

AND THE KIDS VAPED ON: TEENS, TOBACCO, AND THE NATIONAL YOUTH TOBACCO SURVEY

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CENTER FOR TOBACCO PRODUCTS

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AGENDA

- Background
- Methods
- Results
- Conclusions



BACKGROUND



- Most tobacco use behaviors are initiated during youth and young adulthood
 - Nearly 9 in 10 U.S. adult cigarette smokers first try smoking by age 18¹
 - Each day, about 1,500 youth try their first cigarette²
- E-cigarettes entered the U.S. marketplace around 2007³
- Since 2014, e-cigarettes have been the most commonly used tobacco product among U.S. youth³
- In 2018, e-cigarette use among youth was declared an epidemic by FDA Commissioner and US Surgeon General

¹ US Department of Health and Human Services. The Health Consequences of Smoking-50 Years of Progress: A Report of the Surgeon General. 2014.

² Substance Abuse and Mental Health Services Administration. Key substance use and mental health indicators in the US: Results from the 2019 National Survey on Drug Use and Health. www.samhsa.gov/data. 2020

³ US Department of Health and Human Services. E-cigarette Use among Youth and Young Adults: A Report of the Surgeon General. 2016.

BACKGROUND (CONTINUED)



- Youth use of tobacco products, including e-cigarettes, is unsafe¹
- Most e-cigarettes contain nicotine, and nicotine exposure during adolescence can harm the developing brain, impact learning, memory, and attention^{1,2}
- Using nicotine in adolescence can also increase risk for future addiction to other drugs^{1,2}
- Many e-cigarettes come in flavors that are appealing to youth³

¹ US Department of Health and Human Services. E-cigarette Use among Youth and Young Adults: A Report of the Surgeon General. 2016.

² US Department of Health and Human Services. The Health Consequences of Smoking-50 Years of Progress: A Report of the Surgeon General. 2014.

³ Ambrose BK, et al. Flavored Tobacco Product Use Among US Youth Aged 12-17 Years, 2013-2014. JAMA. 2015;314(17):1871-1873.

THE NATIONAL YOUTH TOBACCO SURVEY (NYTS)



- Annual, cross-sectional, school-based, self-administered survey of U.S. middle and high school students (grades 6-12)
- The only nationally representative survey of U.S. middle and high school students that focuses exclusively on tobacco use patterns and associated factors
- NYTS data are used to generate youth tobacco-related measures that may inform public health programs and activities
- Starting in 2012, FDA began co-sponsoring with CDC to collect data annually

- The NYTS employs a multistage stratified sampling design to produce a nationally representative sample of middle school (grades 6-8) and high school (grades 9-12) students attending private and public schools
- Three-stage sample design
 - Probability samples of:
 1. Primary Sampling Units (PSUs): large counties or groups of smaller, adjacent counties
 2. Secondary Sampling Units (SSUs): schools
 3. Classes: all students enrolled are eligible to participate

- Data collection was truncated due to school closures associated with the COVID-19 pandemic
 - Data collected January 16 – March 16, 2020*
 - Despite this, the sample of participating students yielded nationally representative data
- In total, 14,531 students participated (student participation rate: 87.4%) from 180 schools (school participation rate: 49.9%) – Overall response rate: 43.6%
- Self-administered, anonymous survey; Data were collected electronically beginning in 2019
 - Students provided with a tablet computer, pre-programmed with an offline survey application
 - Data stored locally on tablets until synched to central data repository via encrypted WiFi
 - Students allotted a full class period to complete (35-45 minutes)
 - Absent students could participate using a web-based version of the questionnaire programmed to mimic the tablet-based applications

* Data collection and continued recruitment efforts were anticipated to occur through mid-May 2020

TOBACCO PRODUCTS ASSESSED ON THE 2020 NYTS

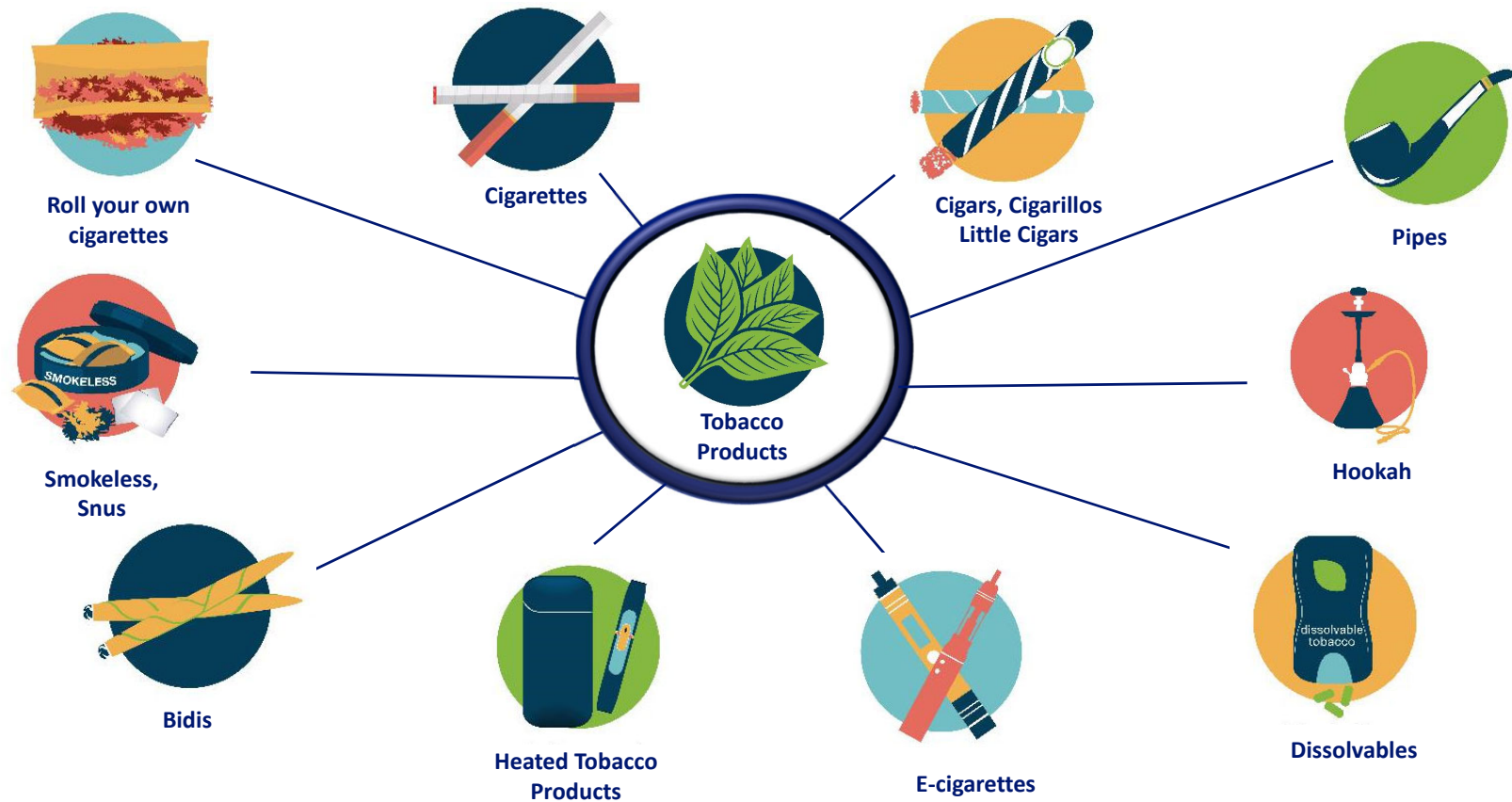


Image courtesy of CDC/OSH

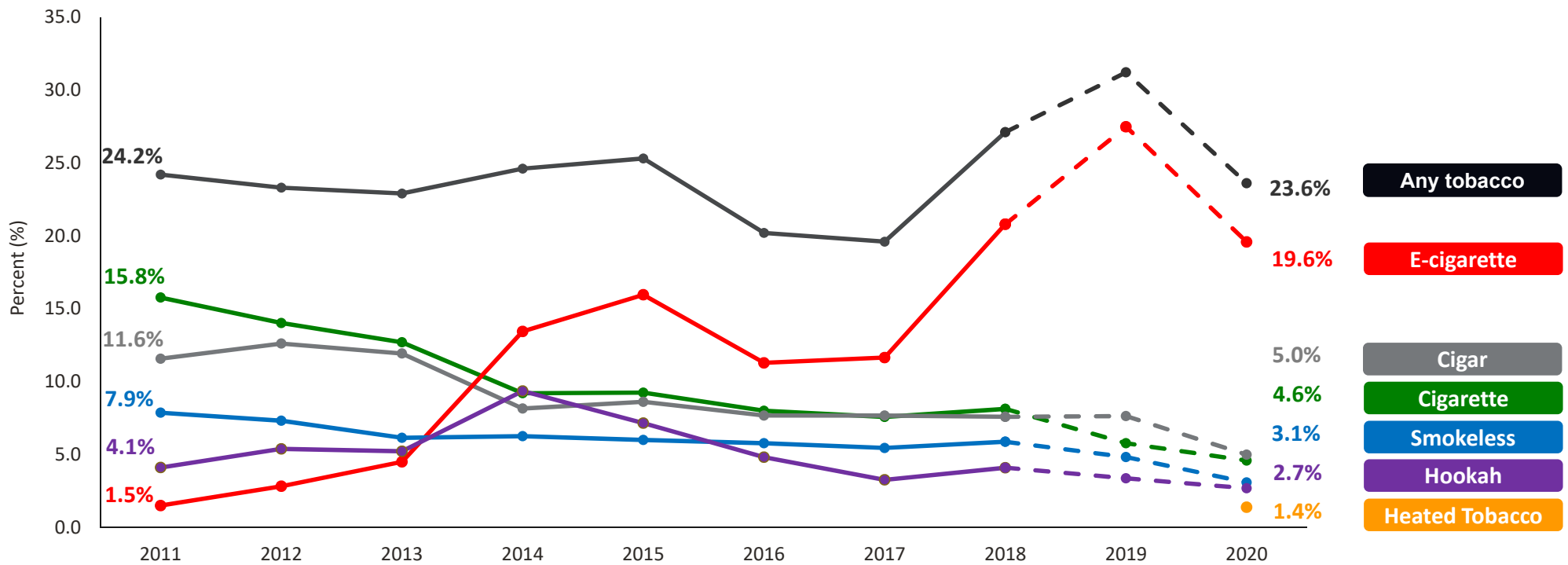
- Current Use – Defined as use on ≥ 1 day during the past 30 days
 - E-cigarettes, cigarettes, cigars (cigars, cigarillos, little cigars), smokeless tobacco (chewing tobacco, snuff, dip), hookah, and heated tobacco products:
 - Students* entered the **number of days [0-30]** during the past 30 days that they used each products
 - Pipe, snus, dissolvable tobacco products, roll-your-own cigarettes, and bidis:
 - Students[†] selected each product(s) that they reported using on at least one day during the past 30 days
- Any tobacco product use: Current (past 30-day) use of e-cigarettes, cigarettes, cigars (cigars, little cigars, cigarillos), smokeless tobacco (chewing tobacco, snuff, dip; snus; dissolvable tobacco), hookah, pipe, bidis, or heated tobacco products[‡]

* Among students reporting “yes” to questions assessing ever use of each product

† Among students who indicated they had ever used at least one of these “other” tobacco products

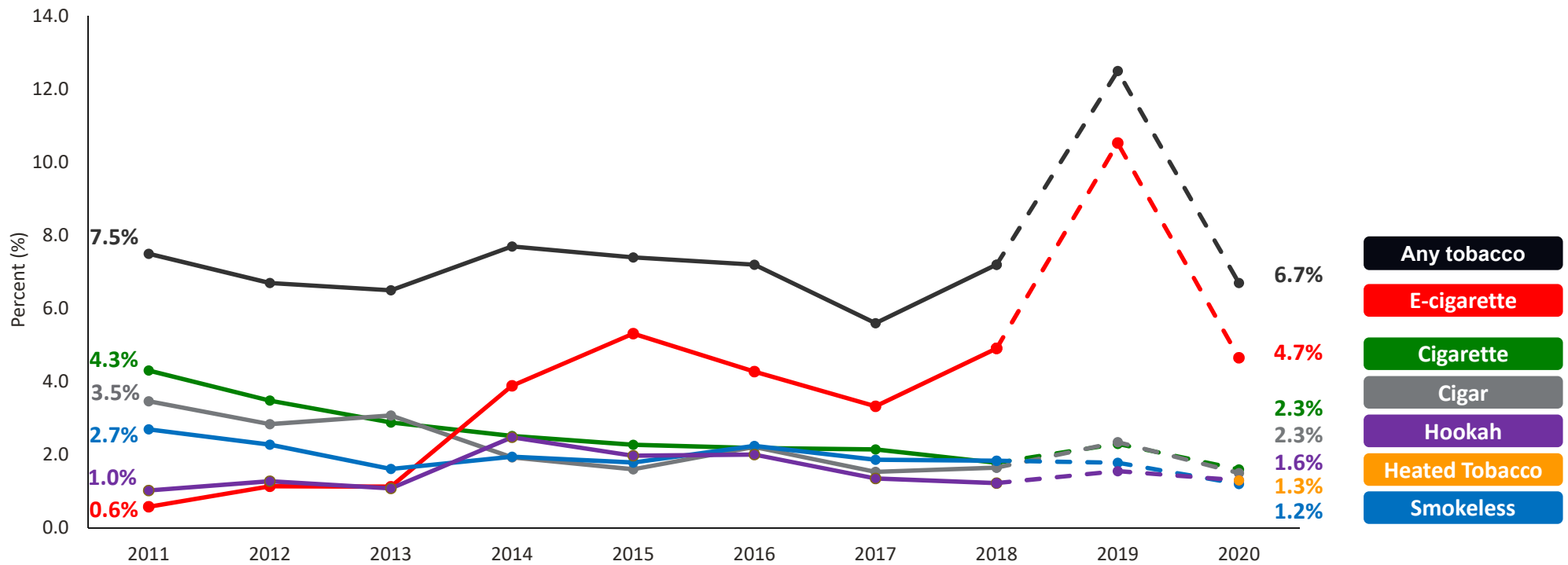
‡ 2020: Definition includes current use of heated tobacco products (HTPs)– this is the first time HTPs are included in these definitions

CURRENT TOBACCO PRODUCT USE AMONG HIGH SCHOOL STUDENTS



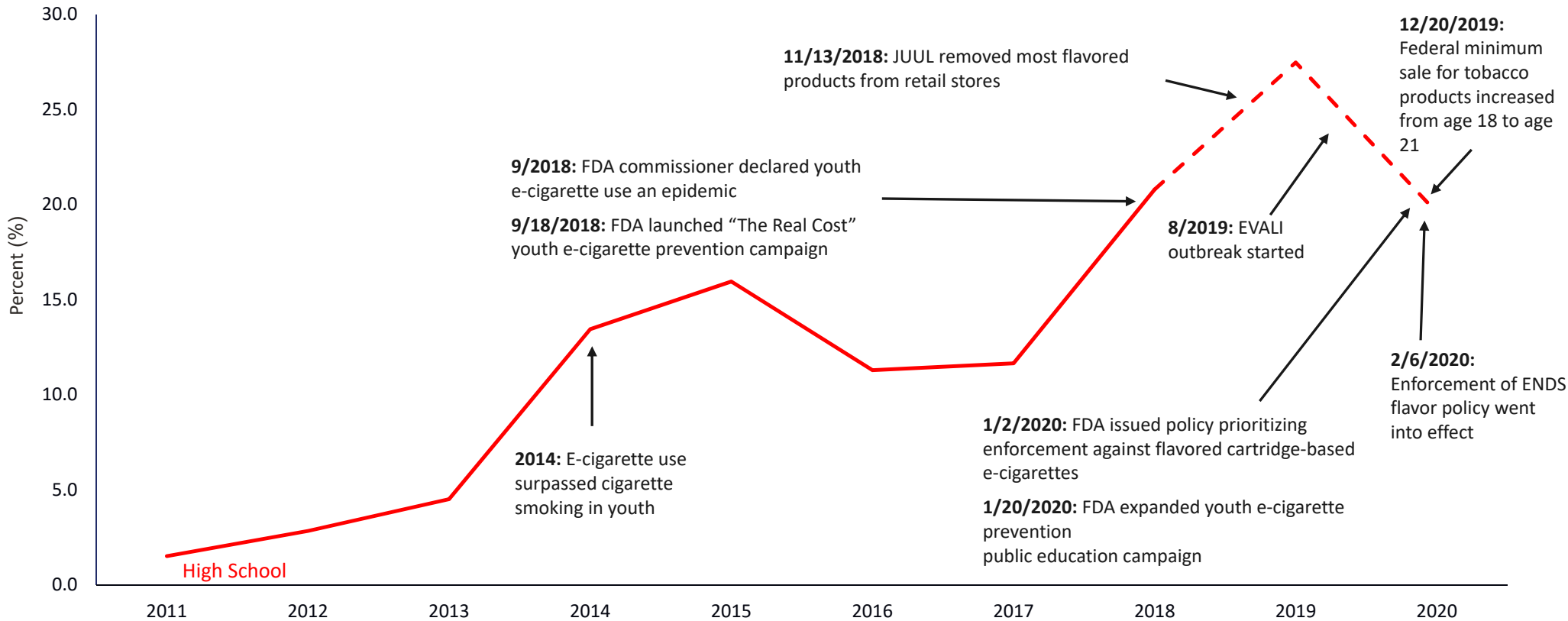
* Note: Trends from 2011-2020 were not conducted due to the change in survey mode in 2019, represented by the dashed line.
 SOURCE: National Youth Tobacco Survey (NYTS), 2011-2020

CURRENT TOBACCO PRODUCT USE AMONG MIDDLE SCHOOL STUDENTS



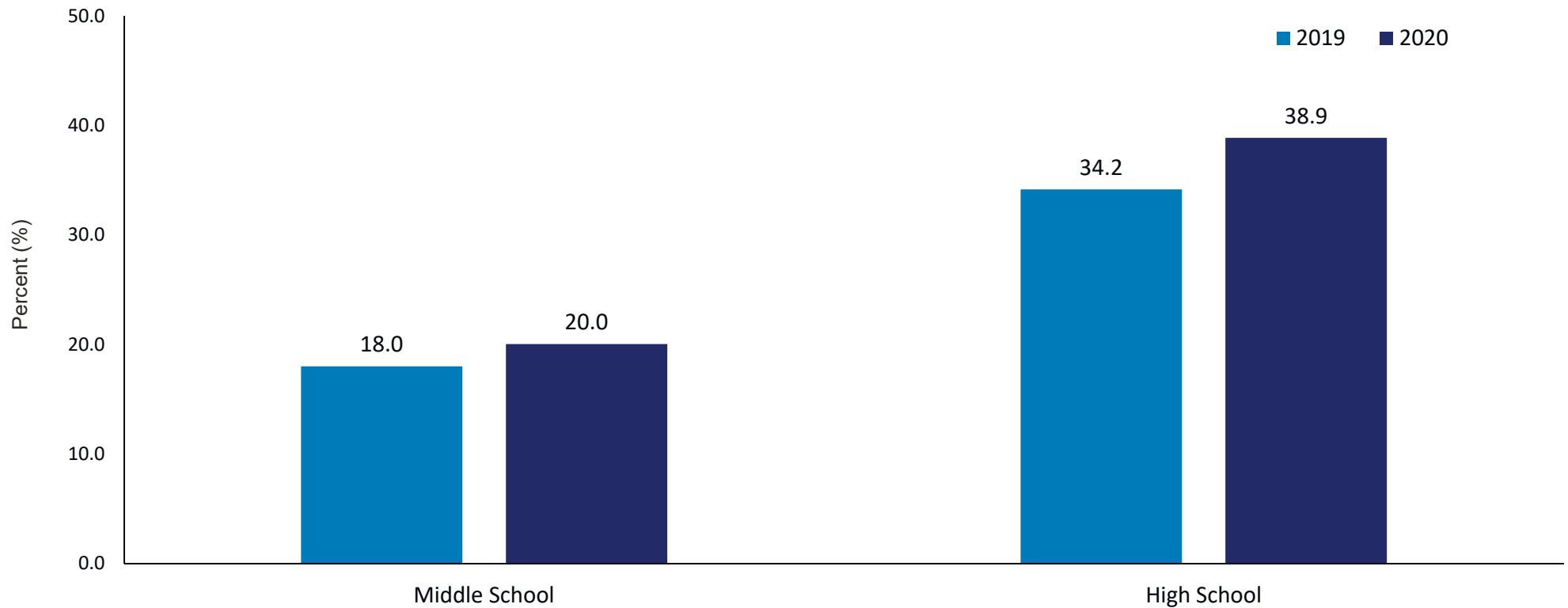
* Note: Trends from 2011-2020 were not conducted due to the change in survey mode in 2019, represented by the dashed line.
 SOURCE: National Youth Tobacco Survey (NYTS), 2011-2020

E-CIGARETTE USE TREND IN CONTEXT



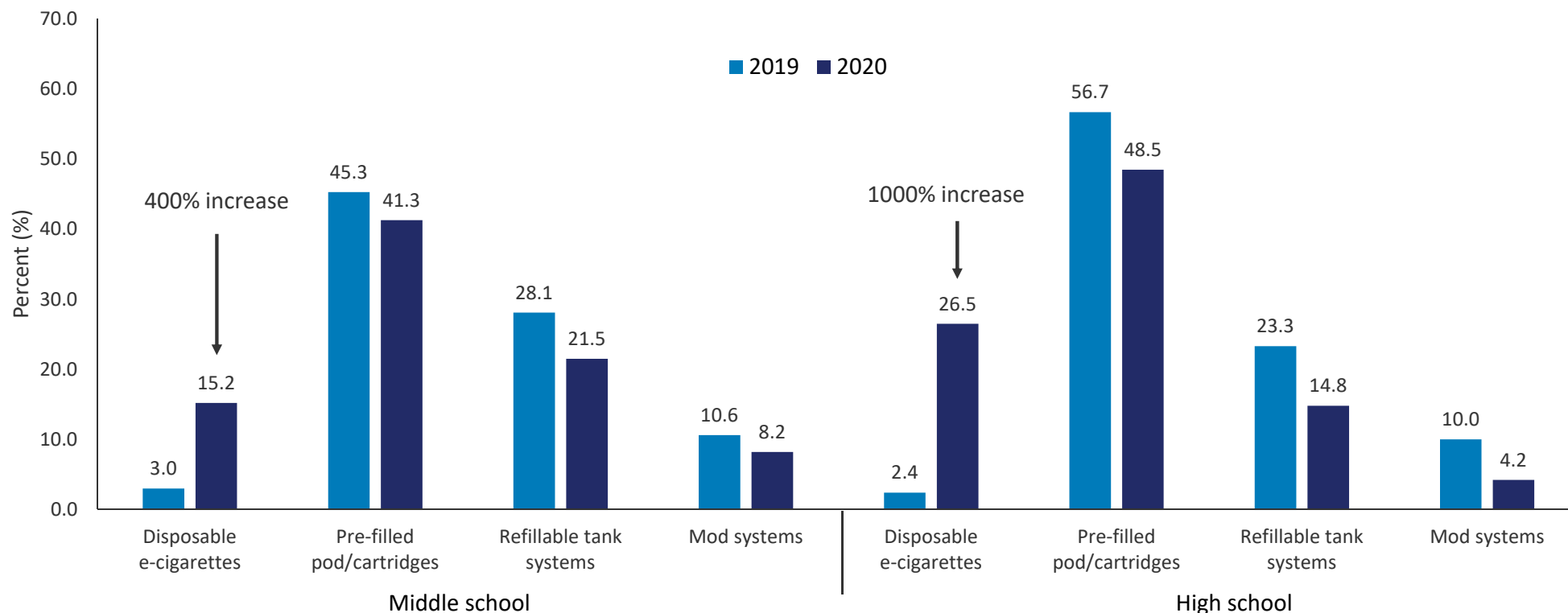
These events are not necessarily related to the changes in e-cigarette use presented in this slide. EVALI: E-cigarette or Vaping product use-Associated Lung Injury

FREQUENT (≥ 20 DAYS) E-CIGARETTE USE IN THE PAST 30 DAYS AMONG **MIDDLE AND HIGH SCHOOL** CURRENT E-CIGARETTE USERS



No significant differences in estimates between 2019 and 2020
Frequent e-cigarette use refers to using e-cigarettes on 20 or more of the past 30 days.
SOURCE: National Youth Tobacco Survey (NYTS), 2019-2020

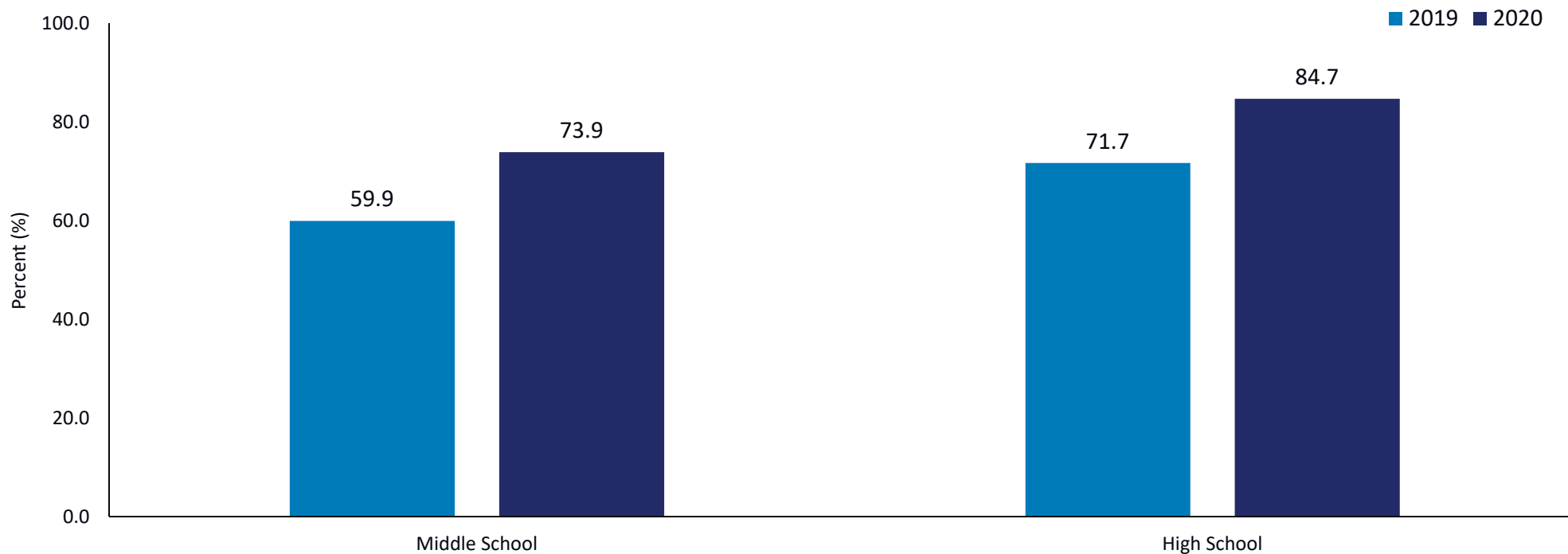
E-CIGARETTE DEVICE TYPE MOST OFTEN USED IN THE PAST 30 DAYS AMONG MIDDLE AND HIGH SCHOOL CURRENT E-CIGARETTE USERS



Device type was assessed by, "Which of the following best describes the type of e-cigarette you have used in the past 30 days? If you have used more than one type, please think about the one you use most often." Response options include: a disposable e-cigarette, an e-cigarette that uses pre-filled pods or cartridges (e.g., JUUL), an e-cigarette with a tank that you refill with liquids, a mod system (an e-cigarette that can be customized by the user with their own combination of batteries or other parts), and "I don't know the type."

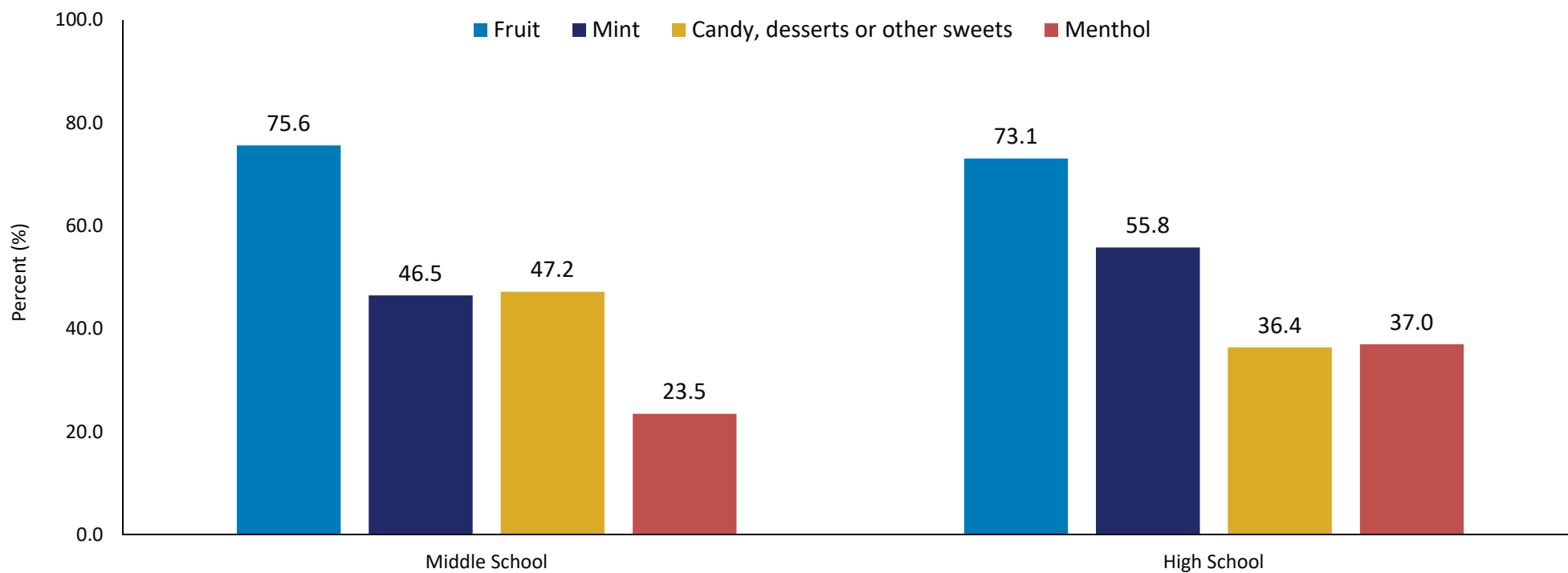
SOURCE: National Youth Tobacco Survey (NYTS), 2020

FLAVORED E-CIGARETTE USE IN THE PAST 30 DAYS AMONG **MIDDLE AND HIGH SCHOOL** CURRENT E-CIGARETTE USERS



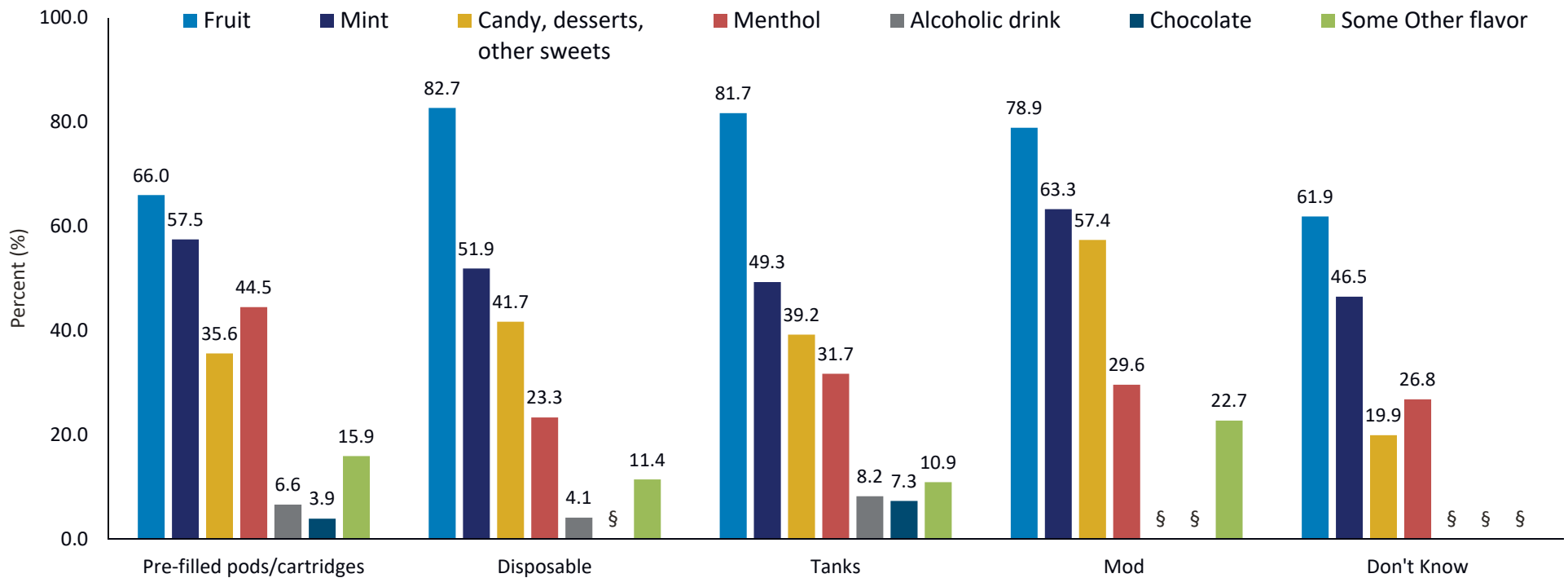
NOTE: No statistical testing was conducted between 2019 and 2020 because of the question structure changes to the flavored tobacco product questions. Question structure was modified in 2020 to assess flavored product use for each tobacco product.
SOURCE: National Youth Tobacco Survey (NYTS), 2019-2020

E-CIGARETTE FLAVORS USED IN THE PAST 30 DAYS AMONG MIDDLE AND HIGH SCHOOL CURRENT FLAVORED E-CIGARETTE USERS: 2020



Question structure was modified in 2020 to assess flavored product use and all flavors used in the past 30 days for each tobacco product.
SOURCE: National Youth Tobacco Survey (NYTS), 2020

E-CIGARETTE FLAVORS USED IN THE PAST 30 DAYS AMONG **MIDDLE AND HIGH SCHOOL** CURRENT FLAVORED E-CIGARETTE USERS BY DEVICE TYPE: 2020



§ Unreliable because of unweighted denominator <50 or a relative standard error >30%; All or most estimates for clove or spice and chocolate flavors are unreliable and not shown.
 Question structure was modified in 2020 to assess flavored product use and all flavors used for each tobacco product.
 SOURCE: National Youth Tobacco Survey (NYTS), 2020

CONCLUSIONS



- Use of any tobacco product by youth declined from 2019 to 2020, largely driven by a decline in current use of e-cigarettes
 - E-cigarette use returned to levels similar to those observed in 2018
 - E-cigarettes remain the most commonly used tobacco product among U.S. middle and high school students
- Despite declines in current e-cigarette use, both frequent use of e-cigarettes and use of flavored e-cigarettes remain high; use of disposable e-cigarettes increased significantly from 2019-2020
 - JUUL was the most often used brand in 2019; they had removed most of their flavored products from the market prior to data collection for the 2020 NYTS
 - FDA ENDS flavor policy was just going into effect when the 2020 NYTS data was being collected
 - Some of the change in device type use could be the result of other brands filling the void when some of the more popular flavored brands became unavailable

CONCLUSIONS



- These findings reinforce the importance of reducing all forms of tobacco product use, including e-cigarettes, among US youth
- These can be accomplished through:
 - tobacco product regulation
 - continued public education campaigns
 - comprehensive and sustained implementation of evidence-based tobacco control strategies
- To inform public health policy, planning, and regulatory efforts, it is essential to continue monitoring tobacco product use and associated factors among youth

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ANY QUESTIONS?

FDA

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EFFECT OF COVID-19 PANDEMIC ON NYTS PARTICIPATION



- The 2020 NYTS was fielded from January 16 – March 16, 2020*
- Data collection was truncated due to school closures associated with the COVID-19 pandemic
- In total, 14,531 students participated (student participation rate: 87.4%) from 180 schools (schools participation rate: 49.9%) – Overall response rate: 43.6%
- Impact of truncated data collection window
 - 74 schools had agreed to participate; data collection could not occur due to COVID-19 associated school closures
 - Further evaluation for bias due to this nonresponse: limited systematic differences (vs. participating schools)
 - Variables[†] associated with nonresponse due to COVID-19 school closures were incorporated into the final weight adjustments to mitigate the potential for bias
 - Weighted estimates from participating students were determined to be nationally representative

* Data collection and continued recruitment efforts were anticipated to occur through mid-May 2020

† Associated with recruitment/non-participation: (1) urban status and (2) proportion of student population that is Black