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Cerebrovascular Disease (Stroke) Mortality

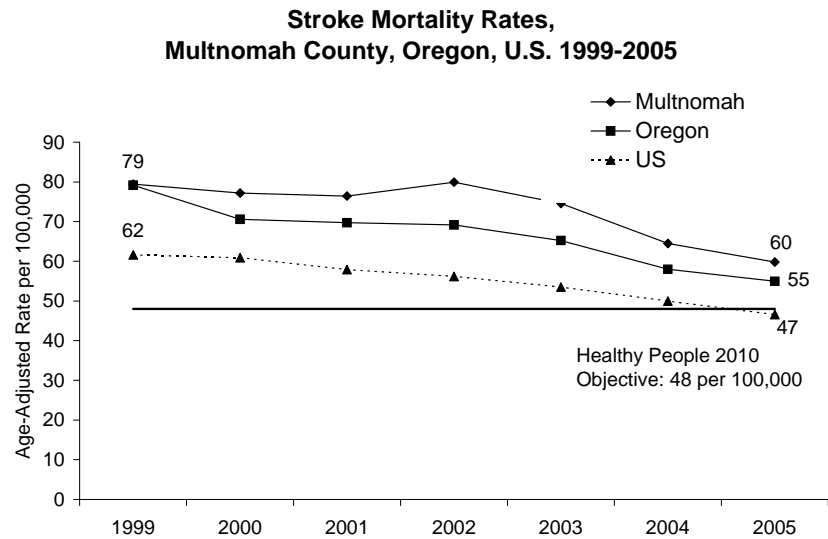
Cerebrovascular disease, also known as stroke, is one of the leading causes of death in the United States. This Health Assessment presents data on stroke mortality by age, gender, and race/ethnicity as well as the costs associated with stroke and prevention measures that can be taken to reduce stroke mortality.

Stroke mortality rates have declined over the last decade. The Centers for Disease Control and Prevention attributes the decline in stroke mortality to prevention efforts and improvements in early detection, treatment, and care. Although stroke death rates have declined 15% in Multnomah County in the last decade, they remain higher than rates for Oregon and the U.S. (Graph 1)

A stroke happens when blood flow to the brain stops. This lack of blood means that oxygen cannot be delivered to the brain and causes brain cells to permanently die. There are two kinds of strokes, those caused by a blood clot that blocks a blood vessel to the brain (ischemic) and those caused by a blood vessel that breaks and bleeds into the brain (hemorrhagic). Approximately 80% of all strokes are ischemic strokes.

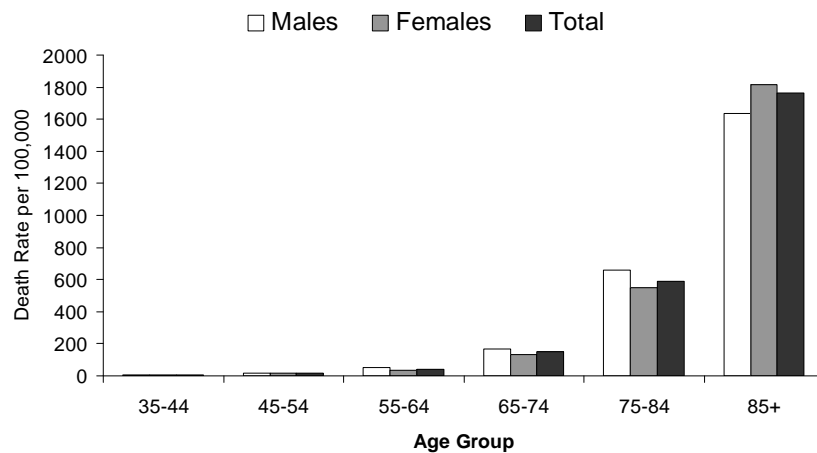
Age

The greatest risk factor for stroke mortality is advanced age. In Multnomah County, 98% of stroke mortality occurs in people age 45 years and older, 78% of stroke mortality occurs in adults age 75 years and



Graph 1. Stroke Mortality Rate, Multnomah County, Oregon, United States.

Stroke Death Rates, by Age Group, Multnomah County 2001-2005

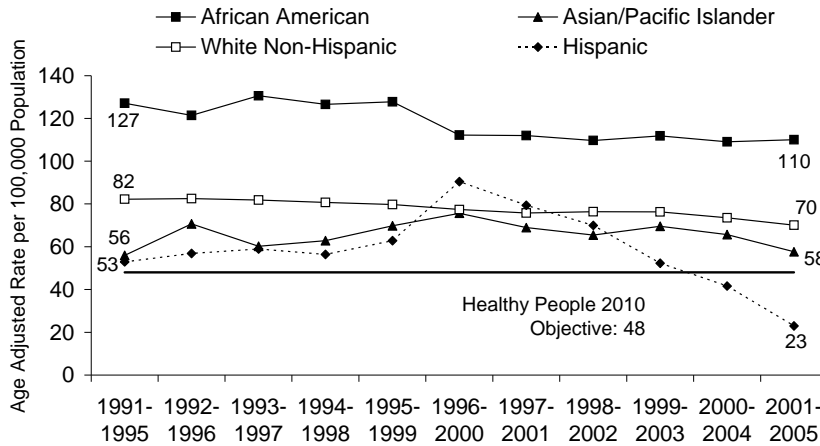


Graph 2. Stroke Death Rates by Age Group and Gender, Multnomah County.

older. Males have a higher mortality rate than females in all age groups until age 85 years and older (Graph 2). Stroke is the third leading cause of death in both men and women in Multnomah County.

Cerebrovascular Disease

**Stroke Mortality Rate by Race/Ethnicity
Multnomah County, 1991-2005**



Graph 3. Stroke Mortality Rate by Race/Ethnicity, Multnomah County

Race and Ethnicity

Trends in stroke mortality from 1991-2005 for racial and ethnic populations are displayed above. There were too few events to calculate rates for American Indians.

Stroke mortality rates have declined for African Americans, White non-Hispanics and Hispanics. Hispanics are the only group that has met the Healthy People 2010 Objective to reduce stroke mortality to no more than 48 deaths per 100,000 population. While stroke mortality rates have declined slightly for African Americans they are consistently higher than for other racial and ethnic populations. The gap between African American and White non-Hispanic stroke mortality rates has remained about the same over-time. In 2001-2005, the total age-adjusted rate was 1.5 times greater for African Americans compared to White non-Hispanics.

The greatest disparity in stroke mortality occurs in younger adults. Among 45-54 and 55-64 year olds the stroke mortality rate was 3.5 times higher for African Americans than for White non-Hispanics. In the 65-74 year age group the stroke mortality rate was 2.2 times higher

and among those aged 75 years and older the mortality rate was 1.2 times higher.

Costs

The American Heart Association estimated the direct and indirect costs for stroke in 2006 were \$57.9 billion nationally.¹ Direct costs include health care spending while indirect costs include lost productivity. In 2006, there were 2,228 hospitalizations of individuals with a primary diagnosis of stroke in Multnomah County. The total cost of hospitalizations with a primary diagnosis of stroke was \$77,851,075.²

Prevention

Stroke mortality (both ischemic and hemorrhagic) is associated with certain risk factors. The most important modifiable risk factors for stroke are hypertension (high blood pressure), smoking, heart disease, and diabetes. The increased risk of stroke in African Americans may, in part, be due to a higher prevalence of high blood pressure and diabetes. In Oregon in 2005, 10.4% of African Americans had diabetes compared to 6.7% of the Oregon population. Current smoking among African Americans was

21.2% compared to 18.5% for the Oregon population.³ Studies suggest that socioeconomic factors also contribute to the disparity between African Americans and White non-Hispanics.

Prevention efforts individuals can take include:

- High blood pressure screening
- Cholesterol screening
- Quit smoking
- Exercise regularly
- Consume alcohol in moderation
- Maintain a healthy body weight

Many studies show that physical activity reduces stroke risk. Being overweight is associated with high blood pressure, heart disease, and diabetes—all of which increase the risk of stroke. There are many community-wide barriers that limit individual ability to eat well and be active. Individual efforts to change behavior would be supported by environmental and policy changes that improve access to healthy affordable food and opportunities to be physically active, such as nutrition standards for school food, establishment of local farmers markets, and improvement of sidewalks for walking.

References

1. American Heart Association. *Heart Disease and Stroke Statistics — 2006 Update*. Dallas, Texas: American Heart Association; 2006.
2. 2006 Statewide Inpatient Discharges, Oregon Association of Hospitals and Health Systems.
3. Behavioral Risk Factor Surveillance System. National Center for Chronic Disease Prevention & Health Promotion. Centers for Disease Control and Prevention. 2005.

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Quarterly is published by Multnomah County Health Department, Health Assessment and Evaluation 426 SW Stark St 9th Floor, Portland OR 97204. If you have questions or comments, please email Claire Smith at claire.smith@co.multnomah.or.us or by phone at 503-988-3674 x28185. This publication is available online at: www.co.multnomah.or.us/health/hra/haq.shtml