STATISTICAL NEWS

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Number of Pennsylvania Deaths Increased in 2008

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The number of deaths for Pennsylvania residents rose from 123,967 in 2007 to 126,332 in 2008. This marked only the second time in the past eight years that the number of annual deaths increased year over year for Pennsylvania residents. Large increases were seen in the number of deaths for chronic lower respiratory diseases, heart disease, and Alzheimer's disease.

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Percent of Preterm Births Down in 2008

Preterm Births in 2008 Account for 10.3 Percent of All Births

Every year, more than half of a million babies in the United States (1 in every 8) are born premature, according to the Centers for Disease Control and Prevention's (CDC) webpage on prematurity. Some babies are so small they could fit in the palm of your hand. A premature birth is a birth that occurs at least three weeks before a baby's due date. Prematurity is the leading cause of death among newborn babies.

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Healthy People 2010: Substance Abuse

Obj 26-02 - Cirrhosis Deaths...HP2010 Target: 3 per 100,000

Obj 26-03 - Drug-induced Deaths…HP2010 Target: 1 per 100,000

Between 2003 and 2008, the annual age-adjusted death rate for cirrhosis deaths among all Pennsylvania residents was highest in 2003 and then declined three consecutive years to 7.2 in 2006, before rising slightly to 7.6 in 2008. A similar pattern was observed among Whites and Hispanics. Hispanics observed the largest change between 2003 and 2008, compared to Whites or Blacks, with a decline in the age-adjusted death rate for cirrhosis from 14.8 to 11.0, which was over a 25 percent drop.

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DEPARTMENT OF HEALTH

Number of Pennsylvania Deaths Increased in 2008

Trend Shows a Slight Decline Over the Past Eight Years

The number of deaths for Pennsylvania residents rose from 123,967 in 2007 to 126,332 in 2008 (see Table 1). This marked only the second time in the past eight years that the number of annual deaths increased year over year for Pennsylvania residents. Large increases were seen in the number of deaths for chronic lower respiratory diseases, heart disease, and Alzheimer's disease. However, when looking at trend data, the number of deaths has been on a slight decline over the past eight years; certain causes such as cerebrovascular diseases, diabetes, and HIV disease were the largest contributors to these decreases.

Two causes of death, chronic lower respiratory diseases (CLRD) and Alzheimer's disease, increased by more than 10 percent and had at least 300 more deaths in 2008 compared to 2007 (see Table 1). The largest increase was for CLRD at just over 11 percent. CLRD also had the third highest number of deaths (6,695) of any cause in 2008. The third highest percent increase was for Alzheimer's disease (10.2%). This increase is noteworthy because Alzheimer's disease was also the 6th leading cause of death for Pennsylvania residents in 2008 with 3,844 deaths. Only one selected cause of death, HIV disease, decreased by more than 10 percent from 2007 to 2008 where the number of deaths decreased by more than 18 percent from 371 to 304.

With the overall number of deaths rising for Pennsylvania residents in 2008, certain demographics experienced larger increases. The number of deaths for Pennsylvania residents aged 65-69 increased by almost 7 percent from 2007 to 2008. This is interesting to note because the population for Pennsylvania residents aged 65-69 actually decreased slightly from 2007 to 2008. Some counties saw larger percent increases in the number of deaths. Deaths for residents of Forest, Fulton, Greene, Mifflin and Snyder Counties all rose by 14 percent or more in 2008 (see Table 2, next page). However, it should be noted that Forest, Fulton, and Mifflin Counties also had larger percents of their populations aged 65 and older, compared to Pennsylvania. Greene County had the same percentage of its population aged 65+ as the state and Snyder County actually had a lower percentage of its population that was aged 65+, when compared to Pennsylvania.

Certain causes of death have had more noticeable trends, either up or down, in the past five years. Deaths due to stroke (see Chart 1, next page) have been on the decline in recent years. The number of deaths for Pennsylvania residents due to stroke has declined by almost 14 percent from 2004 to 2008; stroke deaths have decreased annually for three of the past four years and this includes two sharp decreases from 2005 to 2006 (down 6.4%) and from 2007 to 2008 (down 5.9%). This decline in deaths due to stroke is welcome, since strokes have been the 3rd or 4th leading cause of death for Pennsylva-

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Table 1
Selected Causes of Death
Pennsylvania Residents, 2007 and 2008

	2007	2008	Difference	% Change
Total Deaths	**123,967**	**126,332**	**2,365**	**1.9**
Heart Disease	32,517	33,179	662	2.0
Malignant Neoplasms (Cancer)	28,756	28,699	-57	-0.2
Chronic Low er Respiratory Diseases	6,028	6,695	667	11.1
Cerebrovascular Diseases (Stroke)	7,095	6,676	-419	-5.9
Accidents	5,458	5,669	211	3.9
Alzheimer's Disease	3,488	3,844	356	10.2
Diabetes Mellitus	3,420	3,292	-128	-3.7
Nephritis/Nephrotic Syndrome/Nephrosis	2,938	3,116	178	6.1
Influenza and Pneumonia	2,521	2,701	180	7.1
Septicemia	2,456	2,417	-39	-1.6
Intentional Self-harm (Suicide)	1,416	1,522	106	7.5
Parkinson's Disease	1,156	1,187	31	2.7
Chronic Liver Disease and Cirrhosis	1,071	1,094	23	2.1
Essential Hypertension and HRD	990	1,037	47	4.7
In Situ, Benign and Uncertain Neoplasms	800	823	23	2.9
Assault (Homicide)	737	692	-45	-6.1
Perinatal Conditions	617	611	-6	-1.0
Congenital Malformations	385	389	4	1.0
Atherosclerosis	330	339	9	2.7
Anemias	293	324	31	10.6
HIV Disease	371	304	-67	-18.1

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Number of Pennsylvania Deaths Increased in 2008

nians in recent years. HIV disease deaths have also been declining in recent years. The number of resident deaths due to HIV disease dropped by almost 34 percent from 2004 to 2008. HIV disease deaths had a sharp decrease from 2004 to 2005 and then stabilized for a few years, before another steep decrease from 2007 to 2008.

Obviously, not every cause of death has seen a downward trend in the past five years. Deaths due to Alzheimer's disease (see Chart 1) have been on the rise—increasing by almost 18 percent from 2004 to 2008. After declining from 2005 to 2006, Alzheimer's deaths had large increases in each of the past two years (increasing by almost 17 percent).

Overall, the number of deaths in 2008 may have increased from 2007, but the annual number of deaths has actually been trending downward in the recent past thanks to larger decreases in the number of deaths due to cerebrovascular disease (stroke), diabetes, and HIV disease. The three causes of death that drove up the total number of deaths in 2008 were heart disease, CLRD, and Alzheimer's disease, which together accounted for over 70 percent of the observed net increase in 2008.

For questions about these data, please contact the Bureau of Health Statistics and Research at 717-783-2548 or via an e-mail link on our web site at www.health.state.pa.us/stats.

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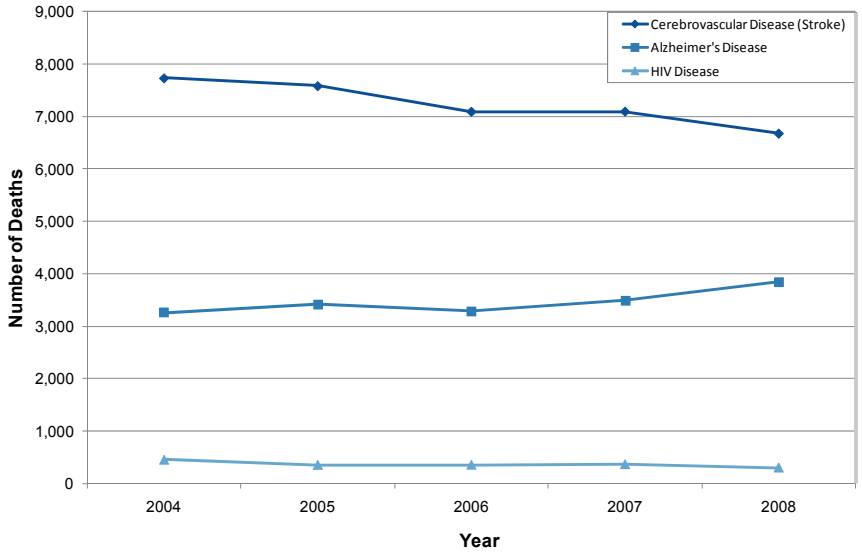
Table 2
Deaths by Select Counties (2007 to 2008 Comparison) and Population by County (Percent aged 65+) for Pennsylvania Residents

	Deaths			Population (2008)		
State/County	2007	2008	% Change	Age 65+	Total	% 65+
Pennsylvania	123,967	126,332	1.9	1,910,587	12,448,279	15.3
Forest	73	89	21.9	1,148	6,825	16.8
Snyder	301	355	17.9	5,329	38,074	14.0
Fulton	119	136	14.3	2,496	14,935	16.7
Mifflin	473	540	14.2	8,418	46,062	18.3
Greene	367	418	13.9	6,004	39,344	15.3

Chart 1
Selected Pennsylvania Resident Deaths With More Noticeable Trends (Stroke, Alzheimer's Disease, and HIV Disease), 2004-2008



Percent of Preterm Births Down in 2008

Preterm Births in 2008 Account for 10.3 Percent of All Births

Every year, more than half a million babies in the United States (1 in every 8) are born premature, according to the Centers for Disease Control and Prevention's (CDC) web page on prematurity. A premature birth (any birth that occurs at least three weeks before a baby's due date) is the leading cause of death among newborn babies. Those babies who do survive may face lifelong physical and developmental problems. Although the shorter the term of pregnancy, the more severe his or her health problems are likely to be, even babies born just a few weeks early can have more health problems than full-term babies (about 40 weeks). Source: http://www.cdc.gov/Features/PrematureBirth.

From 1996 to 2004, the percent of preterm births (births prior to 37 weeks gestation) in Pennsylvania increased, reaching a high of 10.5 percent in 2004. During the same time period, the percent of multiple births (e.g. twins, triplets, etc.) increased from 2.9 percent of all births in 1996 to 3.6 percent of all births in 2004. Multiple births is a known risk factor for preterm births. However, from 2004 to 2008 there was a slight decrease in preterm births, from 10.5 percent to 10.3 percent; but, the percent of multiple births remained steady at approximately 4 percent from 2004 to 2008.

In 2008, there were 15,125 preterm live births among Pennsylvania residents, which accounted for 10.3 percent of all 2008 births. Of those, 11,841 were singleton births (8.3 percent). Of the 11,841 preterm singleton births, 1,906 were very preterm singleton births (less than 32 weeks gestation) which accounted for 1.3 percent of all Pennsylvania singleton births in 2008.

Preterm Birth Risk Factors

It is not uncommon for mothers who give birth to multiple babies to deliver preterm. In Pennsylvania, each year from 2004 to 2008, over 60 percent of all multiple births were delivered preterm. Therefore, singleton births were chosen as the focus of analysis for this article. Also, there are some other known medical risk factors, including: uterine or cervical abnormalities, urinary tract infections, vaginal infections, sexually transmitted infections, diabetes, high blood pressure, underweight or obesity that may lead to a preterm birth, but not always. In addition, there are some lifestyle and environmental risk factors associated with preterm births, including: late or no prenatal care, drinking alcohol, using illegal drugs, domestic violence, stress, and long working hours. However, a preterm birth can happen even if a woman does not have any of the known risk factors.

The following analysis will focus on singleton births and selected risk factors obtained from the certificate of live birth and considered of high quality, including: smoking, race/ethnicity, mother's educational attainment, and the age of the mother at birth.

By Birth Weight

Low birth weight (under 2,500 grams or 5 pounds and 9 ounces) is associated with preterm births. Over 50 percent of all singleton preterm births in Pennsylvania had low birth weights in 2008.

Chart 1 shows that from 2004 to 2008 the percent of singleton preterm births that were low birth weight increased from 49.5 percent to 51.6 percent. Very low birth weight (under 1,500 grams) accounted for

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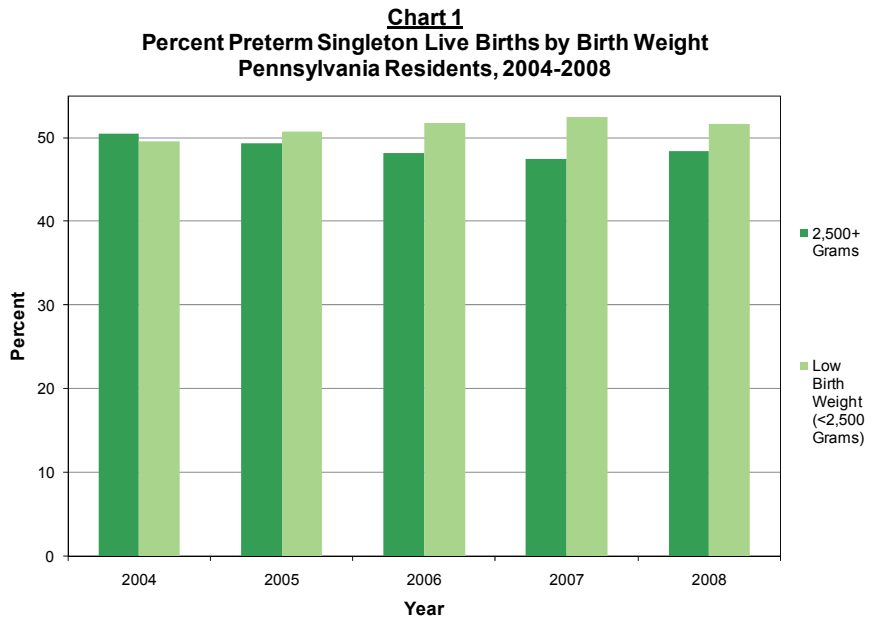

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Percent of Preterm Births Down in 2008

28.3 percent of all the low birth weight singleton preterm births in 2008.

By Smoking

There is also an association between low birth weight and smoking, another risk factor for preterm births. In 2008, approximately 60 percent of all singleton preterm births to mothers who smoked during their pregnancy had low birth weights.

For all singleton births in 2008, mothers who smoked during pregnancy were 35 percent more likely to deliver preterm than mothers who did not smoke during pregnancy (10.4 percent and 7.7 percent, respectively).

By Race/Ethnicity

Between 2004 and 2008, the percentage of preterm singleton births for all race/ethnicity groups showed some fluctuation (see Chart 2). The percentage of preterm singleton births for Whites has declined steadily, from 7.8 percent in 2004 to 7.4 percent in 2008. The highest percentage of preterm singleton births to mothers of any race/ethnicity in 2008 was for Blacks (12.3 percent). The percentage of preterm singleton births for Blacks rose from 2004 (12.6 percent) to 2006 (13.0 percent) and then decreased to 12.3 percent in 2008. Among the four race/ethnicity groups, Asian/Pacific Islanders had the lowest percentage (6.8 percent) of preterm singleton births in 2008. For mothers of Hispanic origin, the 2008 percentage of preterm singleton births was 9.1 percent. (Please note that Hispanics can be of any race.)

Chart 2
Percent Preterm Singleton Live Births, By Race and Hispanic Origin of Mother, Pennsylvania Residents, 2004-2008

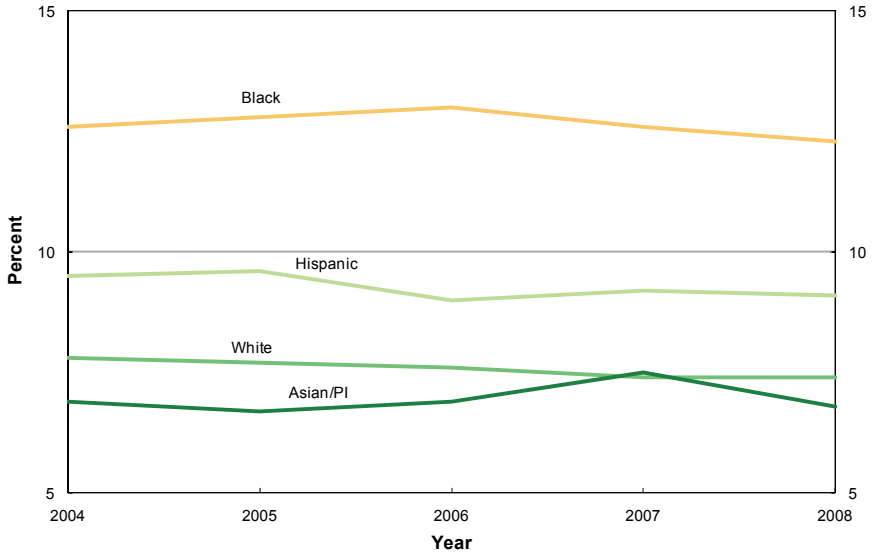
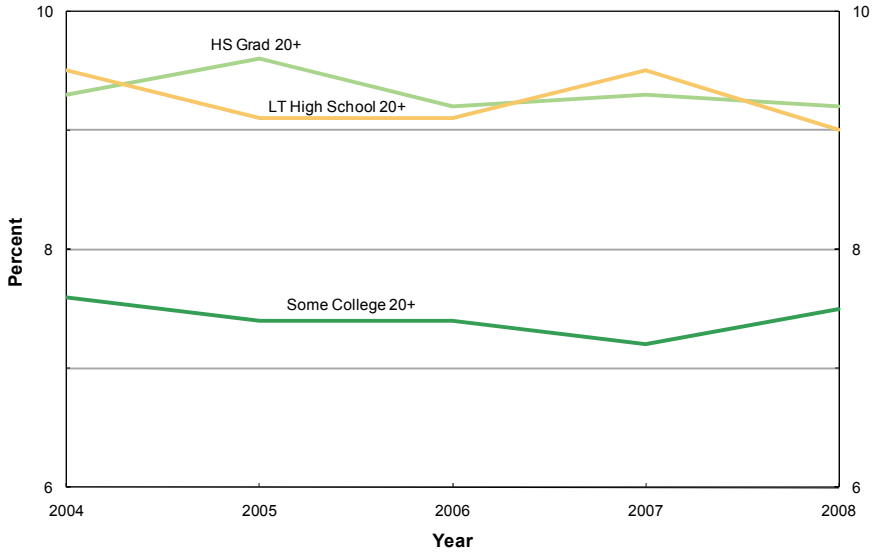


Chart 3
Percent Preterm Singleton Live Births By Education of Mother, Pennsylvania Residents, 2004-2008



By Education of Mother

Mothers (aged 20+) with at least some college had the lowest percentage of preterm singleton births for 2008 (7.5 percent). The percentage of births to mothers (aged 20+) with a high school education was the highest in 2008 (9.2 percent). Preterm births of mothers (aged 20+) with less than a high school education was 9.0 percent in 2008 drop-

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Percent of Preterm Births Down in 2008

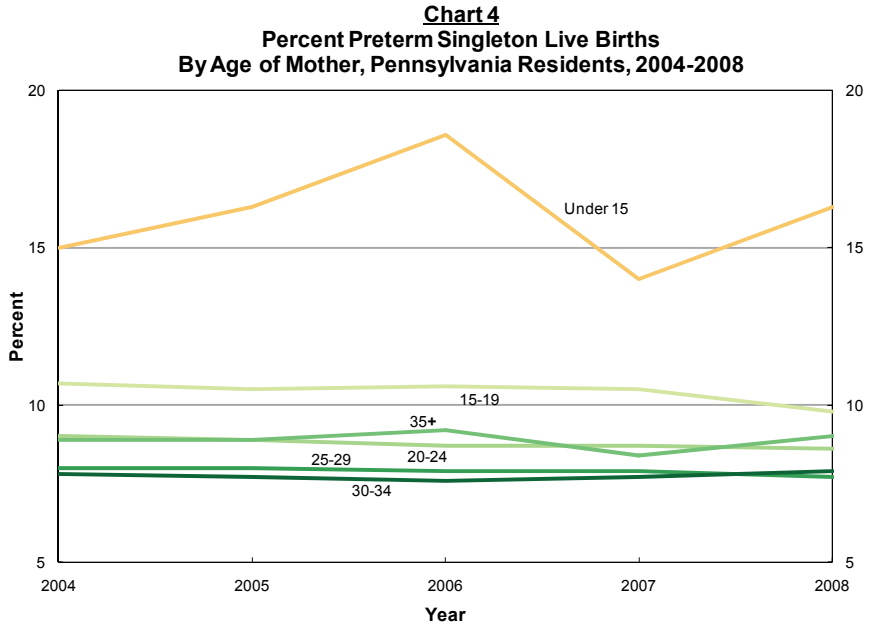
ping from 9.5 percent in 2007. All three education groups have fluctuated throughout the five-year period of 2004-2008. However, mothers with at least some college education consistently have a lower percent of preterm births than mothers with less than a high school education or those who have graduated from high school (see Chart 3, previous page).

By Age of Mother

Chart 4 shows that, in 2008, mothers under 15 years of age had the greatest risk of having a preterm singleton birth with 16.3 percent of all singleton births in this age group being preterm. Mothers aged 25-29 had the lowest percentage (7.7 percent); mothers aged 30-34 followed closely behind with 7.9 percent. Overall, mothers between the ages of 20 and 34 were least likely to have a preterm birth. While research suggests that very young and older mothers have the greatest likelihood of having a preterm birth, Chart 4 shows that the age group in Pennsylvania with the largest risk of preterm birth are females under the age of 15.

By Method of Delivery

From 2004 to 2008, the percentage of preterm singleton births delivered vaginally has steadily decreased by almost 5 percent, from 64.9 percent in 2004 to 61.8 percent in 2008. In contrast, the percent of cesarean deliveries among preterm singleton births has steadily increased by almost 9 percent, from 35.1 percent to 38.2 percent. The March of Dimes web page on c-sections states that "c-sections may contribute to the growing number of babies who are born preterm" and that "babies born by c-section are more likely to have breathing problems than are babies who are delivered vaginally."



According to the CDC's web page on prematurity and the March of Dimes website, not only is premature birth an emotional roller coaster for families, there is a tremendous financial toll as well. The societal economic cost (medical, educational, and lost productivity) of preterm birth in the United States is estimated to be at least $26 billion annually. The average first year medical costs for preterm babies ($32,325) were about 10 times greater than for full-term babies ($3,325). These costs include both inpatient and outpatient care and are estimates from the report 'Preterm Birth: Causes, Consequences and Prevention', published by the Institute of Medicine (2006) and funded in part by the March of Dimes. For more information concerning the economic and societal costs related to prematurity, please visit the following webpage, http://www.marchofdimes.com/prematurity/index_about_10734.asp.

For questions regarding the statistics presented in this article, please contact the Bureau of Health Statistics and Research at 717-783-2548.

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Update: Healthy People 2010 Objectives

Focus Area 26: Substance Abuse

Objective 26-02 - Reduce Cirrhosis Deaths....HP2010 Target: 3 per 100,000
Objective 26-03 - Reduce Drug-induced Deaths....HP2010 Target: 1 per 100,000

Cirrhosis Deaths

Between 2004 and 2008, the annual age-adjusted death rate for cirrhosis deaths among all Pennsylvania residents was 7.5 in 2004, then declined two consecutive years to 7.2 in 2006, before rising to 7.6 in 2008 (see Chart 1). A similar pattern was observed among Whites. Hispanics experienced the largest change between 2004 and 2008, compared to Whites or Blacks, with a decline in the age-adjusted death rate for cirrhosis from 9.5 to 8.8, which was over a 7 percent drop.

The most current data on the U.S. Healthy People website is for 2006 where the age-adjusted rate for cirrhosis deaths for the U.S. (8.8) was higher compared to Pennsylvania (7.2 per 100,000 in 2006).

The 2008 age-adjusted death rate for cirrhosis is higher among Hispanic residents compared to Whites or Blacks and higher among male residents compared to females. Females experienced the lowest rates among either sex or the three race/ethnic groups shown in Table 1, next page, but even the lowest rate for females (4.5 in 2006) is still 50 percent higher than the HP2010 national goal of 3.0.

Drug-Induced Deaths

The annual age-adjusted death rates for drug-induced deaths among all residents increased from 2004 to 2006, with a slight dip in 2007, before increasing again in 2008 (see Chart 2). The same trend occurred for males, Blacks, and Hispanics. As displayed in Chart 2, the rates for

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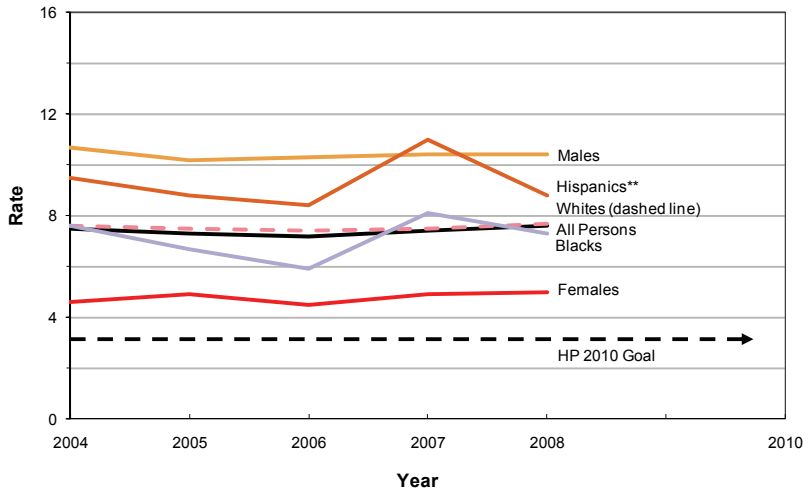
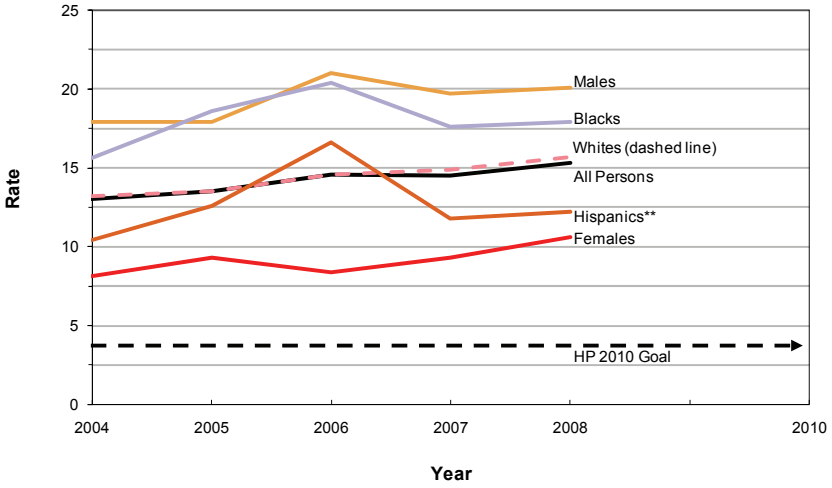
Chart 1
Age-Adjusted Death Rates* for Cirrhosis Deaths
Pennsylvania Residents, 2004-2008



* Age-adjusted rates are per 100,000, computed using direct method, 2000 U.S. standard million population.
** Hispanics can be of any race.

Chart 2
Age-Adjusted Death Rates* for Drug-Induced Deaths
Pennsylvania Residents, 2004-2008



* Age-adjusted rates are per 100,000, computed using direct method, 2000 U.S. standard million population.
** Hispanics can be of any race.

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Update: Healthy People 2010 Objectives

Focus Area 26: Substance Abuse

either sex and the three race/ethnic groups were highest among males and Blacks.

The Healthy People 2010 goal for drug-induced deaths is for an age-adjusted death rate of 1.0 per 100,000 or lower. The 2006 drug-induced death rate for Pennsylvania (14.6) is higher than the most current available U.S. rate (12.7 in 2006). No age-adjusted death rate for either sex or the three race/ethnic groups in Pennsylvania (as shown in Chart 2) is close to meeting this goal. The lowest rate among these groups was observed for females (8.1) in 2004, over eight times higher than the HP2010 goal (1.0 per 100,000).

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 Cirrhosis and Drug-induced Deaths, Pennsylvania, 2004-2008

Cirrhosis	2004	2005	2006	2007	2008
All Persons	7.5	7.3	7.2	7.4	7.6
Males	10.7	10.2	10.3	10.4	10.4
Females	4.6	4.9	4.5	4.9	5.0
Whites	7.6	7.5	7.4	7.5	7.7
Blacks	7.6	6.7	5.9	8.1	7.3
Hispanics**	9.5	8.8	8.4	11.0	8.8

Drug-Induced	2004	2005	2006	2007	2008
All Persons	13.0	13.5	14.6	14.5	15.3
Males	17.9	17.9	21.0	19.7	20.1
Females	8.1	9.3	8.4	9.3	10.6
Whites	13.2	13.5	14.6	14.9	15.7
Blacks	15.6	18.6	20.4	17.6	17.9
Hispanics**	10.4	12.6	16.6	11.8	12.2

* Age-adjusted rates are per 100,000, computed using direct method, 2000 U.S. standard million population.
** Hispanics can be of any race.