# Report on Aging in Arizona

Arizona Department of Health Services - 2010


# Aging in Arizona – 2010

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# Aging in Arizona – 2010

## *Executive summary*

IN THE NEXT TWO DECADES, Arizona will experience a rapid aging of its population. It is among the states with the fastest growth in the aging population within the nation. Accompanying this change there will be increases in chronic illnesses, disability, as well as health care and long term care costs.

Because of improved medical care, increased use of preventive health services, public health efforts, and healthier lifestyles, the majority of Americans now live to at least 65 years of age. Longer life spans are generally considered desirable particularly when healthy years of life are increased. But with an aging population and longer life expectancy come an increasing prevalence of chronic diseases associated with aging including hypertension, diabetes, arthritis and Alzheimer's disease.

As the baby boomers continue to age and Arizona's population grows larger and more diverse there is an ongoing need to monitor and focus efforts to improve the health and wellbeing of residents. This report examines the demographic characteristics, quality of life, chronic diseases trends and health behaviors of the aging population. It also provides a brief summary of health care utilization in the 65+ population.

Within the aging population there have been improvements in health status and quality of life for many individuals. These are due in part to increasing efforts to promote "healthy aging", which can help many individuals avoid or delay onset or disability due to chronic diseases as they age and even help those who are ill or disabled to handle their conditions.

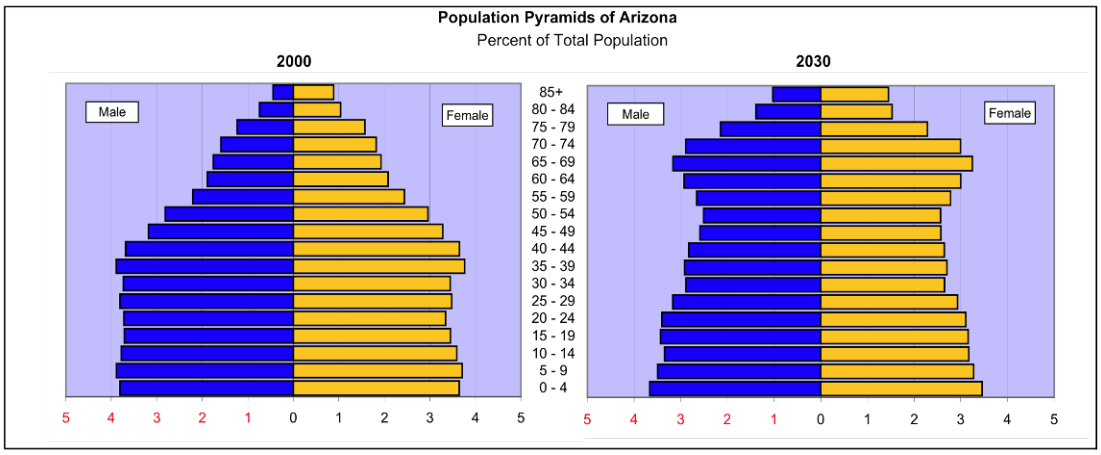
Arizona is moving forward with a range of public health initiatives to promote the ability of older adults to remain active, healthy and living independently in their communities. Evidence based programs are a critical element in these public health activities. This report includes a summary of these projects. It concludes with recommendations for continued efforts to improve the quality of life for older adults in Arizona and control health care expenditures.

# Characteristics of Arizona's Older Adult Population

## *Arizona is among the top five states nationally for the pace of aging.*

Today there are more than 825,000 adults in Arizona who are age sixty-five and older. This is thirteen percent of the state's population. Approximately 45% are men and 55% are women. The population will be increasing rapidly within the next few years. In 2030, it is estimated that 22% of the population will be 65+ according to projections from the United States Census Bureau. (See Figure 1). A quarter of all households in Arizona include a resident who is 65+.

*Figure1: Age composition change in Arizona population between 2000 and 2030*




Source: U.S. Census Bureau, U.S. Population Projections
www.census.gov/population/www/projections/statepyramid.html

Approximately one in four Arizonans is a baby boomer (born between 1946 and 1964). The oldest boomers will turn 65 in 2011 and will be 70 years old in 2016. This shift in the population is of special significance because the next group of age 65+ adults, namely the members of the baby boom generation, is more numerous than any previous age group moving into their older adult years. In addition the number of older adults will increase because of advances in medicine and medical technology as well as social and environmental factors.

The mild weather and other regional assets have made Arizona a magnet for in-migration. Arizona was the second fastest growing state in the nation during the past decade. A significant amount of this growth was in the age 65+ population, with those over age 85 increasing faster than any other age group.

## *The frequency and impact of chronic diseases is increasing as the population ages.*

As the population of Arizona ages, more people will be living with chronic diseases, such as diabetes, cardiovascular disease and arthritis. These chronic conditions are involved in the majority of encounters with the health care system in Arizona and the U.S. – and they are growing. Based on disease trends, population projections and health care inflation forecasts, the Arizona economy will be faced with $99 billion in chronic disease costs by 2023, when the state has 8.5 million people. However, over one quarter of these costs – $25.7 billion – could conceivably be avoided through lifestyle changes, better disease management, greater use of screening devices and education. (Source: Arizona Health Futures, St. Luke's Health Initiatives, 2009)

The U.S government estimates that the health-care sector consumed a record 17.3% of all spending in the U.S. economy in 2009. It grew faster than any year within the past half century. The cost of providing health care for an older adult is three to five times greater than the cost for someone younger than age 65. By 2030, the nation's health care spending is projected to increase to 25%. This escalating cost estimate is partially due to demographic changes as well as other factors such as increasing chronic conditions that accompany aging. Arizona will be challenged to contain costs and improve the quality of life of older adults.

## *Older adults are unevenly distributed throughout Arizona.*

Arizonans reside primarily in the urban areas of Maricopa and Pima counties. Therefore, 80% of the growth in the older population between 2000 and 2030 is expected to occur in these regions. However, in rural counties a greater proportion of the population is older residents. Also, there are substantial differences between counties in Arizona in terms of the median age of residents. The state wide median age is 35 years of age but 4 out of 12 counties have median ages above 42 years. (See Appendix A for details by county).

## *Arizona's older adult population is becoming increasingly diverse.*

As the population ages, there will be increased diversity among older Arizonans (Figure 2). In particular, a larger proportion will be Hispanic (Table 1). The state ranks 2nd nationally in the total number of American Indians, and 6th in the total number of Hispanics. Currently nearly 30% of the entire state population is classified as Hispanic or Latino. American Indians comprise 5.3% of the state population. From 1970 to 2007, the minority population in Arizona increased by 141.9%, in contrast, the White

non-Hispanic population increased by 48.5% according to the ADHS report on Differences in Health Status. County specific data on the percent of individuals who report that they are American Indians or that they speak Spanish at home are included in Appendix B.

The majority of older Arizonans are White (83%). Minorities comprise 17% of the population (see Table 1). However, the greatest burden of chronic diseases and conditions occur within the minority populations.

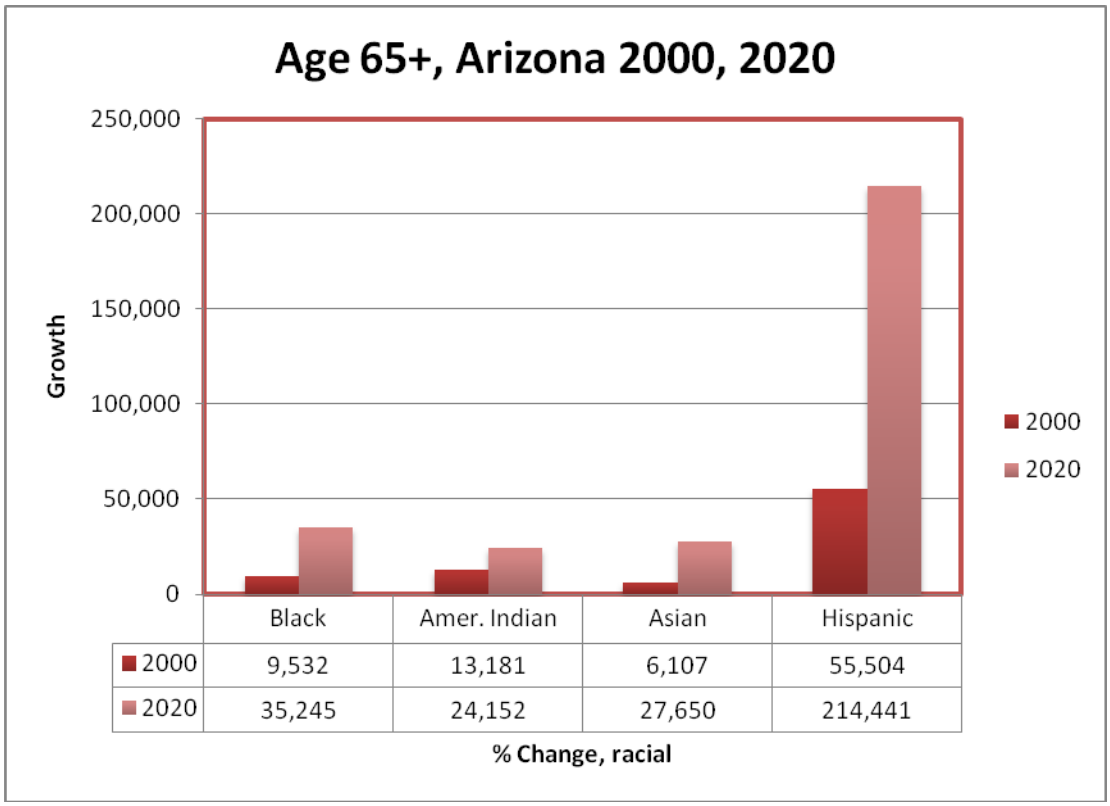
*Table 1: Percent of Persons 65+ by Race and Hispanic Origin Arizona and the U.S.*

| | Arizona | Total U.S. |
|---|---|---|
| Total 65+ | 100% | 100% |
| White (Alone - Non-Hispanic) | 82.90% | 80.40% |
| Black/African American (Non-Hispanic) | 1.90% | 8.30% |
| American Indian (Non - Hispanic) | 2.30% | 0.50% |
| Asian or Pacific Islander (Non-Hispanic) | 1.60% | 3.40% |
| Two or more races (Non-Hispanic) | 0.50% | 0.60% |
| Hispanic/Latino (may be of any race) | 10.90% | 6.80% |
| Total % of minority persons 65+ | 17.00% | 19.60% |

Source: 2008 Data from U.S. Office Administration on Aging
On line at: www.aoa.gov/AoARoot/Aging_Statistics/profile/2008/docs/2008profile.doc

More than half of the state's K-12 population identify themselves as members of minority groups (Hispanic, American Indian, African American, Asian). This is also true of 40% of the entire population. Minority populations are increasing much more rapidly than the White non-Hispanic population. In the future, Arizona will have more residents who are members of one of the "minority" groups than those who are White, non-Hispanic (See Figure 2). The growing diversity of Arizona's population is an important characteristic that underscores the strengths and unique contexts for providing culturally appropriate services and interventions that promote the health and well being of the residents.

*Figure 2: Growth in minority populations*




Source: U.S. Census Bureau Population Projections for States by Selected Age Groups and Sex: 1995 to 2025
On line at: www.factfinder.census.gov

## *Life expectancy is increasing.*

Because of improved medical care, increased use of preventive health services, public health efforts, and healthier lifestyles, the majority of Americans now live to at least 65 years of age. In general, people who live to age 65 can expect to live an average of nearly 18 more years. However, women who reach age 65 can expect to live an additional 19 years whereas men who reach age 65 can expect to live an additional 16 years. The gap between men and women has been decreasing over time.

## *Many of Arizona's older adults are poor.*

Poverty is a strong indicator of poor health outcomes. Arizona ranked 39th among the 50 states in per capita income. Overall, the poverty rate for women is higher than the rate for men. Members of minority groups also are more likely to be poor and 43% of the 65+ population would be below the

poverty line if they did not receive Social Security. More than one quarter of older Arizonans rely on Social Security as their only source of income (US Census Bureau American Community Survey: 2006). In the state, 9% of the 65+ population live in poverty. However, there are major differences in the poverty levels between counties (See Appendix A for county specific estimates).

Low health literacy is another recognized health impediment. Health literacy is the ability to read, understand and act on health information. More than 66% of U.S. adults age 60 and over have either inadequate or marginal literacy skills according to the Partnership for Clear Health Communication. A disproportionate number of minorities are estimated to have literacy problems. Individuals with low health literacy and chronic diseases, such as diabetes, asthma, or hypertension, have less knowledge of their disease and its treatment and fewer effective self-management skills than those who are more literate.

## *Data resources provide tools to plan for, implement and monitor health promotion and disease prevention activities.*

This report provides a snapshot of older adults' health. While the primary focus is on the population 65+, the next younger group, those 55+ are also considered. They will be the first wave of the larger "boomer" generation that will become part of the 65+ population within the next few years. Three primary sources of data are used to describe the populations:

> **BRFSS** (Behavioral Risk Factor Surveillance System). The BRFSS is random digit dial telephone survey of adults age 18 and older, conducted in all states as a joint collaboration between the CDC and state health departments. BRFSS collects data on a variety of health-related characteristics, risk factors, and behaviors. The BRFSS is administered to a sample of the civilian, non-institutionalized population. The Arizona sample size in 2008 was 6,165 individuals. It is useful to keep in mind that all of the findings are from self-reports and important to note that these data are from the civilian, non-institutionalized population. Nursing home residents, VA patients and incarcerated individuals among others are excluded. In addition, people without phones are missed in the survey.
>
> The BRFSS indicators in this survey reflect the progress and point out inequalities that continue to exist in Arizona between the sexes, income levels, and racial and ethnic groups. As the baby boomers continue to age and Arizona's population grows larger and more diverse there is an ongoing need to monitor and focus efforts to improve the health and wellbeing of all older residents.

**AHS** (The Arizona Health Survey) is a random digit dial telephone survey of adults 18 years of age and older. It is one of the most extensive health surveys ever undertaken in the state. Initially conducted in 2008, it was completed with the participation of over 4,000 Arizona households and includes more than 100 interrelated facets of health. The AHS is aimed at deepening the understanding of health and well-being in Arizona. The Survey collects data on individual indicators of health status, insurance coverage, access to care, behavioral health, health-related behaviors and various demographic and social/environmental factors related to health.

The Arizona Health Survey takes a comprehensive approach that considers the impact of social and environmental factors, community resources, health status, health-related behaviors, attitudes and outcomes, plus health insurance and related health content. It is a new resource for developing a health surveillance system capable of providing standardized state and local health data that can be used to identify and target intervention activities, plan resource allocation and inform complex policy issues. Funding for the 2008 Arizona Health Survey was provided by a number of Arizona foundations, including the St. Luke's Health Initiative.

**Arizona Health Status and Vital Statistics** reports are provided by the Arizona Department of Health Services, Bureau of Public Health Statistics. This major resource includes data on mortality, hospital discharges and emergency room visits. It is useful to note that out patient care data are not available. Also, some population data are not included. Reports on individuals hospitalized through the VA and the Indian Health Service are missing.

# Health Status and Quality of life

## *Mortality*

Chronic diseases now account for seven out of ten leading causes of death in Arizona. The five leading causes among adults 65 or older in Arizona for 2008 were diseases of the heart, malignant neoplasms, cerebrovascular diseases, chronic lower respiratory diseases and Alzheimer's disease. In the past decade, Alzheimer's disease replaced influenza and pneumonia as one of the five leading causes of deaths. Also, during this period there was a substantial increase in the rates of fall related deaths for both men and women.

Among the population 65 and older, the all cause mortality rates for American Indians, Hispanics and Blacks were lower than the rates for Non-Hispanic Whites. This is because there were more premature deaths in these minority populations. The median age at death for White non-Hispanics was 78 years, for Blacks it was 62, for Hispanics it was 68 and for American Indians it was 59. Of particular note, on average American Indian residents were 19 years younger at time of death when compared to the average age of death among all racial and ethnic groups. In 2007, the absolute majority of deaths of American Indians, Black, and Hispanic residents of Arizona occurred before the age of 65. In contrast, less than a quarter of White non-Hispanics died before the age of 65.

Historic inequities have created multiple disparities, putting many members of minority groups at a health care, educational and financial disadvantage. As Arizona grows and ages, health care costs could contribute to the widened gap between Arizona's "haves" and "have nots."

## *Health Status*

Self-assessed health status has proved a more powerful predictor of mortality and morbidity than many objective measures of health. In 2008 the percentage of Arizonans who assessed their health status as poor was very similar to the median for all states (Idler, 1997).

According to the 2008 BRFSS, 21% of Arizonans age 55-64 reported that their health was fair or poor, while 25% of residents 65+ reported their health status as fair or poor. Those in the 55-64 and 65+ age groups reported fair or poor health more frequently than the younger populations. Fair or poor health was associated with less income, less education and minority race/ethnicity. The lower the income and lower the education obtained the higher the percentage reporting poor health. Native American and Hispanic

respondents were much more likely to report poor health. Boomers, born between 1946 and 1964, are the next generation of older adults. It is useful to note that the health status measures of that large population will have a very substantial impact on the quality of life, health care needs and health care expenditures within the next few years.

## *Quality of life*

**Physical health:** The 2008 BRFSS asked, "How many days during the past month was your physical health not good?" The percent of individuals reporting at least 8 days per month of not good physical health increased with age. For those aged 55-64, 17% reported that their physical health was not good. While 18% of Arizonans age 65+ reported that their physical health was not good.

**Mental health:** The 2008 BRFSS asked, "How many days per month was your mental health not good?" While 13% of those aged 55-64 reported more than a week per month of "not good" mental health, 8% of those age 65+ reported "not good" mental health more than 8 days per month.

When asked about social support and life satisfaction, 10% of the 65+ population reported that they rarely or never received the social support that they needed. This was nearly twice the rate for those 55-64. Those with the least education and income were the most likely to report that they were isolated. In 2008, approximately 25% of those 65+ lived alone, an estimated, 200,000 individuals.

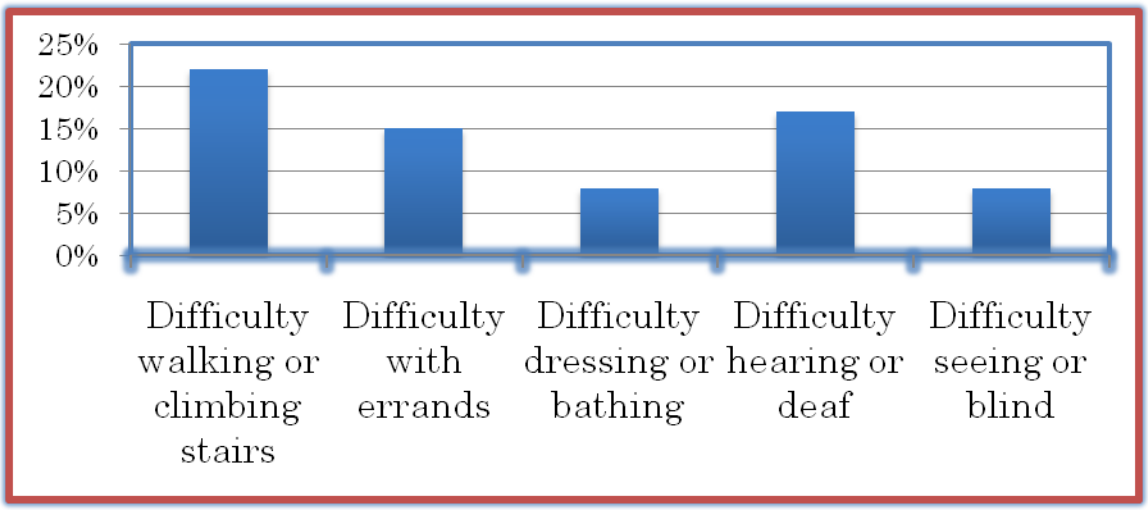
**Limitation of activity** also increases with age. In response to the 2008 BRFSS question, "Are you limited in any way in any activities because of physical, mental, or emotional problems?" among those 55-64, 33% reported that their activities were limited, 35% of those 65+ reported activity limitation. In addition to age, frequency increased with lower income.

**Need for the use of special equipment** such as a cane, wheelchair or special bed also dramatically increased with age according to data from the 2008 BRFSS. The rate of use of special equipment nearly doubled between the ages of 45-54 and ages 55-64 from 6% to 13%. Of those 65+, 22% reported the need for special equipment.

**Disability:** In 2008 the overall prevalence rate of disabilities among residents ages 65 + was 36%, approximately 309,000 individuals. In contrast, adults ages 18-64 had a disability rate of 11%. Within the 65+ population the most frequently reported disability was difficulty walking or climbing stairs, 22%. Nearly 15% reported difficulty with doing errands alone such as visiting a doctor's office or shopping. Difficulty dressing or bathing was reported by 8%.

Seventeen percent reported that they were deaf or had serious difficulty hearing, while 8% reported were blind or had serious difficulty seeing even with glasses. Nine percent reported that they had serious difficulty concentrating, remembering, or making decisions.

*Figure 3: Disability in 65+ population*




Source: 2008 American Community Survey, U.S. Census Bureau

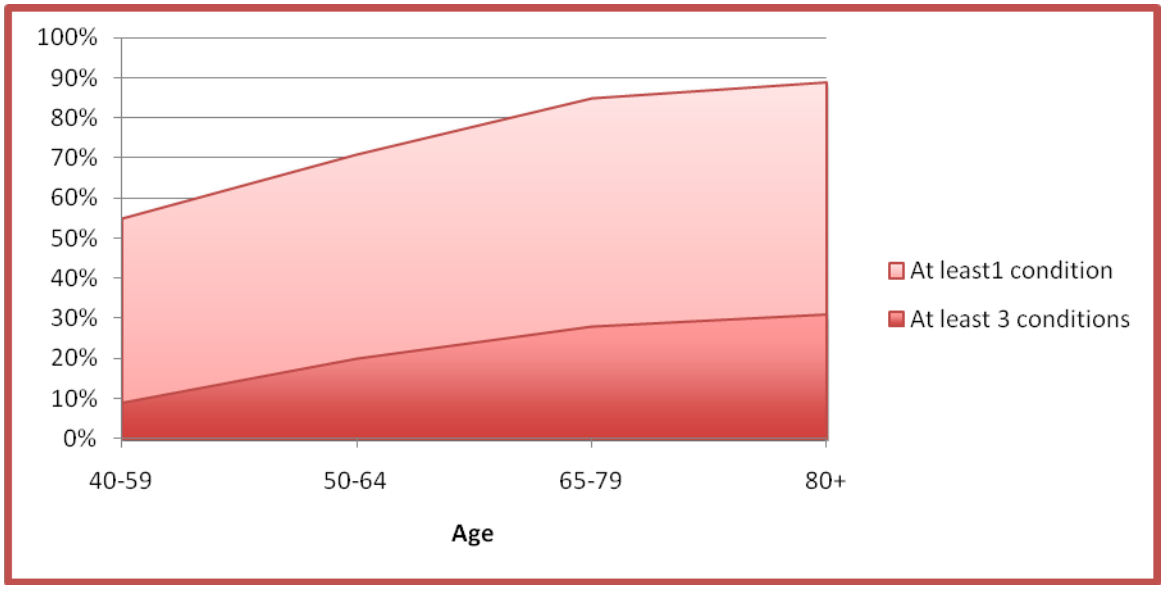
## *Poor health is not an inevitable consequence of aging.*

**Chronic conditions:** The risk of disease, disability and death clearly increases with age. However, adopting healthier behaviors – regular physical activity, a healthy diet and a smoke-free lifestyle – and getting regular screenings (mammograms and colonoscopies, for example) can dramatically reduce a person's risk for many chronic diseases, related disability and premature death.

The Arizona Health Survey (AHS 2008) provides a clear picture of the pattern of chronic conditions increasing with age (Figure 4).

- Over half of people in their forties reported having been diagnosed with at least one chronic condition, and 9% report three or more conditions
- Among Arizona adults between age 50 and 64, the prevalence of at least one chronic disease increased to 71%, and the percentage of adults with three or more conditions was 20%
- Eighty five percent of those ages 65-79 age group had at least one chronic disease, and 28% had been diagnosed with three or more
- Nine out of ten of Arizonans over the age of 80 have reported at least one chronic condition, and nearly one third have three or more conditions.

*Figure 4: Percent of Arizona Adults with Chronic Conditions*




Source: Chronic Conditions Among Arizona Adults, Highlights from the AHS 2008, available on line at: www.healthworksaz.org/

Heart disease, hypertension and arthritis are examples of conditions that are relatively low in young adults, 10% or less, but rise continuously with increasing age. In contrast, diabetes prevalence rates increase steadily with age from early adulthood to middle age at which point they appear to level off. Asthma prevalence rates appear to be relatively constant, possibly declining with age. Figure 5 is based on 2008 reports from the Arizona Health Survey. Age specific prevalence rates from the 2008 BRFSS were similar.

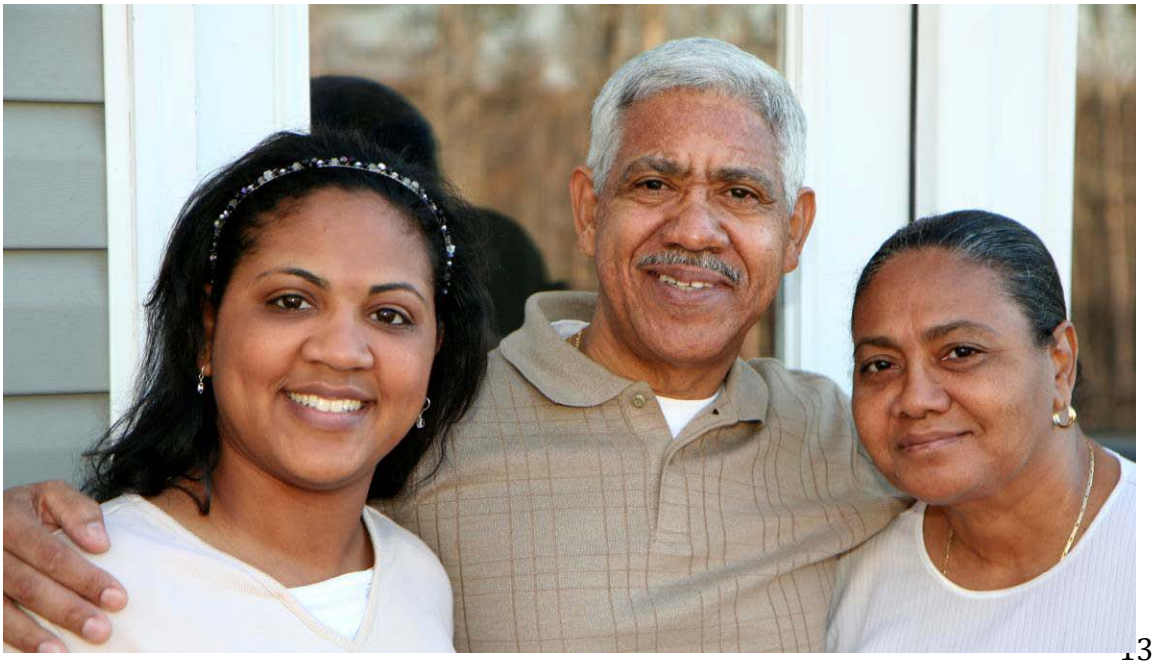
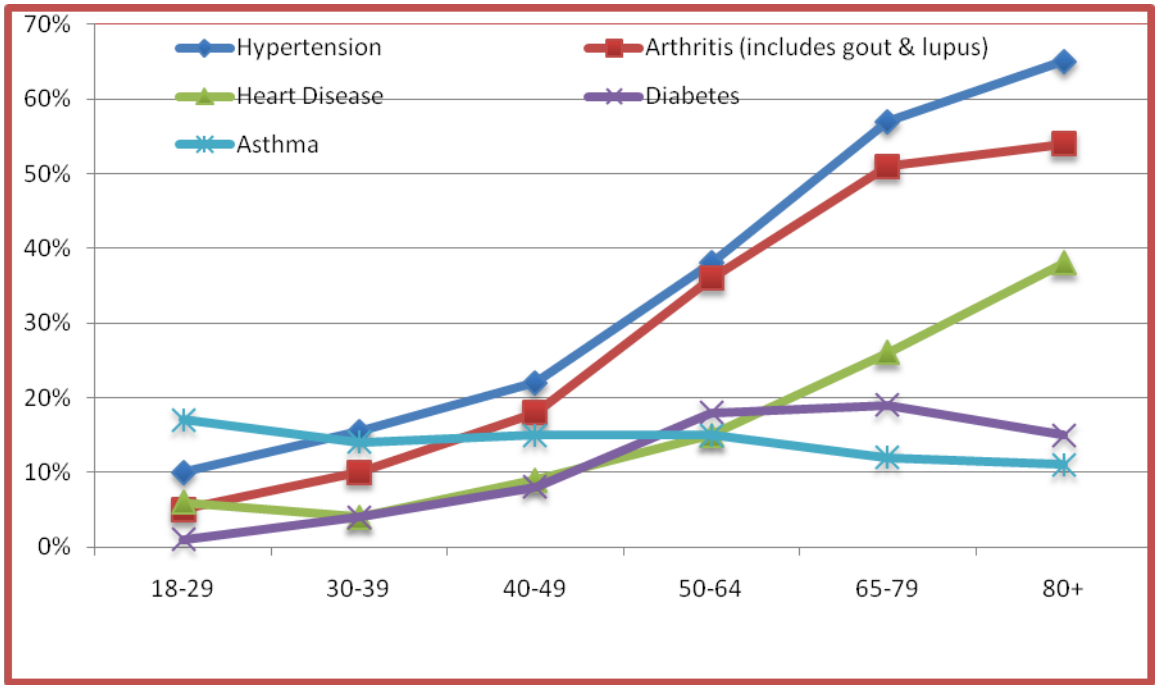


*Figure 5: Prevalence of Chronic Physical Conditions by Age, Arizona 2008*




Source: Chronic Conditions among Arizona Adults, Highlights from the AHS, 2008, Available on line at: www.healthworksaz.org/

**Asthma** is a serious and growing health problem in Arizona as well as in the U.S. Yet, people with asthma can avoid most of the problems caused by asthma if they and their health care providers managed the disease according to accepted guidelines. Nearly every year since 2002, the prevalence rate of asthma in Arizona was greater than the national rate according to BRFSS trend data. The overall Arizona rate in 2008 was 15%. Thirteen percent of people 55-64, and those 65+ reported that they had asthma. Women reported asthma substantially more often than men. The total number of asthma-related inpatient hospitalizations in Arizona doubled from 21,300 in 2000 to 43,205 in 2008. During 2008, there were 88,742 emergency room visits related to asthma. In addition, 59 Arizonans died from the disease. According to the Arizona Asthma Coalition, programs are needed to educate individuals and their health care providers on strategies to prevent or manage asthma. Also, there is an ongoing need for environmental changes to improve air quality and increase access to health care for all, especially for under-served populations.

**Heart disease** is Arizona's and the nation's leading cause of death. In 2008 heart disease accounted for slightly more than 10,000 deaths or 22.3% of all deaths in Arizona. In general cardiovascular mortality rates increase with age. However, the risk of death from heart disease is declining.

Improvements have been noted in those 55 and older. Between 1990 and 2008, the mortality rates from heart disease in those 55+ decreased more than 40%. Because people with heart diseases are living longer, the median age at death from heart disease in 2008 was 81 years. (Vital Stats data, Heart Disease VS Cancer an Epidemiologic Transition in Mortality Risks)

One symptom of heart disease is angina. According to the 2008 BRFSS, angina was reported in nearly 5% the adult population. Among those 65+ the rate was 14%. That was nearly double the rate of those 55-64. From 2005 through 2008, angina rates were consistently higher in Arizona compared to the national rates.

Reducing the prevalence rates of key risk factors could eliminate much of the burden of heart disease as well as stroke. These include, high blood pressure, high blood cholesterol, tobacco use, physical inactivity, and poor nutrition. Modest reductions in the rates of one or more of these risk factors can have a large public health impact.

**Heart Attack:** In response to the 2008 BRFSS questions, "Were you ever told you had a heart attack, also called a myocardial infarction?" the overall prevalence rates were higher in Arizona compared to the nation from 2005 to 2008. In Arizona the rates in 2008 nearly doubled between the ages of 55-64 (7%) to 65+ (13%). Men were more likely to report a heart attack compared to women and those in the lowest income categories reported higher rates of heart attacks compared to those with higher incomes.

**Stroke:** In response to the 2008 BRFSS question, "Has a Doctor or other health care professional ever told you that you had a stroke?" 3% of respondents reported having a stroke. Among those ages 55-64, 4% reported ever having a stroke. Rates for those 65+ were 7%.

Overall stroke mortality has been decreasing in the Arizona. In 2008 stroke was listed as the 6$^{th}$ leading cause of death. The median age at death for those who die of stroke differs greatly among the racial/ethnic groups. Minorities have a median age at death that is ten years younger than the white population. This is true especially among the African Americans and American Indians compared to the Whites.

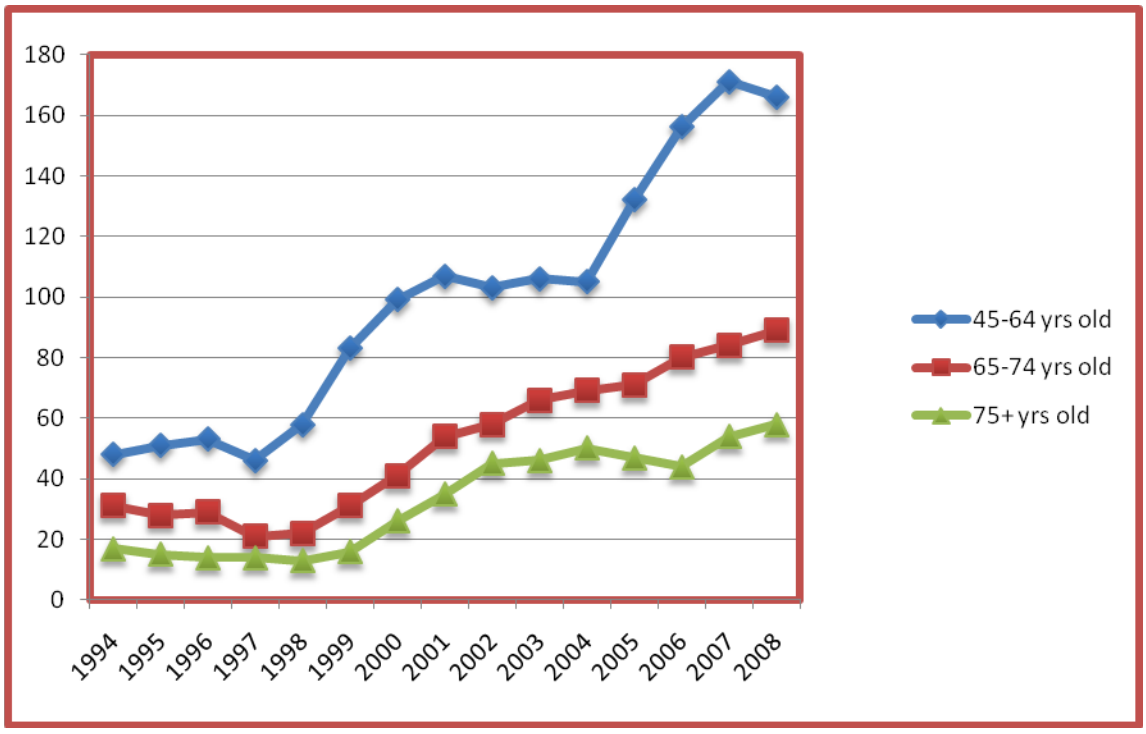
**High blood pressure:** According to the 2007 BRFSS, 54% of 65+ Arizonans reported high blood pressure, approximately 430,000 residents. While approximately 300,000 (46%) of the 55-64 age group reported high blood pressure.

**Diabetes:** Diabetes continues to be a serious health problem in Arizona and the United States. Nationally, it has been estimated that 17 million Americans have diabetes, and over 200,000 people die each year of related complications. Diabetes can cause heart disease, stroke, blindness, kidney failure, leg and foot amputations and deaths related to flu and pneumonia. Particularly at risk are the 5.9 million Americans who are unaware that they have the disease. (CDC, Division of Diabetes Translation)

According to the 2008 Arizona BRFSS, 8% of all respondents were told by a doctor they had diabetes. Based on this rate approximately 380,000 residents have diabetes. An estimated additional 127,000 are living with undiagnosed disease. As age increased, so did the likelihood of diabetes. The rate for those 55-64 was 12% and increased to 19% in those 65+. Those with the least education had higher rates (11%) (See Figure 6). In general, higher rates were reported in Hispanics than non-Hispanics. Among the racial/ethnic groups, the American Indian subgroup had the highest reported rates of diabetes, at 17%, which is 2.2 times the state prevalence rate. Women and men had nearly identical rates, nearly 8%.

According to the 2008 BRFSS, 63% of women who reported that they had diabetes reported that they had taken a course on how to manage their disease. Men were not asked the question about diabetes course participation in the BRFSS.

*Figure 6: Arizona – Adults Diagnosed with Diabetes, Number (in thousands) by age, 1994-2008*




Source: Centers for Disease Control and Prevention: National Diabetes Surveillance System. Available online at: www.cdc.gov/diabetes/statistics/index.htm

**Arthritis:** In response to the 2007 BRFSS question "Has a doctor ever told you that you have some form of arthritis?" rates doubled between the age groups 45-54 (25%) and ages 55-64 (52%). Those 65+ had a slightly higher rate (56%), approximately 450,000 people. Hispanics reported higher rates than non-Hispanic whites. Among those 65+ who reported arthritis, 31% reported that they could do none or some of the things that they would like to do rather than most or everything.

Of adults with arthritis 29% were obese and 42% reported that they were overweight. Of adults with arthritis, 33% reported fair or poor health. Thirty seven percent of adults with arthritis were told by their doctor to lose weight and 54% were advised by their doctor to exercise. Among those with arthritis, 13% reported that they had taken a course or class to manage their arthritis.

**Osteoporosis and fall related fractures:** Osteoporosis is a bone disease that leads to undue susceptibility to fractures. Approximately 30% of White postmenopausal women in the U.S. have the disorder. The prevalence of osteoporosis in White postmenopausal women is estimated to be 14% of women aged 50-59 years, 22% of women aged 60-69 years, 39% women aged 70-79 years, and 70% women aged 80 years or greater. Osteoporosis

prevalence rates are lower in those of race/ethnicity other than White. In addition, osteoporosis is less frequent in men. The clinical consequence of osteoporosis is fracture. The great majority of all fractures in older women result from falls.

According to the Centers for Diseases Control and Prevention (CDC) more than one third of adults 65 and older fall each year in the U.S. Among older adults, falls are the leading cause of injury deaths. They are also the most common cause of nonfatal injuries and hospital admissions for trauma. Fall-related injuries cause significant mortality, disability, loss of independence, and early admission to nursing homes. Half of all older adults hospitalized for hip fractures cannot return home to live independently after sustaining an injury as a result of a fall.

In 2008 there were 9,405 hospital discharges for fall injuries among 65+ Arizonans, 2,645 men and 6,760 women. For people ages 65 and older, unintentional fall-related age-adjusted mortality rates gradually increased from 59.4 per 100,000 in 2001 to 76.6 per 100,000 in 2008 according to Arizona Bureau of Health Statistics.

The 2006 BRFSS asked the questions: "In the past three months, have you had a fall?" and, "were you injured?" Overall, for those 65 years and older, 14% reported having fallen in the past three months. Of those who had a fall, 37% reported that they were injured.

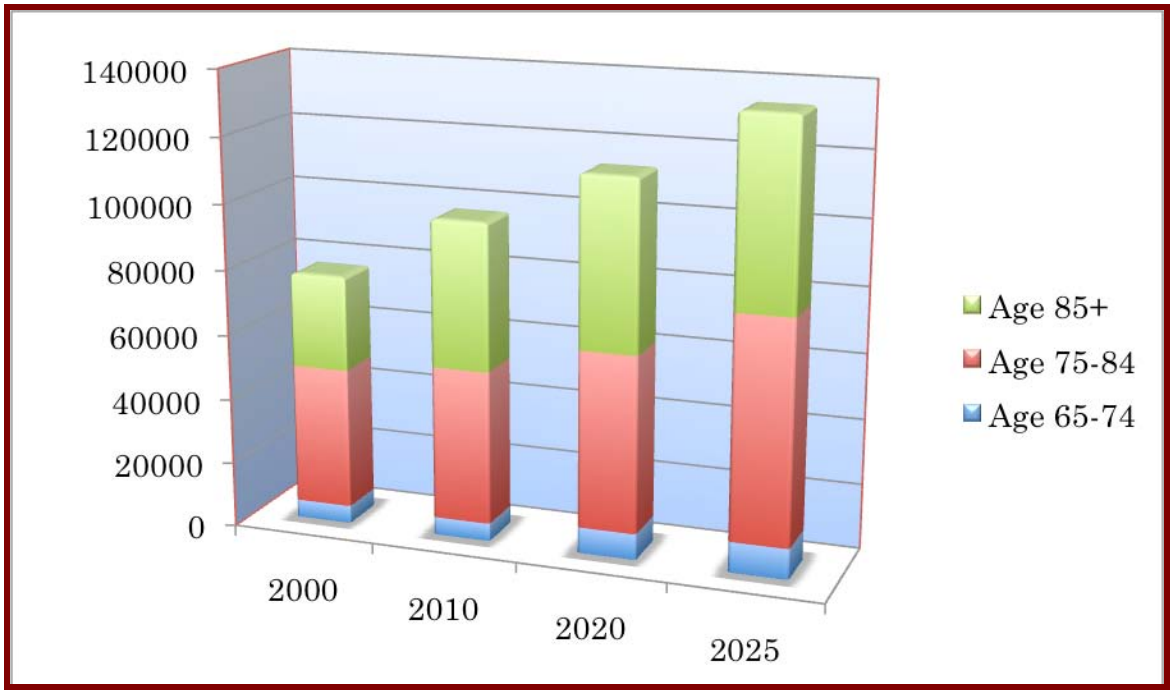
The 2007 BRFSS asked, "Have you ever been told by a doctor or other health professional that you have osteoporosis? Seventeen percent of those 65+ reported that they had osteoporosis. Older adults can take several steps to protect their independence and reduce their risk of falls. These include getting regular exercise, having their eyes checked, regularly reviewing medications with a health care provider and improving safety in the home by improving lighting and removing hazards in the home that could lead to falls.

**Alzheimer's disease:** Between 10 and 20% of individuals aged 65 and older have mild cognitive impairment (MCI). As many as 15% percent per year go on to develop dementia. According to the Alzheimer's Association approximately 13% of the population that is 65+ have Alzheimer's disease. It is not a normal part of aging, but increasing age is the greatest risk factor for the disease. According to the Alzheimer's Association, there are currently nearly 100,000 individuals with Alzheimer's disease in Arizona. That number may reach 130,000 individuals by 2025 (See Figure 6).

During the past decade mortality rates for Alzheimer's disease have been increasing in Arizona. It has become the 5$^{th}$ leading cause of death in the 65+ population. In 2008 there were 2,055 deaths. Most individuals with

Alzheimer's have other age-related coexisting conditions, including hypertension, coronary heart disease, stroke and diabetes. Alzheimer's and other dementias drive up the cost of treating each of these other conditions.

*Figure 6: Arizona - Projected increase in number of individuals with Alzheimer's Disease, 2000-2025*




Source: Alzheimer's Association

No treatment is available to slow or stop the deterioration of brain cells in Alzheimer's disease. However, a growing body of evidence suggests that the health of the brain is closely linked to the overall health of the heart and blood vessels. Some studies suggest that management of cardiovascular risk factors, such as high cholesterol, Type 2 diabetes, high blood pressure and overweight, may help avoid or delay cognitive decline. Additional evidence points to a significant role for regular physical exercise in maintaining lifelong cognitive health. A low-fat diet rich in fruits and vegetables may support brain health, as may a robust social network and a lifetime of intellectual curiosity and mental stimulation.

**Cancer**: The incidence (number of new cases) of cancer increases with age. In Arizona, cancer is the 2nd leading cause of death among those 65+. In 2008 the mortality rate for cancer was 818 per 100,000 for those aged 65 and older. Adults aged 85 years or older accounted for 15.3 percent of all cancer deaths. Cancer of the lungs, bronchus, and trachea were the leading causes of cancer deaths in Arizona among the older age group.

Certain behaviors, such as cigarette smoking, physical inactivity and a diet high in calories and fat have been associated with an increased risk of developing cancer. Early screening for cancers, such as breast, cervical, prostate and colon cancer may result in better success with effective treatment and survival. Knowing the symptoms and signs for early detection and management also improve outcome.

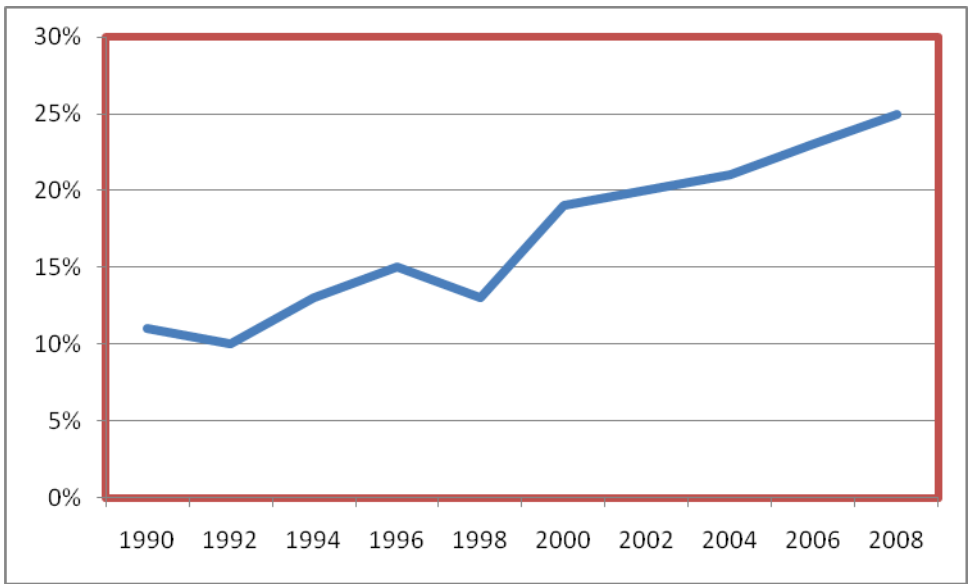
Arizona ranks second in the world in the incidence of skin cancer. It is the most common form of cancer in the United States. The two most widespread types of skin cancers are basal cell and squamous cell carcinomas. Both are highly curable. However, melanoma, the third most common skin cancer, is more dangerous. About 65%–90% of melanomas are caused by exposure to ultraviolet (UV) light or sunlight. It is a highly preventable cancer, if people take the right protective measures when dealing with the sun. This is especially important in Arizona, where the temperature allows for lots of time to be spent outside in recreational activities. It is essential to apply appropriate sun block, wear protective clothing, and seek shade when outdoors to protect against exposure to cancer causing UV light.

## *The risks of chronic diseases could be reduced.*

Chronic diseases, such as heart disease, stroke, cancer, diabetes, and arthritis are among the most common, costly, and preventable of all health problems in the nation. Four modifiable health risk behaviors, lack of physical activity, poor nutrition, tobacco use, and excessive alcohol consumption, are responsible for much of the illness, suffering, and early death related to chronic diseases.

**Obesity:** Consistent with the national trend, the prevalence of obesity in Arizona is increasing (Figure 7). Since 1990, it increased by 136%. According to BRFSS self-reports, 27% of those in the 55-64 age group reported that they were obese, while 24% of those 65+ were obese. Overall, the prevalence of obesity was higher in Blacks (45%), American Indians (37%) and Hispanics (33%) than in non-Hispanic Whites (23%). Self-assessed health status is inversely related to the prevalence of obesity. The higher the rate of obesity, the worse is the self-assessed health status. In previous BRFSS studies, Arizonans reporting that their health was poor were nearly three times more likely to be obese than those who reported their health was excellent. Also, people with diabetes were more than twice as likely to be obese than those without disease.

*Figure 7: Prevalence of Obesity by Year – Arizona 1990-2008*




Source BRFSS 2008, Available on line at: www.cdc.gov/obesity/data/trends.html

**Smoking** is significantly associated with increased risk of heart disease, stroke, lung disease and cancers. Overall 15.8% of Arizona residents identified themselves as current smokers. Highest rates were reported in the 45-54 age group. Among the older groups, those 55-64, 16% reported that they were current smokers; while only 7% of those 65+ reported that they currently smoked. For Arizona respondents overall, smoking decreased by 24% in the past 5 years.

Tobacco use is the leading preventable cause of death. Cigarette smoking is responsible for specific cancers: lung, oral cavity, throat, esophagus, and bladder. It has been estimated that cigarette smoking causes approximately 1 out of every 5 deaths.

**Long-term binge drinking and heavy drinking** increases risk for high blood pressure, cardiovascular diseases, strokes and injuries. Long-term heavy drinking also increases the risk of developing certain forms of cancer, especially of the esophagus, mouth, throat, and larynx. Alcohol use has been linked with a substantial proportion of injuries and deaths from motor vehicle crashes, falls, fires, and drowning. According to data from the Arizona BRFSS, the frequency of binge drinking decreased with age. Among residents, 9% of those 55-64 reported binge drinking while 5% of those 65+ reported binge drinking. While substantial racial differences have been reported in other studies, it could not be assessed from BRFSS data in those 65+ because the sample size was too small.

## *Health protecting behaviors can reduce risk of disease, disability and death.*

**Regular physical exercise** decreases the risk of onset and progression of many diseases including, heart attacks, colon cancer, diabetes, high blood pressure and arthritis. It is a critical element of an overall healthy lifestyle, which can extend years of independent living, reduce disability and improve the quality of life of older people. However, knowledge of the benefits of physical activity for older adults has not yet been fully turned into action. The challenge and the opportunity are to make opportunities for physical activity more accessible to older adults of all ages, abilities and interests. According to BRFSS 2008 data, insufficient or no physical activity was found in slightly less than 50% of adults in all age groups. Adequate exercise tended to decrease with age. The 65+ group reported the least exercise (54%).

**Good nutrition** includes consuming at least 5 servings of fruits and vegetables a day, and controlling saturated fat intake. A healthy diet plays an import role in long-term health. Among all ages, men were less likely than women to eat 5 servings of fruits and vegetables per day. Among those 65+, 27% reported consuming at least 5 fruits and vegetables a day. Those 55-64 did slightly worse (23%).

Controlling sodium intake is another component of healthy eating. Reducing salt intake by just half a teaspoon per day can produce public health benefits on par with reducing high cholesterol, smoking, or obesity. The number of heart attacks in the U.S. could decline by up to 13 percent if adults could just decrease their daily salt intake by 3 grams, or about 1,200 milligrams of sodium. New cases of heart disease and the number of strokes could also be expected to decline, by up to 11 percent and 8 percent, respectively. Processed foods, not salt from the shaker, account for 75 to 80 percent of salt consumption. Arizona is taking steps to improve the health of its residents. The state joined a national public health initiative to cut 20 percent of sodium from diets in the next five years.

## *Preventive care and screening can reduce morbidity and mortality*

**Flu shot:** Influenza is a significant cause of morbidity. Older persons with chronic diseases are at high risk for complications and death as a result of influenza. According to the 2008 BRFS, 72% of Arizonans 65+ years of age reported that they received an influenza vaccine during the past 12 months. Women were more likely than men to receive an influenza vaccination at 72%. Adults with college education were more likely to receive an influenza vaccine, as were adults with higher household incomes.

**Pneumonia shot:** According to the Centers for Disease Control and Prevention, everyone age 65 and older should get the pneumonia vaccine. Some younger people with particular health risk factors should get it also. People who are vaccinated are protected against almost all of the bacteria that cause pneumococcal pneumonia and other pneumococcal diseases as well. According to the 2008 BRFSS, 71% of Arizonans 65+ reported that they had received a pneumonia shot. In 2008 pneumonia was responsible for 844 deaths in Arizonans 65+.

**Mammography** is the best method available to detect breast cancer in its earliest, most treatable stage. The key to reduction in breast cancer mortality is dependent upon successful treatments and early detection. For all women, 63.6% reported that they had ever had a mammogram. Among older women, 96.7% reported that they ever had been screened

**Cervical cancer screening** using the Pap test detects not only cancer but also precancerous lesions. Women should begin getting a Pap test no later than 18 years of age. Routine screening programs using Pap smear testing can reduce incidence and, thus, mortality, of cervical cancer by 93%. In response to the BRFSS question, "Have you ever had a pap test?" nearly 99% of all 65+ women responded "yes".

**Colorectal cancer screening:** Colon cancer is the second leading cause of cancer-related deaths both nationally and in Arizona. In 2007, 966 Arizonans died from colorectal cancer, accounting for approximately 10 percent of all cancer deaths. With age comes an increasing risk of developing colorectal cancer. People at least 50 years old, those who suffer from inflammatory bowel disease, are overweight or physically inactive, and those who have a personal or family history of colorectal polyps or colorectal cancer have a higher risk. Additionally, low fruit and vegetable consumption, a diet low in fiber, alcohol consumption, and tobacco use may contribute to the risk for colorectal cancer.

BRFSS respondents who were at least 50 years of age were surveyed on whether they have had a sigmoidoscopy and colonoscopy. These tests can identify malignant growths or precancerous changes at an early more treatable stage. In 2008, 64% reported they had a sigmoidoscopy or colonoscopy. Men were slightly more likely than women to have been screened at 66% vs. 62%. Screening increased with age. Adults aged 65 and older were most likely to have had a sigmoidoscopy or colonoscopy at 75%.

**Cholesterol screening** is an important tool for measuring cardiovascular disease risk. People older than 65 have the highest incidence of congestive heart disease (CHD) and the risk of CHD attributable to elevated cholesterol

is highest in this group. In addition, there is evidence that cholesterol lowering in older people will substantially reduce their risk of CHD. According to 2007 data from the BRFSS, 93% of older adults reported that they had their cholesterol checked within the past five years.

### *Health care needs and associated costs are increasing.*

As the population ages, the need and demand for health care will increase. Older adults are more likely to suffer from chronic conditions and to seek medical care and other services associated with the aging process

**Health care coverage:** Either lack of a health care insurance or inadequate coverage prevents many Arizonans from getting required care. Based on the 2008 BRFSS question, "Do you have any kind of health care coverage?" almost 21% of Adults between 45 and 54 years old did not have health care coverage. Among the 55-64 age group 9% reported that they did not have coverage. While the rate decreased among the 65+ population, 1% reported that they did not have health care coverage. A higher percentage of men than women reported that they lacked health care coverage, 20% vs. 15%. Having less than a high school education and income below $25,000 were strongly associated with less coverage, approximately 40% for each characteristic.

Having a regular primary care provider is a strong predictor of access to quality health care. However, primary care physicians are unevenly distributed in Arizona. Significant shortages exist in selected rural areas. Also, Arizona lags behind the national average in the number of active non-federal primary care physicians.

In 2008, an estimated 68% percent of Arizona adults reported that they had a routine checkup in the past year. Adults 65 years old and older were more likely to have a routine checkup at 86% than younger age groups. Those adults with college education were more likely to have a routine checkup at 72%. Women were more likely to have a routine checkup at 74% vs. men 62%.

**Outpatient usage:** Arizona specific data are not available for outpatient physician visits. However, according to 2005 data from the National Ambulatory Medical Care Survey, (NAMCES) 25% of all office visits to physicians are made by older adults. (Cherry, 2007)

**Hospitalizations:** In 2008 there were 236,000 discharges from short stay hospitals in Arizona for patients 65+. Older adults are only 13% of the total state population. However, they were responsible for one third of all hospital discharges. The most frequently reported discharges were for diseases of the circulatory system including the heart disease, malignancies, diabetes,

digestive system diseases, respiratory diseases, and musculoskeletal conditions. These data are from Arizona Department of Health Services. Arizona hospitalization reporting is by the number of discharges, not the number of individuals. In addition, they are from state hospitals only. Federal facilities (Veterans Affairs and Indian Health Services) are not included.

**Emergency room use:** In 2008, twelve percent of the emergency department (ED) visits were made by patients 65 years or older. According to national data, rates of hospital admissions following ED visits are seven times greater among older patients compared with younger ones. Many conditions that resulted in hospital admission are for chronic conditions. Older patients also have a much higher admission rate to ICUs, compared with younger patients.

**There are opportunities to promote the ability of older adults to remain active, healthy and living independently in their communities.**

*The Arizona Department of Health Services supports a range of programs that are focused on health promotion and disease prevention for older adults*

**Arizona Living Well** supports two evidence based programs to help individuals living with chronic diseases or conditions develop self-management skills.

- **The Healthy Living Program** based on the Chronic Diseases Self Management Program (CDSMP) developed at Stanford University is a series of workshops that help individuals with chronic illnesses learn ways to self manage their condition and take charge of their life. These sessions are designed to help people gain self-confidence in their ability to control their symptoms and understand how their health problems affect their lives.

  Small-group workshops are given in community settings. They are facilitated by two leaders/moderators with health problems of their own. The workshops are highly interactive, focusing on building skills, sharing experiences, and support. These workshops are currently available in several counties. There are plans to expand this program to cover the entire state. The workshops were designed for people with chronic illnesses, such as asthma, arthritis, diabetes and heart disease. The Arizona Living Well covers a range of health topics such as:

  - Healthy eating
  - Relaxation techniques
  - Managing fatigue

- Low impact exercising
- Managing medications
- Problem solving
- Goal setting
- Working with your health professional

Research on this program has shown that participants are able to manage their symptoms better and communicate more easily with their doctors and loved ones. People who take the program feel better, are less limited by their illness, and may spend less time at the doctor or in the hospital.

♦ **The EnhanceFitness Program** provides community-based exercise courses for older adults. EnhanceFitness classes are conducted in a relaxed way. This program run by certified instructors who has undergone special training in fitness for older adults. The Program allows participants to exercise at their own comfort level. It is based on solid research and tested at over 100 sites around the country. EnhanceFitness focuses on stretching, flexibility, balance, low impact aerobics, and strength training exercises – everything health professionals say are needed by older adults to maintain health and function.

The class has proven to:

- Increase strength. People who regularly attend class grow stronger, improve their balance, and become more limber.
- Boost activity levels. Even the unfit quickly find that they are able to do the things they want to do safely and independently.
- Elevate mood. Research shows that exercise can help prevent depression, and EnhanceFitness participants say they feel better physically and emotionally.

**The Arizona Healthy Aging Initiative** was created by the Arizona Department of Health Services. It consists of three components of an action plan:

♦ **Capacity Development:** Develop a focus on Evidence Based Programs in Physical Activity, Chronic Disease Self Management, Fall and Injury Prevention planning and program implementation in community settings • Assess public health needs and capacity relevant to healthy aging in local communities

♦ **Science and epidemiology:** Collect, interpret, and disseminate data about the health of older adults relevant to program planning and

evaluation・Make data available to partners for planning, implementation and evaluation.

- **Partnership:** The Healthy Aging Communication Network can contribute to the coordination of initiatives across networks.
  ・Establish collaborative relationships with public health and aging service networks and local agencies. These areas of focus through the Healthy Aging Communication Network provide a framework for building healthy aging capacity in a purposeful and coordinated manner across Arizona.

**Healthy Aging Community Network (HACN)** provides communication tools on vital information, educational and evidence-based programs as resources to key partners, health professionals, the public and policy-makers. The HACN Web site links members to programs that support good health and reduce risk for disability for older adults. The HACN has three major focus areas: Physical Activity; Chronic Disease Prevention & Management; Falls Prevention.

Members of the aging network include state and local health departments, the Arizona Department of Economic Security-Division of Aging and Adult Services, the local Area Agencies on Aging, academia and various health-related agencies. The aim is to address issues related to the healthy aging of Arizonans.

The HACN provides resources for the Stanford Chronic Disease Self-Management Program, Enhance Fitness at: www.azlivingwell.com. It also provides linkage for partners addressing chronic diseases such as diabetes, cardiovascular disease, arthritis, osteoporosis and cancer.

**Healthy Aging Arizona:** Is a public resource for older Arizonans. Information is available in several basic elements of healthy aging including: physical activity and good nutrition; disease prevention and health promotion; maintaining one's independence through injury prevention and decreasing the risk for disability.

**Other Arizona Department of Health Service activities** are focused on the health needs of all Arizonans but have major components that address the health needs and modifiable risk factors that impact older adults.

- The state wide Arizona Diabetes Prevention and Control Program, Arizona Heart Disease and Stroke Prevention Program, Arizona Cancer Control Program, Arizona Smart Choice Program and Nutrition and Physical Activity Program are all focused on reducing

the frequency and impact of chronic conditions that disproportionately affect older adults. All of these programs are carried out in collaboration with other public and volunteer organizations.

- The Arizona Health Disparities Center (AHDC) is in the Bureau of Health Systems Development and is the Federal designee for the State. It serves as Arizona's central source of information and resources related to minority and vulnerable population health and health disparities. Its mission is to promote and protect the health and well being of the minority and vulnerable populations of Arizona by enhancing the capacity of the public health system to effectively serve minority populations and reduce health disparities. Its areas of focus are strategic planning and policy promotion, community technical assistance, Culturally and Linguistically Appropriates Services (CLAS) training, resource brokering and partner consultation. More information is available at: www.azminorityhealth.gov.

## Conclusions and Recommendations

Arizona residents are living longer. Survival rates for both older men and women have continued to improve. Notably, there have been declines in deaths due to heart disease, stroke and cancer. However deaths due to some conditions and diseases are increasing, in particular hip fractures and Alzheimer's disease mortality rates have been rising.

As life span has improved in Arizona, more people are living with chronic diseases for longer periods of time. One fourth of Arizonans age 65+ report only fair or poor health status. Approximately one third of the 65+ population also report disability and activity limitations (See Table 2). Controlling health risk behaviors such as smoking, physical inactivity, and poor diet and using preventive health-care services such as immunizations and screening can reduce morbidity and mortality and increase ones quality of life.

*Table 2: Health Status, Health Behaviors & Preventive care In Arizonans age 65+*

| | Arizona % 65 | United States % 65+ |
|---|---|---|
| **Health Status** | | |
| Health status fair or poor | 25 | 26 |
| Complete tooth loss | | |
| …age 65-74 | 12 | 16 |
| …age 75+ | 15 | 21 |
| Disabled | 35 | 33 |
| Need special equipment | 22 | 19 |
| Activity limited | 35 | 33 |
| | | |
| **Health behaviors** | | |
| Eating 5 or more fruits & veg. daily | 27 | 29 |
| No leisure time physical activity | 28 | 33 |
| Obesity | | |
| …Overweight | 38 | 40 |
| …Obese | 24 | 23 |
| Current smoker | 7 | 7 |
| | | |
| **Preventive care & screening** | | |
| Flu vaccine in past year | | |
| …65-74 | 67 | 67 |
| …75+ | 76 | 76 |
| Pneumonia vaccine ever | | |
| …69 | 69 | 60 |
| …75+ | 73 | 75 |
| Mammogram in past 2 years | 81 | 79 |
| Colorectal cancer screening | 75 | 71 |

Source: BRFSS, 2008

Monitoring health risk behaviors, chronic conditions and preventive care practices are essential elements for developing health promotion activities and intervention programs. Data from the Behavioral Risk Factor Surveillance System and Arizona Health Status and Vital Statistics highlight segments of the population that might benefit most from public health interventions. These include, low income, rural, and minority residents.

Current data identify opportunities to enhance health behaviors and use of prevention care and screening. Arizona's Healthy Living Program, based on the CDSMP can play a major role in achieving these goals. This evidence-

based program can help older adults manage their chronic conditions, avoid falls, improve diets, and engage in physical activity.

Evidence based programs could benefit a great many Arizonan's but a solid infrastructure is needed to train and support individuals to carry out the program. This project requires a well designed and managed data base system to insure that the program reaches the people who might benefit most from it and that they receive the program in a way that meets their needs.

The Project for Livable Communities (PLC) is another approach for addressing the community needs for building, and nurturing healthy, safe and sustainable environments. The PLC is a consortium of urban design professionals, public health experts, educators and journalists. The mission of the PLC is to assist individuals and groups to create safe, healthy and sustainable communities.

Arizona is faced with severe economic restraints. It is essential that the various entities concerned about the health and well being of Arizona's older adult population collaborate to maximize and share resources. This includes program planning and creating an ongoing mechanism for working together.

*Appendix A: Arizona Counties, Percent Population 65+, Median Age and Poverty Level*

| Geographic Area | % Total pop 65+ | Median age total pop | %65+ below poverty level |
|---|---|---|---|
| Arizona | 13.0 | 35.0 | 8.4 |
| COUNTY | | | |
| Apache | 10.8 | 30.5 | 29.0 |
| Cochise | 17.0 | 39.6 | 10.5 |
| Coconino | 7.9 | 31.6 | 14.5 |
| Gila | 21.5 | 43.6 | 11.9 |
| Graham | 12.8 | 31.2 | 10.8 |
| La Paz | 32.0 | 50.4 | 6.5 |
| Maricopa | 11.2 | 33.9 | 7.4 |
| Mohave | 21.1 | 42.6 | 7.6 |
| Navajo | 11.8 | 31.2 | 13.4 |
| Pima | 14.9 | 37.0 | 8.3 |
| Pinal | 13.5 | 33.0 | 8.1 |
| Santa Cruz | 12.6 | 34.8 | 20.8 |
| Yavapai | 22.6 | 44.5 | 6.8 |
| Yuma | 18.4 | 34.9 | 12.1 |

*Appendix B: Percent by County of the Total Population Who Speak Spanish at Home or are American Indian*

| | % Spanish at home | % American Indian |
|---|---|---|
| Arizona | 21.7 | 4.5 |
| COUNTY | | |
| Apache | 4.4 | 73.8 |
| Cochise | 23.6 | 1.1 |
| Coconino | 8.3 | 28.2 |
| Gila | 10.2 | 14.6 |
| Graham | 15.1 | 15.8 |
| La Paz* | (X) | 11.5 |
| Maricopa | 22.3 | 1.8 |
| Mohave | 8.6 | 1.7 |
| Navajo | 5.7 | 45.6 |
| Pima | 23.2 | 3.3 |
| Pinal | 20.2 | 5.8 |
| Santa Cruz* | (X) | (X) |
| Yavapai | 9 | 1.8 |
| Yuma | 45 | 1.4 |

Source: U.S. Census Bureau, 2006-2008, American Community Survey

*Data are not available.

| Arizona Population 65+ | |
|---|---|
| Population: | 826,000 |
| % of Population: | 13% |
| Below poverty level: | 9% |
| With a chronic condition: | 85% |
| With any disability: | 36% |
| In fair or poor health: | 25% |

# References and Resources

**Arizona:**

The Arizona Department of Health Services provides news and information about public health services and facilities on line at: www.azdhs.gov/

ADHS - Bureau of Public Health Statistics Arizona Behavioral Risk Factor Survey Reports on line at: www.azdhs.gov/plan/brfs/reports.htm

Arizona Department of Health Services, Bureau of Chronic Disease Prevention and Control on line at: www.azdhs.gov/phs/cdpc/index.htm

ADHS –Arizona Health status and vital statistics on line at: www.azdhs.gov/plan/report/ahs/ahs2008/toc08.htm

ADHS - Differences in the Health Status Among Race/Ethnic Groups, Arizona, 2007 on line at: www.azdhs.gov/plan/report/dhsag/index.htm

ADHS - Healthy Aging Arizona: Healthy Aging Communication Network, on line at: www.azdhs.gov/phs/healthyagingarizona/hacn/index.htm

ADHS, Arizona Diabetes Program on line at: www.azdiabetews.gov

Arizona Disability Statistics From 2005 American Community Survey on line at: www.pascenter.org/state_based_stats/

Alzheimer's Disease Facts and Figures 2010, Alzheimer's Association
Arizona Alzheimer's Statistics, Alzheimer's Association Fact Sheet, on line at: www.alz.org/facts

AARP, Social Security: 2008 Arizona Quick Facts on line at: www.assets.aarp.org/rgcenter/econ/ss_facts_08_az.pdf

Chronic Conditions Among Arizona Adults
Arizona Health Survey questions to map out the prevalence, antecedents and consequences of chronic conditions among Arizona adults, on line at: www.arizonahealthsurvey.org/?p=4

Health Status Arizona- Kaiser State Health Facts
www.statehealthfacts.org/profileglance.jsp?rgn=4

Project for Livable Communities on line at:
www.projectforlivablecommunities.org/

St. Luke's Health Initiatives: AHF Publications & Reports:
Arizona Health Futures Issue Briefs provide an overview of critical health issues in Arizona from a public policy perspective
www.slhi.org/publications/issue_briefs/index.shtml

Gober, Patricia, The Coming of Age Project St. Luke's Health Initiatives, Geo-Demographics of Aging in Arizona: State Knowledge, Arizona State University 2002

**National resources:**

Census Bureau:

U.S. Census Bureau, U.S. Population Projections, on line at:
www.census.gov/population/www/projections/statepyramid.html

US. Census Bureau, American Factfinder: on line at:
www.factfinder.census.gov

Disability Statistics: Online Resources for US /disability Statistics
Data from American Community Survey, U.S. Census Bureau
On line at: www.ilr.cornell.edu/edi/DisabilityStatistics/

AOA:

A Profile of Older American: 2009, Administration on Aging
On line at: www.aoa.gov/AoAroot/Aging_Statistics/Profile/index.aspx

CDC:

Health, United States, 2009 with Chartbook on Trends in Health in America, CDC on line at: www.cdc.gov/nchs/hus.html

CDC, Skin Cancer Rates by State on line at:
www.cdc.gov/cancer/skin/statistics/state.htm

BRFSS Prevalence and Trends Data, National Center for Chronic Disease Prevention and Health Promotion, CDC on line at:
www.cdc.gov/brfss/index.html

National Ambulatory Medical Care Survey: 2005 Summary. Advance data from vital and health statistics; no. 387. Hyattsville, Maryland: National Center for Health Statistics. 2007.

Obesity and Overweight for Professionals: Data and Statistics on line at: www.cdc.gov/obesity/data/trends.html

State of Aging and Health in America, 2007, Centers for Disease Control and Prevention on line at: http://apps.nccd.cdc.gov/SAHA/

Cherry DK, Woodwell DA, Rechtsteiner EA. National Ambulatory Medical Care Survey: 2005 Summary. Advance data from vital and health statistics; no. 387. Hyattsville, Maryland: National Center for Health Statistics. 2007. )

AHRQ:

Diabetes Disparities Among Racial and Ethnic Minorities – Fact Sheet www.ahrq.gov/research/diabdisp.htm

Of interest:

Challenges and Successes in Implementing the Chronic Disease Self-Management Program NCOA Center for Healthy Aging, 2004 **...** on line at: www.healthyagingprograms.org/resources/CDSMPfinalreport.pdf

Compelling Evidence for Public Health Action to Reduce Salt Intake, Appel LJ, Anderson CAM, New England J Med, 362:650-652, 2010

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How many women have osteoporosis now? Melton LJ, J Bone Miner Res 10:175-177, 1995.

Partnership for Clear Health Communication at the National Patient Safety Foundation www.npsf.org/pchc

Self-rated health and mortality: A review of twenty-seven community studies. Idler EL, Benyamini Y. J Health Soc Behav, 38:21-37, 1997

Trends in Infectious Disease Mortality in the United States During the 20th Century, Armstrong G, Conn L, Pinner R, Journal of the American Medical Association; 281:61-66, 1999