

# Pennsylvania Tobacco Facts

Division of Tobacco  
Prevention and  
Control

2012-2016



**pennsylvania**  
DEPARTMENT OF HEALTH

## **Acknowledgements**

This report was developed in partnership with the Research and Evaluation Group at Public Health Management Corporation.

# Table of Contents

Executive Summary	4
Methodology	5
Findings	6
01. Cigarette Sales (2007-2016)	6
02. Prevalence of Adult Cigarette Use	10
03. E-cigarette Use	15
04. Smoking-related Death and Economic Cost	18
05. Smoking-related Disparities	20
06. Youth Tobacco Use	26
07. Youth Access to Tobacco	30
08. Tobacco Use During Pregnancy	31

# Executive Summary

Monitoring tobacco-related data is an important part of tobacco prevention and control efforts. This report provides tobacco information regarding rates of cigarette and other tobacco products use and resulting health and financial costs among Pennsylvanians. Data presented here have been gathered from the Tax Burden on Tobacco, Behavioral Risk Factor Surveillance System (BRFSS), Youth Tobacco Survey, vital statistics, tax receipts, and Synar sales inspections reports.

The information included is intended for use by tobacco control program staff, researchers, health care providers, local health departments, community partners and the public. These data can be used to plan and evaluate tobacco control measures in the areas of risk and prevention and as an application in professional and public education.

Pennsylvania Tobacco Facts supports the programmatic goals of the Pennsylvania State Tobacco Prevention and Control Program, which are to: 1) prevent the initiation of tobacco use among young people, 2) promote quitting among adults and young people, 3) eliminate nonsmokers' exposure to secondhand smoke and 4) identify and eliminate tobacco-related disparities.

## Key Findings for Pennsylvania

Based on the data reviewed in this report, the Pennsylvania Department of Health presents the following key findings:

- Pennsylvania cigarette packs per capita have steadily decreased, while the United States pack per capita has fallen even more drastically.
- Smoking-related personal health care costs in Pennsylvania topped \$6.38 billion.
- Pennsylvania statewide prevalence of cigarette use has decreased to 18 percent, although more progress is needed to reach the Healthy People 2020 goal of 12 percent.
- Eighteen to 34-year-old Pennsylvanians are statistically more likely to use e-cigarettes everyday compared to those aged 35 and older.
- Young adults and older adults have the lowest smoking prevalence.
- Across Pennsylvania, more than 58 percent of cigarette smokers made one or more quit attempts in the past year as of 2016.
- A higher proportion of black non-Hispanic tobacco users have quit smoking for a day or more in the past 12 months compared to their white non-Hispanic counterparts.
- While smoking rates overall are decreasing, rates vary by population with many groups being challenged by significantly higher prevalence of tobacco use.
- Comparable proportions of middle (5.7 percent) and high school (5.8 percent) students used any tobacco product in the last 30 days, including cigarettes, smokeless tobacco, cigars, pipes and bidis.
- The gap in any tobacco use between middle and high school students closed in 2016.

- In 2014, an estimated 10.5 percent of Pennsylvania tobacco retailers received violations for selling tobacco to minors.
- Tobacco use among pregnant women has declined since 2012, to its current level of 11.5 percent.

## Methodology

The estimates of adult cigarette smoking are based on Pennsylvania Behavioral Risk Factor Surveillance System (BRFSS) data from the Centers for Disease Control and Prevention (CDC). Prior to 2011, BRFSS collected data by surveying households through their landline telephones. Over the past decade, use of cell phones in Pennsylvania and the United States has increased. To maintain the representativeness of the sample, in 2011, BRFSS expanded the traditional landline-based random digit dialing survey to a dual-frame survey of households using landline telephones and households using only cell phones.

The BRFSS 2011 data should be considered a baseline year for data analysis and not directly comparable to previous years of BRFSS data because of the changes in weighting methodology and the addition of the cell phone sampling frame. More information about the changes to the 2011 BRFSS is available here:

<http://www.cdc.gov/surveillancepractice/reports/brfss/brfss.html>.

## Pennsylvania Health Districts

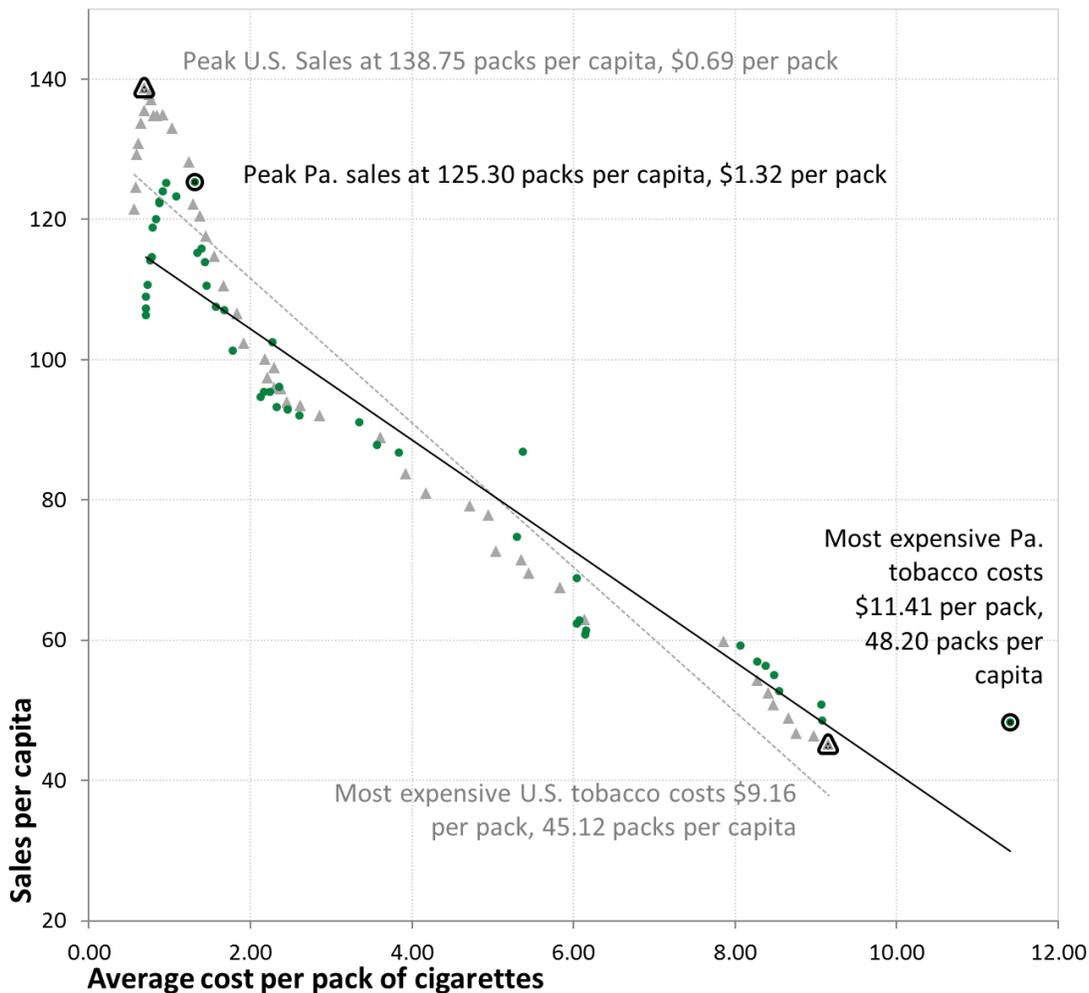
- Northwestern Health District includes Warren, Clearfield, Lawrence, Mercer, Venango, Forest, McKean, Elk, Erie, Cameron, Clarion, Jefferson and Crawford counties.
- Northeastern Health District includes Carbon, Lackawanna, Lehigh, Luzerne, Monroe, Northampton, Pike, Susquehanna, Wayne and Wyoming counties.
- Southwestern Health District includes Washington, Westmoreland, Cambria, Indiana, Armstrong, Butler, Fayette, Green, Beaver and Somerset counties. For the above illustration, Allegheny County was analyzed separately.
- South Central Health District includes York, Franklin, Fulton, Bedford, Adams, Perry, Lebanon, Huntingdon, Juniata, Cumberland, Dauphin, Blair and Mifflin counties.
- Southeastern Health District includes Berks, Bucks, Chester, Delaware, Lancaster, Montgomery and Schuylkill counties. For the above illustration, Philadelphia County was analyzed separately.
- North Central Health District includes Snyder, Northumberland, Union, Columbia, Montour, Sullivan, Bradford, Tioga, Lycoming, Centre, Clinton and Potter counties.

# Findings

## 01. Cigarette Sales (2007-2016)

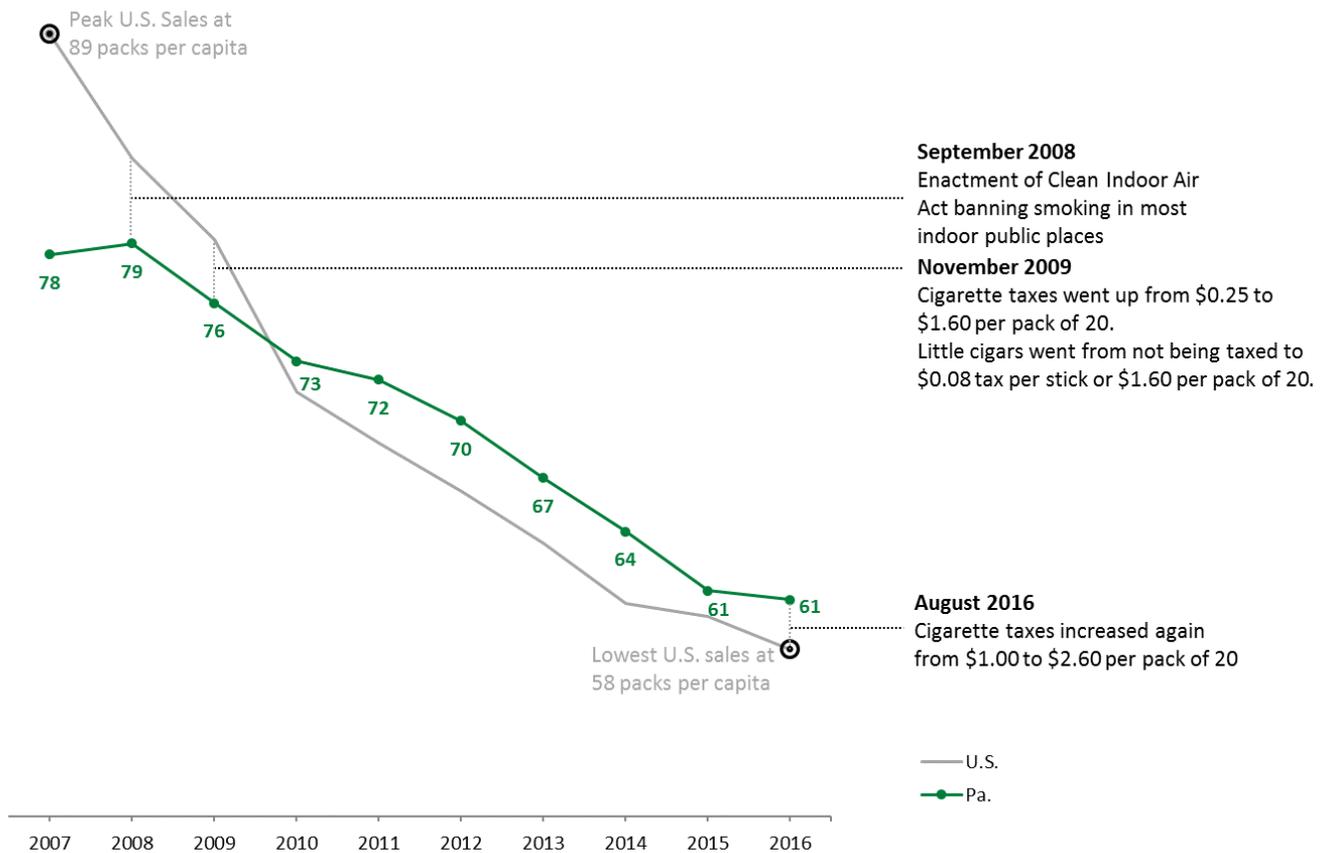
Cigarette sales are falling in the United States; Pennsylvania cigarette sales reflect this trend. Figure 1-1 illustrates per capita sales of cigarettes for the population of 18 years and older and sales of cigarettes reported by Orzechowski and Walker, in the Tax Burden on Tobacco, Historical Compilation. Between 2007 and 2016, the United States has shown a more prominent decrease in cigarette per capita purchases compared to Pennsylvania. However, since 2007, Pennsylvania has increased cigarette prices by 77.5 percent compared to the United States' increase of 48.5 percent. Figure 1-2 displays the decline in cigarette sales over the last 10 years.

**Figure 1.1 – Trends in Tobacco Product Purchases, 2007-2016**



Source: Orzechowski W, Walker RC. The tax burden on tobacco: Volume 51, 1970-2016. Washington D.C: Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, 2007-2016.

**Figure 1.2 - Tobacco Product Price Increases and Sales, 2007-2016**



Source: Orzechowski W, Walker RC. The tax burden on tobacco: Volume 51, 1970-2016. Washington D.C: Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, 2007-2016.

The increases in federal and state taxes have been an additional contributing factor in the decline of cigarette sales per capita. Two significant tax increases have occurred in the last decade as shown in Tables 1-1 and 1-2. As noted in Tables 1-1 and 1-2, the first of the two tax increases went into effect on Nov. 1, 2009. This increased the cigarette tax by 5.4 percent. The second tax increase occurred on Aug. 1, 2016 and increased the existing tax by 1.6 percent.

Pennsylvanians purchased roughly 616 million packs of cigarettes in 2016, representing a decrease of 18.5 percent since 2007. Despite this moderate decline in cigarette purchases, excise taxes collected on the purchase of cigarettes remains over a billion dollars due to cigarette tax rate increases.

**Table 1.1 - Cigarette Sales, Taxes, Prices and Revenue in Pennsylvania, 2007 to 2009**

Year	Annual Pa. Per Capita Cigarette Sales <sup>1,2</sup>	Tax <sup>1</sup>	Price Per Pack <sup>1</sup>	Gross Revenue <sup>3*</sup>
<b>2007</b>	78	\$ 1.74	\$ 4.40	\$ 1,013,296,062.25
<b>2009</b>	76	\$ 2.61	\$ 5.46	\$ 994,043,837.53
<b>Change from 2007 to 2009</b>	2 packs of cigarettes fewer per capita	\$0.87 increase in state and federal tax	\$1.06 increase in price	\$ 19,252,224.72 decrease in gross revenue

**Table 1.2 - Cigarette Sales, Taxes, Prices and Revenue in Pennsylvania, 2009 to 2016**

Year	Annual Pa. Per Capita Cigarette Sales <sup>1,2</sup>	Tax <sup>1</sup>	Price Per Pack <sup>1</sup>	Gross Revenue <sup>3*</sup>
<b>2009</b>	76	\$ 2.61	\$ 5.46	\$ 994,043,837.53
<b>2016</b>	61	\$ 3.61	\$ 7.80	\$ 1,135,599,196.53
<b>Change from 2009 to 2016</b>	15 packs of cigarettes fewer per capita	\$1.00 increase in state and federal tax	\$1.06 increase in price	\$ 141,555,358.82 increase in gross revenue

\*The cigarette tax revenues for Tables 1.1 and 1.2 include 2009 Cigarette Floor Tax, Cigarette Tax Stamp Sales, Cigarette Audit Assessments, Late Payment Assessment, Penalty and Interest.

Sources:

1. United States and Pennsylvania packs of cigarettes sold are from The Tax Burden on Tobacco, Historical Compilation, Orzechowski and Walker, Volume 51, 1970-2016, for each fiscal year.
2. Per capital sales are packs of cigarettes divided by census estimates of population aged 18 and over in United States and Pennsylvania in July of each year.
3. Annual gross cigarette excise tax collected is reported by Pa. Department of Revenue and summed for the state fiscal year (July to June).

## Events Related to Pennsylvania Tobacco Sales

**June 2001:** Enactment of Act 77 of 2001, the Tobacco Settlement Act, established a special fund and account for money received by Pennsylvania from the Master Settlement Agreement with tobacco manufacturers.

**January 2002:** \$0.69 per pack cigarette excise tax was increased, from \$0.31 to \$1.

**May 2002:** All 67 counties received tobacco funds to establish comprehensive tobacco programs.

**June 2002:** Launch of Pennsylvania Free Quitline (1-800-QUIT-NOW) occurred.

**July 2002:** Act 112 of 2002 amended the Youth Access to Tobacco law.

**July 2004:** \$0.35 per pack cigarette excise tax increased from \$1 to \$1.35.

**July 2005:** A reduction occurred in funding of Tobacco Prevention and Control.

**September 2008:** Clean Indoor Air Act was passed, banning smoking in most indoor public places.

**November 2009:** Cigarette taxes increased \$0.25 to \$1.60 per pack of 20.

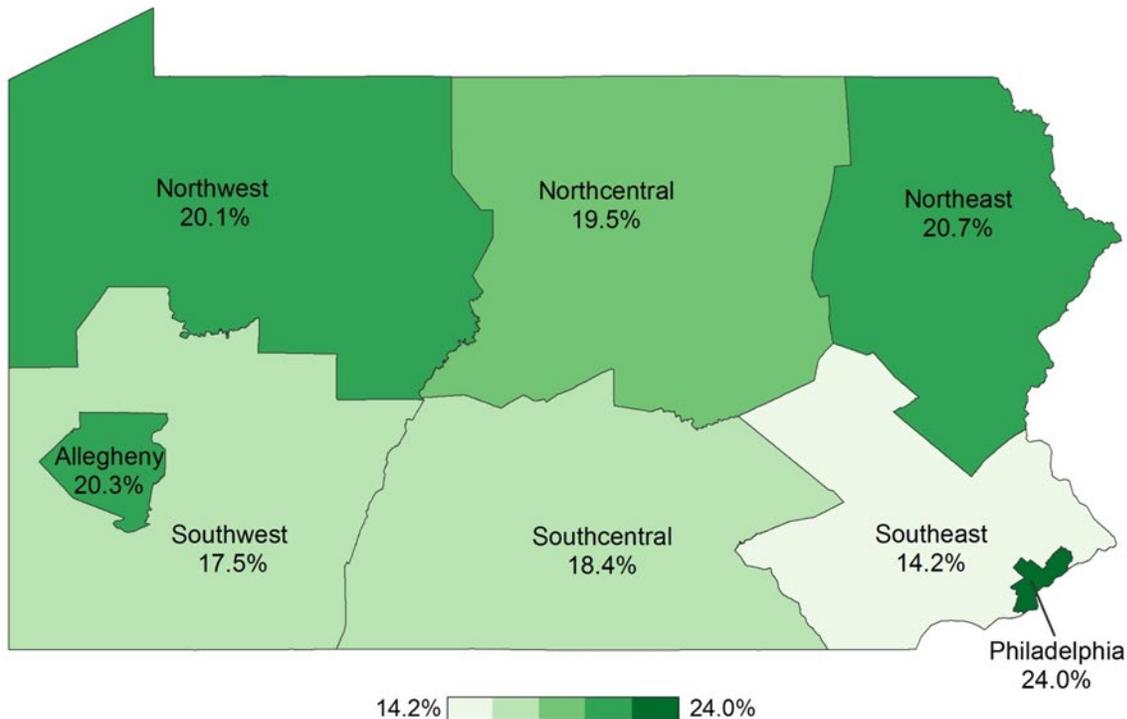
**November 2009:** Little cigars increased from zero to \$0.08 a stick or \$1.60 per pack of 20.

**August 2016:** Cigarette taxes increased \$1.00 to \$2.60 per pack of 20.

## 02. Prevalence of Adult Cigarette Use

### Statewide Prevalence

Map 2.1 - Smoking Prevalence Across Health Districts, 2016



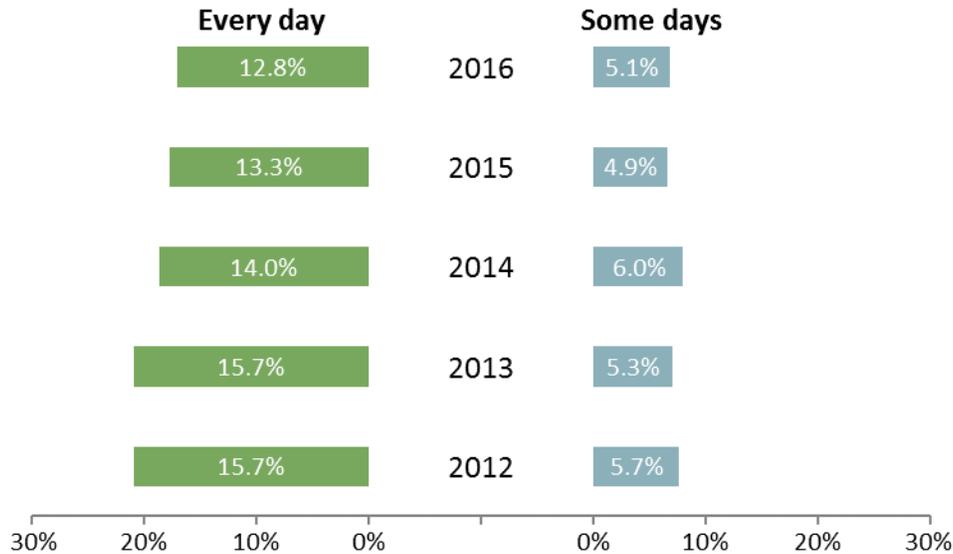
Source: Centers for Disease Control and Prevention (CDC). Behavioral Risk Factor Surveillance System Survey Data. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2016.

\*Southeast Health District excludes Philadelphia; Southwest Health District excludes Allegheny County.

Since 2012, Pennsylvania's prevalence of adults (18 and over) currently smoking cigarettes has declined by 16.4 percent to a current smoking rate of 18.0 percent. Adult smoking rates ranged from 14.2 percent in the Southeast to 24.0 percent in Philadelphia. Everyday smokers accounted for 12.8 percent and some days smokers accounted for 5.1 percent of the total adult current smoking prevalence. As noted in Figure 2-1, Pennsylvania experienced its largest single year decline in smoking rates in 2016, when the prevalence of adult smokers decreased an estimated 1.8 percentage points from the previous year. To meet the Healthy People 2020 goal of 12 percent, additional tobacco prevention and control work is needed.

**Note: Smoking rates from 2012 and forward are not comparable with estimates from 2011 and prior due to changes in BRFSS sampling and analysis methodology.**

**Figure 2.1 – Trends in Tobacco Use, Pennsylvania, 2012 to 2016**



Source: Centers for Disease Control and Prevention (CDC). Behavioral Risk Factor Surveillance System Survey Data. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2012-2016.

**Health District Prevalence**

Though Pennsylvania’s smoking rate has continuously declined, fluctuation in smoking rates can be observed within health districts during the five-year period of 2012 to 2016. All districts except Southcentral experienced a decrease in the adult smoking rate at some point during the five-year period. [Figure 2.2]

**Figure 2.2 – Adult Smoking Rates by Health District, Pennsylvania, 2012-2016**

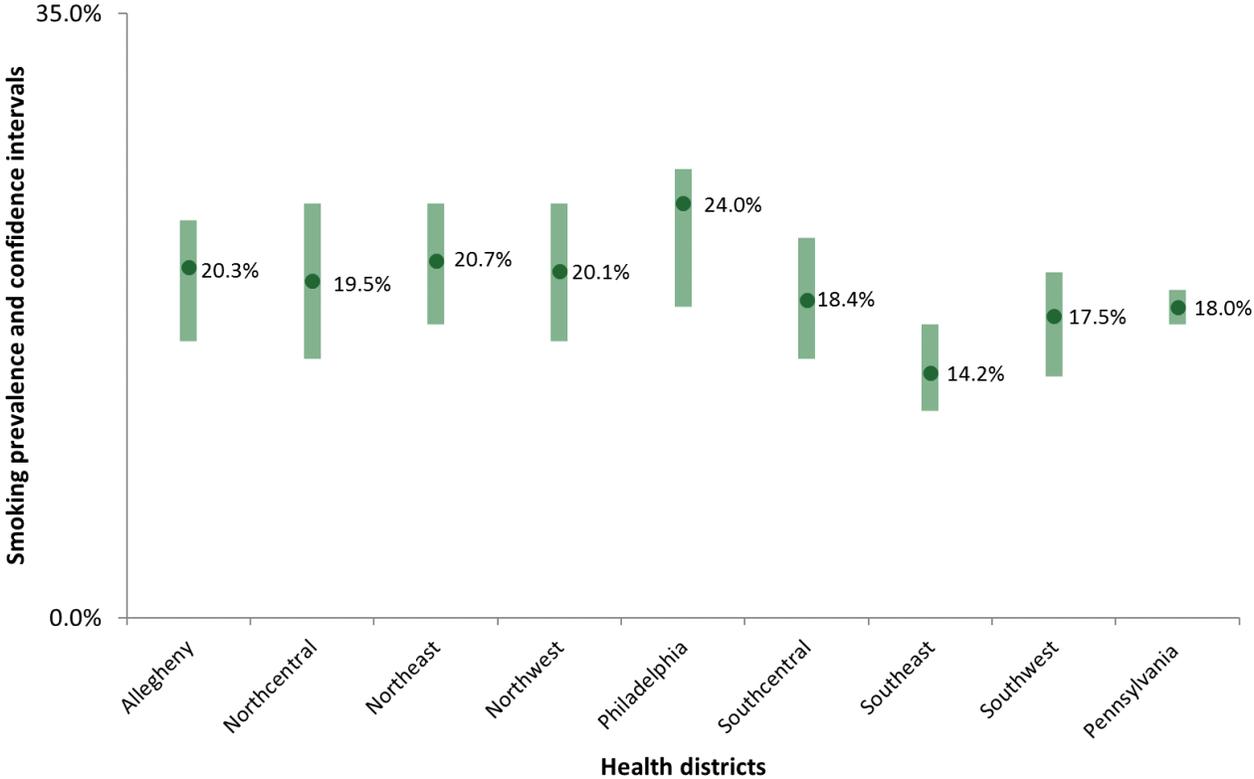
District	2012	2013	2014	2015	2016
Allegheny	22.2%	21.4%	19.5%	16.8%	20.3%
Northcentral	20.3%	19.6%	20.0%	22.8%	19.5%
Northeast	23.5%	22.5%	20.5%	22.2%	20.7%
Northwest	24.3%	21.8%	24.9%	20.9%	20.1%
Philadelphia	24.8%	25.3%	23.9%	23.0%	24.0%
Southcentral	18.4%	22.0%	19.6%	19.2%	18.4%
Southeast	19.1%	18.3%	16.6%	12.7%	14.2%
Southwest	22.4%	20.1%	21.0%	19.8%	17.5%

Source: Centers for Disease Control and Prevention (CDC). Behavioral Risk Factor Surveillance System Survey Data. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2012-2016.

\*Southeast Health District excludes Philadelphia; Southwest Health District excludes Allegheny County

In 2016, the statewide cigarette use estimate was 18.0 percent; during the same year, Southeast Health District (which excludes Philadelphia) had the lowest smoking rate of all the health districts, while Philadelphia County had the highest rate in the state. [Figure 2-3]

**Figure 2.3 Adult Cigarette Smoking Prevalence Across Pennsylvania by Health District, 2016**



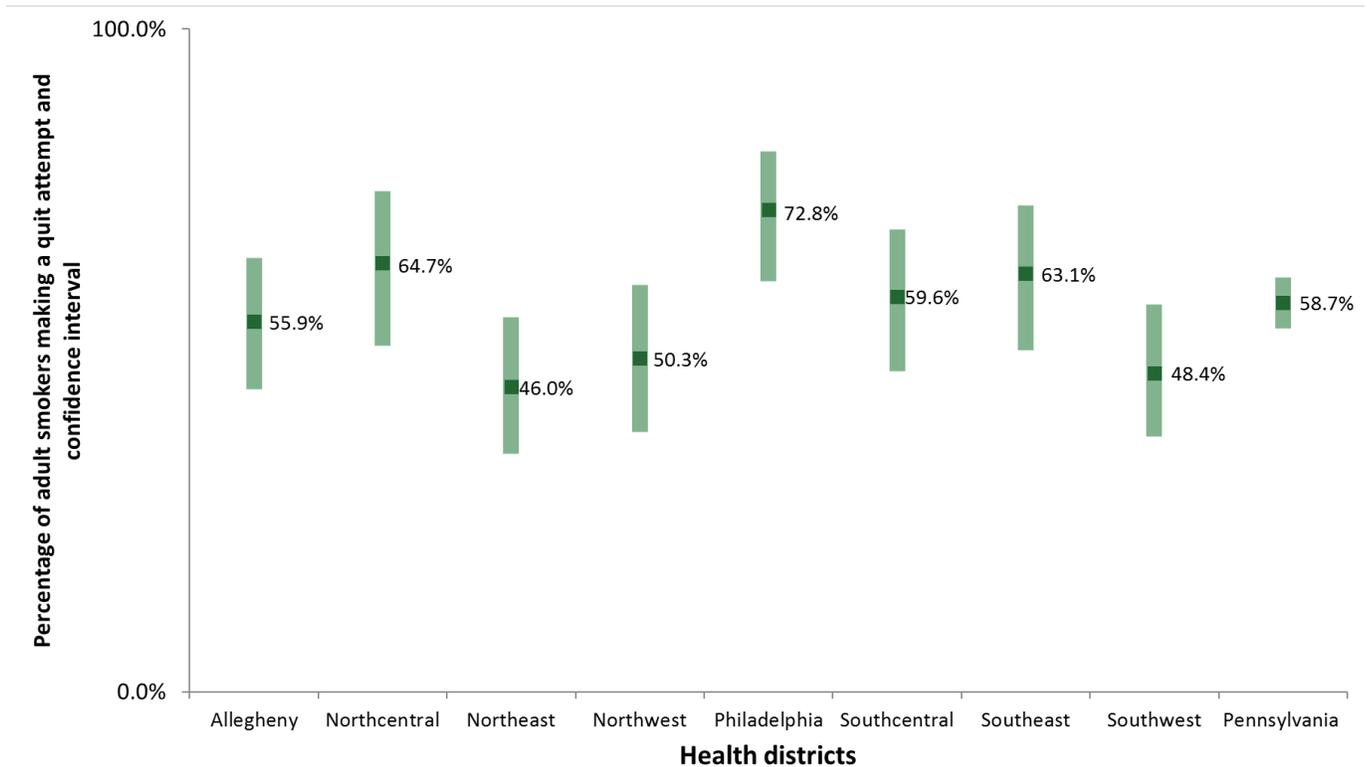
Prevalence and 95% confidence intervals are displayed.  
 Source: Centers for Disease Control and Prevention (CDC). Behavioral Risk Factor Surveillance System Survey Data. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2016.

\*Southeast Health District excludes Philadelphia; Southwest Health District excludes Allegheny County.

## Quit Attempts

In 2016, more than half (51.0 percent) of the Pennsylvania adult smokers made one or more quit attempts within the past year. [Figure 2-4] No statistical differences were observed between the statewide percentages of smokers attempting to quit and the eight health districts.

**Figure 2.4 - Adult Cigarette Smokers with One or More Quit Attempts in the Past Year, 2016**



Prevalence and 95% confidence intervals are displayed.

Source: Centers for Disease Control and Prevention (CDC). Behavioral Risk Factor Surveillance System Survey Data. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2016.

\*Southeast Health District excludes Philadelphia; Southwest Health District excludes Allegheny County.

## Health District Prevalence of Smokeless Tobacco Use

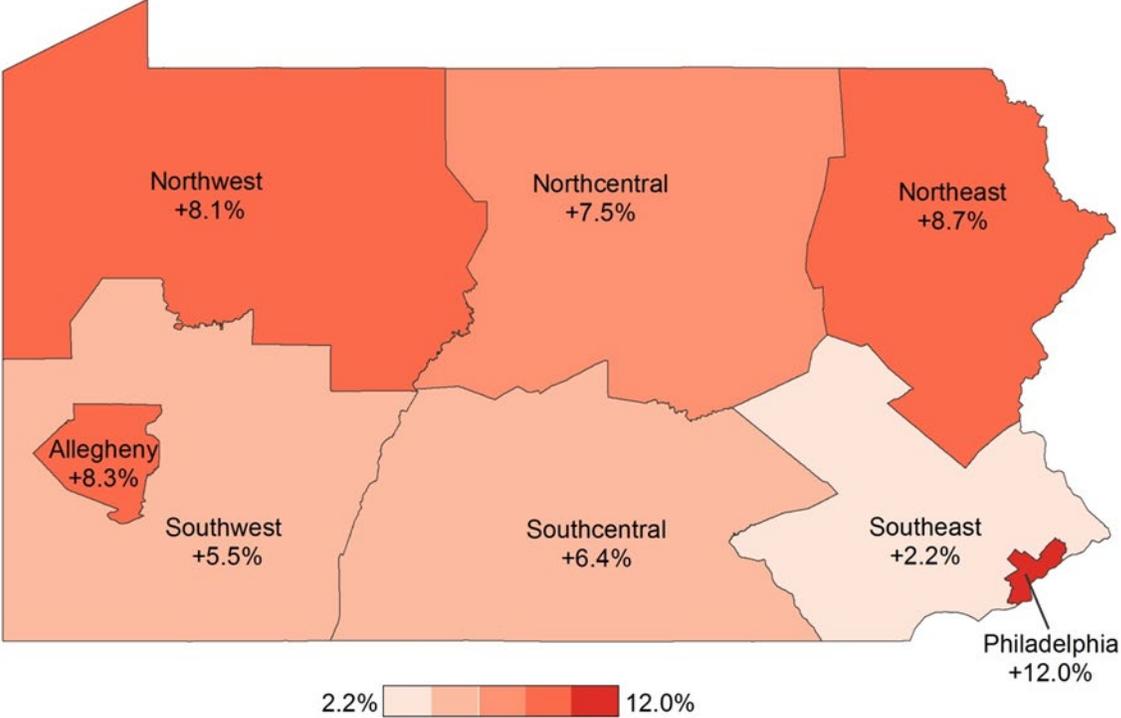
The prevalence of smokeless tobacco use in the Northwest and Northcentral Health Districts were significantly higher than the statewide estimate of 4.0 percent; both of these districts are estimated to be around 8 percent currently using smokeless tobacco. Overall, the more rural health districts experience higher smokeless tobacco use rates; Southwest (excluding Allegheny County) and Southcentral were also higher than the statewide estimate, but not significantly so. No health district was found to be significantly lower than the statewide estimate.

## Pennsylvania Progress Towards Healthy People 2020

The Healthy People 2020 tobacco use objective is to decrease the prevalence of adult tobacco smokers in the United States to 12.0 percent. Since the announcement of this goal in

December 2010, the Pennsylvania adult smoking rate has consistently decreased, but there is still progress to be made. As of 2016, Pennsylvania still remains more than six percentage points away from the goal, with individual health districts ranging from 2.2 to 12 percentage points from Healthy People 2020 goal. Currently, the Southeast Health District has an adult smoking rate (14.2 percent) closest to the Pennsylvania Healthy People 2020 goal. [Map 2-2]

**Map 2.2 - Smoking Rates Compared to Healthy People 2020 Goal, Pennsylvania, 2016**



Source: Centers for Disease Control and Prevention (CDC). Behavioral Risk Factor Surveillance System Survey Data. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2016.

\*Southeast Health District excludes Philadelphia; Southwest Health District excludes Allegheny County.

## 03.E-cigarette Use

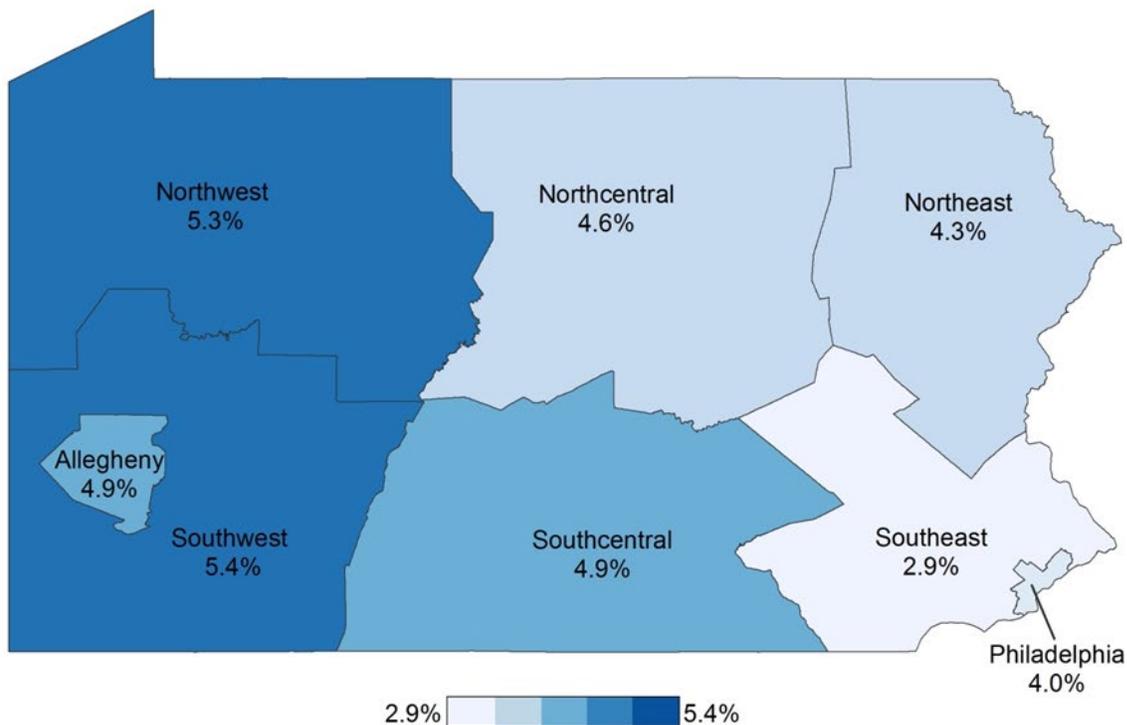
### Prevalence

In 2016, Behavioral Risk Factor Surveillance System (BRFSS) added two new questions about e-cigarettes for adults:

- “Have you ever used an e-cigarette or other electronic ‘vaping’ product, even just one time, in your entire life?”
- “Do you now use e-cigarettes or other electronic ‘vaping’ products every day, some days or not at all?”

Map 3-1 presents the prevalence of e-cigarette use by health district. In 2016, Pennsylvania’s statewide e-cigarette rate was 4.2 percent.

**Map 3.1 –Prevalence of Adult E-cigarette Use by Pennsylvania Health District, 2016**



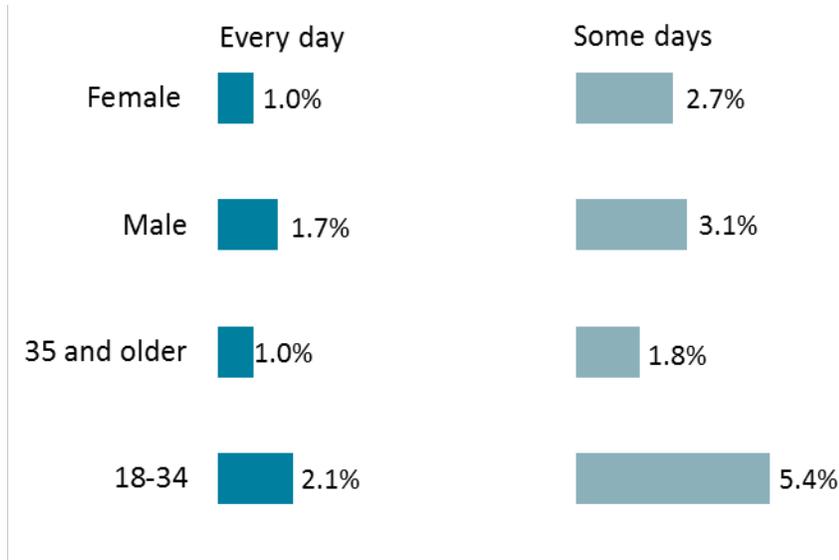
Source: Centers for Disease Control and Prevention (CDC). Behavioral Risk Factor Surveillance System Survey Data. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2016.

\*Southeast Health District excludes Philadelphia; Southwest Health District excludes Allegheny County.

## Demographics

Eighteen to 34-year-old Pennsylvanians are statistically more likely to use e-cigarettes every day compared to those aged 35 and older ( $p < 0.001$ ). [Figure 3-1]

**Figure 3.1 – Daily E-cigarette Use by Gender and Age, 2016**



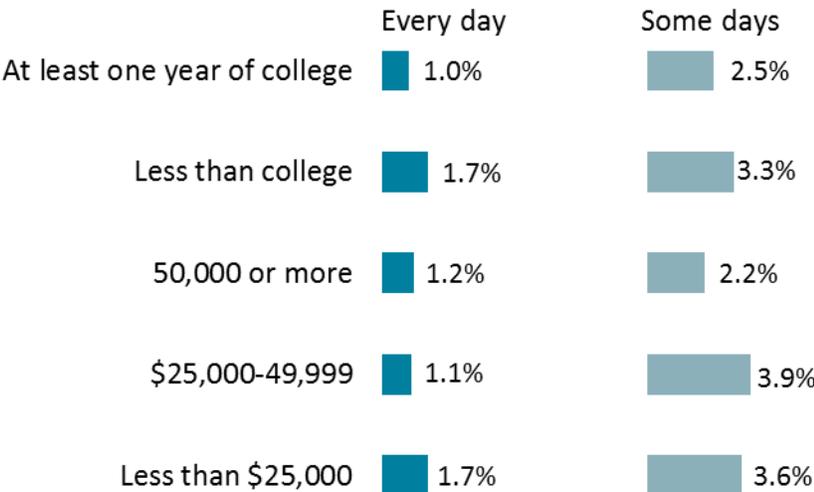
Source: Centers for Disease Control and Prevention (CDC). Behavioral Risk Factor Surveillance System Survey Data. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2016.

Male Pennsylvanian prevalence of e-cigarette use was slightly higher, but not statistically significantly, than female e-cigarette use for everyday and some days usage.

Pennsylvanians with less than a college education were more likely to use e-cigarettes than individuals with at least one year of college, but the difference is not statistically significant. [Figure 3-2]

Comparing income levels, Pennsylvanians with an annual household income less than \$25,000 were more likely to use e-cigarettes every day compared to those with annual household income between \$25,000 and \$49,999 and those with an annual household income of \$50,000 or more. [Figure 3-2]

**Figure 3.2 – Tobacco Use by Education and Annual Household Income, 2016**



**Source:** Centers for Disease Control and Prevention (CDC). Behavioral Risk Factor Surveillance System Survey Data. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2016.

## 04. Smoking-related Death and Economic Cost

According to the 2005-2009 Smoking Attributable Mortality, Morbidity and Economic Costs (SAMMEC), the average annual deaths for Pennsylvania were 70,411. The average annual death calculation is based on the summation of 23 diseases the U.S. Surgeon General has determined for which cigarette smoking is a causal factor. Deaths from fires or deaths attributable to exposure to secondhand smoke and Pennsylvanians under the age of 35 are not included in deaths attributed to cigarette smoking.

Table 4-1 displays the lists of the 23 diseases and associated ICD-10 codes from the 2014 Surgeon General's report. The Health Consequences of Smoking reported smoking as a causal factor in the following death ICD-10 codes.

**Table 4.1 - Smoking Attributable Diseases and ICD-10 Codes**

Malignant Neoplasms	ICD-10	Cardiovascular Diseases (continued)	ICD-10
Lip/Oral cavity/Pharynx	C00-C14	Cerebrovascular Disease	I60-I69
Esophagus	C15	Aortic Aneurysm	I71
Stomach	C16	Other Heart Disease	I00-I09, I26-I51
Pancreas	C25	Atherosclerosis	I70
Larynx	C32	Other arterial disease	I72-I78
Trachea/Lung/Bronchus	C33-C34		
Cervix Uteri	C53	<b>Respiratory Diseases</b>	
Kidney & Renal Pelvis	C64-C65	Influenza	J09-J11
Bladder	C67	Bronchitis	J40-J42
Acute Myeloid Leukemia	C92.0	Chronic Airways Obstruction	J44
<b>Cardiovascular Disease</b>		Pneumonia	J12-J18
Coronary Heart Disease	I20-I25	Emphysema	J43
Pulmonary Heart Disease	I26-I28		

Source: Warren GW, Alberg AJ, Kraft AS, Cummings KM. The 2014 Surgeon General's report: "The health consequences of smoking—50 years of progress": a paradigm shift in cancer care. *Cancer*. 2014;120:1914-1916.

## Economic Cost

Direct medical expenses, as shown in Table 4-2, are personal health care costs associated with smoking-related illnesses for adults 35 and over. In 2009, direct medical expenses due to smoking reached approximately \$6.38 billion in Pennsylvania.<sup>1</sup> These direct health care costs include ambulatory care, hospital care, prescription drugs, nursing home care and other care (such as home health care, durable and non-durable medical products, and other professional services).

**Table 4.2 - Smoking-related Personal Health Care Costs, Pennsylvania, 2009**

	Smoking-Attributable Personal Health Care Expenditure (in millions)
Ambulatory Care	\$ 873.4
Hospital Care	\$ 3,261.2
Prescription Drugs	\$ 1,198.1
Nursing Home Care	\$ 673.2
Other	\$ 377.2
Total	\$ 6,383.2

Source: Centers for Disease Control and Prevention. Tobacco Use Data Portal. Available at: <https://chronicdata.cdc.gov/health-area/tobacco-use>

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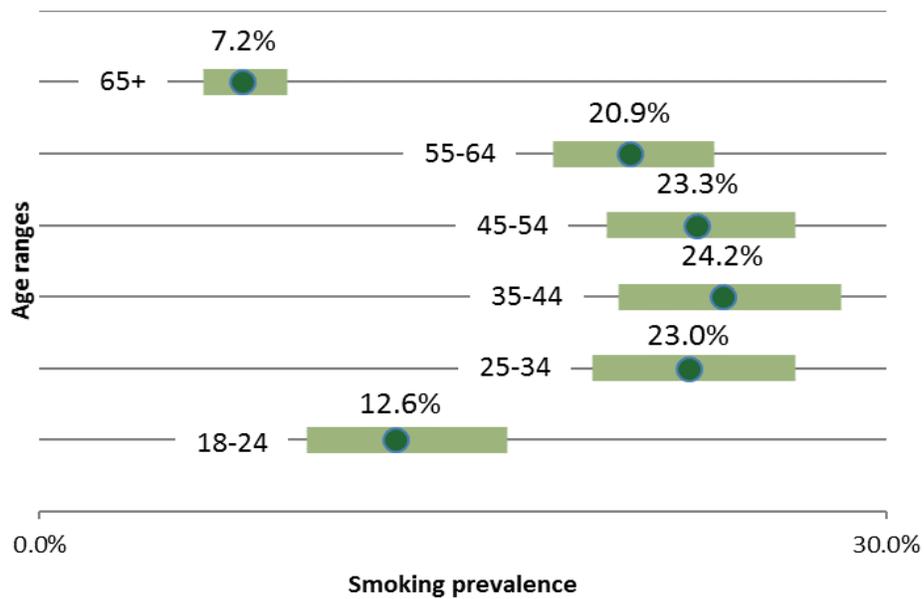
<sup>1</sup> Total excludes dental expenditures.

## 05. Smoking-related Disparities

While smoking rates overall are decreasing, rates vary by population with many groups facing the challenges associated with higher prevalence.

An important factor associated with the prevalence of tobacco use is age. Figure 5-1 shows that there is no significant difference in smoking prevalence among age groups 25-34, 35-44, 45-54 and 55-64, while people in age groups 18-24 and 65 and over have significantly lower smoking prevalence compared with any other group.

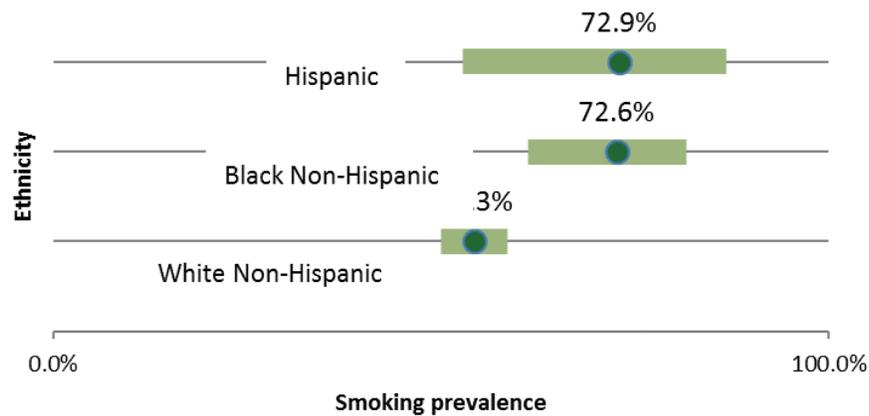
**Figure 5.1 – Smoking Prevalence by Age Group**



Prevalence and 95% confidence intervals are displayed.

Source: Centers for Disease Control and Prevention (CDC). Behavioral Risk Factor Surveillance System Survey Data. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2016.

**Figure 5.2 – Smoking Prevalence of Black Non-Hispanic Pennsylvanians Compared to White Non-Hispanic Pennsylvanians**

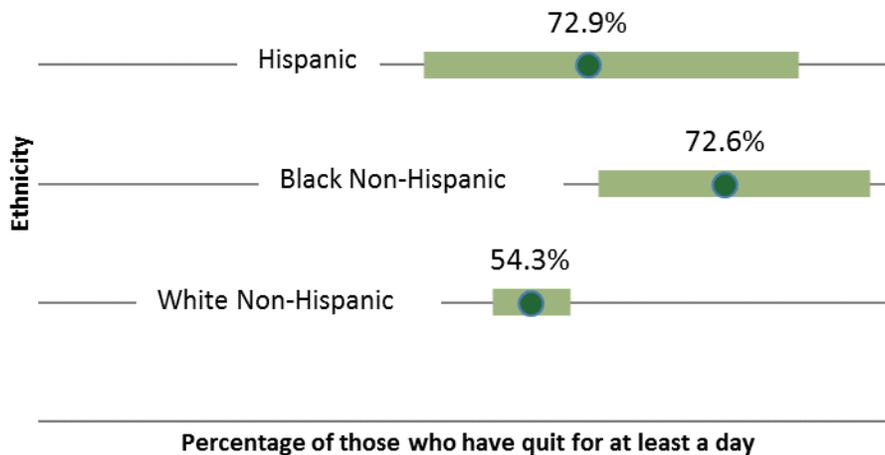


Prevalence and 95% confidence intervals are displayed.  
 Source: Centers for Disease Control and Prevention (CDC). Behavioral Risk Factor Surveillance System Survey Data. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2016.

The prevalence of smoking among black non-Hispanic adults in Pennsylvania is significantly higher than that of white non-Hispanic adults. The small sample size of the Hispanic subpopulation results in a wide confidence interval which may conceal differences. [Figure 5-2]

Almost 60 percent of all adults who currently smoke attempted to quit in the previous 12 months. A higher proportion of black non-Hispanic smokers have quit smoking for a day or more in the past 12 months as compared to white non-Hispanic smokers. [Figure 5-3]

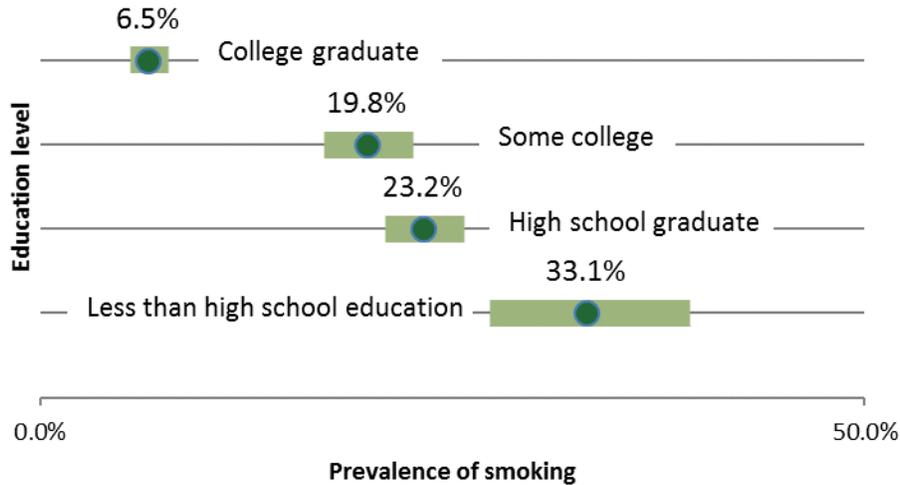
**Figure 5.3 – Quit Attempts by Ethnicity, Pennsylvania, 2016**



Prevalence and 95% confidence intervals are displayed.  
 Source: Centers for Disease Control and Prevention (CDC). Behavioral Risk Factor Surveillance System Survey Data. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2016.

Smoking prevalence is generally higher within socioeconomically disadvantaged populations. Education is one socioeconomic indicator that is negatively correlated with tobacco use. College graduates are less likely to smoke than people with a high school education or some college. The prevalence of tobacco use is significantly higher for adults with less than high school education than for any other group. [Figure 5-4]

**Figure 5.4 - Prevalence of Smoking by Education Level, Pennsylvania, 2016**

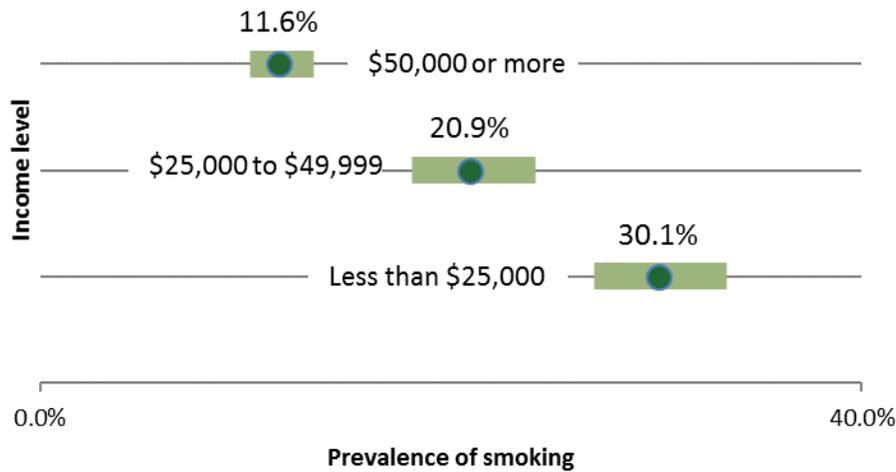


Prevalence and 95% confidence intervals are displayed.

Source: Centers for Disease Control and Prevention (CDC). Behavioral Risk Factor Surveillance System Survey Data. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2016.

Annual household income is another socioeconomic indicator negatively associated with tobacco use. Thirty percent of Pennsylvanians with an annual household income less than \$25,000 are current tobacco users. Pennsylvanians with an annual household income between \$25,000 and \$49,999 smoke at a rate of 20.9 percent, and 11.6 percent of individuals with an annual household income of \$50,000 or above smoke. [Figure 5-5]

**Figure 5.5 – Prevalence of Smoking by Income Level, Pennsylvania, 2016**

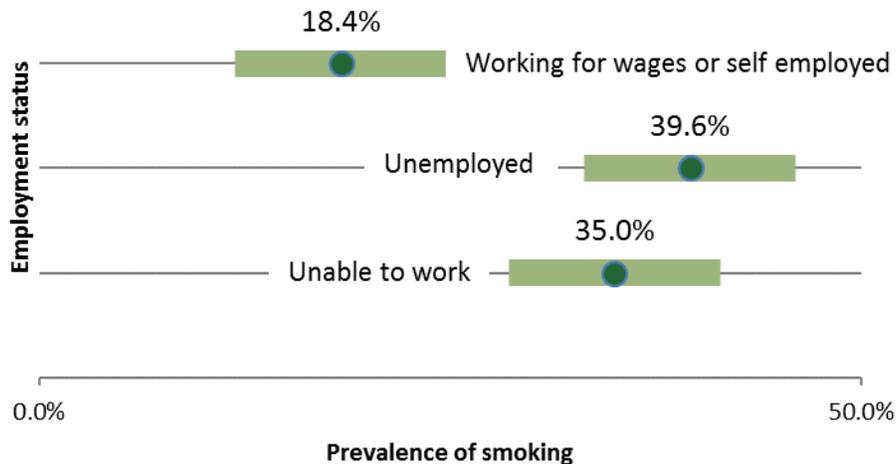


Prevalence and 95% confidence intervals are displayed.

Source: Centers for Disease Control and Prevention (CDC). Behavioral Risk Factor Surveillance System Survey Data. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2016.

Pennsylvanians who are currently unemployed or unable to work have a significantly higher smoking prevalence than those employed for wages or who are self-employed. [Figure 5-6]

**Figure 5.6 – Smoking Prevalence and Employment Status, Pennsylvania, 2016**

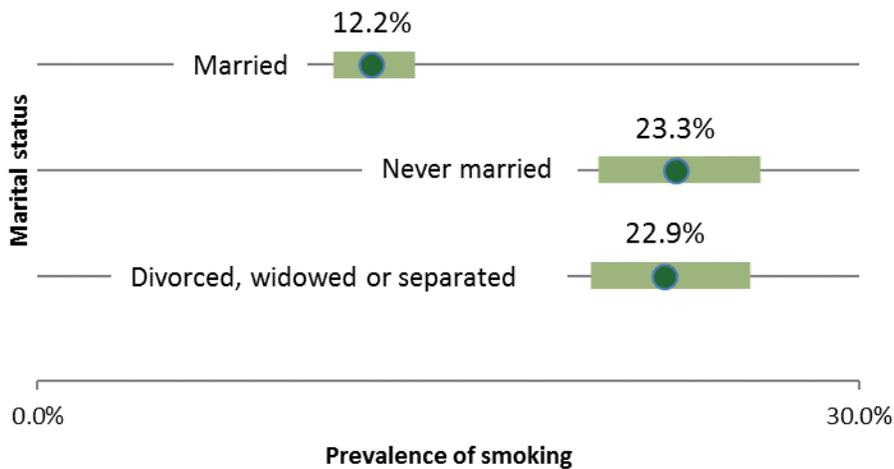


Prevalence and 95% confidence intervals are displayed.

Source: Centers for Disease Control and Prevention (CDC). Behavioral Risk Factor Surveillance System Survey Data. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2016.

Married Pennsylvanians have lower smoking prevalence than never married, divorced, widowed or separated individuals. [Figure 5-7]

**Figure 5.7 – Smoking Prevalence by Marital Status, Pennsylvania, 2016**

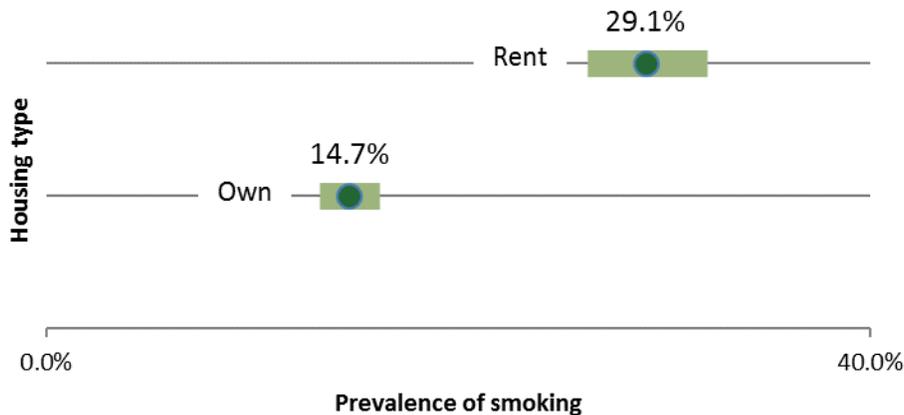


Prevalence and 95% confidence intervals are displayed.

Source: Centers for Disease Control and Prevention (CDC). Behavioral Risk Factor Surveillance System Survey Data. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2016.

Pennsylvanians who rent their homes were more likely to smoke than individuals that owned their homes. [Figure 5-8]

**Figure 5.8 – Smoking Prevalence by Housing Situation, Pennsylvania, 2016**

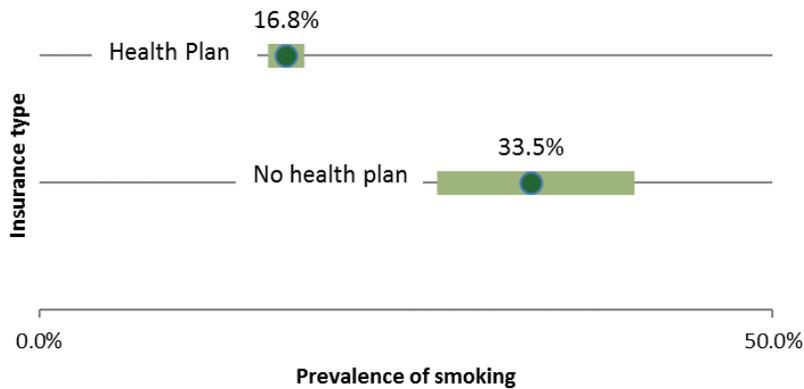


Prevalence and 95% confidence intervals are displayed.

Source: Centers for Disease Control and Prevention (CDC). Behavioral Risk Factor Surveillance System Survey Data. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2016.

Smoking prevalence is significantly higher among individuals who do not have health care coverage, including health insurance, prepaid plans such as HMOs or government plans such as Medicare, or Indian Health Service coverage as compared to people with health care coverage. [Figure 5-9]

**Figure 5.9 - Smoking Prevalence by Insurance Status, Pennsylvania, 2016**

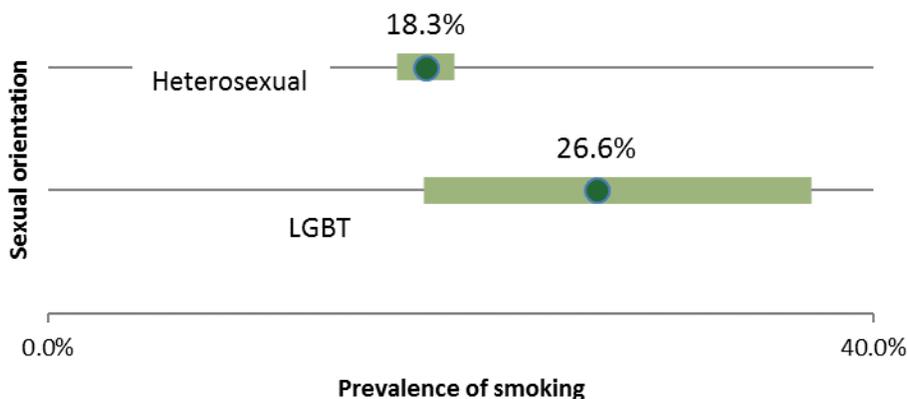


Prevalence and 95% confidence intervals are displayed.

Source: Centers for Disease Control and Prevention (CDC). Behavioral Risk Factor Surveillance System Survey Data. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2016.

Smoking prevalence does not differ significantly when comparing between different sexual orientations, although it does approach significance ( $p=.054$ ). Lesbian, gay, bisexual and transgender (LGBT) Pennsylvanians smoke at a higher rate than heterosexual Pennsylvanians. Wide confidence intervals for LGBT smokers reflects the smaller sample size of LGBT tobacco users surveyed. Small sample size may mask meaningful differences. [Figure 5-10]

**Figure 5.10 – Smoking Prevalence by Sexual Orientation, Pennsylvania, 2016**



Prevalence and 95% confidence intervals are displayed.

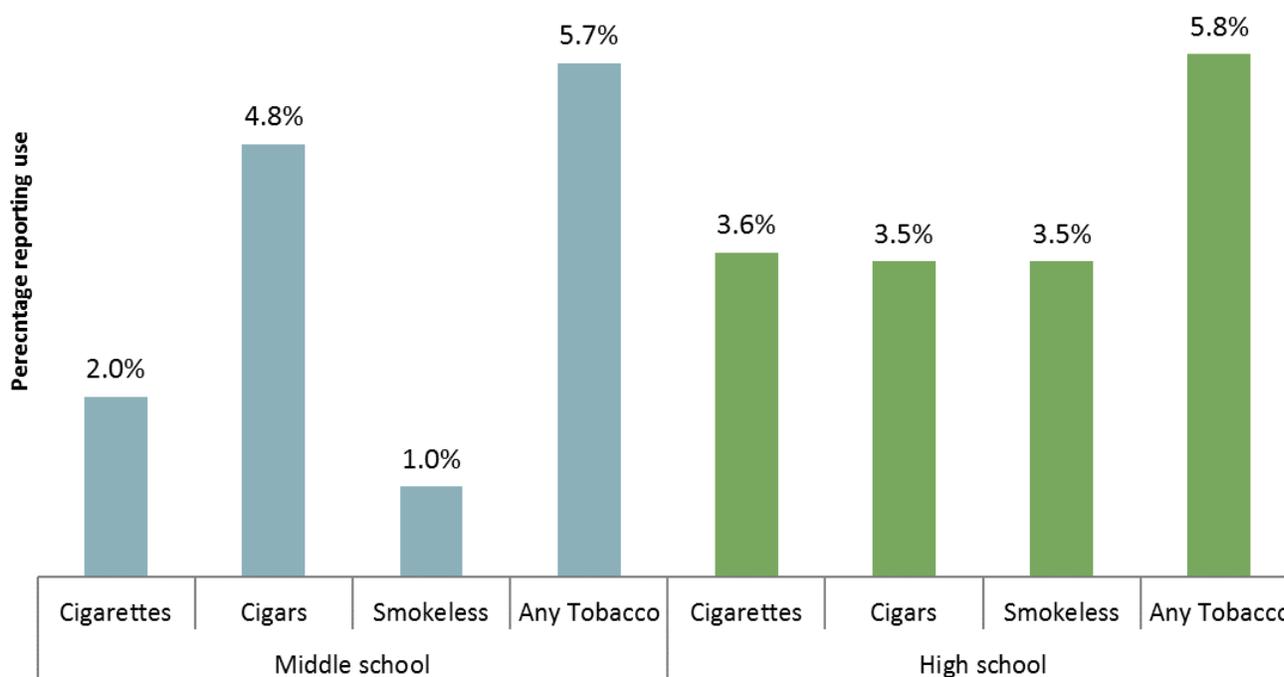
Source: Centers for Disease Control and Prevention (CDC). Behavioral Risk Factor Surveillance System Survey Data. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2016.

## 06. Youth Tobacco Use

Results from the 2016 Youth Tobacco Survey (YTS) show 2.0 percent of middle school students and 3.6 percent of high school students smoked cigarettes in the last 30 days. [Figure 6-1]

Cigarettes are the most commonly used tobacco product for high school students, only slightly eclipsing both cigars and smokeless tobacco. Cigars, including cigarillos or small cigars, are the most prevalent tobacco product for middle school students. Smokeless tobacco includes chewing tobacco, snuff or dip. Nearly one in twenty (4.8 percent) middle school students reported smoking cigars, cigarillos or small cigars in the last 30 days compared to 3.5 percent of high school students. Comparable proportions of middle (5.7 percent) and high school (5.8 percent) students used any tobacco product in the last 30 days, including cigarettes, smokeless tobacco, cigars, pipes and bidis.

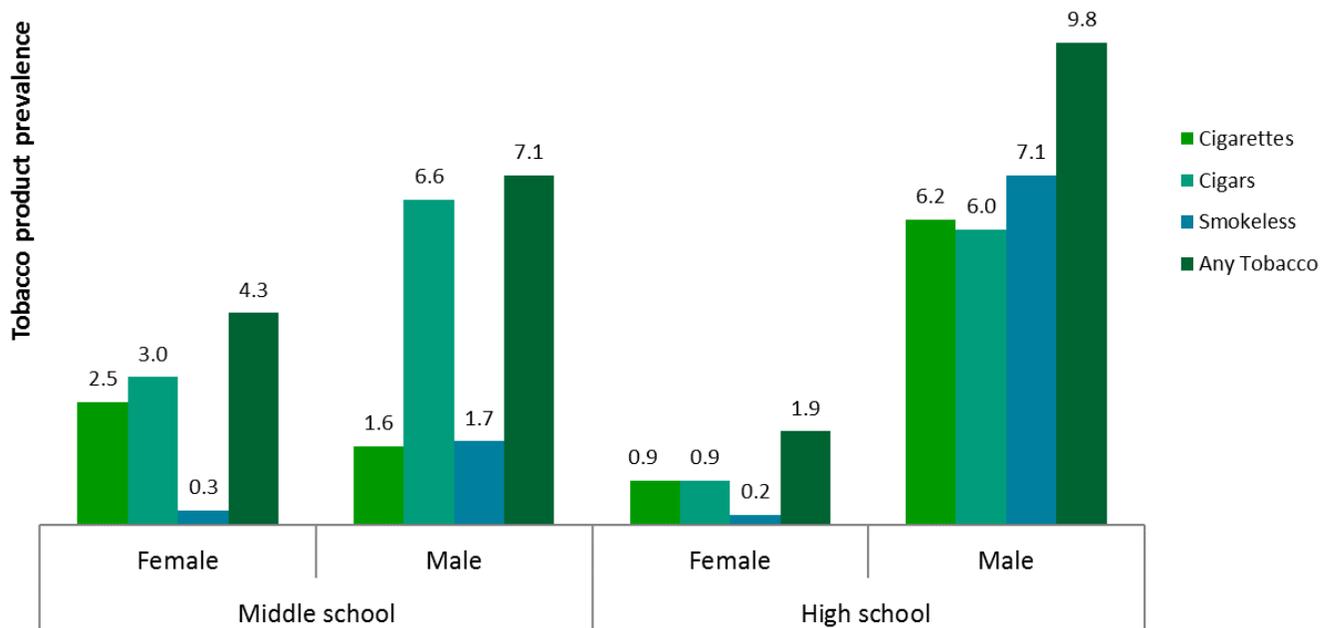
**Figure 6.1 – Prevalence of Tobacco Use by Type in Middle and High School, 2016**



Source: Centers for Disease Control and Prevention (CDC). Pennsylvania Youth Tobacco Survey Data. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2016.

Prevalence of smokeless tobacco use is significantly higher among male than female high school students. Prevalence of cigar use is significantly higher for males and females in middle school than in high school, respectively. The difference becomes larger when looking at gender difference in cigar use among high school students. [Figure 6-2]

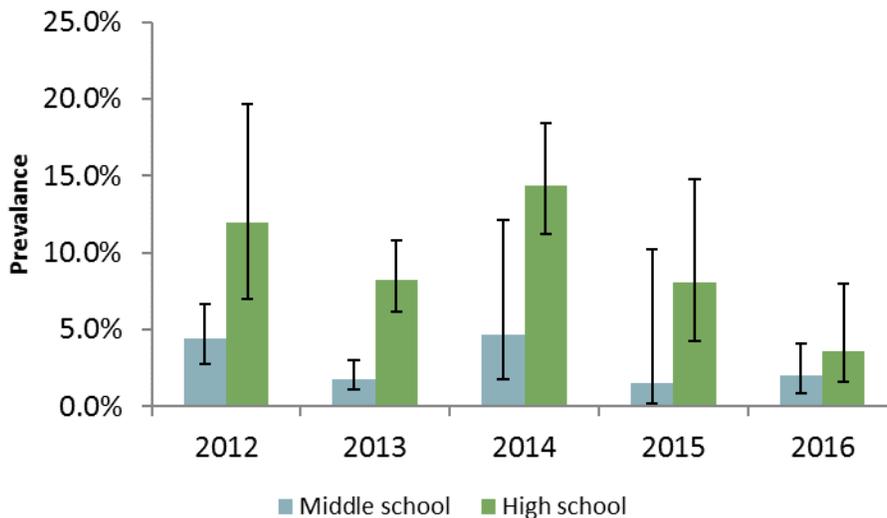
**Figure 6.2 - Tobacco Use by Gender in Middle and High School, 2016**



Source: Centers for Disease Control and Prevention (CDC). Pennsylvania Youth Tobacco Survey Data. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2016.

In 2012, there was a significant difference in cigarette use between middle and high school students, but, by 2016, rates have become more similar. [Figure 6-3]

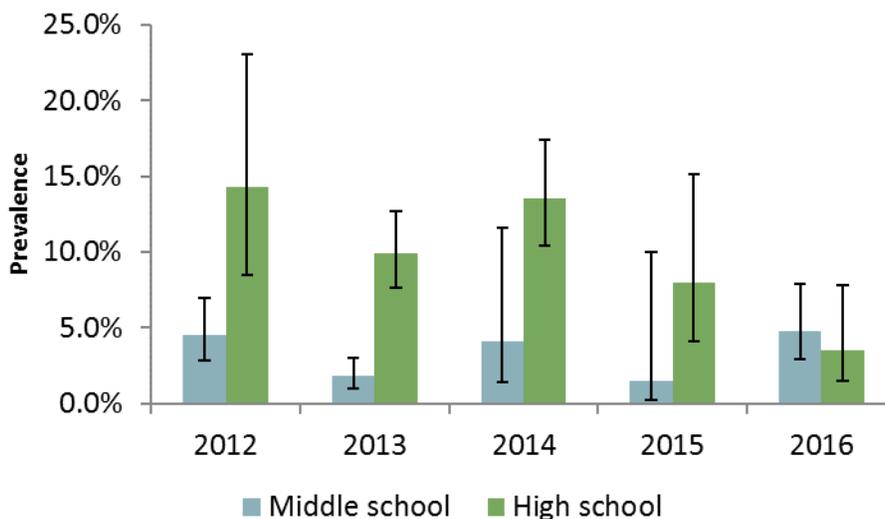
**Figure 6.3 - Cigarette Use by Middle and High School Students, 2012-2016**



Source: Centers for Disease Control and Prevention (CDC). Pennsylvania Youth Tobacco Survey Data. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2016.

The prevalence of cigar use was greater for high school students than middle school students, except in 2016. This difference was significant from 2012-2013. Examination of these rates should continue to identify if this is a trending change or a variation due to sample size. [Figure 6-4]

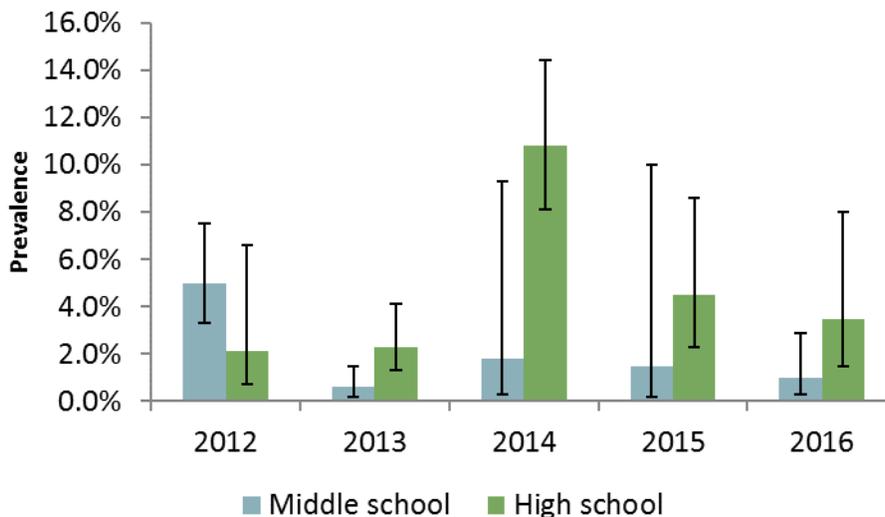
**Figure 6.4 – Cigar Use by Middle and High School Students, 2012-2016**



Source: Centers for Disease Control and Prevention (CDC). Pennsylvania Youth Tobacco Survey Data. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2016.

Prevalence of smokeless tobacco use was greater for high school students than middle school students for all years except for 2012. [Figure 6-5]

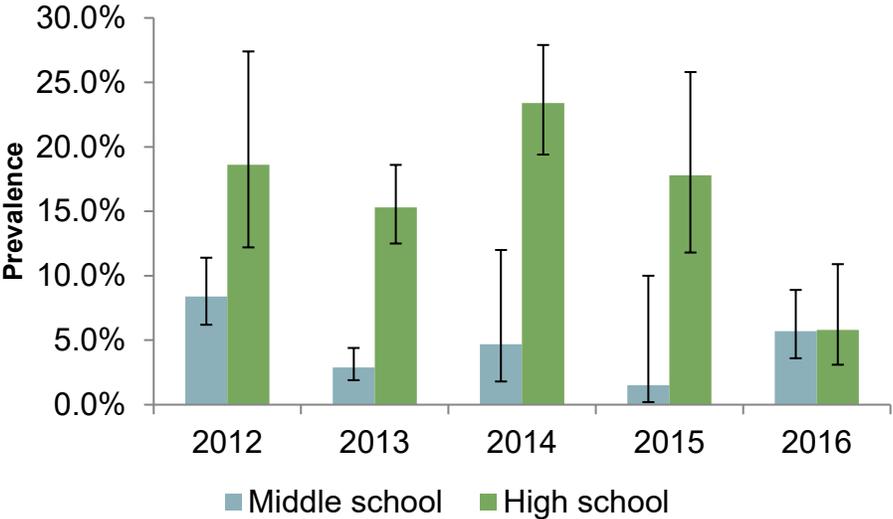
**Figure 6.5 – Prevalence of Smokeless Tobacco Use for Both Middle and High School Students Over Time**



Source: Centers for Disease Control and Prevention (CDC). Pennsylvania Youth Tobacco Survey Data. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2016.

From 2012 to 2015, prevalence of any type of tobacco was significantly higher for high school students than middle school students. In 2016, the use of any tobacco products was about the same between high and middle school students, with high school students having a wider confidence interval. [Figure 6-6]

**Figure 6.6 - All Tobacco Use for Middle and High School Students, 2012 - 2016**



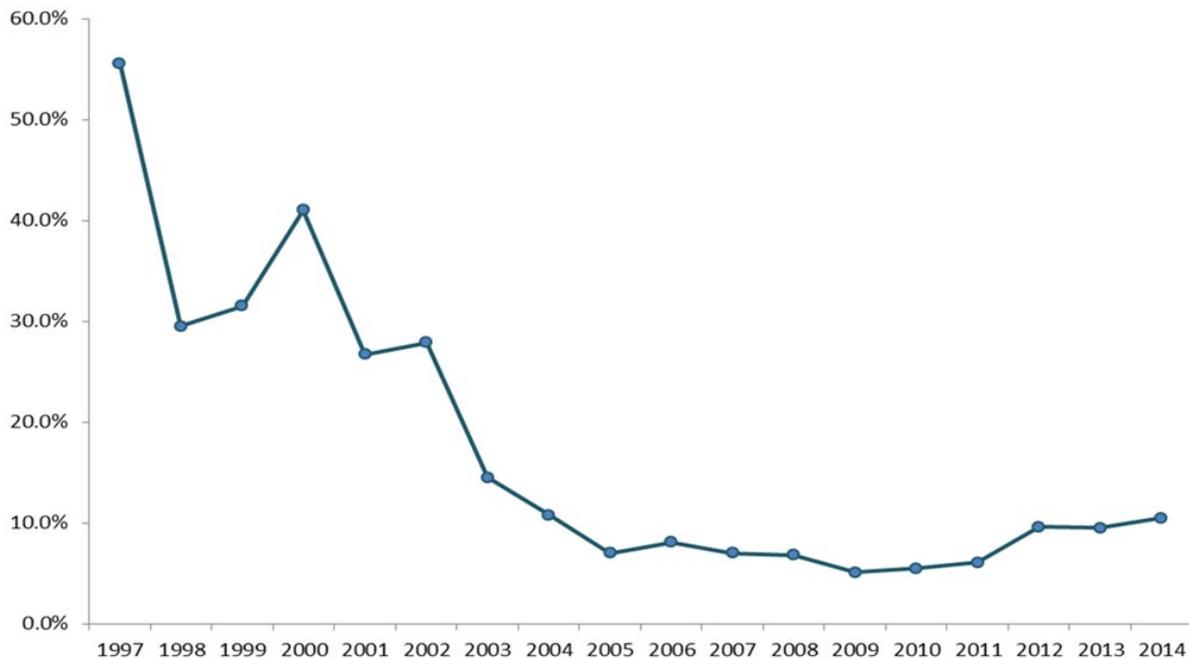
Source: Centers for Disease Control and Prevention (CDC). Pennsylvania Youth Tobacco Survey Data. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2016.

## 07. Youth Access to Tobacco

Legislation prohibiting the sale of tobacco products to minors is an important factor in reducing smoking prevalence among adolescents in Pennsylvania. The annual Synar Survey is designed to estimate the percentage rate at which retailers sell tobacco products to minors, as part of compliance with the Synar amendment that prohibits any manufacturer, retailer or distributor of tobacco products from selling or distributing such products to any individual under the age of 18.

Figure 7-1 displays Synar Survey results from 1997 to 2014. The percentage of Pennsylvania retailers receiving a violation trends downward from 1997 to 2005, remains relatively stable for six years followed by a slight increase in 2011. In 2014, an estimated 10.5 percent of Pennsylvania tobacco retailers received violations.

**Figure 7.1 - Synar Violation Rates in Pennsylvania ,1997 - 2014**



Source: Centers for Disease Control and Prevention (CDC). Substance Abuse and Mental Health Services Administration (SAMHSA). Tobacco/ Synar Program. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2016.

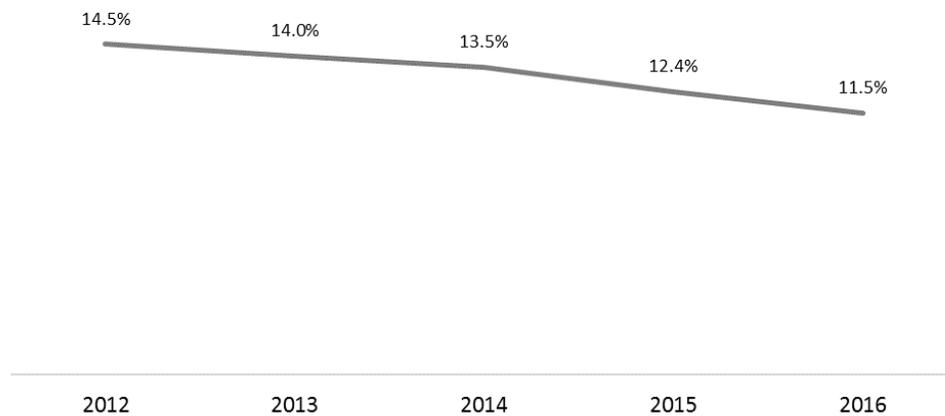
The Youth Tobacco Survey (YTS) collects data on students in grades 6 to 12 regarding tobacco use, including the source through which they obtained tobacco products. The two most commonly reported methods for obtaining tobacco products was by having someone else purchase them (3.6 percent) or being offered tobacco products by someone else (3.0 percent).

## 08. Tobacco Use During Pregnancy

Tobacco use during pregnancy raises a likelihood of health problems during the pregnancy and future health problems for the child. Dangers of tobacco use during pregnancy include a greater chance of miscarriage, problems with the placenta, premature birth, low birth weight, certain birth defects and sudden infant death syndrome.

Tobacco use among pregnant women has declined since 2012, to its current level of 11.5 percent. Prevalence is calculated by dividing the number of women who stated they used tobacco during pregnancy by all live births. [Figure 8-1]

**Figure 8.1 – Smoking Prevalence During Pregnancy, 2012- 2016**



Source: Pennsylvania Certificate of Live Births, Pennsylvania Department of Health, Bureau of Health Statistics and Research. Pregnant women with unknown smoking status during part or all of their pregnancy are excluded from calculations.

### Demographics

The overall prevalence of women using tobacco during pregnancy has declined annually since 2012. Tobacco use among pregnant women is negatively associated with age. The highest percentage of women reporting tobacco use during pregnancy were aged 20 to 24 years, with prevalence steadily declining with age. [Figure 8-2]

**Figure 8.2 – Tobacco Use During Pregnancy by Age, Pennsylvania, 2012-2016**

	2012	2013	2014	2015	2016
< 20	19.6%	18.6%	18.4%	16.3%	14.4%
20-24	23.4%	22.7%	21.4%	19.6%	17.8%
25-29	15.4%	14.9%	14.8%	13.8%	12.9%
30-34	9.8%	9.5%	9.0%	8.7%	8.2%
35-39	8.1%	8.2%	8.0%	7.8%	7.9%
40-50	9.0%	8.2%	8.2%	7.9%	7.4%

Source: Pennsylvania Certificate of Live Births, Pennsylvania Department of Health, Bureau of Health Statistics and Research. Pregnant women with unknown smoking status during part or all of their pregnancy are excluded from calculations.

Across all ages, the highest percentage of women reporting tobacco use during pregnancy were white non-Hispanic women, followed by black non-Hispanic women. [Figure 8-3]

**Figure 8.3 – Tobacco Use During Pregnancy by Race, Pennsylvania, 2012-2016**

	2012	2013	2014	2015	2016
White, non-Hispanic	17.0%	16.4%	15.7%	14.5%	13.6%
Black, non-Hispanic	13.3%	11.9%	11.7%	11.0%	10.0%
Hispanic	8.3%	8.4%	8.5%	7.5%	6.3%
Other	2.5%	2.5%	4.1%	3.1%	3.1%

Source: Pennsylvania Certificate of Live Births, Pennsylvania Department of Health, Bureau of Health Statistics and Research. Pregnant women with unknown smoking status during part or all of their pregnancy are excluded from calculations.

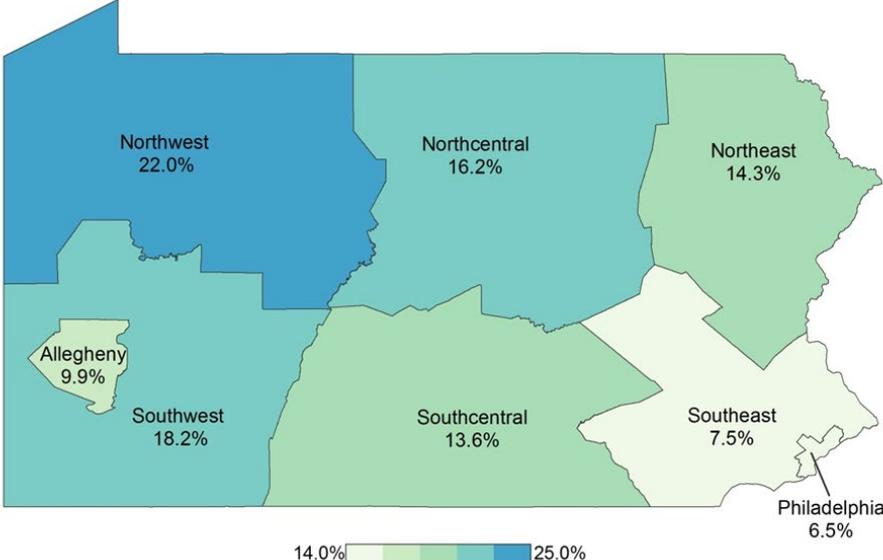
Similar to the overall adult population, education has a negative correlation with tobacco use during pregnancy. Tobacco use decreases as maternal education level increases. [Figure 8-4]

**Figure 8-4. Tobacco Use During Pregnancy by Education Level, Pennsylvania, 2012-2016**

	2012	2013	2014	2015	2016
Less than high school	24.6%	23.4%	22.9%	21.7%	19.9%
High school graduate/GED	25.5%	24.8%	24.3%	22.5%	21.1%
Some college/Associate degree	15.8%	15.7%	15.1%	13.8%	13.0%
Bachelor’s degree or higher	2.1%	1.8%	1.6%	1.6%	1.4%

In 2016, the statewide estimated prevalence of tobacco use during pregnancy was 11.7 percent. Five of the eight regions’ prevalence was higher than the statewide estimate. The Northwest Region had the highest prevalence of women reporting tobacco use during pregnancy. Although Philadelphia Health District had the highest prevalence of tobacco use among all adults in 2016, it currently has the lowest prevalence of women reporting tobacco use during pregnancy.

### Map 8-1. Tobacco Use During Pregnancy by Health District, Pennsylvania, 2016



Source: Pennsylvania Certificate of Live Births, Pennsylvania Department of Health, Bureau of Health Statistics and Research. Pregnant women with unknown smoking status during part or all of their pregnancy are excluded from calculations.