

Chronic Disease Service Logo Image

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Cardiovascular Disease Morbidity, Mortality and Risk Factors

Heart disease is the nation's leading cause of death. Three health-related behaviors – tobacco use, lack of physical activity, and poor nutrition – contribute heavily to the onset of heart disease as well as the heart disease related conditions, of high blood pressure and high blood cholesterol. Modifying these behaviors is critical for both preventing and controlling heart disease. Modest changes in one or more of these risk factors within the population can have a large public health impact. Heart disease can also be prevented or controlled by changing governmental policies (such as restricting access to tobacco) and by changing environmental factors (such as providing better access to healthy foods and opportunities for physical activity). (The Burden of Chronic Diseases and Their Risk Factors, CDC, 2002)

In 1999 all cardiovascular diseases combined took more than 950,000 lives in US, and more than 14,500 in Oklahoma. During the same year the age-adjusted mortality rate due to all diseases of cardiovascular system for Oklahoma was 417/100,000 and exceeded the US rate of 352/100,000 (Figure 1). (1999 Vital Statistics)

Heart disease alone killed more than 725,000 Americans in 1999 and accounted for more than

11,000 lives in Oklahoma during the same year. Of all states, Oklahoma had the third-highest rate of death due to diseases of the heart at 317/100,000. Heart disease accounted for 32% of all deaths in Oklahoma. Rates of death were significantly higher among blacks than whites, and 49% higher among men than women. (1999 Vital Statistics)

Stroke, or cerebrovascular disease, is a major cause of death and disability in the United States. It is the third leading cause of death in Oklahoma as well as US, after diseases of the heart and cancers. It caused more than 2,400 deaths in Oklahoma in 1999. Rates of death from stroke were 34% higher among blacks than among whites. Of all states, in 1999, Oklahoma stroke mortality rate ranked 12th highest at 70/100,000. (1999 Vital Statistics)

Tobacco use increases the risk for cardiovascular diseases by narrowing the vessels. In 2000, nearly one in four of Oklahoma adults reported current cigarette smoking (23%). The highest prevalence of smoking was among American Indians/Alaska Natives at 33% (Bursac, Campbell 2002). Twenty-one percent of middle school students and 42% of high school students are current (within the last 30 days) users of tobacco (Oklahoma YST 1999). Rates increase from 12% among 6th graders to 45% among 12th graders. Rates are higher for boys on both school levels. Nearly half of high school boys report they are current users of at least one form of tobacco. Rates among racial/ethnic groups in middle school range from 13% among African Americans to 26% among American Indians. Similarly on the high school level rates range from 38% among African Americans to 50% among American Indians with Whites and Hispanic groups in between (Oklahoma YTS 1999). One in six middle school students and one in three high school students report they are current cigarette smokers (1 or more cigarettes during the past 30 days). The proportion of students who smoke daily (30 days per month), increases from less than 1% in 6th grade, to 13% in 12th. As school grade increases, more current smokers become daily

smokers. Boys and girls are equally likely to be current smokers. African American youth are least likely to report they are current smokers compared to other youth (Oklahoma YTS 1999).

Regular and sustained physical activity greatly reduces a person's risk of dying of heart disease. Despite the proven benefits of being physically active, more than 28% of US adults report no leisure-time physical activity. In Oklahoma that number is even greater. In 2000, Oklahoma ranked third highest of all states in percentage of adults who report no-leisure-time physical activity at more than 34%. Sedentary lifestyle and physical inactivity are also becoming a major problem among Oklahoma youth. Two factors that have contributed to the decline in physical activity of children are a greater reliance on television and computers for entertainment and decreased participation in physical education programs in schools. Good nutrition including a diet that is low in saturated fats and contains five or more servings of fruits and vegetables each day plays a major role in maintaining good health. Improving the American diet could extend the productive life span and reduce the occurrence of chronic diseases, including heart diseases and stroke. Close to 82% of adult Oklahomans reported eating fewer than five servings of fruits and vegetables daily, which is the third highest percentage of all states in 2000. Men tend to eat less fruits and vegetables than women, as well as all minority groups compared to white population. (2000 BRFSS)

In 2000, 56% of adult Oklahomans were overweight, which is a significant increase from 45% in 1990, primarily due to an almost 10% increase in prevalence of obesity. Prevalence of obesity in Oklahoma significantly increased from 11% in 1990 to 20% in 2000, with the highest point being 21% in 1999. Clearly, the obesity epidemic has spread throughout the state of Oklahoma in the same manner as it did throughout the entire US. Combined data from 1999 and 2000 BRFSS

show that 44 out of 77 Oklahoma counties have obesity prevalence greater than 20%.

Furthermore, 18 counties have prevalence of obesity ranging between 15 and 20%, putting a total of 62 Oklahoma counties above the national 2010 health objective of reducing the obesity to 15%. Obesity prevalence was the highest among American Indian/Alaska Natives at 28%. Initial results from the 1999 National Health and Nutrition Examination Survey (NHANES), using measured heights and weights, indicate that an estimated 13 percent of children ages 6-11 years and 14 percent of adolescents ages 12-19 years are overweight. This represents a 2 to 3 percent increase from the overweight estimates of 11 percent obtained from NHANES III (1988-94). The percentage of children and adolescents who are defined as overweight has more than doubled since the early 1970s.

Hypertension is one of the major risk factors for stroke. One in five of Oklahoma adults suffer from high blood pressure (21%). It is significantly more prevalent among the black population (30%), and also higher among women than men (24% and 17% respectively). (1999 BRFSS)

High blood cholesterol levels increase the risk for coronary heart disease and myocardial infarction. More than 21% of adults in Oklahoma have been diagnosed with high cholesterol levels. The Hispanic population of Oklahoma has the highest prevalence, close to 24%. (1999 BRFSS)

Heart disease is 2-6 times more likely to occur among persons with diabetes. Prevalence of diabetes has increased in Oklahoma in the last ten years. Between 1998 and 2000, the average three-year diabetes prevalence for Oklahoma equaled 6.4%. However, it is significantly higher among minority groups especially American Indian/Alaska Natives for whom it exceeds 8% (REACH 2010 BRFS). In 2000 estimated 140,000 adults in Oklahoma had diagnosed diabetes. In

1999 rates of death from diabetes were 180% higher among American Indians/Alaska Natives, and 160% higher among blacks than among whites. (1999 Vital Statistics)

It is clear that cardiovascular disease presents an enormous burden for Oklahoma. The age-adjusted mortality rates are higher for diseases of the heart and stroke in Oklahoma as compared to US. There are gender and racial disparities, with black men being the most likely die from these diseases (Figure 1). Further, the risk factors for cardiovascular disease have higher prevalence in Oklahoma as compared to US overall prevalence. Cigarette smoking, lack of leisure time physical activity, eating less than five fruits and vegetables a day, and obesity are all contributing to high cardiovascular morbidity and mortality.

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