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E-cigarette Use by State and Demographic Characteristics

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Presenter Disclosures

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United Health Foundation provides funding each year to Arundel Metrics, Inc (Independent Contractor) to write *America's Health Rankings® Annual Report*.

Introduction and Objective

E-cigarettes and Health

- Unknown long-term health effects¹
- As of July 2017, 49 states have laws regulating e-cigarettes²
 - Laws vary widely – age to purchase/possess; where able be sold/used; product definition
- Emerging interest in e-cigarettes as smoking rates decline

¹ National Academy of Sciences. Public Health Consequences of E-Cigarettes, 2018.

<http://nationalacademies.org/hmd/Reports/2018/public-health-consequences-of-e-cigarettes.aspx>

² The Policy Surveillance Program. Electronic Cigarette Laws. <http://lawatlas.org/datasets/electronic-nicotine-delivery-systems>

America's Health Rankings Annual Report

- Since 1990 – longest running state level assessment of health
- Used by state health officials and for public health communication
- 35 measures - 8 from BRFSS
 - Includes smoking, but not e-cigarette use



Objective

- Characterize e-cigarette use by state and user demographic characteristics for potential inclusion in a health scorecard

Methodology

Definitions

- Ever e-cigarette use
 - Percentage of adults reporting ever using e-cigarette or vaping products
- Current e-cigarette use
 - Percentage of adults reporting use of e-cigarettes or vaping products every day or some days

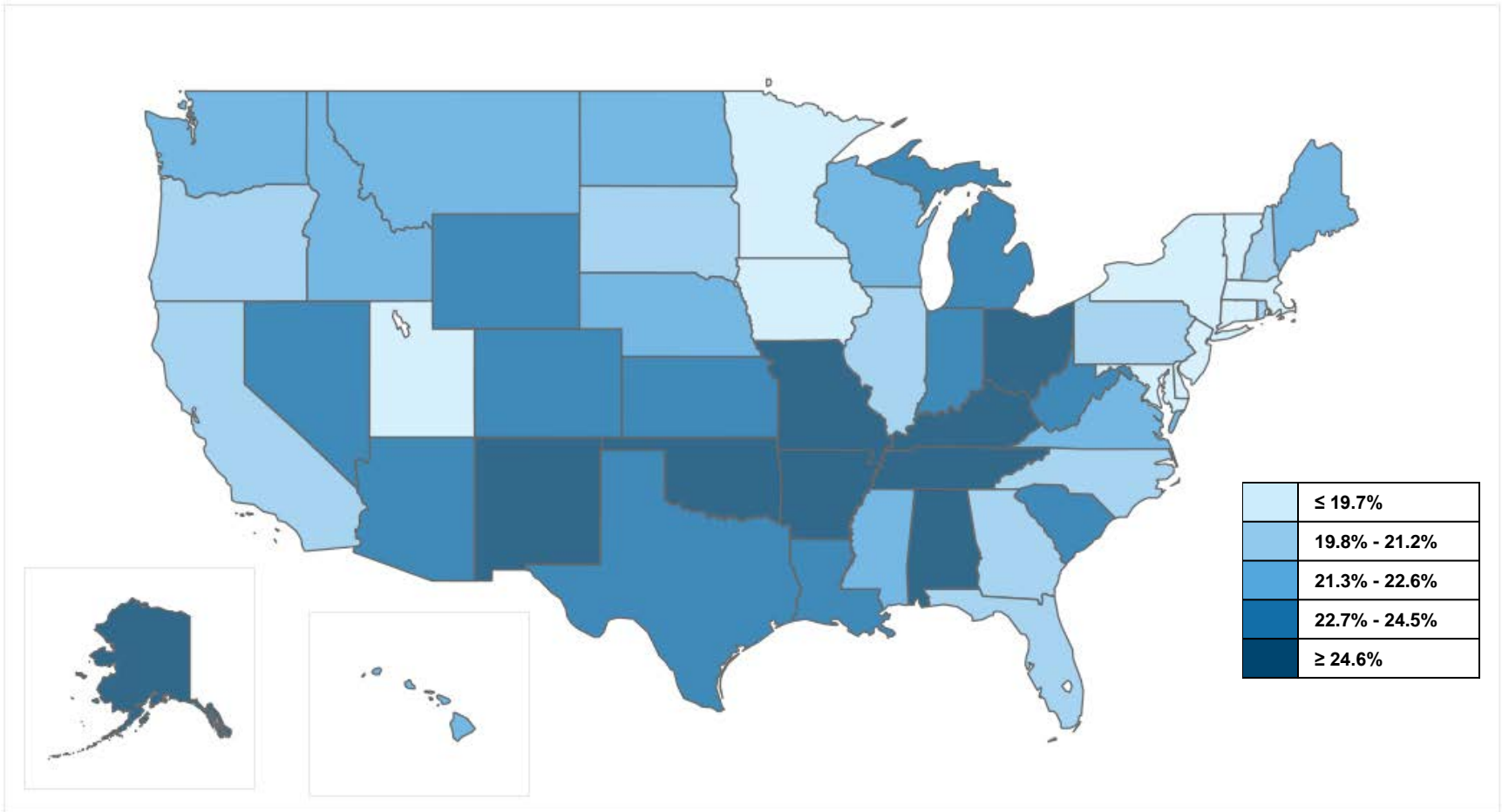
Analysis: BRFSS 2016

- National and state-level prevalence estimates
 - Overall
 - Subpopulations - gender, age, race/ethnicity, urbanicity, education**, income**
- Suppression rules
 - Sample size less than 50
 - Relative standard error >30%
- Median value reported for U.S.
 - Mean value reported for subpopulations

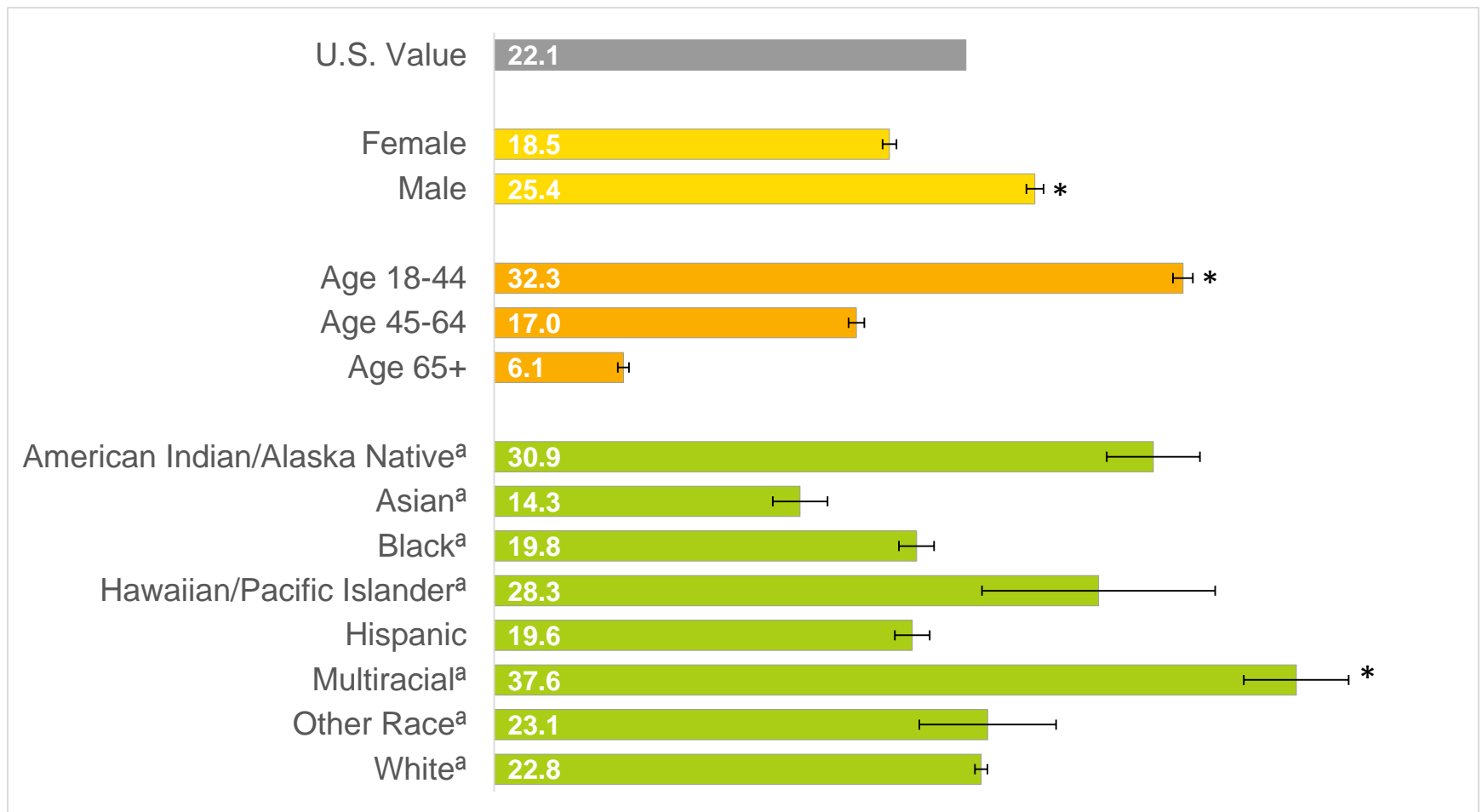
Results

Ever Use of E-cigarettes

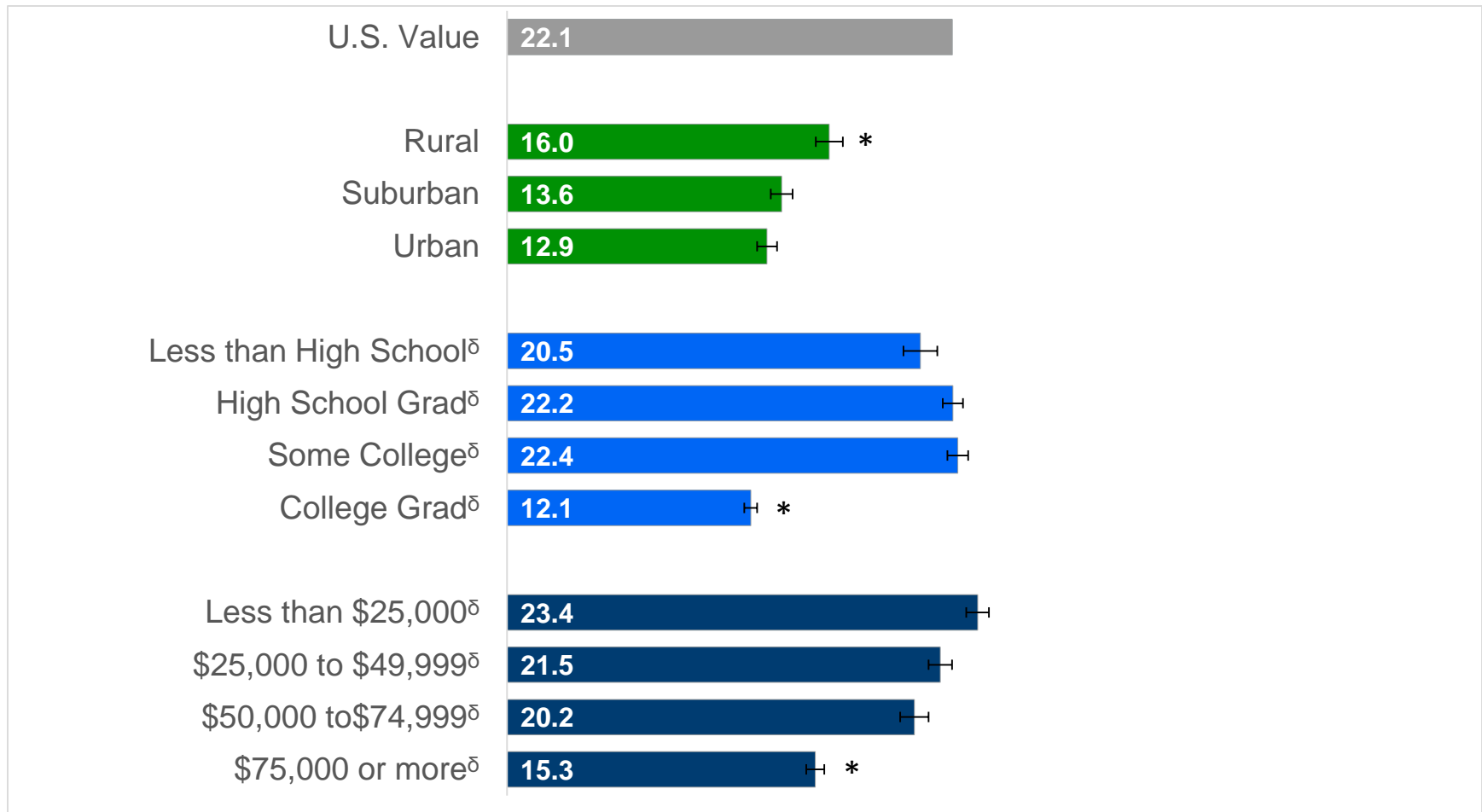
US median = 22.1%; Range: 17.8% (CT) to 28.4% (AR)



Demographic Characteristics of Ever Users

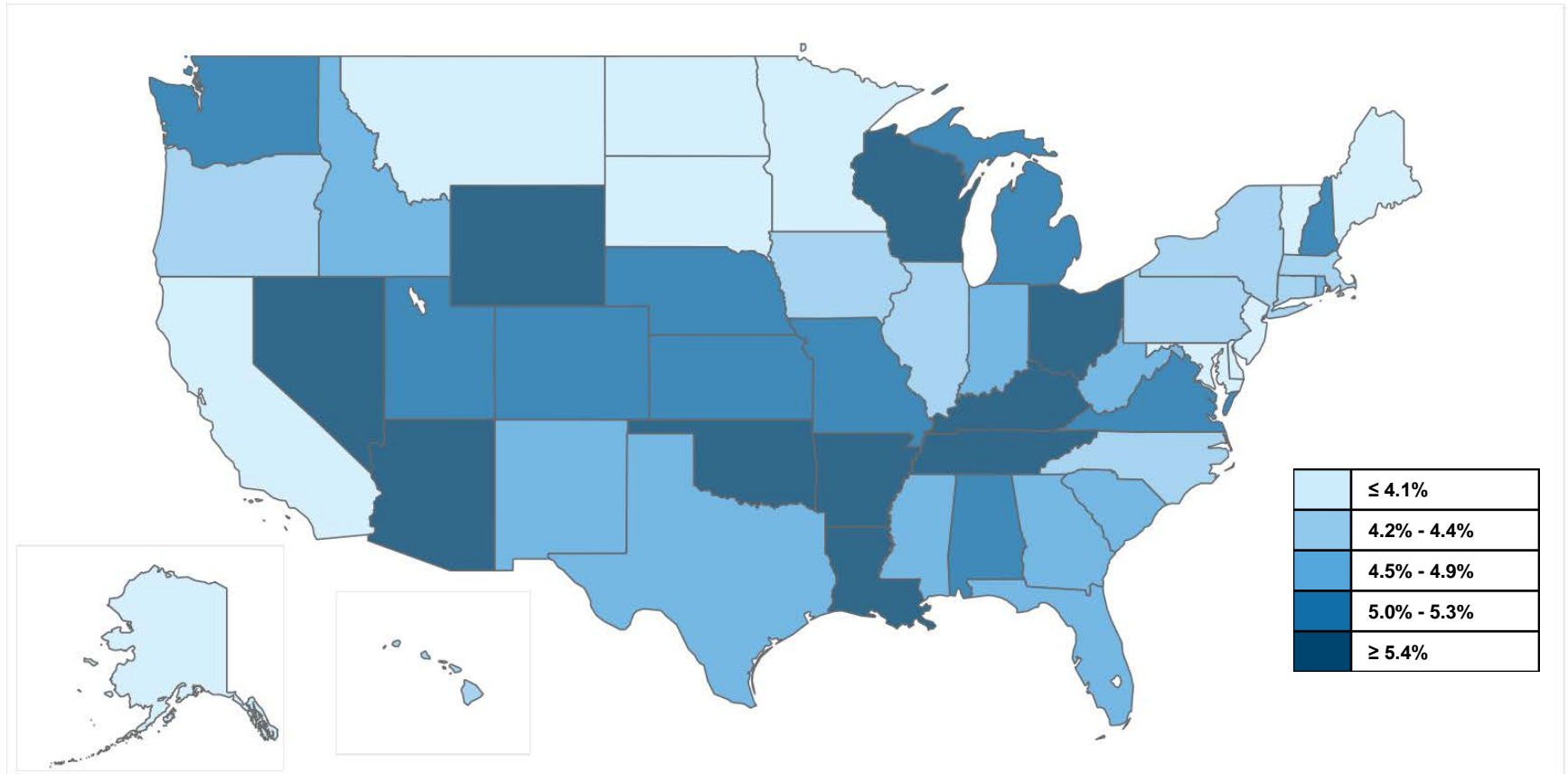


Demographic Characteristics of Ever Users

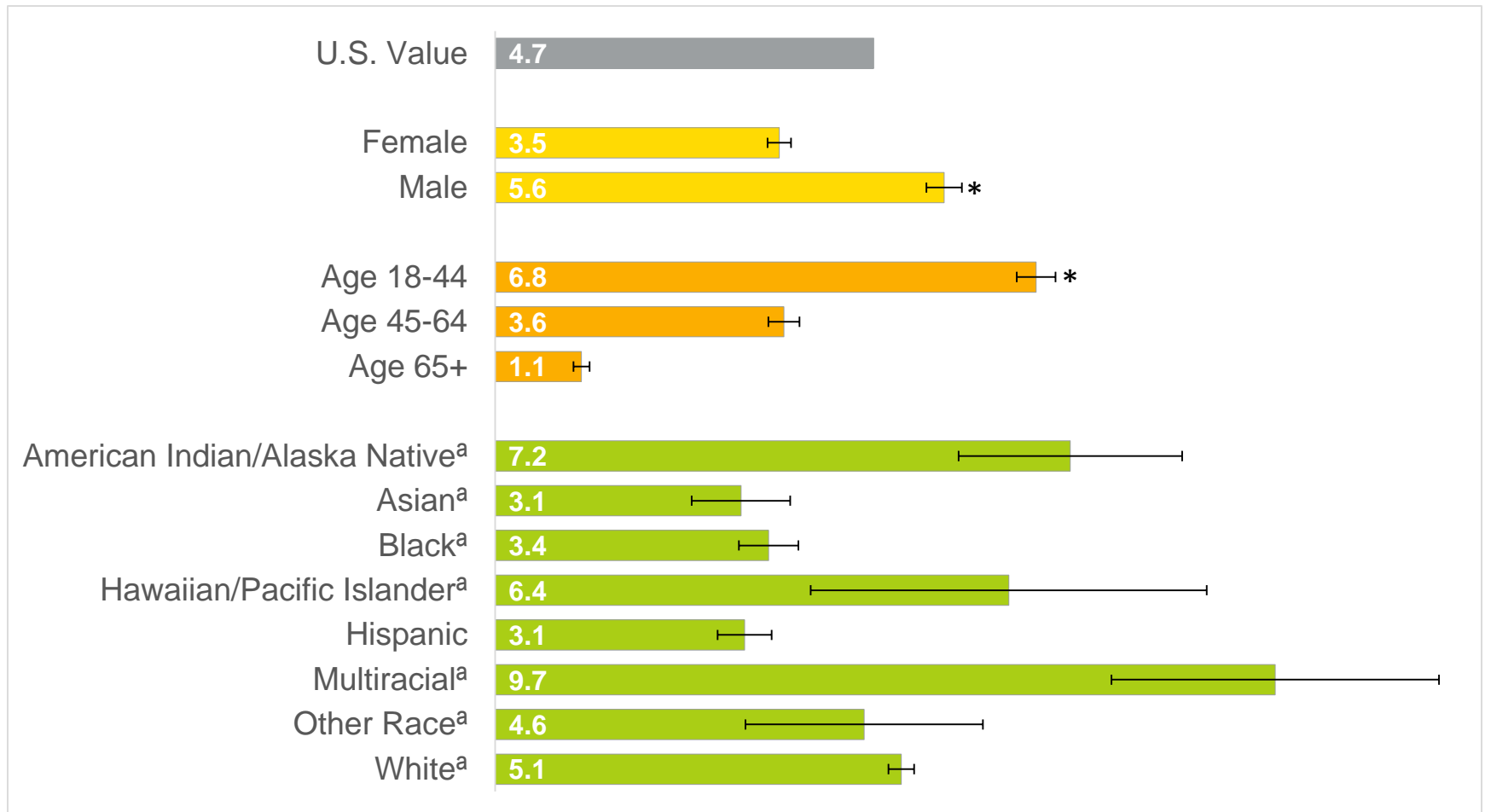


Current Use of E-cigarettes

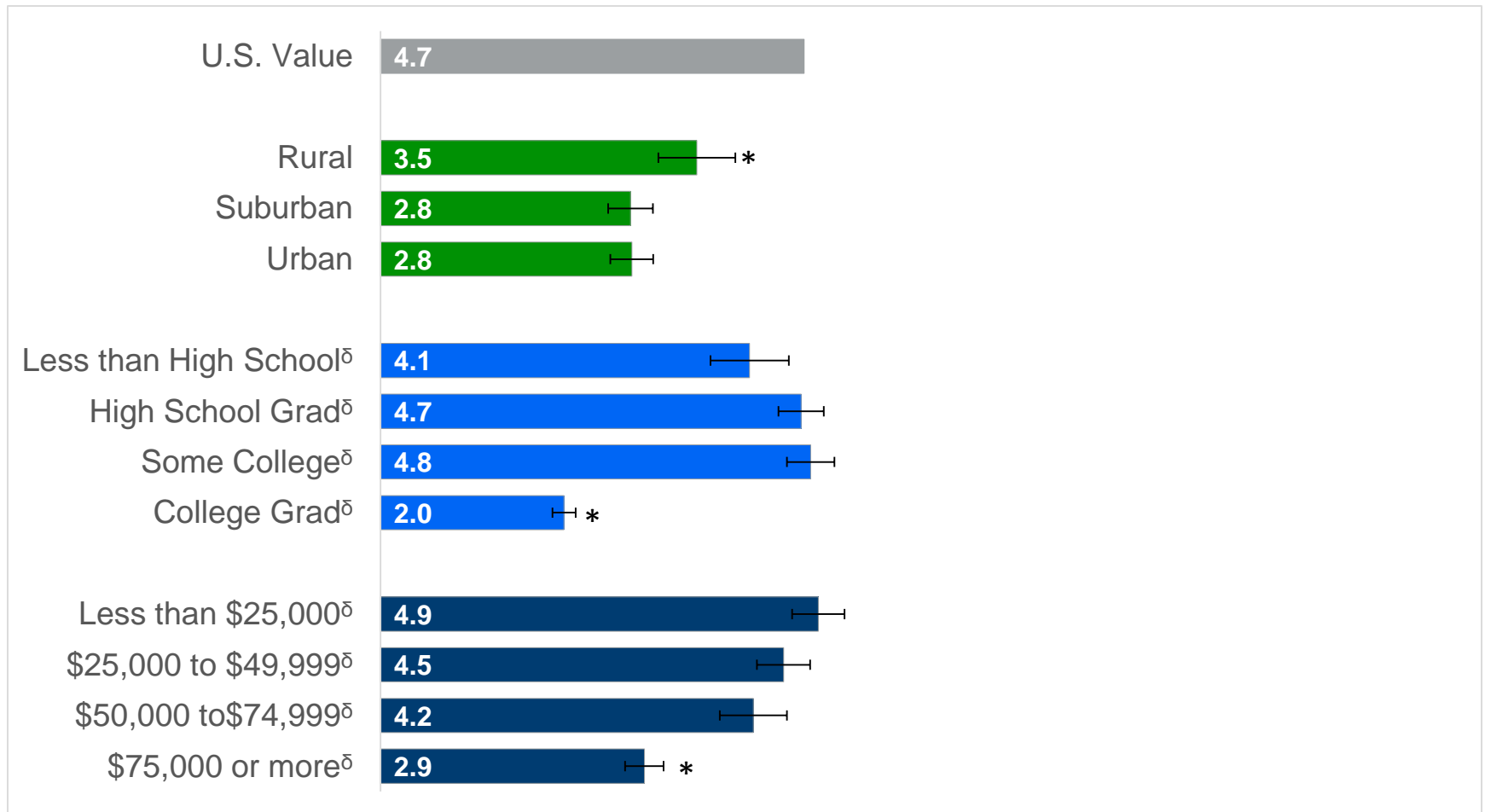
US median = 4.7%; Range: 2.9% (SD) to 6.7% (OK)



Demographic Characteristics of Current Users



Demographic Characteristics of Current Users

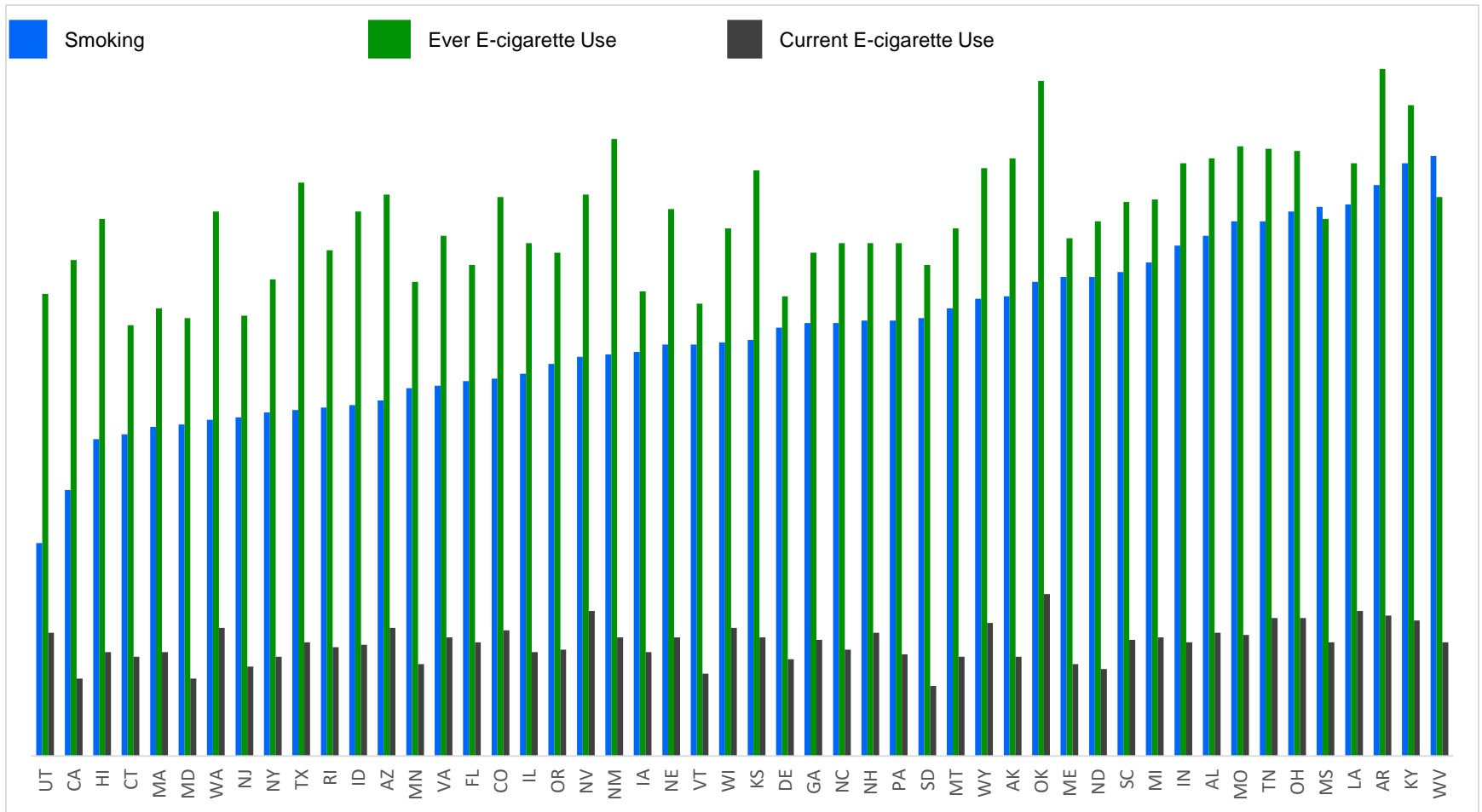


Comparison with Smoking Prevalence

- Smoking – BRFSS, 2016
 - US median 17.1%
 - Range: 8.1% (UT) to 24.8% (WV)
- Correlation³ with smoking prevalence
 - Ever e-cig = 0.65
 - Current e-cig = 0.39

³Pearson correlation coefficient

Comparison Between Smoking Prevalence and E-cigarette Use



Conclusions & Implications

Conclusions

- E-cigarette use varies by state. Between the top and bottom states, there is a
 - 1.6 fold difference in ever use
 - 2.3 fold difference in current use
- E-cigarette use varies by user demographic characteristics
- Current e-cigarette use is not well correlated with smoking prevalence at the state level
- Future research should explore e-cigarette use by smoking status (current, former, never smokers)

Implications

- May be useful for targeting programs and policies, and examining effectiveness
- This measure should be considered for inclusion in the America's Health Rankings Annual Report

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Thank You

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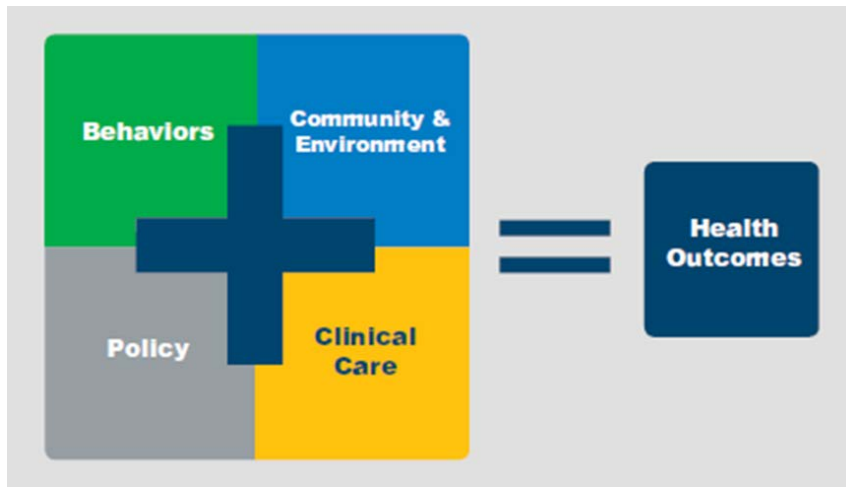
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Appendix

Annual Report Model



- Model was developed and measures were selected under the guidance of a national advisory steering group of public health experts
- 35 measures
- 15 sources of publicly available data

BRFSS measures in America's Health Rankings Reports

- *Annual Report* – smoking, physical inactivity, obesity, excessive drinking, diabetes, disparity in health status, frequent mental distress, frequent physical distress
- *Senior Report* – smoking, physical inactivity, obesity, excessive drinking, pain management, dedicated health care provider, flu vaccine, health screenings, falls, frequent mental distress, high health status, teeth extractions

BRFSS measures in America's Health Rankings Reports

- *Health of Women and Children Report* - smoking, physical inactivity, obesity, excessive drinking, cervical cancer screening, dedicated healthcare provider, dental visit, flu vaccine, well-woman visit, diabetes
- *Veterans Report* - smoking, physical inactivity, obesity, excessive drinking, insufficient sleep, health insurance, cancer screening, dental visit, flu vaccine, personal health care provider, unmet medical need, arthritis, cancer, COPD, coronary heart disease, depression, diabetes, frequent mental distress, frequent physical distress, functional impairment, heart attack, health status, stroke, teeth extractions