

Smoking Among Pregnant Women--United States, Behavioral Risk Factor Surveillance System, 2011-2014

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Background

Smoking during pregnancy is linked to poor birth outcomes including preterm birth, low birthweight, miscarriage, and increased risk of sudden infant death syndrome. In order to assess the geographic variation of smoking during pregnancy across all 50 states we calculated prevalence estimates using the Behavioral Risk Factor Surveillance System (BRFSS) by state and by subpopulation groups (age, race/ethnicity, education, income, and urbanicity).

Methodology

Smoking during pregnancy was defined as the percentage of pregnant women aged 18-44 who smoked at least 100 cigarettes in their lifetime and currently smoke.

BRFSS data from 2011-2014 were analyzed using Stata v14.1 to account for the complex survey design. National and state estimates were calculated using the specified survey weights and represent the non-institutionalized adult population. Responses of "refused", "don't know," or "not sure" were excluded from the analysis, but are reflected in standard error and confidence interval estimates. Estimates were stratified by age, race/ethnicity, urbanicity, education, and income groups. Estimates for subgroup analyses were suppressed if sample size was <50. Significance was determined by non-overlapping confidence intervals.

Results

- Nationally, 10.5% of pregnant women reported smoking during pregnancy.
- Smoking during pregnancy ranges from 1.4% in Connecticut to 24.2% in West Virginia (Figure 1).
- Smoking during pregnancy was significantly higher in women aged 35-44 years (15.2%, 95% CI: 13.0%-17.4%) compared with younger age groups (Figure 2).
- Smoking during pregnancy was significantly higher in American Indian/ Alaska Native women (26.1%, 95% CI: 14.6%-37.5%) compared with Asian and Hispanic women (Figure 2).
- Smoking during pregnancy was significantly higher in women with incomes less than \$25,000 (19.2%, 95% CI: 16.2%-22.2%) compared with higher income groups (Figure 2).
- Smoking during pregnancy was significantly higher among women with less than a high school education (17.7%, 95% CI: 13.0%-22.4%) compared with women with some college and college graduates (Figure 2).
- There was no significant difference in smoking during pregnancy by urbanicity (Figure 2).

Figure 1. US State map of smoking prevalence during pregnancy

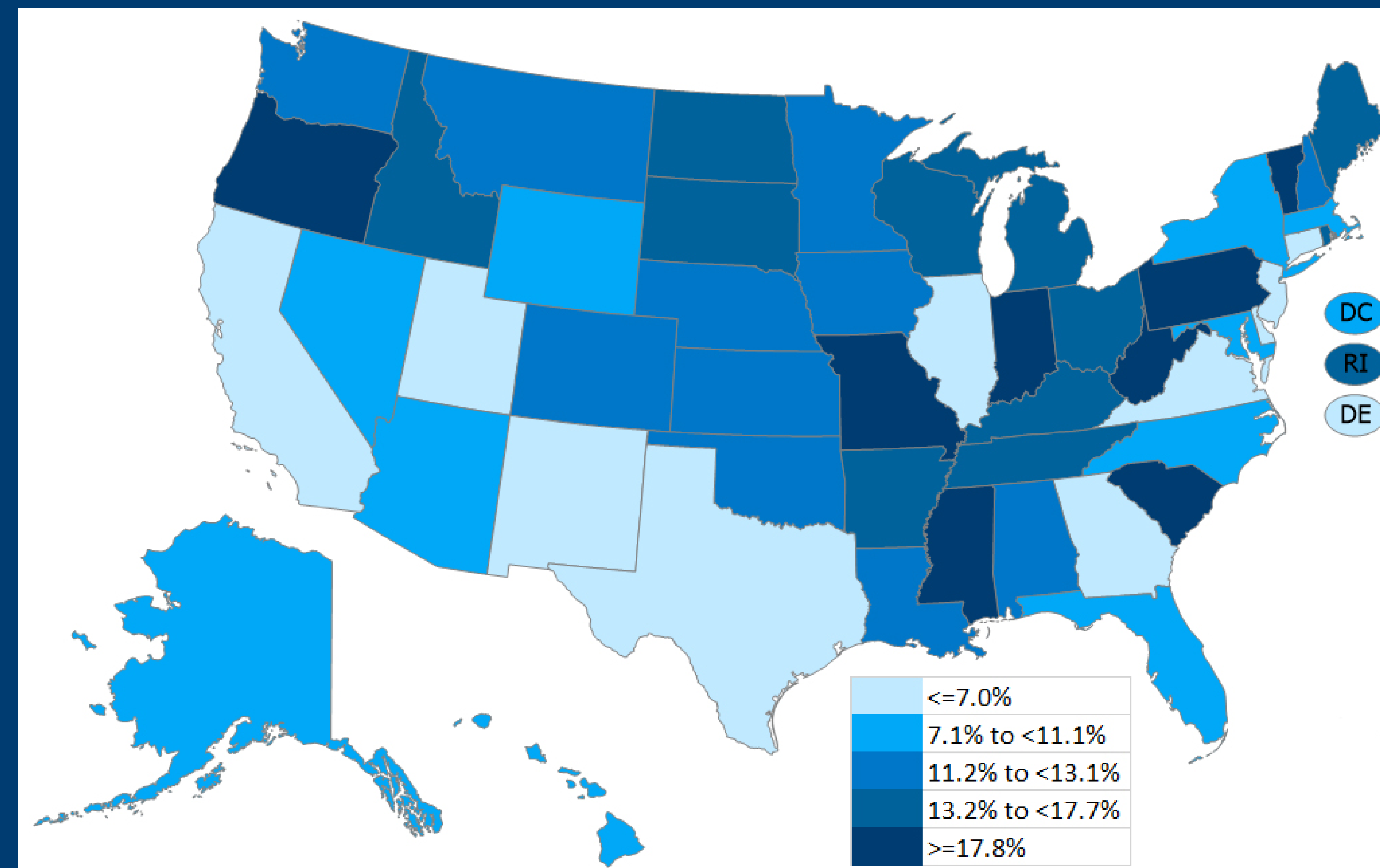


Figure 2. Prevalence of smoking during pregnancy by age, race/ethnicity, income, education and urbanicity groups

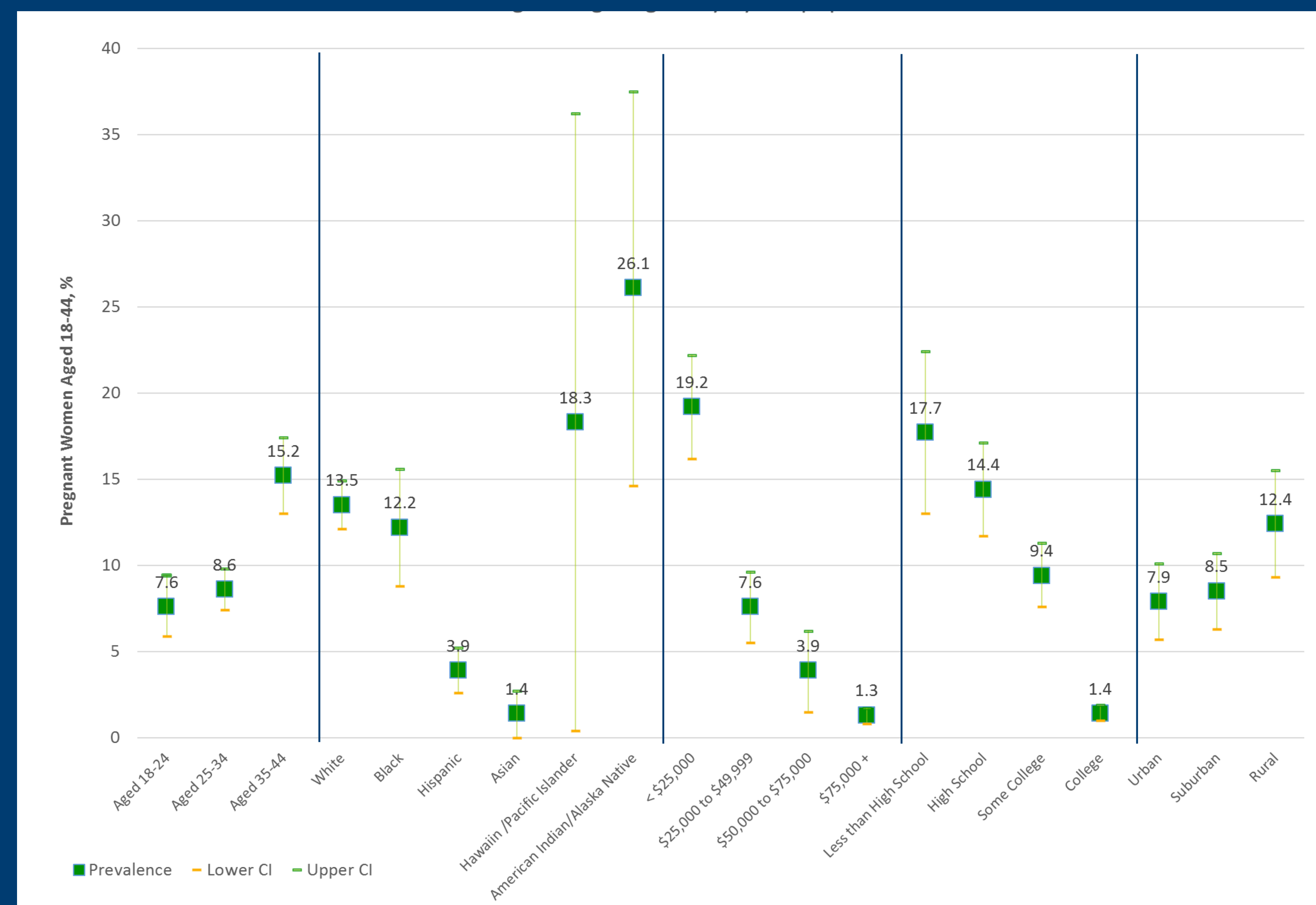


Figure 3. Prevalence of smoking by state among pregnant women aged 18-44 and all women aged 18-44 (Sorted by prevalence of smoking among pregnant women and shaded by quintile of rank)

There are inconsistencies within states between smoking prevalence among pregnant women and women of reproductive age (Figure 3). For example, Oregon and Vermont rank in the bottom quintile for prevalence of smoking during pregnancy, but rank in the middle quintile for prevalence of smoking among women of reproductive age.

State	Pregnant	All Women
CT	1.4	15.6
UT	3.5	9.2
TX	4.3	13.8
CA	4.4	8.2
IL	4.7	14.9
DE	5.2	19.1
NM	6.1	17.5
NJ	6.2	13.5
GA	6.8	15.6
VA	7	18.3
AZ	7.5	13.5
NY	8	14.8
FL	8.5	16.6
HI	8.5	15.3
MA	9	15.2
NV	9.3	14.6
MD	10	13.6
WY	10.6	22.5
NC	10.9	19.3
AK	11.1	21.8
WA	11.3	15.8
KS	11.5	20.2
MN	11.5	18.8
LA	11.6	23
OK	11.7	24.2
IA	11.8	20.7
NH	11.9	21.4
NE	12.2	20
CO	12.5	18.4
AL	13.1	21.6
MT	13.1	23.1
ID	13.3	18.3
TN	14	25.5
RI	14.4	18.1
ND	14.7	21.5
SD	14.7	24.7
KY	14.8	29.7
OH	16	26.3
AR	16.6	28.8
ME	17.7	25.6
MI	17.7	22.7
WI	17.7	19.8
MO	18.2	23.4
OR	18.9	18.9
MS	20	26.4
IN	20.4	25.7
VT	20.8	20.2
SC	21.4	22.5
PA	22.2	22.7
WV	24.2	33.6
ALL	10.5	17.4
DC	11	14

Quintile	Color	Legend
1-10		
11-20		
21-30		
31-40		
41-50		
Not Ranked		

Conclusion

Based on 2011-2014 BRFSS data, 1 in 10 pregnant women aged 18-44 years smoke and the prevalence varies widely by state, age, race/ethnicity, education, and income. Smoking prevalence among pregnant women in West Virginia is 17.3 times higher than in Connecticut. States that rank better in smoking prevalence among pregnant women than all women of reproductive age may have lessons worth sharing with other states. Identifying pregnant women who smoke early in pregnancy and offering evidence-based programs to support smoking cessation in pregnancy could reduce poor birth outcomes.

Limitations

- Aggregated data cannot be used to make inferences at the individual level.
- BRFSS data is based on self-report and excludes those without a telephone and those who are institutionalized
- Small sample sizes prevented presenting state level data by age, race/ethnicity, income, education and urbanicity groups.

The data used in this analysis are available in *America's Health Rankings Health of Women and Children Report* and at www.AmericasHealthRankings.org



Acknowledgments

We thank the advisory committee, who provided guidance in the development of the *Health of Women and Children Report*, and United Health Foundation for their continued support of this project.

Disclosure

Arundel Metrics receives funding from United Health Foundation to produce America's Health Rankings. Arundel Metrics (arundelmetrics.com) is a small, data-driven consulting firm specializing in public health measurement and index generation.