

The Burden of Cardiovascular Disease in Pennsylvania



February 2007
Pennsylvania Department of Health

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1. Introduction

State Cardiovascular Disease Burden At-A-Glance

Heart disease and stroke—the chief components of cardiovascular disease (CVD)—have a devastating impact on the health of all Pennsylvanians (Table 1a), our health care system, and economy. As illustrated in Figure 1, heart disease is the leading cause of death in Pennsylvania accounting for 28.5% of all 2004 deaths in the state. About 6% of 2004 Pennsylvania deaths were caused by stroke, which is the third leading cause of death in the state, and a leading cause of adult disability. The Pennsylvania Department of Health’s Bureau of Health Statistics and Research estimates that the state’s CVD health care costs and CVD-related lost productivity costs amounted to over \$15 billion in 2005.

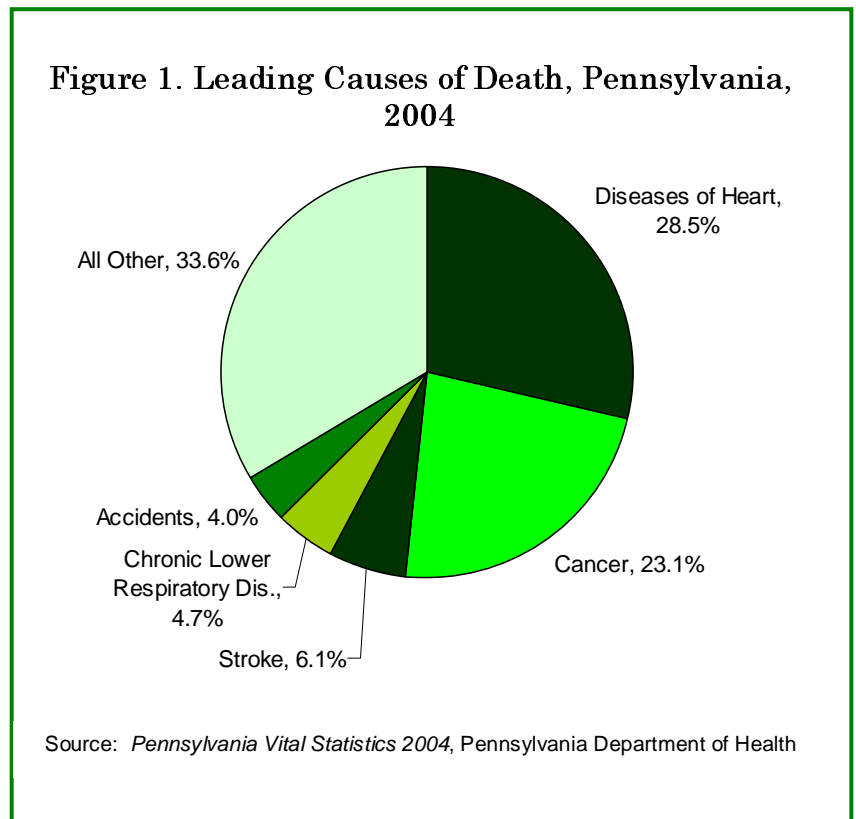


Table 1a. Five Leading Causes of Death by Race & Ethnicity, Pennsylvania, 2004

	Whites	African Americans	Hispanics
1	Diseases of Heart	Diseases of Heart	Cancer
2	Cancer	Cancer	Diseases of Heart
3	Stroke	Stroke	Accidents
4	Chronic Lower Respiratory Disease	Accidents	HIV Disease
5	Accidents	Diabetes	Perinatal Conditions

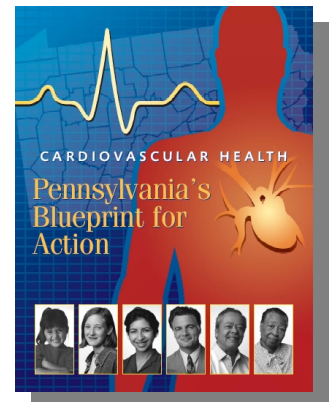
Source: *Pennsylvania Vital Statistics 2004*, Bureau of Health Statistics & Research

Note: Hispanics can be of any race

Useful Pennsylvania Cardiovascular Health Resources

The Pennsylvania Department of Health has developed this report in accordance with Centers for Disease Control and Prevention recommendations for state burden documents¹. ***The Burden of Cardiovascular Disease in Pennsylvania*** can be used by public health agencies, community groups, universities, and other stakeholders throughout the state to increase public awareness of cardiovascular disease as a significant public health problem. The data presented in this document is also useful for directing cardiovascular health program planning, supporting advocacy activities, informing program funding and budgeting, and evaluating the effectiveness of cardiovascular health initiatives.

This burden document is a timely companion report to ***Cardiovascular Health: Pennsylvania's Blueprint for Action***, a working document and long-term guide for improving the cardiovascular health of all Pennsylvanians developed by the **Pennsylvania Cardiovascular Health Consortium (PCHC)**. PCHC is a statewide partnership initiated in 2002 to develop the first-ever, stakeholder-driven cardiovascular health plan for Pennsylvania. Over 100 leaders in the fields of public health and cardiovascular disease prevention, treatment, and rehabilitation, representing Pennsylvania universities, medical schools, hospitals and clinics, public health agencies, state and local governing bodies, and service providers, joined PCHC and worked together to develop the *Blueprint*.



Visit the **Pennsylvania Department of Health's Heart Disease and Stroke Program (HDSP)** online at www.health.state.pa.us to download an electronic copy of the *Blueprint* and to access information on HDSP funded programs, as well as links to valuable national cardiovascular health resources.

Important Data Notes

Most of the data in this report are retrieved from the **Bureau of Health Statistics and Research, Pennsylvania Department of Health (BHSR)** Epidemiologic Query and Mapping System (EpiQMS), which can be accessed at www.health.state.pa.us/stats. **EpiQMS** is an extensive and versatile on-line interactive system that allows users to create various state and local health statistical output on resident live births, teen pregnancy, deaths, infant deaths, cancer incidence, behavioral health risk and population in different formats (tables, charts, maps, and profiles) over time (in single and multiple-year output) for the purpose of trend analysis, public health assessment and surveillance support. Specific data sources for the types of data provided in this burden document are listed in Table 1b.



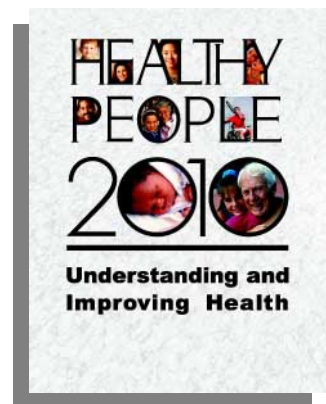
Unless age-specific death rates are indicated, **age-adjusted death rates** using the 2000 US standard population are presented consistently throughout this report. Underlying cause of deaths presented in this report have been classified according to **International Classification of Diseases (ICD)** codes. ICD-10 codes were used to classify cause of death data since 1999 and ICD-9 codes were used between 1979 and 1998. Specific ICD codes are listed in each section of this report.

Table 1b. The Burden of Cardiovascular Disease in Pennsylvania, Data Types & Sources

Type of Data	Data Source
♥ Mortality	BHSR: PA Certificates of Death
♥ Hospitalizations & Cost	Pennsylvania Health Care Cost Containment Council (PHC4) http://www.phc4.org
♥ Disease Prevalence & Disability	
♥ Recognition of Symptoms & Emergency Action	BHSR: A Behavioral Risk Factor Surveillance System (BRFSS)
♥ Risk Factors & Screening Prevalence	

Healthy People 2010

Healthy People 2010 is a set of national health objectives to be achieved by the year 2010. Developed through a broad consultation process, *Healthy People 2010* was created by scientists both inside and outside of government. The national objectives are built on the best scientific knowledge and designed to measure programs over time. *Healthy People 2010* has two overarching goals: 1) Increase quality and years of healthy life, and 2) Eliminate health disparities. The document features 467 science-based objectives, which are organized under 28 focus areas, or chapters. **Focus area 12 addresses heart disease and stroke.** Pennsylvania data on selected *Healthy People 2010* heart disease and stroke objectives are presented throughout this report. For more information on *Healthy People 2010*, visit www.healthypeople.gov. For Pennsylvania data on *Healthy People 2010* objectives, visit the Bureau of Health Statistics and Research, Pennsylvania Department of Health web page at www.health.state.pa.us/stats.



2. Cardiovascular Disease

Cardiovascular disease (CVD) may refer to any of the disorders that can affect the circulatory system, but the term often means coronary heart disease (CHD), stroke, and heart failure taken together².

Cardiovascular Disease Mortality

In 2004, cardiovascular disease accounted for 46,686 of the total 126,602 Pennsylvania deaths that occurred that year. The 2004 age-adjusted mortality rate for Pennsylvania is 302.7. As illustrated in [Figure 2-1](#), the cardiovascular disease mortality rate for Pennsylvania declined by 27.7% between 1990 and 2004. However significant differences in CVD mortality exist by age, gender, geography & and race/ethnicity.

CVD deaths presented are defined according to the following International Classification of Diseases codes: ICD-10: I00-I78/ ICD-9: 390-448.

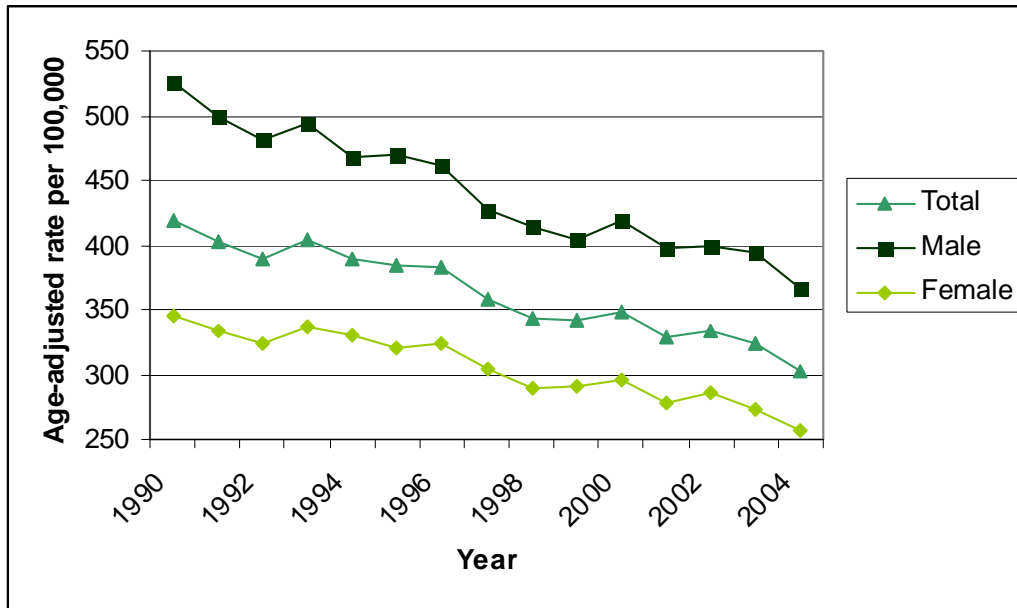
Age

- ♥ [Figure 2-2](#), [2-6](#) and [Table 2c](#): Pennsylvania cardiovascular disease rates rise with increasing age, and adults 65 years and older represent over 86% of deaths from cardiovascular diseases.
- ♥ In 2004, 6,178 Pennsylvanians died prematurely from cardiovascular disease. Premature deaths are defined as those occurring among people younger than 65 years of age. The 2004 age-specific cardiovascular disease death rate for Pennsylvanians younger than 65 years of age is 58.8, and the 2004 age-specific cardiovascular disease death rate for Pennsylvanians aged 65 years and older is 2134.2. See [Table 2c](#) for 3-year sum death rates by age.

Gender

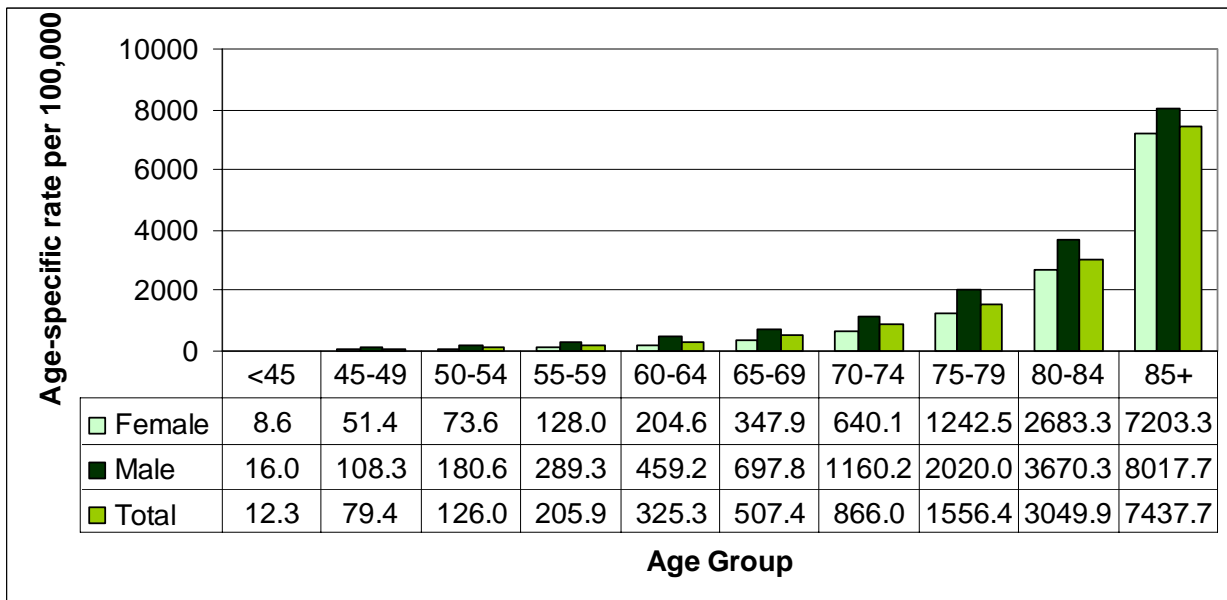
- ♥ In 2004, 25,528 women and 21,158 men in Pennsylvania died from cardiovascular disease. See [Table 2a](#) for cardiovascular disease death rates by gender from 1990-2004.
- ♥ [Figure 2-1](#) and [Table 2a](#): In Pennsylvania, male cardiovascular disease death rates continue to be higher than female CVD death rates. In 2004, Pennsylvania's cardiovascular disease death rate was 256.1 for women and 366.7 for men.
- ♥ [Figure 2-2](#): Pennsylvania's cardiovascular disease death rates are higher among men than women in all age groups.

Figure 2-1. Cardiovascular Disease Death Rates by Gender, Pennsylvania, 1990-2004



Source: Pennsylvania Certificates of Death

Figure 2-2. Cardiovascular Disease Death Rates by Gender & Age, Pennsylvania, 2004

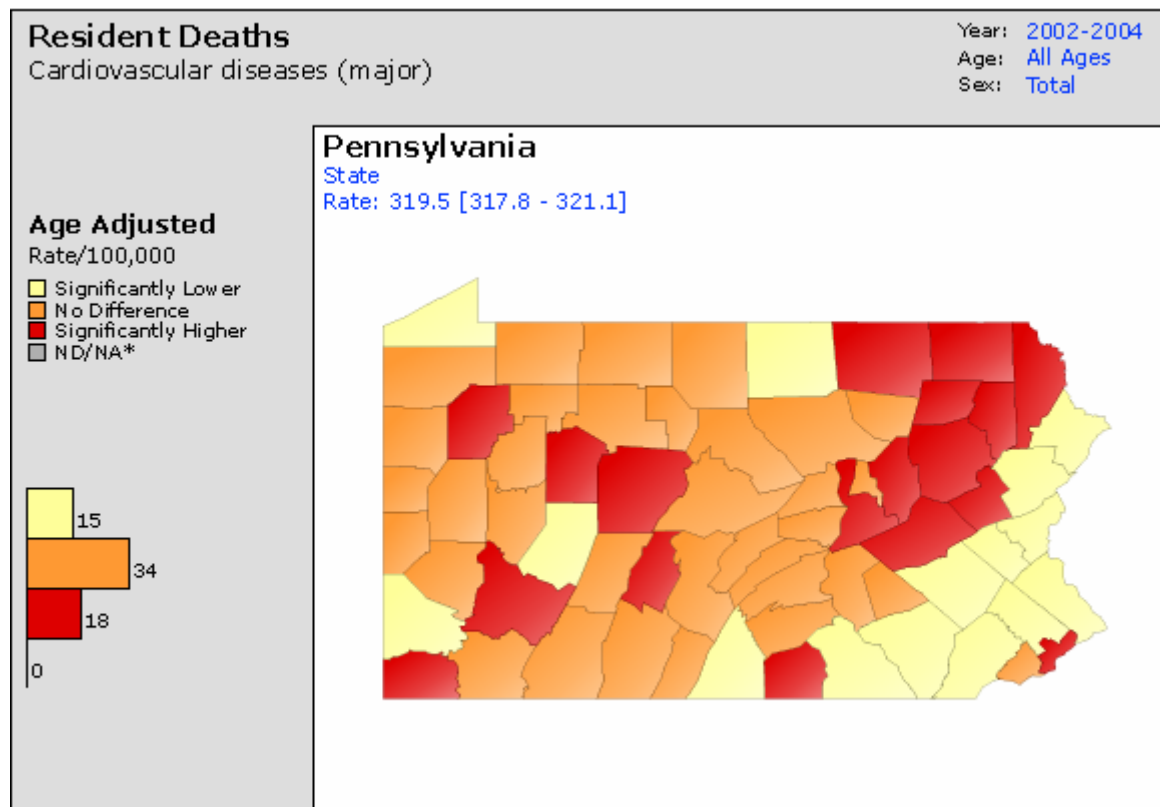


Source: Pennsylvania Certificates of Death

Geography

- ♥ Figure 2-3 and Table 2b: The 2002-2004 cardiovascular disease death rate in Adams, Blair, Bradford, Carbon, Clearfield, Columbia, Greene, Jefferson, Lackawanna, Luzerne, Northumberland, Philadelphia, Schuylkill, Susquehanna, Venango, Wayne, Westmoreland, and Wyoming Counties is significantly higher than the 2002-2004 cardiovascular disease death rate for the state, 319.5.
- ♥ Figure 2-3 and Table 2b: The 2002-2004 cardiovascular disease death rate in Berks, Bucks, Chester, Erie, Franklin, Indiana, Lancaster, Lehigh, Monroe, Montgomery, Northampton, Pike, Tioga, Washington, and York Counties is significantly lower than the 2002-2004 cardiovascular disease death rate for the state.

Figure 2-3. Cardiovascular Disease Death Rates by County, Pennsylvania, 2002-2004 (3-Year Sum)



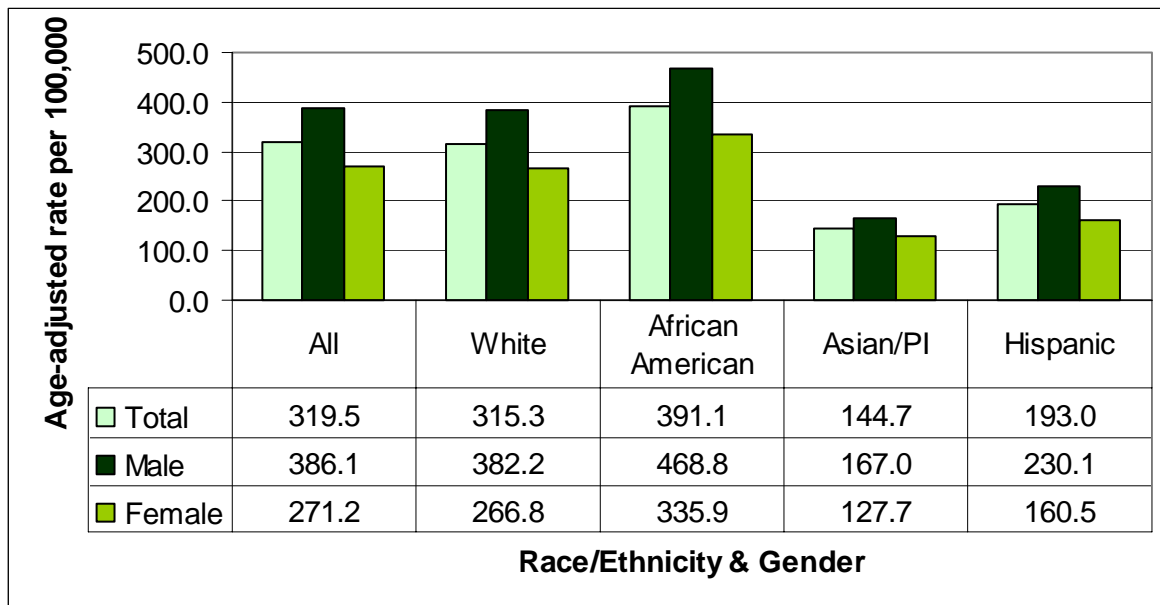
Source: Pennsylvania Certificates of Death

Note: Color-coded bar graph indicates the number of counties with age-adjusted death rates that are significantly lower, no different, or significantly higher than the state age-adjusted death rate.

Race & Ethnicity

- ♥ Figure 2-4 and Table 2a: In Pennsylvania, for the period of 2002-2004, African American men had the highest cardiovascular disease death rates. White men had the second highest CVD death rates, followed by African American women. Asian/Pacific Islander men and women had the lowest cardiovascular disease death rates in Pennsylvania.
- ♥ Figure 2-5 and Table 2a: Although cardiovascular disease death rates have declined since 1990, disparities in CVD death rates between white and African American Pennsylvanians have persisted over time.

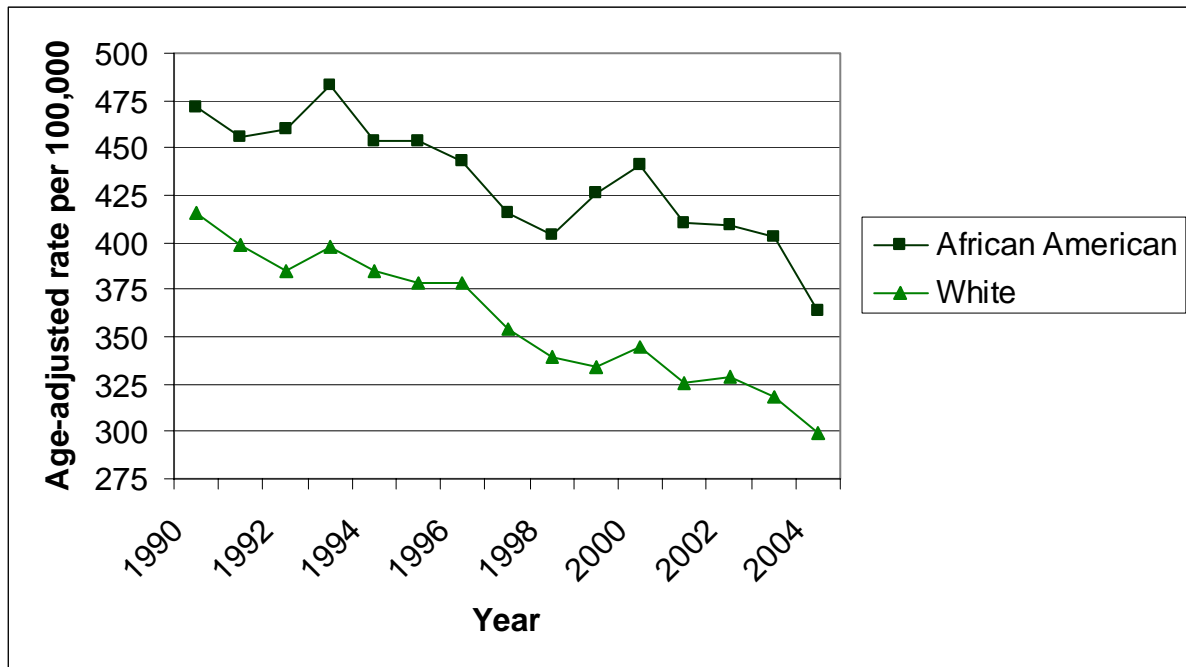
Figure 2-4. Cardiovascular Disease Death Rates by Race/Ethnicity & Gender, Pennsylvania, 2002-2004 (3-Year Sum)



Source: Pennsylvania Certificates of Death

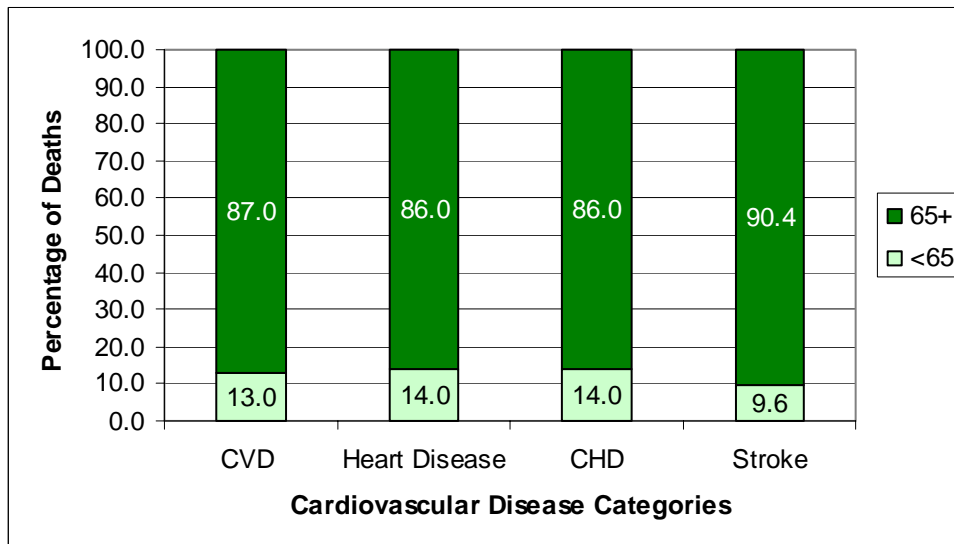
Note: Hispanics can be of any race

Figure 2-5. Cardiovascular Disease Death Rates by Race, Pennsylvania, 1990-2004



Source: Pennsylvania Certificates of Death

Figure 2-6. Percentage of Total Cardiovascular Disease Deaths by Age Group, Pennsylvania, 2002-2004 (3-Year Sum)



Cardiovascular Disease Mortality Data Tables

Table 2a. Cardiovascular Disease Age-Adjusted Death Rates per 100,000 by Gender & Race/Ethnicity, Pennsylvania, 1990-2004

Year	Total	Gender		Race/Ethnicity			
		Female	Male	African American	Asian/PI	Hispanic	White
1990	418.6	345.4	524.8	456.4	NA	265.3	411.6
1991	403.2	334.4	499.0	440.9	NA	196.3	395.5
1992	390.1	323.4	481.2	445.6	NA	223.5	381.2
1993	403.3	337.0	493.5	482.8	NA	241.8	397.1
1994	389.9	330.1	467.7	454.0	NA	235.2	384.8
1995	384.0	321.1	469.6	453.6	NA	243.7	378.7
1996	382.9	323.1	462.0	443.0	NA	210.7	378.0
1997	358.7	304.6	427.8	415.3	NA	270.2	353.8
1998	344.2	290.1	414.2	403.4	NA	202.7	339.6
1999	341.0	290.7	404.1	426.5	NA	226.3	334.4
2000	348.2	295.6	419.6	440.8	167.9	293.3	344.3
2001	328.9	278.0	397.8	410.3	180.7	239.4	325.6
2002	333.4	285.6	399.3	409.3	159.7	223.8	328.9
2003	323.3	272.6	393.5	402.4	141.2	201.7	318.8
2004	302.7	256.1	366.7	363.3	137.3	159.9	299.2

Source: Pennsylvania Certificates of Death

Note: Hispanics can be of any race, NA= data not available

Table 2b. Cardiovascular Age-Adjusted Disease Death Rates by County, Pennsylvania, 2002-2004 (3-Year Sum)

Blue: significantly lower than state rate
 Red: significantly higher than state rate

State/County	Count	Rate	Low CI	Hi CI
Pennsylvania	145187	319.5	317.8	321.1
Adams	1151	360.2	339.7	381.6
Allegheny	17166	324.1	319.3	329.0
Armstrong	980	329.6	309.2	351.0
Beaver	2408	320.1	307.3	333.2
Bedford	571	306.9	282.2	333.3
Berks	3985	298.4	289.2	307.8
Blair	1951	381.8	364.9	399.2
Bradford	788	344.0	320.3	368.9
Bucks	5117	295.4	287.3	303.7
Butler	2131	328.8	314.9	343.1
Cambria	2260	329.2	315.7	343.2
Cameron	89	331.7	265.7	408.6
Carbon	863	351.0	327.9	375.3
Centre	1034	311.3	292.6	331.0
Chester	3513	288.5	279.0	298.3
Clarion	508	333.4	305.0	363.8
Clearfield	1152	348.3	328.4	369.1
Clinton	487	349.7	319.1	382.4
Columbia	906	372.5	348.6	397.7
Crawford	1027	310.1	291.4	329.7
Cumberland	2354	309.7	297.3	322.5
Dauphin	2776	324.5	312.5	336.8
Delaware	6387	316.2	308.4	324.0
Elk	433	311.0	282.3	341.9
Erie	2965	304.4	293.5	315.6
Fayette	2063	332.8	318.5	347.6
Forest	90	377.2	302.5	465.6
Franklin	1388	279.3	264.7	294.4
Fulton	130	272.9	227.8	324.5
Greene	529	363.9	333.5	396.3
Huntingdon	486	314.7	287.3	344.1
Indiana	935	284.0	266.0	302.9
Jefferson	738	383.3	356.0	412.1
Juniata	238	290.3	254.5	329.7

State/County	Count	Rate	Low CI	Hi CI
Lackawanna	3591	372.0	359.8	384.6
Lancaster	4851	300.5	292.1	309.1
Lawrence	1411	333.5	316.1	351.5
Lebanon	1543	324.9	308.8	341.6
Lehigh	3332	278.1	268.7	287.7
Luzerne	5643	381.2	371.3	391.4
Lycoming	1448	321.6	305.2	338.6
McKean	613	345.8	318.8	374.3
Mercer	1571	310.3	295.0	326.1
Mifflin	620	333.7	307.8	361.1
Monroe	1170	296.8	279.7	314.7
Montgomery	7481	275.1	268.9	281.4
Montour	256	344.0	303.1	388.9
Northampton	2977	290.2	279.8	300.8
Northumberland	1461	355.9	337.7	374.8
Perry	438	333.8	303.1	366.7
Philadelphia	17235	350.6	345.4	355.9
Pike	331	221.0	197.0	247.3
Potter	229	312.2	272.9	355.5
Schuylkill	2589	384.1	369.3	399.4
Snyder	391	312.4	282.2	345.0
Somerset	1130	338.1	318.5	358.6
Sullivan	116	343.7	282.7	413.4
Susquehanna	565	353.0	324.4	383.4
Tioga	455	275.7	250.8	302.3
Union	413	293.1	265.5	322.8
Venango	768	357.6	332.7	384.0
Warren	552	329.6	302.6	358.4
Washington	2585	306.8	295.0	318.9
Wayne	718	370.0	343.3	398.2
Westmoreland	5161	331.2	322.2	340.4
Wyoming	331	371.2	332.1	413.7
York	3613	288.9	279.6	298.5

Source: Pennsylvania Certificates of Death

Low CI: lower 95% confidence limit
Hi CI: upper 95% confidence limit

A 95% confidence interval (CI) is composed of two figures (upper and lower limits) computed specifically for a rate. That range identifies the variability of the rate, i.e., 95% of the time, the true rate (unaffected by chance variation or number of events) will occur within that range.

Shading: Premature (<65 years of age) deaths

Table 2c. Cardiovascular Disease Death Rates per 100,000 by Age Group, Pennsylvania, 2002-2004 (3-Year Sum)

Age Group	Count	Population	Rate	Low CI	Hi CI
00-04	91	2,195,998	4.1	3.3	5.1
04-09	20	2,350,244	0.9	0.5	1.3
10-14	41	2,519,830	1.6	1.2	2.2
15-19	62	2,717,489	2.3	1.7	2.9
20-24	104	2,436,033	4.3	3.5	5.2
25-29	148	2,134,369	6.9	5.9	8.1
30-34	279	2,336,056	11.9	10.6	13.4
35-39	619	2,641,956	23.4	21.6	25.4
40-44	1,368	2,868,908	47.7	45.2	50.3
45-49	2,239	2,814,171	79.6	76.3	82.9
50-54	3,490	2,549,669	136.9	132.4	141.5
55-59	4,621	2,125,596	217.4	211.2	223.8
60-64	5,821	1,709,284	340.6	331.9	349.4
65-69	7,979	1,490,250	535.4	523.7	547.3
70-74	12,771	1,386,406	921.2	905.3	937.3
75-79	20,248	1,226,830	1650.4	1627.8	1673.3
80-84	27,436	882,081	3110.4	3073.7	3147.4
85+	57,801	721,668	8009.4	7944.2	8074.9

Source: Pennsylvania Certificates of Death

Low CI: lower 95% confidence limit
 Hi CI: upper 95% confidence limit

A 95% confidence interval (CI) is composed of two figures (upper and lower limits) computed specifically for a rate. That range identifies the variability of the rate, i.e., 95% of the time, the true rate (unaffected by chance variation or number of events) will occur within that range.

Cardiovascular Disease Hospitalizations

The data presented in the hospitalization sections of the burden report were provided by the Pennsylvania Health Care Cost Containment Council (PHC4). The hospitalization rates presented below are for the years 1999-2001 and are per 1,000 population.

- ♥ County cardiovascular disease hospitalization rates for the period of 1999-2001 ranged from 5.3 (Pike County) to 22.3 (Forest County).
- ♥ As expected, county cardiovascular disease hospitalization rates increase with advancing age.

Table 2d. Cardiovascular Disease Hospitalization Rates per 1,000 Population by County & Age, Pennsylvania, 1999-2001 (3-Year Sum)

County	<55	55-64	65-74	≥75
Adams	3.6	35.8	68.5	111.2
Allegheny	4.3	37.6	80.2	148.3
Armstrong	4.3	38.2	75.8	145.8
Beaver	4.3	38.3	77.1	137.9
Bedford	4.2	36.0	75.3	138.6
Berks	3.6	35.8	68.6	116.2
Blair	4.7	39.9	82.4	147.1
Bradford	3.4	32.4	57.7	105.6
Bucks	4.2	37.8	82.3	140.8
Butler	3.6	39.2	84.3	155.1
Cambria	4.4	40.7	84.4	159.2
Cameron	4.3	52.7	79.2	138.9
Carbon	5.7	45.0	90.9	164.4
Centre	2.6	32.3	71.5	137.9
Chester	3.2	30.6	66.8	131.8
Clarion	5.3	38.0	96.5	178.1
Clearfield	6.0	51.2	94.6	178.5
Clinton	3.0	37.4	65.4	115.5
Columbia	4.3	38.3	75.7	142.7
Crawford	4.8	43.8	85.8	144.2
Cumberland	4.2	37.0	78.6	138.6
Dauphin	3.8	38.2	69.7	113.0
Delaware	4.2	42.0	81.5	147.3
Elk	4.1	34.1	82.5	149.8

County	<55	55-64	65-74	≥75
Erie	3.9	38.8	75.1	123.6
Fayette	6.1	54.0	93.6	170.9
Forest	8.1	71.8	118.7	184.1
Franklin	3.1	27.3	55.2	101.0
Fulton	5.1	42.7	88.4	166.3
Greene	4.7	36.0	82.0	146.2
Huntingdon	3.7	42.8	78.6	139.4
Indiana	4.0	40.1	86.7	149.0
Jefferson	5.9	50.8	108.1	165.0
Juniata	4.5	46.4	92.6	179.7
Lackawanna	4.6	38.7	82.2	145.8
Lancaster	3.3	32.0	65.9	110.3
Lawrence	5.9	47.4	92.3	162.0
Lebanon	3.6	36.8	72.3	131.1
Lehigh	3.4	32.6	63.3	107.2
Luzerne	4.9	41.6	82.0	142.4
Lycoming	3.1	29.7	51.7	98.3
McKean	4.6	42.0	79.5	136.9
Mercer	5.8	50.2	96.6	160.1
Mifflin	5.3	50.9	92.1	181.5
Monroe	4.0	39.4	79.0	135.3
Montgomery	3.7	32.5	69.7	126.8
Montour	4.4	28.4	70.0	115.5
Northampton	4.2	43.6	93.1	168.6
Northumberland	5.6	47.2	81.3	146.8
Perry	5.1	49.0	88.5	149.6
Philadelphia	6.3	55.0	94.2	153.7
Pike	1.9	12.4	27.1	39.7
Potter	3.6	29.8	47.4	90.8
Schuylkill	5.9	51.4	96.3	166.6
Snyder	4.0	39.1	80.6	146.4
Somerset	4.8	40.1	84.2	151.1
Sullivan	3.2	28.0	56.8	87.8
Susquehanna	3.6	34.5	69.4	142.8
Tioga	3.7	36.6	69.4	136.0
Union	3.3	33.0	82.4	143.1
Venango	5.5	45.2	94.8	162.6
Warren	4.8	36.3	69.0	123.5

County	<55	55-64	65-74	≥75
Washington	5.0	42.6	86.9	159.5
Wayne	4.8	39.6	76.5	137.9
Westmoreland	4.9	41.5	94.2	164.4
Wyoming	5.0	46.5	95.7	187.5
York	3.4	31.8	63.1	113.2

Source: Pennsylvania Health Care Cost Containment Council

Statewide Hospital Charges for CVD-related Diagnosis

Using Pennsylvania Department of Health, American Heart Association, and U.S. Census data, the Pennsylvania Department of Health's Heart Disease and Stroke Program (HDSP) estimates that cardiovascular disease cost Pennsylvania approximately \$15.7 billion in 2005 (approximately \$10.8 billion in heart disease related costs and \$2.4 billion in stroke related costs). HDSP estimates include both direct and indirect costs. Direct costs include the cost of physicians and other professionals, hospital and nursing home services, the cost of medications, home health care and other medical durables. Indirect costs include lost productivity that results from illness and death.

The data presented in the section below was obtained from the Pennsylvania Health Care Cost Containment Council's 2005 Hospital Performance Report, which provides data on inpatient hospital discharges in virtually all Pennsylvania hospitals for the 2005 federal fiscal year (October 1, 2004 through September 30, 2005)³.

- ♥ **Table 2e:** It is estimated that Pennsylvania hospital charges for cardiovascular conditions (congestive heart failure, heart attack, and stroke) exceeded \$2.3 billion in 2005.

Table 2e. Hospital Charges for CVD-related Principal Diagnosis, Pennsylvania, 2005

Diagnosis	Number of Cases	Average Charge*	Total Charge**
Congestive heart failure	55,029	\$22,795	\$1,254,386,055
Heart attack (medical management)	14,337	\$29,702	\$425,837,574
Stroke (hemorrhagic)	3,636	\$36,044	\$131,055,984
Stroke (non-hemorrhagic)	19,992	\$26,722	\$534,226,224

Note: Diagnosis of heart attack (medical management includes heart attack patients who were treated without a balloon (angioplasty) procedure or open heart surgery³.

Diagnosis of stroke (non-hemorrhagic) does not include transient ischemic attack (temporary stroke symptoms)³.

* According to the Pennsylvania Health Care Cost Containment Council (PHC4) report, charges are what the hospital reports on the billing form, and they may not accurately represent the amount a hospital receives in payment for the services it delivers. According to PHC4, hospitals generally receive less in actual payments than the listed charge. However, PHC4 maintains that charges are the only data compiled that reflect the relative cost of all services provided by hospitals, and hospital charges are used almost universally by those attempting to assess the costs of health care.

** Estimated statewide hospital charges calculated by multiplying number of cases by average charge.

3. Heart Disease

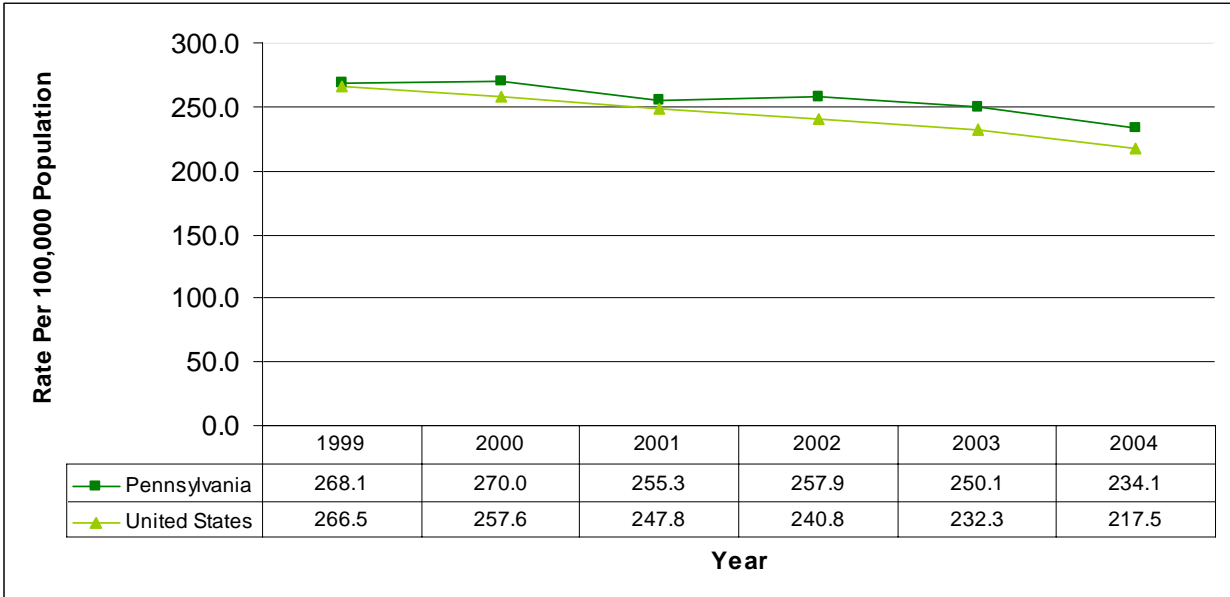
Heart disease is any affliction that impairs the structure or function of the heart (e.g., atherosclerotic and hypertensive diseases, congenital heart disease, rheumatic heart disease and cardiomyopathies²).

Heart Disease Mortality

Heart Disease is the leading cause of death in Pennsylvania. According to the 2004 Pennsylvania Department of Health Vital Statistics Report, 99 Pennsylvanians died from heart disease each day in 2004. In 2004, heart disease accounted for 36,063 of the total 126,602 Pennsylvania deaths occurring that year. The 2004 age-adjusted heart disease mortality rate for Pennsylvania is 234.1. As illustrated in Figure 3-1, the heart disease mortality rate for Pennsylvania and the United States has declined since 1990. However, significant differences in state heart disease mortality exist by age, gender, geography, and race/ethnicity.

Heart disease deaths presented are defined according to the following International Classification of Diseases codes: ICD-10: 100-109, I11, I13, I20-I51/ ICD-9: 390-398, 402, 404-429

Figure 3-1. Heart Disease Age-Adjusted Death Rates, United States and Pennsylvania, 1999-2004



Source: *Pennsylvania Vital Statistics 2004*, Pennsylvania Department of Health

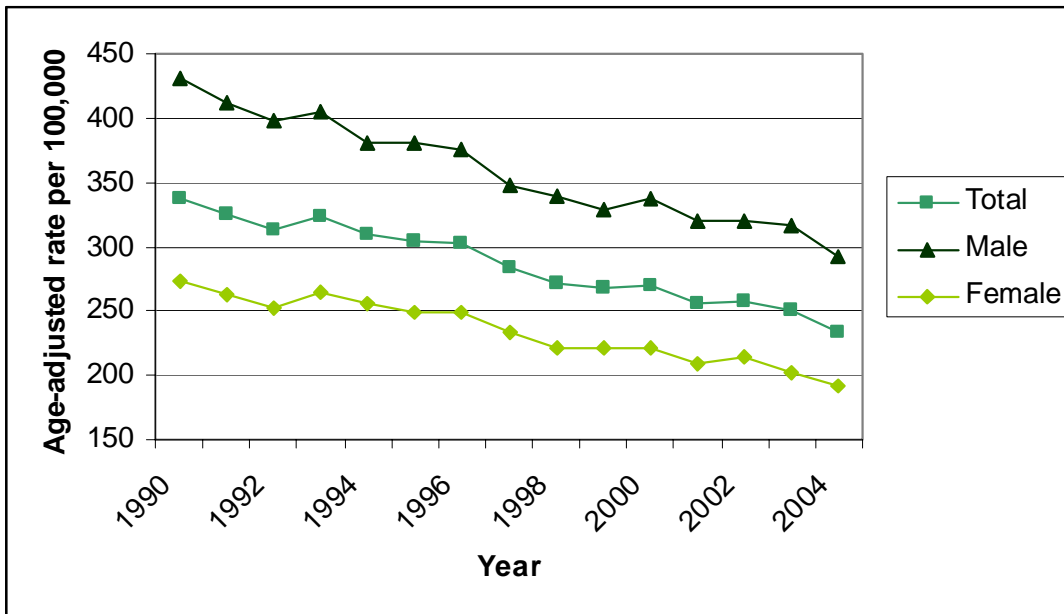
Age

- ♥ Figure 3-3 and Table 3c: Pennsylvania heart disease rates rise with increasing age.
- ♥ In 2004, 5075 Pennsylvanians died prematurely from heart disease. Premature deaths are defined as those occurring among people younger than 65 years of age. The 2004 age-specific heart disease death rate for Pennsylvanians younger than 65 years of age is 48.3, and the 2004 age-specific heart disease death rate for Pennsylvanians aged 65 years and older is 1632.5. See Table 3c for 3-year sum death rates by age.
- ♥ According to the Bureau of Health Statistics and Research's *Pennsylvania Vital Statistics 2004* report, the median age at death caused by heart disease in Pennsylvania in 2004 was 82.4.
- ♥ The median age at death caused by heart disease in Pennsylvania in 2004 was 82.9 for whites, 74.0 for African Americans, and 69.7 for Pennsylvanians of Hispanic origin who can be of any race.

Gender

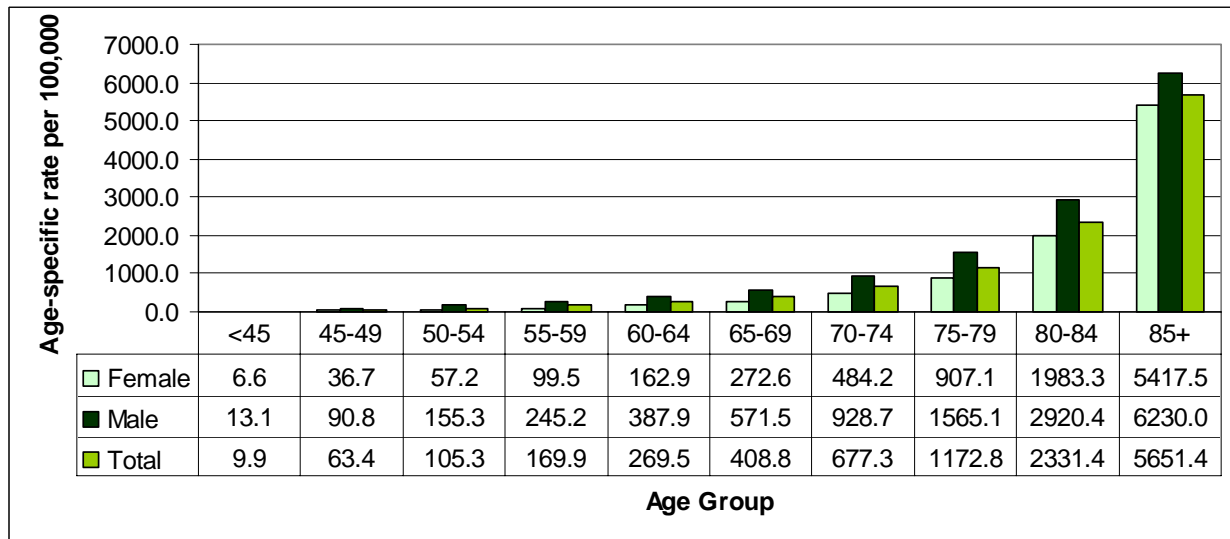
- ♥ In 2004, 19,155 women and 16,908 men in Pennsylvania died from heart disease. See Table 3a for death rates by gender for the years 1990-2004.
- ♥ Figure 3-2 and Table 3a: In Pennsylvania, male heart disease death rates continue to be higher than female heart disease death rates. In 2004, Pennsylvania's heart disease death rate was 192.3 for women and 292.1 for men.
- ♥ Figure 3-3: Pennsylvania's heart disease death rates are higher among men than women in all age groups.

Figure 3-2. Heart Disease Death Rates by Gender, Pennsylvania, 1990-2004



Source: Pennsylvania Certificates of Death

Figure 3-3. Heart Disease Death Rates by Gender & Age, Pennsylvania, 2004

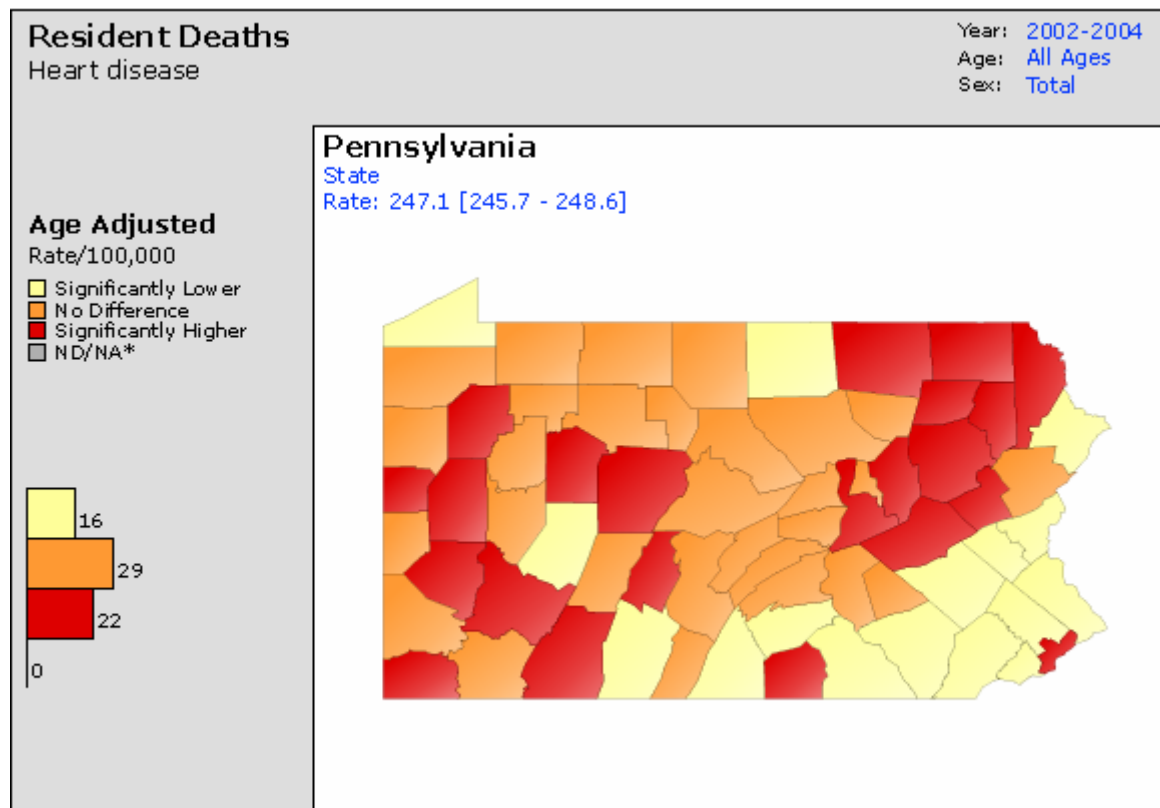


Source: Pennsylvania Certificates of Death

Geography

- ♥ **Figure 3-4 and Table 3b:** The 2002-2004 heart disease death rate in Adams, Allegheny, Blair, Bradford, Butler, Carbon, Clearfield, Columbia, Greene, Jefferson, Lackawanna, Lawrence, Luzerne, Northumberland, Philadelphia, Schuylkill, Somerset, Susquehanna, Venango, Wayne, Westmoreland, and Wyoming Counties is significantly higher than the 2002-2004 heart disease death rate for the state, 247.1.
- ♥ **Figure 3-4 and Table 3b:** The 2002-2004 heart disease death rate in Bedford, Berks, Bucks, Chester, Cumberland, Delaware, Erie, Franklin, Indiana, Lancaster, Lehigh, Montgomery, Northampton, Pike, Tioga, and York Counties is significantly lower than the 2002-2004 heart disease death rate for the state.

Figure 3-4. Heart Disease Death Rates by County, Pennsylvania, 2002-2004 (3-Year Sum)



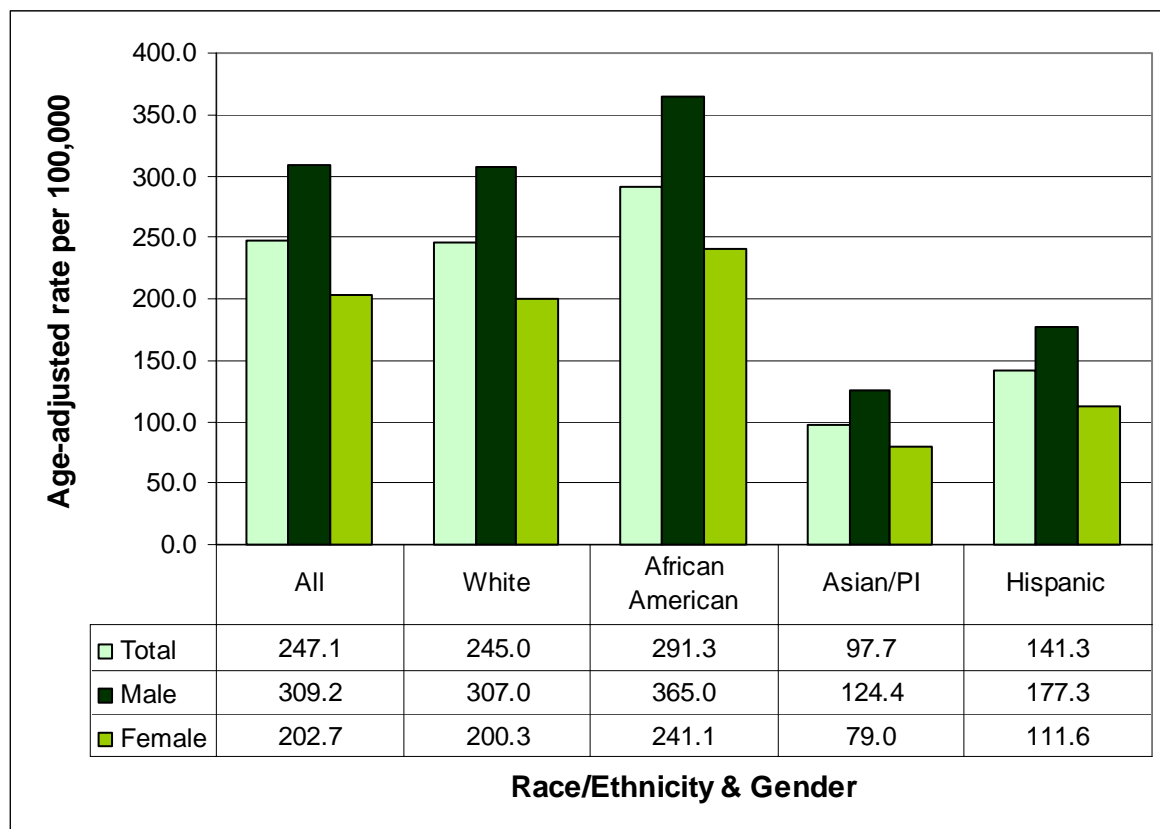
Source: Pennsylvania Certificates of Death

Note: Color-coded bar graph indicates the number of counties with age-adjusted death rates that are significantly lower, no different, or significantly higher than the state age-adjusted death rate.

Race & Ethnicity

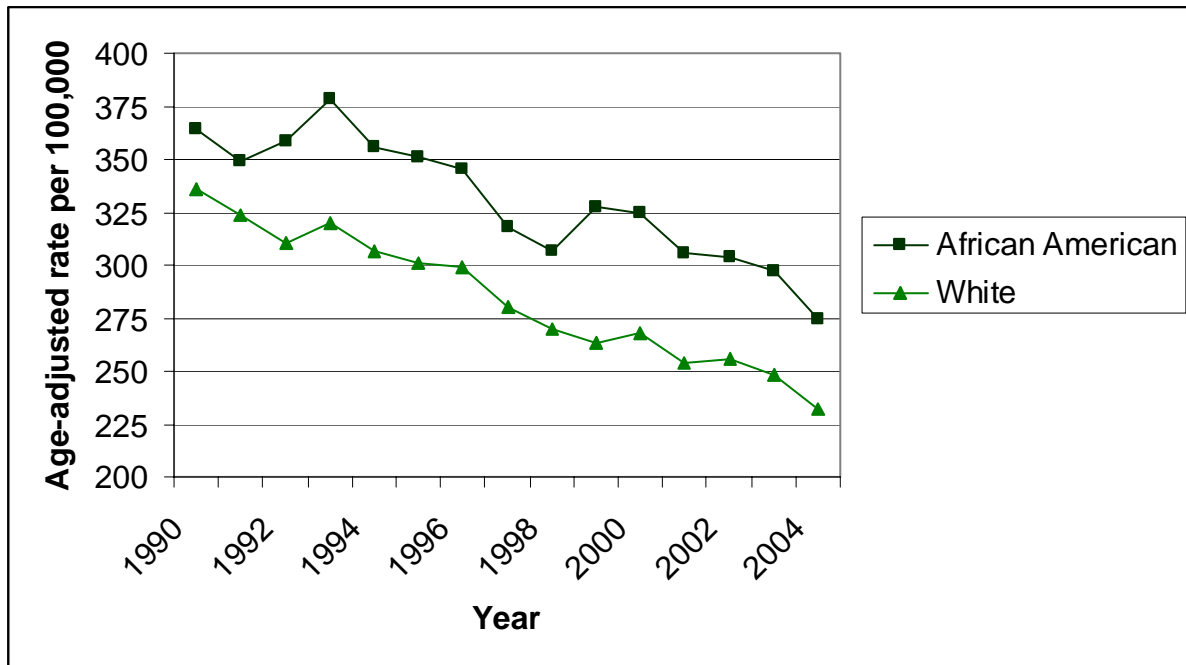
- ♥ **Figure 3-5 and Table 3a:** In Pennsylvania, African American men have the highest heart disease death rates. During the period of 2002-2004, 4,213 African American men died from heart disease in Pennsylvania. For the 2002-2004 period, White men had the second highest heart disease death rates, followed by African American women. Asian/Pacific Islander men and women had the lowest heart disease death rates in Pennsylvania.
- ♥ **Figure 3-6 and Table 3a:** Although heart disease death rates have declined since 1990, disparities in heart disease death rates between white and African American Pennsylvanians have persisted over time.

Figure 3-5. Heart Disease Death Rates by Race/Ethnicity & Gender, Pennsylvania, 2002-2004 (3-Year Sum)



Source: Pennsylvania Certificates of Death
 Note: Hispanics can be of any race

Figure 3-6. Heart Disease Death Rates by Race, Pennsylvania, 1990-2004



Source: Pennsylvania Certificates of Death

Heart Disease Mortality Data Tables

Table 3a. Heart Disease Age-Adjusted Death Rates per 100,000 by Gender & Race/Ethnicity, Pennsylvania, 1990-2004

Year	Total	Gender		Race/Ethnicity			
		Female	Male	African American	Asian/PI	Hispanic	White
1990	337.5	272.7	430.7	364.5	NA	234.2	336.1
1991	325.4	262.9	412.7	349.3	NA	165.3	323.4
1992	313.7	252.0	398.8	358.7	NA	211.5	310.2
1993	324.0	264.6	405.4	378.1	NA	184.8	319.8
1994	309.8	255.4	381.4	355.2	NA	183.7	306.3
1995	304.6	248.4	381.1	350.7	NA	190.9	301.1
1996	302.6	248.1	375.6	344.9	NA	151.8	299.3
1997	283.2	232.9	348.5	317.6	NA	209.2	280.2
1998	272.1	221.9	338.2	306.7	NA	151.6	269.5
1999	268.1	221.3	328.1	327.8	NA	175.7	263.5
2000	270.0	221.9	336.7	324.6	118.6	214.8	268.2
2001	255.3	208.1	319.6	305.9	120.4	182.7	253.8
2002	257.9	213.7	319.3	303.6	103.2	170.9	255.5
2003	250.1	202.8	317.0	297.2	97.2	140.5	248.0
2004	234.1	192.3	292.1	274.4	95.0	117.9	232.1

Source: Pennsylvania Certificates of Death

Note: Hispanics can be of any race, NA= data not available

Table 3b. Heart Disease Age-Adjusted Death Rates per 100,000 by County, Pennsylvania, 2002-2004 (3-Year Sum)

Blue: significantly lower than state rate
 Red: significantly higher than state rate

State/County	Count	Rate	Low CI	Hi CI
Pennsylvania	112159	247.1	245.7	248.6
Adams	956	298.8	280.2	318.4
Allegheny	13404	253.9	249.6	258.3
Armstrong	784	264.1	245.8	283.4
Beaver	1922	256.1	244.7	267.9
Bedford	410	219.3	198.4	241.7
Berks	2968	222.5	214.5	230.6
Blair	1541	302.4	287.4	318.0
Bradford	628	274.1	253.0	296.5
Bucks	3742	215.8	208.9	223.0
Butler	1691	261.5	249.2	274.4
Cambria	1766	258.8	246.8	271.3
Cameron	77	287.1	225.9	359.1
Carbon	675	274.8	254.4	296.4
Centre	809	242.7	226.2	260.1
Chester	2706	222.2	213.9	230.8
Clarion	402	264.4	239.1	291.6
Clearfield	904	273.8	256.2	292.4
Clinton	368	262.4	236.2	290.9
Columbia	707	291.4	270.3	313.8
Crawford	774	234.4	218.1	251.5
Cumberland	1778	233.9	223.1	245.0
Dauphin	2179	254.6	244.0	265.5
Delaware	4803	238.2	231.5	245.1
Elk	316	226.7	202.3	253.3
Erie	2281	234.7	225.2	244.6
Fayette	1605	259.7	247.0	272.8
Forest	68	285.9	221.3	364.2
Franklin	1031	207.2	194.7	220.3
Fulton	106	222.2	181.7	269.2
Greene	422	290.3	263.2	319.4
Huntingdon	383	247.8	223.5	274.0
Indiana	737	224.7	208.7	241.6
Jefferson	563	294.1	270.1	319.6
Juniata	178	217.2	186.4	251.7

State/County	Count	Rate	Low CI	Hi CI
Lackawanna	2920	303.5	292.4	314.8
Lancaster	3652	226.5	219.2	234.0
Lawrence	1123	267.5	251.9	283.8
Lebanon	1203	253.9	239.7	268.7
Lehigh	2588	216.2	207.9	224.7
Luzerne	4419	298.9	290.1	308.0
Lycoming	1073	238.7	224.6	253.5
McKean	409	232.6	210.5	256.3
Mercer	1225	242.8	229.3	256.9
Mifflin	481	259.1	236.4	283.4
Monroe	927	234.3	219.2	250.3
Montgomery	5390	198.4	193.2	203.8
Montour	192	258.4	223.1	297.8
Northampton	2349	229.2	220.0	238.7
Northumberland	1187	290.5	274.0	307.7
Perry	351	266.9	239.6	296.5
Philadelphia	13360	272.3	267.7	277.0
Pike	254	170.7	149.7	194.1
Potter	176	240.5	206.1	278.9
Schuylkill	2072	308.0	294.8	321.7
Snyder	301	240.3	213.9	269.1
Somerset	917	275.6	257.9	294.1
Sullivan	84	254.0	201.2	315.6
Susquehanna	463	289.8	264.0	317.5
Tioga	355	215.3	193.3	239.0
Union	316	224.5	200.4	250.6
Venango	598	278.2	256.3	301.6
Warren	418	249.6	226.2	274.8
Washington	1996	237.4	227.1	248.1
Wayne	546	281.5	258.2	306.2
Westmoreland	4050	260.6	252.5	268.7
Wyoming	260	291.1	256.6	328.9
York	2820	225.1	216.8	233.5

Source: Pennsylvania Certificates of Death

Low CI: lower 95% confidence limit
Hi CI: upper 95% confidence limit

A 95% confidence interval (CI) is composed of two figures (upper and lower limits) computed specifically for a rate. That range identifies the variability of the rate, i.e., 95% of the time, the true rate (unaffected by chance variation or number of events) will occur within that range.

Shading: Premature (<65 years of age) deaths

Table 3c. Heart Disease Death Rates per 100,000 by Age Group, Pennsylvania, 2002-2004 (3-Year Sum)

Age Group	Count	Population	Rate	Low CI	Hi CI
00-04	75	2,195,998	3.4	2.7	4.3
04-09	13	2,350,244	0.6	0.3	0.9
10-14	30	2,519,830	1.2	0.8	1.7
15-19	43	2,717,489	1.6	1.1	2.1
20-24	81	2,436,033	3.3	2.6	4.1
25-29	118	2,134,369	5.5	4.6	6.6
30-34	226	2,336,056	9.7	8.5	11.0
35-39	512	2,641,956	19.4	17.7	21.1
40-44	1,122	2,868,908	39.1	36.9	41.5
45-49	1,831	2,814,171	65.1	62.1	68.1
50-54	2,906	2,549,669	114.0	109.9	118.2
55-59	3,806	2,125,596	179.1	173.4	184.8
60-64	4,839	1,709,284	283.1	275.2	291.2
65-69	6,437	1,490,250	431.9	421.5	442.6
70-74	10,088	1,386,406	727.6	713.5	742.0
75-79	15,514	1,226,830	1264.6	1244.7	1284.6
80-84	20,745	882,081	2351.8	2319.9	2384.0
85+	43,732	721,668	6059.8	6003.2	6116.9

Source: Pennsylvania Certificates of Death

Low CI: lower 95% confidence limit
 Hi CI: upper 95% confidence limit

A 95% confidence interval (CI) is composed of two figures (upper and lower limits) computed specifically for a rate. That range identifies the variability of the rate, i.e., 95% of the time, the true rate (unaffected by chance variation or number of events) will occur within that range.

Heart Disease Hospitalizations

- ♥ As expected, Pennsylvania county heart disease hospitalization rates for the period of 1999-2001 were higher for older age groups.
- ♥ The lowest of five ranges of hospitalization rates for Pennsylvania adults younger than 55 years of age was 1.60-3.10. Lawrence and Carbon were among the Pennsylvania Counties with the lowest heart disease hospitalization rates for adults younger than 55. The highest range of county hospitalization rates for this age group was 4.44-6.83 per 1,000.
- ♥ County heart disease hospitalization rates for adults 55-64 years of age ranged from 9.92 to 63.69; hospitalization rates for adults 65-74 years of age ranged from 22.20 to 94.80; and hospitalization rates for adults 75 years of age and older ranged from 30.67 to 152.27. Pike County had the lowest heart disease hospitalization rate, and Forest County had the highest, for each of these age groups.

Table 3d. Heart Disease Hospitalization Rates per 1,000 Population by County & Age, Pennsylvania, 1999-2001 (3-Year Sum)

County	<55	55-64	65-74	≥75
Adams	3.3	31.1	56.4	87.9
Allegheny	3.7	30.5	64.0	115.2
Armstrong	3.6	32.3	59.6	110.8
Beaver	3.8	31.8	63.3	111.0
Bedford	3.8	32.2	61.8	106.7
Berks	3.1	30.2	55.8	89.5
Blair	4.0	33.6	67.5	113.7
Bradford	3.1	28.6	46.4	83.9
Bucks	3.7	32.3	68.8	110.8
Butler	3.0	32.7	66.2	117.2
Cambria	3.8	34.2	68.4	125.1
Cameron	3.4	42.2	68.1	118.7
Carbon	4.9	39.2	76.0	129.3
Centre	2.3	27.6	59.8	109.9
Chester	2.9	25.9	53.1	100.2
Clarion	4.6	31.8	80.7	133.9
Clearfield	5.3	44.7	79.0	144.7
Clinton	2.7	31.6	52.3	91.8
Columbia	3.8	32.2	60.5	109.8

County	<55	55-64	65-74	≥75
Crawford	4.3	36.9	71.9	118.7
Cumberland	3.7	31.3	63.6	108.9
Dauphin	3.3	31.3	55.7	88.0
Delaware	3.6	34.4	62.8	109.5
Elk	3.7	30.3	64.5	115.5
Erie	3.3	32.6	59.0	94.0
Fayette	5.3	46.2	78.3	138.4
Forest	6.8	63.7	94.8	152.3
Franklin	2.7	24.2	46.9	79.8
Fulton	4.7	37.7	71.0	123.7
Greene	4.2	33.4	70.8	122.2
Huntingdon	3.3	36.9	63.1	103.7
Indiana	3.4	34.1	70.9	117.9
Jefferson	5.2	44.4	89.8	129.1
Juniata	3.8	40.6	78.7	140.3
Lackawanna	4.0	31.0	65.2	110.7
Lancaster	2.8	27.0	54.5	85.7
Lawrence	5.2	40.3	75.7	128.8
Lebanon	3.2	30.2	57.6	101.5
Lehigh	3.0	27.5	51.2	84.2
Luzerne	4.1	33.9	64.1	106.2
Lycoming	2.7	24.8	41.7	75.6
McKean	4.0	36.5	66.0	113.0
Mercer	5.2	44.4	81.7	130.6
Mifflin	4.5	43.5	72.3	140.8
Monroe	3.5	34.1	64.5	107.3
Montgomery	3.2	27.6	56.7	99.2
Montour	3.9	25.3	54.3	86.2
Northampton	3.7	37.7	78.1	135.3
Northumberland	5.0	40.6	66.5	117.4
Perry	4.4	42.4	72.8	118.8
Philadelphia	5.3	45.5	76.4	120.8
Pike	1.6	9.9	22.2	30.7
Potter	3.3	26.2	39.0	69.0
Schuylkill	5.3	43.8	78.7	130.6
Snyder	3.4	32.2	66.5	113.5
Somerset	4.1	34.1	69.6	117.3
Sullivan	2.7	24.2	45.1	74.3

County	<55	55-64	65-74	≥75
Susquehanna	3.2	28.9	56.7	109.5
Tioga	3.2	31.7	57.3	110.4
Union	2.9	27.1	67.4	113.9
Venango	4.3	37.8	77.2	121.5
Warren	4.3	31.6	56.1	104.5
Washington	4.3	36.1	71.3	123.6
Wayne	4.1	33.0	59.8	103.9
Westmoreland	4.2	34.8	77.4	130.7
Wyoming	4.3	38.1	78.5	138.2
York	2.9	26.6	51.1	87.1

Source: Pennsylvania Health Care Cost Containment Council Data

4. Coronary Heart Disease

Coronary heart disease (CHD) is heart disease caused by impaired circulation in one or more arteries; often manifests as chest pain (angina pectoris) or heart attack².

Coronary Heart Disease Mortality

In 2004, coronary heart disease accounted for 25,237 of the total 126,602 Pennsylvania deaths that occurred that year. The 2004 age-adjusted mortality rate for Pennsylvania is 163.7 compared with 166 per 100,000 population, as stated in Healthy People 2010 Objective 12-1. As illustrated in [Figure 4-1](#), the coronary heart disease mortality rate for Pennsylvania declined by 38.8% between 1990 and 2004; however, significant differences in CHD mortality exist by age, gender, geography, and race/ethnicity.

CHD deaths presented are defined according to the following International Classification of Diseases codes: ICD-10: I11, I20-I25, I516 / ICD-9: 402, 410-414, 4292

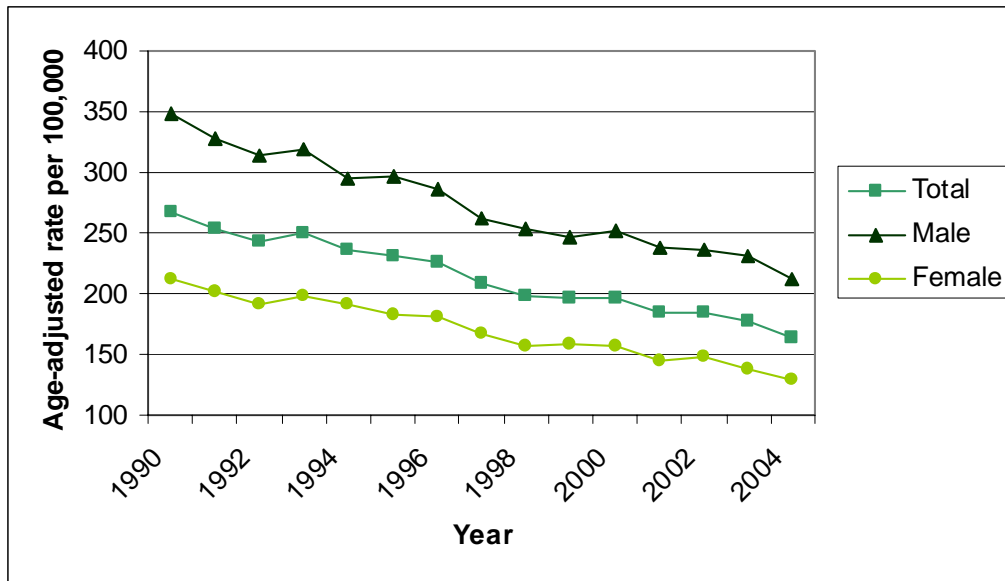
Age

- ♥ [Figure 4-2 and Table 4c](#): Pennsylvania coronary heart disease death rates rise with increasing age.
- ♥ In 2004, 3,507 Pennsylvanians died prematurely from coronary heart disease. Premature deaths are defined as those occurring among people younger than 65 years of age. The 2004 age-specific coronary heart disease death rate for Pennsylvanians younger than 65 years of age is 33.4, and the 2004 age-specific coronary heart disease death rate for Pennsylvanians aged 65 years and older is 1145.0.

Gender

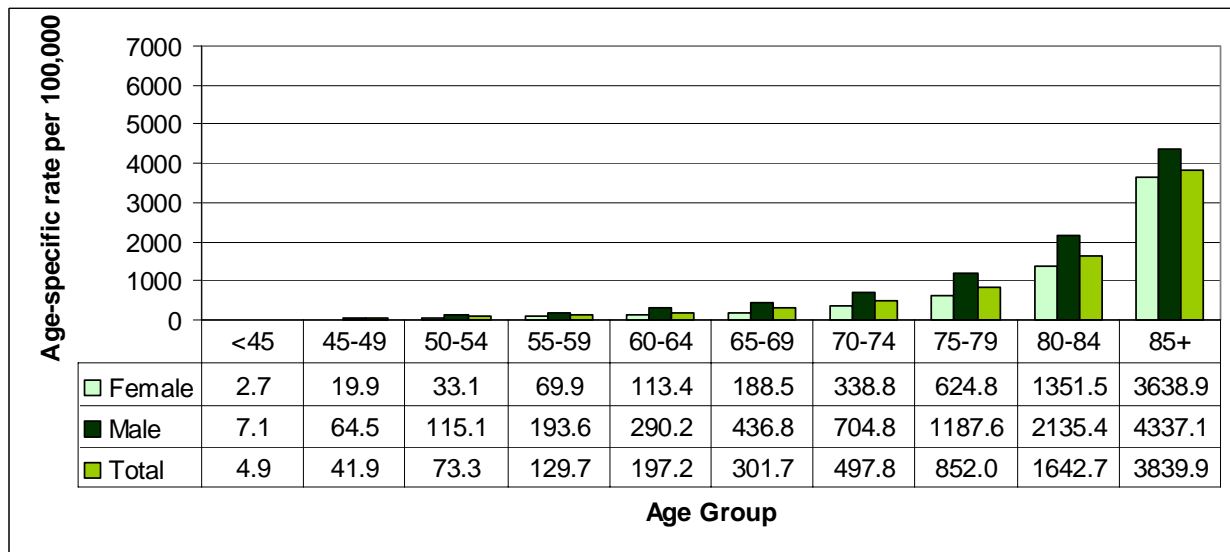
- ♥ In 2004, 12,889 women and 12,338 men in Pennsylvania died from coronary heart disease. See [Table 4a](#) for coronary heart disease death rates by gender from 1990 to 2004.
- ♥ [Figure 4-1 and Table 4a](#): In Pennsylvania, male coronary heart disease death rates continue to be higher than female CHD death rates. In 2004, Pennsylvania's coronary heart disease death rate was 129.0 for women and 212.0 for men.
- ♥ [Figure 4-2](#): Pennsylvania's coronary heart disease death rates were higher among men than women in all age groups.

Figure 4-1. Coronary Heart Disease Death Rates by Gender, Pennsylvania, 1990-2004



Source: Pennsylvania Certificates of Death

Figure 4-2. Coronary Heart Disease Death Rates by Gender & Age, Pennsylvania, 2004

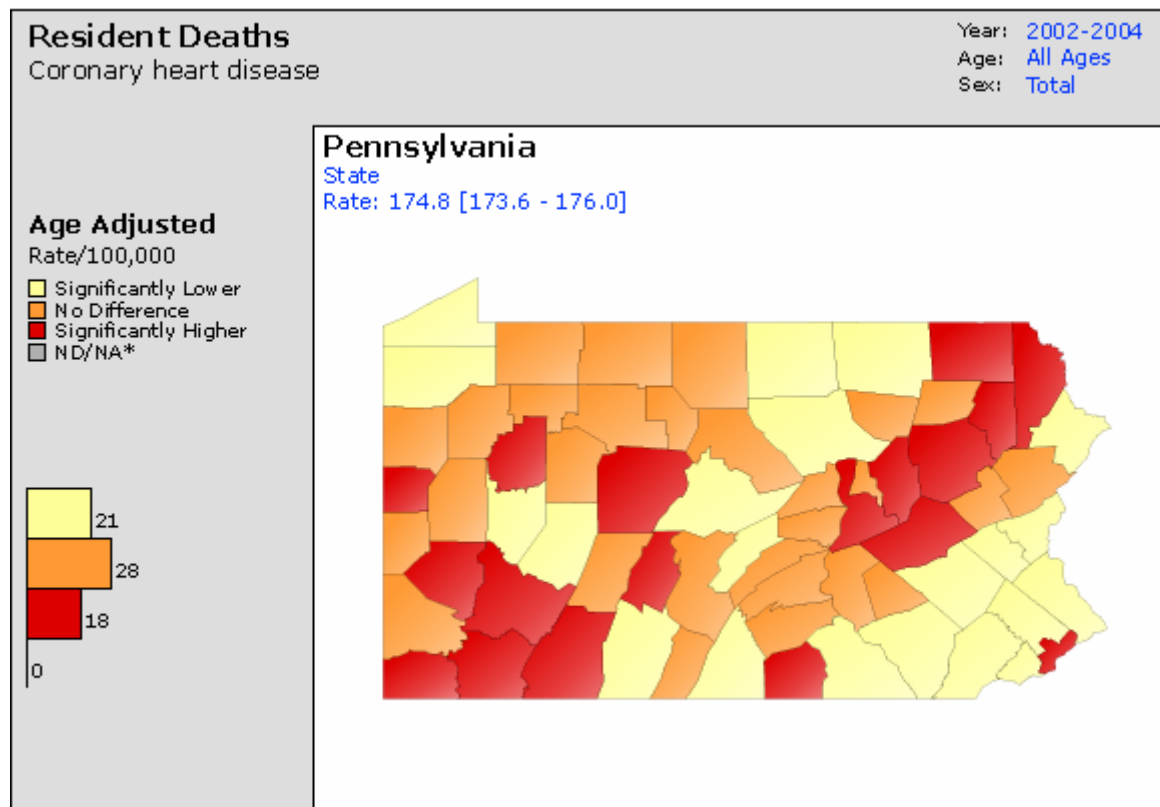


Source: Pennsylvania Certificates of Death

Geography

- ♥ **Figure 4-3 and Table 4b:** The 2002-2004 coronary heart disease death rate in Adams, Allegheny, Blair, Clarion, Clearfield, Columbia, Fayette, Greene, Lackawanna, Lawrence, Luzerne, Northumberland, Philadelphia, Schuylkill, Somerset, Susquehanna, Wayne, and Westmoreland Counties is significantly higher than the 2002-2004 CHD death rate for the state, 174.8.
- ♥ **Figure 4-3 and Table 4b:** The 2002-2004 coronary heart disease death rate in Armstrong, Bedford, Berks, Bradford, Bucks, Centre, Chester, Crawford, Delaware, Erie, Franklin, Indiana, Lancaster, Lehigh, Lycoming, Mifflin, Montgomery, Northampton, Pike, Tioga, and York Counties is significantly lower than the 2002-2004 CHD death rate for the state.

Figure 4-3. Coronary Heart Disease Death Rates by County, Pennsylvania, 2002-2004 (3-Year Sum)



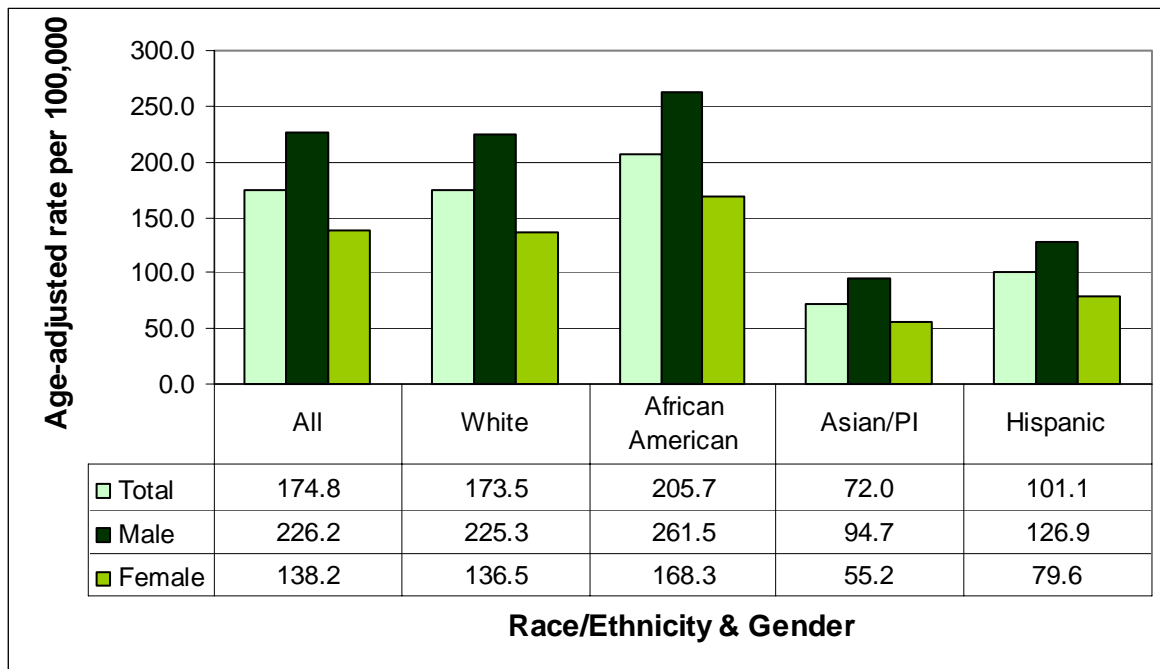
Source: Pennsylvania Certificates of Death

Note: Color-coded bar graph indicates the number of counties with age-adjusted death rates that are significantly lower, no different, or significantly higher than the state age-adjusted death rate.

Race & Ethnicity

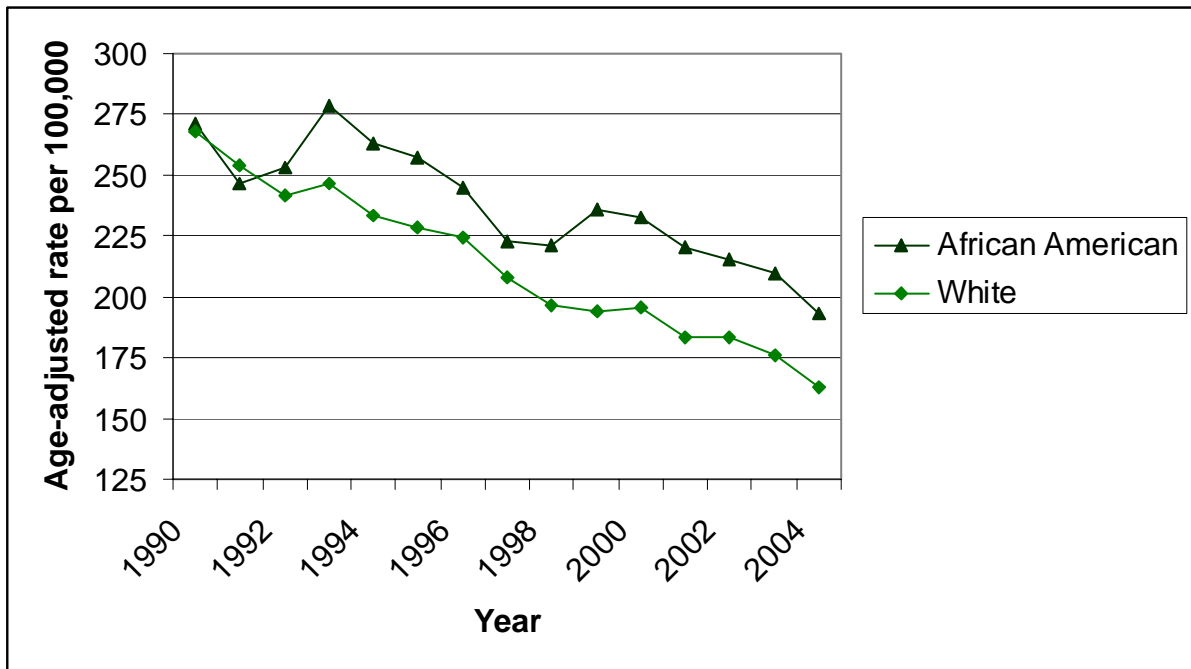
- ♥ **Figure 4-4 and Table 4a:** In Pennsylvania, for the period 2002-2004, African American men had the highest coronary heart disease death rates. White men had the second highest CHD death rates, followed by African American women. Asian/Pacific Islander men and women had the lowest coronary heart disease death rates in Pennsylvania.
- ♥ **Figure 4-5 and Table 4a:** Although coronary heart disease death rates have declined since 1990, disparities in CHD death rates between white and African American Pennsylvanians have persisted over time.

Figure 4-4. Coronary Heart Disease Death Rates by Race/Ethnicity & Gender, Pennsylvania, 2002-2004 (3-Year Sum)



Source: Pennsylvania Certificates of Death
 Note: Hispanics can be of any race

Figure 4-5. Coronary Heart Disease Death Rates by Race, Pennsylvania, 1990-2004



Source: Pennsylvania Certificates of Death

Coronary Heart Disease Mortality Data Tables

Table 4a. Coronary Heart Disease Age-Adjusted Death Rates per 100,000 by Gender & Race/Ethnicity, Pennsylvania, 1990-2004

Year	Total	Gender		Race/Ethnicity			
		Female	Male	African American	Asian/PI	Hispanic	White
1990	267.4	211.4	347.7	271.3	NA	188.8	267.7
1991	253.9	201.4	327.1	246.3	NA	125.5	254.4
1992	242.8	190.9	314.4	253.3	NA	157.3	242.0
1993	249.2	198.2	319.3	278.4	NA	128.2	247.0
1994	235.8	190.8	295.2	262.7	NA	128.1	233.8
1995	230.8	182.8	296.7	257.0	NA	145.1	228.9
1996	225.7	180.5	286.5	245.0	NA	102.6	224.3
1997	208.8	168.0	262.0	222.9	NA	151.8	207.6
1998	198.1	156.7	253.6	221.3	NA	108.3	196.6
1999	196.9	158.2	247.3	235.6	NA	119.3	194.0
2000	196.4	156.1	252.5	232.7	94.3	155.9	195.4
2001	184.3	145.4	237.9	220.7	87.4	136.0	183.4
2002	184.3	147.6	236.2	215.3	79.0	129.9	183.0
2003	177.0	138.5	231.3	209.5	67.3	104.5	175.7
2004	163.7	129.0	212.0	193.1	71.5	74.5	162.4

Source: Pennsylvania Certificates of Death

Note: Hispanics can be of any race, NA= data not available

Table 4b. Coronary Heart Disease Age-Adjusted Death Rates per 100,000 by County, Pennsylvania, 2002-2004 (3-Year Sum)

Blue: significantly lower than state rate
Red: significantly higher than state rate

State/County	Count	Rate	Low CI	Hi CI
Pennsylvania	79449	174.8	173.6	176.0
Adams	725	226.4	210.2	243.5
Allegheny	10204	193.1	189.3	196.9
Armstrong	442	149.6	135.9	164.4
Beaver	1363	180.9	171.3	190.8
Bedford	273	145.7	128.8	164.2
Berks	2018	151.3	144.7	158.0
Blair	1046	204.3	192.1	217.2
Bradford	358	155.7	140.0	172.8
Bucks	2505	144.8	139.1	150.6
Butler	1102	171.6	161.6	182.1
Cambria	1192	175.5	165.5	185.8
Cameron	56	213.3	160.5	277.2
Carbon	472	191.7	174.7	209.8
Centre	493	147.8	135.0	161.5
Chester	1926	157.7	150.7	165.0
Clarion	311	204.5	182.3	228.5
Clearfield	625	189.7	175.0	205.2
Clinton	269	191.7	169.4	216.3
Columbia	516	212.9	194.8	232.1
Crawford	521	157.8	144.5	172.0
Cumberland	1267	166.3	157.2	175.7
Dauphin	1452	169.3	160.7	178.2
Delaware	3364	166.8	161.2	172.5
Elk	228	163.7	143.1	186.5
Erie	1534	157.9	150.1	166.0
Fayette	1219	196.4	185.5	207.8
Forest	31	127.8	86.6	182.9
Franklin	691	138.7	128.5	149.5
Fulton	82	171.9	136.5	213.8
Greene	289	198.8	176.5	223.1
Huntingdon	283	183.0	162.2	205.7
Indiana	500	152.9	139.7	167.0
Jefferson	354	182.7	164.0	202.8
Juniata	147	178.8	151.0	210.2

State/County	Count	Rate	Low CI	Hi CI
Lackawanna	1887	197.2	188.3	206.4
Lancaster	2366	146.5	140.6	152.5
Lawrence	792	187.9	174.9	201.6
Lebanon	850	179.0	167.2	191.5
Lehigh	1829	152.7	145.8	159.9
Luzerne	3562	239.2	231.3	247.2
Lycoming	727	161.7	150.1	173.9
McKean	295	167.3	148.7	187.6
Mercer	905	178.0	166.5	190.1
Mifflin	263	140.4	123.9	158.4
Monroe	657	164.2	151.6	177.6
Montgomery	3678	135.2	130.8	139.6
Montour	131	177.0	147.9	210.1
Northampton	1616	157.7	150.1	165.6
Northumberland	851	208.9	195.0	223.6
Perry	247	187.3	164.6	212.3
Philadelphia	9637	195.9	192.0	199.9
Pike	188	123.5	105.9	143.5
Potter	133	182.3	152.5	216.0
Schuylkill	1592	235.7	224.2	247.7
Snyder	199	158.7	137.4	182.4
Somerset	649	194.8	180.0	210.5
Sullivan	52	158.9	117.3	209.5
Susquehanna	347	217.3	195.0	241.4
Tioga	241	145.4	127.5	165.0
Union	247	175.3	154.1	198.6
Venango	406	189.6	171.5	209.1
Warren	298	177.6	158.0	199.0
Washington	1456	172.7	163.9	181.9
Wayne	419	215.5	195.2	237.3
Westmoreland	2882	185.5	178.8	192.5
Wyoming	162	182.2	155.2	212.7
York	2027	161.1	154.2	168.3

Source: Pennsylvania Certificates of Death

Low CI: lower 95% confidence limit
Hi CI: upper 95% confidence limit

A 95% confidence interval (CI) is composed of two figures (upper and lower limits) computed specifically for a rate. That range identifies the variability of the rate, i.e., 95% of the time, the true rate (unaffected by chance variation or number of events) will occur within that range.

Shading: Premature (<65 years of age) deaths

Table 4c. Coronary Heart Disease Death Rates per 100,000 by Age Group, Pennsylvania, 2002-2004 (3-Year Sum)

Age Group	Count	Population	Rate	Low CI	Hi CI
00-04	2	2,195,998	ND	ND	ND
04-09	0	2,350,244	ND	ND	ND
10-14	2	2,519,830	ND	ND	ND
15-19	4	2,717,489	ND	ND	ND
20-24	11	2,436,033	0.5	0.2	0.8
25-29	35	2,134,369	1.6	1.1	2.3
30-34	95	2,336,056	4.1	3.3	5.0
35-39	270	2,641,956	10.2	9.0	11.5
40-44	720	2,868,908	25.1	23.3	27.0
45-49	1,244	2,814,171	44.2	41.8	46.7
50-54	2,100	2,549,669	82.4	78.9	86.0
55-59	2,818	2,125,596	132.6	127.7	137.6
60-64	3,581	1,709,284	209.5	202.7	216.5
65-69	4,764	1,490,250	319.7	310.7	328.9
70-74	7,423	1,386,406	535.4	523.3	547.7
75-79	11,314	1,226,830	922.2	905.3	939.4
80-84	14,804	882,081	1678.3	1651.4	1705.6
85+	30,237	721,668	4189.9	4142.8	4237.4

Source: Pennsylvania Certificates of Death

Note: ND = Data not displayed. Statistics (rates, ratios, percents) are not calculated and displayed for counts less than 10. This is due to the unreliability of statistics based on small numbers of events.

Low CI: lower 95% confidence limit
 Hi CI: upper 95% confidence limit

A 95% confidence interval (CI) is composed of two figures (upper and lower limits) computed specifically for a rate. That range identifies the variability of the rate, i.e., 95% of the time, the true rate (unaffected by chance variation or number of events) will occur within that range.

Coronary Heart Disease Prevalence

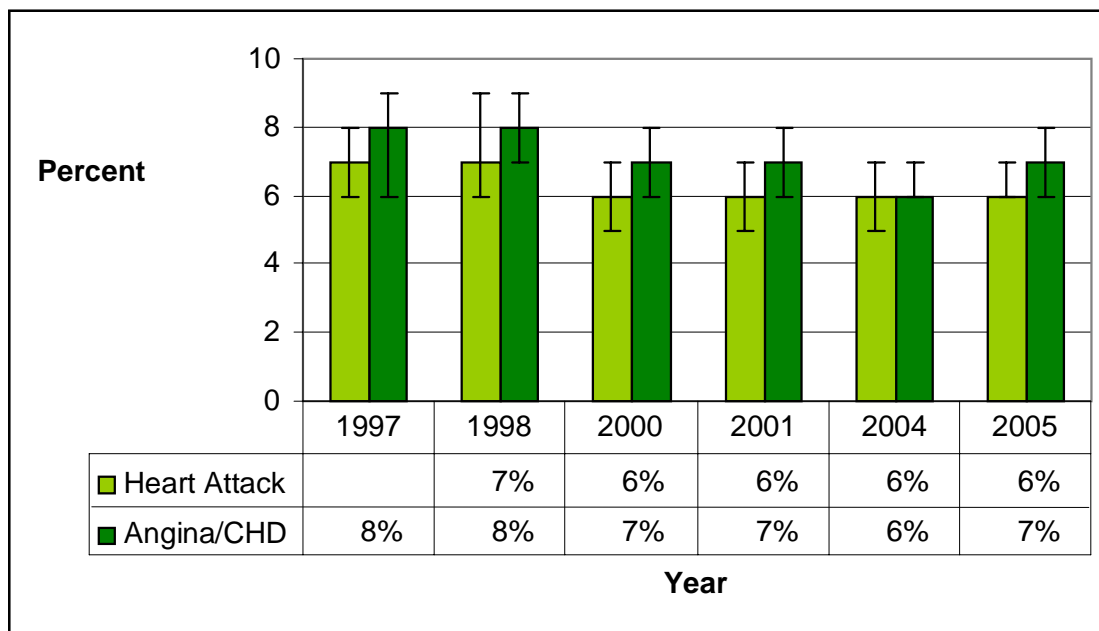
The Cardiovascular Disease Module of the Pennsylvania Behavioral Risk Factor Surveillance System (BRFSS) survey includes the following question:

Has a doctor ever told you that you had a heart attack, heart disease or a stroke?

A representative, random sample of Pennsylvanians were asked this question during BRFSS survey years 1997, 1998, 2000, 2001, 2004, and 2005. Relevant findings from the Cardiovascular Disease Module of the PA BRFSS are presented in this section and in the Stroke Prevalence section (Chapter 5) of this report. The Bureau of Health Statistics and Research, Pennsylvania Department of Health publishes annual BRFSS reports that are available on the Department's web site: www.health.state.pa.us.

- ♥ **Figure 4-6:** According to the 2005 survey, 6 percent of Pennsylvania adults aged 35 and older had been told by a doctor that they had a heart attack and 7 percent had been told that they had angina or heart disease.
- ♥ In 2005, twelve percent of Pennsylvania adults aged 35 years and older reported having either one or a combination of cardiovascular conditions (i.e., heart attack, heart disease, or stroke).

Figure 4-6. Percent (%) Ever Told They Had a Heart Attack or Angina/Heart Disease, Age \geq 35, Pennsylvania, 1997-2005



Source: Pennsylvania BRFSS

Note: [] symbol marks lower and upper 95% confidence interval (CI)

Age

- ♥ Figure 4-7: According to 2005 survey findings, as age increased, each age group had a significantly higher percentage of being told they had a heart attack, heart disease, or a stroke compared to younger age groups.

Gender

- ♥ Figure 4-8: In 2005, men ages 35+ had a significantly higher percentage (14) compared to women ages 35+ (10 percent) of being diagnosed with a cardiovascular condition.

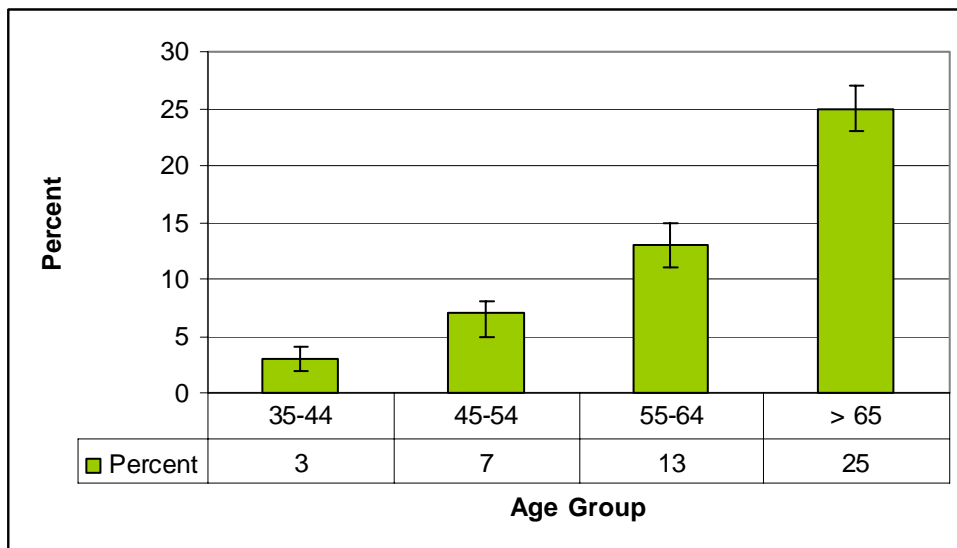
Race & Ethnicity

- ♥ Figure 4-9: No *significant* differences by race/ethnicity were found in 2005 survey findings (12 percent of non-Hispanic whites; 14 percent of non-Hispanic African Americans, and 8 percent of Hispanic Pennsylvanians aged 35 years and older were ever told they had a heart attack, angina/heart disease, or stroke).

Socioeconomic Status

- ♥ Figure 4-10: In 2005, adults aged 35 years and older with less than a high school education had a significantly higher percentage of having been told they had a heart attack, heart disease or a stroke (23 percent) than adults aged 35 years and older with a high school education (12 percent), some college (12 percent) or a college degree (8 percent).
- ♥ Figure 4-11: In 2005, significantly higher percentages of adults aged 35 years and older with household incomes less than \$50,000 had been told they had a heart attack, heart disease, or a stroke compared to adults aged 35 years and older with household incomes of \$50,000 or more.

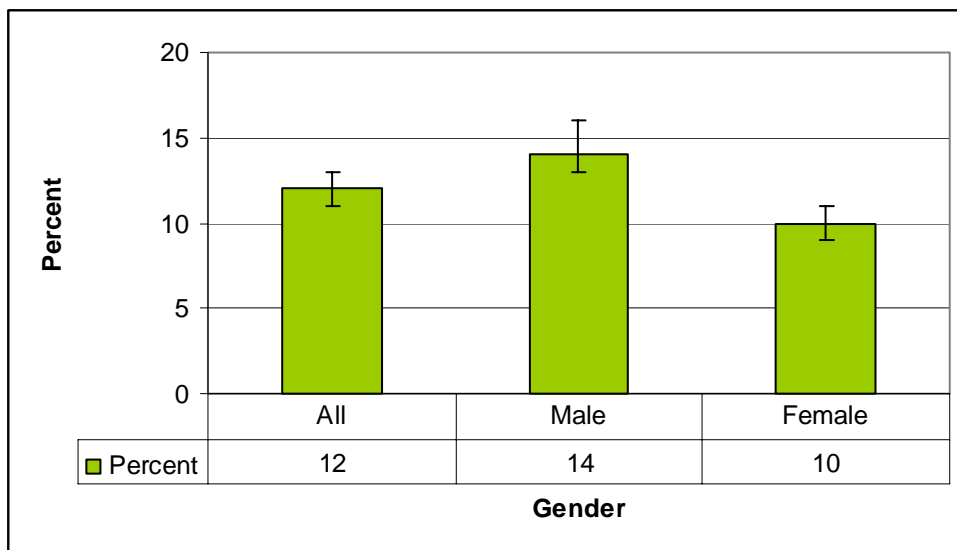
Figure 4-7. Percent Ever Told They Had a Heart Attack, Angina/Heart Disease, or Stroke by Age Group, Pennsylvania, 2005



Source: Pennsylvania BRFSS

Note: | symbol marks lower and upper 95% confidence interval (CI)

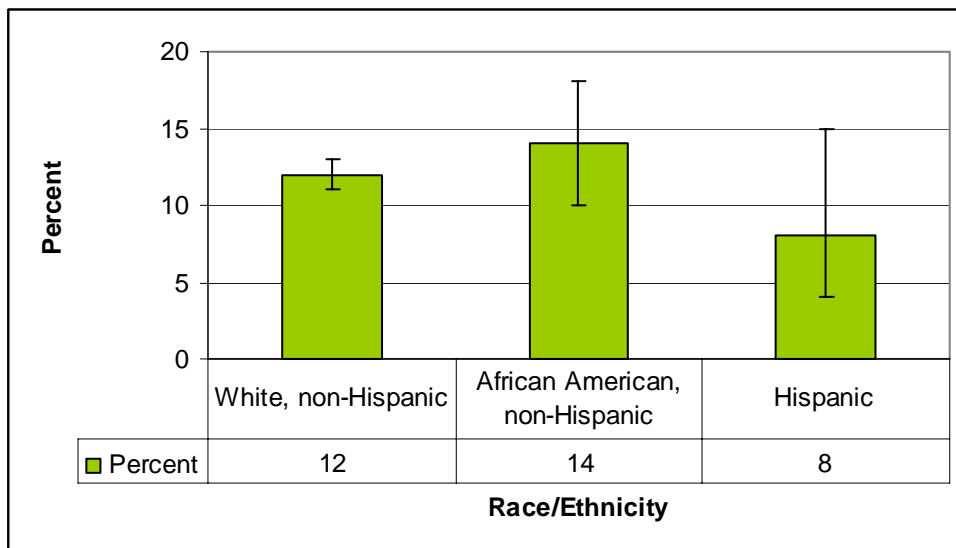
Figure 4-8. Percent Ever Told They Had a Heart Attack, Angina/Heart Disease, or Stroke by Gender, Age ≥ 35, Pennsylvania, 2005



Source: Pennsylvania BRFSS

Note: | symbol marks lower and upper 95% confidence interval (CI)

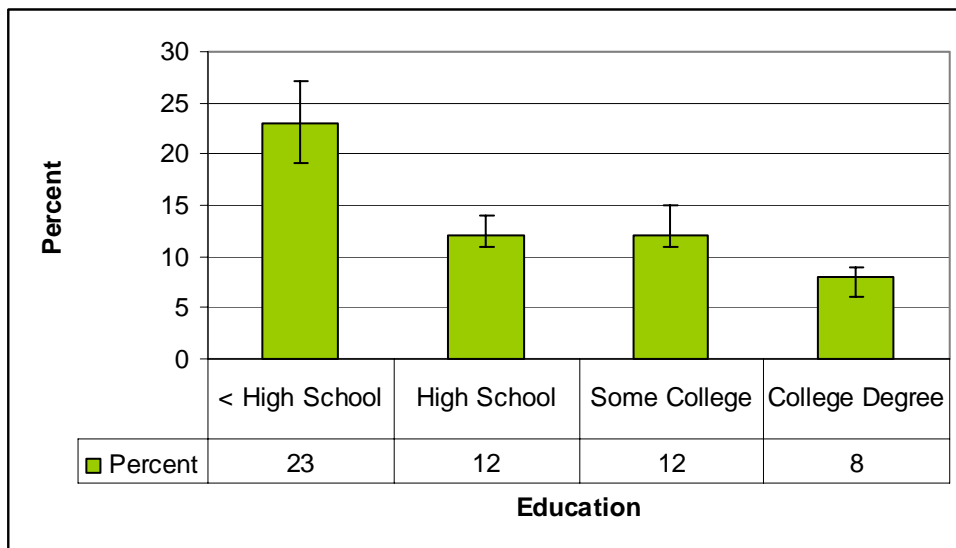
Figure 4-9. Percent Ever Told They Had a Heart Attack, Angina/Heart Disease, or Stroke by Race/Ethnicity, Age ≥ 35 , Pennsylvania, 2005



Source: Pennsylvania BRFSS

Note: | symbol marks lower and upper 95% confidence interval (CI)

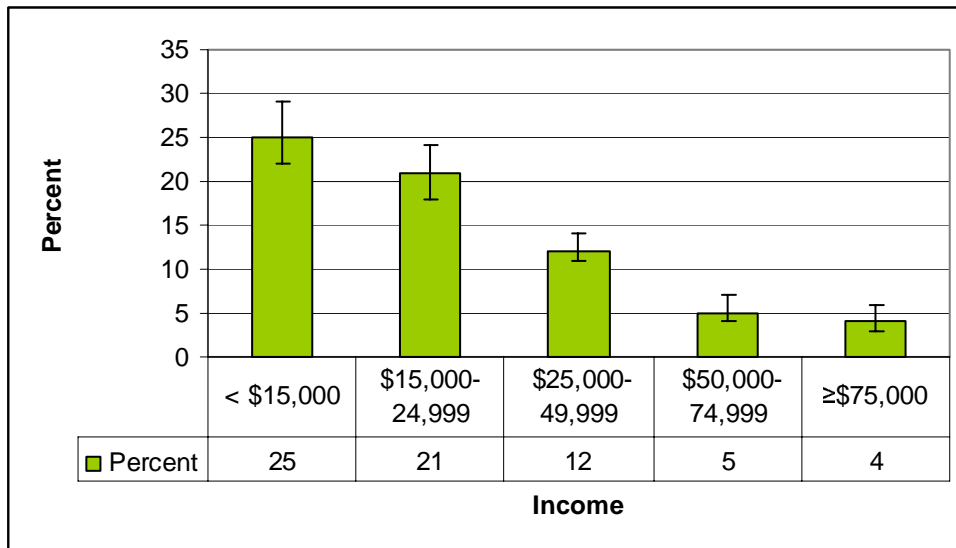
Figure 4-10. Percent Ever Told They Had a Heart Attack, Angina/Heart Disease, or Stroke by Education, Age ≥ 35 , Pennsylvania, 2005



Source: Pennsylvania BRFSS

Note: | symbol marks lower and upper 95% confidence interval (CI)

Figure 4-11. Percent Ever Told They Had a Heart Attack, Angina/Heart Disease, or Stroke by Income, Age ≥ 35 , Pennsylvania, 2005



Source: Pennsylvania BRFSS

Note: | symbol marks lower and upper 95% confidence interval (CI)

5. Stroke

Stroke is sudden interruption of blood supply to the brain caused by an obstruction or the rupture of a blood vessel².

Stroke Mortality

In 2004, stroke accounted for 7,731 of the total 126,602 Pennsylvania deaths that occurred that year. The 2004 age-adjusted mortality rate for Pennsylvania is 49.9, compared with the Healthy People 2010 Objective 12-7 goal of 48 deaths per 1000,000 population. As illustrated in [Figure 5-1](#), the stroke mortality rate for Pennsylvania declined by 17.9% between 1990 and 2004. However, significant differences in stroke mortality exist by age, gender, geography & and race/ethnicity.

Stroke deaths presented are defined according to the following International Classification of Diseases codes: ICD-10: I60-I69 / ICD-9: 430-438

Age

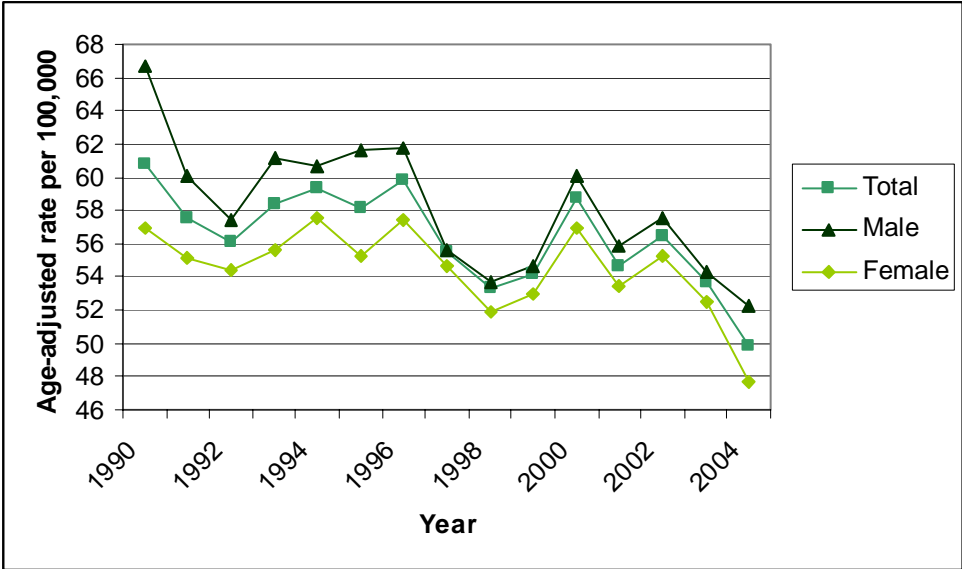
- ♥ [Figure 5-2](#) and [Table 5c](#): Pennsylvania stroke death rates rise with increasing age.
- ♥ In 2004, 779 Pennsylvanians died prematurely from stroke. Premature deaths are defined as those occurring among people younger than 65 years of age. The 2004 age-specific stroke death rate for Pennsylvanians younger than 65 years of age is 7.4, and the 2004 age-specific stroke death rate for Pennsylvanians ages 65 years and older is 366.5. See [Table 5c](#) for 3-year sum death rates by age.
- ♥ According to the Bureau of Health Statistics and Research's *Pennsylvania Vital Statistics 2004* report, the median age at death caused by stroke in Pennsylvania in 2004 was 83.4.
- ♥ The median age at death caused by stroke in Pennsylvania in 2004 was 83.9 for whites, 76.3 for African Americans, and 70.2 for Pennsylvanians of Hispanic origin who can be of any race.

Gender

- ♥ In 2004, 4,767 women and 2,964 men in Pennsylvania died from stroke. See [Table 5a](#) for stroke death rates by gender from 1990-2004.

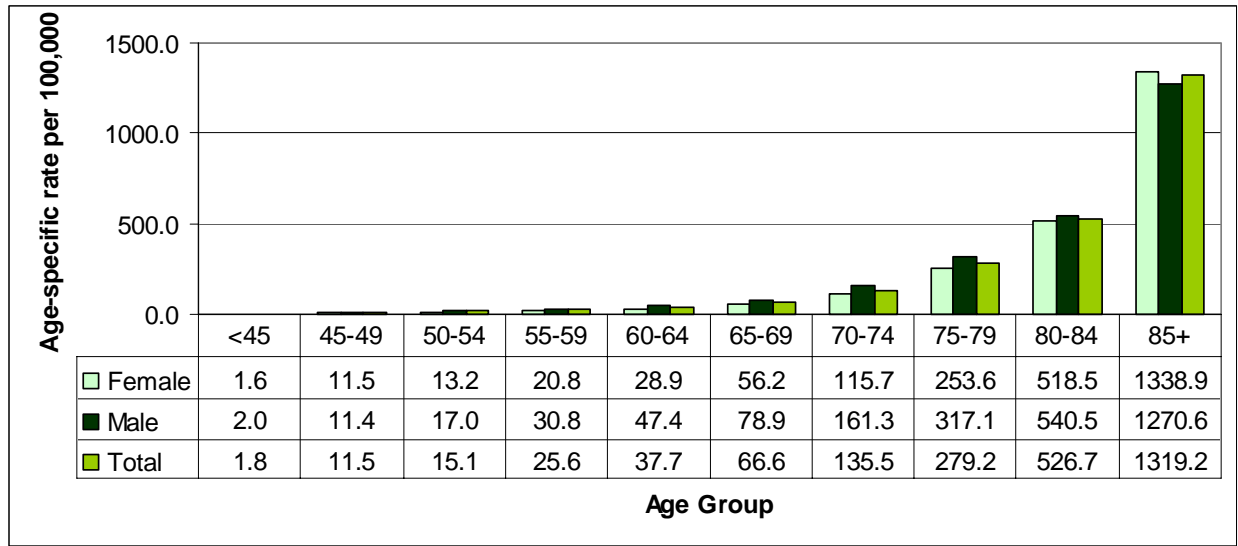
- ♥ Figure 5-1 and Table 5a: In Pennsylvania, male stroke disease death rates continue to be higher than female stroke death rates. In 2004, Pennsylvania's stroke death rate was 47.7 for women and 52.2 for men.
- ♥ Figure 5-2: Pennsylvania's stroke death rates are higher among men than women in all age groups, except those aged 45-49 years and those 85 years and older.

Figure 5-1. Stroke Death Rates by Gender, Pennsylvania, 1990-2004



Source: Pennsylvania Certificates of Death

Figure 5-2. Stroke Death Rates by Gender & Age, Pennsylvania, 2004

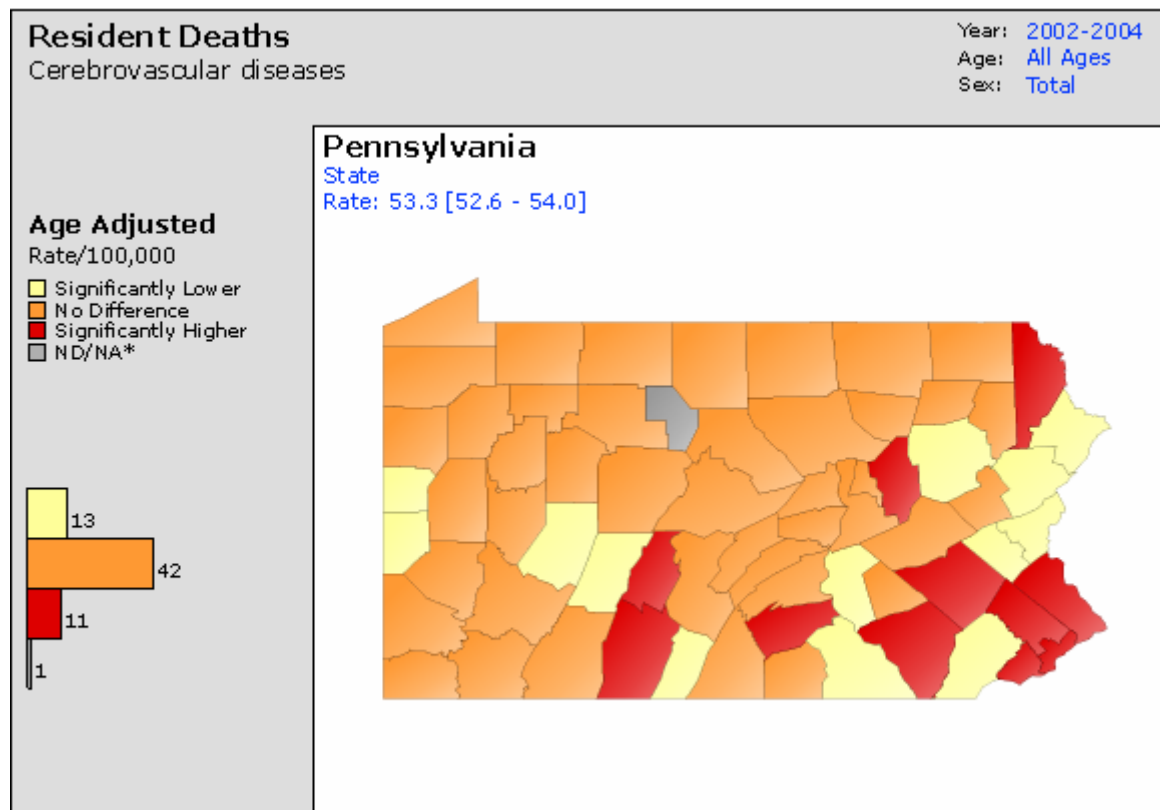


Source: Pennsylvania Certificates of Death

Geography

- ♥ Figure 5-3 and Table 5b: The 2002-2004 stroke death rate in Bedford, Berks, Blair, Bucks, Columbia, Cumberland, Delaware, Lancaster, Montgomery, Philadelphia, and Wayne Counties is significantly higher than the 2002-2004 stroke death rate for the state, 53.3.
- ♥ Figure 5-3 and Table 5b: The 2002-2004 stroke death rate in Beaver, Cambria, Chester, Dauphin, Fulton, Indiana, Lawrence, Lehigh, Luzerne, Monroe, Northampton, Pike, and York Counties is significantly lower than the 2002-2004 stroke death rate for the state.

Figure 5-3. Stroke Death Rates by County, Pennsylvania, 2002-2004 (3-Year Sum)



Source: Pennsylvania Certificates of Death

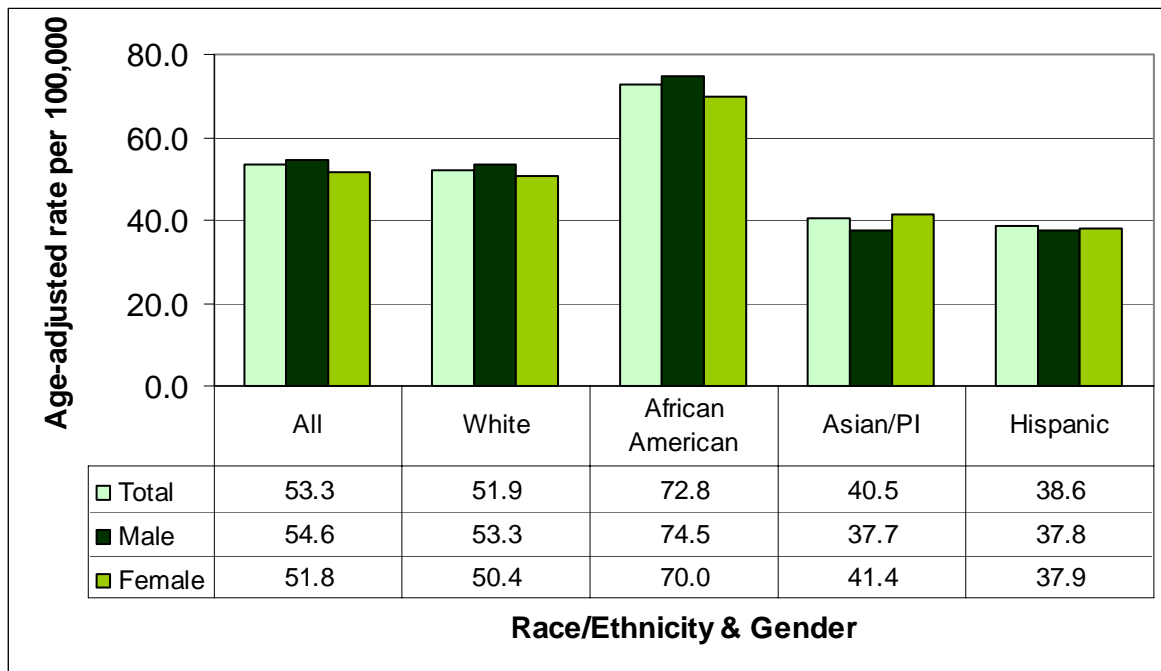
Note: ND = Not displayed if count <10

Color-coded bar graph indicates the number of counties with age-adjusted death rates that are significantly lower, no different, or significantly higher than the state age-adjusted death rate.

Race & Ethnicity

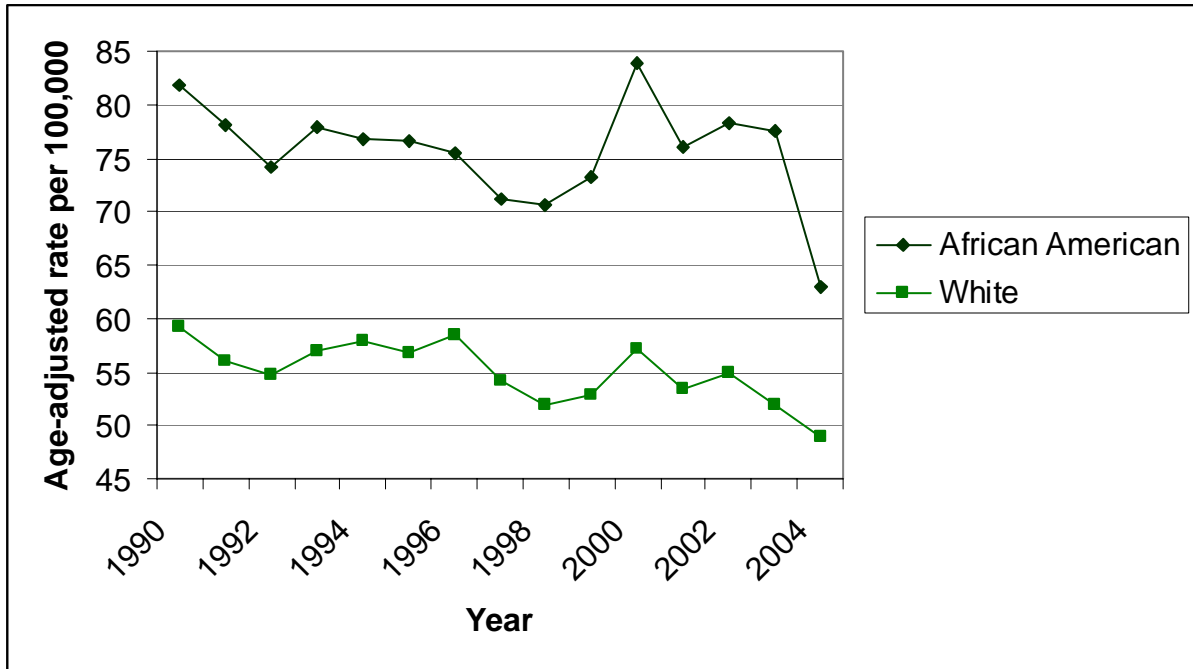
- ♥ Figure 5-4 and Table 5a: In Pennsylvania, for the period 2002-2004, African American men had the highest stroke death rates. African American women had the second highest stroke death rates, followed by white men. Asian/Pacific Islander men and Hispanic men and women had the lowest stroke death rates in Pennsylvania.
- ♥ Figure 5-5 and Table 5a: Although stroke death rates have declined since 1990, disparities in stroke death rates between white and African American Pennsylvanians have persisted over time.

Figure 5-4. Stroke Death Rates by Race/Ethnicity & Gender, Pennsylvania, 2002-2004 (3-Year Sum)



Source: Pennsylvania Certificates of Death
 Note: Hispanics can be of any race

Figure 5-5. Stroke Death Rates by Race, Pennsylvania, 1990-2004



Source: Pennsylvania Certificates of Death

Stroke Mortality Data Tables

Table 5a. Stroke Age-Adjusted Death Rates per 100,000 by Gender & Race/Ethnicity, Pennsylvania, 1990-2004

Year	Total	Gender		Race/Ethnicity			
		Female	Male	African American	Asian/PI	Hispanic	White
1990	60.8	56.9	66.7	81.8	NA	59.8	59.2
1991	57.6	55.1	60.1	78.0	NA	49.7	56.0
1992	56.1	54.4	57.4	74.2	NA	32.2	54.7
1993	58.4	55.6	61.1	77.9	NA	43.5	56.9
1994	59.4	57.5	60.7	76.7	NA	41.9	57.9
1995	58.2	55.3	61.6	76.5	NA	45.9	56.7
1996	59.8	57.4	61.8	75.5	NA	44.4	58.4
1997	55.5	54.6	55.6	71.2	NA	47.6	54.1
1998	53.3	51.9	53.7	70.6	NA	40.7	51.9
1999	54.2	53.0	54.6	73.2	NA	41.8	52.8
2000	58.7	56.9	60.1	83.9	44.0	62.7	57.2
2001	54.7	53.4	55.8	76.0	48.8	47.0	53.5
2002	56.5	55.3	57.6	78.3	50.4	40.2	54.9
2003	53.7	52.5	54.3	77.5	39.2	47.6	52.0
2004	49.9	47.7	52.2	63.0	34.3	29.3	48.9

Source: Pennsylvania Certificates of Death

Note: Hispanics can be of any race, NA= data not available

Table 5b. Stroke Age-Adjusted Death Rates per 100,000 by County, Pennsylvania, 2002-2004 (3-Year Sum)

Blue: significantly lower than state rate
 Red: significantly higher than state rate

State/County	Count	Rate	Low CI	Hi CI
Pennsylvania	24353	53.3	52.6	54.0
Adams	145	45.7	38.5	53.7
Allegheny	2862	53.3	51.3	55.3
Armstrong	162	53.6	45.6	62.5
Beaver	342	44.9	40.2	49.9
Bedford	132	72.1	60.3	85.5
Berks	816	60.9	56.8	65.2
Blair	329	63.6	56.9	70.9
Bradford	118	51.5	42.6	61.8
Bucks	1013	59.3	55.7	63.1
Butler	344	52.3	46.9	58.2
Cambria	305	43.4	38.7	48.6
Cameron	8	ND	ND	ND
Carbon	121	48.6	40.3	58.1
Centre	167	50.9	43.4	59.2
Chester	589	48.6	44.8	52.8
Clarion	71	46.2	36.0	58.2
Clearfield	181	54.4	46.8	63.0
Clinton	89	64.6	51.8	79.6
Columbia	166	67.4	57.5	78.5
Crawford	199	59.5	51.5	68.4
Cumberland	453	59.7	54.3	65.4
Dauphin	375	43.9	39.5	48.5
Delaware	1223	60.1	56.8	63.6
Elk	89	63.7	51.1	78.5
Erie	505	51.6	47.1	56.3
Fayette	326	52.1	46.5	58.0
Forest	15	61.7	34.2	103.8
Franklin	266	53.7	47.5	60.6
Fulton	12	26.9	13.9	47.1
Greene	80	54.9	43.5	68.3
Huntingdon	78	50.7	40.0	63.3
Indiana	147	43.7	36.9	51.3
Jefferson	110	56.1	46.1	67.7
Juniata	36	43.9	30.7	60.8

State/County	Count	Rate	Low CI	Hi CI
Lackawanna	491	50.2	45.8	54.9
Lancaster	941	58.1	54.4	61.9
Lawrence	200	45.7	39.6	52.5
Lebanon	253	52.8	46.5	59.8
Lehigh	538	44.6	40.9	48.6
Luzerne	713	48.1	44.6	51.8
Lycoming	270	59.6	52.7	67.1
McKean	83	46.5	37.0	57.7
Mercer	241	47.2	41.3	53.5
Mifflin	104	56.1	45.8	68.0
Monroe	170	43.5	37.1	50.8
Montgomery	1618	59.3	56.5	62.3
Montour	49	65.1	48.2	86.1
Northampton	436	42.3	38.4	46.5
Northumberland	215	51.5	44.8	58.9
Perry	70	53.8	41.9	68.0
Philadelphia	2916	58.7	56.6	60.9
Pike	61	40.0	30.3	52.1
Potter	34	46.5	32.2	64.9
Schuylkill	374	55.0	49.5	60.9
Snyder	67	54.0	41.8	68.6
Somerset	161	47.0	40.0	54.9
Sullivan	25	70.2	45.3	103.4
Susquehanna	78	48.1	38.0	60.1
Tioga	85	51.6	41.1	63.8
Union	64	45.6	35.1	58.2
Venango	127	58.9	49.1	70.2
Warren	99	59.3	48.1	72.2
Washington	428	50.2	45.6	55.2
Wayne	136	70.2	58.9	83.1
Westmoreland	782	49.7	46.2	53.3
Wyoming	54	61.3	46.0	80.1
York	596	48.0	44.2	52.0

Source: Pennsylvania Certificates of Death

Note: ND = Not displayed if count <10

Low CI: lower 95% confidence limit
Hi CI: upper 95% confidence limit

A 95% confidence interval (CI) is composed of two figures (upper and lower limits) computed specifically for a rate. That range identifies the variability of the rate, i.e., 95% of the time, the true rate (unaffected by chance variation or number of events) will occur within that range.

Shading: Premature (<65 years of age) deaths

Table 5c. Stroke Death Rates per 100,000 by Age Group, Pennsylvania, 2002-2004 (3-Year Sum)

Age Group	Count	Population	Rate	Low CI	Hi CI
00-04	16	2,195,998	0.7	0.4	1.2
04-09	7	2,350,244	ND	ND	ND
10-14	6	2,519,830	ND	ND	ND
15-19	16	2,717,489	0.6	0.3	1.0
20-24	17	2,436,033	0.7	0.4	1.1
25-29	17	2,134,369	0.8	0.5	1.3
30-34	37	2,336,056	1.6	1.1	2.2
35-39	78	2,641,956	3.0	2.3	3.7
40-44	186	2,868,908	6.5	5.6	7.5
45-49	294	2,814,171	10.4	9.3	11.7
50-54	424	2,549,669	16.6	15.1	18.3
55-59	565	2,125,596	26.6	24.4	28.9
60-64	664	1,709,284	38.8	35.9	41.9
65-69	1,050	1,490,250	70.5	66.3	74.9
70-74	1,908	1,386,406	137.6	131.5	143.9
75-79	3,474	1,226,830	283.2	273.8	292.7
80-84	5,030	882,081	570.2	554.6	586.2
85+	10,560	721,668	1463.3	1435.5	1491.5

Source: Pennsylvania Certificates of Death

Note: ND = Data not displayed. Statistics (rates, ratios, percents) are not calculated and displayed for counts less than 10. This is due to the unreliability of statistics based on small numbers of events.

Low CI: lower 95% confidence limit
 Hi CI: upper 95% confidence limit

A 95% confidence interval (CI) is composed of two figures (upper and lower limits) computed specifically for a rate. That range identifies the variability of the rate, i.e., 95% of the time, the true rate (unaffected by chance variation or number of events) will occur within that range.

Stroke Hospitalizations

- ♥ As expected, Pennsylvania county stroke hospitalization rates for the period of 1999-2001 increase with advancing age.
- ♥ For the period of 1999-2001, the lowest of five stroke hospitalization rate ranges for Pennsylvania adults younger than 55 years of age was 0.28-0.41. Centre and Elk were among the Pennsylvania Counties with the lowest hospitalization rates for adults younger than 55. The highest range of county hospitalization rates for this age group was 0.72-1.24 per 1,000.
- ♥ County stroke hospitalization rates for adults 55-64 years of age ranged from 2.50 in Pike County to 10.55 in Cameron County; hospitalization rates for adults 65-74 years of age ranged from 4.89 in Pike County to 23.85 in Forest County; and hospitalization rates for adults 75 years of age and older ranged from 9.02 in Pike County to 49.37 in Wyoming County.

Table 5d. Stroke Hospitalization Rates per 1,000 Population by County & Age, Pennsylvania, 1999-2001 (3-Year Sum)

County	<55	55-64	65-74	≥75
Adams	0.3	4.7	12.1	23.3
Allegheny	0.7	7.1	16.3	33.1
Armstrong	0.6	5.9	16.3	35.0
Beaver	0.6	6.5	13.8	26.9
Bedford	0.4	3.7	13.5	31.9
Berks	0.5	5.6	12.8	26.8
Blair	0.8	6.3	15.0	33.5
Bradford	0.3	3.8	11.4	21.7
Bucks	0.5	5.4	13.5	30.0
Butler	0.7	6.5	18.1	37.9
Cambria	0.6	6.5	16.0	34.1
Cameron	0.9	10.6	11.2	20.2
Carbon	0.8	5.8	14.9	35.2
Centre	0.3	4.7	11.7	28.0
Chester	0.4	4.7	13.7	31.6
Clarion	0.8	6.1	15.7	44.2
Clearfield	0.8	6.5	15.7	33.9
Clinton	0.3	5.8	13.1	23.8
Columbia	0.5	6.2	15.2	32.9
Crawford	0.5	6.9	13.9	25.5

County	<55	55-64	65-74	≥75
Cumberland	0.4	5.7	15.1	29.6
Dauphin	0.5	6.9	14.0	25.0
Delaware	0.7	7.6	18.8	37.8
Elk	0.4	3.8	18.0	34.4
Erie	0.6	6.2	16.0	29.7
Fayette	0.8	7.8	15.3	32.6
Forest	1.2	8.1	23.9	31.8
Franklin	0.4	3.1	8.3	21.2
Fulton	0.4	5.0	17.3	42.6
Greene	0.5	2.7	11.2	24.0
Huntingdon	0.3	5.9	15.4	35.8
Indiana	0.6	6.0	15.8	31.1
Jefferson	0.7	6.4	18.3	36.0
Juniata	0.7	5.9	13.9	39.4
Lackawanna	0.7	7.7	17.0	35.2
Lancaster	0.5	5.0	11.4	24.6
Lawrence	0.7	7.1	16.6	33.1
Lebanon	0.4	6.6	14.7	29.6
Lehigh	0.4	5.1	12.1	22.9
Luzerne	0.8	7.6	17.9	36.2
Lycoming	0.5	4.8	10.0	22.7
McKean	0.6	5.5	13.5	23.9
Mercer	0.6	5.9	14.8	29.4
Mifflin	0.7	7.4	19.8	40.7
Monroe	0.5	5.3	14.5	28.0
Montgomery	0.5	4.9	13.0	27.7
Montour	0.4	3.2	15.7	29.3
Northampton	0.5	5.9	15.0	33.3
Northumberland	0.7	6.7	14.8	29.5
Perry	0.7	6.6	15.7	30.8
Philadelphia	1.0	9.5	17.8	32.9
Pike	0.3	2.5	4.9	9.0
Potter	0.3	3.7	8.4	21.8
Schuylkill	0.7	7.6	17.6	36.1
Snyder	0.6	6.9	14.2	32.9
Somerset	0.7	6.0	14.5	33.8
Sullivan	0.5	3.8	11.7	13.4
Susquehanna	0.4	5.5	12.7	33.3

County	<55	55-64	65-74	≥75
Tioga	0.5	4.9	12.1	25.6
Union	0.4	5.9	15.0	29.2
Venango	1.2	7.3	17.6	41.1
Warren	0.4	4.8	12.8	19.0
Washington	0.7	6.5	15.6	35.9
Wayne	0.8	6.7	16.8	34.0
Westmoreland	0.6	6.6	16.8	33.7
Wyoming	0.7	8.5	17.2	49.4
York	0.5	5.2	12.0	26.1

Source: Pennsylvania Health Care Cost Containment Council

Stroke Prevalence

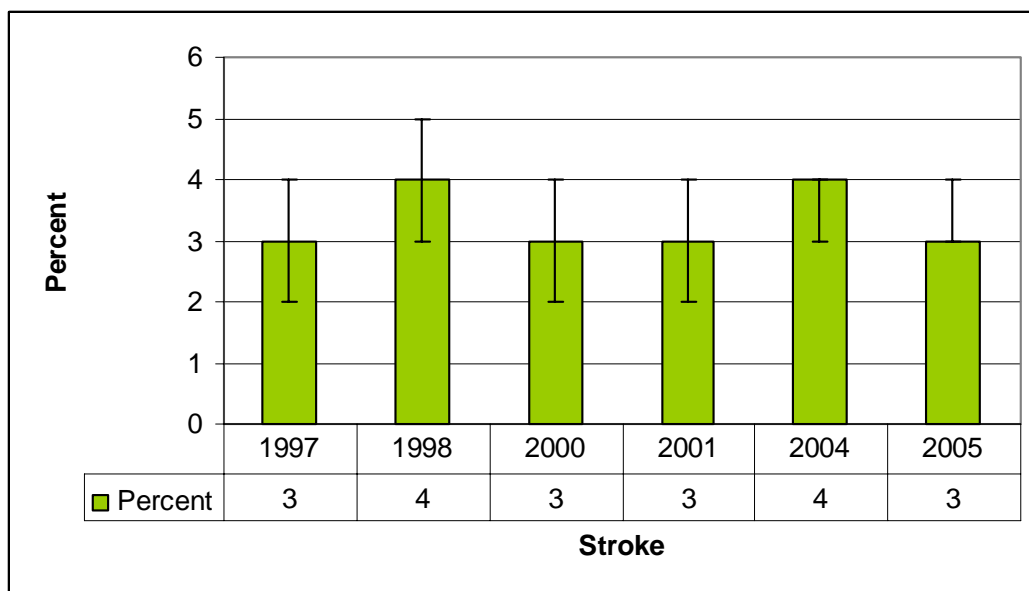
The Cardiovascular Disease Module of the Pennsylvania Behavioral Risk Factor Surveillance System (BRFSS) survey includes the following question:

Has a doctor ever told you that you had a heart attack, heart disease or a stroke?

A representative, random sample of Pennsylvanians were asked this question during BRFSS survey years 1997, 1998, 2000, 2001, 2004, and 2005. Relevant findings from the Cardiovascular Disease Module of the PA BRFSS are presented in this section and in the Coronary Heart Disease Prevalence section (Chapter 4) of this report. See the Coronary Heart Disease section for combined heart attack, heart disease and stroke prevalence rates by age, gender, race/ethnicity, and socioeconomic status.

- ♥ **Figure 5-6:** According to the 2005 survey, 3 percent of Pennsylvania adults aged 35 and older had been told by a doctor that they had a stroke. This reported prevalence rate has remained steady over time.

Figure 5-6. Percent Ever Told They Had a Stroke, Age \geq 35, Pennsylvania, 1997-2005



Source: Pennsylvania BRFSS

Note: | symbol marks lower and upper 95% confidence interval (CI)

6. Blood Pressure & Cholesterol

High Blood Pressure

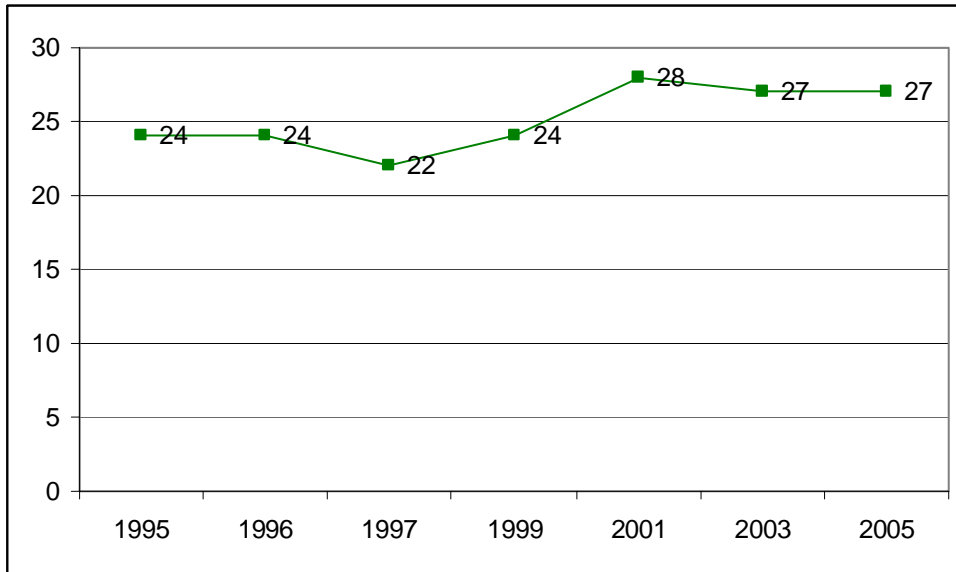
High blood pressure (Hypertension) is a condition in which the pressure in the arterial circulation is greater than desired. High blood pressure is associated with increased risk for heart disease, stroke, chronic kidney disease, and other conditions. Blood pressure is considered “high” if systolic pressure, which is measured at the peak contraction of the heart, is greater than or equal to 140mm Hg, or if diastolic pressure, which is measured at the fullest relaxation of the heart is greater than or equal to 90mm Hg². A blood pressure reading of 120/80 is normal, and anything in between is considered prehypertensive⁴.

- ♥ Figure 6-1 and Table 6a: In the 2005 Pennsylvania Behavioral Risk Factor Surveillance System (BRFSS) survey, 27 percent of Pennsylvania adults aged 18 years and older responded “Yes” to the question, “Have you ever been told by a doctor, nurse, or other health professional that you have high blood pressure?”, compared to the Healthy People 2010 Objective 12-9 goal of 16 percent for all adults aged 20 years and older.
- ♥ Table 6a: In 2005, of Pennsylvania adults with high blood pressure, 79% reported that they were currently taking medication for high blood pressure.

Age

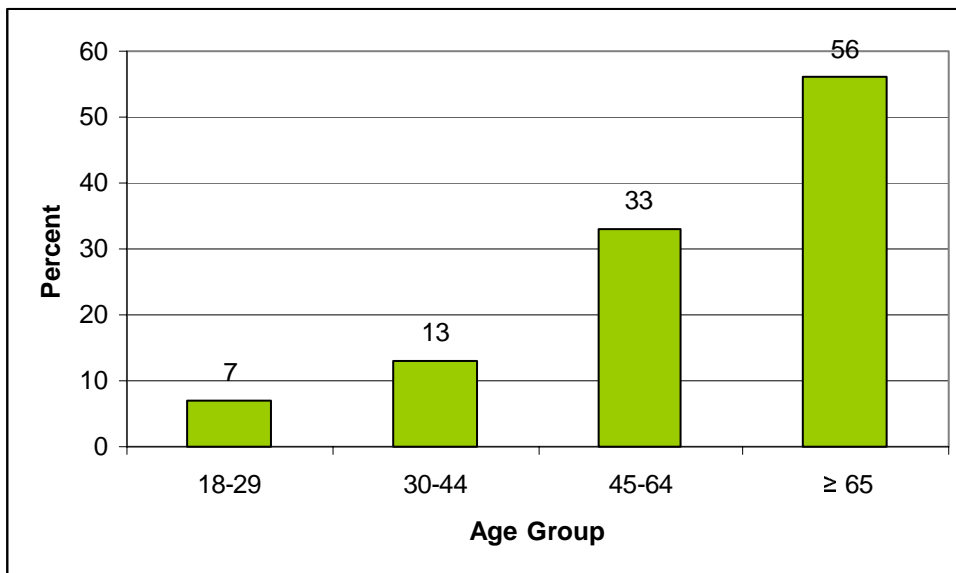
- ♥ Figure 6-2 and Table 6a: According to 2005 survey findings, as age increased, each age group had a significantly higher percentage of ever being told they had high blood pressure compared to younger age groups.
- ♥ Table 6a: In 2005, among adults with high blood pressure, reports of currently taking medication increased significantly with age. Data on currently taking medication is not displayed for age group 18-29 with high blood pressure because the count is less than 10.

Figure 6-1. Percent Ever Told They Have High Blood Pressure, Age ≥ 18 , Pennsylvania, 1995-2005



Source: Pennsylvania BRFSS

Figure 6-2. Percent Ever Told They Have High Blood Pressure by Age, Pennsylvania, 2005



Source: Pennsylvania BRFSS

Gender

- ♥ Table 6a: In 2005, 27% of adult males and 27% of adult females in Pennsylvania reported ever being told they have high blood pressure.
- ♥ Table 6a: Among Pennsylvania adults with high blood pressure in 2005, females had a significantly higher percentage of taking blood pressure medication (86 percent) compared to males (72 percent).

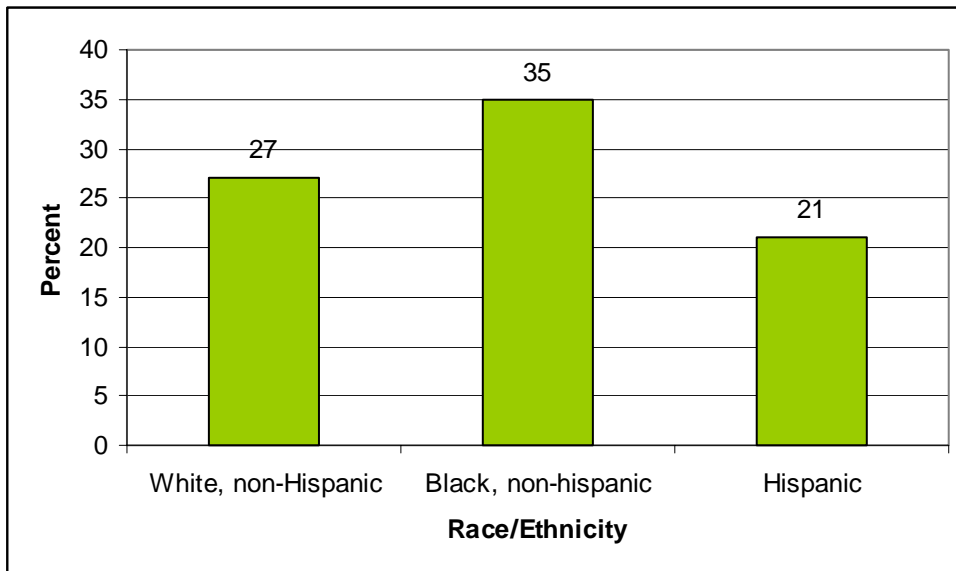
Race & Ethnicity

- ♥ Figure 6-3 and Table 6a: In 2005, no *significant* differences in percent of Pennsylvanians ever told they have high blood pressure exist between Hispanic (21 percent) and non-Hispanic white adults (27percent). The percent of adults ever told they have high blood pressure was significantly higher for non-Hispanic African American adults (35 percent) compared to non-Hispanic whites and Hispanic adults.
- ♥ Table 6a: Among Pennsylvania adults with high blood pressure in 2005, there were no significant difference between non-Hispanic African American (74%) and white, (80%) adults currently taking medication for high blood pressure. Data on currently taking medication is not displayed for Hispanic adults with high blood pressure due to the unreliability of statistics (insufficient sample integrity).

Socioeconomic Status

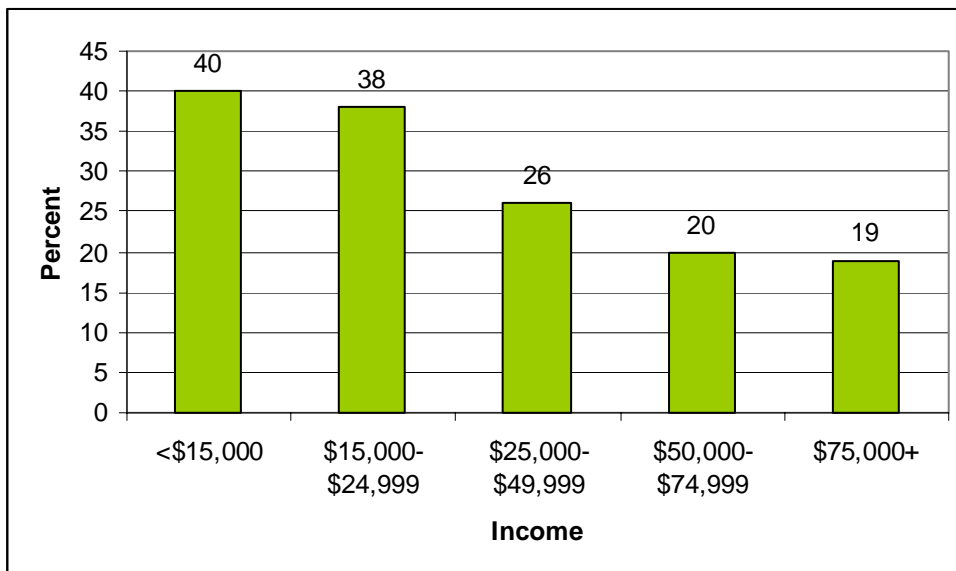
- ♥ Table 6a: In 2005, Pennsylvania adults with a high school education or less had a significantly higher percentage of ever being told they have high blood pressure (36 percent) compared to Pennsylvania adults with some college (25 percent) or a college education (21 percent).
- ♥ Table 6a: In 2005, there were no *significant* differences by education or income in the percent of adults with high blood pressure who are currently taking medication.
- ♥ Figure 6-4 and Table 6a: According to 2005 survey findings, Pennsylvania adults with higher incomes were less likely of ever being told they have high blood pressure.

Figure 6-3. Percent Ever Told They Have High Blood Pressure by Race/Ethnicity, Pennsylvania, 2005



Source: Pennsylvania BRFSS

Figure 6-4. Percent Ever Told They Have High Blood Pressure by Income, Pennsylvania, 2005



Source: Pennsylvania BRFSS

Table 6a. Hypertension Awareness, Pennsylvania Adults, 2005

	Ever Told Blood Pressure Was Too High			Adults with High Blood Pressure Currently Taking Medication		
	Percent	Low CI	Hi CI	Percent	Low CI	Hi CI
All Adults	27	26	28	79	77	81
Male	27	25	29	72	69	76
Female	27	26	29	86	83	88
Age:						
18-29	7	5	10	ND	ND	ND
30-44	13	11	15	55	48	62
45-64	33	31	35	81	78	84
65+	56	54	58	92	90	94
Education:						
<High School	36	32	40	78	71	85
High School	31	29	33	81	78	84
Some College	25	22	27	79	74	83
College Degree	21	19	22	76	72	81
Income:						
<\$15,000	40	36	44	81	75	86
\$15,000-\$24,999	38	35	42	85	81	89
\$25,000-\$49,999	26	24	28	80	76	84
\$50,000-\$74,999	20	17	22	76	69	82
\$75,000+	19	17	21	70	63	76
Race/Ethnicity:						
White, non-Hispanic	27	26	28	80	78	82
African American, non-Hispanic	35	30	40	74	64	83
Hispanic	21	15	29	ND	ND	ND

Source: Pennsylvania BRFSS

Note: ND = Data not displayed. Statistics (rates, ratios, percents) are not calculated and displayed for counts less than 10. This is due to the unreliability of statistics based on small numbers of events. Data excludes missing, don't know & refused responses.

Low CI: lower 95% confidence limit
 Hi CI: upper 95% confidence limit

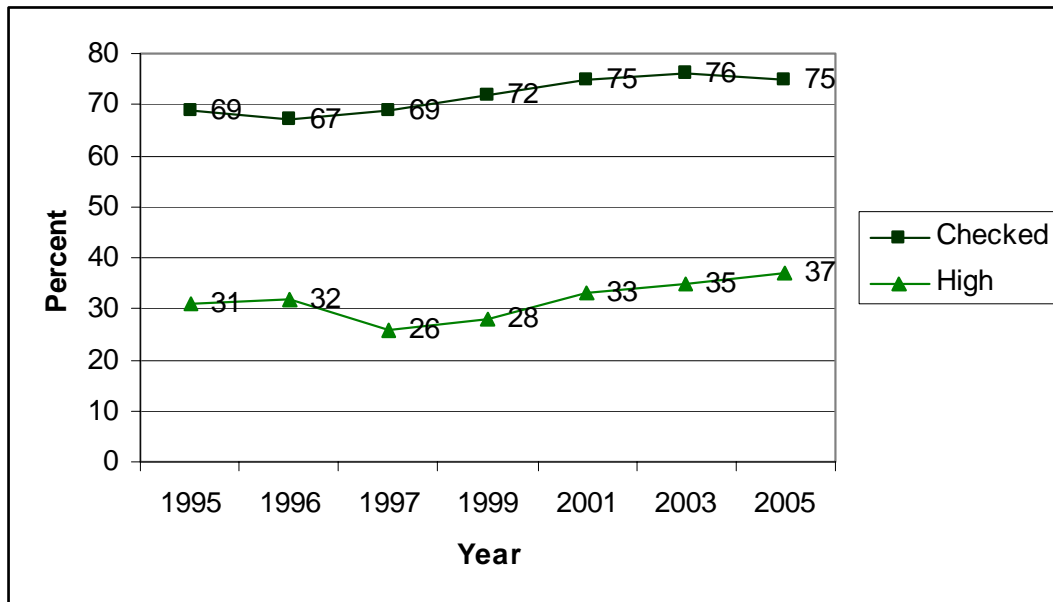
A 95% confidence interval (CI) is composed of two figures (upper and lower limits) computed specifically for a percent. That range identifies the variability of the percent, i.e., 95% of the time, the true percent (unaffected by chance variation or sample size) will occur within that range.

High Cholesterol

Blood Cholesterol is the blood concentration of a family of lipid or “fatty” molecular compounds obtained directly from the diet or produced in the body from fatty dietary components; a necessary factor in development of atherosclerosis. Total cholesterol concentration is classified as high if it is greater than or equal to 200 mg/dl. Subtypes of cholesterol differ in their relation to CVD risk with high-density lipoprotein (HDL) cholesterol considered “good,” and low-density (LDL) cholesterol considered “bad.”²

- ♥ Table 6b: In 2005, 79 percent of Pennsylvania adults responded “Yes” to ever having had their blood cholesterol checked.
- ♥ Figure 6-5 and Table 6b: In 2005, 75 percent of Pennsylvania adults reported having their cholesterol checked within the past five years, compared with the Healthy People 2010 Objective 12-15 goal of 80 percent.
- ♥ Figure 6-5 and Table 6b: Of Pennsylvania adults who ever had their cholesterol checked, 37 percent reported in 2005 that they had been told their cholesterol was high.

Figure 6-5. Percent Had Cholesterol Checked within Past 5 years and Percent Ever Had Cholesterol Checked and Were Told Cholesterol Was High, Pennsylvania, 1995-2005



Source: Pennsylvania BRFSS

Age

- ♥ Figure 6-6 and Table 6b: According to 2005 survey findings, as age increased, each age group had a significantly higher percentage of both ever having cholesterol checked and having cholesterol checked within the past 5 years.
- ♥ Table 6b: In 2005, there were significant differences between those age groups 44 years of age and younger compared to those 45 years and older on percentage of adults who had ever been tested for high cholesterol and been told they had high cholesterol.

Gender

- ♥ Table 6b: In 2005, a significantly higher percentage of women (81) reported ever having their cholesterol checked compared to men (77 percent).
- ♥ Table 6b: In 2005, there were no *significant* gender differences in percentage of adults who had ever been tested for high cholesterol and been told they had high cholesterol.
- ♥ Table 6b: In 2005, a significantly higher percentage of women (78) reported having their cholesterol checked within the past 5 years compared to men (73 percent).

Race & Ethnicity

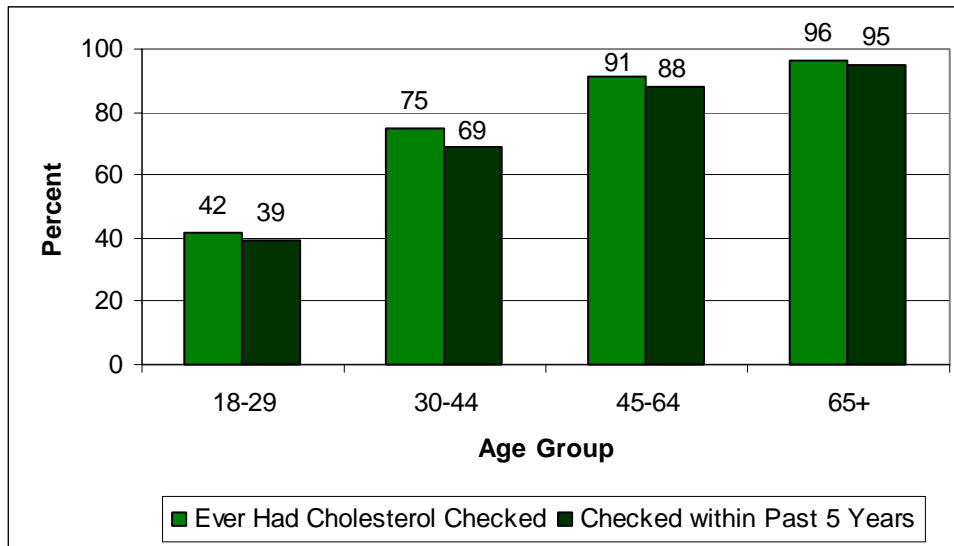
- ♥ Table 6b: In 2005, there were no *significant* differences by race/ethnicity in percentage of adults who had ever had their cholesterol checked or in the percentage of adults who reported having their cholesterol checked within the past 5 years.
- ♥ Table 6b: A higher percentage non-Hispanic white Pennsylvania adults who had ever been tested for high cholesterol and been told they had high cholesterol (38 percent) compared to non-Hispanic African American Pennsylvania adults (27 percent). There were no *significant* differences on this measure between non-Hispanic white and Hispanic adults or between non-Hispanic African American and Hispanic adults.

Socioeconomic Status

- ♥ Figure 6-7 and Table 6b: In 2005, a significantly higher percentage of Pennsylvania adults with college degrees reported ever having their cholesterol checked (86 percent) and having their cholesterol checked within the past 5 years (81 percent) compared to Pennsylvania adults with less than a High School education, a High School education, and some college.

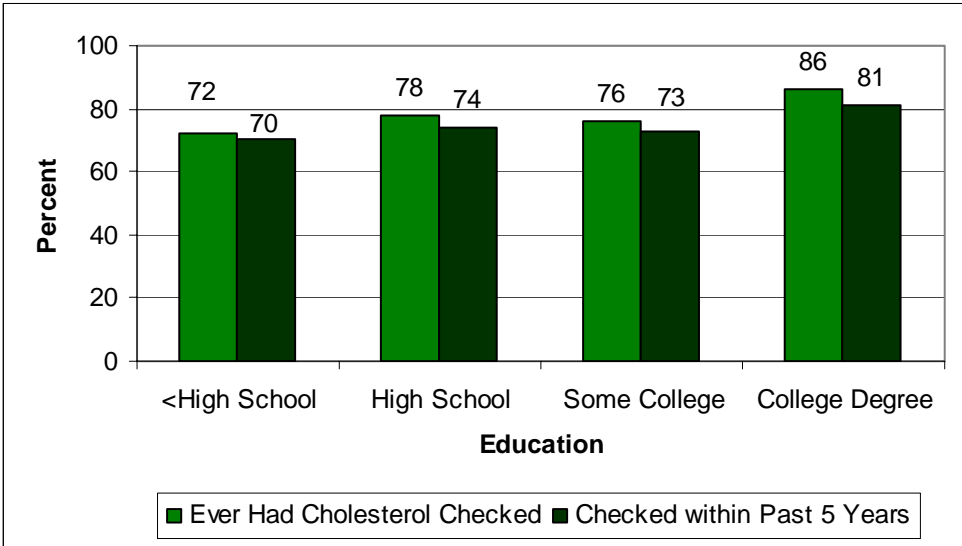
- ♥ **Table 6b:** In 2005, Pennsylvania adults with a college degree had a significantly lower percentage of ever being told they had high cholesterol compared to Pennsylvania adults with a High School education or less.
- ♥ **Figure 6-4 and Table 6b:** According to 2005 survey findings, there was an overall trend of increase in the percentage of adults who had ever been told they have high blood pressure as income decreased.
- ♥ **Table 6b:** Pennsylvania adults in income groups above \$25,000 and more had a significantly lower percentage of ever being told they have high cholesterol compared to adults who make \$24,999 or less.
- ♥ **Table 6b:** Pennsylvania adults with incomes greater than or equal to \$75,000 had significantly higher percentages of ever having their cholesterol checked and having their cholesterol checked within the past 5 years compared to Pennsylvania adults with incomes of \$49,999 or less.

Figure 6-6. Percent Ever Checked Cholesterol and Checked Cholesterol within 5 Years by Age, Pennsylvania, 2005



Source: Pennsylvania BRFSS

Figure 6-7. Percent Ever Checked Cholesterol and Checked Cholesterol within 5 Years by Education, Pennsylvania, 2005



Source: Pennsylvania BRFSS

Table 6b. Cholesterol Awareness, Pennsylvania Adults, 2005

	Ever Had Cholesterol Checked			Ever Told Cholesterol Was High (of those who ever had cholesterol checked)		
	Percent	Low CI	Hi CI	Percent	Low CI	Hi CI
All Adults	79	78	80	37	36	38
Male	77	75	79	39	37	41
Female	81	80	83	35	34	37
Age:						
18-29	42	38	47	17	13	22
30-44	75	73	77	24	22	27
45-64	91	90	93	42	40	44
65+	96	95	97	51	49	54
Education:						
<High School	72	67	77	42	37	47
High School	78	76	80	42	40	44
Some College	76	73	79	34	32	37
College Degree	86	84	87	31	29	33
Income:						
<\$15,000	74	69	79	46	42	51
\$15,000-\$24,999	78	75	81	43	40	46
\$25,000-\$49,999	76	74	79	36	34	39
\$50,000-\$74,999	81	77	83	33	30	37
\$75,000+	86	83	88	31	28	34
Race/Ethnicity:						
White, non-Hispanic	80	78	81	38	37	39
African American, non-Hispanic	77	71	82	27	22	33
Hispanic	70	60	78	40	30	52

Source: Pennsylvania BRFSS

Note: Data excludes missing, don't know & refused responses.

Low CI: lower 95% confidence limit
Hi CI: upper 95% confidence limit

A 95% confidence interval (CI) is composed of two figures (upper and lower limits) computed specifically for a percent. That range identifies the variability of the percent, i.e., 95% of the time, the true percent (unaffected by chance variation or sample size) will occur within that range.

Table 7c. Cholesterol Checked in Past 5 Years, Pennsylvania Adults, 2005

	Cholesterol Checked in Past Five Years		
	Percent	Low CI	Hi CI
All Adults	75	74	77
Male	73	71	75
Female	78	76	79
Age:			
18-29	39	35	44
30-44	69	67	72
45-64	88	86	89
65+	95	94	96
Education:			
<High School	70	64	74
High School	74	72	76
Some College	73	70	75
College Degree	81	79	83
Income:			
<\$15,000	70	65	75
\$15,000-\$24,999	75	71	78
\$25,000-\$49,999	73	70	75
\$50,000-\$74,999	77	74	80
\$75,000+	81	78	84
Race/Ethnicity:			
White, non-Hispanic	76	74	77
African American, non-Hispanic	75	69	80
Hispanic	68	58	76

Source: Pennsylvania BRFSS

Note: Data excludes missing, don't know & refused responses.

Low CI: lower 95% confidence limit
 Hi CI: upper 95% confidence limit

A 95% confidence interval (CI) is composed of two figures (upper and lower limits) computed specifically for a percent. That range identifies the variability of the percent, i.e., 95% of the time, the true percent (unaffected by chance variation or sample size) will occur within that range.

7. Other Risk Factors At-A-Glance

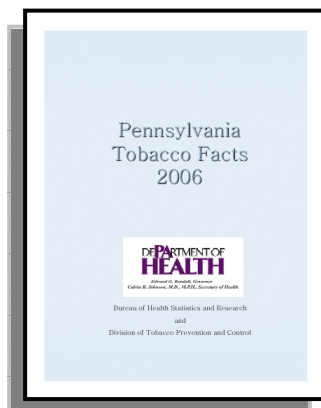
A **risk factor** is an individual characteristic associated with increased frequency of specified health problems. For example, high LDL cholesterol, high blood pressure, diabetes, cigarette smoking, and obesity are all associated with CVD². Visit the **Pennsylvania Department of Health's Heart Disease and Stroke Program (HDSP)** online at www.health.state.pa.us for more information on CVD risk factors.

Smoking in Pennsylvania At-A-Glance

According to the Centers for Disease Control and Prevention, smoking causes coronary heart disease, the leading cause of death in the United States. Cigarette smokers are 2–4 times more likely to develop coronary heart disease than nonsmokers, and cigarette smoking approximately doubles a person's risk for stroke⁵.

Pennsylvania Resources

The Division of Tobacco Prevention and Control (DTPC), The Bureau of Health Promotion and Risk Reduction, is responsible for leading and coordinating strategic efforts aimed at preventing tobacco use among youth, promoting smoking cessation among youth and adults, protecting nonsmokers from environmental tobacco smoke (ETS), and eliminating tobacco-related health disparities. State level tobacco use prevention initiatives include: a telephone quitline, efforts to counter tobacco marketing, surveillance of tobacco sales to minors, promotion of clinical-practice guidelines for assessment and treatment of tobacco addiction, and program evaluation.



Visit DTTC online at the Department of Health website: www.health.state.pa.us/tobacco for valuable program information and detailed annual reports on tobacco use in Pennsylvania, including ***Pennsylvania Tobacco Facts 2006***. This report developed by The Bureau of Health Statistics and Research and DTTC provides valuable tobacco facts on rates of cigarette and other tobacco products use, resulting health and financial costs, and exposure to secondhand smoke in Pennsylvania for adults and youth. Data included in ***Pennsylvania Tobacco Facts 2006*** have been gathered from surveys, vital statistics, tax receipts, and sales inspections reports (Synar).

Key Findings from Pennsylvania Tobacco Facts 2006

- ♥ Cigarette sales in Pennsylvania declined by 28 percent between 1994 and 2004.
- ♥ Approximately 20,000 Pennsylvania adults die annually, at a rate of 16 percent, from smoking-related causes.
- ♥ Tobacco-related personal health care costs total approximately four billion dollars annually in Pennsylvania.
- ♥ Smoking attributable productivity losses in Pennsylvania total approximately 4.6 billion dollars annually.
- ♥ Smoking attributable years of potential life lost totaled approximately 268,000 years annually for Pennsylvania adults aged 35 and older.
- ♥ Statistically significant ($p < 0.05$) disparities exist in smoking rates based on age (lower rates are associated with older ages), race (higher rates of smoking are shown in African Americans compared to Whites), education (increasing education is associated with lower rates of smoking), and income (higher income is associated with lower smoking rates).
- ♥ Approximately seven in ten Pennsylvania adults favor a ban on smoking in indoor work areas and shopping malls.

2005 Pennsylvania Smoking Prevalence (Table 8a)

- ♥ Twenty-four percent of all Pennsylvania adults indicated that they were current cigarette smokers in 2005.
- ♥ Only 9 percent of adults age 65+ said that they were current smokers – this prevalence rate is significantly lower than that of other age groups.
- ♥ There were no *significant* gender differences in current smoking rates among Pennsylvania adults in 2005.
- ♥ Only twelve percent of college graduates were current smokers, which is a prevalence rate that is significantly lower than that of other education groups.
- ♥ Adults with a household income of less than \$75,000 had significantly higher percentages of smoking compared to adults with a household income of \$75,000 or more.
- ♥ Non-Hispanic African American adults had a significantly higher percentage for being current cigarette smokers compared to non-Hispanic white adults.

Table 8a. Current Smokers, Pennsylvania Adults, 2005

	Current Smokers		
	Percent	Low CI	Hi CI
All Adults	24	22	25
Male	25	23	27
Female	22	21	24
Age:			
18-29	33	30	38
30-44	28	26	30
45-64	23	22	25
65+	9	8	11
Education:			
<High School	39	34	43
High School	28	26	30
Some College	24	22	27
College Degree	12	10	13
Income:			
<\$15,000	37	33	42
\$15,000-\$24,999	30	27	34
\$25,000-\$49,999	26	24	29
\$50,000-\$74,999	22	20	26
\$75,000+	14	12	17
Race/Ethnicity:			
White, non-Hispanic	22	21	24
African American, non-Hispanic	31	26	37
Hispanic	31	23	41

Source: Pennsylvania BRFSS

Note: Data excludes missing, don't know & refused responses.

Low CI: lower 95% confidence limit
Hi CI: upper 95% confidence limit

A 95% confidence interval (CI) is composed of two figures (upper and lower limits) computed specifically for a percent. That range identifies the variability of the percent, i.e., 95% of the time, the true percent (unaffected by chance variation or sample size) will occur within that range.

Diabetes in Pennsylvania At-A-Glance

Diabetes (or diabetes mellitus) is a metabolic disorder resulting from insufficient production or utilization of insulin, commonly leading to cardiovascular complications².

Pennsylvania Resources

The Diabetes Prevention and Control Program, The Bureau of Health Promotion and Risk Reduction, focuses on three major goals: 1) to improve the lives of Pennsylvanians with diabetes, 2) to reduce disparities related to diabetes among minority and underserved populations in the Commonwealth, and 3) to prevent the onset of type 2 diabetes through reduction of risk factors. Program services are offered on a statewide basis supporting contract activities with state and federal funding. Visit The Diabetes Control Program online at the Department of Health website: www.health.state.pa.us for valuable diabetes facts and information on funded programs.

Diabetes in Pennsylvania

- ♥ Approximately 20,000 Pennsylvania adults die annually from smoking-related causes which accounts for 16% of all deaths among residents.
- ♥ Diabetes is the 6th leading cause of death in the U.S. In Pennsylvania, diabetes was listed as the cause of death on 23 out of every 100,000 death certificates.
- ♥ In 2005, approximately 774,000 adults 18 and older in Pennsylvania have been diagnosed with diabetes (Source: Pennsylvania BRFSS).
- ♥ In 2004, hospitalizations where diabetes was the principal diagnosis incurred over \$673 million in hospital charges in Pennsylvania (PHC4 Diabetes in Hospitalization Report, Nov. 2005)⁶.
- ♥ African Americans continue to have the highest rates of hospitalization for diabetes, as well as the highest rates of lower extremity amputations and hospitalization of end stage renal disease⁶.

2005 Pennsylvania Diabetes Prevalence (Table 8b)

- ♥ Eight percent of Pennsylvania adults responded “yes” in the 2005 survey to ever being told by a doctor that they have diabetes.
- ♥ The 18 percent of adults age 65+ who had ever been told that they had diabetes was significantly higher than any of the other, younger age groups. Also, adults age 45-64 had a significantly higher percentage compared to adults under age 45.

- ♥ In 2005, survey findings indicated no *significant* gender differences in percentage of Pennsylvania adults who had ever been told they had diabetes.
- ♥ Thirteen percent of adults with less than a high school education reported they were ever told that they had diabetes – significantly higher when compared to other levels of education.
- ♥ Significantly higher percentages were seen for adults reporting household incomes less than \$24,999 compared to adults with household incomes of \$25,000 or higher.

Table 8b. Diabetes, Pennsylvania Adults, 2005

	Ever Told Had Diabetes		
	Percent	Low CI	Hi CI
All Adults	8	7	9
Male	8	7	9
Female	8	7	9
Age:			
18-29	2	1	3
30-44	4	3	5
45-64	9	8	11
65+	18	17	20
Education:			
<High School	13	11	16
High School	9	8	10
Some College	8	7	10
College Degree	5	4	6
Income:			
<\$15,000	15	13	18
\$15,000-\$24,999	13	11	15
\$25,000-\$49,999	8	7	9
\$50,000-\$74,999	5	4	7
\$75,000+	3	3	5
Race/Ethnicity:			
White, non-Hispanic	8	7	9
African American, non-Hispanic	11	9	15
Hispanic	6	3	11

Source: Pennsylvania BRFSS

Note: Data excludes missing, don't know & refused responses.

Low CI: lower 95% confidence limit
 Hi CI: upper 95% confidence limit

A 95% confidence interval (CI) is composed of two figures (upper and lower limits) computed specifically for a percent. That range identifies the variability of the percent, i.e., 95% of the time, the true percent (unaffected by chance variation or sample size) will occur within that range.

Physical Inactivity & Obesity in Pennsylvania At-A-Glance

Physical inactivity is defined as lack of enough routine activity to maintain good health. Physical inactivity results in a poor balance between energy intake and outflow, which fosters the development of overweight or obesity and other risk factors for heart disease and stroke ².

Obesity is usually defined in terms of body mass index (BMI), which is calculated as body weight in kilograms (1 kg=2.2 lbs) divided by height in meters (1m=39.37 inches) squared. Adults with a BMI equal to or greater than 30 kg/m² are considered obese and those with a BMI of 25-29.9 kg/m² are considered overweight².

Pennsylvania Resources

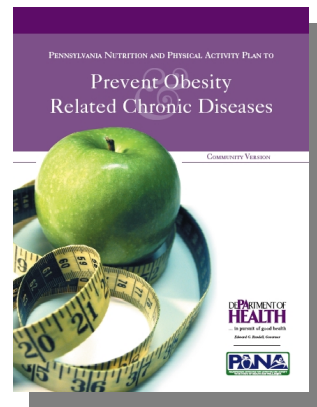
The Pennsylvania Department of Health Physical Activity Program coordinates state activities by expanding and integrating physical activity initiatives into other chronic disease programs to promote health and prevent chronic disease incidence, morbidity, and mortality. The Physical Activity Program activities focus on increasing moderate levels of physical activity for all Pennsylvanians through increasing awareness of the benefits, increasing awareness of the Surgeon General's recommendation of at least 30 minutes of moderate physical activity most days of the week for better health, and promoting behavior change.

The Pennsylvania Department of Health Nutrition Program coordinates obesity prevention initiatives and the **5 A Day for Better Health Program** (changing 3/19/07 to "Fruits and Veggies—More Matters"). The Nutrition Program helps oversee the implementation of the Pennsylvania Nutrition and Activity Plan to Prevent Obesity and Related Chronic Diseases (PaNPA plan), and to evaluate the plan. The Nutrition Program provides expert nutrition consultation to the chronic disease programs administered by the Bureau of Health Promotion and Risk Reduction, Pennsylvania Department of Health.



To learn more about the Physical Activity Program and the Nutrition Program, visit the Department website: www.health.state.pa.us .

Pennsylvania's Nutrition and Physical Activity Plan to Prevent Obesity and Related Chronic Diseases, published in 2003 by the Pennsylvania Department of Health, is also available at www.health.state.pa.us.



2005 Physical Inactivity in Pennsylvania (Table 8c)

- ♥ Twenty-six percent of Pennsylvania adults responded in 2005 that they had not engaged in any leisure time physical activity in the past month.
- ♥ Pennsylvania adults age 65 years and older had significantly higher percentages of not having engaged in leisure time physical activity (37 percent) compared to adults in the younger age groups.
- ♥ In 2005, survey findings indicated no *significant* gender differences in percentage of Pennsylvania adults not having engaged in leisure time physical activity.
- ♥ Adults with less education consistently had significantly higher percentages compared to adults with more education for not engaging in any leisure time physical activity in the past month.
- ♥ Lower household income adults (<\$25,000 compared to \$25,000+) had significantly higher percentages for having no leisure time physical activity compared to higher household income adults.
- ♥ Hispanic adults (35 percent) and non-Hispanic African American adults (35 percent) had significantly higher percentages compared to non-Hispanic white adults (24 percent) for no leisure time physical activity in the past month.

Table 8c. Percent No Physical Activity, Pennsylvania Adults, 2005

	No Physical Activity		
	Percent	Low CI	Hi CI
All Adults	26	25	27
Male	24	22	26
Female	28	26	29
Age:			
18-29	17	14	21
30-44	23	21	26
45-64	26	25	28
65+	37	34	39
Education:			
<High School	42	37	46
High School	32	30	34
Some College	23	21	26
College Degree	14	12	15
Income:			
<\$15,000	42	38	47
\$15,000-\$24,999	39	36	43
\$25,000-\$49,999	25	23	27
\$50,000-\$74,999	21	18	24
\$75,000+	12	10	14
Race/Ethnicity:			
White, non-Hispanic	24	23	25
African American, non-Hispanic	35	30	41
Hispanic	35	27	44

Source: Pennsylvania BRFSS

Note: Data excludes missing, don't know & refused responses.

Low CI: lower 95% confidence limit
 Hi CI: upper 95% confidence limit

A 95% confidence interval (CI) is composed of two figures (upper and lower limits) computed specifically for a percent. That range identifies the variability of the percent, i.e., 95% of the time, the true percent (unaffected by chance variation or sample size) will occur within that range.

2005 Overweight & Obesity in Pennsylvania (Table 8d)

- ♥ Sixty-two percent of Pennsylvania adults were overweight according to the 2005 survey results. Note: obese adults are included in the overweight percentages.
- ♥ Twenty-five percent of Pennsylvania adults were obese according to the 2005 survey results.
- ♥ In 2005, survey findings indicated that adults 18-29 years of age had a significantly lower percentage of being overweight compared to the older age groups.
- ♥ Adults age 30 years and older had significantly higher percentages for being obese compared to adults ages 18-29.
- ♥ In 2005, males had a significantly higher percentage of being overweight compared to females. However, there were no significant differences by gender on percentages for being obese.
- ♥ In 2005, a significantly lower percentage of adults with a college degree were overweight compared to adults with a high school diploma or less than a high school education.
- ♥ A significantly lower percentage of adults with a college degree were obese compared to adults in all other education groups.
- ♥ The percentage of obesity for those with incomes of \$75,000+ (20 percent) was significantly lower compared to those with incomes <\$50,000.
- ♥ African American, non-Hispanic adults had significantly higher percentages for being overweight and obese compared to white, non-Hispanic adults.

Table 8d. Percent Overweight & Obese, Pennsylvania Adults, 2005

	Overweight			Obese		
	Percent	Low CI	Hi CI	Percent	Low CI	Hi CI
All Adults	62	60	63	25	24	26
Male	70	68	72	27	25	29
Female	54	52	56	24	23	25
Age:						
18-29	44	40	48	16	13	19
30-44	62	60	65	26	24	28
45-64	70	68	71	31	29	33
65+	66	64	68	24	22	26
Education:						
<High School	62	57	67	30	26	34
High School	66	63	68	29	27	31
Some College	62	59	65	25	23	27
College Degree	57	54	59	20	18	22
Income:						
<\$15,000	62	57	66	30	27	34
\$15,000-\$24,999	64	61	67	29	26	32
\$25,000-\$49,999	63	60	66	27	25	30
\$50,000-\$74,999	65	61	68	25	22	28
\$75,000+	61	58	64	20	18	23
Race/Ethnicity:						
White, non-Hispanic	62	60	63	24	23	26
African American, non-Hispanic	71	65	76	34	29	40
Hispanic	60	51	69	29	21	38

Source: Pennsylvania BRFSS

Note: Data excludes missing, don't know & refused responses.

Low CI: lower 95% confidence limit
 Hi CI: upper 95% confidence limit

A 95% confidence interval (CI) is composed of two figures (upper and lower limits) computed specifically for a percent. That range identifies the variability of the percent, i.e., 95% of the time, the true percent (unaffected by chance variation or sample size) will occur within that range.

8. Burden Summary

CVD Mortality Summary

Heart disease and stroke—the chief components of cardiovascular disease (CVD)—have a devastating impact on the health of all Pennsylvanians, our health care system, and economy. Much progress has been made in treating cardiovascular disease and in preventing cardiovascular disease deaths. For example, in 2004, Pennsylvania’s age-adjusted coronary heart disease death rate was 163.7 per 100,000. This 2004 rate surpassed the *Healthy People 2010*⁷ national objective to reduce the coronary heart disease death rate to 166 per 100,000 population. There has also been a declining trend in Pennsylvania’s age-adjusted stroke death rate during the period of 2000-2004. In 2004, Pennsylvania’s stroke death rate was 49.9 per 100,000, which suggests that the state is close to achieving the *Healthy People 2010* stroke death rate goal of 48 per 100,000.

Healthy People 2010 is a set of national health objectives to be achieved by the year 2010. To learn more about the national objectives, visit www.healthypeople.gov

However, the cardiovascular disease data presented in this document makes it clear that there is still work to be done to reduce the burden of cardiovascular disease in Pennsylvania. Heart disease is Pennsylvania’s leading cause of death, and the third leading cause of death in Pennsylvania is stroke. Table 8a highlights 2004 Pennsylvania age-adjusted death rates by cardiovascular disease categories.

Table 8a. Cardiovascular Disease Death Rates, Pennsylvania, 2004

CVD Category	2004 Age-Adjusted Death Rate per 100,000 by Race, Ethnicity & Gender								
	Total	African American Males	Asian/PI Males	Hispanic Males	White Males	African American Females	Asian/PI Females	Hispanic Females	White Females
Cardiovascular Disease	302.7	448.7	147.8	210.4	362.9	305.2	125.7	119.5	252.7
Heart Disease	234.1	353.1	108.3	161.1	289.5	222.6	83.4	84.3	190.3
Coronary Heart Disease	163.7	251.6	78.1	107.2	210.9	155.4	62.9	48.2	127.4
Stroke	49.9	67.9	31.0	32.9	51.2	58.3	34.9	26.1	46.9

Source: Pennsylvania Certificates of Death
 Note: Hispanics can be of any race

Cardiovascular Health Disparities Summary

Significant differences in cardiovascular disease mortality, hospitalizations and prevalence exist by age, gender, geography, socioeconomic status and race/ethnicity, and, as data is available, health disparities statistics are included in this burden document. Recaps of some of the significant cardiovascular health disparities presented throughout this document are presented below.

Age

- ♥ Pennsylvania cardiovascular disease, heart disease, coronary heart disease, and stroke death rates all rise with increasing age.
- ♥ In general, Pennsylvania cardiovascular disease, heart disease and stroke hospitalization rates by county for the period of 1999-2001 increase with advancing age.
- ♥ According to 2005 BRFSS survey findings, as age increased, each age group had a significantly higher percentage of being told they had a heart attack, heart disease, or a stroke compared to younger age groups.

Gender

- ♥ In Pennsylvania, male cardiovascular disease, heart disease, coronary heart disease, and stroke death rates are all higher than the female death rates.
- ♥ In 2005, a significantly higher percentage of men reported being diagnosed with a cardiovascular condition (i.e., heart attack, heart disease, or a stroke) compared to women.

Geography

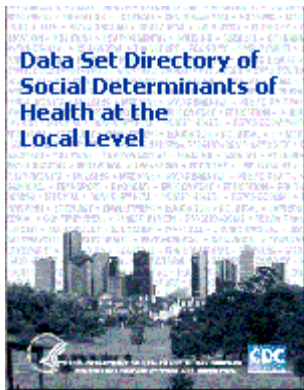
- ♥ The 2002-2004 cardiovascular disease death rate in Adams, Blair, Bradford, Carbon, Clearfield, Columbia, Greene, Jefferson, Lackawanna, Luzerne, Northumberland, Philadelphia, Schuylkill, Susquehanna, Venango, Wayne, Westmoreland, and Wyoming Counties is significantly higher than the 2002-2004 cardiovascular disease death rate for the state, 319.5.
- ♥ The 2002-2004 cardiovascular disease death rate in Berks, Bucks, Chester, Erie, Franklin, Indiana, Lancaster, Lehigh, Monroe, Montgomery, Northampton, Pike, Tioga, Washington, and York Counties is significantly lower than the 2002-2004 cardiovascular disease death rate for the state.

Race & Ethnicity

- ♥ In Pennsylvania, for the period 2002-2004, African American men had the highest cardiovascular disease, heart disease, coronary heart disease, and stroke death rates compared to the other race/ethnicity/gender groups.
- ♥ White men had the second highest cardiovascular disease, heart disease, and coronary heart disease death rates, followed by African American women. Asian/Pacific Islander women had the lowest death rates for these cardiovascular conditions in Pennsylvania for the period 2002-2004.
- ♥ African American women had the second highest stroke death rate in Pennsylvania for the 2002-2004 period.

Socioeconomic Status

- ♥ In 2005, adults aged 35 years and older with less than a high school education had significantly higher percentages of ever being told they had a heart attack, heart disease, or a stroke than adults aged 35 years and older with a high school, and more than a high school, education.
- ♥ In 2005, significantly higher percentages of adults aged 35 years and older with household incomes less than \$50,000 had ever been told they had a heart attack, heart disease, or a stroke compared to adults aged 35 years and older with household incomes of \$50,000 or more.

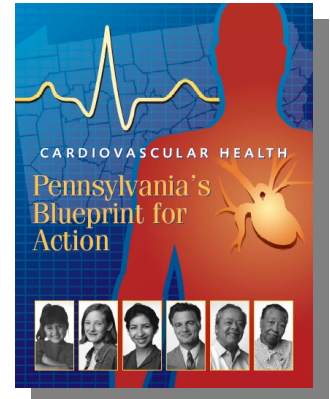


According to CDC's ***Data Set Directory of Social Determinants of Health at the Local Level***, government agencies, academic institutions, and community organizations are increasingly recognizing the need to understand and address socioeconomic contexts (e.g., where people work and play) in order to improve the public's health and welfare⁸. Interventions to improve socioenvironmental conditions have the potential to produce wide-ranging health benefits and could reduce marked health disparities that remain a high priority for public health, such as the cardiovascular health disparities presented throughout this burden document. According to the directory, efforts to improve health and eliminate health disparities need to be integrated into

community characteristics that promote or endanger health. The directory contains an extensive list of existing data sets that can be used to address social determinants health. As statewide and local level data collection and analysis capacity continues to develop, data on social determinants of health can help the Pennsylvania Department of Health, local health agencies, academic institutions and community based organizations better identify and address socially-rooted causes of cardiovascular health disparities.

9. A Call to Action

The burden data presented in this document drives cardiovascular health program planning and implementation for the Pennsylvania Department of Health's Heart Disease and Stroke Program (HDSP). Strategies and action steps presented in ***Cardiovascular Health: Pennsylvania's Blueprint for Action***, were developed by the Pennsylvania Cardiovascular Health Consortium to address the devastating impact cardiovascular disease has on Pennsylvanians, our health care system, and economy. Readers are encouraged to visit the Pennsylvania Department of Health's Heart Disease and Stroke Program online at www.health.state.pa.us, download an electronic copy of the *Blueprint*, and join the state's efforts to improve cardiovascular health in Pennsylvania.



Pennsylvania's *Blueprint for Action* serves as a road map for the implementation of our extensive knowledge base to reduce CVD morbidity and mortality. Specifically, uses of the blueprint include:

- ♥ Educating policy makers,
- ♥ Guiding research at academic institutions,
- ♥ Supporting statewide and community-based applications for funding, and
- ♥ Directing the assessment and development of data collection methods.

The strategies and action steps presented in the blueprint are not intended to be prescriptive; rather, they are intended to provide starting points for schools, worksites, community-based organizations, health care providers and institutions, state and local government agencies, academic research partners and other stakeholders who work to prevent and control cardiovascular disease in Pennsylvania.

Heart disease and stroke are largely preventable diseases, and the blueprint identifies and supports the implementation of a full range of public health interventions across the continuum of care, with a strong focus on health promotion and disease intervention. Cardiovascular health stakeholders throughout the state are strongly encouraged to both 1) incorporate *Pennsylvania's Blueprint for Action* into their efforts to address Pennsylvania's CVD burden and 2) identify and address the health inequities that exist in their service areas by targeting disparate and underserved groups with heart disease and stroke prevention and control initiatives.

End Notes

- 1 U.S. Department of Health and Human Services. The Burden of Heart Disease & Stroke in the United States, Atlanta, Ga.: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention; August 2004.
- 2 U.S. Department of Health and Human Services. A Public Health Action Plan to Prevent Heart Disease and Stroke, Atlanta, Ga.: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention; 2003.
- 3 Pennsylvania Health Care Cost Containment Council. Hospital Performance Report: Federal Fiscal Year 2005—October 1, 2004-September 30, 2005, Harrisburg, Pennsylvania; September 2006.
- 4 U.S. Department of Health and Human Services, National Institutes of Health, National Heart, Lung and Blood Institute. (2003). The Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure. Retrieved February 18, 2007 from <http://www.nhlbi.nih.gov/guidelines/hypertension>.
- 5 U.S. Department of Health and Human Services, Centers for Disease Control and Prevention. (2006). Health Effects of Cigarette Smoking. Retrieved February 18, 2007 from http://www.cdc.gov/tobacco/factsheets/HealthEffectsofCigaretteSmoking_Factsheet.htm
- 6 Pennsylvania Health Care Cost Containment Council. Diabetes Hospitalization Report, Harrisburg, Pennsylvania; November 2005.
- 7 U.S. Department of Health and Human Services. (2000). Healthy People 2010: Understanding and Improving Health. Retrieved December 3, 2006 from <http://www.healthypeople.gov>.
- 8 U.S. Department of Health and Human Services. (2003). Data Set Directory of Social Determinants of Health at the Local Level. Retrieved December 8, 2006 from http://www.cdc.gov/dhdsp/library/data_set_directory/index.htm.