

# Longitudinal Associations Between Multiple Tobacco Product Use and Incident Asthma Among US Youth

## Background

- Use of non-cigarette tobacco products, including ENDS, have become more common over the last decade
- While the health effects of cigarettes are well-documented, little is known about the effects of ENDS use and dual/poly use

## Data

- The Population Assessment of Tobacco and Health (PATH) study Waves 1-5 (including 4.5) (2013-2019)
- Analysis was restricted to youth and aged up young adults who had no history of asthma at baseline and at least one follow-up interview (n=9,140)

## Measures

- Past-30-day tobacco product use was classified into the following use categories: 1) non-current, 2) exclusive cigarette, 3) exclusive ENDS, 4) exclusive other combustibles (OC), 5) dual cigarettes & ENDS/dual ENDS & OC (i.e., dual combustibles & ENDS), 6) dual cigarettes & OC, and 7) poly
- The OC category included use of cigars/cigarillos/little filtered cigars, traditional pipe, and/or hookah
- Incident asthma was defined as whether a health professional had diagnosed respondents with asthma in the past year.
- Covariates used in this analysis were age, sex, race/ethnicity, parental education, urbanicity, secondhand smoke exposure, household use of combustible products, and body mass index at baseline

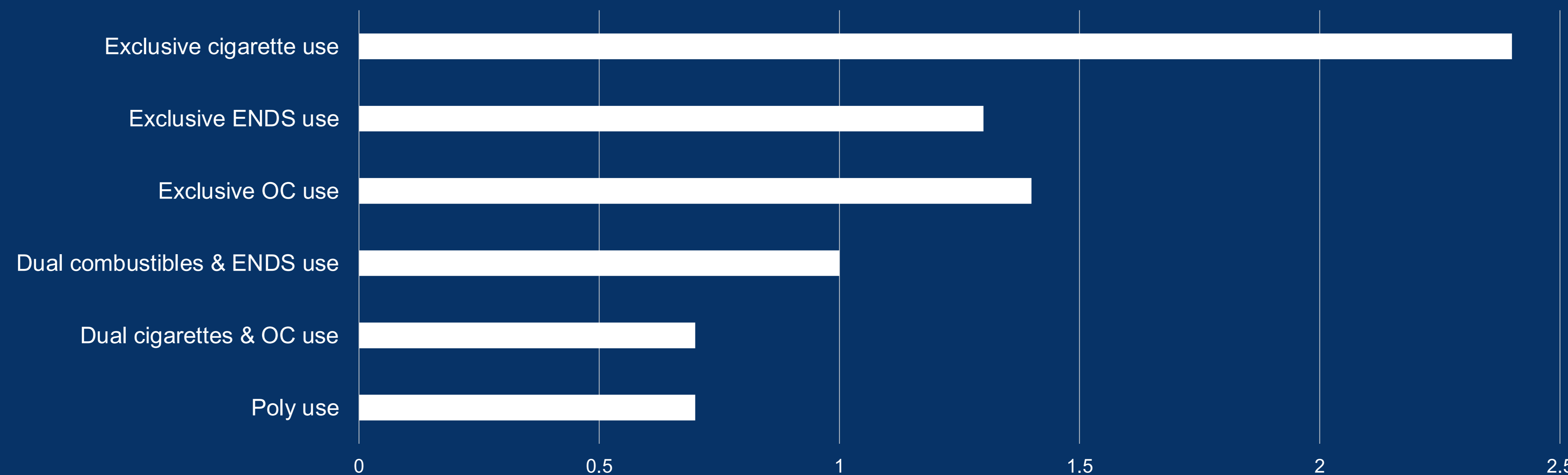
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## Statistical Analysis

- Created an unbalanced person-period dataset that included each respondent (n=9,140) with rows (maximum of five) equal to the time period until they were diagnosed with asthma or right-censored due to attrition or missing data (n=39,554)
- Discrete time survival analysis, using a complimentary log-log link function, estimated the incidence of asthma across waves 2-5, predicted by tobacco use and adjusted for potential confounders
- Used W1 weights to adjust for the complex survey design and estimated variances using the balanced repeated replication method with Fay's adjustment set to 0.3

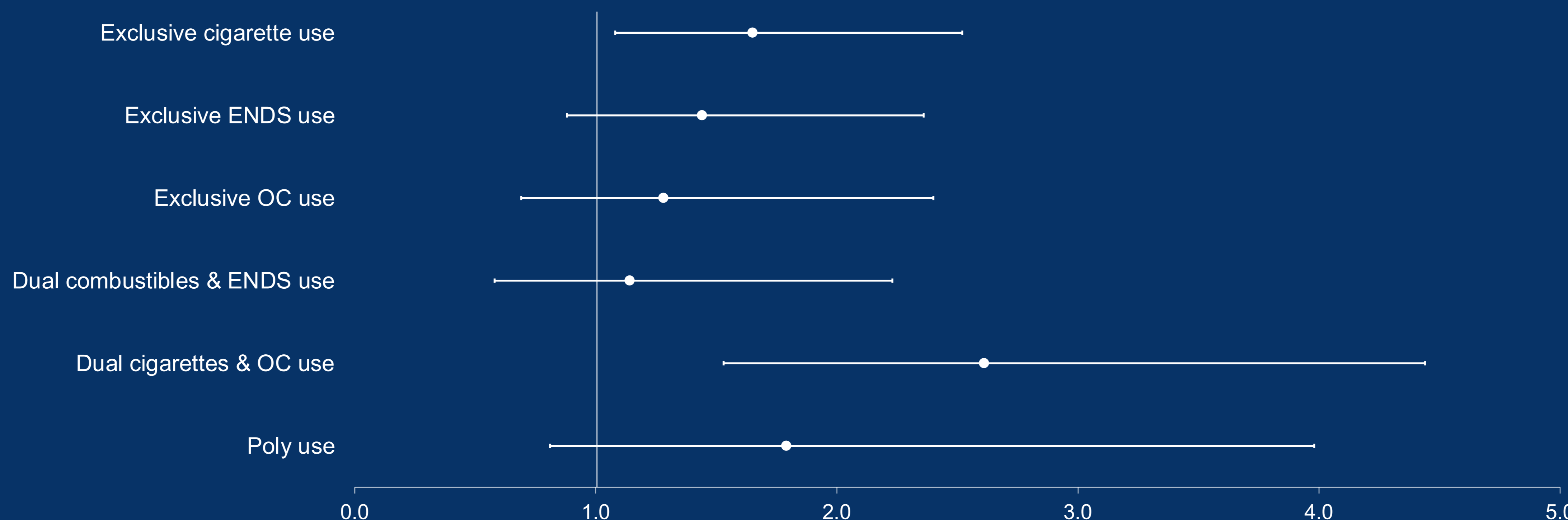
## Results

Prevalence of Tobacco Use (Wave 1, 2013-14)



Note: Non-current use = 92.5

Adjusted Hazard Ratios



Note: Referent group is non-current use

## Conclusions

- 574 respondents were diagnosed with asthma over the study period
- Exclusive cigarette use and dual cigarette and OC use were associated with incident asthma
- There were no statistically significant associations between exclusive ENDS and dual/poly use groups with ENDS and incident asthma

## Abstract



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