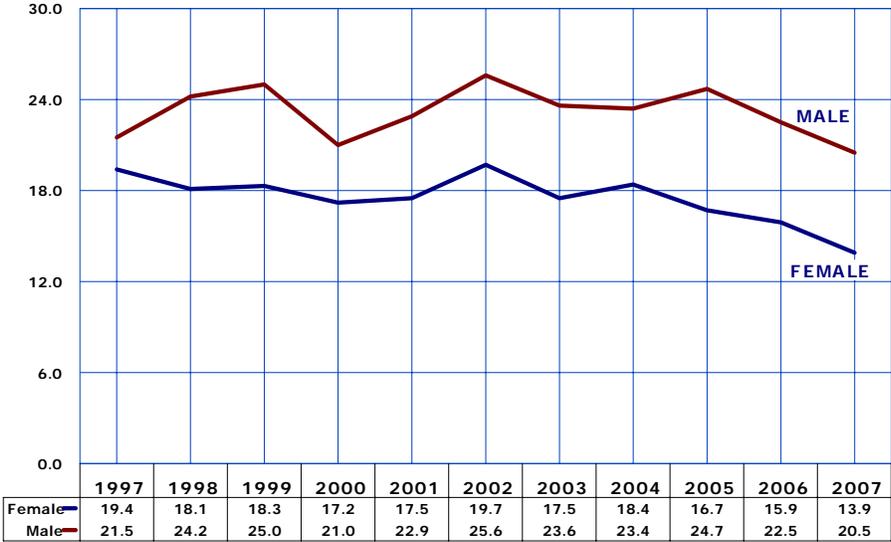
2B. LEADING CAUSES OF DEATH
Diabetes

Figure 2B-18
Age-Adjusted Mortality Rates for Diabetes by Gender and Year,
Arizona, 1997-2007

In 2007, diabetes was the 7th leading cause of death among Arizona residents. Both men and women experienced a decline in mortality rates for diabetes from 2005 to 2007 (Figure 2B-18).

In 2007, in addition to 1,145 deaths that had diabetes assigned as the underlying cause, another 1,619 deaths had diabetes assigned as a contributing factor (Figure 2B-1B). The diabetes-related death rate of 41.1/100,000 (Table 6A-6) was 2.4 times greater than the rate for diabetes as underlying cause (17.0/100,000, Table 2B-2).

The diabetes-related death rate includes all mentions of diabetes on the death certificate as the underlying or other than underlying cause.

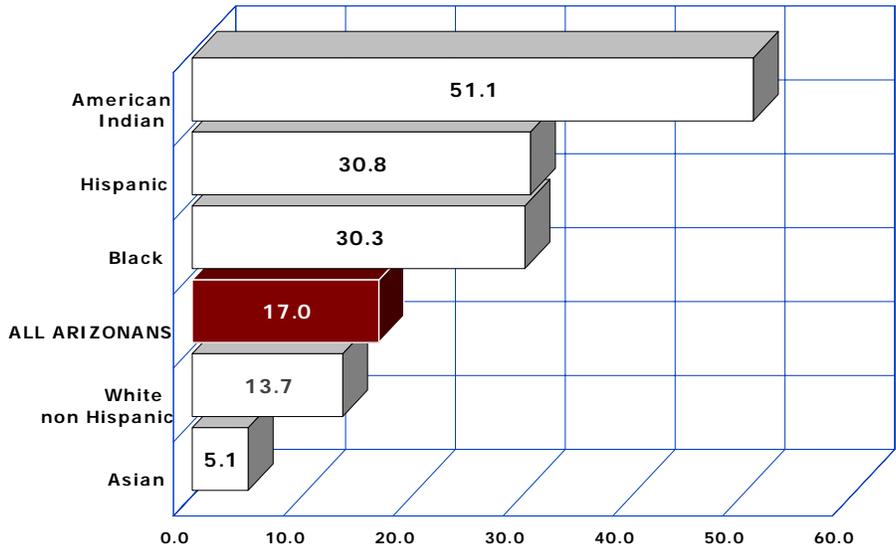


Number of deaths per 100,000 population age-adjusted to the 2000 U.S. standard.

Figure 2B-19
Age-Adjusted Mortality Rates for Diabetes by Race/Ethnicity,
Arizona, 2007

In 2007, compared to Arizona's rate, American Indians were 3 times more likely to die from diabetes (51.1 deaths per 100,000; Figure 2B-19, Table 2B-4). The rate of 5.1 deaths per 100,000 among Asians was the lowest rate among race/ethnic groups in the State.

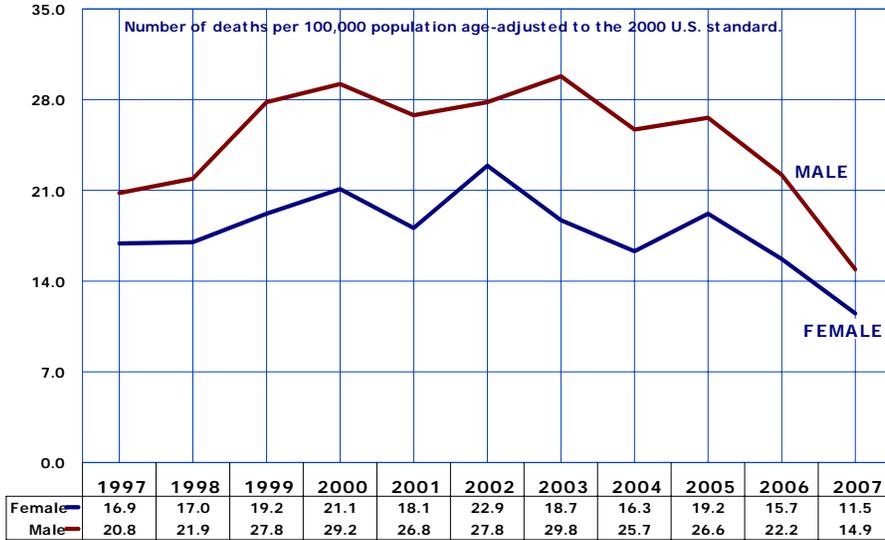
Among the 15 Arizona counties, in 2007 Greenlee (45.5/100,000), La Paz (37.1/100,000) and Apache (36.2/100,000) had the highest mortality rates for diabetes (Table 5E-11).



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

2B. LEADING CAUSES OF DEATH
Influenza and pneumonia

Figure 2B-20
Age-Adjusted Mortality Rates for Influenza and Pneumonia by
Gender and Year, Arizona, 1997-2007



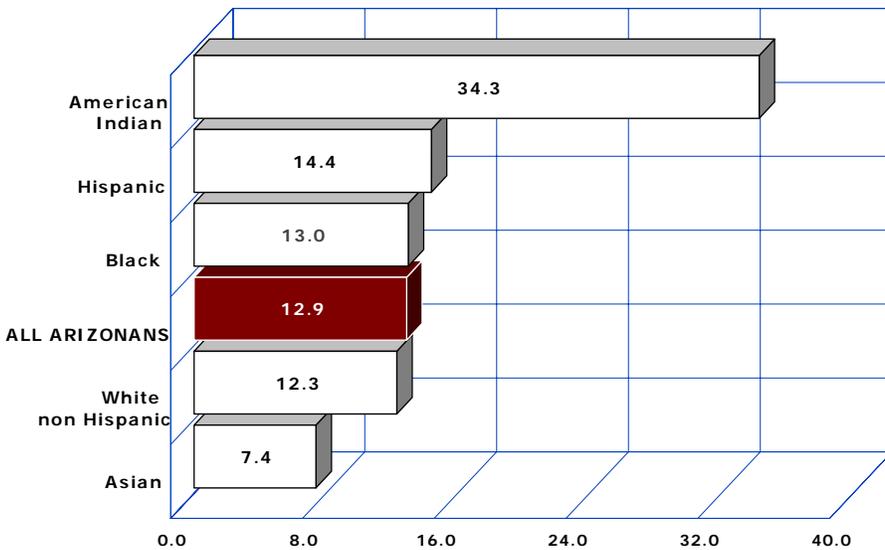
Note: The rates for 1997-1999 are based on the number of deaths according to ICD-9. The rates for 2000 and beyond are based on the number of deaths according to ICD-10. For comparability, the rates for 1997-1999 were adjusted using the preliminary comparability ratio of 0.6982 from NCHS. Comparability 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 number of deaths from influenza and pneumonia declined by 23.7 percent from 1,147 in 2006 to 875 in 2007 (Table 2B-1). In 2007, influenza and pneumonia were ranked the 9th leading cause of death in Arizona. Among the 875 deaths, influenza was identified as the underlying cause for 8 of them, while pneumonia was listed as the underlying cause on 867 death certificates (Table 2B-6).

The mortality rate for influenza and pneumonia decreased for females from 15.7 deaths per 100,000 in 2006 to 11.5 deaths in 2007 (Figure 2B-20, Table 2B-2). The mortality rate for influenza and pneumonia also decreased for males from 22.2 deaths per 100,000 in 2006 to 14.9/100,000 in 2006.

In 2007, Arizona males were 29.6 percent more likely to die from influenza and pneumonia than females.

Figure 2B-21
Age-Adjusted Mortality Rates for Influenza and Pneumonia by
Race/Ethnicity, Arizona, 1997-2007



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

In 2007, American Indian residents of Arizona had the highest mortality rate for influenza and pneumonia (34.3 deaths per 100,000) among the race/ethnic groups. The age-adjusted mortality of 7.4/100,000 among Asians was the lowest rate among race/ethnic groups in the State (Figure 2B-21, Table 2B-4).

Compared to the State death rate for influenza and pneumonia, Greenlee County's rate was 2.5 times greater (32.5/100,000), and Apache County's 2.2 times greater (28.4/100,000; Table 5E-11).

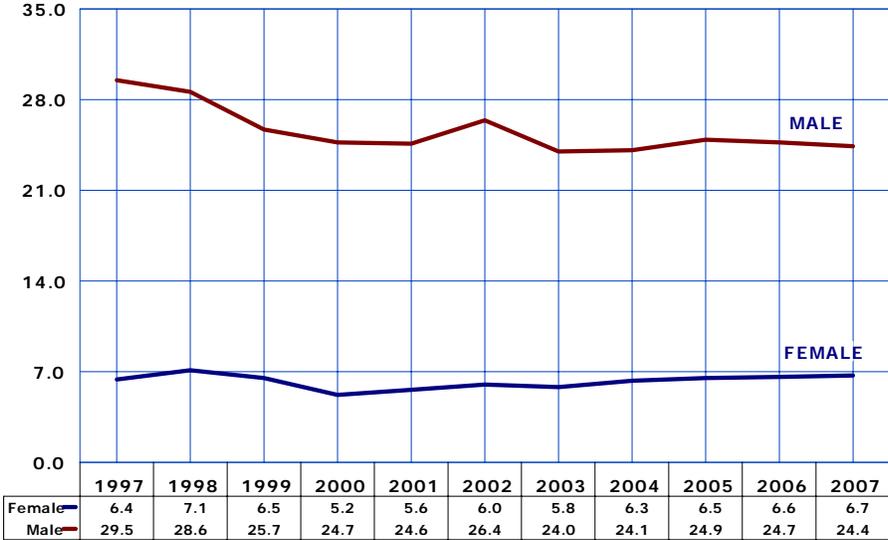
2B. LEADING CAUSES OF DEATH
Suicide

Figure 2B-22
Age-Adjusted Mortality Rates for Suicide by Gender and Year,
Arizona, 1997-2007

In 2007, suicide was the 6th leading cause of death among males. It was not ranked among the top ten causes of mortality for females. The age-adjusted suicide rate was unchanged since 2005 at 15.4 suicides per 100,000 residents of the State (Table 2B-3).

However, the suicide rate increased for the fourth consecutive year for females from 5.8 suicides per 100,000 in 2003 to 6.7 in 2007 (Figure 2B-22, Table 2B-3). In contrast, the male mortality risk for suicide slightly decreased by from the 2005 rate of 24.9 suicides per 100,000 males to 24.7/100,000 in 2006, and 24.4/100,000 in 2007.

In 2007, suicide posed a 3.6 times greater mortality risk for males (24.4/100,000) than females (6.7/100,000).



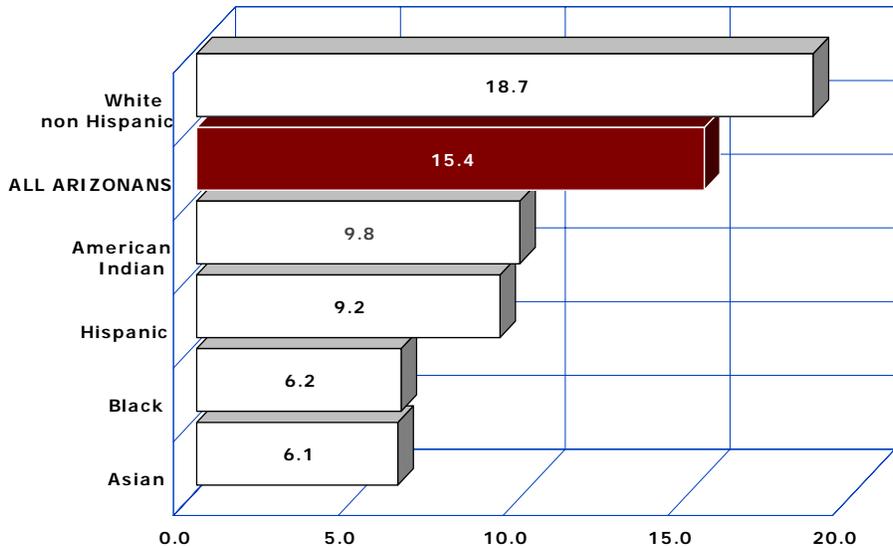
Number of deaths per 100,000 population age-adjusted to the 2000 U.S. standard.

Figure 2B-23
Age-Adjusted Mortality Rates for Suicide by Race/Ethnicity,
Arizona, 2007

Suicide rates in 2006 were substantially higher among White non-Hispanics (18.7 suicides per 100,000), than they were among American Indians (9.8/100,000), Hispanics (9.2/100,000), Blacks or African Americans (6.2/100,000), and Asians (6.1/100,000; Figure 2B-23, Table 2B-4).

American Indian residents of Arizona experienced an unprecedented decline in their suicide rate from 17.5 suicide per 100,000 in 2005 to 13.7/100,000 in 2006, and 9.8/100,000 in 2007 (Table 2B-3). The number of suicides among American Indians decreased by 37.5 percent from 56 in 2005 to 35 in 2007.

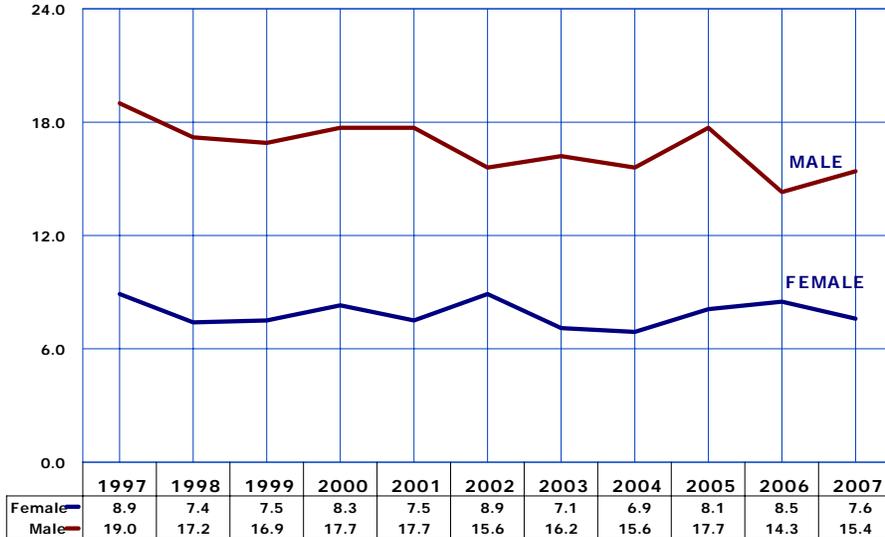
The age-adjusted mortality rates varied in Arizona in 2007 from 4.1 suicides per 100,000 residents of Santa Cruz to 28 suicides per 100,000 residents of Yavapai County (Table 5E-11).



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

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

Figure 2B-24
Age-Adjusted Mortality Rates for Chronic Liver Disease and Cirrhosis
by Gender and Year, Arizona, 1997-2007



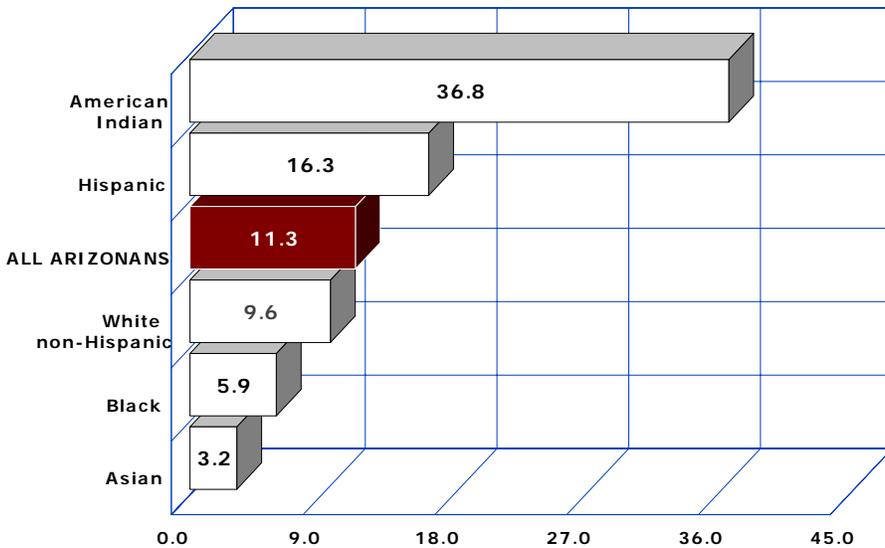
Chronic liver disease and cirrhosis was the 10th leading cause of death in Arizona in 2007 (**Figure 2B-1, Table 2B-1**). Among the 734 deaths due to chronic liver disease and cirrhosis, 481 (65.5 percent) were males (**Table 2B-4**).

The temporal changes from 2006 to 2007 in mortality from chronic liver disease and cirrhosis differed by gender, decreasing by 10.6 percent for females and increasing by 7.7 percent for males (**Figure 2B-24, Table 2B-3**).

In 2007, Apache and Navajo counties had the highest mortality rates for chronic liver disease and cirrhosis (**Table 5E-11**)

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

Figure 2B-25
Age-Adjusted Mortality Rates for Chronic Liver Disease and Cirrhosis
by Race/Ethnicity, Arizona, 2007



The 2007 death rate for chronic liver disease and cirrhosis among American Indians (36.8 deaths per 100,000) was 11.5 times greater than the rate among Asians (3.2/100,000) (**Figure 2B-25, Table 2B-4**). The rate for Hispanics (16.3 deaths per 100,000 population) was the second highest among racial/ethnic groups in the State.

Compared to the median age at death from all causes (76 years), those who died from chronic liver disease and cirrhosis were 19 years younger (57 years, **Table 2D-3**).

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