

# STATISTICAL NEWS

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### **Suicide Deaths on the Rise in Pennsylvania**

#### Pennsylvania Suicides are Highest Among White, Middle-aged Males

**S**uicide is a public health problem that has lasting harmful impacts on individuals, families, communities and society as a whole. The age-adjusted death rate for suicides among Pennsylvania residents increased in 2011 to a rate of 12.9 per 100,000, compared to 11.7 in 2010, for an alarming fourth increase in the last five years reported.

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# Pregnancy and Diabetes in Pennsylvania

## Gestational Diabetes Increases Risk for Developing Type II Diabetes

Having diabetes can lead to numerous complications during pregnancy. According to the Centers for Disease Control and Prevention (CDC), the baby can be at risk for low blood sugar, breathing problems, increased birth weight and a higher chance of developing diabetes later in life. The 2012 Pennsylvania Behavioral Risk Factor Surveillance System (BRFSS) survey estimates that 10 percent (95% CI: 9-11) of Pennsylvania women ages 18 and older have diabetes. Table 1 lists the number of births from 2007 to 2011 in Pennsylvania in cases where the mother had diabetes before the pregnancy. In 2011, there were 1,057 births from mothers who had pre-pregnancy diabetes, out of 142,021 total births with a known pre-pregnancy diabetes status.

Since diabetes prevalence increases with age, many women were not diagnosed with diabetes until much later in life, after having already given birth. This would explain why there was such a low percentage of women with pre-pregnancy diabetes. In fact, pre-pregnancy diabetes has consistently been present in less than one percent of all births to Pennsylvania resident mothers from 2007 to 2011. Risk factors for diabetes include age (45 and over), a family history of diabetes, high blood pressure, being overweight, not exercising regularly, being in one of various ethnic and/or racial groups, and having had gestational diabetes in the past. Even if the mother does not have diabetes, similar complications can occur during pregnancy because of gestational diabetes.

**Table 1**  
**Pre-Pregnancy Diabetes Births**  
**Pennsylvania Residents, 2007-2011**

Year	Pre-Pregnancy Diabetes	Total Births*	Pre-Pregnancy Diabetes Percent
2011	1,057	142,021	0.7%
2010	1,143	141,894	0.8%
2009	1,051	144,086	0.7%
2008	1,084	146,529	0.7%
2007	909	146,821	0.6%

\* Unknown pre-pregnancy diabetes status births excluded  
Source: Pennsylvania Certificates of Live Birth

**Table 2**  
**Gestational Diabetes Births**  
**Pennsylvania Residents, 2007-2011**

Year	Gestational Diabetes	Total Births*	Gestational Diabetes Percent
2011	6,944	142,021	4.9%
2010	6,588	141,894	4.6%
2009	6,490	144,086	4.5%
2008	6,364	146,529	4.3%
2007	6,286	146,821	4.3%

\* Unknown gestational diabetes status births excluded  
Source: Pennsylvania Certificates of Live Birth

### What is gestational diabetes?

Gestational diabetes (or gestational diabetes mellitus) is a form of diabetes that occurs during pregnancy in previously non-diabetic women. Having gestational diabetes is a risk factor for developing type II diabetes later in life. Gestational diabetes has few symptoms and is usually diagnosed by screening during pregnancy. Table 2 lists the number of births from 2007 to 2011 in Pennsylvania where gestational diabetes was involved with the pregnancy.

Although the number of births among Pennsylvania residents has decreased during 2007 through 2011, the number and percentage of births involving gestational diabetes has increased. Gestational diabetes was a condition in 4.9 percent of all resi-

dent births in Pennsylvania in 2011, occurring in 6,944 births out of the 142,021 births with a known gestational diabetes status.

### Prevention

Living a healthy lifestyle before and during pregnancy is important for preventing gestational diabetes. Eating a healthy diet, staying physically active and losing excess weight will lead to a healthier pregnancy. A gestational diabetes test is often performed between 24 and 28 weeks of pregnancy. If detected, a follow-up screening is necessary six to 12 weeks after the birth to ensure that blood sugar levels have returned to normal, and again every one to three years from then on.

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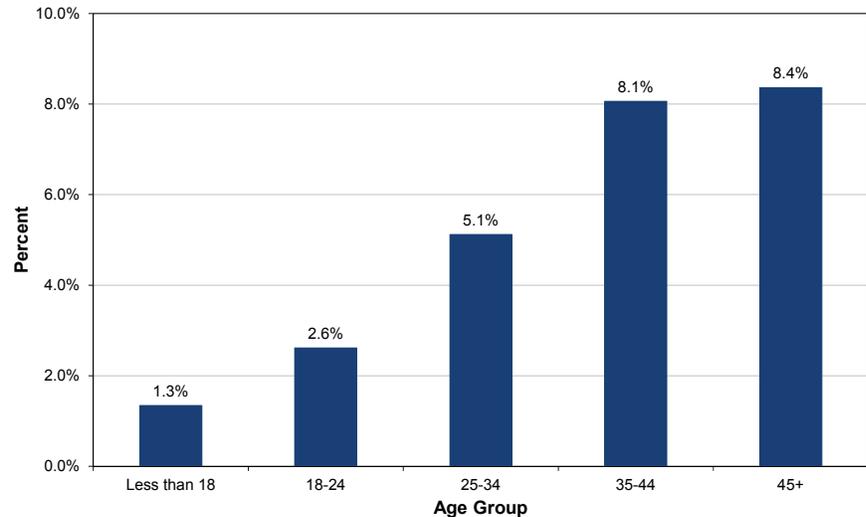
## Pregnancy and Diabetes in Pennsylvania

### Risk Factors and Complications

Risk factors for developing gestational diabetes include being over the age of 25, being overweight, having a family or personal history of pre-diabetes and being of a racial/ethnic minority. Screening for gestational diabetes is important to avoid possible complications during pregnancy. Complications relating to gestational diabetes include preeclampsia (high blood pressure), excess delivery weight (which may require C-section), a preterm birth (prior to 37 weeks gestation), low blood sugar, breathing problems, jaundice and increased risk of type II diabetes later in life.

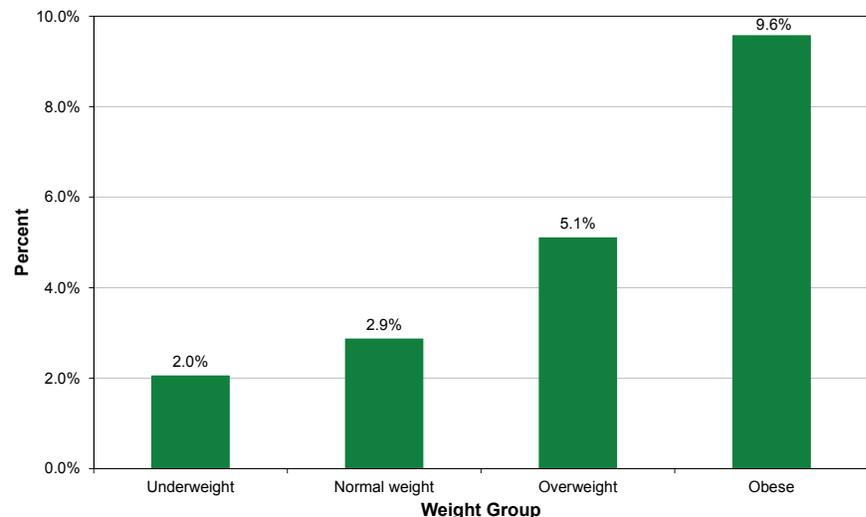
Charts 1-4 display gestational diabetes percentages by age group, weight status, race/ethnicity and marital status and education level. Gestational diabetes prevalence is shown to increase with age, and those ages 45 and older are at the highest risk (see Chart 1). The percent of gestational diabetes doubles between the age group of under 18 to 18-24 year-olds. It then nearly doubles again for the age group of 25-34. Gestational diabetes is more common in those who are overweight or obese compared to those who are of a normal weight (see Chart 2). In fact, births to mothers in the obese group were three times more likely to have had gestational diabetes compared to those in the normal weight group. Weight status is assigned by calculating the body mass index (BMI) using the mother's pre-pregnancy height and weight. Groups are underweight ( $BMI \leq 18.5$ ), normal weight ( $18.5 < BMI < 25$ ), overweight ( $25 \leq BMI < 30$ ) and obese ( $BMI \geq 30$ ). Gestational diabetes was shown to vary by

**Chart 1**  
Gestational Diabetes by Age Group  
Pennsylvania Residents, 2011



Source: Pennsylvania Certificates of Live Birth

**Chart 2**  
Gestational Diabetes by Weight Group  
Pennsylvania Residents, 2011



Source: Pennsylvania Certificates of Live Birth

race/ethnicity group (see Chart 3, page 4). Due to the strong correlation shown with age, the varying percentages displayed in Chart 4 (see page 4) for marital status and education level are suspected to be related to the mother's age.

### Treatment

Managing gestational diabetes is possible. It is important to attend all prenatal checkups. The healthcare provider will give recommendations for controlling blood sugar levels. A

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## Pregnancy and Diabetes in Pennsylvania

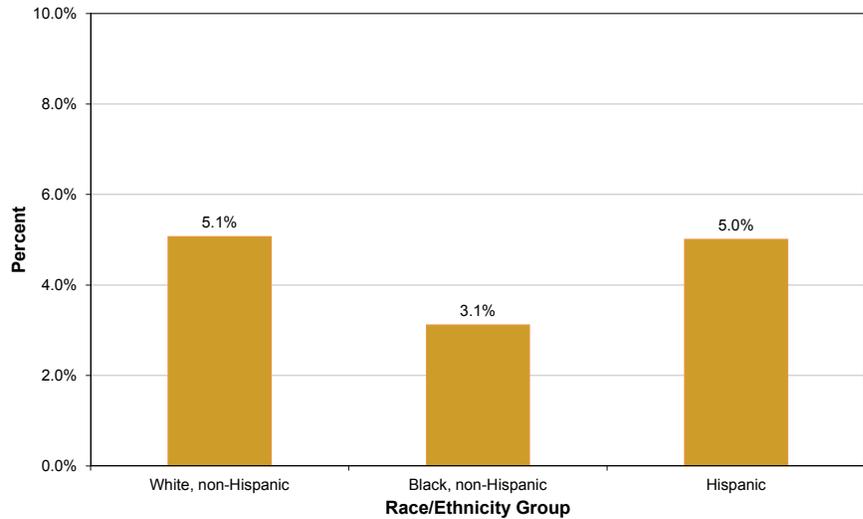
dietician or diabetes educator will be able to advise someone on staying physically active and choosing healthy foods.

### Conclusions

A form of diabetes can affect a pregnancy whether or not the mother has a diagnosis of diabetes. Even though the percentage of Pennsylvania births involving pre-pregnancy diabetes was very low, there were still many births with gestational diabetes.

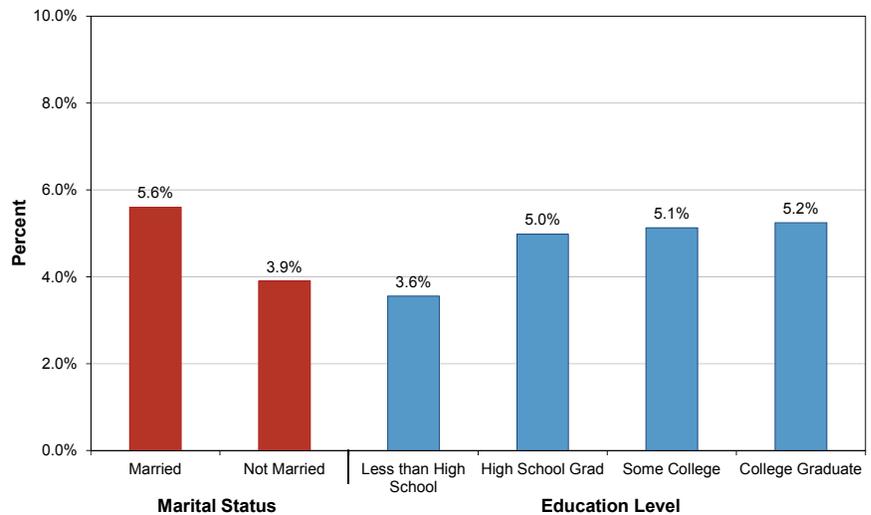
For more information, please see the Department of Health's Gestational Diabetes Fact Sheet, available at: [www.health.state.pa.us/diabetes](http://www.health.state.pa.us/diabetes). Additional information on the topics of diabetes and pregnancy are available online from the CDC at: <http://www.cdc.gov/Features/DiabetesPregnancy/>.

**Chart 3**  
Gestational Diabetes by Race/Ethnicity Group  
Pennsylvania Residents, 2011



Source: Pennsylvania Certificates of Live Birth

**Chart 4**  
Gestational Diabetes by Marital Status and Education Level  
Pennsylvania Residents, 2011



Source: Pennsylvania Certificates of Live Birth

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# The Healthy Woman Program and the Breast and Cervical Cancer Burden Index

## Quantifying Disease Burden

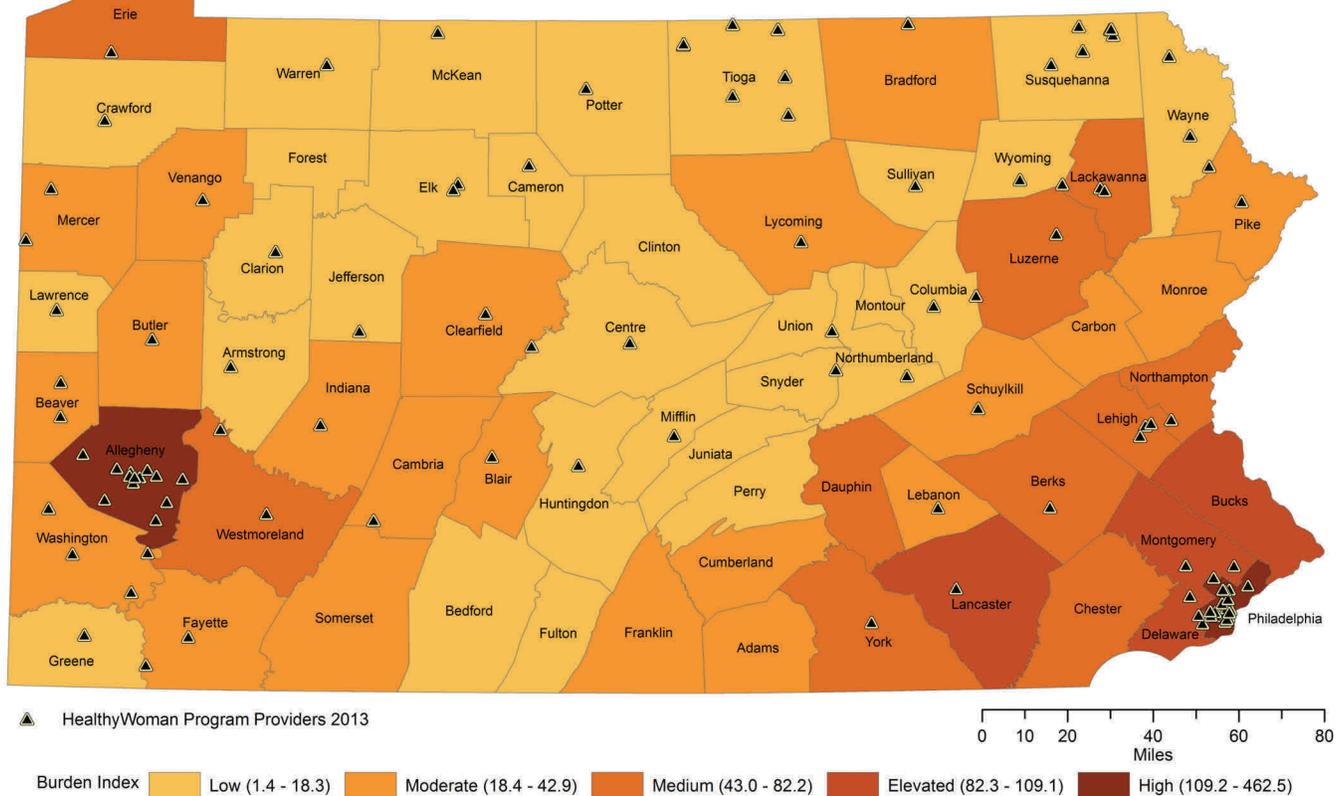
The Healthy Woman Program (HWP) provides breast and cervical cancer screening to underserved women between the ages of 40 and 64 in Pennsylvania. These women are uninsured or underinsured, and the age guidelines can be flexible if a woman outside the age range is symptomatic or is found to have certain other circumstances. The program screens approximately 10,000 women per year, and any woman who receives a positive

screening is referred to the Pennsylvania Breast and Cervical Cancer Prevention and Treatment program for treatment. These screenings are administered at various provider sites located across the commonwealth.

Though the HWP screens over 10,000 women each year, potential demand far exceeds the available screening resources, with an estimate of up to 150,000 women in Pennsylvania meeting eligibility requirements for the program. Therefore,

provider sites need to be situated around the commonwealth in as equitable a way as possible, ideally reflecting the level of need in a given area. Prior to the creation of the burden index, there was no methodologically grounded way to accomplish this. The burden index provides a way to support and justify HWP decisions on provider locations and can impact development of contract requirements for the HWP screening contractor.

**Breast and Cervical Cancer Burden Index\* Relative Burden Score by County in Relation to HealthyWoman Program (HWP) Provider Locations, 2013**



Source: Pennsylvania Department of Health; HealthyWoman Program; Bureau of Health Statistics and Research  
 \*Burden Index created by the Bureau of Health Statistics and Research, using data from the Pennsylvania Cancer Registry, Pennsylvania Death Certificates, Behavioral Risk Factor Surveillance System, and the U.S. Census Bureau's Small Area Health Insurance Estimates.

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## The Healthy Woman Program and the Breast and Cervical Cancer Burden Index

The burden index comprises several disparate data sources. These data sources include the following: breast and cervical cancer incidence data and late stage breast and cervical cancer percentages from the Pennsylvania Cancer Registry; breast and cervical cancer mortality data from Pennsylvania death certificates; Small Area Health Insurance Estimates (SAHIE) from the United States Census Bureau; and breast and cervical cancer risk factor data from the Pennsylvania Behavioral Risk Factor Surveillance System (BRFSS) survey. Z-scores for incidence and mortality rates, late stage percentages and BRFSS risk factor data are calculated to normalize the data in preparation for applying weights. The

HWP and their screening contractor are consulted on the relative importance of each data source; they determine the contributing weights towards the overall burden through consensus on each data source. These normalized, weighted data sources are ultimately combined with crude counts of incidence and mortality data and SAHIE population data, producing an overall burden index number for each county.

Map 1 (see page 5) displays HWP provider locations, current as of 2013, which are geocoded to the street level. The burden index in this map is based on 2008-2010 data for Pennsylvania's counties. Because the index does not have an approximately normal distribution, natural breaks

are used to categorize the index values. Overall, provider distribution is somewhat irregular with respect to burden level; three counties with a medium or elevated burden level have no providers at all (Bucks, Chester and Dauphin counties), while two counties with a low burden level have several providers (Susquehanna and Tioga counties). This suggests room for improvement, and, in fact, the current request for applications for the screening contractor incorporates some of these findings. For more information on this topic visit the [Healthy Woman Program webpage](#) on the Department of Health website.

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# Pennsylvania's 2013 Synar Survey Results

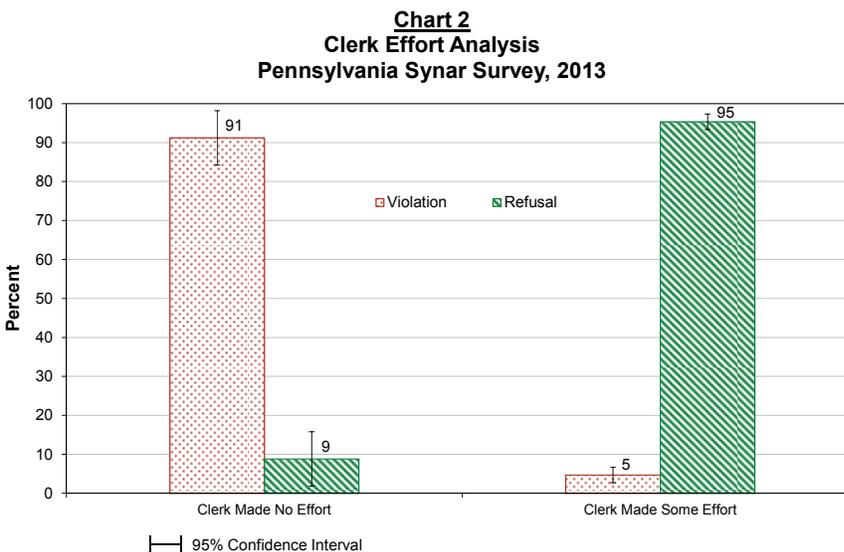
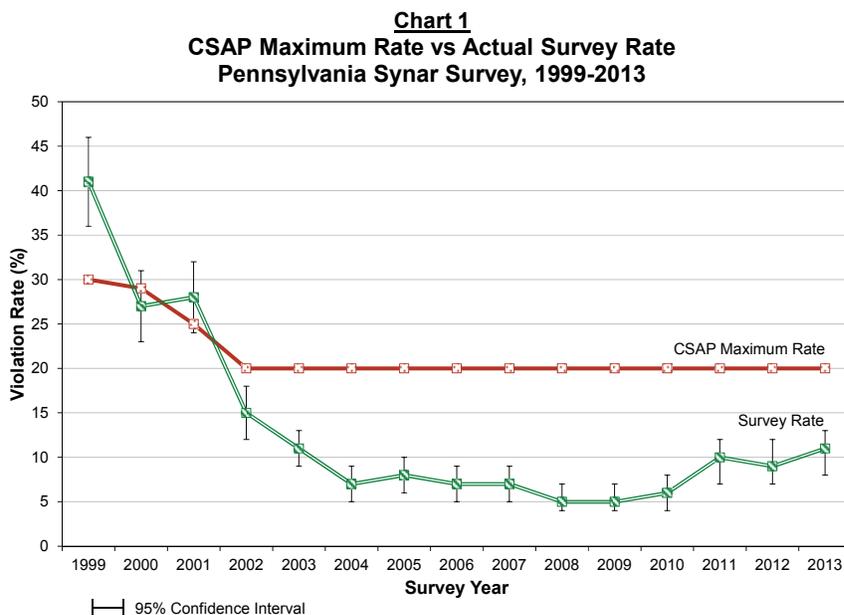
## Selected Factors Affecting Youth Tobacco Sales

An estimated 11 percent (95% CI:  $\pm 2$ ) of Pennsylvania's cigarette retailers sold cigarettes to minors in 2013, according to the latest Pennsylvania Synar survey. The estimated retail violation rate (RVR) was based on attempts by underage students to purchase cigarettes from a sample of cigarette retailers.

The Synar survey measures cigarette retailers' noncompliance with youth tobacco laws. The survey indicates if a state is in agreement with the Center for Substance Abuse Prevention's (CSAP) maximum allowable RVR. Pennsylvania's 2013 RVR was significantly below the 20 percent maximum RVR set by CSAP. Moreover, Pennsylvania has remained significantly below the 20 percent RVR for the past 12 years (see Chart 1). Chi-square tests demonstrated that the 2013 RVR was not statistically different from the 2005, 2011 and 2012 violation rates. However, the 2013 RVR was statistically different from the 2004, 2006, 2007, 2008, 2009 and 2010 violation rates.

The 2013 Synar survey sample was selected from a sampling frame. The sampling frame was created using a list of retailers that purchased a license to sell cigarettes in Pennsylvania. Each cigarette retailer on the list had a non-zero probability of selection. In 2013, Pennsylvania surveyed 1,095 of the estimated 16,938 statewide cigarette retailers accessible to minors.

For the past 15 years, Pennsylvania has used a probabilistic sampling method for which retailers are stratified and clustered. The first stage of sampling selects the clusters by method of probability proportion-



Clerk made no effort: clerk did not ask the minor for their age and the clerk did not ask the minor for their identification.  
Clerk made some effort: any combination of the clerk asking for age or asking for identification or both.

ate to size. The second and final stage randomly selects from within the chosen clusters. CSAP requires that the survey's statewide standard error is less than or equal to 1.82. The standard error for the 2013 Pennsylvania Synar survey was 1.2.

Cigarette retailers tend to post warning signs. These signs can remind the clerk of the minimum birth year required to buy cigarettes. Signs also serve as a warning to minors trying to buy cigarettes. According to

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## Pennsylvania's 2013 Synar Survey Results

the 2013 Synar survey, it is estimated that 87 percent (95% CI: ±3) of the cigarette retailers accessible to minors had visible warning signs present.

Merchant education is a method for preventing youth tobacco access. Merchant education teaches clerks to ask for identification to verify age. An estimated 7 percent (95% CI: ±2) of the cigarette retailer's clerks failed to ask for age or identification in 2013. Furthermore, 5 percent (95% CI: ±2) of the cigarette retailer's clerks, who made some effort to determine the youth's age by asking their age or asking for an ID, still sold cigarettes to the minors (see Chart 2, page 7).

The gender of the clerk and the youth buyer has an impact on the outcome of an attempt. After an attempt by a youth surveyor to purchase cigarettes, the perceived age and gender of the clerk working at

**Table 1**  
**Analysis for Clerk and Buyer Gender**  
**Pennsylvania Synar Survey, 2013**

	Male clerk		Female clerk	
	Violation	Refusal	Violation	Refusal
Male youth buyer	7(±4)%	93(±4)%	7(±4)%	93(±4)%
Female youth buyer	18(±6)%	82(±6)%	9(±4)%	91(±4)%

the cigarette retailer is recorded. Significance tests were calculated for all interactions of clerk and youth buyer gender. Violation and refusal rates are displayed in Table 1. Survey results show that when the youth buyer is a female, a male clerk is two times more likely than a female clerk to sell the buyer cigarettes. While the large confidence intervals may make it appear that the results are not significantly different, Chi-square tests do show that they are significantly different.

The Annual Synar Report was submitted to CSAP with detailed explanations. For additional information about the Synar survey, you can visit the Synar website at <http://prevention.samhsa.gov/tobacco/default.aspx>. This website is maintained by the United States Department of Health and Human Services. For questions regarding this article or the Pennsylvania Synar survey, please contact the Bureau of Health Statistics and Research at 717-783-2548 or visit the [PA Synar website](#).

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# Suicide Deaths on the Rise in Pennsylvania

## Pennsylvania Suicides are Highest Among White, Middle-aged Males

Suicide is a public health problem that has lasting harmful impacts on individuals, families, communities and society as a whole. The age-adjusted death rate for suicides among Pennsylvania residents increased in 2011 to a rate of 12.9 per 100,000, compared to 11.7 in 2010, for an alarming fourth increase in the last five years reported.

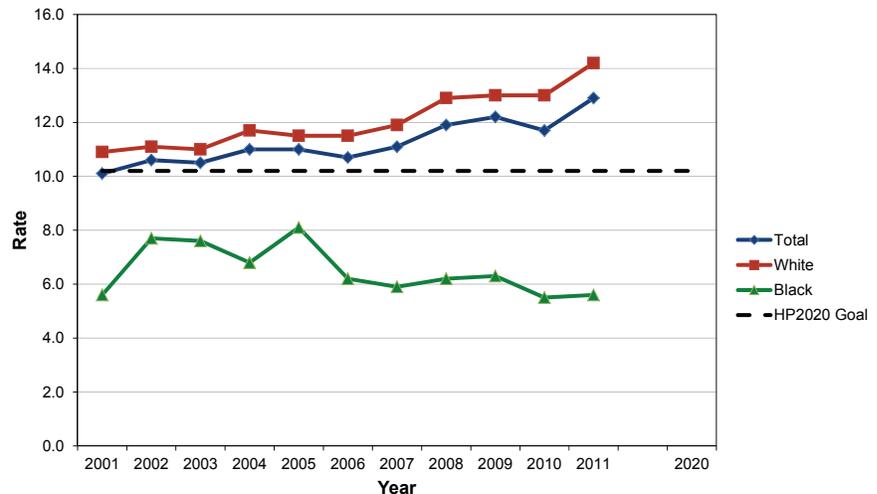
### Race

Suicides in Pa. are much higher among white residents than they are among black residents. The age-adjusted suicide rate in 2011 among whites (14.2 per 100,000) was two and a half times greater than the rate for blacks (5.6). Almost 94 percent of all suicides in 2011 were for white residents of Pennsylvania (1,597 out of a total of 1,707). It is also worth noting that the disparity between whites and blacks for this cause of death has increased in recent years (see Chart 1). For example, the difference in the rates between the two races was much closer in 2002 (11.1 for whites vs. 7.7 for blacks) than it has been in more recent years.

### Sex

The majority of Pennsylvania resident suicide deaths occur for males. In 2011, the age-adjusted rate among males was more than four times the rate for females — 21.4 per 100,000 compared to 5.0 among females. Of the 1,707 resident suicides recorded that year, 1,374 occurred among males, accounting for over 80 percent of all suicides in Pennsylvania. Of these male deaths, 1,286 were among whites (age-adjusted rate of 23.3), while 63 were among blacks (age-adjusted rate of 9.7).

**Chart 1**  
Suicide Death Rates\* by Race  
Pennsylvania Residents, 2001-2011



\*per 100,000 and age-adjusted to 2000 U.S. standard population

### Age

Reviewing the number of suicides by five-year age group shows that young to middle-aged adults had the highest figures in 2011 (see Chart 2, page 10). The age group 50-54 had the highest number, accounting for 12.6 percent of all suicide deaths. The second highest number occurred among those ages 45-49, followed next by the age groups 40-44 and 55-59. Almost 79 percent of all suicides for Pennsylvania residents occurred between the ages of 20-64, and, more specifically, 42 percent occurred in those ages 40-59.

### Method of Suicide

Causes of death are given an International Classification of Diseases (ICD) code when they are entered on the certificate of death. Suicide (also referred to as “Intentional Self-Harm”) is made up of the ICD-10 codes U03, X60-X84 and Y870. By examining these ICD-10 codes, lead-

ing methods of suicide become apparent. The leading method of suicide death among Pennsylvania residents in 2011 was by discharge of firearms (ICD-10 codes X72-X74). This method accounted for more than half (51.1 percent) of all suicide deaths in 2011 (see Chart 3, page 10). The second leading method of suicide death was by hanging, strangulation and suffocation (ICD-10 code X70). These deaths accounted for approximately 25 percent of all suicide deaths. The next leading method of suicide was by drug poisoning (ICD-10 codes X60-X64), which made up 12.5 percent of all Pennsylvania resident suicides. Rounding out the top five methods were suicidal poisoning by exposure to gases and vapors (X67, includes carbon monoxide poisoning) and suicide by jumping from a high place (X80).

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## Suicide Deaths on the Rise in Pennsylvania

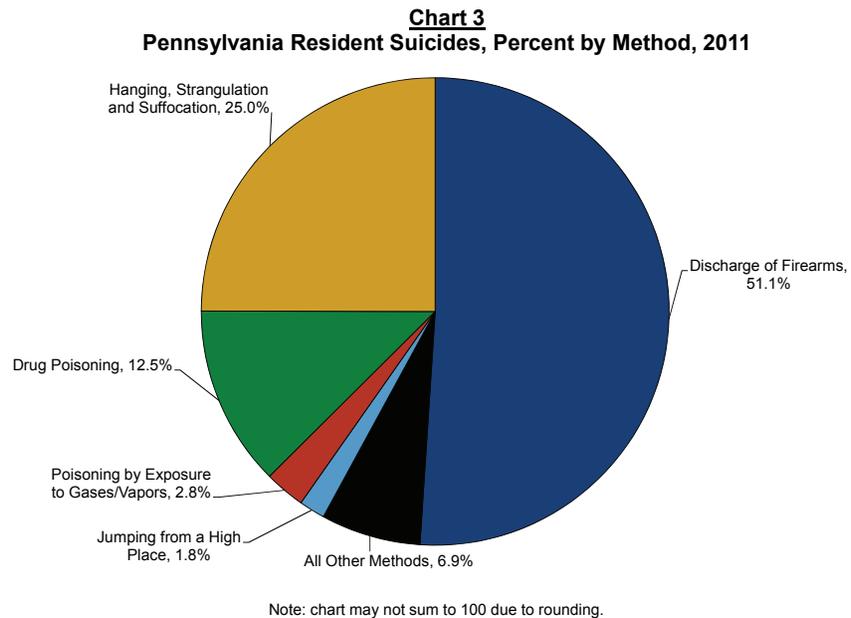
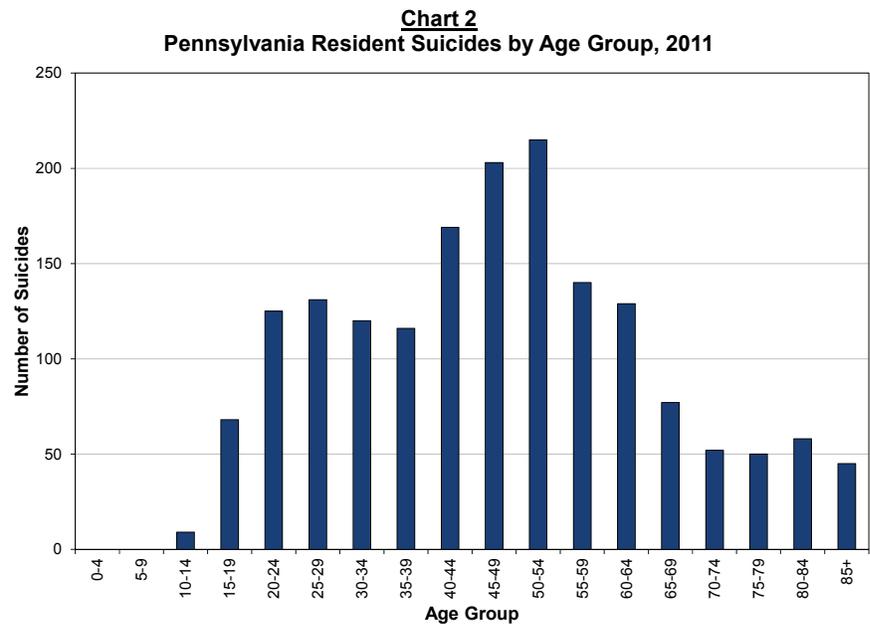
### County

The county with the highest age-adjusted suicide rate for the three-year period of 2009-2011 was Carbon County (24.5 per 100,000 and based on 50 suicides). The second highest rate was for residents of Elk County (19.9 based on 21 suicides). Third was Wayne, followed by Huntingdon and Tioga. Of the five counties listed above, only Carbon and Wayne had significantly higher age-adjusted suicide rates at the 95% confidence level, compared to the state. It is worth noting that the top five highest rates were among rural counties.

Lancaster County (9.3 based on 151 suicides) had the lowest age-adjusted suicide rate for the three-year period of 2009-2011. The second lowest rate was for both Dauphin (9.4 based on 80 suicides) and Northampton (9.4 based on 92 suicides) counties. Centre County (rate of 9.5 based on 40 suicides) was the next lowest, followed by Philadelphia (count of 454) and Somerset (count of 24) counties, which were tied with a rate of 9.9. Of the six counties listed above, Lancaster, Dauphin, Northampton and Philadelphia each had a significantly lower rate than the state. It is interesting to observe that a majority of these lower rates were among urban counties. Please note that five counties were not included in these rankings, since they had less than 20 reported suicides during this three-year period, making their rates unreliable.

### Trends

The age-adjusted suicide rate for Pennsylvania residents increased in 2011 for the fourth time in the last



five years reported. This rate has been on the rise over the past decade. Since 2001, the suicide rate has risen almost 28 percent (10.1 in 2001 compared to 12.9 in 2011). Healthy People 2020 has an objective for suicide deaths and the goal for the

year 2020 is an age-adjusted rate of 10.2 per 100,000 population. Unfortunately in recent years, Pennsylvania has been moving farther away from the target instead of making progress towards meeting the goal.

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## Suicide Deaths on the Rise in Pennsylvania

According to the [American Foundation for Suicide Prevention](#), people who kill themselves usually show warning signs before they take action. The individual at risk may talk about wishing they were dead, or they could even go so far as to speak of a specific suicide plan. Other warning signs include depression, feeling that life is hopeless or that they are a burden to others. They may also lose interest in things that would normally bring pleasure, or they may become socially isolated from even their loved ones. Sometimes a warning sign will take the form of rage, rather than depression, as the person may talk about seeking revenge for being victimized or rejected.

If someone you know shows some of these signs and you suspect that they may be at risk for suicide, there are some important things you can say to them. Begin by expressing that you are concerned about them. Tell them specifically what they have said or done that makes you feel concerned about suicide. Do not try to argue someone out of suicide. Instead, let them know that you care, that they are not alone and that they can get help. Encourage them to see a physician or mental health professional. There may be times when more drastic action needs to be taken. If the suicidal person is threatening, talking about or making specific plans for suicide, then this is a crisis requiring immediate attention. Do

not leave the person alone. Remove any firearms, drugs or sharp objects that could be used for suicide from the area. Take the person to a walk-in clinic at a psychiatric hospital or a hospital emergency room. If these options are not available, call 911 or the National Suicide Prevention Lifeline at 1-800-273-TALK (8255) for assistance.

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 website at [www.health.state.pa.us/stats](http://www.health.state.pa.us/stats).

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