



# Iowa Youth Tobacco Use Rates

Iowa Youth Survey: 2018, 1999-2018 Trends



Division of Tobacco Use Prevention and Control

May 2019

**Iowa Department of Public Health**  
Protecting and Improving the Health of Iowans



## Acknowledgements

Suggested Citation:

Iowa Department of Public Health. Division of Tobacco Use Prevention and Control. *Iowa Youth Tobacco Use Rates: Iowa Youth Survey—2018, Trends 1999-2018*. Des Moines: Iowa Dept. of Public Health, 2019. <https://idph.iowa.gov/tupac/statistics>.

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## Executive Summary

### Iowa Youth Survey Background:

The Iowa Youth Survey (IYS) is designed to help state-level planners, community agencies and school personnel understand youth developmental needs, implement targeted interventions and assess outcomes.<sup>1</sup> Questions in the IYS cover both youth behaviors (tobacco and other substance use, diet, exercise, extracurricular activities, etc.) and their social environments (school, family, community, peers).

Between 1999 and 2008, the IYS was conducted every three years. Since 2008, the IYS has been conducted every two years in even-numbered years. All schools in Iowa with students in grades six, eight and 11 are asked to administer the IYS to each of their students in those grades. In 2018, 70,451 usable responses were received from students in these three grades.

The IYS has included questions about youth use of cigarettes, smokeless tobacco and cigars since 1999. Since 2014, the IYS has also covered e-cigarette use, and since 2016, water pipe/hookah use. Data from nine IYS survey years (1999, 2002, 2005, 2008, 2010, 2012, 2014, 2016 and 2018) were used to create this document.

### 2018 IYS findings on tobacco use among Iowa youth:

- Almost 1 in 4 11<sup>th</sup> grade students use tobacco (24.0%).
- One in 11 eighth grade students use tobacco (9.2%).
- One in 33 sixth grade students use tobacco (2.8%).

### Most used products:

- E-cigarettes are the most used tobacco product in every grade.
- Cigarettes are the second-most used tobacco product in every grade.
- E-cigarette use is about four times higher than cigarette use among 11<sup>th</sup> grade students
- E-cigarette use is about three times higher than cigarette use among eighth and sixth grade students.
- About 9 of every 10 tobacco users in sixth, eighth and 11<sup>th</sup> grade use e-cigarettes.

### 1999-2018 Iowa Youth Survey findings: Tobacco use trends among 11<sup>th</sup> grade students:

- Long-term, any tobacco use among 11<sup>th</sup> grade students decreased. In 1999, the any tobacco use rate was 37.9%. In 2018 it was 24%.
- Short-term, between 2016 and 2018, the rate of any tobacco use among 11<sup>th</sup> grade students in Iowa increased--rising from 14.7% to 24%.
- This short-term increase was due to the unprecedented increase in e-cigarette use.
- Since 1999, among 11<sup>th</sup> grade students, for the three tobacco products for which there are long-term trends (cigarettes, smokeless tobacco and cigars), use has trended downward.
- Cigarettes were the most used tobacco product in 1999—but now their use has fallen to the second most used product—behind e-cigarettes.

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- Cigarette use dropped between 1999 and 2018 - from 33.1% to 5.6%.
- Cigars use dropped between 1999 and 2018 - from 12.8% to 2.7%.
- Smokeless tobacco products use dropped between 1999 and 2018 - from 9.7% to 3%.

## Glossary

**Any tobacco:** The tobacco products that have had their use queried in the IYS have changed through the years and as a result, so are the products included in the calculation of “any tobacco use.” In this report, “any tobacco use” rates for:

1999-2012 are based on the use of cigarettes, cigars and smokeless tobacco;

2014 are based on the use of these three products plus e-cigarettes; and

2016 and 2018 are based on the use of five tobacco products (cigarettes, cigars, smokeless tobacco, e-cigarettes and water pipes/hookahs).

(See Appendix A for more details on the calculation across years of “any tobacco use” rate in this document.)

**E-cigarettes:** Refers to all electronic smoking and vaping devices, including mods, pods, JUUL, vape-pens, hookah-pens, e-hookahs, e-cigars, e-pipes, personal vaporizers, mods and other rechargeable vaping products.

**Smokeless tobacco:** Refers to chew, snuff, plug, snus and dipping tobacco products.

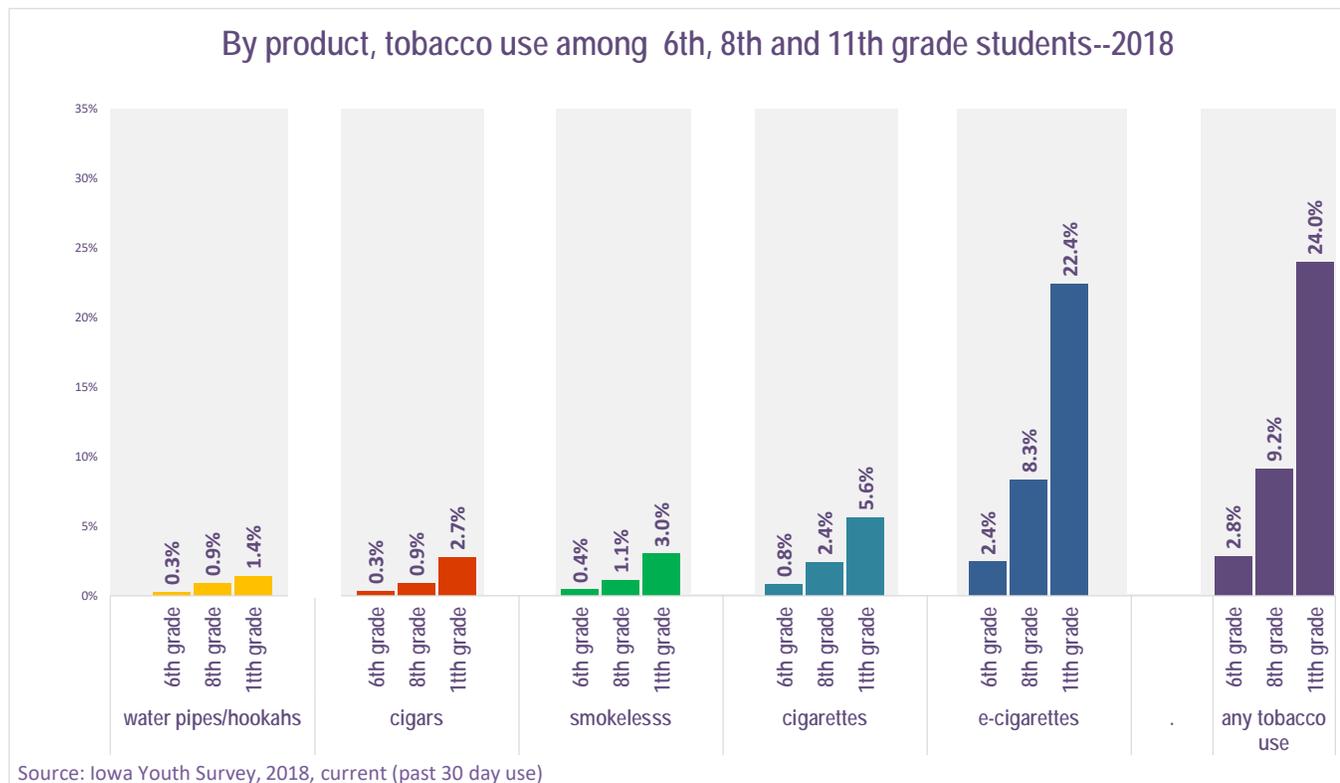
## List of Acronyms

IDPH ..... Iowa Department of Public Health

IYS..... Iowa Youth Survey

## Iowa Youth Tobacco Use—2018

Figure 1 Tobacco use among 6<sup>th</sup>, 8<sup>th</sup> and 11<sup>th</sup> grade students--2018



### Any tobacco use:

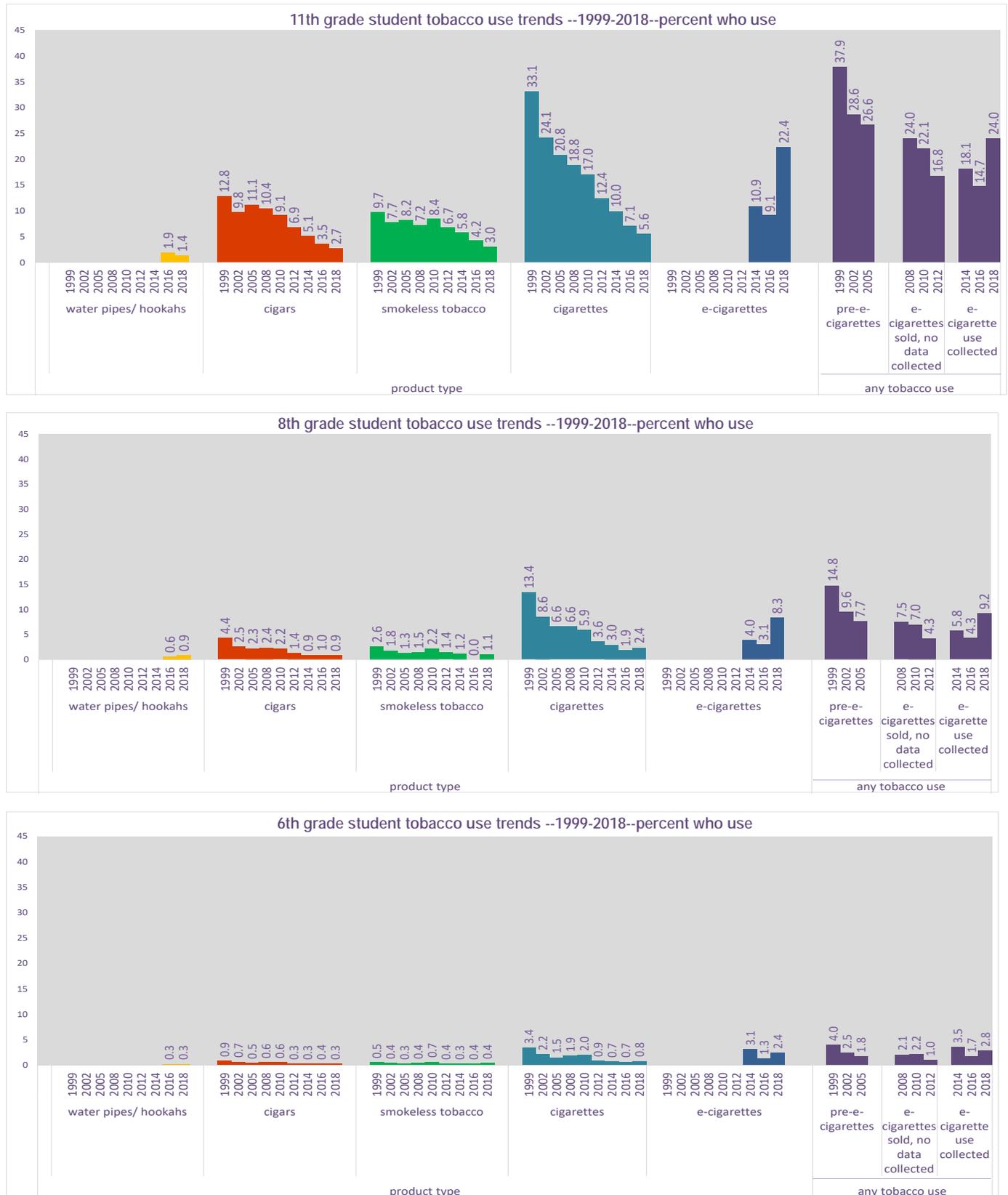
- Almost 1 in 4 11<sup>th</sup> grade students uses tobacco (24%).
- One in 11 8<sup>th</sup> grade students uses tobacco (9.2%).
- One in 33 6<sup>th</sup> grade students uses tobacco (2.8%).

### Most used products:

- E-cigarettes are the most used tobacco product in every grade.
- Cigarettes are the second-most used tobacco product in every grade.
- The rate of e-cigarette use is about four times higher than the rate of cigarette use among 11th grade students.
- The rate of e-cigarette use is about three times higher than the cigarette use rate among eighth and sixth grade students.
- About 9 of every 10 tobacco users in each grade use e-cigarettes.

# Iowa Youth Tobacco Use: Trends—1999-2018

Figure 2 Tobacco use trends among 6th, 8th and 11th grade students--1999 to 2018



11<sup>th</sup> grade trends 2016 to 2018:

E-cigarettes:

- Between 2016 and 2018, the 11<sup>th</sup> grade rate of e-cigarette use more than doubled - rising from 9.1% to 22.4%.

Cigarettes:

- Between 2016 and 2018, the 11<sup>th</sup> grade rate of cigarette use dropped from 7.1% to 5.6%.

Smokeless tobacco:

- Between 2016 and 2018, the 11<sup>th</sup> grade rate of use of smokeless tobacco dropped from 4.2% to 3.1%.

Cigars:

- Between 2016 and 2018, the 11<sup>th</sup> grade rate of use cigars dropped from 3.5% to 2.7%.

Water pipes/hookahs:

- In 2016, the water pipe/hookah use rate among 11<sup>th</sup> grade students was 1.9% and in 2018, 0.9%-- down 1 percentage point. (Water pipe/hookah use was not collected by the IYS until 2016.)

Any-tobacco use:

- Between 2016 and 2018, the 11<sup>th</sup> grade rate of any tobacco use among 11<sup>th</sup> grade students increased from 14.7% to 24%.
- The increase in use of any tobacco between 2016 and 2018 was driven by the unprecedented increase in e-cigarette use.

11<sup>th</sup> grade long-term trends--1999 compared to 2018:

Cigarettes, smokeless tobacco and cigars:

- Since 1999, use of cigarettes, smokeless tobacco and cigars has trended downward.
- Cigarette use was 33.1% in 1999 and 5.6% in 2018.
- Smokeless tobacco use was 9.7% in 1999 and 3.0% in 2018.
- Cigar use was 12.8% in 1999 and 2.7% in 2018.

Any tobacco use:

- Long-term, the any tobacco use rate among 11<sup>th</sup> grade students was lower in 1999 than in 2018. The any tobacco use rate was 37.9% in 1999 and 24% in 2018.
- Short-term, due to the introduction of e-cigarettes, the rate of any tobacco use has increased. The any tobacco use rate was 14.7% in 2016 and 24% in 2018.
- In 2018 among 11<sup>th</sup> grade students, the any tobacco use rate inclusive of e-cigarettes was 24%. Exclusive of e-cigarettes it was 7.8% in 2018 (see Table 1.)

Table 1 Iowa Youth Survey tobacco use rates by grade, sex and current, ever use status, Iowa--2018

NOTE: In most cases, the IDPH Division of Tobacco Use Prevention and Control uses the 11th grade rates highlighted in yellow when providing youth tobacco use rates in Iowa for 2018 from the Iowa Youth Survey.

| Iowa Youth Survey · 2018 State of Iowa Results · Percent Who Use Tobacco |  |      |        |           |      |        |            |      |        |            |      |        |      |
|--|--|------|--------|-----------|------|--------|------------|------|--------|------------|------|--------|------|
| Any Tobacco Use,<br>Including E-cigarettes                               | Current: B28, B32, B33, B34, B35, B36, B37<br>Ever: B27, B28, B29, B30, B31, B32, B33, B34, B35, B36, B37, B38 |      |        |           |      |        |            |      |        |            |      |        |      |
|  | 6th Grade  |      |        | 8th Grade |      |        | 11th Grade |      |        | All Grades |      |        |      |
|  | TOTAL  | Male | Female | TOTAL     | Male | Female | TOTAL      | Male | Female | TOTAL      | Male | Female |      |
| <b>Current</b>   | 2.8  | 3.2  | 2.4    | 9.2       | 9.2  | 9.1    | 24.0       | 24.7 | 23.3   | 11.4       | 11.7 | 11.0   |      |
| <b>Ever</b>  | 7.2  | 8.4  | 5.9    | 18.3      | 18.9 | 17.7   | 39.1       | 38.8 | 39.5   | 20.6       | 21.0 | 20.0   |      |
| Any Tobacco Use,<br>Excluding E-cigarettes                               | Current: C28: B28, B32, B33, B34, B35, B36<br>Ever: B27, B28, B29, B30, B31, B32, B33, B34, B35, B36           |      |        |           |      |        |            |      |        |            |      |        |      |
|  | <b>Current</b>   | 1.0  | 1.1    | 0.9       | 3.1  | 3.3    | 2.8        | 7.8  | 9.2    | 6.3        | 3.7  | 4.2    | 3.2  |
|  | <b>Ever</b>  | 3.0  | 3.4    | 2.5       | 7.2  | 7.8    | 6.6        | 16.9 | 18.7   | 15.0       | 8.6  | 9.5    | 7.7  |
| Cigarettes   | Current: B28, B32, B36<br>Ever: B28, B29, B30, B32, B36  |      |        |           |      |        |            |      |        |            |      |        |      |
|  | <b>Current</b>   | 0.8  | 0.8    | 0.8       | 2.4  | 2.4    | 2.4        | 5.6  | 6.0    | 5.2        | 2.8  | 2.9    | 2.7  |
|  | <b>Ever</b>  | 1.5  | 1.7    | 1.2       | 4.6  | 4.8    | 4.4        | 11.2 | 11.7   | 10.7       | 5.5  | 5.8    | 5.2  |
| Menthol Cigarettes   | Current: B36   |      |        |           |      |        |            |      |        |            |      |        |      |
|  | <b>Current</b>   | 0.4  | 0.4    | 0.4       | 1.3  | 1.3    | 1.2        | 3.2  | 3.5    | 2.9        | 1.5  | 1.6    | 1.4  |
| Cigars   | Current: B33   |      |        |           |      |        |            |      |        |            |      |        |      |
|  | <b>Current</b>   | 0.3  | 0.3    | 0.3       | 0.9  | 1.1    | 0.7        | 2.7  | 3.9    | 1.6        | 1.3  | 1.6    | 0.8  |
| Smokeless Tobacco  | Current: B34<br>Ever: B31, B34   |      |        |           |      |        |            |      |        |            |      |        |      |
|  | <b>Current</b>   | 0.4  | 0.5    | 0.4       | 1.1  | 1.4    | 0.7        | 3.0  | 4.8    | 1.1        | 1.4  | 2.1    | 0.7  |
|  | <b>Ever</b>  | 0.9  | 1.1    | 0.6       | 2.5  | 3.3    | 1.7        | 7.3  | 10.6   | 4.0        | 3.4  | 4.7    | 2.0  |
| Water Pipe or Hookah   | Current: B35   |      |        |           |      |        |            |      |        |            |      |        |      |
|  | <b>Current</b>   | 0.3  | 0.2    | 0.3       | 0.9  | 1.0    | 0.9        | 1.4  | 1.6    | 1.1        | 0.8  | 0.9    | 0.7  |
| Electronic Cigarettes  | Current: B38<br>Ever: B37, B38   |      |        |           |      |        |            |      |        |            |      |        |      |
|  | <b>Current</b>   | 2.4  | 2.7    | 2.1       | 8.3  | 8.3    | 8.4        | 22.4 | 22.7   | 22.1       | 10.4 | 10.6   | 10.3 |
|  | <b>Ever</b>  | 5.9  | 7.0    | 4.7       | 16.6 | 17.1   | 16.1       | 36.8 | 36.1   | 37.6       | 18.8 | 19.2   | 18.5 |

The number of the question(s) in the 2018 IYS that were used to calculate the rates in this table are noted above (e.g., B28, B32 and B36 were used to calculate current cigarette use.) Current use is use in the past 30 days.

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## Appendix A – Any Tobacco Use Rate Calculation

Rate calculations in this document for “any tobacco use” and the availability of data on e-cigarette use:

E-cigarettes were introduced to the U.S. in 2007. Use of e-cigarettes initially grew slowly and their use was not queried in the IYS until 2014.

As a result, the IYS “any tobacco use” rates in this document for the 2008, 2010 and 2012 do not include e-cigarette use, and likely underestimate the overall use rate of tobacco for those years by approximately 1 percentage point for each of these years.<sup>a</sup>

Because the “any tobacco use” rates for the years 2008, 2010 and 2012 are likely underestimated, they are broken out separately from those “any tobacco use” rates before 2008 (when e-cigarettes were not available) and after 2012 (when e-cigarette use data was collected in the IYS) in the figures in this document.

Rate calculations in this document for “any tobacco use” and the availability of data on water pipe/hookah use:

The exclusion of water pipe use in the IYS questionnaire prior to 2016 is believed to have influenced the overall calculation of “any tobacco use” very little since the use rate of water pipes/hookahs is very low in Iowa (2% of 11<sup>th</sup> grade students in 2016 and 1% in 2018). In 2016, 97% of 11<sup>th</sup> grade students who did use water pipes also used another tobacco product.

<sup>a</sup> The estimate of “any tobacco use” rates for 2008 through 2012 being about 1 percentage point lower than they would be if e-cigarette use data had been used in their calculation is based on applying national youth e-cigarette use rates during these early years (when Iowa rates were not available) to the estimated percent of Iowa 11<sup>th</sup> grade e-cigarette users in 2014 who used only e-cigarettes in 2014, the earliest year for which a count of students who used only e-cigarettes is available. (See table below.)

| Year | Youth e-cigarette use rates   |  | % of all Iowa 11 <sup>th</sup> grade students who used only e-cigarettes | % of Iowa 11 <sup>th</sup> grade e-cigarette users who only use e-cigarettes-- who used no other tobacco product | Estimated number of percentage points that 2008, 2010 and 2012 IYS ‘any tobacco use’ rates are understated in this document due to e-cigarette use not being collected for those years |
|------|---|--|--|--|--|
|      | U.S. (National Youth Tobacco Survey- U.S high school) <sup>2,3,4,5,6,7,8,9,10</sup> | Iowa (IYS 11 <sup>th</sup> grade-- IYS is conducted in even numbered years only) |  |  |  |
| 2008 | not collected   | not collected  | not collected  | not collected  | =1.5% * .40 = 0.6 percentage points  |
| 2009 | not collected   | no survey  | no survey  | no survey  | no survey  |
| 2010 | not collected   | not collected  | not collected  | not collected  | =1.5% * .40 = 0.6 percentage points  |
| 2011 | 1.5%  | no survey  | no survey  | no survey  | no survey  |
| 2012 | 2.8%  | not collected  | not collected  | not collected  | =2.8% * .40 = 1.1 percentage points  |
| 2013 | 4.5%  | no survey  | no survey  | no survey  |  |
| 2014 | 13.4%   | 10.9%  | 4.4%   | 40%<br>(4.4%/10.1%)  |  |
| 2015 | 16.0%   | no survey  | no survey  | no survey  |  |
| 2016 | 11.3%   | 9.1%   | 4.7%   | 48%<br>(4.7%/9.1%)   |  |
| 2017 | 11.7%   | no survey  | no survey  | no survey  |  |
| 2018 | 20.8%   | 22%  | 16%  | 73%<br>(16%/22%)   |  |