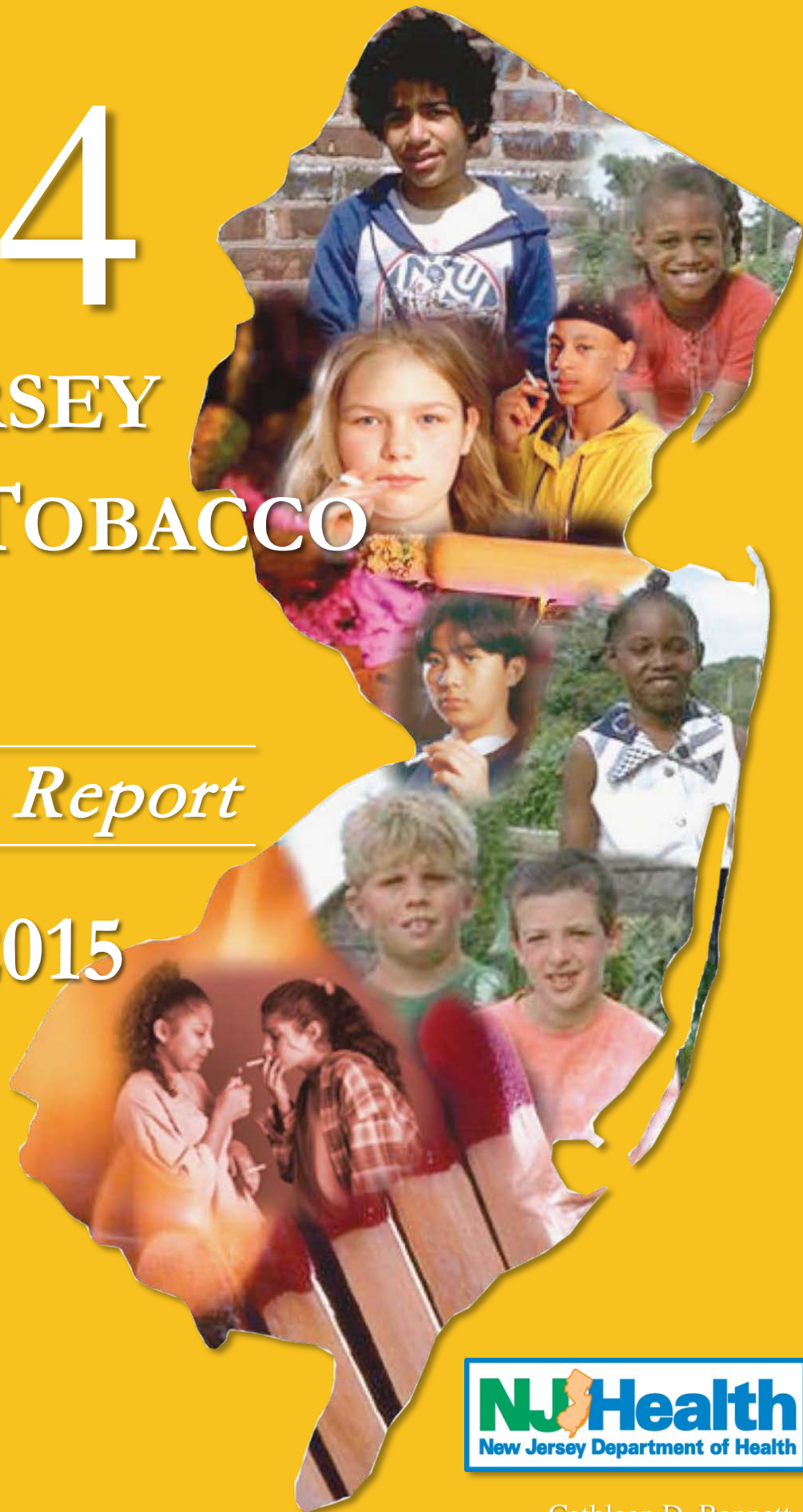


# 2014

## NEW JERSEY YOUTH TOBACCO SURVEY

*A Statewide Report*

### October 2015



Chris Christie, Governor  
Kim Guadagno, Lt. Governor

Cathleen D. Bennett  
Commissioner

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## **INTRODUCTION**

The New Jersey Comprehensive Tobacco Control Program (CTCP), in existence from 2000 to 2010, sought to decrease deaths, sickness and disability among residents who use tobacco or are exposed to secondhand smoke. In 2011, the former CTCP was modified and renamed to the Office of Tobacco Control (OTC) at the NJ Department of Health. The OTC focuses on strategies aimed at: increasing tobacco-free policies in schools; the Tobacco Age of Sale Enforcement (TASE) program, which aims to stop the sale of tobacco to minors; NJQuitline, a telephone counseling service to help youth and adults quit smoking; and, coalition building for the sustainability of the program. OTC continues to move toward activities that are focused on population-based strategies such as broad policy efforts that help the public at large as well as those with chronic diseases. These efforts include reducing exposure to secondhand smoke and access to tobacco products.

New Jersey began statewide youth tobacco surveillance in 1999 using the Youth Tobacco Survey. The Centers for Disease Control and Prevention (CDC) developed the National Youth Tobacco Survey (NYTS) to provide states with data, such as population-based estimates of the prevalence of tobacco use among middle and high school students to support the design, implementation, and evaluation of comprehensive tobacco control programs. The New Jersey Youth Tobacco Survey (NJYTS) is an adaptation of the NYTS and includes state-added questions specific to programming and youth tobacco use trends in New Jersey. The first NJYTS was intended to provide a baseline for monitoring progress toward the CTCP's goal to reduce tobacco use among youth. After the baseline survey, the NJYTS was repeated in 2001, 2004, 2006, 2008, 2010, 2012, and 2014, as reported herein. While previous survey administrations included both middle and high school students, the 2010 and 2012 NJYTS included high schools only. Middle schools were once again included in the 2014 NJYTS, the results of which will be reported separately.

The 2014 NJYTS was administered to 3,953 high school students (grades 9-12) in 41 schools during the fall of 2014, of which 3,909 completed usable questionnaires. The NJYTS employs population-based sampling methods to ensure that findings presented in this report are representative of all 9<sup>th</sup> through 12<sup>th</sup> grade public school students in New Jersey. The *2014 New Jersey Youth Tobacco Survey: A Statewide Report* summarizes current tobacco use patterns among New Jersey youth using results from the most recent NJYTS administration. These results are compared with data collected from previous NJYTS administrations.

**RESULTS**

**Lifetime or Ever Use of Tobacco**

New Jersey high school students were asked if they had ever used cigarettes, cigars, smokeless tobacco (SLT), bidis, or hookahs in their lifetime. Beginning in 2012, questions regarding use of e-cigarettes and snus, two emerging, popular tobacco products, were also included in the NJYTS. Lifetime or ever use is defined as trying a tobacco product even one time. However, hookah, e-cigarette, and snus use were excluded from the lifetime or ever use of any tobacco product definition to allow for comparison of prevalence from year to year. Estimates of lifetime or ever use of any and each tobacco product(s) by gender, race/ethnicity, and grade are found in Table 1.

**Table 1. Percentage of New Jersey high school students who ever used any tobacco product\* (cigarettes, cigars, smokeless tobacco, and/or bidis) by gender, race/ethnicity, and school grade—New Jersey Youth Tobacco Survey, 2014**

	<b>Any*</b>	<b>Cigarette</b>	<b>Cigar</b>	<b>SLT</b>	<b>Bidis</b>	<b>Hookah</b>	<b>Snus</b>	<b>Ecig</b>
	<b>% ± CI</b>	<b>% ± CI</b>	<b>% ± CI</b>	<b>% ± CI</b>	<b>% ± CI</b>	<b>% ± CI</b>	<b>% ± CI</b>	<b>% ± CI</b>
<b>Gender</b>								
Male	37.6 ± 4.1	27.3 ± 4.5	25.3 ± 3.7	13.8 ± 3.3	7.7 ± 1.4	22.4 ± 3.2	7.2 ± 1.9	27.1 ± 3.4
Female	32.7 ± 3.5	25.7 ± 3.0	15.0 ± 2.2	4.8 ± 1.2	5.3 ± 0.8	24.9 ± 3.7	3.0 ± 0.9	21.1 ± 3.8
<b>Race/Ethnicity</b>								
White	36.3 ± 4.5	27.3 ± 4.8	23.3 ± 3.1	11.5 ± 2.7	5.6 ± 1.4	23.3 ± 3.4	5.3 ± 1.5	27.9 ± 4.3
Black	32.8 ± 3.7	19.9 ± 3.8	18.5 ± 3.8	6.5 ± 2.2	8.4 ± 1.9	21.3 ± 4.8	4.8 ± 3.3	17.9 ± 4.7
Hispanic	40.1 ± 3.6	34.0 ± 4.1	18.5 ± 2.6	8.2 ± 3.0	8.5 ± 2.0	28.7 ± 3.3	5.0 ± 1.8	22.3 ± 3.3
<b>Grade</b>								
9	23.3 ± 4.0	16.8 ± 3.2	13.3 ± 3.5	5.3 ± 2.2	4.9 ± 1.5	15.1 ± 2.8	3.8 ± 1.5	16.8 ± 3.3
10	29.8 ± 4.1	21.4 ± 4.4	15.6 ± 2.6	8.0 ± 2.2	6.0 ± 1.6	22.1 ± 4.2	4.2 ± 1.6	20.9 ± 4.8
11	42.2 ± 7.0	32.9 ± 6.3	24.5 ± 5.0	12.2 ± 4.3	7.6 ± 2.9	26.2 ± 5.3	6.5 ± 3.1	29.8 ± 5.4
12	46.4 ± 3.9	35.3 ± 4.3	28.0 ± 4.6	11.8 ± 2.8	7.7 ± 1.7	32.0 ± 5.6	5.9 ± 1.9	29.4 ± 5.1
<b>Overall</b>	<b>35.1 ± 3.3</b>	<b>26.4 ± 3.4</b>	<b>20.1 ± 2.5</b>	<b>9.3 ± 2.1</b>	<b>6.5 ± 0.9</b>	<b>23.6 ± 2.8</b>	<b>5.1 ± 1.2</b>	<b>24.1 ± 3.4</b>

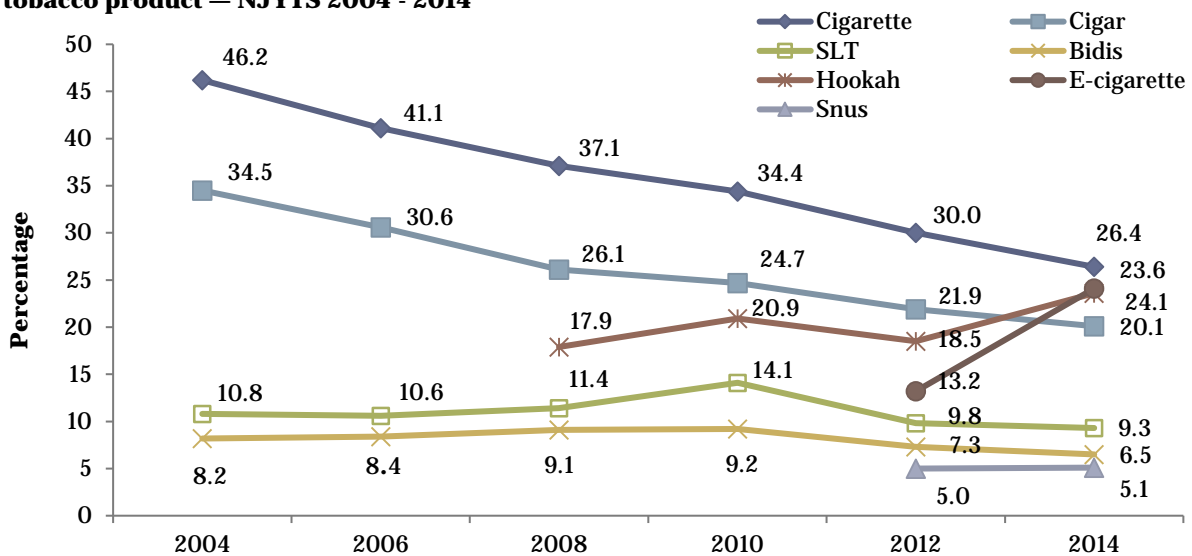
\*Ever use of cigarettes and/or cigars and/or smokeless tobacco and/or bidis (excludes snus, hookah, and e-cigarettes)  
 SLT: Smokeless tobacco (such as chew, snuff or dip); Ecig: Electronic cigarettes; CI: 95% Confidence Interval

In 2014, 35.1% (±3.3) of high school students reported ever having used any form of tobacco in their lifetime, representing a non-significant decrease from 2012 (38.7 ± 4.2%). There were some differences in overall lifetime tobacco use among New Jersey youth by demographic characteristics (see Table 1). Prevalence of lifetime any tobacco use was higher – though not significantly – for males than females and increased with grade level. Specifically, ever use was significantly more prevalent among 11<sup>th</sup> and 12<sup>th</sup> graders compared to 9<sup>th</sup> and 10<sup>th</sup>. Additionally, ever use of any tobacco type was significantly more prevalent for Hispanic high school students compared to Black high school students.

As in previous years, lifetime use of specific tobacco products also differed by demographic characteristics in 2014. Generally, ever use of each tobacco product increased as grade level increased. Eleventh and 12<sup>th</sup> graders had significantly greater prevalence of lifetime cigarette and cigar use than 9<sup>th</sup> and 10<sup>th</sup> graders and significantly greater rates of lifetime SLT, hookah, and e-cigarette use than 9<sup>th</sup> graders. Prevalence of lifetime cigar and SLT use was significantly higher for males than females; however there were no significant gender differences in reported lifetime use of cigarettes, bidis, hookah, snus or e-cigarettes. Finally, prevalence of lifetime cigarette and hookah use was greatest among Hispanic students, while rates of lifetime cigar, SLT, snus, and e-cigarette use were highest for Whites.

The overall prevalence of lifetime any tobacco use among high school students has decreased steadily over time, and this difference is significant when comparing 2014 (35.1 ± 3.3%) to 2008 (48.7 ± 3.4%) and earlier. Cigarettes remained the most frequently used tobacco products by NJ high school students, although prevalence of lifetime use of these products has decreased over time (Figure 1). However, in 2014, e-cigarettes and hookah became the 2<sup>nd</sup> and 3<sup>rd</sup> most commonly tried products, pushing cigars to 4<sup>th</sup> place for the first time since the inception of the NJYTS. Meanwhile, there were no significant changes in lifetime use of SLT, bidis, or snus from 2012 to 2014.

**Figure 1: Prevalence of lifetime tobacco use among all high school students, by type of tobacco product – NJYTS 2004 - 2014**



**Current Use of Tobacco**

Current tobacco use is defined as the use of any tobacco product on one or more days in the 30 days preceding the survey. This measure includes experimenters (e.g., those who may have just tried a product for the first time), occasional users (e.g., those who use a product occasionally) and regular users. New Jersey youth were asked about their current use of cigarettes, cigars, SLT, bidis, hookah, e-cigarettes, and snus (although hookah, e-cigarettes, and snus were excluded from the definition of current use of any tobacco product to be consistent with prior NJYTS reports). Current use of all tobacco products by gender, race/ethnicity, and grade is found in Table 2.

**Current Use of Any Tobacco**

Overall, 14.2% ( $\pm 2.6$ ) of high school students reported using cigarettes, cigars, smokeless tobacco, or bidis in the 30 days preceding the survey. This was a significant decrease from 2010 when the overall rate of current any tobacco use was 22.2% ( $\pm 2.2$ ) but a slight increase from 2012 (13.6  $\pm 2.6$ %). There were demographic differences in overall rate of current any tobacco use among New Jersey youth in 2014 (see Table 2). As in previous years, prevalence of current tobacco use increased with grade level, such that rates were significantly greater for 11<sup>th</sup> and 12<sup>th</sup> graders compared to 9<sup>th</sup> graders, as well as for 12<sup>th</sup> graders compared to 9<sup>th</sup> and 10<sup>th</sup> graders. As in 2010 and 2012, there were no significant differences in prevalence of current tobacco use by race/ethnicity; however, prevalence of current tobacco use was significantly greater for males relative to females.

**Table 2. Percentage of New Jersey high school students who were current users of any tobacco product\* (cigarettes, cigars, smokeless tobacco, and/or bidis) by gender, race/ethnicity, and school grade—New Jersey Youth Tobacco Survey, 2014**

	<b>Any*</b> % $\pm$ CI	<b>Cigarette</b> % $\pm$ CI	<b>Cigar</b> % $\pm$ CI	<b>SLT†</b> % $\pm$ CI	<b>Bidis</b> % $\pm$ CI	<b>Hookah</b> % $\pm$ CI	<b>Snus</b> % $\pm$ CI	<b>Ecig</b> % $\pm$ CI
<b>Gender</b>								
Male	17.2 $\pm$ 3.2	9.0 $\pm$ 2.4	8.5 $\pm$ 1.7	6.6 $\pm$ 2.1	5.3 $\pm$ 1.3	12.3 $\pm$ 2.2	5.5 $\pm$ 1.3	14.3 $\pm$ 2.8
Female	11.2 $\pm$ 2.5	7.4 $\pm$ 1.9	4.3 $\pm$ 0.9	1.6 $\pm$ 0.8	2.6 $\pm$ 0.9	11.3 $\pm$ 1.8	2.0 $\pm$ 1.0	10.1 $\pm$ 2.7
<b>Race/Ethnicity</b>								
White	16.6 $\pm$ 3.1	10.0 $\pm$ 2.4	7.4 $\pm$ 1.5	5.5 $\pm$ 1.6	2.9 $\pm$ 0.7	10.4 $\pm$ 2.3	3.0 $\pm$ 0.9	14.1 $\pm$ 2.8
Black	9.8 $\pm$ 3.8	4.0 $\pm$ 1.9	4.5 $\pm$ 2.2	2.1 $\pm$ 1.2	4.1 $\pm$ 1.9	10.2 $\pm$ 3.3	3.8 $\pm$ 1.4	8.0 $\pm$ 2.9
Hispanic	14.9 $\pm$ 3.4	8.5 $\pm$ 2.2	6.6 $\pm$ 2.4	3.2 $\pm$ 1.8	6.6 $\pm$ 2.2	17.2 $\pm$ 2.7	6.1 $\pm$ 2.4	12.5 $\pm$ 2.7
<b>Grade</b>								
9	9.2 $\pm$ 3.4	4.9 $\pm$ 2.0	3.5 $\pm$ 1.5	2.7 $\pm$ 1.7	3.4 $\pm$ 1.7	8.6 $\pm$ 2.8	3.2 $\pm$ 1.8	9.1 $\pm$ 2.8
10	11.7 $\pm$ 2.5	6.3 $\pm$ 1.7	5.2 $\pm$ 1.6	3.0 $\pm$ 1.5	4.0 $\pm$ 1.4	11.1 $\pm$ 2.9	3.7 $\pm$ 1.4	10.6 $\pm$ 3.2
11	16.6 $\pm$ 1.4	9.3 $\pm$ 3.2	7.6 $\pm$ 2.7	4.9 $\pm$ 2.5	4.1 $\pm$ 1.5	13.3 $\pm$ 3.3	3.3 $\pm$ 1.9	13.9 $\pm$ 4.0
12	19.8 $\pm$ 3.8	12.5 $\pm$ 3.3	9.4 $\pm$ 2.3	6.0 $\pm$ 2.1	4.2 $\pm$ 1.5	14.6 $\pm$ 2.9	5.0 $\pm$ 1.6	15.4 $\pm$ 3.0
<b>Overall</b>	<b>14.2 <math>\pm</math> 2.6</b>	<b>8.2 <math>\pm</math> 1.9</b>	<b>6.3 <math>\pm</math> 1.2</b>	<b>4.1 <math>\pm</math> 1.3</b>	<b>3.9 <math>\pm</math> 0.8</b>	<b>11.8 <math>\pm</math> 1.7</b>	<b>3.8 <math>\pm</math> 0.8</b>	<b>12.1 <math>\pm</math> 2.4</b>

\*Use of any tobacco (cigarettes, cigars, smokeless tobacco, or bidis) during  $\geq 1$  of the 30 days preceding the survey (excludes hookah, e-cigarettes, and snus)

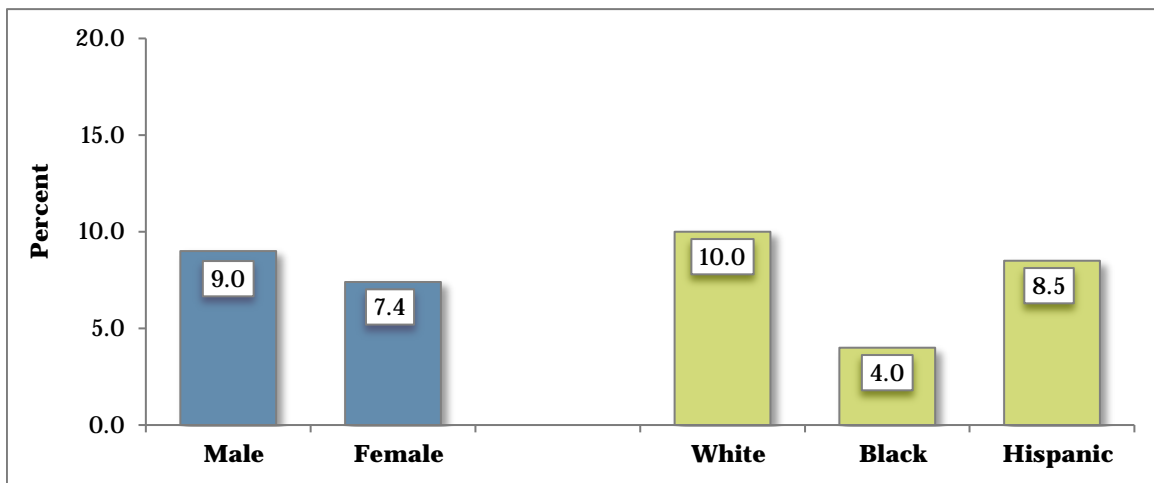
†Smokeless tobacco

CI: 95% Confidence Interval

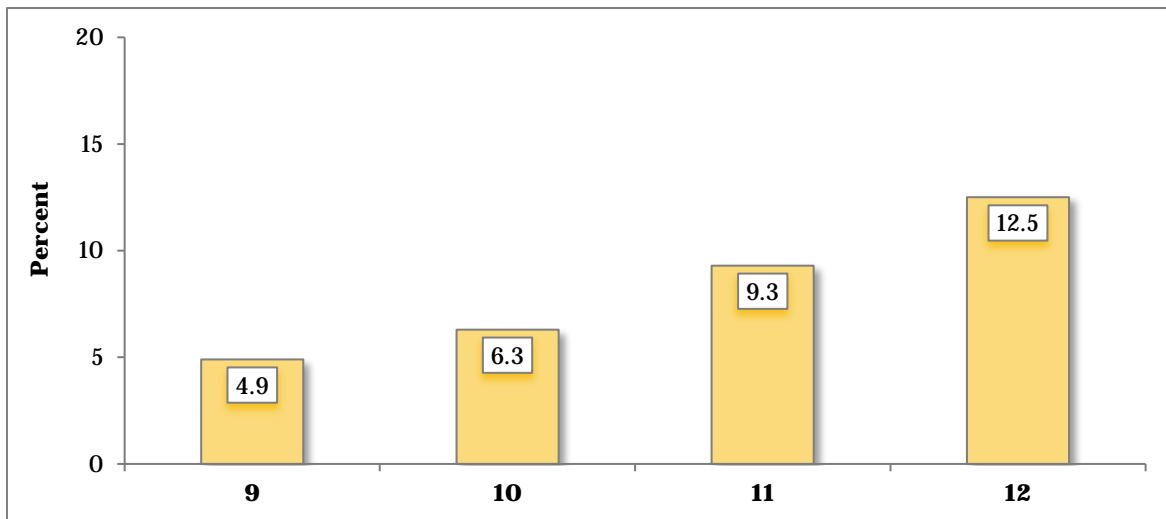
**Current Cigarette Use**

Overall, 8.2% ( $\pm 1.9$ ) of high school students reported smoking a cigarette on one or more days in the 30 days preceding the survey—a non-significant decrease from 2012 (9.3  $\pm$  2.4%) – and current smoking rates differed by race/ethnicity and grade level (Table 2). White students reported the highest rate of current cigarette use, followed by Hispanic students, both of which were significantly greater than that of Black students (Figure 2a). Additionally, prevalence of current cigarette use increased by grade level and 12th graders reported significantly higher rates than 9th and 10th graders (Figure 2b). Unlike previous years, current smoking prevalence did not differ significantly by gender.

**Figure 2a: Prevalence of current cigarette use among all high school students by gender and race/ethnicity group — NJYTS 2014**



**Figure 2b: Prevalence of current cigarette use among all high school students by grade level — NJYTS 2014**

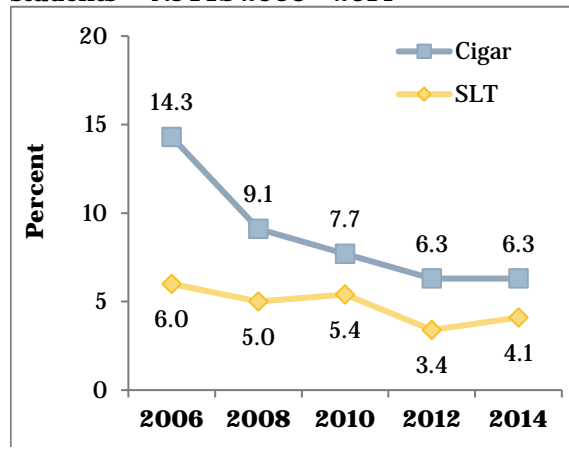




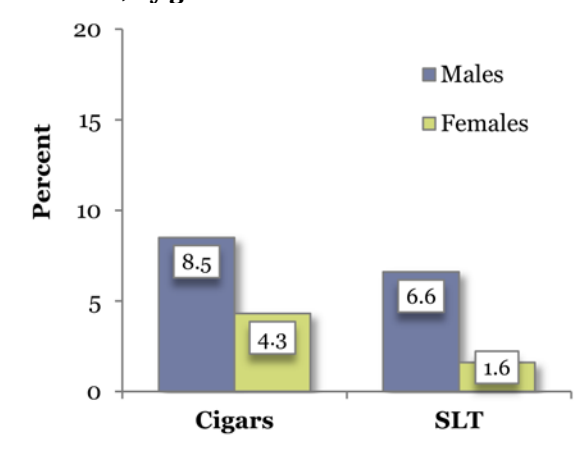
### Current Cigar Use

In 2014, 6.3% ( $\pm 1.2$ ) of high school students reported smoking a cigar in the past 30 days preceding the survey, indicating no change in prevalence from 2012 (Figure 3). There were demographic differences in current cigar use among New Jersey youth in 2014. Among high school students, males reported significantly higher prevalence of current cigar use compared to females (Figure 4). Additionally, cigar use prevalence increased with grade level and the rate among 12<sup>th</sup> graders was more than twice that of 9<sup>th</sup> graders (Table 2). There were no significant differences in current cigar use by race/ethnicity.

**Figure 3. Prevalence of current cigar and smokeless tobacco use among NJ high school students – NJYTS 2006 – 2014**



**Figure 4. Prevalence of current cigar and smokeless tobacco use among all high school students, by gender – NJYTS 2014**



### Current Smokeless Tobacco Use

Overall, 4.1% ( $\pm 1.3$ ) of high school students reported using smokeless tobacco in the 30 days preceding the survey. After a decrease in prevalence from 2010 to 2012, current SLT use slightly increased in 2014 overall (Figure 3), as well as across most demographic categories; however these changes were not statistically significant. As in previous years, the prevalence of smokeless tobacco use in 2014 was significantly higher among high school males compared to females (Figure 4). Additionally, current SLT prevalence increased with grade and was twice as high among 11<sup>th</sup> and 12<sup>th</sup> graders as among 9<sup>th</sup> graders (Table 2).

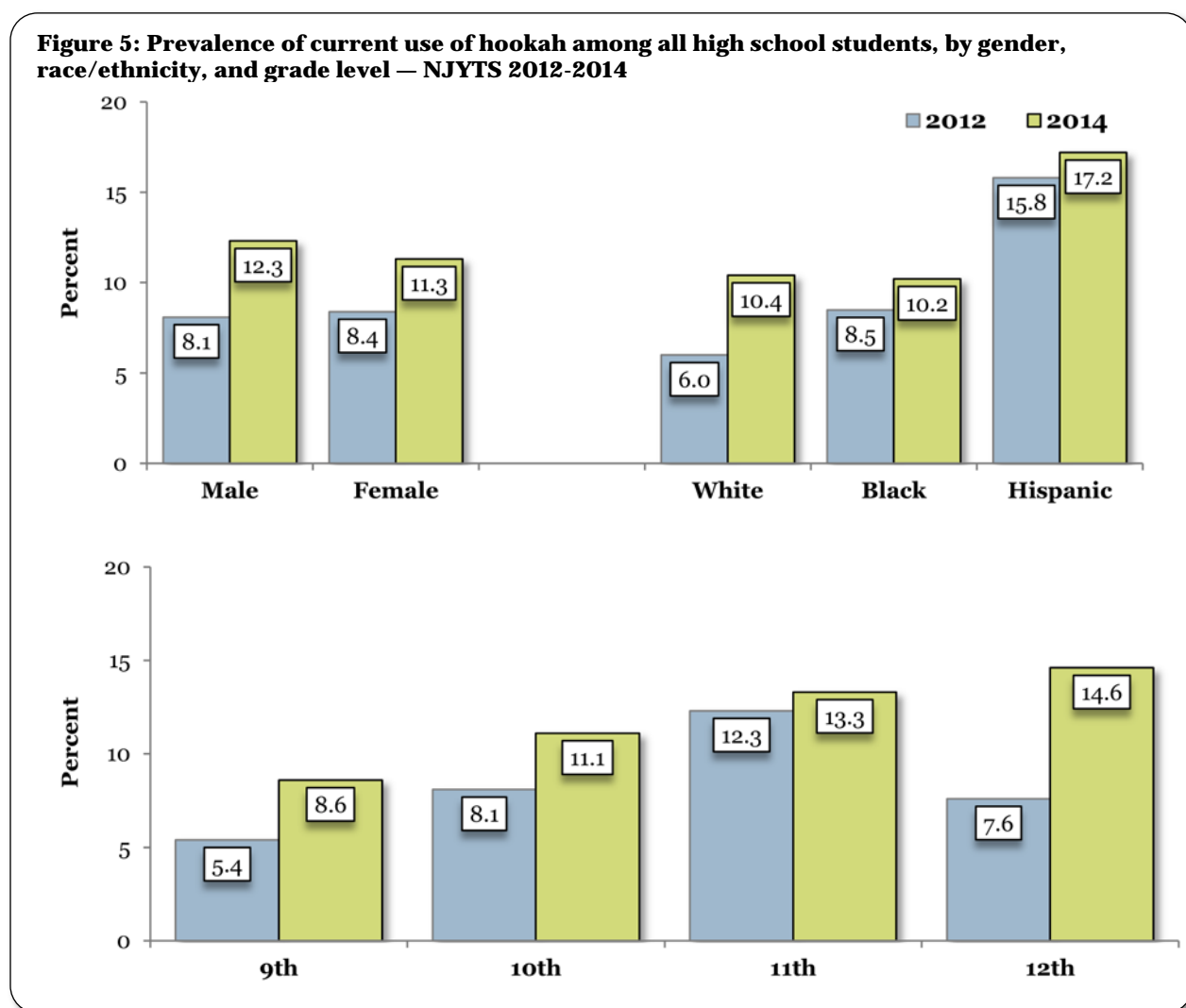
### Current Bidi Use

Bidis are small hand-rolled cigarettes that are often flavored and primarily made in India. In 2014, 3.9% ( $\pm 0.8$ ) of high school students reported smoking bidis in the previous 30 days. While there were no statistical differences in bidi use by grade level, prevalence was significantly higher in males relative to females and among Hispanics relative to Whites (Table 2). Additionally, there were slight increases in current bidi use overall and across most demographic categories when comparing 2014 to 2012, with larger differences among male (5.3  $\pm$  1.3% vs. 3.7  $\pm$  1.7%) and Hispanic students (6.6  $\pm$  2.2% vs. 4.1  $\pm$  1.4%);

however no changes were statistically significant.

### Current Hookah Use

Hookah was the second most popular form of currently used tobacco in 2014, surpassing cigarettes for the first time in NJYTS history. Among high school students, 11.8% ( $\pm 1.7$ ) reported current use of a hookah to smoke tobacco or flavored tobacco, a marginally significant increase from 8.4% ( $\pm 1.8$ ) in 2012. Prevalence also increased within all demographic subgroups from 2012 to 2014, including significant increases among Whites and 12<sup>th</sup> graders (Figure 5). In 2014, current hookah use was significantly more prevalent among Hispanics relative to Whites and Blacks, as well as among 12<sup>th</sup> graders relative to 9<sup>th</sup> graders (Table 2, Figure 5); however there were no significant differences by gender.



### Current E-Cigarette Use

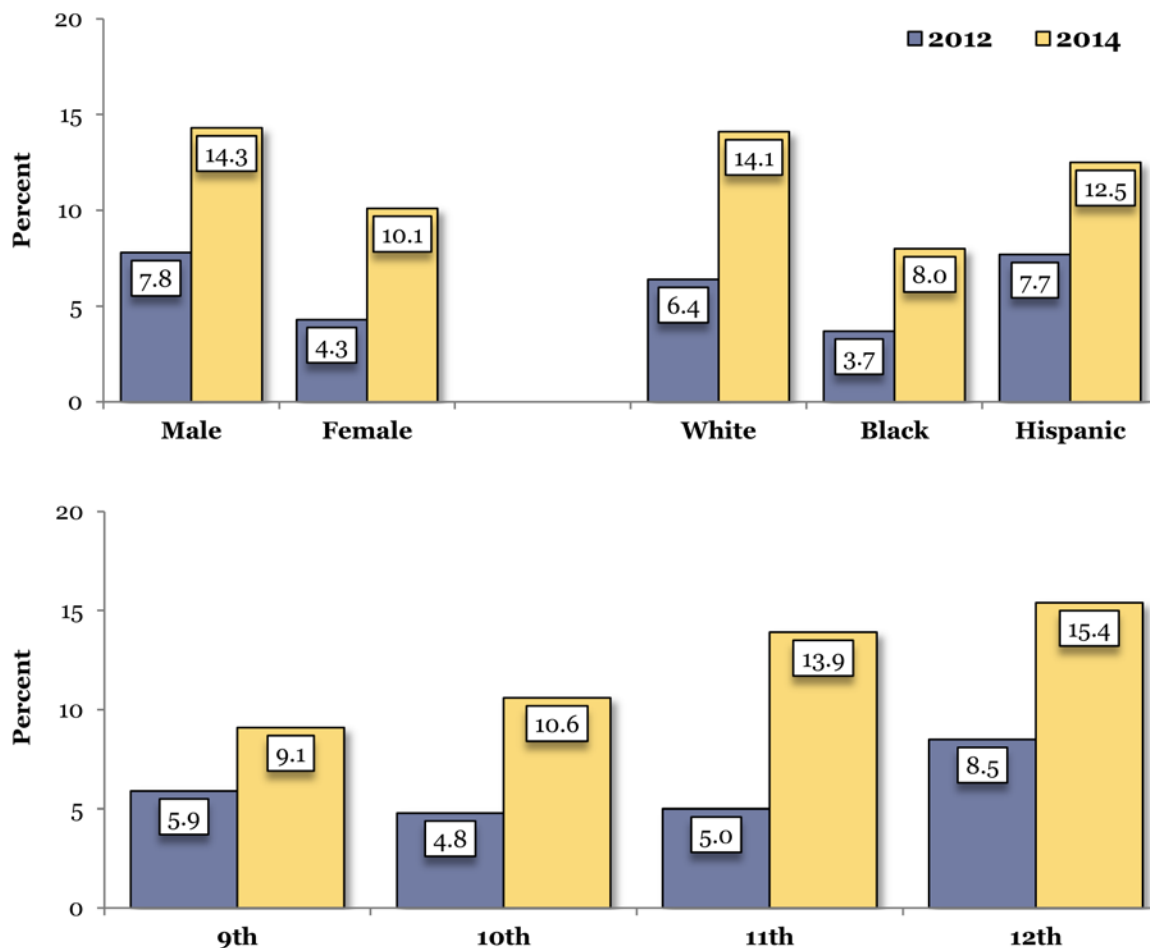
E-cigarettes, or electronic cigarettes, also referred to as electronic vaping devices, personal vaporizers, or

electronic nicotine delivery systems (ENDS) are battery-powered devices which simulate tobacco smoking. The e-cigarette consists of a heating element that vaporizes a liquid solution which contains a mixture of nicotine and flavorings and other substances, provided in a refillable cartridge. Many are designed to simulate smoking cigarettes or cigars, in their use and/or appearance.<sup>1</sup>

Among New Jersey high school students, 12.1% ( $\pm 2.4$ ) reported being current users of e-cigarettes in 2014, which was a significant increase from 6.1% ( $\pm 1.5$ ) in 2012 making e-cigarettes the most popular currently used product assessed by the NJYTS. Prevalence also increased among all demographic groups, including significant increases for male (14.3  $\pm$  2.8% vs 7.8  $\pm$  2.5%), female (10.1  $\pm$  2.7% vs 4.3  $\pm$  1.1%), and White (14.1  $\pm$  2.8% vs 6.4  $\pm$  2.2%) students. In addition, there were differences in current e-cigarette prevalence by demographic group. White students exhibited the highest prevalence of current e-cigarette use, and their rate was significantly greater than that of Black students (Table 2). There also were significant differences by grade level, such that 12<sup>th</sup> graders reported higher rates of use than 9<sup>th</sup> graders, and prevalence increased with grade level. Males reported current e-cigarette use at a higher rate than females, but this difference was

not statistically significant.

**Figure 6: Prevalence of current use of e-cigarettes among all high school students, by gender, race/ethnicity, and grade level — NJYTS 2012-2014**

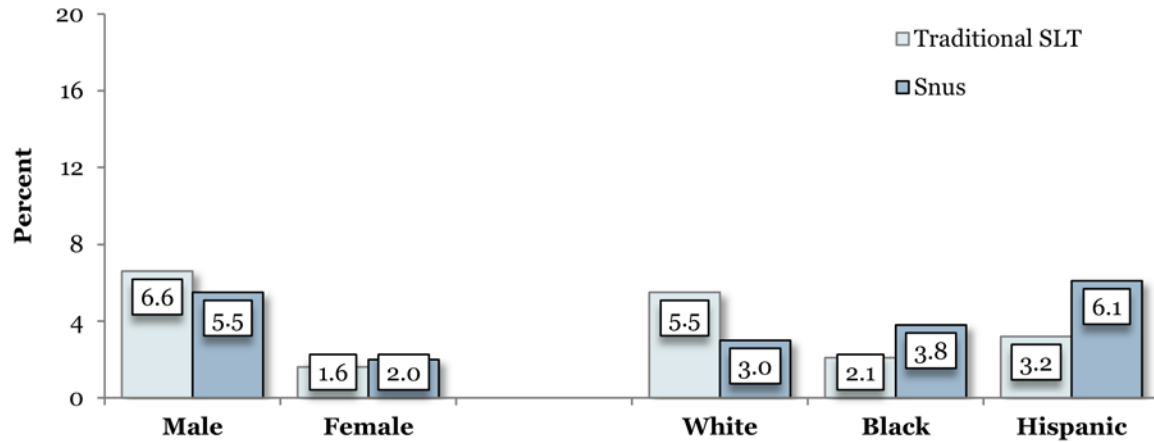


### Current Snus Use

Another tobacco product gaining popularity is snus, a spitless smokeless tobacco product which is used by placing under the upper lip. Among New Jersey high school students, snus was the least popular tobacco product, with an estimated prevalence of 3.8% ( $\pm 0.8$ ); however current use of this product has increased slightly since 2012 (2.3  $\pm 0.8$ %). As with traditional smokeless tobacco (SLT) products, prevalence was notably higher for males relative to females. However, in contrast to traditional SLT, where White high school students reported the highest prevalence of current use, Hispanic students reported significantly

higher rates than White students of current snus use (Figure 7).

**Figure 7: Prevalence of current use of traditional SLT and snus products among all high school students, by gender and race/ethnicity — NJYTS 2014**



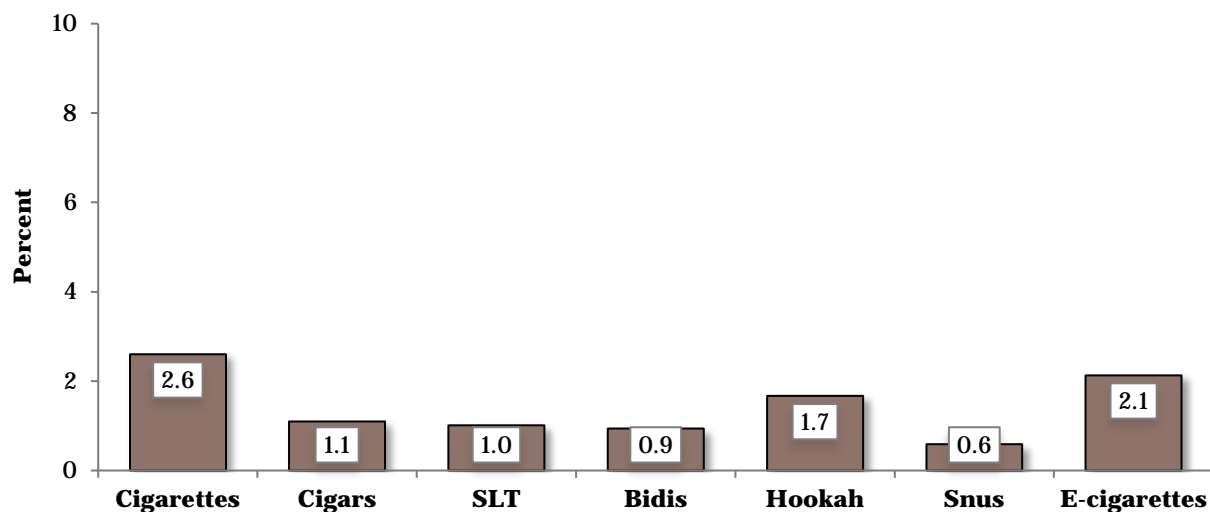
### Frequent Use of Cigarettes

The NJYTS also examined the prevalence of frequent cigarette smoking, defined as smoking cigarettes on 20 or more days of the 30 days preceding the survey. Overall, 2.6% ( $\pm 0.9$ ) of high school students were frequent smokers in 2014, representing a slight decrease from 3.5% ( $\pm 0.7$ ) in 2012 and a significant decrease from 5.4% ( $\pm 1.1$ ) in 2010. The prevalence of frequent cigarette smoking generally trended upward with grade level, and prevalence among 12<sup>th</sup> graders (5.9  $\pm 2.5$ %) was significantly greater than that of 10<sup>th</sup> (1.7  $\pm 0.6$ %) and 9<sup>th</sup> graders (0.7  $\pm 0.5$ %). Additionally, frequent smoking was significantly more prevalent among White (3.4  $\pm 1.4$ %) than Black (0.9  $\pm 0.8$ %) high school students in 2014. Male high school students (3.2  $\pm 1.1$ %) reported higher rates of frequent smoking compared to female high school students (2.0  $\pm 0.9$ %), however this difference was not statistically significant as it had been in previous years.

### Frequent Use of Other Tobacco Products

Cigarettes, as noted above, had the greatest prevalence of frequent use by high school students for all tobacco products, and 31.6% ( $\pm 6.2$ ) of current smokers were also classified as frequent smokers. However, other products were also used frequently by a notable proportion of high school students (Figure 8). Specifically, 1.1% ( $\pm 0.3$ ) of students were frequent cigar users, 1.0% ( $\pm 0.5$ ) were frequent SLT users, 0.9% ( $\pm 0.4$ ) were frequent bidi users, 1.7% ( $\pm 0.5$ ) were frequent hookah users, 0.6% ( $\pm 0.2$ ) were frequent snus users, and 2.1% ( $\pm 0.6$ ) were frequent e-cigarette users, reporting using the respective product on at least 20 of the previous 30 days. This suggests that while frequent use of these products are not common, prevalence of frequent hookah and e-cigarette use is more prevalent among high school students than cigars, SLT, bidis, and snus.

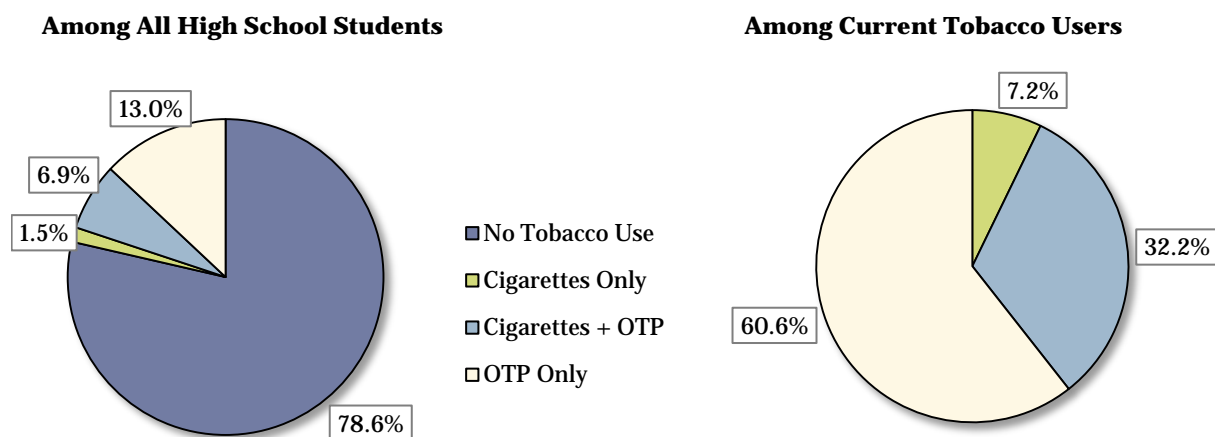
**Figure 8: Prevalence of frequent use among current users by type of tobacco product among all high school students – NJYTS 2014**



### Dual or Concurrent Tobacco Use

Among all high school students, 6.9% ( $\pm 1.7$ ) reported dual use of cigarettes and at least one other tobacco product (OTP: cigars, SLT, bidis, hookah, snus, and e-cigarettes), 13.0% ( $\pm 1.6$ ) reported use of OTP only, and 1.5% ( $\pm 0.5$ ) reported use of cigarettes only (Figure 9). These estimates highlight that concurrent use of cigarettes and OTP and use of OTP alone (i.e., tobacco users who do not use cigarettes but use at least one OTP) was more prevalent than use of cigarettes alone. In fact, among those that currently use any tobacco product, nearly one-third (32.2  $\pm 5.3$ %) use cigarettes concurrently with another product and 60.6% ( $\pm 5.4$ ) do not use cigarettes at all, whereas just 7.2% ( $\pm 2.2$ ) use cigarettes alone (Figure 9).

**Figure 9. Prevalence and concurrent use of cigarettes and other tobacco products (OTPs; includes cigars, SLT, bidis, hookah, snus, and e-cigarettes) - NJYTS 2014**

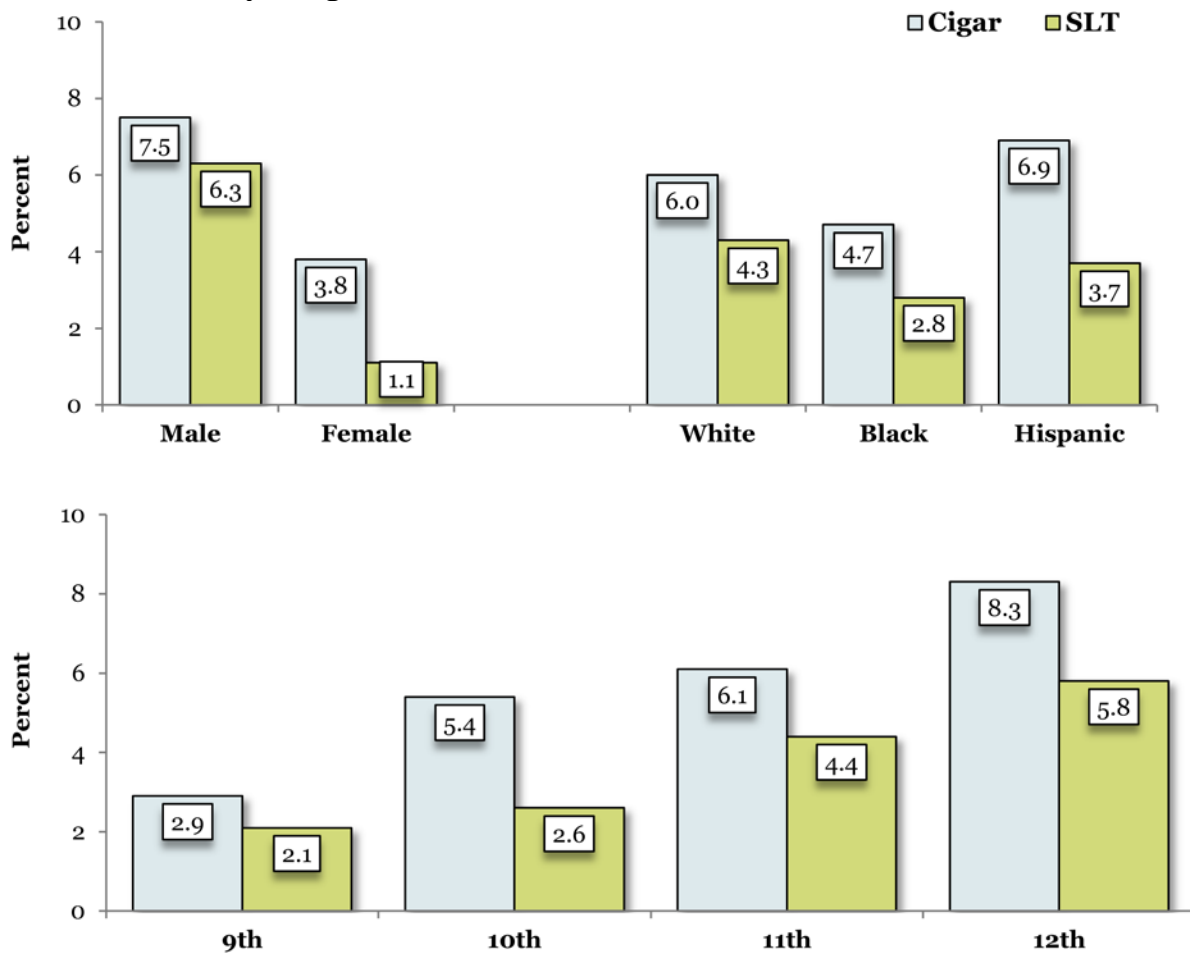


Male and female high school students reported similar rates of using cigarettes alone ( $1.6 \pm 0.8\%$  vs.  $1.4 \pm 0.9\%$ ) and of using cigarettes concurrently with OTP ( $7.7 \pm 2.2\%$  vs.  $6.1 \pm 1.6\%$ ). However, males ( $14.9 \pm 2.3\%$ ) reported use of OTP alone at a higher rate than females ( $11.1 \pm 1.7\%$ ). By race/ethnicity, there was a significantly higher prevalence of dual use reported among White ( $8.4 \pm 2.1\%$ ) high school students than among Black ( $3.2 \pm 1.9\%$ ) students, but no significant differences in prevalence of using cigarettes alone or OTP alone. Prevalence of dual use increased with grade level and was significantly greater among 12<sup>th</sup> graders ( $10.5 \pm 3.2\%$ ) than 9<sup>th</sup> graders ( $4.0 \pm 2.6\%$ ).

### Flavored Tobacco Products

The 2014 NJYTS assessed the consumption of flavored cigars (i.e., menthol/mint, fruit, alcohol/wine, or sweet candy-like flavor) among high school students, estimating that 5.6% ( $\pm 1.1$ ) of NJ high school students ( $81 \pm 6.0\%$  of current cigar smokers) smoked flavored cigars in the previous 30 days. Males ( $7.5 \pm 1.5\%$ ) reported significantly higher rates of flavored cigar use than females ( $3.8 \pm 1.0\%$ ), and flavored cigar use became more prevalent with higher grade level, with 12<sup>th</sup> graders ( $8.3 \pm 2.0\%$ ) reporting significantly higher

**Figure 10: Prevalence of current use of flavored products among all high school students, by gender, race/ethnicity, and grade level — NJYTS 2014**



rates of use than 9<sup>th</sup> graders (2.9 ±1.5%) (Figure 10). While there were no significant differences in prevalence by race/ethnicity, the highest rate was observed for Hispanics (6.9 ±2.1%), followed by Whites (6.0 ±1.3%), and Blacks (4.7 ±2.1%). Among those who smoked flavored cigars, the most popularly reported flavors were alcohol/wine (28.1 ±6.0%) and fruit (26.0 ±6.4%).

Students also were asked about use of flavored SLT products (mint/wintergreen, fruit, or other), and 3.7% (±1.1) of all high school students reported past 30-day use of flavored SLT. As with cigars, this represents a large majority of current SLT users (86.2 ±5.7%). Use of flavored SLT products varied significantly by gender, with male prevalence estimated at 6.3% (±1.8) relative to 1.1% (±0.6) for females (Figure 10). Prevalence was greatest among White students (4.3 ±1.3%), followed by Hispanic (3.7 ±2.0%) and Black (2.8 ±1.1%) students, but these differences were not statistically significant. There were also no statistical differences by grade, although prevalence did tend to increase with grade level from 2.1% (±1.4) among 9<sup>th</sup> graders to 5.8% (±2.1) among 12<sup>th</sup> graders. Mint or wintergreen flavored SLT was used by the majority (58% ±9.4%) of flavored SLT users.

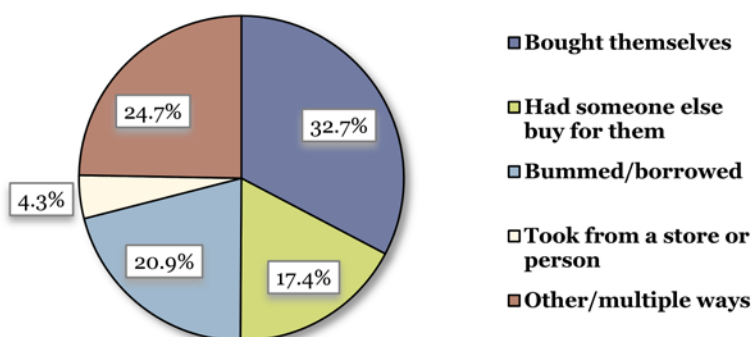
### Strategies to Reduce Youth Smoking

Strategies to reduce youth smoking include policies and programs that attempt to change social norms, availability, and/or regulation of tobacco. This section addresses youth access to tobacco, exposure to secondhand smoke, awareness of empowerment program activities, and interest in smoking cessation services among New Jersey youth.

#### Access and Purchasing of Cigarettes

As shown in Figure 11, the most common way of obtaining cigarettes for current high school smokers was buying the product in stores themselves (32.7 ±5.9%), followed by borrowing or “bumming” them (20.9 ±3.9%). In April 2006, the state of New Jersey raised the legal age to purchase cigarettes from 18 years to 19 years. Despite this increase in the legal age, in 2014, nearly one-third (32.3 ±6.0%) of current high school smokers under the age of 19 reported usually obtaining their cigarettes by buying them in stores. This rate is similar to that reported in 2012 (36.6 ±8.0%). Additionally, in 2014, 67.9% (±7.3) of current smokers in high school under the age of 19 who bought or tried to buy cigarettes in the 30 days preceding the survey reported they were **not** refused because of their age. This indicates that the prevalence of underage sales has not improved since 2006 (60.2 ±5.0%).

**Figure 11: Means of obtaining cigarettes in the past 30 days among current cigarette smokers — NJYTS 2014**



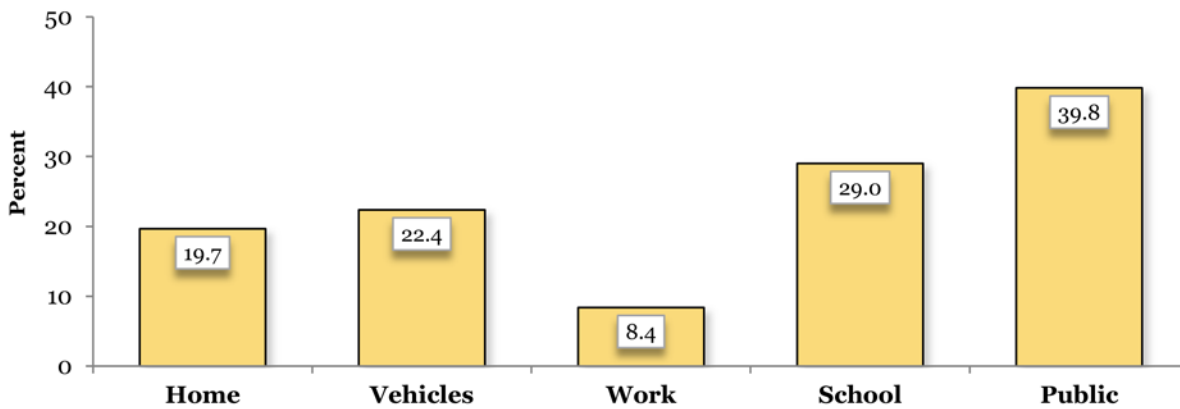


The unchanged availability of retail cigarettes over the past several years suggests a need for increased and continued enforcement of tobacco age of sale regulations in New Jersey. Further, youth may obtain cigarettes by purchasing a single cigarette, known as a loose cigarette or “loosie.” Although the sale of loose cigarettes is illegal in New Jersey, many youth reported access to them. Similar to prior years, 34.1% ( $\pm 3.8$ ) of high school students reported awareness of places that sold loose cigarettes, and awareness was significantly more prevalent among Black ( $48.6 \pm 8.3\%$ ) and Hispanic ( $41.2 \pm 5.5\%$ ) high school students than among White students ( $27.9 \pm 3.8\%$ ).

### Secondhand Smoke

The New Jersey Smoke-Free Air Act (NJSFAA), enacted on April 15, 2006, prohibits smoking in most indoor public places and workplaces. The NJYTS assesses possible exposure to SHS while at work. Among all high school students, 8.4% ( $\pm 1.2$ ) reported they had breathed the smoke from someone who was smoking in the place where they worked, a significant decrease from 2006 ( $10.8 \pm 1.3\%$ ). These significant declines in reported exposure to secondhand smoke in homes or vehicles, or at work, suggest that the NJSFAA may have had some success in reducing youth exposure to secondhand smoke. However, the 2014 NJYTS also assessed exposure to environmental tobacco smoke on school grounds and public places, finding that 29% ( $\pm 3.8$ ) and 39.8% ( $\pm 2.5$ ) of students reported exposure to secondhand smoke on school grounds and in indoor or outdoor public spaces, respectively (Figure 12). These exposure rates suggest that the enforcement of smoke-free regulations may be lacking in certain public spaces.

**Figure 12: Exposure to secondhand smoke during the past 7 days, by location, among all high school students – NJYTS 2014**



In 2014, 81.2% ( $\pm 2.5$ ) of high school students reported that smoking was never allowed inside their home, and 76.8% ( $\pm 2.7$ ) reported that smoking was never allowed in the vehicles they or their family own or lease. Meanwhile, 28.5% ( $\pm 3.5$ ) of high school students reported being exposed to secondhand smoke (SHS) in either their homes or in vehicles in which they were riding in the seven days preceding the survey. Overall, this finding represents a significant decline from 48.1% ( $\pm 4.1$ ) in 2010 and earlier years, but no change from

28.3% ( $\pm 5.5$ ) in 2012 (Figure 13). While there were no statistical differences in SHS exposure in homes or vehicles by demographic group, prevalence tended to increase with grade level (from 24.3  $\pm 3.4\%$  among 9<sup>th</sup> graders to 31.9  $\pm 5.0\%$  among 12<sup>th</sup> graders) and was somewhat higher among White students than Black students (31.5  $\pm 4.8\%$  vs. 23.8  $\pm 5.2\%$ ).

Among all high school students, 27.8% ( $\pm 3.2$ ) reported living with a

smoker, representing no significant change from 2012 (26.3  $\pm 3.6\%$ ). This is an important consideration, as smoking prevalence was significantly higher among those students who live with a cigarette smoker relative to those who do not (13.1  $\pm 3.7\%$  vs. 6.3  $\pm 1.3\%$ ), highlighting the role that family members play in youth smoking behavior.

### Youth Empowerment

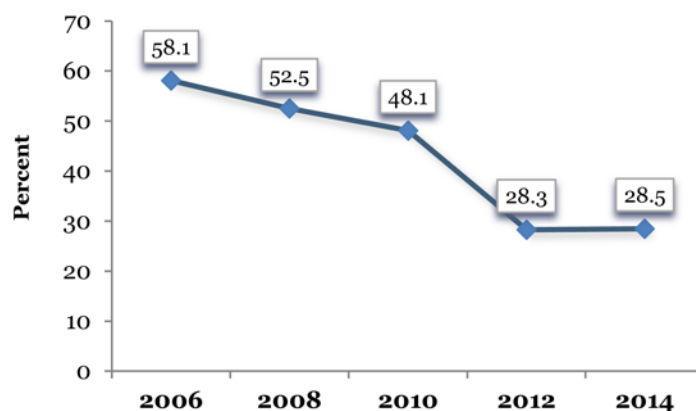
The 2014 NJYTS included questions on awareness of youth tobacco advocacy activities. Among New Jersey high school students, 35.9% ( $\pm 3.5$ ) reported being taught in classes why tobacco should not be used and 15.7% ( $\pm 2.3$ ) reported practicing ways in classes to say 'No' to tobacco. In addition, 9.7% ( $\pm 1.9$ ) reported having participated in school-organized activities to discourage people their age from using cigarettes or other tobacco products in the past 12 months. There were no demographic differences associated with participation in these school-organized activities.

### Smoking Cessation

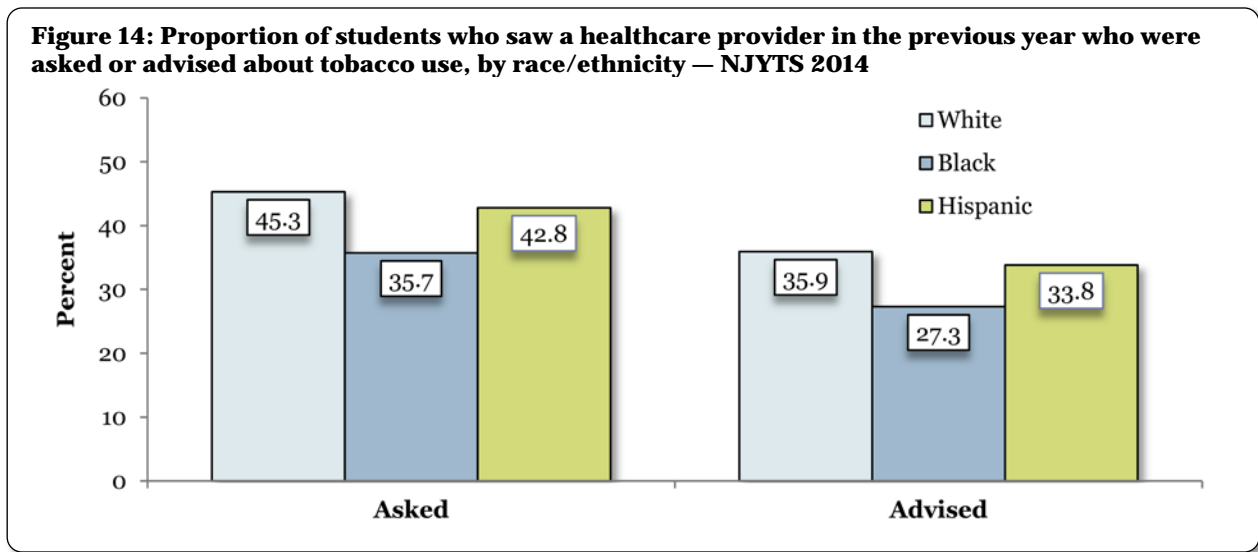
In 2014, 46.7% ( $\pm 6.9$ ) of current high school smokers reported the desire to stop smoking; of those, 80.2% ( $\pm 7.7$ ) had made an attempt to quit in the previous 12 months. There were no significant differences in the desire to quit by gender or grade level; however the desire to quit smoking was significantly more prevalent among Black smokers (79.5  $\pm 21.5\%$ ) as compared to White (46.7  $\pm 7.4\%$ ) and Hispanic (37.4  $\pm 11.7\%$ ) smokers. There were no statistically significant differences in the proportion of current smokers who reported wanting to stop smoking between 2012 (44.5  $\pm 9.8\%$ ) and 2014.

Despite nearly half expressing a desire to quit, only 48.3% ( $\pm 7.8$ ) of past-year tobacco users who had made a quit attempt reported use of a cessation aid, such as a school program, quit line, or nicotine replacement therapy. Additionally, only 36.0% ( $\pm 6.1$ ) of high school smokers had heard of NJQuitline, a telephone counseling service to help teens and adults quit smoking.

**Figure 13: Prevalence of exposure to secondhand smoke in home or cars during the past 7 days, among all high school students – NJYTS 2006 – 2014**



Among all high school students who had seen a health care professional in the previous year, 42% ( $\pm 4.0$ ) reported they had a doctor, dentist, nurse or other health professional ask them if they used tobacco during the previous 12 months, and 33.8% ( $\pm 3.1$ ) reported a health professional had advised them against using tobacco of any kind. These rates were somewhat higher for current smokers who had seen a health care professional in the previous year ( $53.2 \pm 6.9\%$  and  $49.1 \pm 6.9\%$ , respectively); however these rates highlight that a large proportion of youth are not being asked or advised about tobacco use by their healthcare providers. The proportions of students being asked or advised about tobacco use by a healthcare provider did not differ by gender; however a significantly lower percentage of Black students than White students reported being asked about tobacco use ( $35.7 \pm 5.2\%$  vs  $45.3 \pm 4.3\%$ ) and advised against tobacco use ( $27.3 \pm 4.4\%$  vs  $35.9 \pm 3.9\%$ ) by a healthcare provider (Figure 14). Additionally, 11<sup>th</sup> ( $47.3 \pm 5.3\%$ ) and 12<sup>th</sup> ( $48.6 \pm 4.4\%$ ) graders reported significantly higher rates of being asked about tobacco use by a healthcare provider than did 9<sup>th</sup> ( $34.7 \pm 4.8\%$ ) graders.



## CONCLUSIONS

### Overview of Findings

The *2014 New Jersey Youth Tobacco Survey: A Statewide Report* provides an opportunity for assessing short and long-term impact of tobacco control programming in New Jersey. When comparing 2014 to a decade prior in 2004, several successes in youth tobacco use are notable. Since 2004, the overall prevalence of ever or lifetime tobacco use among high school students decreased from 53.9% ( $\pm 3.0$ ) to 35.1% ( $\pm 3.3$ ) and current use of any tobacco among high school students decreased from 26.8% ( $\pm 3.0$ ) to 14.2% ( $\pm 2.6$ ). Current use of cigarettes and cigars, as well as exposure to secondhand smoke, has also decreased significantly over the past decade.

Although cigarette and cigar smoking, historically the most popularly used products among New Jersey high school students, has decreased steadily since the inception of the NJYTS, prevalence of other emerging tobacco products has increased substantially over the past two years. Specifically, e-cigarettes and hookah have surpassed cigars, becoming the second and third most prevalently tried products and have overtaken both cigarettes and cigars as the top two currently used products among high school students in New Jersey. Meanwhile, declines in the rates of both ever and current use of SLT, bidis, and snus have stalled, remaining statistically unchanged since 2012.

It is also important to note that roughly four out of five current cigar and current SLT users reported that the products they used were flavored. Flavors can mask the harshness and taste of tobacco, making flavored tobacco products appealing to youth. And with flavors now banned in cigarettes, youth may increasingly turn to cigars and other products that are still able to offer flavored brands. E-cigarettes are also known to offer flavored products, and the market for e-cigarettes is fast-growing. In fact, prevalence of both ever and current e-cigarette use among NJ high school students nearly doubled from 2012 to 2014. Continued monitoring of e-cigarette use, as well as all flavored tobacco products, is needed to assess trends over time and inform policy and program interventions.

Although the current smoking prevalence among New Jersey high school students has decreased, racial/ethnic disparities persist, such that both White and Hispanic students reported significantly higher rates than Blacks. Demographic disparities exist for other products as well. High school males reported greater rates of current use of cigars, SLT, bidis, and snus compared to high school females. By race/ethnicity, White and Hispanic students reported greater rates of cigarette smoking than Black students; Hispanic students reported higher rates of bidi, hookah, and snus use than White students; and White students reported the highest rates of e-cigarette use, frequent cigarette smoking, and concurrent use of cigarettes and other tobacco products. These findings underscore the importance of monitoring the differing patterns of tobacco product use across sex and racial/ethnic groups.

The number of New Jersey youth who obtain their cigarettes from retail outlets continues to increase. In

2014, 32% of high school smokers under the age of 19 purchased their cigarettes from a retail store, representing an increase from 29% of underage smokers in 2004. Further, 69% of smokers who bought or tried to buy cigarettes in a retail store were not asked to show proof of age, compared to 60% in 2006, and 34% of students indicated awareness of retailers that (illegally) sold single or loose cigarettes (aka “loosies”). Black and Hispanic high school students reported awareness of such retailers at significantly higher rates than White students. These findings suggest that it continues to be easy for youth to obtain cigarettes through illegal retail sale.

Secondhand smoke (SHS) exposure is a New Jersey tobacco control priority area monitored by the NJYTS. Since the enactment of the New Jersey Smoke-Free Air Act (NJSFAA) on April 15, 2006, a significant reduction in the percent of high school students reporting SHS exposure at work was reported in 2014 (8.4% versus 20.4% in 2006). Further, there was a significant decrease in reported SHS exposure in either homes or cars during the seven days preceding the survey from 2006 to 2012; however there was no change from 2012 to 2014. While these results suggest the NJSFAA may have helped reduce exposure to SHS among New Jersey youth, children continue to experience exposure to secondhand smoke in other places, including school grounds (29%) and indoor or outdoor public places (40%), suggesting that enforcement of smoke-free regulations may be lacking in certain public spaces.

### **Limitations**

Several limitations of the 2014 NJYTS warrant notation. First, although the survey instrument did not change from 2012 to 2014, the wording of some questions in the 2012 survey was slightly modified from the 2010 and earlier surveys. In addition, the order of presentation for some question groups (for example, questions on quitting tobacco products) was different in the 2012 version of the NJYTS compared to the 2010 NJYTS. These changes in wording and item presentation may have affected students’ responses, and thus reported prevalence. As a result, comparisons of estimates from 2012 and 2014 with those of prior years should be interpreted with caution.

Second, in 2006 New Jersey passed a law to raise the legal age to purchase tobacco from 18 to 19 years. The 2006, 2008, and 2010 NJYTS did not ask survey participants to identify their exact age if they were older than 18, however, the NJYTS was modified in 2012 and 2014 to allow for identification of high school students age 19 or older. Thus, estimates of prevalence of under-age purchases of tobacco products derived from the 2012 and 2014 NJYTS are not directly comparable to the 2006 - 2010 estimates.

Third, private schools were included in the sampling frame in the 1999, 2001, and 2004 NJYTS administrations, but not in any thereafter. Analyses of NJYTS data indicate that the inclusion of private school students resulted in slightly lower estimates of tobacco use<sup>5</sup> and as such, should be considered when comparing trends over time.

Fourth, the questions about e-cigarettes were added in 2012, so comparisons over time are limited to the

latest two NJYTS administrations. Further, hookah questions have only been included since 2008, so comparisons with earlier dates are not possible.

Lastly, while NJYTS data is useful to monitor outcome indicators such as smoking prevalence, it cannot be used to determine causality; as such, the NJYTS cannot assess the direct impact of state tobacco control programming on the prevalence of tobacco use among New Jersey youth.

## Recommendations

After more than a decade of tobacco control programming in New Jersey, it appears that overall tobacco use is decreasing again among NJ youth. However, the increasing popularity of other forms of tobacco plus new, emerging tobacco products, warrants concern. For instance, e-cigarettes and hookah have now surpassed traditional cigarettes and cigars in popularity among youth. Further, a considerable proportion of SLT, bidi, cigar, and e-cigarette users are using these respective products frequently, and half of current tobacco users are concurrently using cigarettes as well as at least one other tobacco product. Finally, an overwhelming majority of cigar and SLT users are opting for flavored versions of these products. In light of these findings, strategies to prevent and reduce youth tobacco use – price, access, education, and counter marketing – should focus on *all* tobacco products, especially targeting emerging and flavored products. For example, legislation to protect youth from flavored tobacco products via bans has passed in New York City and Chicago<sup>4</sup>. Such efforts in New Jersey at the state or local level may be useful in reducing youth consumption of these products.

An upward trend in the availability of tobacco to underage youth has been observed. In 2009, the Tobacco Age of Sale (TASE) program, whose efforts successfully increased the proportion of merchants in compliance with the age-of-sale law, was restructured, and the number of random retail inspections decreased. At the same time, the proportion of youth who reported obtaining their cigarettes from retail outlets and/or reported not being asked for proof of age when buying cigarettes has risen<sup>5</sup>. In addition, youth awareness of retailers that sold single or loose cigarettes has persisted. Finally, the increased prevalence of hookah use among high school students suggests that NJ youth are either (illegally) consuming tobacco at “hookah bars” or purchasing tobacco for use in a personal hookah pipe. To reduce illegal sales of tobacco products to youth, tobacco sales regulations and enforcement in New Jersey should be strengthened. The Office of Tobacco Control has introduced new Point of Sale surveillance strategies and should continue these along with existing inspection efforts.

Since New Jersey passed the NJSFAA in 2006 banning smoking in public places, including worksites, a significant decrease in the proportion of students reporting exposure to SHS at work, in their homes or vehicles has been observed. Although this suggests a positive impact of the NJSFAA, some SHS exposure still persists, as a notable proportion of NJ high school students report exposure in both indoor and outdoor public spaces. To further reduce SHS exposure among youth, New Jersey tobacco control programs should increase enforcement of NJSFAA regulations in both indoor and outdoor spaces.<sup>6</sup>

## TECHNICAL NOTES

### Instrument

Students were surveyed using the 2014 NJYTS instrument which was designed to meet specific needs of the OTC. The NJYTS addresses eight content areas: tobacco prevalence, access to tobacco, smoking cessation, smoking intention, perceived consequences of tobacco use, mass media, awareness of tobacco industry strategies, and environmental tobacco smoke. In 2014, race/ethnicity data was collected in a manner consistent with the 2009 NYTS and NYRBS<sup>7</sup>, which differs from pre-2008 administrations of the NJYTS. To draw comparisons to state and national trends from previous YTS administrations, the data collected from these two variables were combined to create an overall race variable according to the algorithm currently used for the NYRBS. Race/ethnicity was determined by responses to two questions: 1) "Are you Hispanic or Latino?" (Yes/No), and 2) "What race or races do you consider yourself to be?" ("American Indian or Alaska Native," "Asian," "Black or African American," "Native Hawaiian or other Pacific Islander," or "White"). For this report, students answering "Yes" to the first question were classified as Hispanic; students answering "No" to the first question were classified according to their response to the second question.<sup>7</sup> In 2008, questions about hookah use were introduced to the YTS questionnaire, and in 2012, questions about e-cigarette and snus use. For consistency when comparing trends over time, use of hookah, e-cigarette and snus were excluded when calculating lifetime and current rates of *any* tobacco use.

### Sample

A two-stage cluster design was used to obtain a representative sample of students in grades 9-12. The first-stage sampling frame consisted of all public high schools in New Jersey and was then stratified by percent minority enrollment. Schools were selected with a probability proportional to size (PPS), within each stratum, without replacement, for a total of 50 high schools. The second stage of sampling involved the random selection of approximately 4 classes within sampled schools.

The NJYTS surveyed a representative sample of all public high school students in New Jersey. The survey was administered to 3953 high school students (grades 9-12) in 41 schools throughout New Jersey, of which 3909 completed usable questionnaires. An overall participation rate of 70.2% was achieved. Overall participation rates were calculated by multiplying the school participation rate (82%) by the student participation rate (85.6%). The data were weighted to adjust for non-response and the varying probabilities of selection providing results representative of New Jersey's 9<sup>th</sup>-12<sup>th</sup> grade student population.

### Analysis

SUDAAN 11.0.1 and SAS 9.4 survey procedures, which account for the complex sample design of the survey<sup>8</sup>, were used to generate all prevalence and variance estimates. Differences between estimates were considered statistically significant at the  $p = 0.05$  level if 95% confidence intervals did not overlap.<sup>8</sup>

## GLOSSARY

<b>Bidis</b>	Small, brown, hand-rolled cigarettes primarily made in India and other Southeast Asian countries; often flavored.
<b>CDC</b>	Centers for Disease Control and Prevention; an agency of the US Department of Health and Human Services.
<b>Current Use</b>	Defined as the use of tobacco on one or more of the 30 days preceding the survey.
<b>E-cigarette</b>	Electronic cigarette, also electronic vaping device, personal vaporizer, or electronic nicotine delivery system (ENDS); a battery-powered device which simulates tobacco smoking.
<b>Ever Use</b>	Defined as the use of a tobacco product over the course of one's lifetime.
<b>Frequent Use</b>	Defined as the use of a tobacco product on 20 or more days of the past 30.
<b>High School Students</b>	Students who were in 9 <sup>th</sup> , 10 <sup>th</sup> , 11 <sup>th</sup> , or 12 <sup>th</sup> grade at the time of the survey.
<b>Hookah</b>	A water pipe that is used to smoke tobacco and flavored tobacco usually in a group setting; also called hubble-bubble, water-pipe or narghile.
<b>NJYTS</b>	The New Jersey Youth Tobacco Survey is a population-based survey to monitor tobacco use among New Jersey youth.
<b>NYRBS</b>	The National Youth Risk Behavior Survey is a population-based survey designed to monitor priority health risk behaviors that contribute markedly to the leading causes of death, disability, and social problems among youth in the United States.
<b>OTC</b>	The Office of Tobacco Control (formerly the Comprehensive Tobacco Control Program) is the current tobacco control program at NJDOH. Its mission is to decrease deaths, sickness and disability among New Jersey residents who use tobacco or are exposed to SHS.
<b>OTP</b>	Other tobacco products (tobacco products other than cigarettes).
<b>SHS</b>	Secondhand smoke; a mixture of the smoke given off by the burning end of a cigarette, pipe, or cigar and smoke exhaled from the lungs of smokers.
<b>SLT</b>	Smokeless tobacco (such as chew, snuff or dip).
<b>Snus</b>	A moist powder smokeless tobacco product used by placing under the upper lip.
<b>TASE</b>	Tobacco Age of Sale Enforcement.



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