

Secondhand Exposure to E-Cigarette Aerosol Among U.S. Youth:

Findings from the 2015 National Youth Tobacco Survey

NCTOH | MARCH 22, 2017

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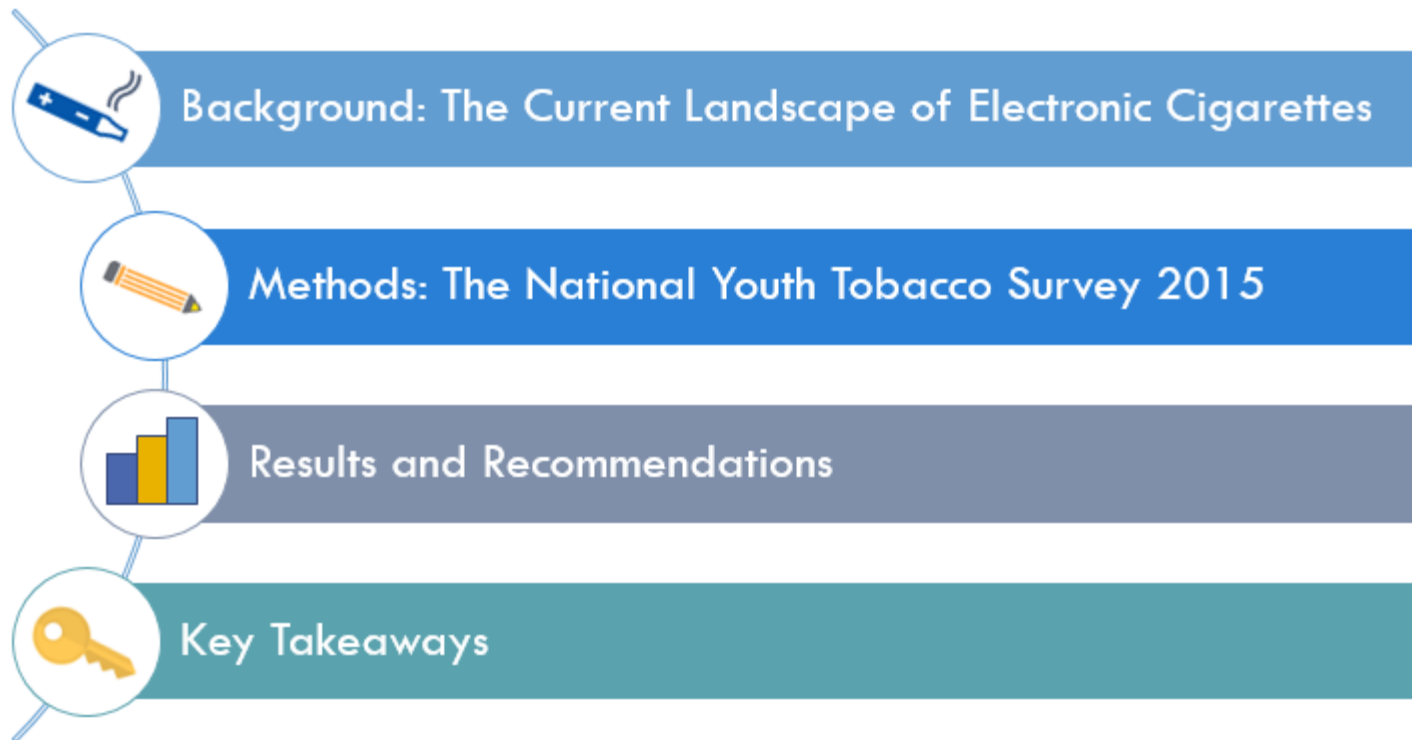
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Overview



Electronic Cigarettes (E-Cigarettes)

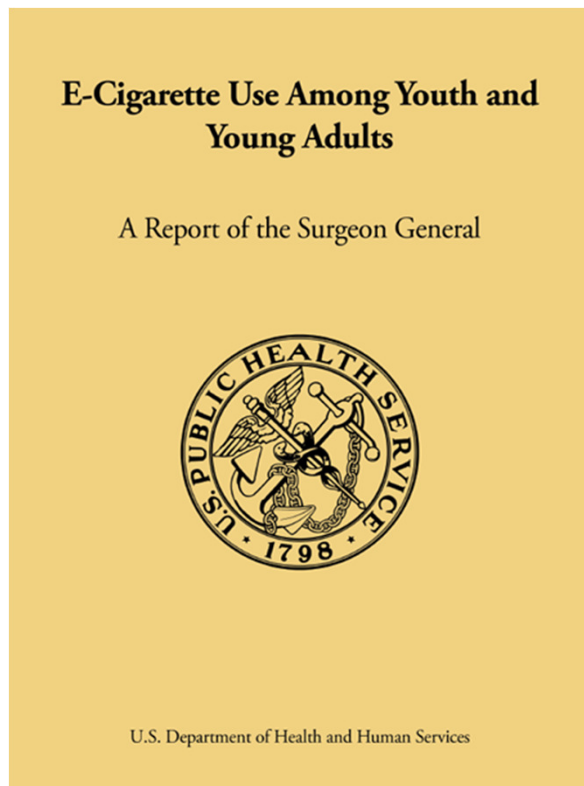
A Rapidly Emerging, Diversified Product Class



- A. Disposable e-cigarette
- B. Rechargeable e-cigarette
- C. Medium-sized tank device
- D. Large-size tank devices
- E. E-pipe
- F. E-cigar

E-Cigarette Aerosol is Not Harmless

Conclusion from the 2016 U.S. Surgeon General's Report



- Nicotine
- Fine particulate matter
- Carbonyl compounds
- Volatile organic compounds
- Solvents
- Toxicants
- Flavorants

E-Cigarette Flavorings

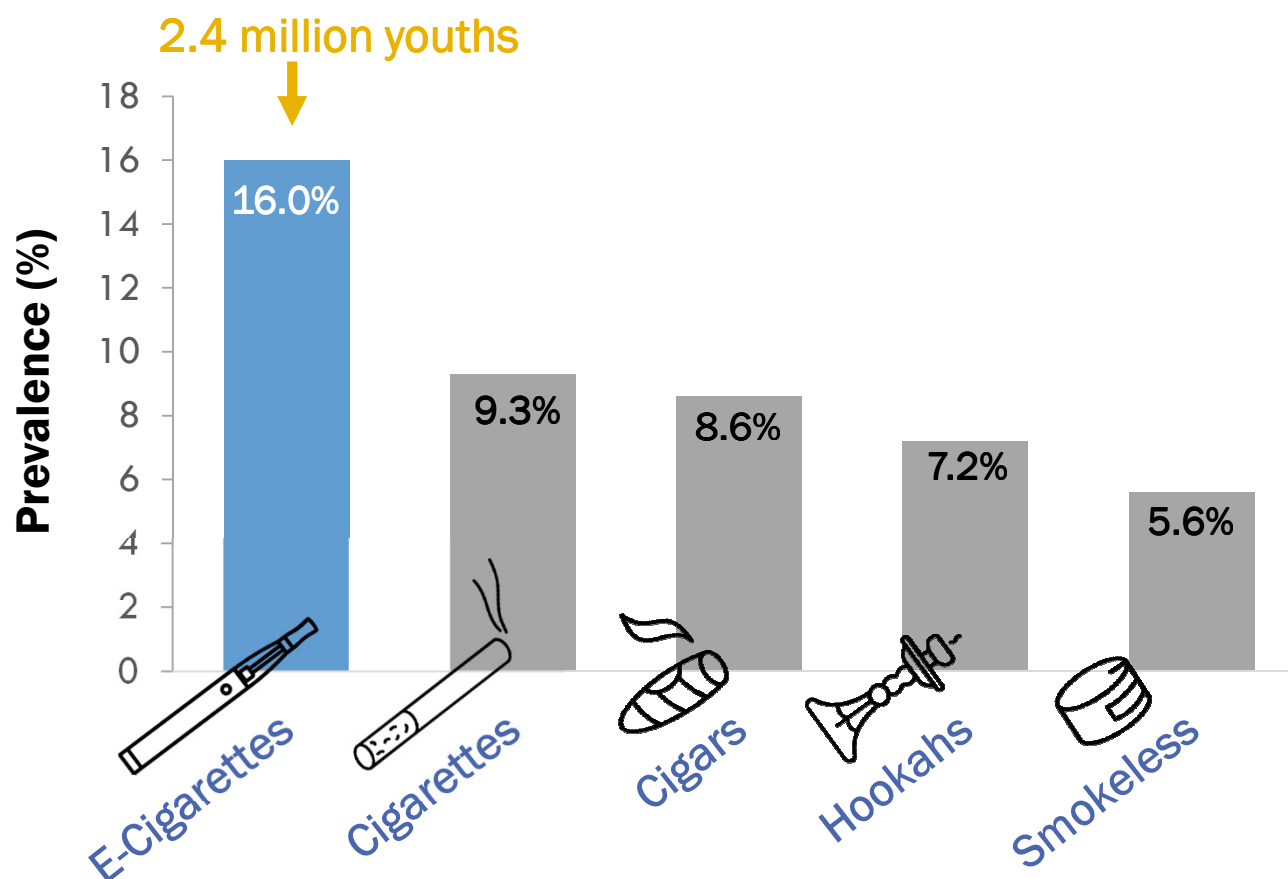
Complex mixtures of natural and manmade substances

- 7,700+ unique flavors on the market

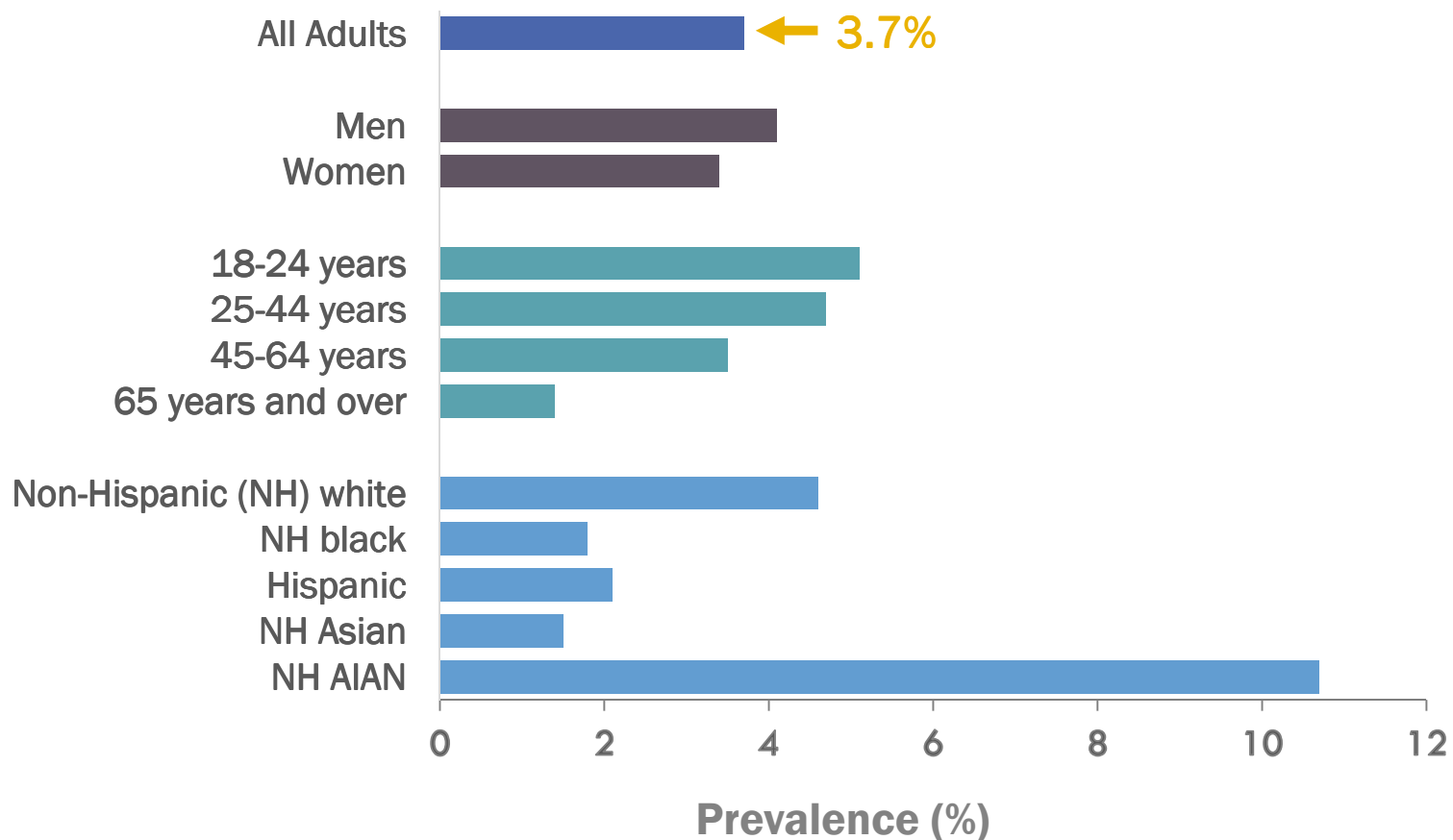


- Generally Recognized as Safe (GRAS): for ingestion, not inhalation

Current (Past 30-Day) Use of Tobacco Products Among U.S. High School Students — National Youth Tobacco Survey, 2015



Current (Some day or Every day) E-Cigarette Use Among U.S. Adults – National Health Interview Survey, 2014



Secondhand Exposure to E-Cigarette Aerosol

The extent to which U.S. youth are exposed is unknown

What are the prevalence and correlates of secondhand e-cigarette aerosol exposure among U.S. youth?



The National Youth Tobacco Survey (NYTS) – 2015

Nationally representative data on U.S. middle and high school students



Cross-sectional, school-based, self-administered



U.S. public and private schools:

Middle school (grades 6-8)

High school (grades 9-12)



3-Stage cluster-based sampling

Counties (n=85)

Schools (n=225)

Classes (n= 17,711 students)

The Survey Question

Measuring self-reported secondhand e-cigarette aerosol exposure

“During the past 30 days, on how many days did you breathe the vapor from someone who was using an electronic cigarette or e-cigarette in an indoor or outdoor public place?”

Response Options:

- | | |
|--|--|
| ☐ 0 days | ☒ 6 to 9 days |
| ☒ 1 or 2 days | ☒ 10 to 19 days |
| ☒ 3 to 5 days | ☒ 20 to 29 days |
| | ☒ All 30 days |

≥1 days considered exposed

The Data Analysis

Prevalence and correlates of self-reported e-cigarette aerosol exposure



Weighted point estimates and 95% confidence intervals



Overall and by the following correlates:



School Level

- Middle School
- High School



Sex

- Male
- Female



Race/Ethnicity

- Non-Hispanic Black
- Non-Hispanic White
- Hispanic
- Non-Hispanic Other



E-Cigarette Use

- Current Use
(past 30-day use)
- Former Use
- Never Use



Other Tobacco Product Use

- Current Use
(past 30-day use)
- Former Use
- Never Use

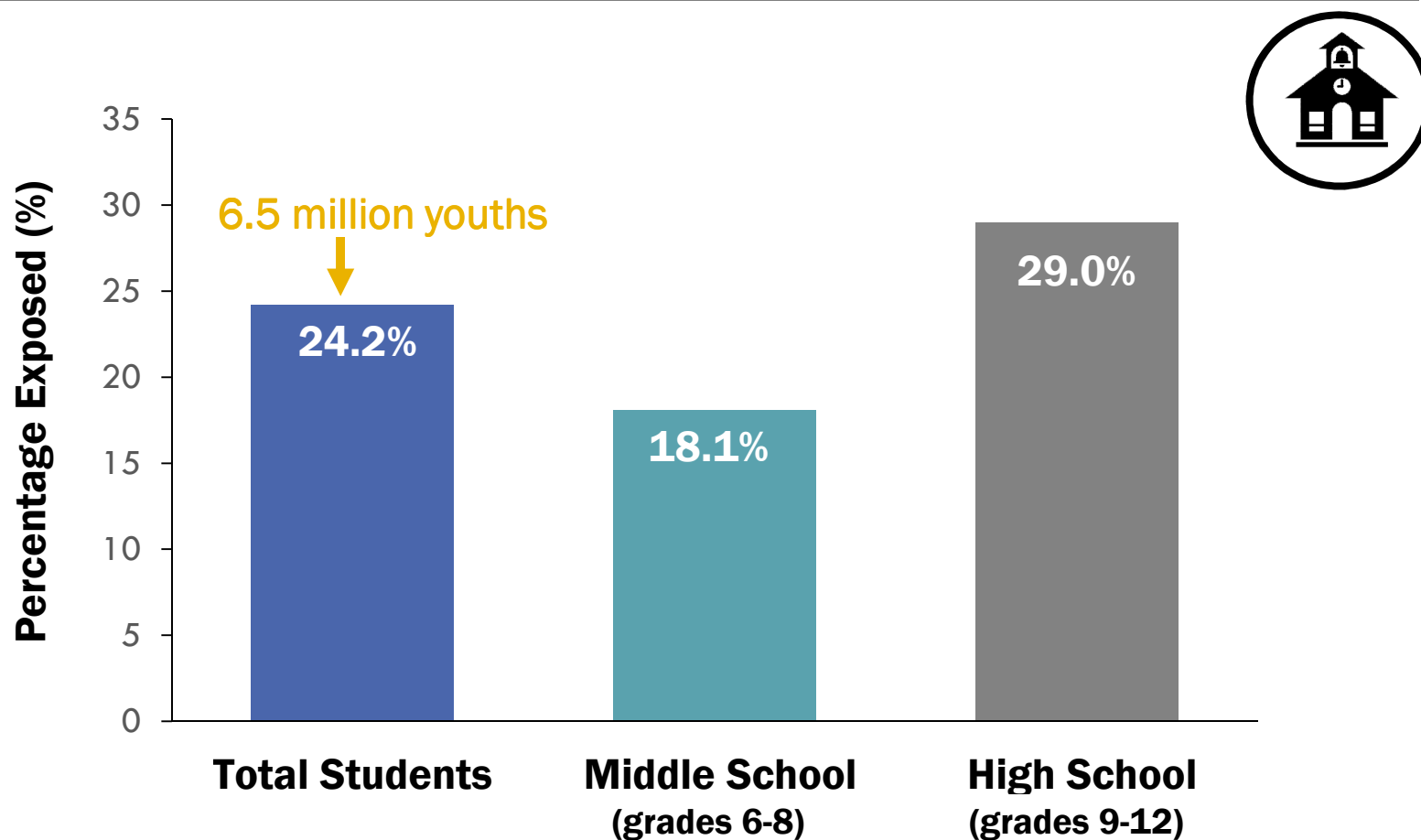


Secondhand Smoke Exposure

- Exposed
(≥1 in past 30 days)
- Unexposed

Overall Exposure to Secondhand E-Cigarette Aerosol

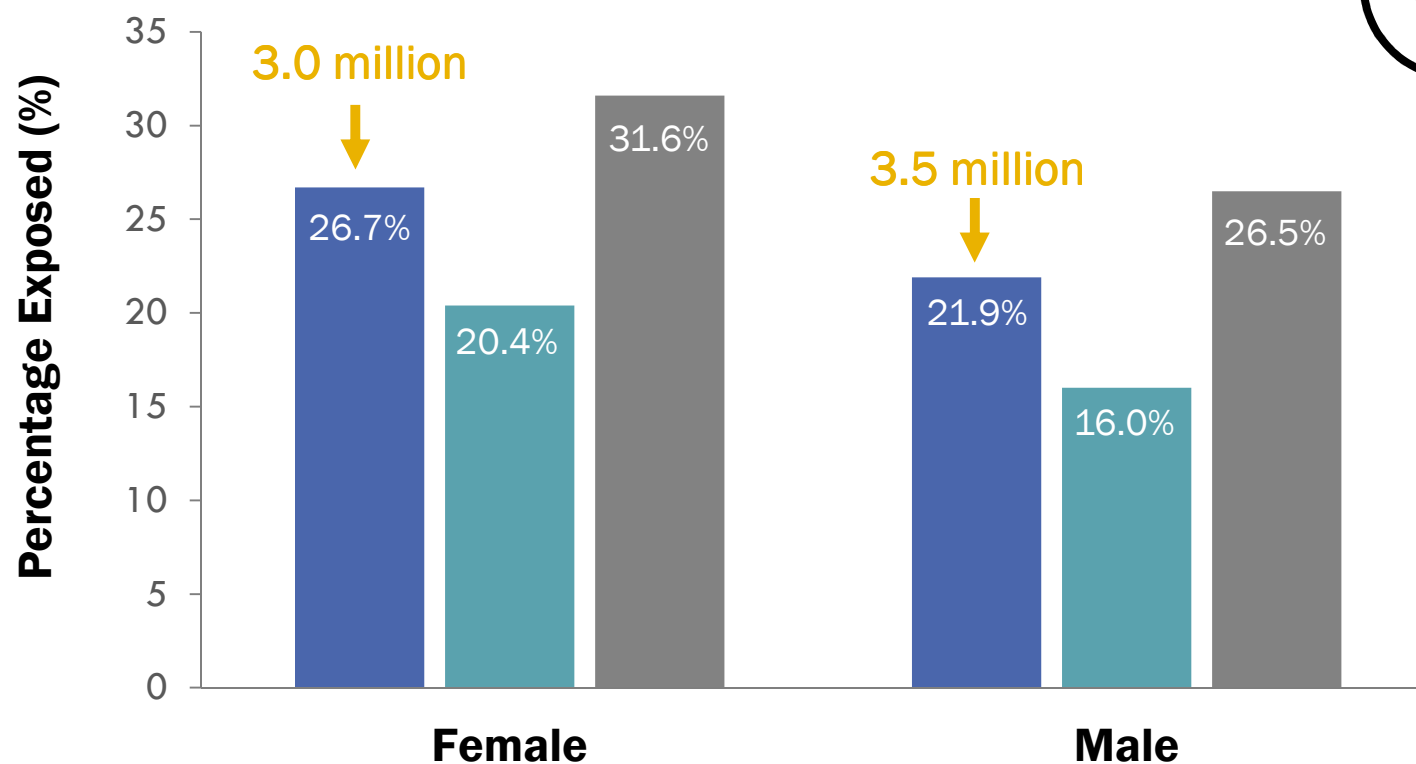
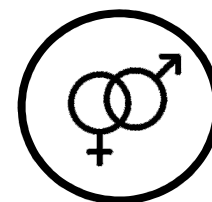
24.2% of students reported exposure within the past 30 days



Note: Self-reported secondhand exposure was assessed for indoor or outdoor public places

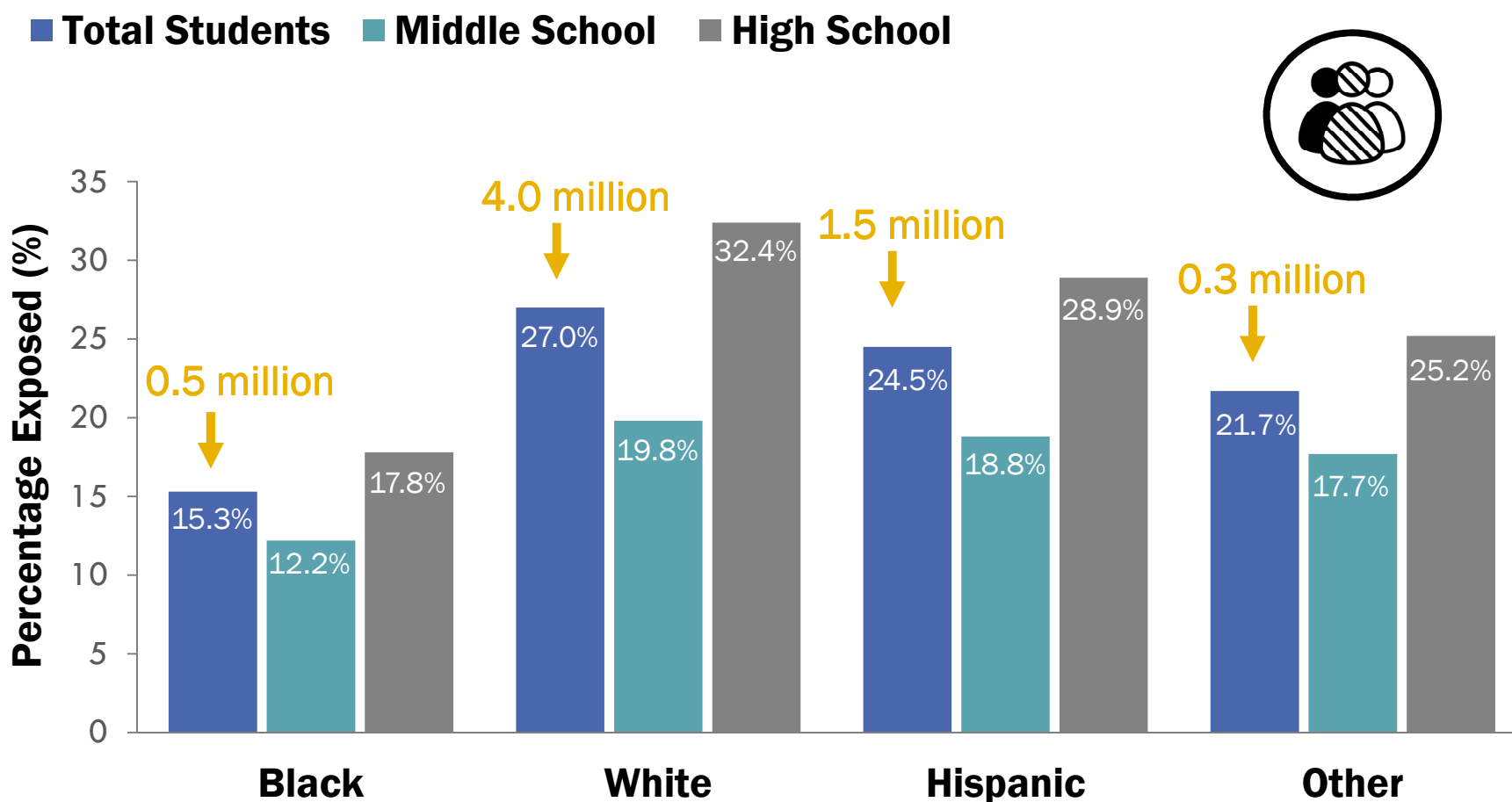
Secondhand E-Cigarette Aerosol Exposure, by Sex

■ Total Students ■ Middle School ■ High School



Note: Self-reported secondhand exposure was assessed for indoor or outdoor public places

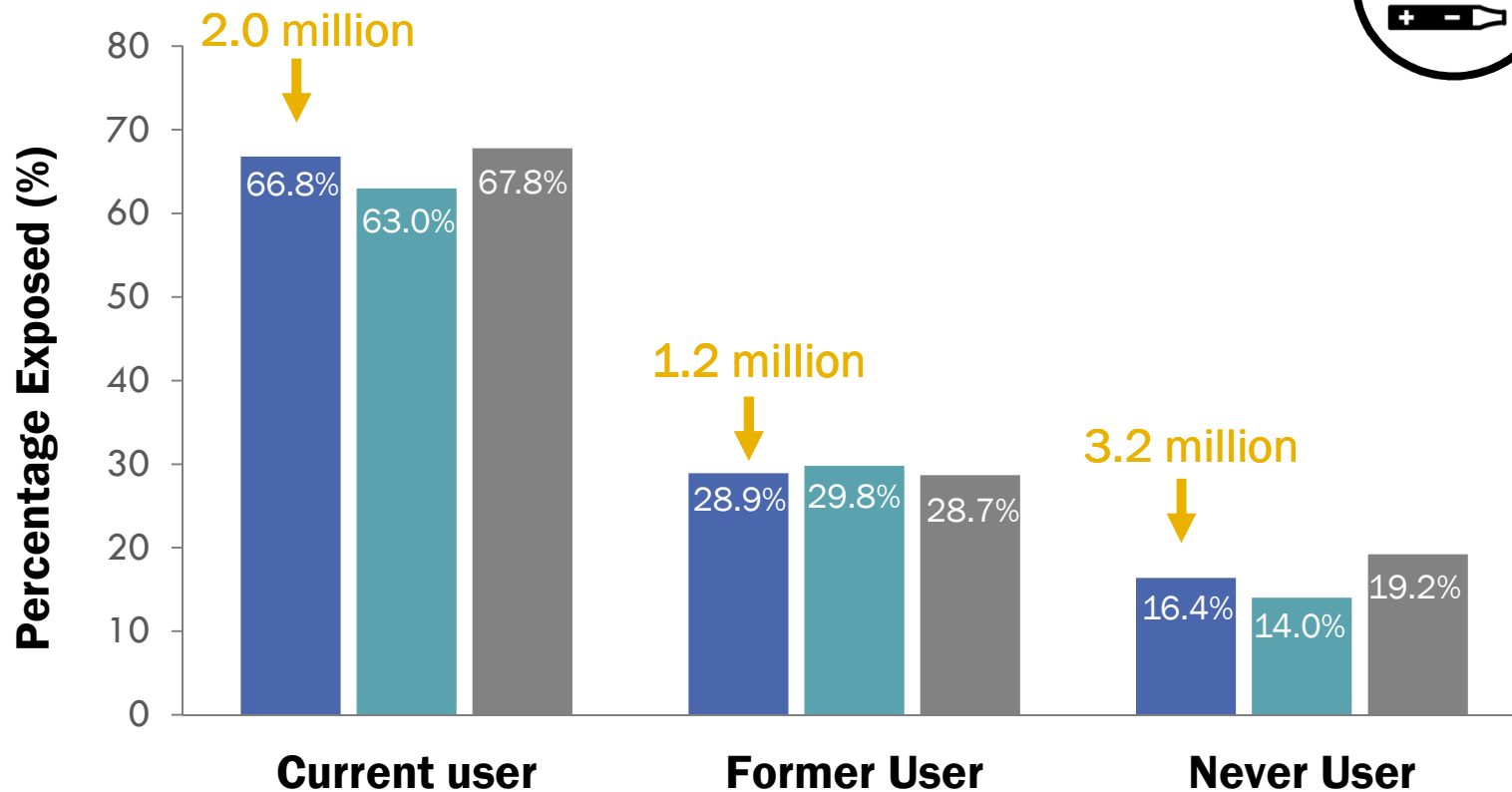
Secondhand E-Cigarette Aerosol Exposure, by Race/Ethnicity



Note: Self-reported secondhand exposure was assessed for indoor or outdoor public places

Secondhand E-Cigarette Aerosol Exposure, by E-Cigarette Use

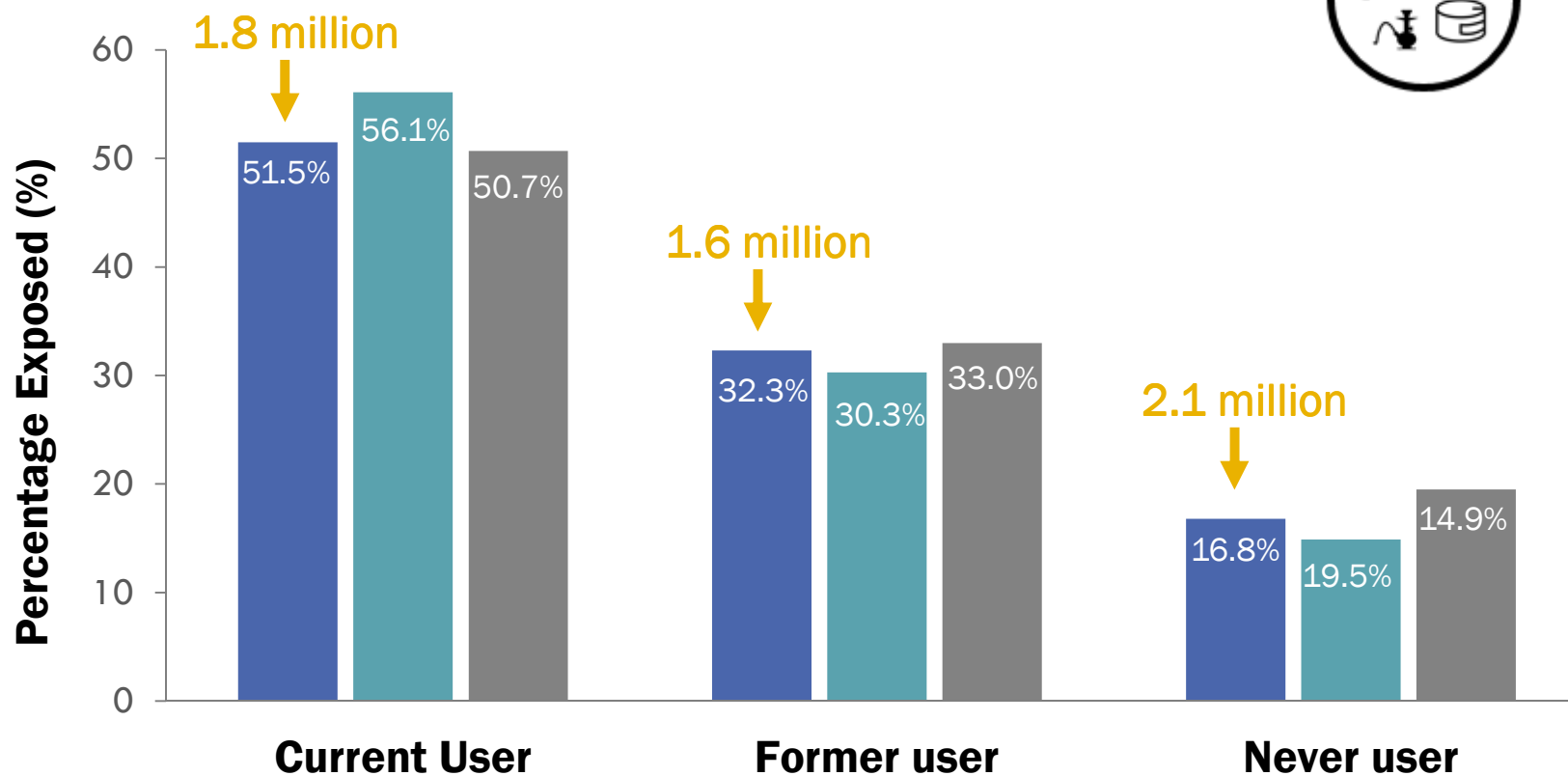
■ Total Students ■ Middle School ■ High School



Note: Self-reported secondhand exposure was assessed for indoor or outdoor public places

Secondhand E-Cigarette Aerosol Exposure, by Other Tobacco Use

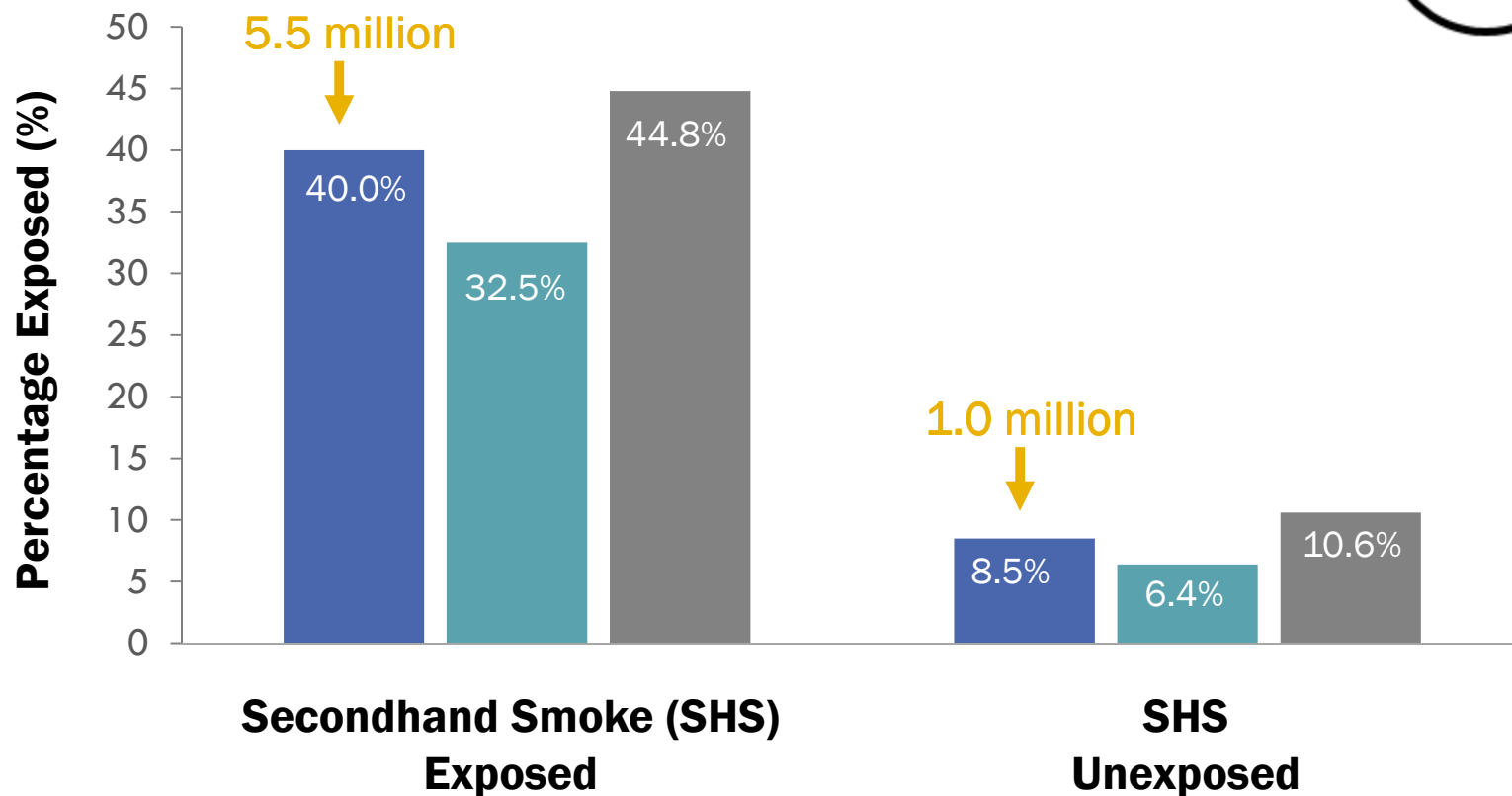
■ Total Students ■ Middle School ■ High School



Note: Self-reported secondhand exposure was assessed for indoor or outdoor public places

Secondhand E-Cigarette Aerosol Exposure, by SHS Exposure

■ Total Students ■ Middle School ■ High School

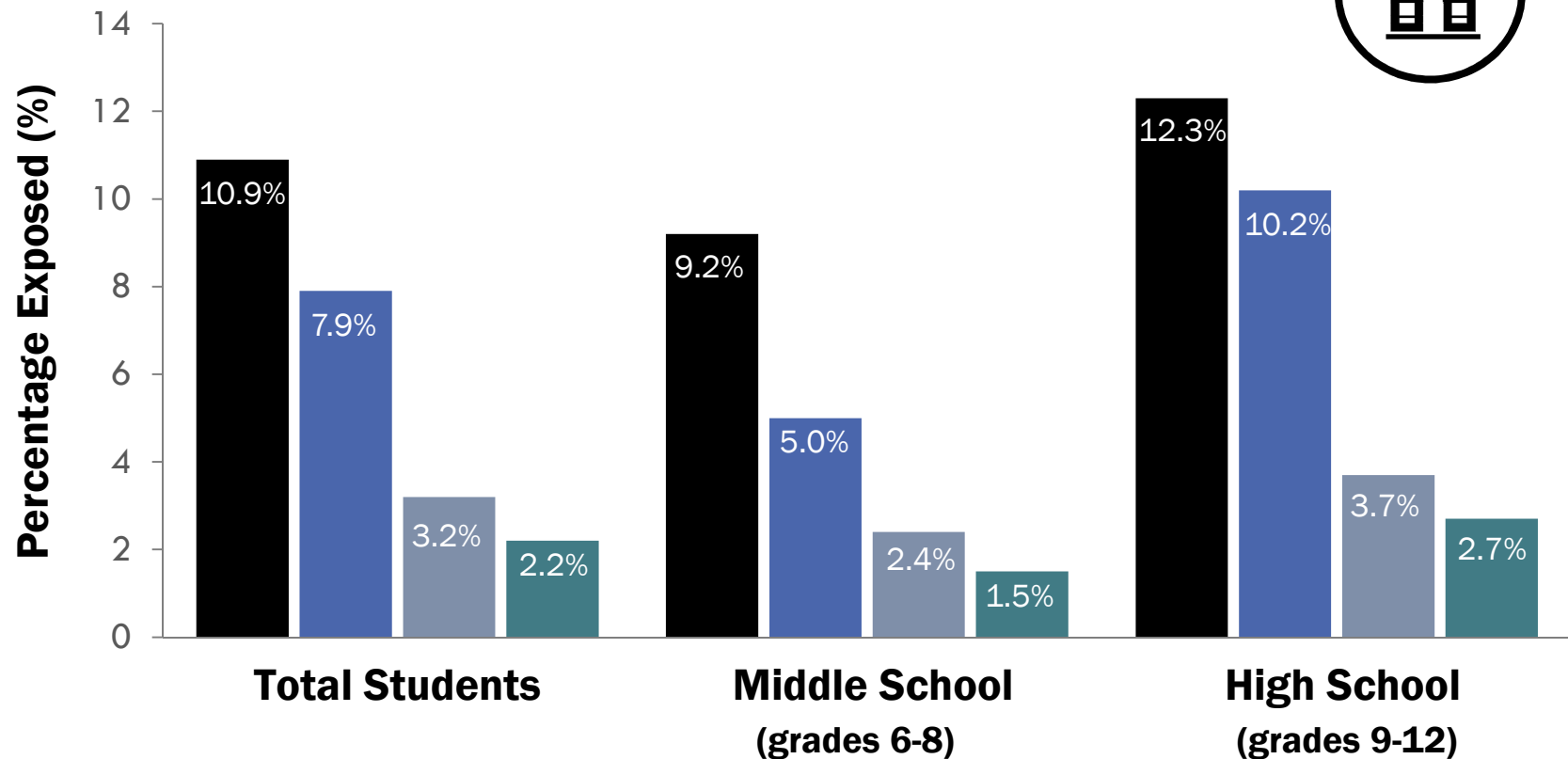


Note: Self-reported secondhand exposure was assessed for indoor or outdoor public places

Distribution of Secondhand Aerosol Exposure

Majority of students reported 1-2 days of exposure within the past 30 days

■ 1-2 days ■ 3-9 days ■ 10-29 days ■ 30 days



Note: Distributions do not add up to 100% as respondents who reported "0 days" were omitted.
Self-reported secondhand exposure was assessed for indoor or outdoor public places

Study Limitations

-  Generalizability to all middle and high school-aged youth
-  Potential recall bias
-  Does not assess secondhand e-cigarette aerosol exposure in private settings (e.g. homes, cars)

Who Can Take Action?

Coordinating efforts across a wide range of stakeholders



Public health and
health care professionals



Teachers, coaches,
other youth influencers



Researchers



Civic and community leaders



Individuals, parents,
and families



Federal Government



State, local, and
territorial governments



E-cigarette manufacturers,
distributors, and retailers

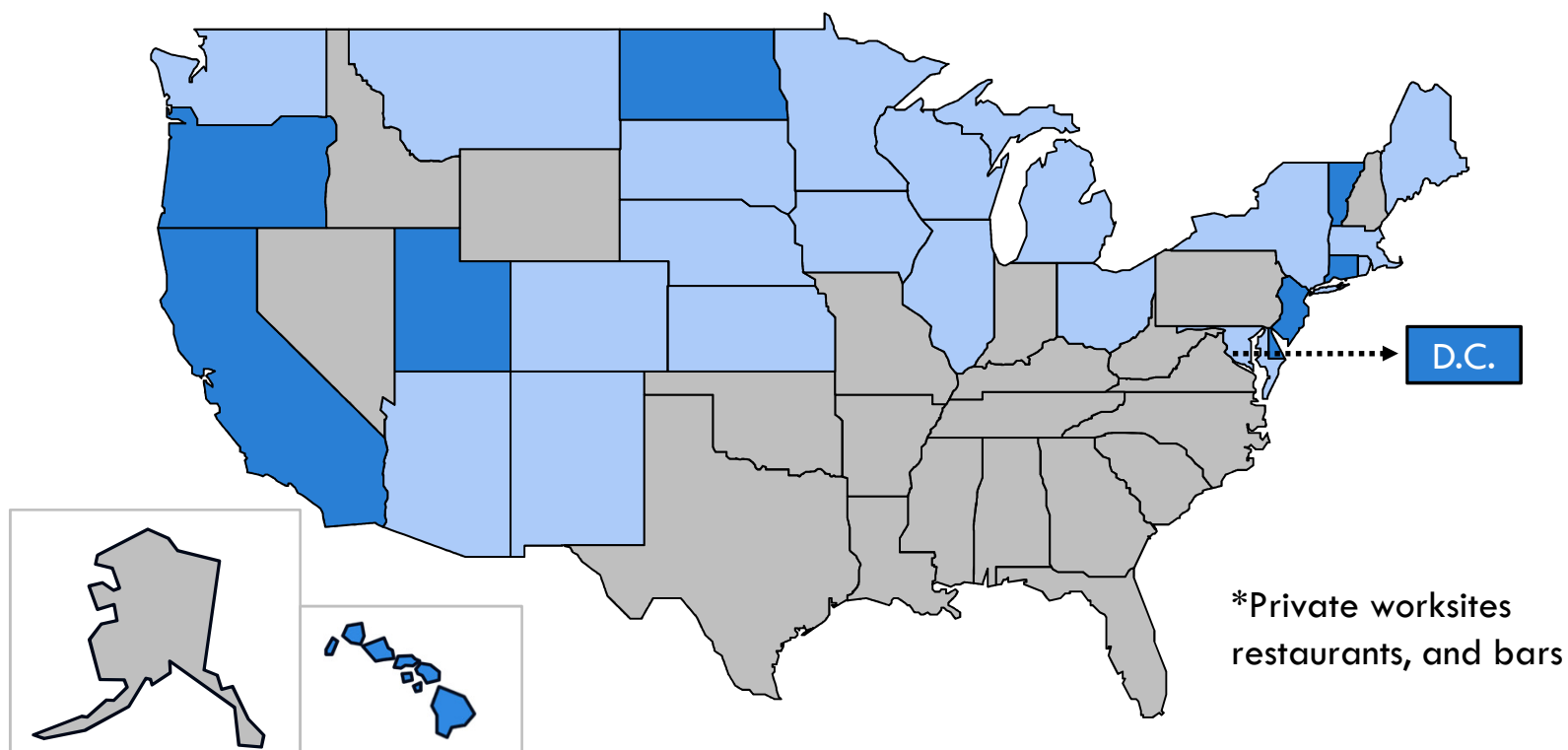


Voluntary health agencies,
NGOs, other community
faith based organizations

Comprehensive* Smokefree Laws as of Jan. 2017

8 states have comprehensive smokefree laws that include e-cigarettes

- Comprehensively prohibits indoor smoking and e-cigarette use (n=8 states and D.C.)
- Comprehensively prohibits indoor smoking only (n=19 states)
- No comprehensive smokefree law or prohibition of indoor e-cigarette use (n=23 states)



Key Takeaways



E-cigarette aerosol is not harmless



1 in 4 U.S. middle and high school students (6.5 million) have been exposed to secondhand e-cigarette aerosol in public places within the past 30 days



Modernization of indoor smokefree policies to include e-cigarettes can be implemented to protect the health of our nation's youth

Acknowledgements

CDC/NCCDPHP/OSH

Kristy Marynak, MPP

Israel Agaku, DMD, MPH

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The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

