## 2A.

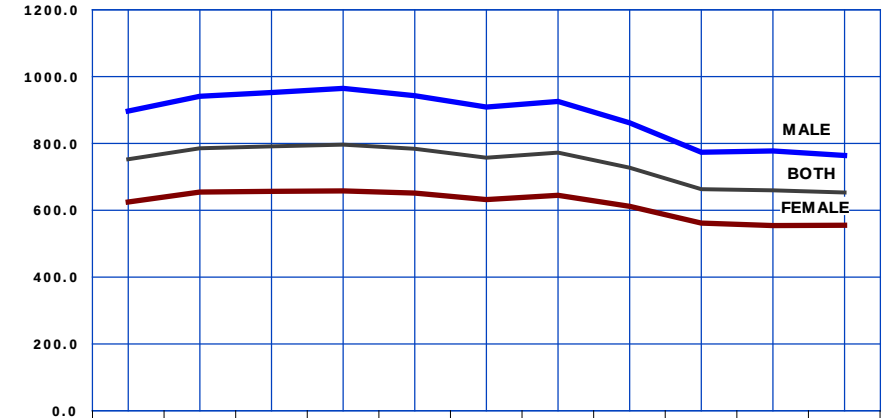
## TOTAL MORTALITY

The number of deaths among Arizona residents decreased slightly from 45,128 in 2008 to 45,065 in 2009 (**Table 2A-1**). The number of deaths occurring in Arizona (including the deaths of out-of-State residents) also slightly decreased from 46,515 in 2008 to 46,429 in 2009(**Table 5E-2**).

Only one population subgroup (based on race/ethnicity) did not experience an increase in mortality. The number of deaths among White non-Hispanic actually decreased from 2008 to 2009. However, based on age and race/ethnicity, the number of deaths among Hispanic or Latinos aged 15-34 years (the age and ethnic group most likely to be illegally in Arizona) declined by 29.3 percent. In fact, Hispanics or Latinos accounted for 9 out of every 10 fewer deaths of Arizonans 15-34 years old in 2009 compared to 2007. We do not think that there was a miraculous improvement in the survival chances among Hispanics or Latinos aged 15-34 years. Rather, there were fewer deaths because the number of illegal Hispanic residents of the State was lower in 2009 than it was in 2007. In contrast, the number of deaths increased among White non-Hispanics, Blacks or African Americans, American Indians or Alaska Native, and Asians or Pacific Islanders. The number of deaths decreased by 22.0 percent among infants less than 1 year of age (obviously associated with an unprecedented decrease in the number of live births). Other age groups, including preschoolers 1-4 years old, and Arizonans aged 35 -74 years or older experienced an increase in mortality between 2008 and 2009.

There were fewer deaths in 2009 for some of the leading causes of mortality including diseases of heart, accidents (unintentional injuries), chronic obstructive pulmonary diseases, stroke, diabetes, influenza and pneumonia, and homicide. The causes with the largest increases were suicide (9.5 percent), kidney disease (9.0 percent), and chronic liver disease and cirrhosis (5.1 percent).

**Figure 2A-1**
**Age-adjusted Mortality Rates for all Causes by Gender and Year, Arizona, 1999-2009**




| | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Female | 624.8 | 654.6 | 656.7 | 658.0 | 651.5 | 632.0 | 644.9 | 611.8 | 561.7 | 554.3 | 555.1 |
| Both | 752.8 | 785.6 | 791.2 | 796.4 | 784.0 | 757.3 | 772.5 | 727.3 | 663.2 | 659.6 | 653.2 |
| Male | 896.9 | 941.1 | 952.4 | 964.8 | 942.8 | 909.0 | 925.7 | 861.6 | 773.8 | 777.6 | 763.9 |

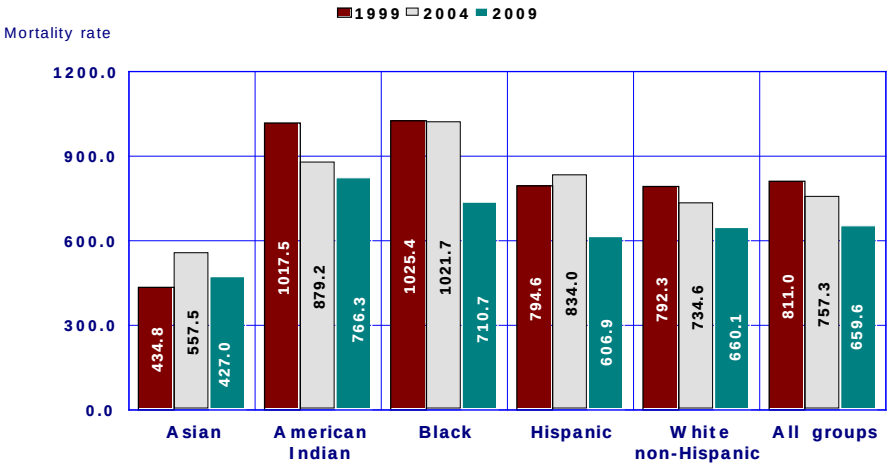
Number of deaths per 100,000 persons (adjusted to the 2000 standard U.S. population).

Beginning with the 2000 data year in Arizona, the age-adjusted mortality rates discussed below are based on the year 2000 population standard. The rates for 1999 were re-calculated using the new standard. All mortality rates in sections 2A and 2B are age-adjusted. A detailed explanation of the age-adjustment of mortality rates is given in *Technical Notes*.

The total age-adjusted mortality rate decreased for the 4th consecutive year from 772.5 in 2005 to 653.2 in 2009 (**Figure 2A-1, Table 2B-2**). The death rate for females in 2009 was 555.1, 0.1 percent higher than in 2008. For males, the age-adjusted mortality rate decreased by 1.8 percent from 777.6 in 2008 to 763.9 in 2009.

The percent difference between male and female mortality rates narrowed from 44 percent greater mortality rate in 1999 to 27 percent greater in 2009. However, the parallel trend lines (**Figure 2A-1**) do not seem to suggest that the full convergence in mortality risk between males and females is likely to happen anytime soon.

**Figure 2A-2**
**Age-adjusted Mortality Rates* for all Causes by Race/Ethnicity and Year, Arizona Residents, 1999, 2004 and 2009**




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

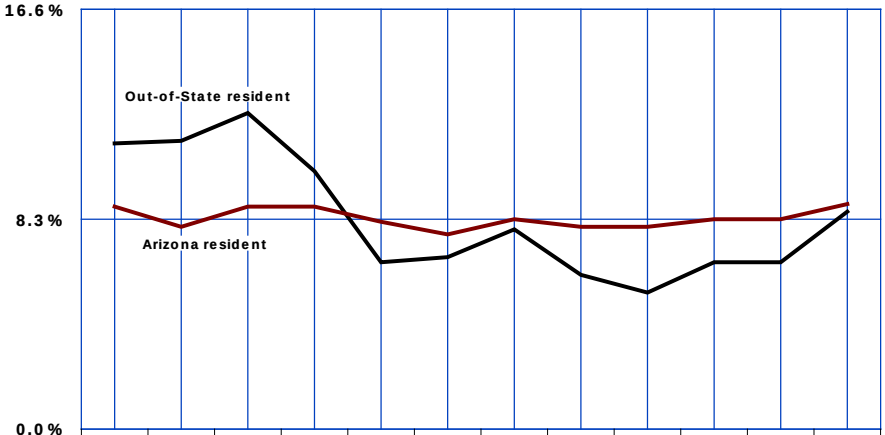
The 2009 age-adjusted death rates for the major race/ethnic groups were as follows: for Asian or Pacific Islander, 427.0 deaths per 100,000 population; Hispanic or Latino, 606.9; White non-Hispanic, 660.1; Black or African American, 710.7 and American Indian or Alaska Native, 766.3 (Figure 2A-2, Table 2B-4).

In 2009, as in 2004 and in 1999, Blacks and American Indians had higher total mortality rates than White non-Hispanics, Hispanics and Asians. In contrast, the total mortality rates for Asians were lower than the rates of White non-Hispanics in 1999, 2004 and 2009.

If there was no monthly variation in proportional contribution to the annual deaths total, 8.3 percent (100/12) of deaths should occur monthly. However, when the monthly distribution of resident deaths is examined, four months, December (8.9 percent of annual deaths), January, March, and April (8.8 percent each) deviated in 2009 from the expected value by no less than 6 percent (**Figure 2A-3**). June was the month with the lowest proportional contribution (7.7 percent) to the annual death total among Arizona residents.

The majority of the 2,094 non-residents who died in Arizona during 2009 did so during January, February, March, and April. September was the month with the lowest proportional contribution (5.4 percent) to the annual death total among out-of-State residents who died in Arizona

**Figure 2A-3**
**Percent Annual Deaths by Month of Occurrence and Residence Status, Arizona, 2009**

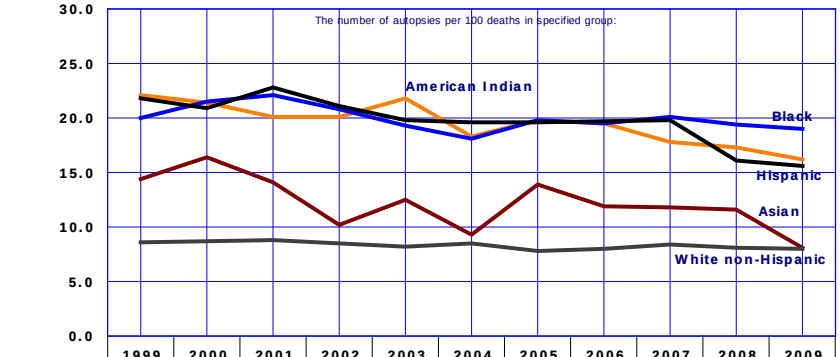



| | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| AZR | 8.8% | 8.0% | 8.8% | 8.8% | 8.2% | 7.7% | 8.3% | 8.0% | 8.0% | 8.3% | 8.3% | 8.9% |
| OSR | 11.3% | 11.4% | 12.5% | 10.2% | 6.6% | 6.8% | 7.9% | 6.1% | 5.4% | 6.6% | 6.6% | 8.6% |

Autopsies were reported as performed on 4,358 decedents, or 9.7 percent of the deaths that occurred among Arizona residents in 2009. In 1999 – 2009, the percentage of deaths for which autopsies were reported varied from a high of 10.9 percent in 1999 to a low of 9.7 percent in 2008.

The percentage autopsied varies by the decedent's demographic characteristics. By race/ethnicity (**Figure 2A-4**) the percentage autopsied was lower for the White non-Hispanic population than for other groups. The prevalence of autopsies was substantially greater among Hispanic or Latino, American Indians and Black or African Americans. A substantial portion of the differential in the use of autopsy by race/ethnicity reflects differences in the age and manner of death. For example, autopsies tend to be more common at younger ages and for homicide, suicide, accidents, and undetermined manner.

**Figure 2A-4**
**Percentage of Deaths for which Autopsies were Reported by Race/Ethnicity and Year, Arizona Residents, 1999-2009**




| | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Asian | 14.4 | 16.4 | 14.1 | 10.2 | 12.5 | 9.3 | 13.9 | 11.9 | 11.8 | 11.6 | 8.1 |
| American Indian | 22.1 | 21.4 | 20.1 | 20.1 | 21.8 | 18.3 | 19.8 | 19.5 | 17.8 | 17.3 | 16.2 |
| Black | 20.0 | 21.5 | 22.1 | 20.8 | 19.3 | 18.1 | 19.8 | 19.5 | 20.1 | 19.4 | 19.0 |
| Hispanic | 21.8 | 20.9 | 22.8 | 21.1 | 19.8 | 19.6 | 19.6 | 19.7 | 19.8 | 16.1 | 15.6 |
| White non-Hispanic | 8.6 | 8.7 | 8.8 | 8.5 | 8.2 | 8.5 | 7.8 | 8.0 | 8.4 | 8.1 | 8.0 |