

# An analysis of the 2020 U.S. National Youth Tobacco Survey (NYTS) Data: E-cigarette and blu Brand Use Among Middle and High School Students



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## 1. Introduction

- Youth use of nicotine-containing products remains an important concern and understanding patterns of youth use over time is key to the design and implementation of comprehensive youth access and prevention programs. E-cigarettes (ENDS) are recorded as the most commonly used tobacco-derived product among U.S. youths [1]; however, limited information exists on the ENDS product types and brands used by youth. In support of understanding patterns of any inappropriate ENDS use by youth, we performed an analysis of the public use files from the U.S. National Youth Tobacco Survey (NYTS) 2020 dataset [2].
- NYTS is a school-based survey that collects information on tobacco and tobacco-derived product use from U.S. middle school and high school students to provide national data on short-term, intermediate, and long-term indicators key to the design, implementation, and evaluation of comprehensive tobacco prevention and control programs.
- Here we present an analysis of the U.S. NYTS 2020 dataset for current ENDS use among middle school and high school students with respect to: [i] ENDS use prevalence by frequency of use; [ii] prevalence of all possible patterns of poly-product use; and [iii] past-30-day (p30d) use patterns in the context of ever/former use and never use (i.e., naïve to any tobacco or nicotine-containing product use). Results are shown for the ENDS category in general and for blu ENDS specifically.

## 2. Materials & Methods

- The U.S. National Youth Tobacco Survey (NYTS) is an ongoing, repeated cross-sectional survey administered by the U.S. CDC and FDA as a collaborative effort. The survey was first conducted in 1999, repeated biennially until 2009, and administered annually beginning in 2011. A stratified, 3-stage cluster sample design is employed at each survey cycle to identify a nationally representative sample of middle school (Grades 6 to 8) and high school (Grades 9 to 12) students enrolled in public and private schools in the U.S.
- The most recent survey cycle was conducted during January 16–March 16, 2020. The final sample consisted of 361 schools, of which 180 participated, yielding a school response rate of 49.9%. A total of 14,531 student questionnaires were completed out of a sample of 16,634 students, yielding a student response rate of 87.4%. The overall response rate, defined as the product of the school-level and student-level response rates, was 43.6%.
- The NYTS survey contains a range of questions covering p30d use of a variety of tobacco and tobacco-derived nicotine-containing products. P30d of each product was defined as using the product on at least one day in the p30d and categorized into: [i] p30d combustible use (including cigarette, cigar, hookah, pipe, and bidis); [ii] p30d non-combustible use (including heated tobacco, smokeless tobacco, snus, and dissolvable); [iii] p30d exclusive ENDS use; and [iv] no p30d use of any tobacco or ENDS product.
- Exclusive ENDS use was further defined as being naïve to tobacco (reported never use of any tobacco product) or having been a former tobacco user (reported ever use of at least one tobacco product, but not in the p30d).
- With regards to ENDS use in the p30d specifically, answers were aggregated into one of the following ranges of uses: "0 days"; "1-2 days"; "3-5 days"; "6-9 days"; "10-19 days"; "20-29 days"; and "All 30 days". Here we used the weighted estimates produced by the NYTS to compute final percentages.

## 3. ENDS and tobacco product poly-use by days used in p30d

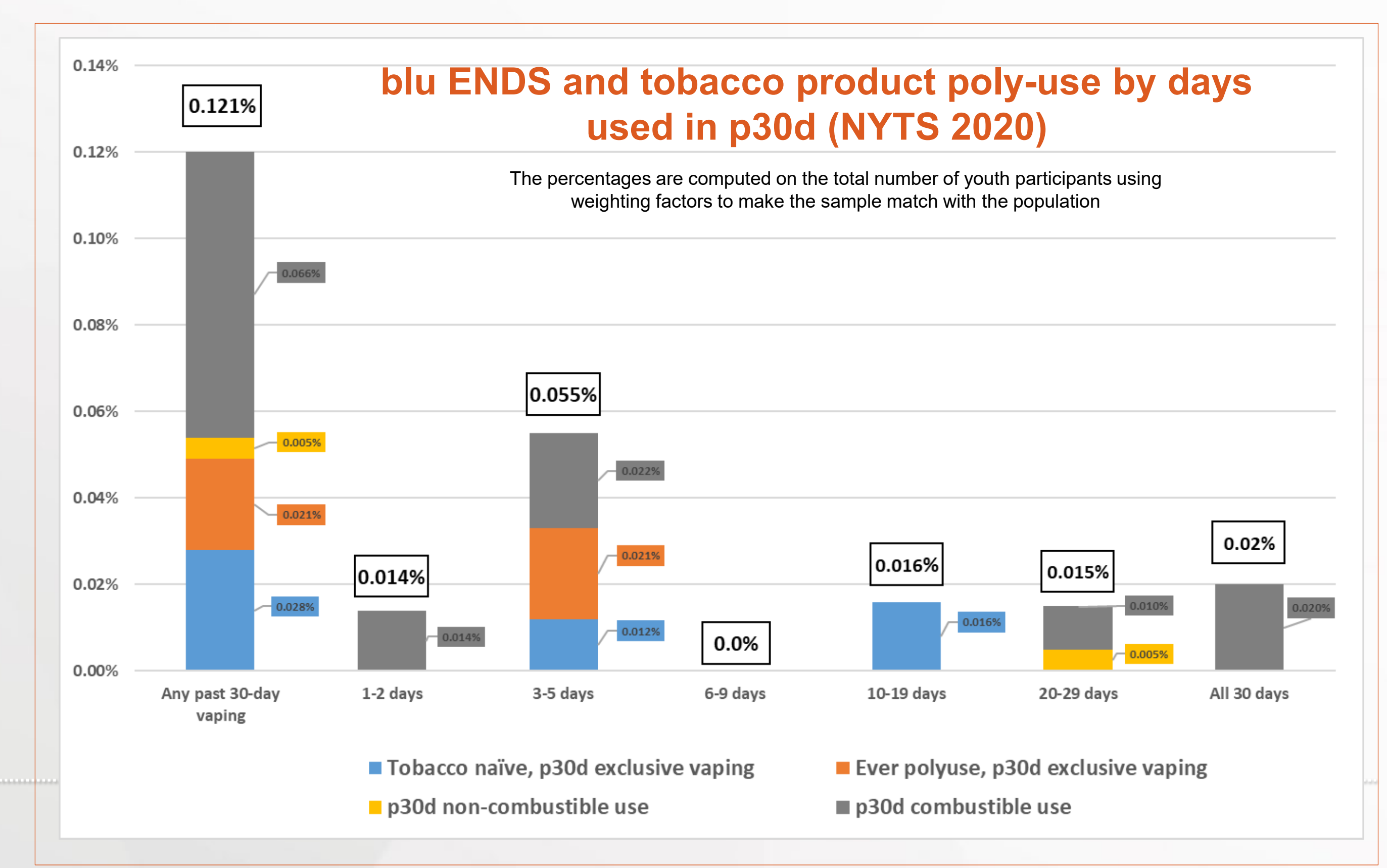
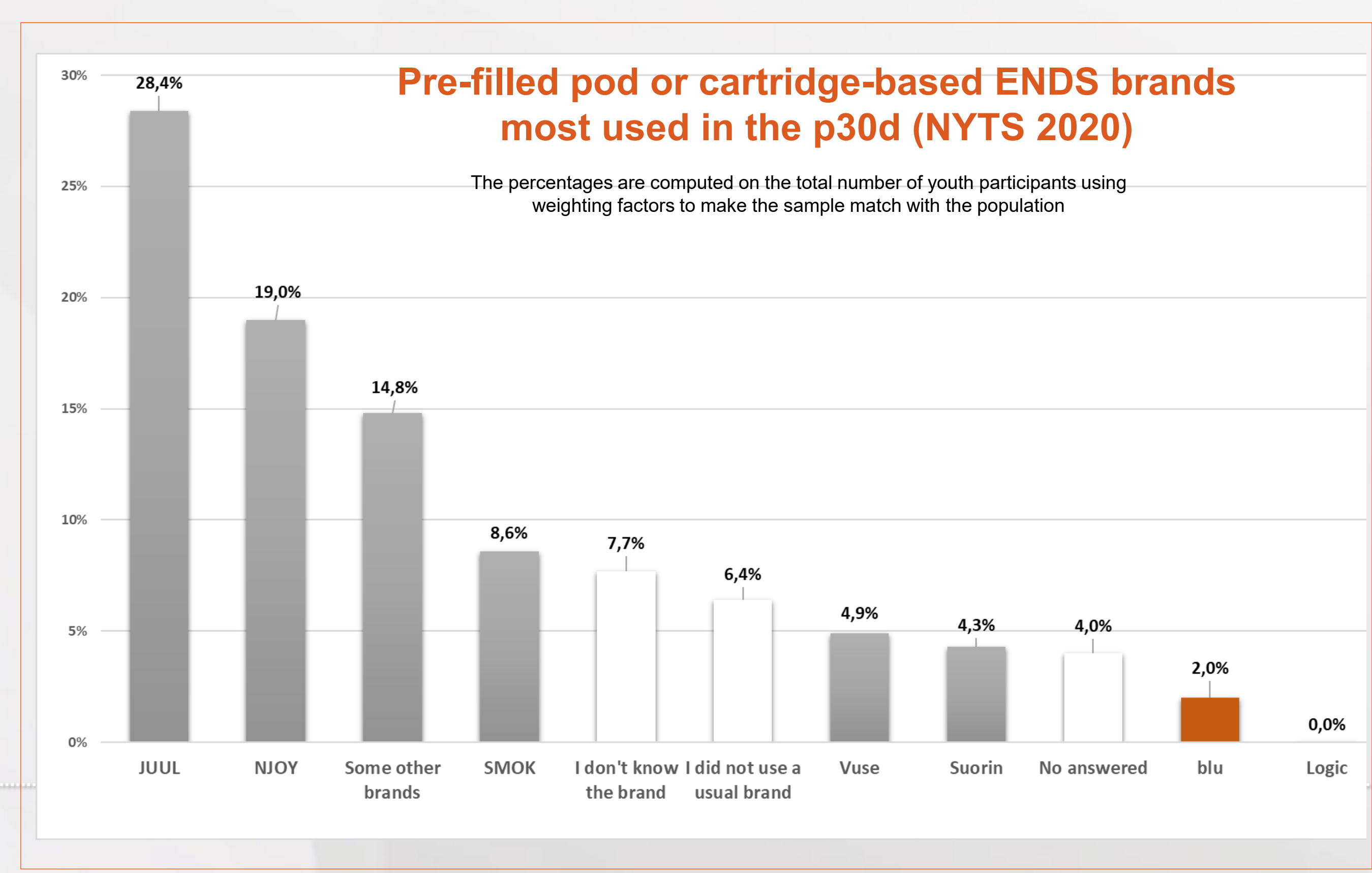
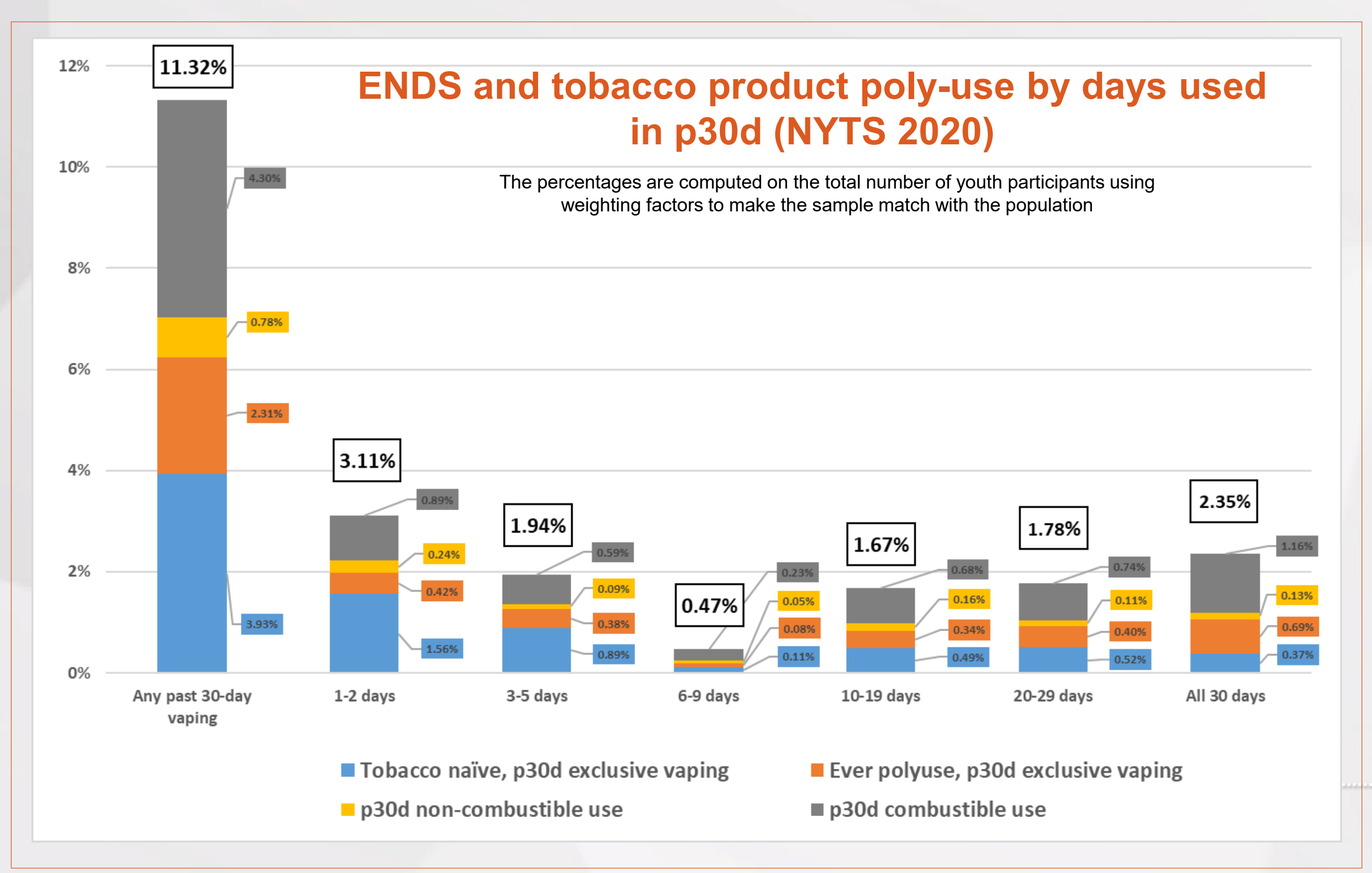
- In 2020, 11.32% of youth reported any p30d ENDS use of which 5.08% reported concurrent p30d use of at least one tobacco product in addition to the ENDS product; 2.31% were ever but not p30d tobacco users; and 3.93% were tobacco-naïve.
- Within the 5.08% of youth who reported concurrent p30d tobacco use and ENDS use, 4.3% used a combustible tobacco product and 0.78% used a non-combustible tobacco product.
- From 2019 to 2020 there has been a significant decline in p30d youth ENDS use, from 19.9% in 2019 to 11.32% in 2020.

## 4. Pre-filled pod or cartridge-based ENDS brands most used in the p30d

- Pre-filled pod and cartridge-based ENDS products are popular amongst adult smokers transitioning away from combustible tobacco products [2]. However, there are concerns that such product types may also be inappropriately used by youth. Pre-filled pods or cartridge-based ENDS were the most commonly used ENDS device type in 2020 (47.4% among any p30d ENDS users).
- An analysis of the brand specific data in the NYTS 2020 dataset for p30d pre-filled and cartridge-based ENDS use shows p30d use of blu products (including myblu, blu disposable, and blu PLUS+ variants) was reported by 2% of youth, representing the 7<sup>th</sup> most reported pre-filled pod or cartridge-based ENDS brand ever used in the p30d of those brands captured in the NYTS 2020 dataset.

## 5. blu ENDS and tobacco product poly-use by days used in p30d

- Further analysis of the blu brand dataset showed 13 of 14,531 (0.12% of the NYTS sample) reported blu ENDS use at any point in the p30d. Among these p30d blu ENDS users, 0.071% reported concurrent p30d use of at least one tobacco product, in addition to the blu ENDS product.
- Within the 0.071% who used concurrent p30d tobacco products and blu ENDS, 0.066% used a combustible tobacco product and 0.005% used a non-combustible tobacco product.
- Among the reported 0.12% p30d blu ENDS users, 0.028% were tobacco-naïve before ever using blu ENDS, corresponding to four respondents among the entire NYTS sample. In 2020, no tobacco-naïve users used blu ENDS for more than 19 days in the p30d.



## 6. CONCLUSIONS

- Youth use of tobacco and nicotine-containing products remains an important concern. It is without equivocation that no youth should use any tobacco or nicotine-containing product. Use of potentially less harmful alternative nicotine-containing products, such as ENDS, by unintended audiences, such as youth, may minimise the harm reduction potential of such products at a population-level. To this end, it is important that product use by unintended audiences is closely monitored.
- In 2020, 13 of 14,531 NYTS 2020 respondents reported to have used blu ENDS during the p30d (0.12% of the population). By comparison, this was 111 of 19,018 in the NYTS 2019 dataset (0.59% of the population).
- Use of blu ENDS by tobacco-naïve youth remains very low. Amongst youth that reported to have used blu ENDS at any point in the p30d, four respondents within the NYTS 2020 dataset were tobacco naïve (0.028% of the total population).
- The analysis presented here only focuses on a U.S. specific dataset, and it is not clear this generalises to other jurisdictions, due to specific cultural factors.

## REFERENCES

[1] Wang TW, Neff LJ, Park-Lee E, Ren C, Cullen KA, King BA. E-cigarette Use Among Middle and High School Students — US, 2020. MMWR Morb Mortal Wkly Rep 2020;69:1310–1312.  
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