STATISTICAL NEWS

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Teen Pregnancy Rate Recently Higher After 11 Year Decline

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Disparities Between Races and Sexes Still Evident

The age-adjusted death rate for heart disease among Pennsylvania residents decreased in 2008. This marked the sixth consecutive year in which the rate decreased. While this is good news, there continue to be significant disparities in heart disease deaths among sexes and racial groups. The age-adjusted death rate among males was 54 percent greater than the rate for female residents and Blacks had a 25 percent higher rate than Whites.

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Healthy People 2010: Diabetes

Obj 05-05 - Reduce Diabetes Deaths
HP2010 Target: 45 deaths per 100,000

The age-adjusted death rate for diabetes (as an underlying or contributing cause) among all Pennsylvania residents between 2004 and 2008 has been stable in recent years. The highest death rate was recorded most recently in 2006 (80.7 per 100,000) and the lowest figure in 2008 (75.9) during this five-year period. There were 11,816 resident deaths in 2008 either due directly to diabetes or with diabetes mentioned as a contributing cause, resulting in an age-adjusted rate of 75.9 per 100,000.

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Pregnancies Continue to Rise in Pennsylvania

Teen Pregnancy Rate Recently Higher After 11 Year Decline

There were 187,696 pregnancies reported among female residents of Pennsylvania in 2008, with a reported pregnancy rate of 76.0 per 1,000 females ages 15-44. From 1994 to 2002, the reported pregnancy rate among female residents decreased by 6.7 percent, 75.1 and 70.1, respectively. However, since 2002 the reported pregnancy rate has increased by 8.4 percent from 70.1 to 76.0.

Chart 1 depicts the annual rate of reported pregnancies for all Pennsylvania residents and the annual rate of reported pregnancies for teens (ages 15 -19), from 1994 through 2008. The teen pregnancy rate declined by 24 percent from 1994 (58.3) to 2008 (44.3). However, in 2008 the teen pregnancy rate (44.3) increased 1.4 percent from the 2007 teen pregnancy rate of 43.7.

Table 1 compares the reported pregnancy rates by women's ages for 2008 and 2007. All of the rates for the age groups listed have increased slightly with the exception of the under 15 age group, which remained constant. The largest rate increase was seen for ages 15-19 (1.4 percent) followed by women in the age group 20-29 with an increase of 0.7 percent. The rate for women aged 30 and older increased by only 0.2 percent.

Reported pregnancy statistics for Pennsylvania residents in 2008, by woman's age group and outcome, are shown in Table 2. In 2008, 79.3 percent (148,934) of all reported pregnancies resulted in a live birth, 19.8 percent (37,222) in an induced abortion, and only 0.8 percent (1,540) in a fetal death (non-induced termination of 16 weeks or more gestation). Women

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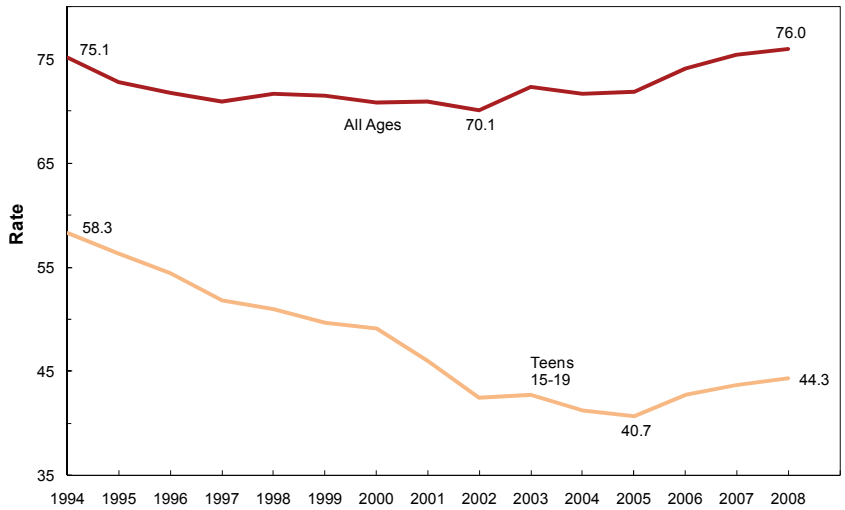
Chart 1
Reported Pregnancy Rate*, All Ages and Teens 15-19
Pennsylvania Residents, 1994-2008



*Rate per 1,000 female population for each year by age group; all ages - per 1,000 females ages 15-44 years.

Table 1
Reported Pregnancies and Rates* by Woman's Age and Year, Pennsylvania Residents, 2008 and 2007

Age of Woman	2008		2007		Rate % Difference
	Number	Rate	Number	Rate	
All Ages	187,696	76.0	187,112	75.4	0.8
Under 15	389	1.0	395	1.0	0.0
15-19	20,289	44.3	20,090	43.7	1.4
20-29	98,547	123.7	97,305	122.9	0.7
30 & Older	68,362	40.8	69,153	40.7	0.2

*Rate Calculations: per 1,000 female population for each year by age group; all ages - per 1,000 females ages 15-44 years; under 15 - per 1,000 females ages 10-14 years; and 30 & older - per 1,000 females ages 30-49 years.
Notes: Unknown ages are included in the total number for all ages.

Table 2
Reported Pregnancies by Woman's Age Group and Outcome
Pennsylvania Residents, 2008

Age of Woman	Reported Pregnancies	Live Births	Fetal Deaths	Induced Abortions
All Ages	187,696	148,934	1,540	37,222
Under 15	389	158	7	224
15-17	6,397	4,269	51	2,077
18-19	13,892	9,439	123	4,330
20-29	98,547	76,216	754	21,577
30 & Older	68,362	58,769	585	9,008

Note: Unknown ages are included in the total for all ages.

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Pregnancies Continue to Rise in Pennsylvania

aged 20-29 accounted for 52.5 percent of all reported pregnancies in 2008; those under 20 years of age accounted for 11.0 percent; and women 30 years of age and older accounted for 36.4 percent. In 2008, 67.1 percent of all reported pregnancies to women under 20 years of age resulted in a live birth, compared to 77.3 percent for women 20-29 years of age, and 86.0 percent for those women 30 years of age and older.

Almost 68 percent (127,231) of all reported pregnancies in 2008 were among White women, as shown in Table 3. Black women accounted for 20.6 percent (38,646) of the reported pregnancies; and Asian/Pacific Islander women accounted for only 3.6 percent (6,772) of all reported pregnancies. Reported pregnancies among women of Hispanic origin accounted for 9.0 percent (16,916). Please note that persons of Hispanic origin can be of any race. Among Hispanic and Black females in 2008, 18.0 percent and 19.9 percent of the reported pregnancies, respectively, were to females under 20 years of age. Only 7.9 percent of all reported pregnancies to Whites and 3.4 percent of all reported pregnancies to Asian/Pacific Islanders were to females under 20 years of age.

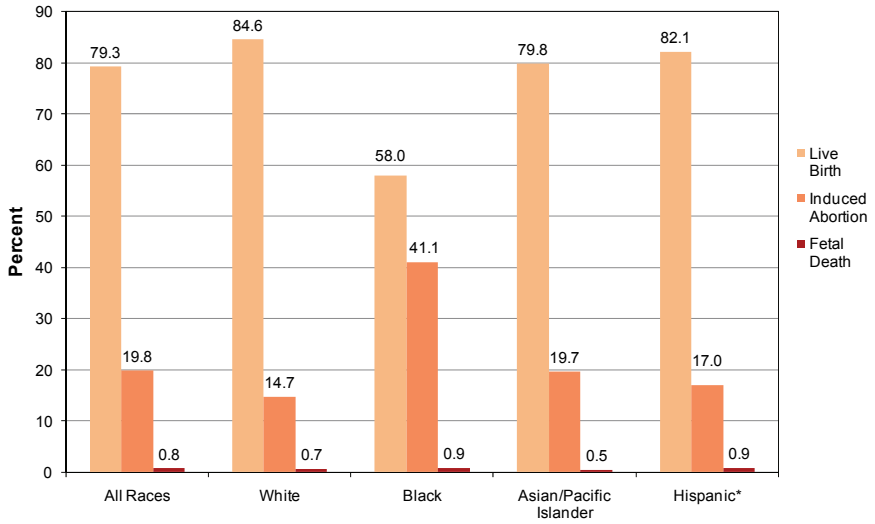
Chart 2 shows the percentage of 2008 reported pregnancies by outcome, race and Hispanic origin for Pennsylvania residents. In 2008, 84.6 percent of the reported pregnancies to White women resulted in a live birth and 14.7 percent in an induced abortion. Among Asian/Pacific Islander women, 79.8 percent of the reported pregnancies resulted in a live birth and 19.7 percent in an induced abortion. Only 58.0 percent of the reported pregnancies among Black women resulted in a live birth with 41.1 percent resulting in an induced abortion. The percentages of live births and induced abortions for Hispanic women were similar to those for White women at 82.1 percent and 17.0 percent, respectively.

Table 3
Reported Pregnancies by Age, Race and Hispanic Origin of Woman, Pennsylvania Residents, 2008

Age of Woman	All Races	White	Black	Asian/Pacific Islander	Hispanic Origin
All Ages	187,696	127,231	38,646	6,772	16,916
Under 15	389	100	249	3	46
15-17	6,397	2,709	2,654	66	1,093
18-19	13,892	7,302	4,799	164	1,905
20-29	98,547	65,202	21,826	2,794	9,912
30 & Older	68,362	51,857	9,100	3,741	3,954

Notes: Hispanic origin can be of any race. Unknown ages are included in the total for all ages.

Chart 2
Reported Pregnancies, Percent Outcome by Race and Hispanic Origin*, Pennsylvania Residents, 2008



*Hispanic Origin can be of any race

Three components were used to calculate the reported pregnancies (live births, non-induced fetal deaths, and induced abortions). Please note the following qualifications of the reported pregnancy statistics as released by the Bureau of Health Statistics and Research. Fetal deaths exclude non-induced terminations of less than 16 weeks of gestation. Induced abortions exclude those performed on a Pennsylvania resident in an out-of-state facility.

For additional statistics on age-specific pregnancy rate and percent live birth outcome for reported resident teen pregnancies please visit our website at www.health.state.pa.us/stats and click on the EpiQMS logo. If you have

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Cancer Staging and Its Connection to Survival

Prognosis Generally Better for Early Stage Detection

Cancer staging refers to a classification system based on how far the disease has progressed from the site of origin. In other words, the staging measures the extent that a cancer has spread. Staging is determined at the time of diagnosis, and depending on the staging system, is based on several factors (e.g. tumor size, number of lymph nodes affected, depth of tissue/organ penetration and invasion of other organs/tissue). A cancer patient with an early stage diagnosis generally has a better prognosis than a patient diagnosed at a later stage. For this reason, cancer staging is an important instrument in cancer surveillance, is a powerful predictor of survival, and is helpful in determining the best course of treatment.

Today's Surveillance Epidemiology and End Results (SEER) Summary Staging System is a result of the work of the National Cancer Institute's Demographic Analysis Section, who first prepared the 1977 Summary Staging Guide. The SEER Summary Staging System groups most cancers into four major categories.

In Situ - An in situ diagnosis means that the cancer has not penetrated or spread beyond the basement membrane of the epithelial tissue involved. Microscopic examination is necessary to make this determination. Other terms used instead of in situ include non-invasive, pre-invasive, non-infiltrating, intra-epithelial and Stage 0.

Local - A cancer that is invasive, but is confined entirely to the organ of origin. The lesion does not extend beyond the outer limits of the primary organ and there is no evidence of metastasis anywhere else in the body.

Regional - A cancer which has extended beyond the limits of the organ of origin and there is no evidence of distant metastasis. Several regional subcategories are also defined (See the Technical Notes section of the *Pennsylvania Cancer Incidence and Mortality* annual report for more details).

Distant - Cancer cells have broken away from the primary cancer, have traveled to other parts of the body, and have begun to grow at the new location. Distant stage is also called remote, diffuse, disseminated, metastatic, or secondary disease. This category includes all leukemias and myelomas (systemic disease).

Unstaged/Unknown – Occasionally invasive cancers cannot be staged. This situation generally occurs for unknown primary sites, death certificate only cases, some non-analytic only cases, some biopsy only cases, and/or some pathology lab only cases.

The two early stage categories for a cancer diagnosis are in situ and local, while regional and distant are the two late stage categories.

Another staging system called the Ann Arbor Staging Classification is used for lymphomas, either Hodgkin or non-Hodgkin types. This system is very similar to the SEER Summary Stage except that the in situ category is not used. The Ann Arbor Staging also uses the terms Stage I to refer to the local stage, Stage II to refer to the regional stage, and Stage III/IV to refer to the distant stage.

The SEER Summary Staging classification is one of the most common systems used, mainly because this system is able to classify many types of cancers. However, another common system used for staging is the American Joint Committee on Cancer's TNM Staging where T describes the Tumor, N describes the Lymph Nodes, and M describes the Metastasis. One important difference from the SEER Summary Staging is that AJCC TNM Staging does not stage for leukemia or myeloma. The AJCC TNM staging system is mostly used by physicians and hospitals, while the SEER Summary Staging is the standard used for cancer surveillance. Consequently, Pennsylvania's annual statistical reports use the SEER Summary Staging System for most cancer types in combination with the Ann Arbor Staging for lymphomas.

There have been many versions of the SEER Summary Staging system, which can affect how cancer staging data are reported. For this reason, one must use caution when attempting any trend analysis and interpretation from year to year; and for simplicity, we have avoided any trend analysis in this article.

During the three-year period, 2005-2007, the most common stage diagnosis among Pennsylvania residents for all cancer sites/types excluding lymphomas was for local

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Cancer Staging and Its Connection to Survival

stage (41.8 percent – see Chart 1). In situ staging accounted for 9.3 percent of cases, while regional and distant staging accounted for 19.5 percent and 21.1 percent, respectively. An additional 8.4 percent were unstaged.

One of the most important aspects of cancer staging is that some types of cancer are more likely to be diagnosed at an early stage, while other cancers are more likely to be diagnosed at a late stage. Lung and bronchus cancer, for example, had over 50 percent of diagnoses made at the distant stage for the three-year period, 2005-2007. In Table 1, select cancers have been grouped into the four staging categories. The cancers that appear in each staging group had the highest percentage of diagnoses at that stage. Cancers of the female breast, melanoma of the skin and urinary bladder had the highest percentage of diagnoses made at the in situ stage. Lung/bronchus, leukemia, myeloma, ovarian and pancreatic cancers had the highest percentage of diagnoses made at the distant stage.

Since an early stage diagnosis indicates that the cancer has not spread as much as a late stage diagnosis, it makes sense that treatment has a better potential for success with early stage cancers. Late stage cancers involve multiple organs and tissue and therefore require dramatically more complex treatments. To illustrate the point, Table 2 (next page) compares the five year survival rates of the top in situ stage cancers and the top distant stage cancers. The in situ stage cancers (female breast, melanoma and urinary bladder) had five year relative survival rates of 79

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Chart 1
Percent of Staging Distribution for All Cancers Excluding Lymphomas, Pennsylvania Residents, 2005-2007

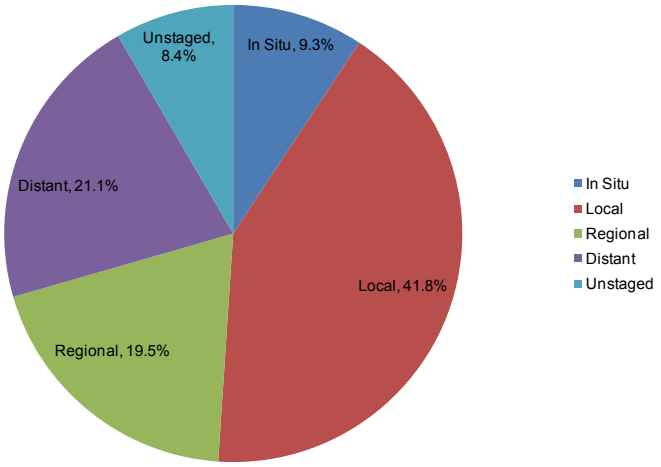

Table 1
Top Cancers for Each of the Four Staging Categories by Percentage of Diagnoses, Pennsylvania Residents, 2005-2007

In Situ Cancers	Urinary Bladder	49.6%
	Melanoma of the Skin	29.1%
	Female Breast	20.2%
Local Stage Cancers	Prostate	79.7%
	Brain and Other Nervous System	74.0%
	Thyroid	74.0%
	Testis	66.9%
	Corpus and Uterus, NOS	65.9%
	Kidney and Renal Pelvis	62.5%
Regional Stage Cancers	Oral Cavity and Pharynx	43.6%
	Cervix Uteri	37.6%
Distant Stage Cancers	Leukemia	99.9%
	Myeloma	94.4%
	Ovary	58.7%
	Lung and Bronchus	51.2%
	Pancreas	50.0%

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Cancer Staging and Its Connection to Survival

percent and higher. The late stage cancers (lung/bronchus, leukemia, myeloma, ovary and pancreas) had survival rates of 55 percent and under – some had very low survival rates, like pancreatic cancer where only 5.6 percent of patients diagnosed in distant stage survive five years after diagnosis.

Some cancer types can be diagnosed at an early stage as a result of regular screening. For example, screening for breast, colorectal, prostate and cervical cancers has been very successful in early stage diagnosing. However, some cancers, such as lung and bronchus, are very difficult to diagnose early. To read about the existing screening guidelines visit the American Cancer Society's Guidelines for the Early Detection of Cancer.

To access more detailed statistics on cancer staging, please visit our interactive website EpiQMS. Specifically, you can access the percent of staging distribution and the age-adjusted staging rate. The age-adjusted staging rate is unique in that it allows you to compare different regions without the bias of a population's age distribution. You can also compare staging data confidence intervals, determine significant differences, build charts and create maps.

Table 2
Cancer Incidence Staging Data
Compared to Relative Survival Rates*

		Stage 2005-2007		*Relative Survival
		In Situ	Distant	
In Situ Stage Cancers	Melanoma of the Skin	29.1%	3.2%	91.4%
	Female Breast	20.2%	4.9%	89.0%
	Urinary Bladder	49.6%	3.7%	79.3%
Distant Stage Cancers	Leukemia	0.0%	99.9%	55.3%
	Ovary	0.4%	58.7%	45.6%
	Myeloma	0.0%	94.4%	38.2%
	Lung and Bronchus	0.1%	51.2%	15.8%
	Pancreas	0.5%	50.0%	5.6%

*Five Year Relative Survival Rates based on 1999-2006 National Cancer Institute's 17 SEER areas, except for leukemia which is based on 9 SEER areas.

For questions regarding the content presented in this article, please contact the Bureau of Health Statistics and Research at 717-783-2548 or send us an email.

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Heart Disease Deaths Decline for Sixth Straight Year

Disparities Between Races and Sexes Still Evident

The age-adjusted death rate for heart disease among Pennsylvania residents decreased in 2008. This marked the sixth consecutive year in which the rate decreased. While this is good news, there continue to be significant disparities in heart disease deaths among sexes and racial groups. The age-adjusted death rate among males was 54 percent greater than the rate for female residents and Blacks had a 25 percent higher rate than Whites (see Chart 1).

Race:
Pennsylvania's age-adjusted death rate for heart disease among Black residents during 2008 was more than 25 percent higher than the rate for Whites (256.6 vs. 205.1). A closer look at Black deaths due to heart disease shows that Black males had an age-adjusted rate of 322.9 per 100,000 while Black females had a rate of 210.6. One contributor or risk factor for heart disease is diabetes. According to the *2008 Behavioral Health Risks of Pennsylvania Adults*, 15 percent (95% Confidence Interval (CI): 12-19) of non-Hispanic Black adults (age 18+) were ever told they had diabetes. This is statistically significantly higher than the rate of 8 percent (CI: 8-9) for non-Hispanic White adults.

Sex:
In 2008, the age-adjusted heart disease death rate for male residents of Pennsylvania was over 54 percent higher than the rate for females (259.5 compared to 168.5). Diabetes could be a contributing factor for this disparity between the sexes as well. According to Healthy People 2010 objective 05-03, the rate (age-adjusted per 1,000 population) for male adults (ages 18+) who were diagnosed with diabetes was 90 (CI: 79-101), while the rate for females was 69 (CI: 62-76) for Pennsylvania residents in 2008.

Age:
Reviewing the number of heart disease deaths by age group for 2008 shows that elderly persons had by far the highest figures. Over 71 percent of Pennsylvania resident deaths due to heart disease occurred among residents aged 75 and older. A look at 5-year age groups shows that the age-specific death rate for heart disease increased with age showing a larger jump starting with the age group 45-49 (see Chart 2, next page).

Type of Heart Disease:
One of the more familiar types of heart disease is coronary heart disease. There were 22,152 Pennsylvania resident deaths with coronary heart disease in 2008. Acute myocardial infarction (heart attack), which is a subset of coronary heart disease, accounted for 7,138 resident deaths. Congestive heart failure was the cause for 3,090 deaths. There were 1,340 deaths due to cardiac arrest in 2008.

County:
The county with the highest age-adjusted rate for heart disease deaths in 2008 was Wyoming County (rate of 304.1 based on 94 deaths). The second highest rate occurred for Blair County (rate of 293.6 based on 513 deaths). Third highest was Montour County followed by Columbia County. It is interesting to note that three of these top four counties are located in the northeastern section of the state. The age-adjusted heart disease death rates for these counties were all significantly higher than the state rate, with the exception of Montour County.

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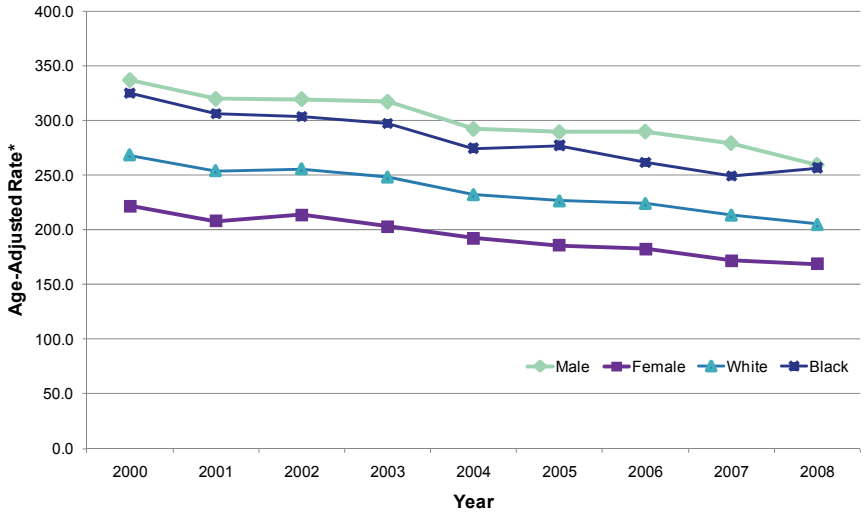
Chart 1
Age-Adjusted Heart Disease Death Rates* by Sex and Race
Pennsylvania Residents, 2000-2008



* per 100,000 and adjusted to the 2000 U.S. standard population.

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Heart Disease Deaths Decline for Sixth Straight Year

Fulton County with a rate of 136.1 (based on 25 deaths) had the lowest age-adjusted death rate for heart disease. The next lowest rate was for residents of Pike County (161.0 rate based on 112 deaths). Franklin County was third lowest followed by Bucks County. The fact that Bucks County has the fourth lowest rate is particularly noteworthy, since Bucks County is the fourth most populated county in the state. The four counties listed above all had significantly lower age-adjusted heart disease death rates compared to the state. Please note that counties with less than 20 deaths were not included in these rankings, since age-adjusted rates based on less than 20 events are considered statistically unreliable.

Trends:

The age-adjusted heart disease death rate for Pennsylvania residents decreased from 214.9 in 2007 to 207.3 in 2008 (see Chart 3). This marked the sixth consecutive year that the rate decreased. The rate has dropped over 23 percent since 2000 (207.3 in 2008 vs. 270.0 in 2000).

For questions regarding the statistics presented in this article, please contact the Bureau of Health Statistics and Research at 717-783-2548 or via an email link on our web site at www.health.state.pa.us/stats.

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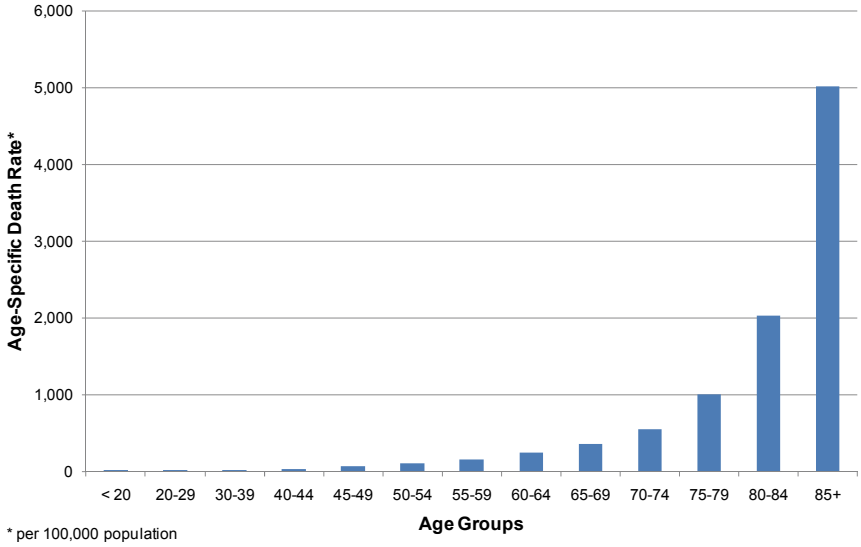
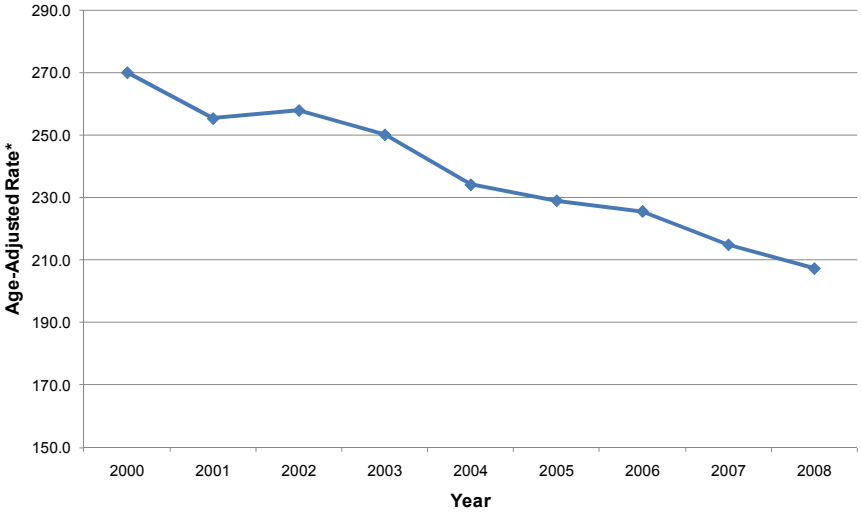
Chart 2
Age-Specific Heart Disease Death Rates*
Pennsylvania Residents by Age Groups, 2008



* per 100,000 population

Chart 3
Age-Adjusted Heart Disease Death Rates*
Pennsylvania Residents, 2000-2008



* per 100,000 and adjusted to the 2000 U.S. standard population.

Update: Healthy People 2010 Objectives

Focus Area 05: Diabetes

Objective 05-05 - Reduce Diabetes Deaths....HP2010 Target: 45 deaths per 100,000

All Deaths and by Sex

The age-adjusted death rate for diabetes (as an underlying or contributing cause) among all Pennsylvania residents between 2004 and 2008 has declined slightly in recent years. The highest death rate was recorded most recently in 2006 (80.7 per 100,000) and the lowest figure in 2008 (75.9) during this five-year period (see Chart 1). There were 11,816 resident deaths in 2008 either due directly to diabetes or with diabetes mentioned as a contributing cause, resulting in an age-adjusted rate of 75.9 per 100,000. In 2006, there were 12,007 such deaths among residents for a rate of 80.7 per 100,000. The age-adjusted death rate among male residents between 2004 and 2008 has been lower as of late – from 101.6 per 100,000 in 2006 to a low of 93.1 in 2008. The rate among female residents also declined, although not as dramatically as males, during this five-year period.

By Race and Hispanic Origin

Black residents have much higher age-adjusted death rates for diabetes (as an underlying or contributing cause), compared to White and Hispanic residents. The 2008 rate for Blacks was 101.5 per 100,000, compared to 74.5 for Whites and 61.3 for Hispanics (see Chart 2). During the five-year period of 2004-2008, the age-adjusted diabetes death rates for White and Black residents were lower in recent years. Among White residents, the highest annual rate for this period occurred in 2006 (79.3); among Blacks, 2005 (109.4); among Hispanic residents, 2007 (66.6). The

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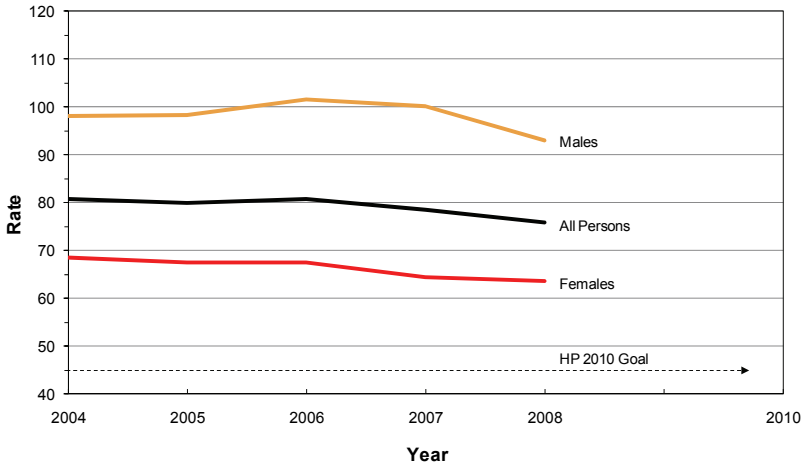
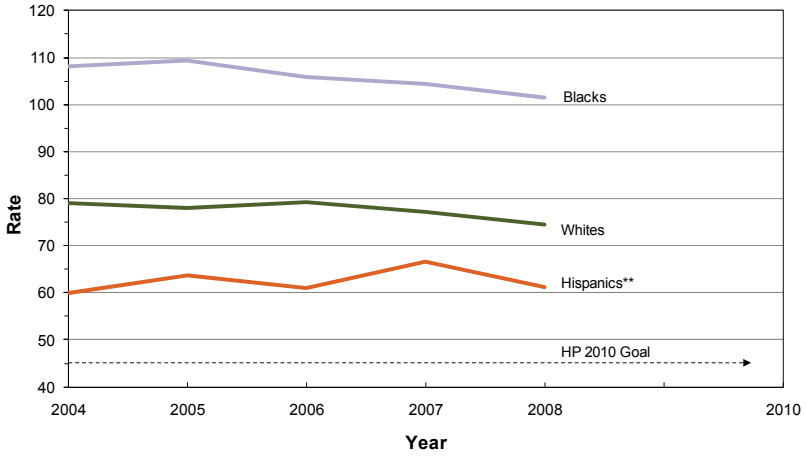
Chart 1
Age-Adjusted Death Rates* for Diabetes Deaths by Sex, Pennsylvania Residents, 2004-2008



*Age-adjusted rates are per 100,000, computed using direct method, 2000 U.S. standard million population; for deaths listing diabetes as an underlying or contributing cause.

Chart 2
Age-Adjusted Death Rates* for Diabetes Deaths by Race and Hispanic Origin, Pennsylvania Residents, 2004-2008**



*Age-adjusted rates are per 100,000, computed using direct method, 2000 U.S. standard million population; for deaths listing diabetes as an underlying or contributing cause.
**Hispanics can be of any race.

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Update: Healthy People 2010 Objectives

Focus Area 05: Diabetes

Healthy People 2010 national objective is for an age-adjusted death rate of 45 per 100,000. The rates for Pennsylvania's Whites, Hispanics and, especially, Blacks are much higher than the goal.

HP2010 State and County Data on the Web

To access the Department of Health's web page of Healthy People 2010 statistics for the state and counties, go to www.health.state.pa.us/stats. The latest available statistics as well as trend data are shown. You can view data for the state or all counties. Complete data sets for the state and counties can be downloaded. There is also a link to the national HP2010 web site.

The data contained in this article is not yet available on our HP2010 website, but is available through EpiQMS, our interactive health statistics web tool.

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Table 1
Age-Adjusted Death Rates* for Diabetes Deaths
Pennsylvania, 2004-2008

Diabetes	2004	2005	2006	2007	2008
All Persons	80.7	80.0	80.7	78.6	75.9
Males	98.1	98.3	101.6	100.2	93.1
Females	68.5	67.5	67.6	64.4	63.6
Whites	79.1	78.1	79.3	77.1	74.5
Blacks	108.2	109.4	105.9	104.5	101.5
Hispanics**	60.0	63.8	61.1	66.6	61.3

*Age-adjusted rates are per 100,000, computed using direct method, 2000 U.S. standard million population; for deaths listing diabetes as an underlying or contributing cause.
**Hispanics can be of any race.