

Burden of Heart Disease, Stroke, and Risk Factors in Virginia

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Heart Disease and Stroke in the U.S.

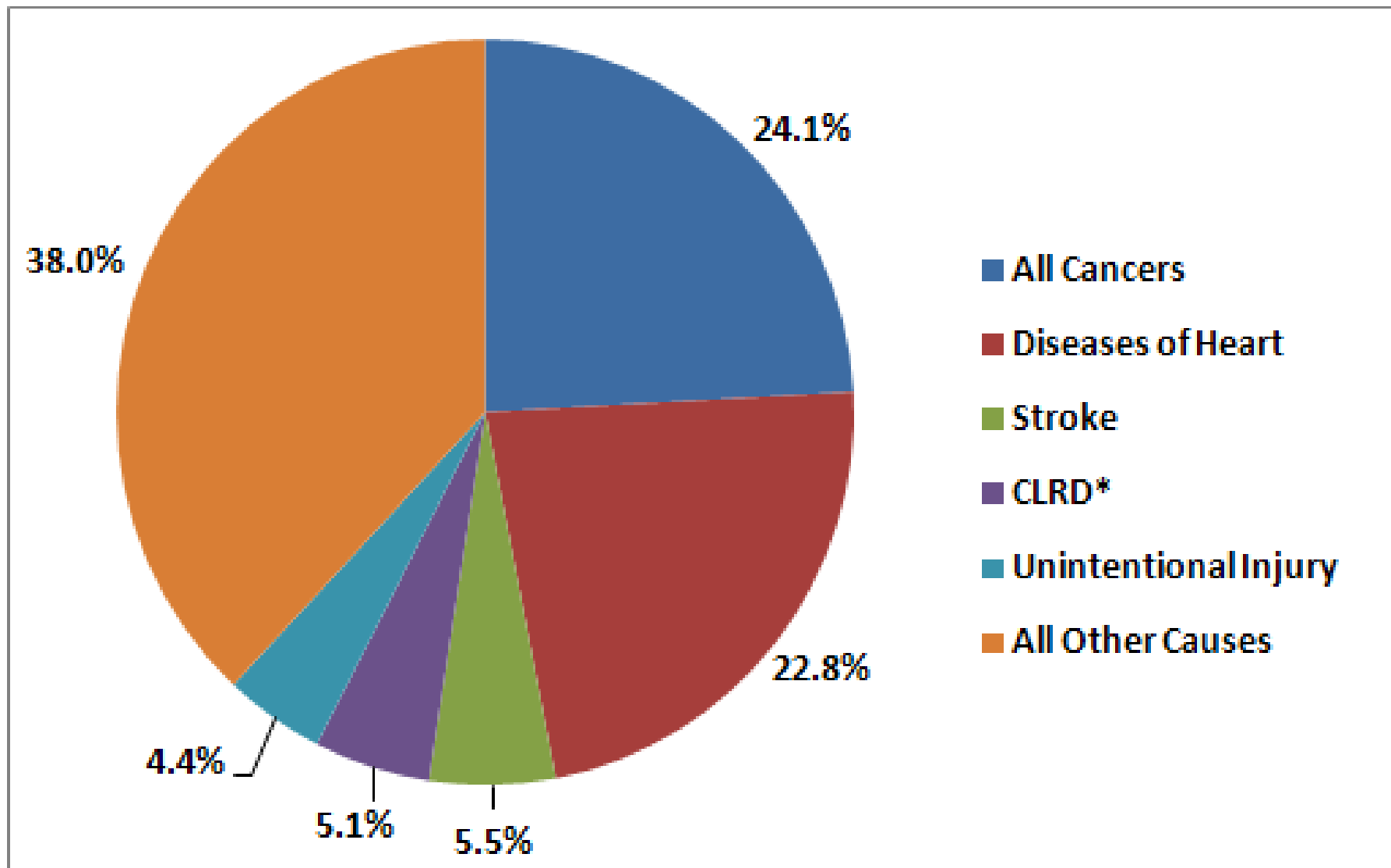
- Cardiovascular disease (CVD), including heart disease and stroke is the #1 killer of Americans.
- Cardiovascular disease (CVD) account for more than one-third (34.3%) of all U.S. deaths.
- According to the 2009 National Health Interview Survey, about 26.8 million people diagnosed with heart disease and 6 million people with stroke.
- Heart disease and stroke also are among the leading causes of disability in the United States, with nearly 3 million people reporting disability from these causes.

Sources: "The State of Aging and Health in American", CDC and Merck Institute on Aging and Health, 2004, 2007; "The Burden of Chronic Diseases and Their Risk Factors", CDC, 2004; Boult et al. *American Journal of Public Health* 1996; 86(10), 1388-1393. Addressing the Nation's Leading Killers: At A Glance 2010 CDC, Heart Disease and Stroke; <http://www.cdc.gov/chronicdisease/resources/publications/aag/dhdsp.htm>

Risk Factors for Heart Disease and Stroke

- Many risk factors for Heart Disease and Stroke can be decreased by lifestyle changes:
 - " Physical Inactivity
 - " Diet
 - " Obesity
 - " Smoking
 - " High Blood Pressure
 - " High Blood Cholesterol
 - " Diabetes

Leading Causes of Death, Virginia, 2009



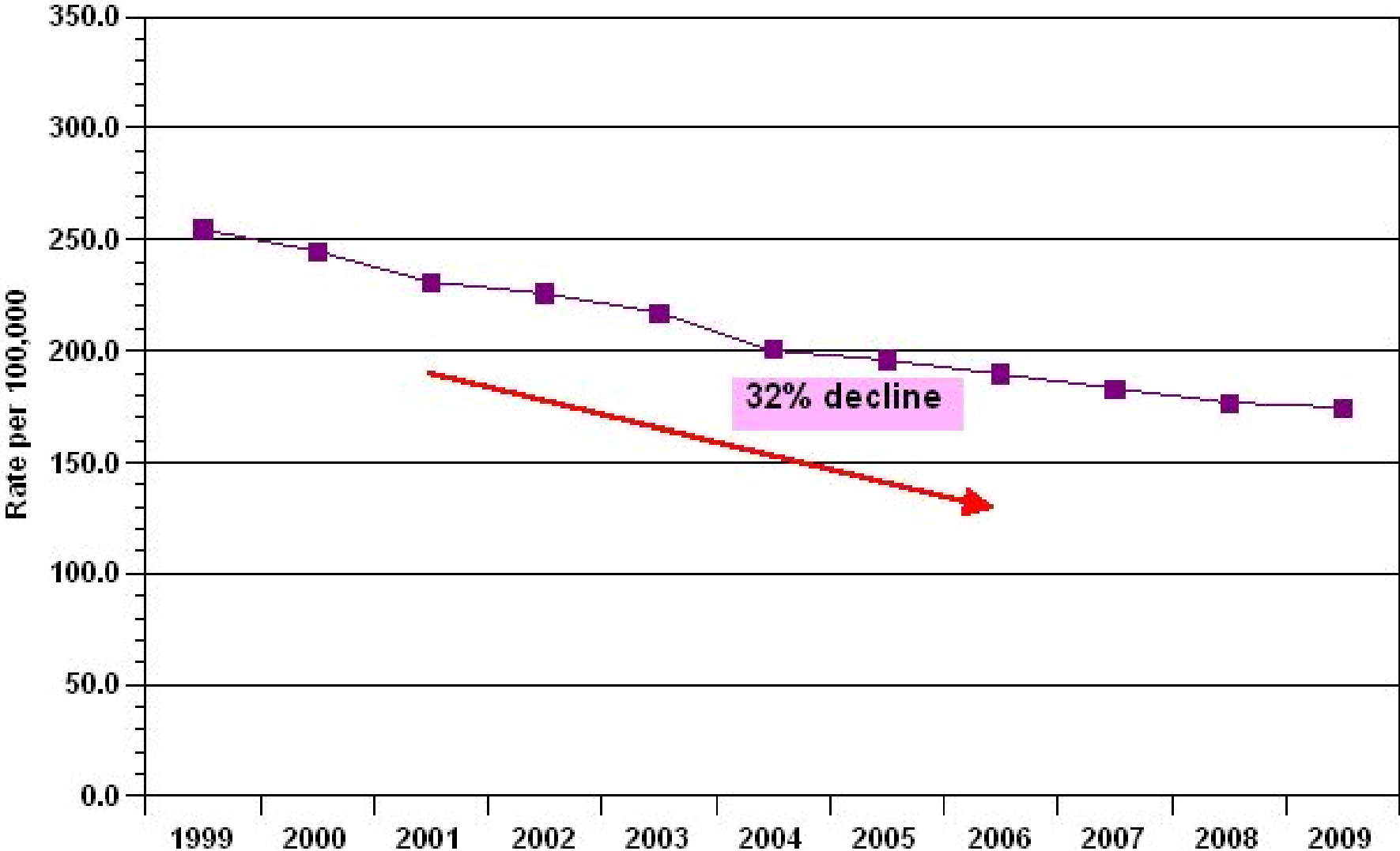
Source: VDH, Division of Health Statistics, 2009; *CLRD-chronic lower respiratory diseases.

Heart Disease Mortality, VA, 2009

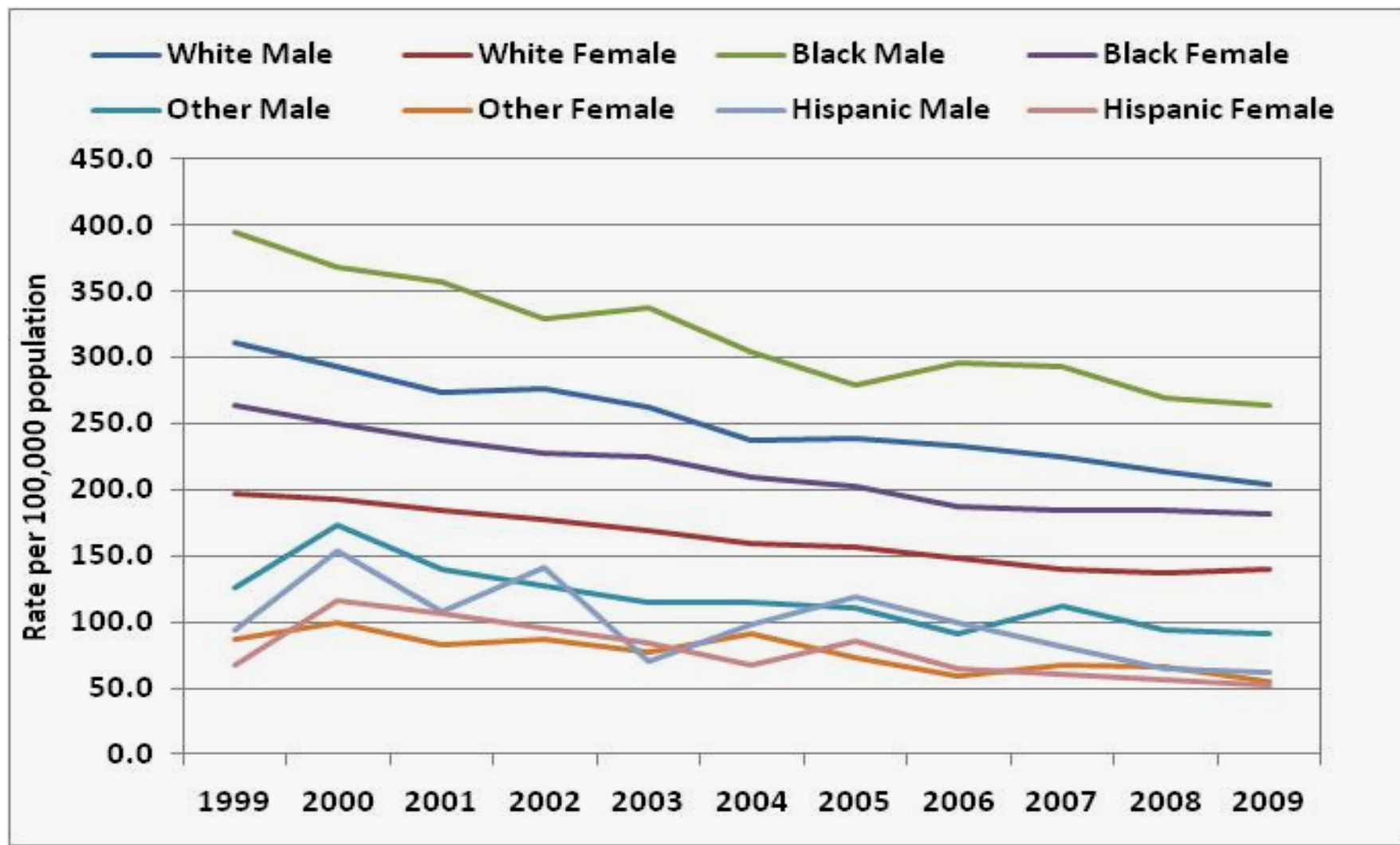
- Heart disease was the second leading cause of death in Virginia in 2009.
- In Virginia, heart disease accounts for 23% of total deaths and 75% of CVD deaths.
- Males had the higher rates of death due to heart disease in Virginia than females.

Source: VDH, Division of Health Statistics, 2009.

Heart Disease Mortality Rate, VA, 1999-2009



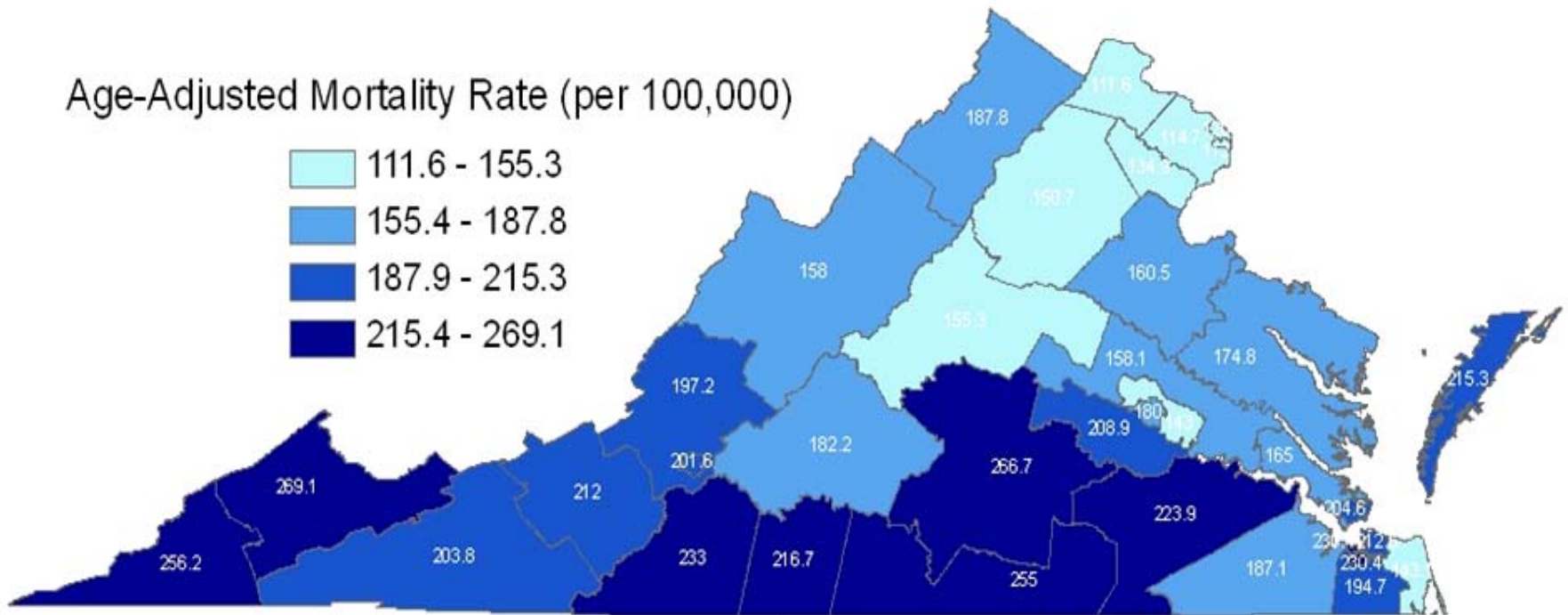
Heart Disease Mortality Rate by Gender and Race, VA, 1999-2009



Source: VDH, Division of Health Statistics, 1999-2009; rates are age-adjusted per 100,000 population.

Age-Adjusted Heart Disease Mortality Rate (per 100,000) by Health District, Virginia, 2009

Age-Adjusted Mortality Rate (per 100,000)



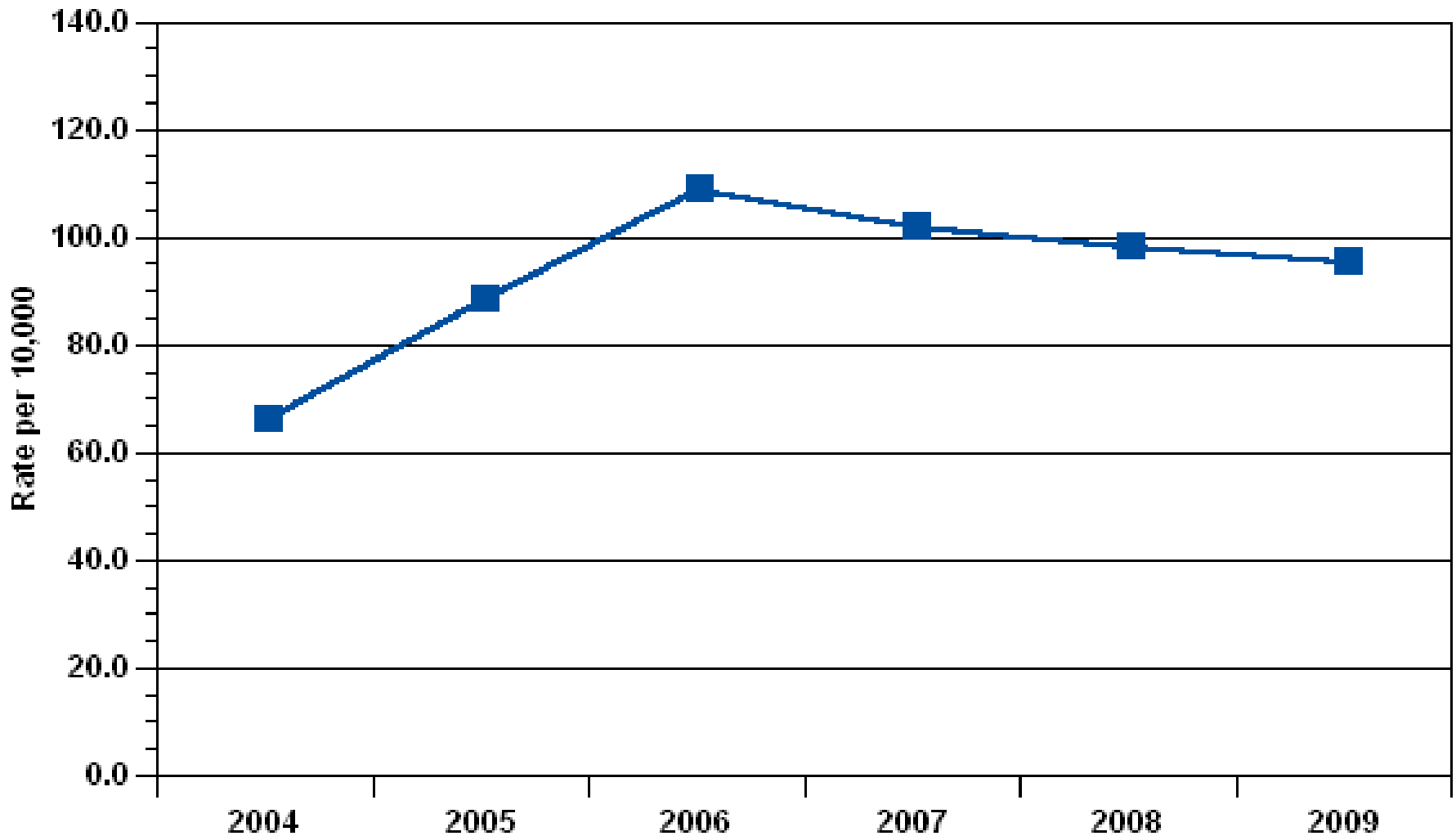
Source: VDH, Division of Health Statistics, 2009 (accessed through the VDH Data Mart). Based on deaths with underlying cause of ICD-10 codes I00-I09, I11, I13, I20-I51. Rates (per 100,000) are age-adjusted. Classification is by quartile.

Heart Disease Hospital Discharge, VA, 2009

Total Heart Disease discharges	76,435
Total charges (\$)	3.1 billion
State Rate*	95.2/10,000
Average charges (\$) per discharge	40,672
Average length of stay (LOS)	4.8 days

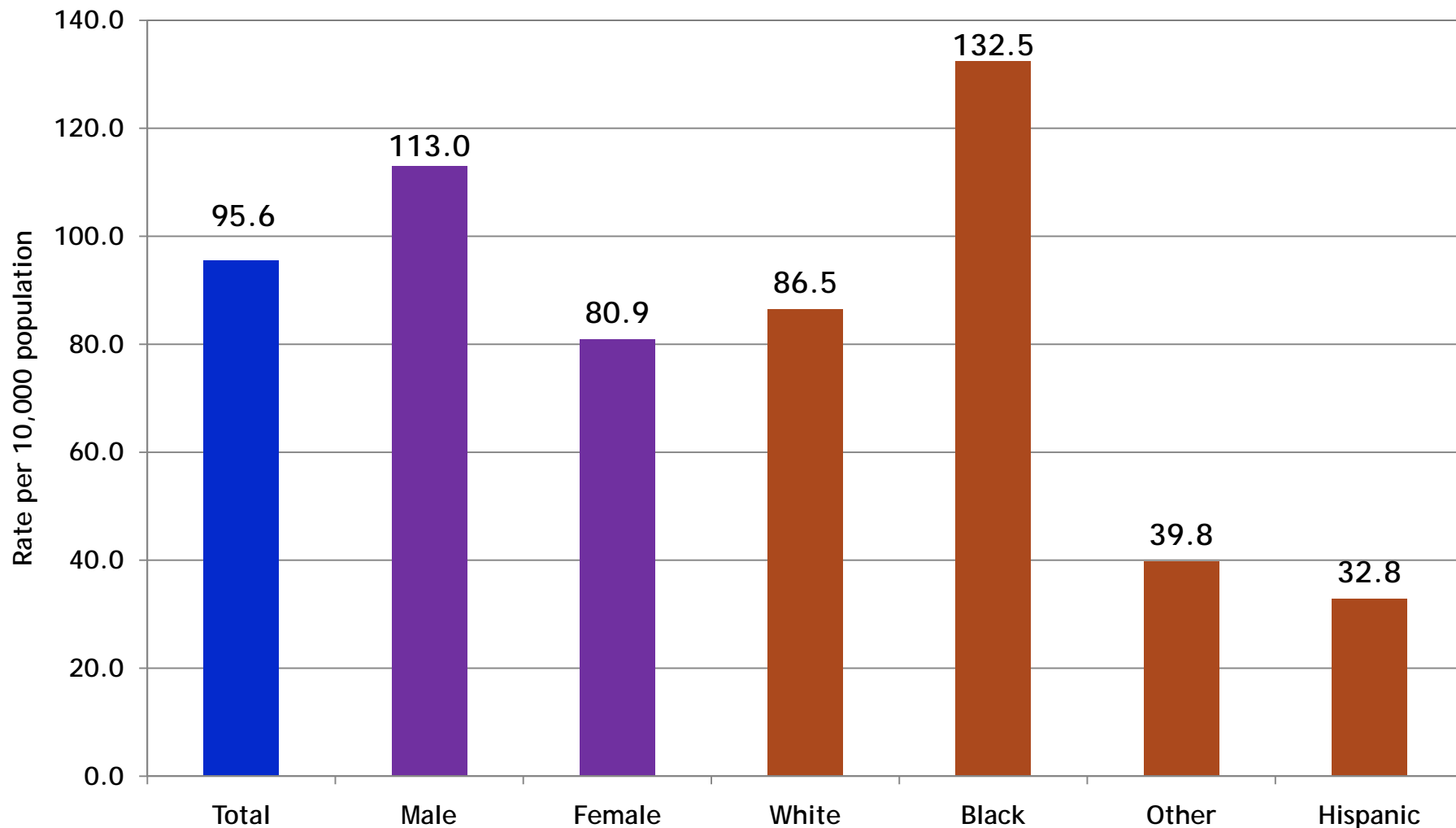
Source: Virginia Health Information Patient-Level Data, 2009; *rate is age-adjusted per 10,000 population.

Heart Disease Hospital Discharge Rate, VA, 1999-2009



Source: Virginia Health Information Patient-Level Data, 2004-2009; rate is age-adjusted per 10,000 population.

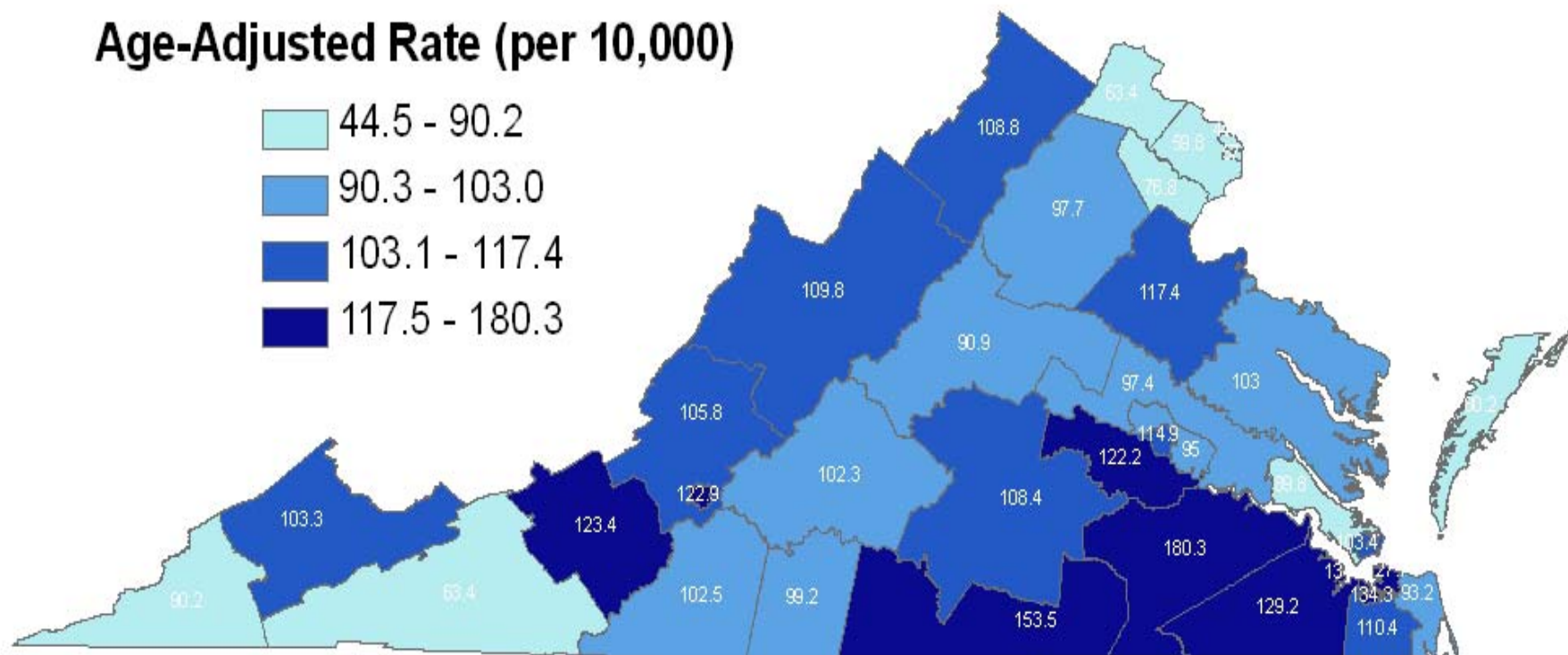
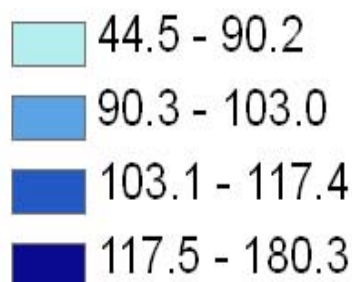
Heart Disease Hospital Discharge, VA, 2009



Source: Virginia Health Information Patient-Level Data, 2009; rate is age-adjusted per 10,000 population.

Age-Adjusted Hospital Discharge Rate (per 10,000) for Heart Disease, by Health District, Virginia, 2009

Age-Adjusted Rate (per 10,000)



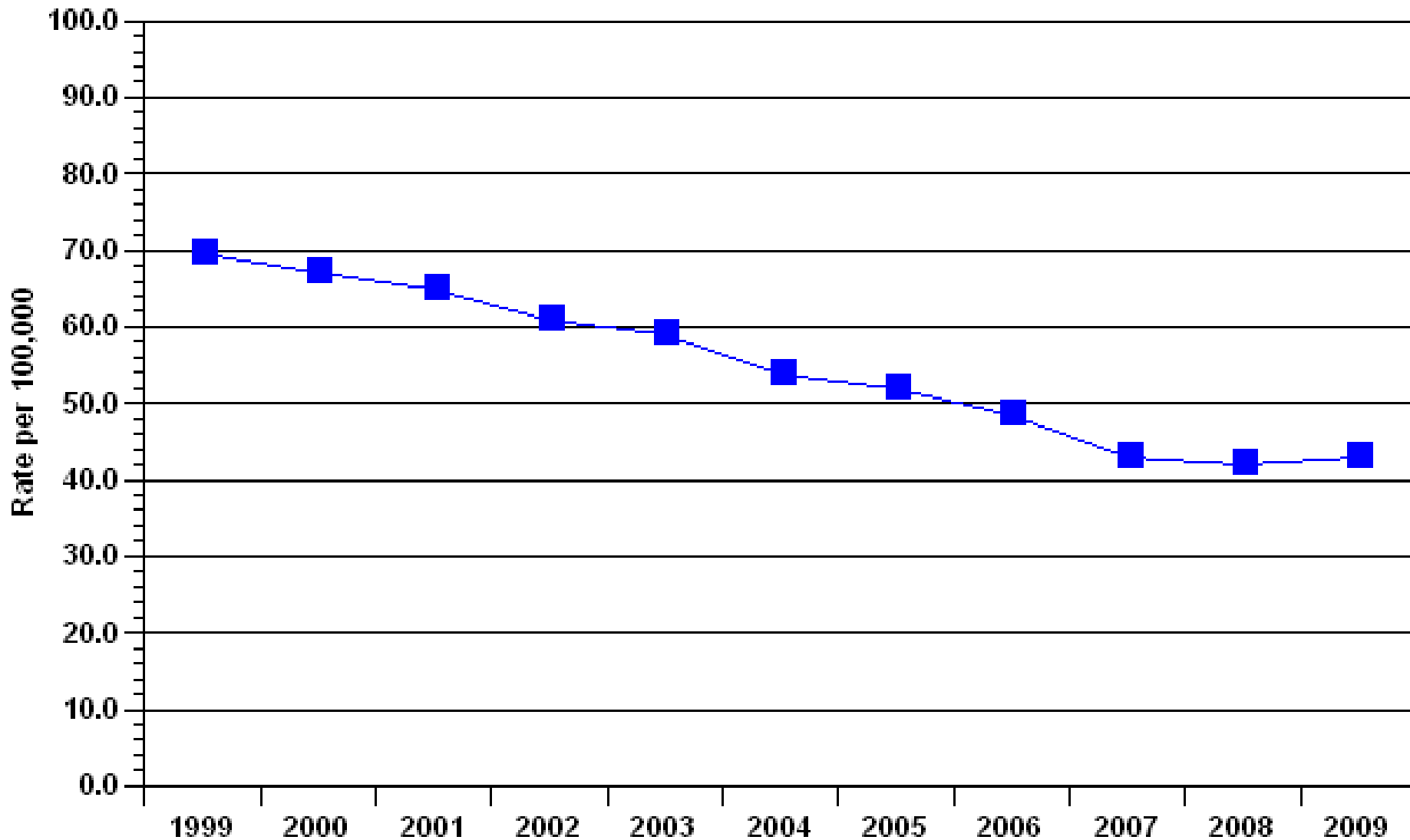
Source: Virginia Health Information, Patient-Level Hospital Discharge Dataset, 2009 (accessed through the VDH Data Warehouse). Based on discharges with primary diagnosis of ICD-9 codes 390-398, 402, 404-429. Rates (per 10,000) are age-adjusted. Classification is by quartile.

Stroke Mortality, VA, 2009

- Stroke was the third leading cause of death in Virginia in 2009.
- In Virginia, stroke accounts for 5.5% of total deaths and 18% of CVD deaths.
- A total of 3,230 Virginians died from stroke in 2009 with a state rate of 43.2 per 100,000 population.
- Blacks had the highest rates of stroke mortality in Virginia, followed by whites.

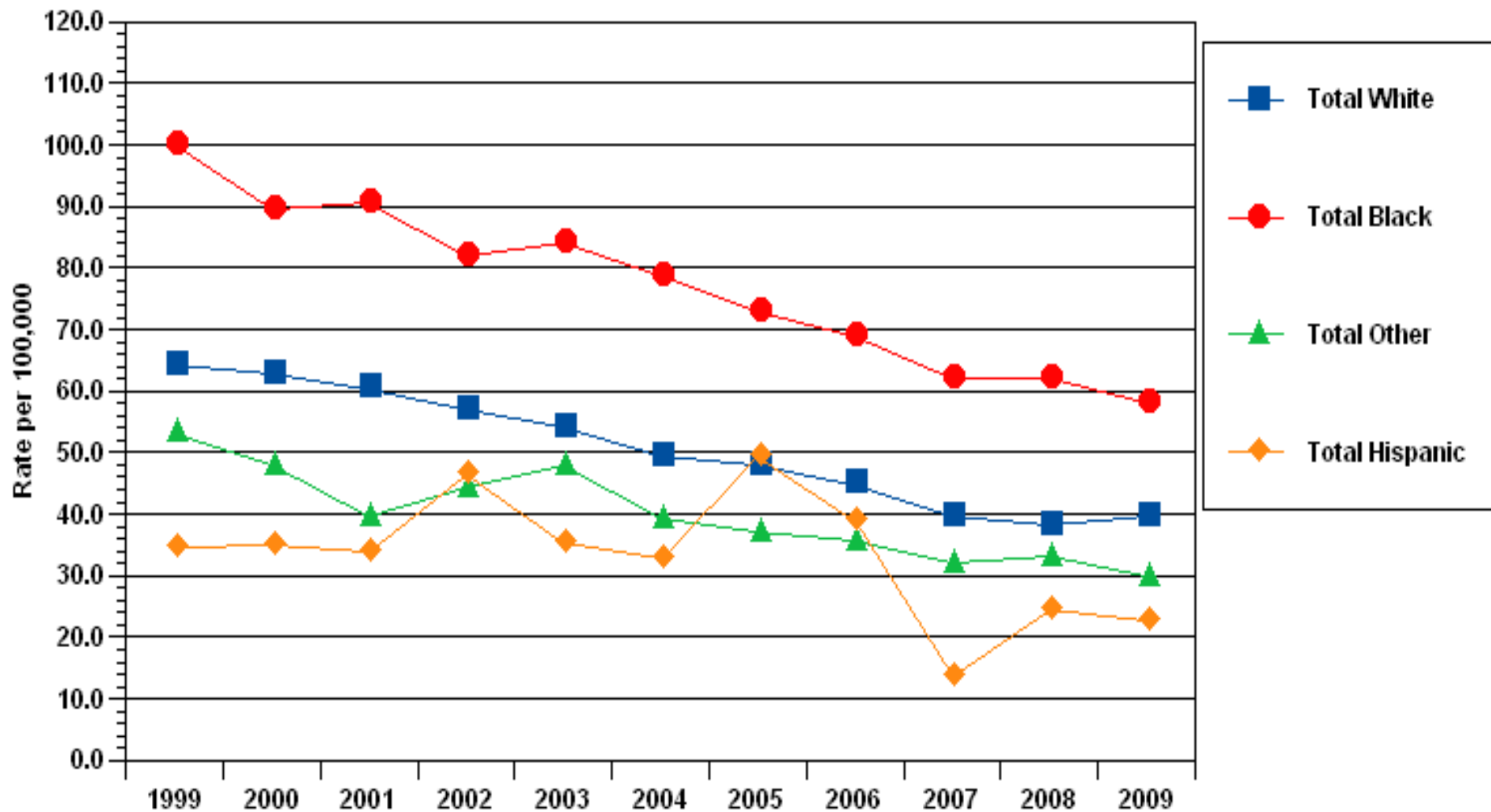
Source: VDH Division of Health Statistics, 2009; rates are age-adjusted per 100,000 population.

Stroke Mortality Rate, Virginia, 1999-2009



Source: VDH Division of Health Statistics 1999-2009; age-adjusted per 100,000 population.

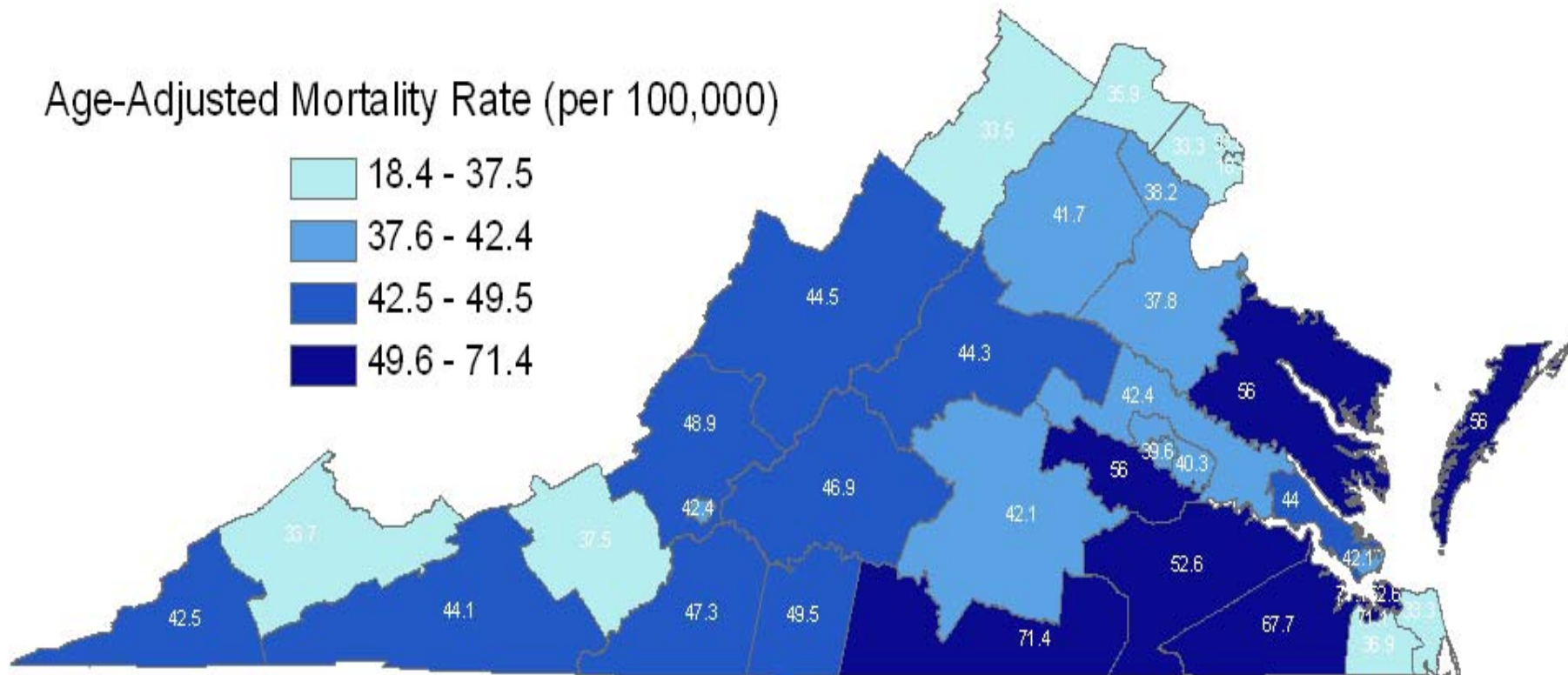
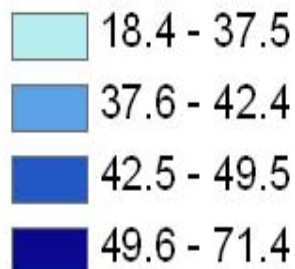
Stroke Mortality Rates by Race/Ethnicity, VA, 1999-2009



Source: VDH Division of Health Statistics 1999-2009; age-adjusted per 100,000 population.

Age-Adjusted Cerebrovascular Disease (Stroke) Mortality Rate (per 100,000), by Health District, Virginia, 2009

Age-Adjusted Mortality Rate (per 100,000)



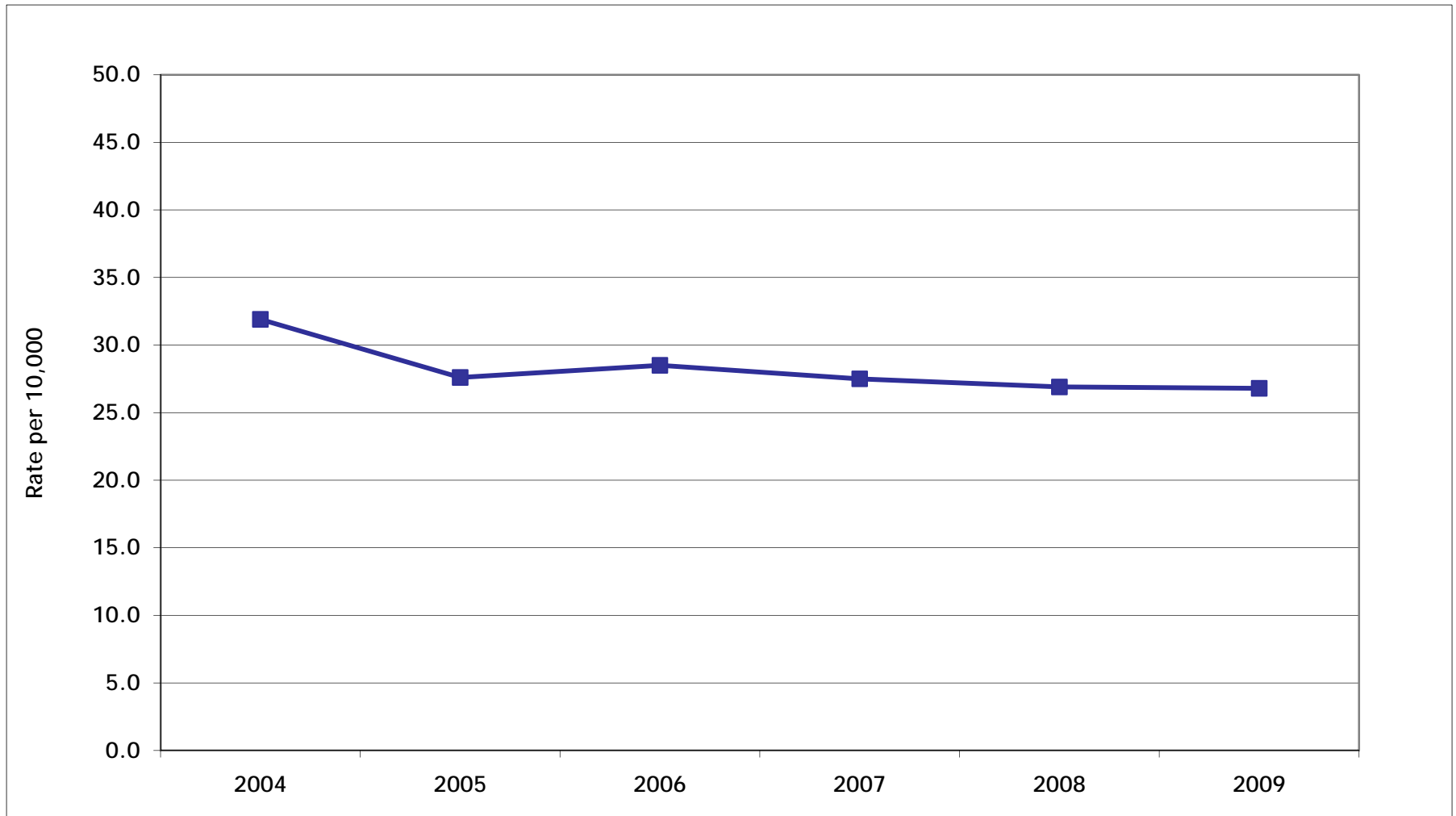
Source: VDH, Division of Health Statistics, 2009 (accessed through the VDH Data Mart). Based on deaths with underlying cause of ICD-10 codes I60-I69. Rates (per 100,000) are age-adjusted. Classification is by quartile.

Stroke Hospital Discharge, VA, 2009

Total Stroke discharges	21,280
Total charges (\$)	637 million
State Rate*	26.8/10,000
Average charges (\$) per discharge	29,975
Average length of stay (LOS)	4.9 days

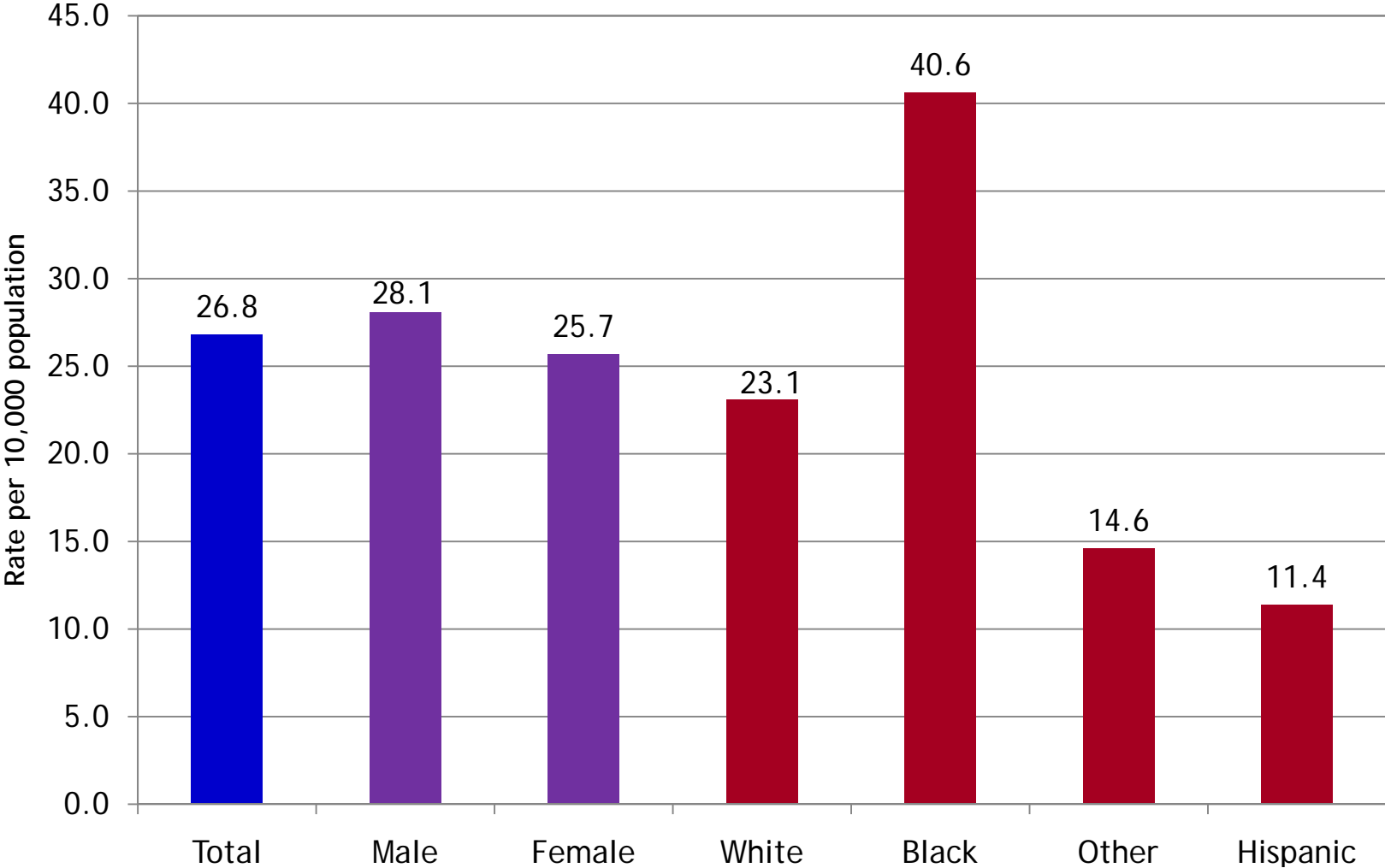
Source: Virginia Health Information Patient-Level Data, 2009; *rate is age-adjusted per 10,000 population.

Stroke Hospital Discharge Rate, VA, 2004-2009



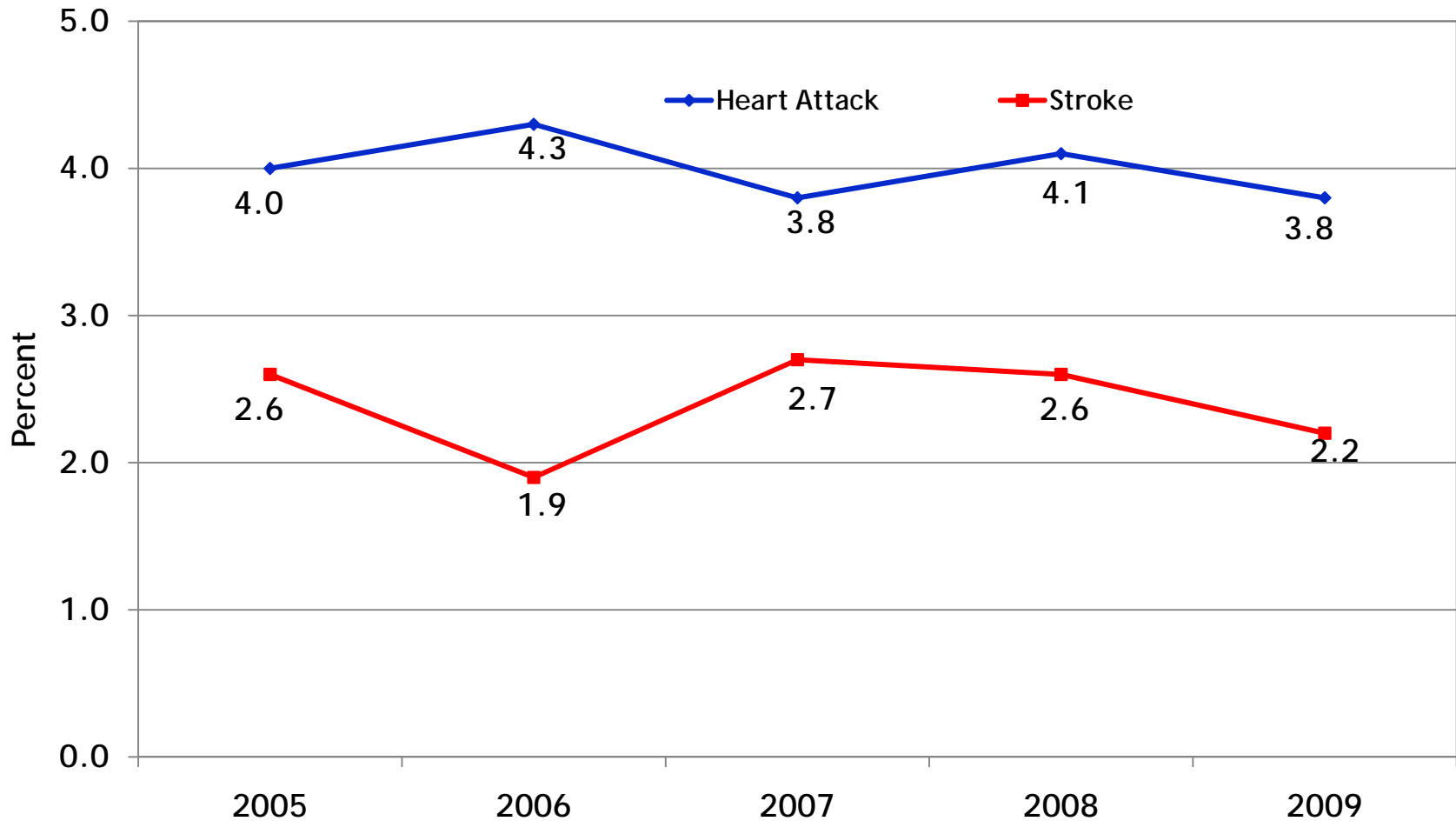
Source: Virginia Health Information Patient-Level Data, 2009; *rate is age-adjusted per 10,000 population.

Stroke Hospital Discharge, VA, 2009



Source: Virginia Health Information Patient-Level Data, 2009; rate is age-adjusted per 10,000 population.

Prevalence of Heart Attack & Stroke, Virginia, 2005-2009



Source: VA BRFSS 2005-2009; adults 18+; weighted percents.

Prevalence of Heart Attack by Health District, Virginia, 2008-2009 (combined)

- The top three health districts with the highest rates of heart attack were:
 1. Cumberland Plateau (8.3%)
 2. Mount Rogers (7.7%)
 3. Three Rivers (7.6%)

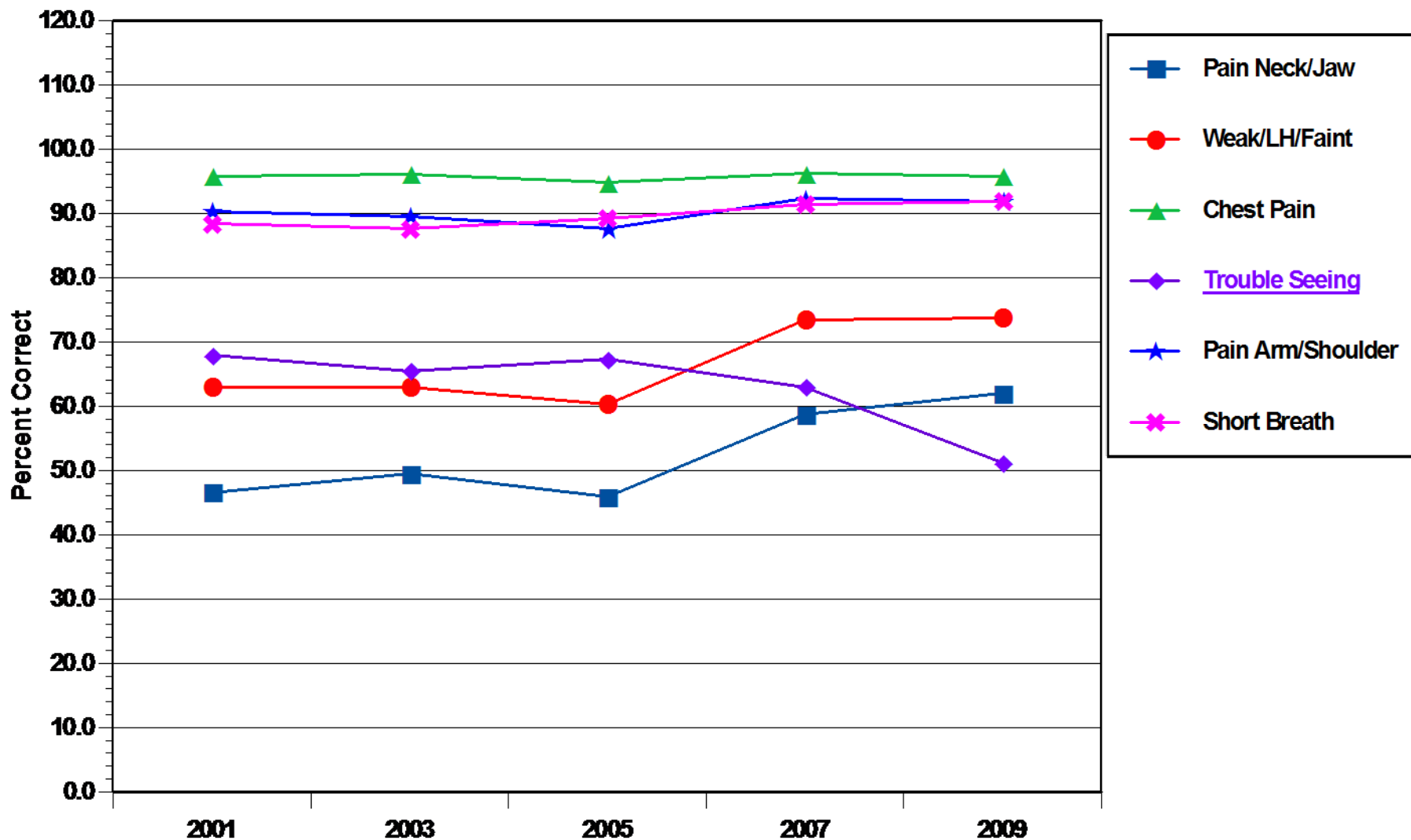
Source: VA BRFSS 2008-2009; adults 18+; weighted percents.

Prevalence of Stroke by Health District, Virginia, 2008-2009 (combined)

- The top three health districts with the highest rates of stroke were:
 1. Richmond (5.1%)
 2. Cumberland Plateau (4.7%)
 3. Crater (4.6%)

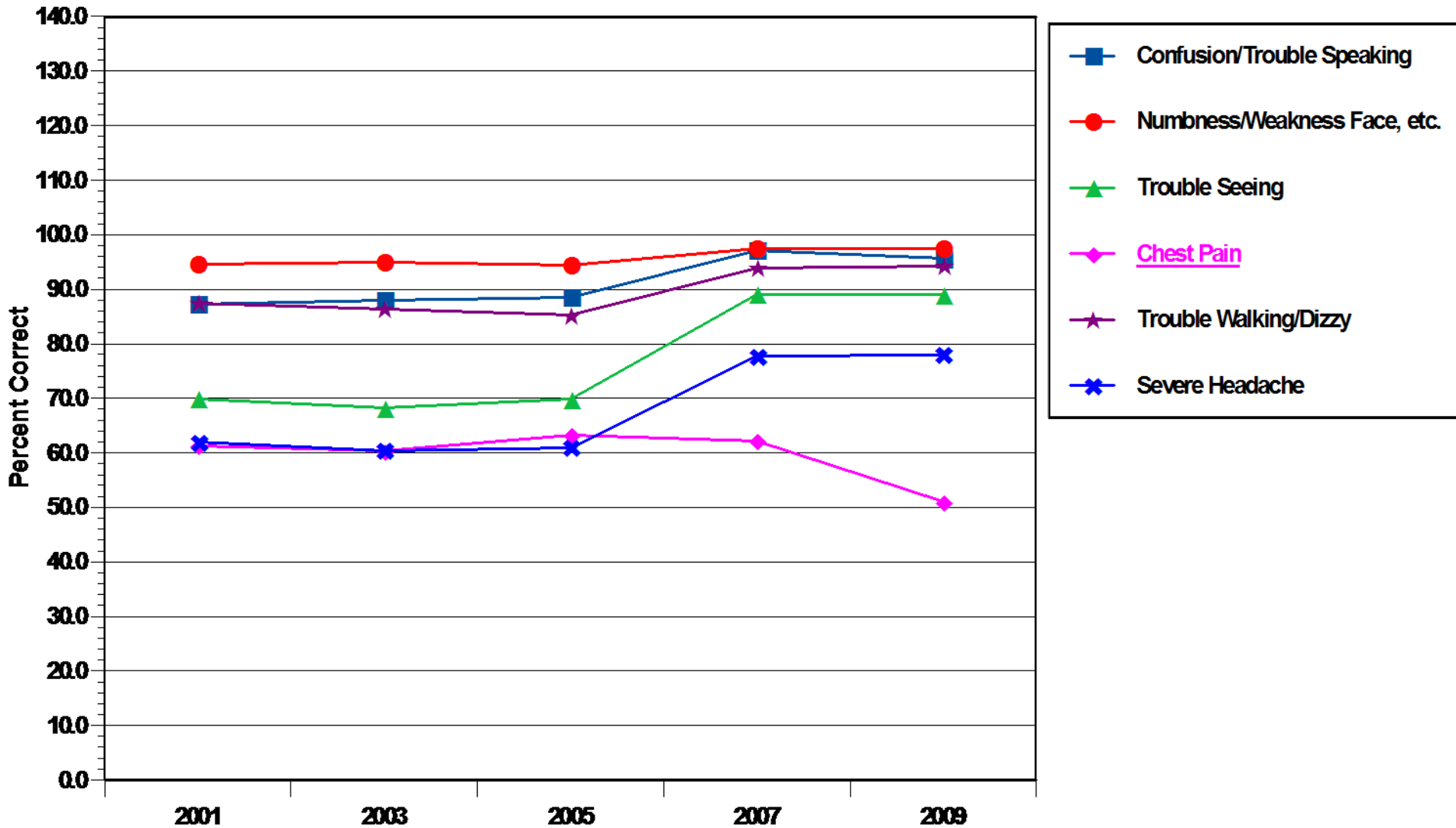
Source: VA BRFSS 2008-2009; adults 18+; weighted percents.

Recognition of Heart Attack Signs & Symptoms



Source: VA BRFSS 2001-2009; adults 18+; weighted percents; trouble seeing is not a sign or symptoms of heart attack; correct response is to not identify it as one.

Recognition of Stroke Signs & Symptoms



Source: VA BRFSS 2001-2009; adults 18+; weighted percents; chest pain is not a sign or symptoms of stroke; correct response is to not identify it as one.

Risk Factors for Heart Disease and Stroke, Virginia, 2009

Risk Factor	Percent	Estimated Population
Smoking	19.0	1,133,775
No Physical Activity	21.9	1,313,351
Consume less than five servings of fruits and vegetables per day	72.7	4,164,661
Obesity	25.5	1,452,228
High Blood Pressure	27.5	1,644,076
High Blood Cholesterol	36.7	1,804,005
Diabetes	8.2	492,037

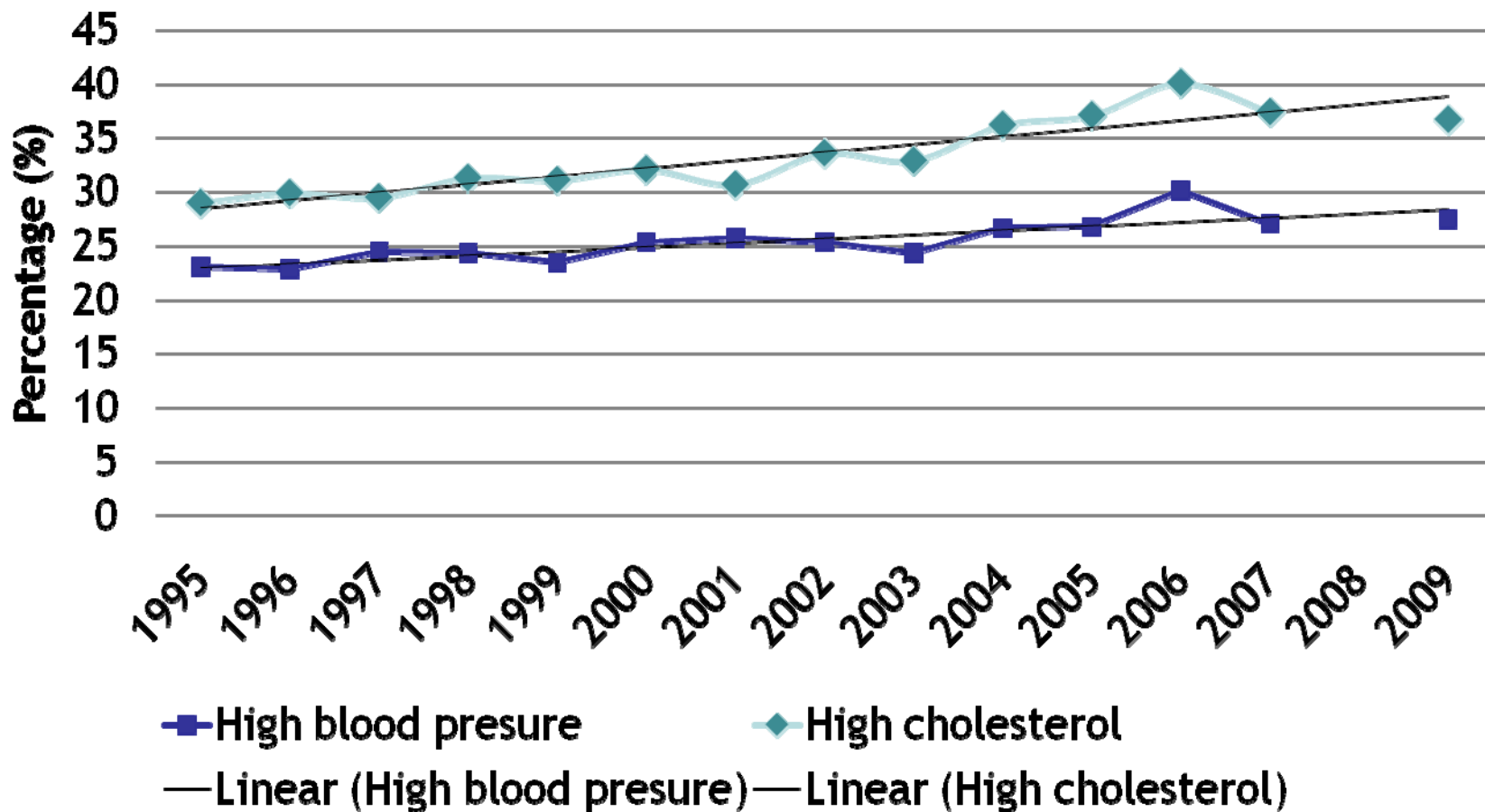
Source: VDH, OFHS, VA BRFSS. Based on 2009 data. Percentage are weighted.

Populations with Highest Rates of Risk Factors for Heart Disease and Stroke, Virginia, 2009

	At-Risk Populations
Smoking	Men, Young adults (18-24 years), American Indians, Low income , and Less education
No Physical Activity	Women, adults aged (45-65+ years), African Americans, Low income, and Less education
Consume less than five servings of fruits and vegetables per day	Men, Young adults, Hispanics, Low income, and Less education
Obesity	Women, Adults aged (25-65+ years), African Americans, Low income, and Less education
High Blood Pressure	Men, Adults aged (45-65+ years), African Americans, Low income, and Less education
High Blood Cholesterol	Men, Adults aged (35-65+ years), White, Low income, and Less education
Diabetes	Men and Women, Adults aged (45-65+ years), African Americans, Low income, and Less education

Source: VDH, OFHS, VA BRFSS. Based on 2009 data. Percentage are weighted.

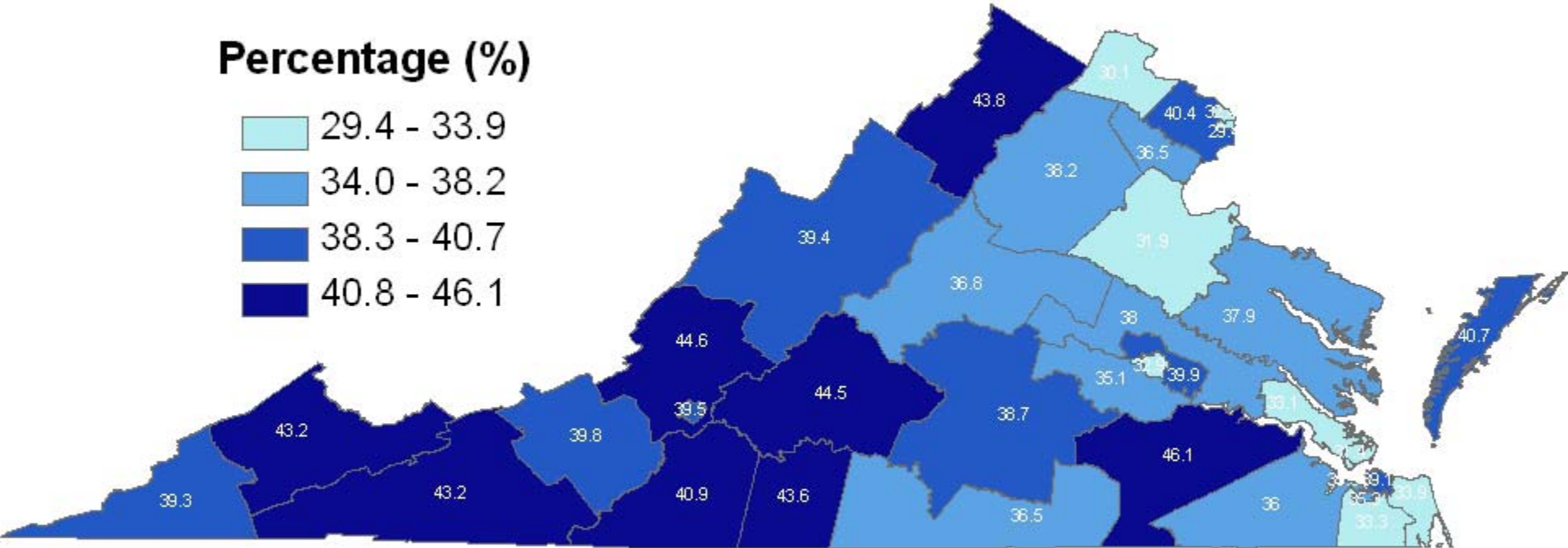
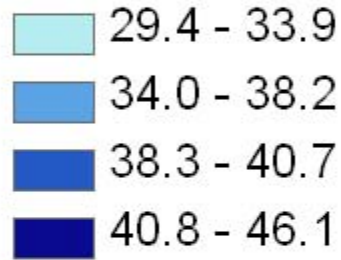
Percentage of Adults who have High Blood Pressure and High Cholesterol, Virginia, 1995-2009



Source: VDH, OFHS, Virginia Behavioral Risk Factor Surveillance System. Percentages are weighted. Refers to adults were told by a health care professional that they have high blood pressure or high cholesterol. Change in response options for blood pressure question after 2001.

Percentage of Adults with High Blood Cholesterol, by Health District, Virginia, 2005-2009

Percentage (%)



Source: VDH, OFHS, Virginia Behavioral Risk Factor Surveillance System. Based on 2005-2007 and 2009 data combined. Classification is by quartile. Refers to adults who report ever being told by a health care professional that they have high blood cholesterol.

Questions??

For more information please see our web page
at:

<http://www.vahealth.org/cdpc/cvh/secondary/data.htm>