

State-Specific Prevalence of Cigarette Smoking and Smokeless Tobacco Use Among Adults — United States, 2009

The health consequences of cigarette smoking and smokeless tobacco use both have been well documented, including increased risk for lung, throat, oral, and other types of cancers (1,2). To assess state-specific current cigarette smoking and smokeless tobacco use among adults, CDC analyzed data from the 2009 Behavioral Risk Factor Surveillance System (BRFSS). This report summarizes the results of that analysis, which indicated wide variation in self-reported cigarette smoking prevalence (range: 6.4% [U.S. Virgin Islands (USVI)] to 25.6% [Kentucky and West Virginia]) and smokeless tobacco use (range: 0.8% [USVI] to 9.1% [Wyoming]). For 15 of the states, Puerto Rico, and Guam, smoking prevalence was significantly higher among men than among women. The prevalence of smokeless tobacco use was higher among men than women in all states and territories. Smokeless tobacco use was highest among persons aged 18–24 years and those with a high school education or less. From 0.9% (Puerto Rico) to 13.7% (Wyoming) of current smokers reported also using smokeless tobacco. Clinicians should identify all tobacco use in their patients and advise those who use any tobacco product to quit. The World Health Organization (WHO) recommends implementing this approach in combination with other measures, including raising excise taxes on tobacco and strengthening smoke-free policies to prevent tobacco-related deaths.

BRFSS* is a state-based, landline telephone survey of noninstitutionalized adults conducted annually in all 50 states, the District of Columbia (DC), Guam, Puerto Rico, and USVI. The 2009 BRFSS included data from 432,607 adults that were used to assess the prevalence of current smoking[†] and smokeless tobacco

use.[§] Respondents also were asked their age, sex, and highest grade or year of school completed. Estimates were weighted to adjust for differences in probability of selection and nonresponse, as well as noncoverage of persons in households without landline telephones. These sampling weights were used to calculate all estimates and 95% confidence intervals. Response rates for BRFSS are calculated using Council of American Survey and Research Organizations (CASRO) guidelines. Median survey response rates were 52.5%, calculated as the percentage of persons who completed interviews among all eligible persons, including those who were not contacted. Median cooperation rates were 75.0%, calculated as the percentage of persons who completed interviews among all eligible persons who were contacted. For comparisons of prevalence between men and women, statistical significance ($p < 0.05$) was determined using a two-sided z-test.

Current Cigarette Smoking Prevalence

In 2009, current smoking prevalence was highest in Kentucky (25.6%), West Virginia (25.6%), and Oklahoma (25.5%), and lowest in Utah (9.8%), California (12.9%), and Washington (14.9%) (Table 1). Smoking prevalence was 6.4% in USVI, 10.6% in Puerto Rico, and 24.1% in Guam. For 15 of the states, Puerto Rico, and Guam, smoking prevalence was significantly higher among men than among women, and in no state was smoking prevalence significantly higher among women than men.

Current Smokeless Tobacco Use Prevalence

Smokeless tobacco use within states was highest in Wyoming (9.1%), West Virginia (8.5%), and Mississippi (7.5%); and lowest in California (1.3%),

* BRFSS survey data information is available at http://www.cdc.gov/brfss/technical_infodata/surveydata/2009.htm.

[†] Respondents who answered “yes” to the question “Have you smoked at least 100 cigarettes in your entire life?” and answered “every day” or “some days” to the question “Do you now smoke cigarettes every day, some days, or not at all?” were classified as current cigarette smokers.

[§] Respondents who answered “every day” or “some days” to the question “Do you currently use chewing tobacco, snuff, or snus [a small pouch of smokeless tobacco] every day, some days, or not at all?” were classified as current smokeless tobacco users. This is the first year that a question related to smokeless tobacco use was included on the core questionnaire of the BRFSS. In some previous years, the questions to assess smokeless tobacco use were offered as an optional module.

TABLE 1. Prevalence of current cigarette smoking among adults,* by state/area and sex — Behavioral Risk Factor Surveillance System, United States, 2009

State/Area	Cigarette smoking					
	Total		Men		Women	
	%	(95% CI) [†]	%	(95% CI)	%	(95% CI)
Utah	9.8	(8.9–10.7)	11.9	(10.4–13.4)	7.7	(6.7–8.7)
California	12.9	(12.1–13.7)	15.6	(14.3–16.9)	10.2	(9.3–11.1)
Washington	14.9	(14.1–15.7)	16.1	(14.8–17.3)	13.8	(12.9–14.7)
Massachusetts	15.0	(14.0–16.0)	16.1	(14.5–17.7)	14.0	(12.8–15.1)
Rhode Island	15.1	(13.7–16.5)	15.3	(13.0–17.5)	14.9	(13.3–16.6)
Maryland	15.2	(14.0–16.4)	16.7	(14.7–18.7)	13.8	(12.4–15.1)
District of Columbia	15.3	(13.7–16.9)	15.8	(13.1–18.5)	14.8	(12.9–16.7)
Connecticut	15.4	(13.9–16.9)	16.2	(13.8–18.6)	14.7	(12.8–16.7)
Hawaii	15.4	(14.1–16.7)	16.8	(14.7–18.9)	13.9	(12.3–15.5)
New Hampshire	15.8	(14.3–17.3)	17.3	(14.7–19.9)	14.3	(12.6–16.0)
New Jersey	15.8	(14.7–16.9)	17.6	(15.7–19.5)	14.2	(13.0–15.4)
Arizona	16.1	(14.1–18.1)	18.0	(14.9–21.2)	14.3	(11.9–16.7)
Idaho	16.3	(14.7–17.8)	18.7	(16.2–21.3)	13.9	(12.2–15.6)
Nebraska	16.7	(15.3–18.1)	18.5	(16.3–20.6)	15.0	(13.4–16.6)
Minnesota	16.8	(15.3–18.3)	18.6	(16.1–21.2)	14.9	(13.1–16.7)
Montana	16.8	(15.4–18.1)	16.4	(14.3–18.4)	17.3	(15.5–19.0)
Colorado	17.1	(16.0–18.2)	19.5	(17.7–21.3)	14.6	(13.4–15.9)
Florida	17.1	(15.8–18.4)	18.0	(15.8–20.2)	16.3	(14.8–17.8)
Vermont	17.1	(15.7–18.5)	19.4	(17.2–21.6)	15.0	(13.3–16.6)
Iowa	17.2	(15.8–18.6)	19.6	(17.3–21.9)	14.8	(13.2–16.5)
Maine	17.3	(16.1–18.5)	18.9	(16.9–20.8)	15.8	(14.4–17.2)
South Dakota	17.5	(16.0–19.0)	16.9	(14.6–19.2)	18.1	(16.1–20.0)
Georgia	17.7	(16.1–19.3)	20.0	(17.2–22.7)	15.5	(13.8–17.2)
Kansas	17.8	(17.0–18.6)	18.6	(17.3–19.9)	17.1	(16.1–18.1)
New Mexico	17.9	(16.6–19.2)	19.9	(17.7–22.0)	16.1	(14.5–17.7)
Oregon	17.9	(16.1–19.7)	18.5	(15.6–21.4)	17.2	(15.0–19.5)
Texas	17.9	(16.4–19.4)	22.1	(19.5–24.7)	13.8	(12.5–15.1)
New York	18.0	(16.6–19.4)	19.3	(16.9–21.7)	16.8	(15.2–18.4)
Delaware	18.3	(16.5–20.1)	20.2	(17.2–23.1)	16.6	(14.5–18.7)
Illinois	18.6	(17.1–20.1)	20.6	(18.1–23.1)	16.7	(15.0–18.3)
North Dakota	18.6	(16.9–20.3)	19.3	(16.7–22.0)	17.9	(15.8–19.9)
Wisconsin	18.8	(16.8–20.8)	20.3	(16.9–23.6)	17.3	(15.0–19.6)
Virginia	19.0	(16.8–21.2)	22.5	(18.6–26.4)	15.8	(13.9–17.6)
Michigan	19.6	(18.4–20.8)	21.1	(19.1–22.9)	18.2	(16.8–19.7)
Wyoming	19.9	(18.3–21.4)	20.1	(17.8–22.5)	19.7	(17.7–21.7)
Pennsylvania	20.2	(18.9–21.5)	21.5	(19.3–23.7)	19.1	(17.5–20.6)
North Carolina	20.3	(19.0–21.6)	23.1	(21.0–25.3)	17.7	(16.3–19.1)
Ohio	20.3	(19.0–21.5)	21.2	(19.2–23.3)	19.5	(18.0–21.0)
South Carolina	20.4	(19.0–21.8)	21.5	(19.2–23.8)	19.3	(17.5–21.1)
Alaska	20.6	(18.2–23.0)	20.7	(17.2–24.3)	20.5	(17.2–23.8)
Arkansas	21.5	(19.5–23.5)	21.0	(17.8–24.1)	21.9	(19.3–24.5)
Nevada	22.0	(19.5–24.5)	22.7	(18.8–26.7)	21.3	(18.3–24.3)
Tennessee	22.0	(20.1–23.9)	24.6	(21.4–27.9)	19.6	(17.7–21.6)
Louisiana	22.1	(20.7–23.5)	25.1	(22.7–27.4)	19.3	(17.9–20.8)
Alabama	22.5	(20.9–24.1)	25.7	(22.9–28.5)	19.7	(17.9–21.4)
Indiana	23.1	(21.7–24.5)	24.9	(22.6–27.1)	21.5	(19.8–23.1)
Missouri	23.1	(21.2–25.0)	24.3	(21.3–27.4)	21.9	(19.6–24.3)
Mississippi	23.3	(22.0–24.6)	27.2	(25.0–29.4)	19.8	(18.4–21.3)
Oklahoma	25.5	(24.1–26.9)	27.1	(24.7–29.4)	24.0	(22.4–25.5)
Kentucky	25.6	(23.9–27.3)	27.1	(24.1–30.0)	24.2	(22.3–26.1)
West Virginia	25.6	(23.9–27.2)	27.7	(25.0–30.4)	23.6	(21.7–25.6)
U.S. Virgin Islands	6.4	(5.2–7.6)	8.1	(6.0–10.1)	5.0	(3.7–6.2)
Puerto Rico	10.6	(9.3–11.9)	13.8	(11.4–16.2)	7.7	(6.4–9.1)
Guam	24.1	(21.1–27.1)	30.9	(25.8–36.0)	17.1	(14.2–20.1)

* Persons aged ≥18 years who reported having smoked ≥100 cigarettes during their life and currently smoke every day or some days. Data were weighted to be representative of the state/area population.

† Confidence interval.

TABLE 2. Prevalence of current smokeless tobacco use among adults,* by state/area — Behavioral Risk Surveillance System, United States, 2009

State/Area	Smokeless tobacco use					
	Total		Men		Women	
	%	(95% CI†)	%	(95% CI)	%	(95% CI)
California	1.3	(1.1–1.6)	2.4	(1.9–2.9)	0.3	(0.2–0.4)
District of Columbia	1.5	(0.9–2.2)	2.0	(1.0–2.9)	1.2	(0.3–2.0)
Massachusetts	1.5	(1.1–1.8)	2.6	(1.8–3.3)	0.4	(0.2–0.6)
Rhode Island	1.5	(1.0–2.0)	2.3	(1.3–3.2)	0.7	(0.4–1.1)
Connecticut	1.6	(1.1–2.2)	2.9	(1.9–4.0)	0.5	(0.2–0.7)
Maryland	1.7	(1.3–2.0)	2.5	(1.8–3.2)	0.9	(0.5–1.3)
Delaware	1.9	(1.3–2.5)	3.9	(2.6–5.1)	0.2	(0.1–0.3)
New York	2.0	(1.4–2.6)	3.5	(2.3–4.6)	0.7	(0.4–1.0)
Maine	2.3	(1.9–2.8)	4.1	(3.2–5.0)	0.7	(0.4–1.0)
New Jersey	2.3	(1.7–2.9)	3.6	(2.5–4.7)	1.1	(0.6–1.5)
Hawaii	2.6	(2.0–3.3)	4.0	(2.8–5.1)	1.3	(0.6–2.0)
New Hampshire	2.6	(1.8–3.3)	4.1	(2.8–5.5)	1.1	(0.4–1.7)
Utah	2.7	(2.2–3.2)	4.9	(3.9–5.9)	0.5	(0.2–0.7)
Arizona	3.1	(1.9–4.2)	5.7	(3.5–8.0)	0.5	(0.2–0.8)
Florida	3.2	(2.5–3.9)	5.1	(3.8–6.4)	1.3	(0.7–1.9)
Illinois	3.2	(2.5–3.9)	5.2	(3.9–6.5)	1.2	(0.7–1.8)
Nevada	3.3	(2.3–4.3)	5.3	(3.5–7.0)	1.3	(0.6–2.0)
Michigan	3.5	(2.9–4.2)	6.3	(5.0–7.5)	1.0	(0.6–1.3)
Vermont	3.6	(2.8–4.3)	6.2	(4.9–7.5)	1.1	(0.4–1.8)
Washington	3.7	(3.2–4.3)	6.8	(5.8–7.8)	0.6	(0.3–0.8)
Wisconsin	3.7	(2.7–4.7)	6.6	(4.7–8.4)	0.9	(0.3–1.5)
Texas	3.8	(3.1–4.5)	6.7	(5.4–8.0)	0.9	(0.6–1.2)
Colorado	3.9	(3.3–4.5)	7.2	(6.0–8.4)	0.6	(0.3–0.9)
Louisiana	3.9	(3.3–4.6)	7.0	(5.7–8.2)	1.2	(0.7–1.6)
Minnesota	3.9	(3.0–4.9)	7.1	(5.3–8.9)	0.8	(0.4–1.3)
Oregon	3.9	(2.8–4.9)	7.2	(5.2–9.2)	0.6	(0.2–1.0)
Ohio	4.1	(3.4–4.8)	7.7	(6.3–9.0)	0.8	(0.4–1.1)
New Mexico	4.2	(3.3–5.1)	7.9	(6.2–9.7)	0.6	(0.3–0.9)
North Carolina	4.3	(3.6–5.0)	7.5	(6.2–8.8)	1.3	(1.0–1.6)
Iowa	4.5	(3.7–5.4)	8.9	(7.2–10.5)	0.4	(0.2–0.6)
Indiana	4.6	(3.9–5.4)	8.5	(7.1–10.0)	0.9	(0.6–1.3)
Virginia	4.6	(3.3–6.0)	8.6	(5.9–11.3)	0.9	(0.5–1.3)
Georgia	4.7	(3.9–5.5)	7.8	(6.2–9.4)	1.7	(1.2–2.2)
Nebraska	4.7	(4.1–5.4)	9.1	(7.8–10.3)	0.6	(0.4–0.8)
South Carolina	4.7	(3.9–5.6)	8.4	(6.7–10.0)	1.4	(0.9–1.9)
Tennessee	4.9	(4.0–5.8)	8.5	(6.8–10.2)	1.6	(0.9–2.3)
Pennsylvania	5.0	(4.2–5.8)	9.7	(8.1–11.3)	0.7	(0.4–1.0)
Missouri	5.4	(4.3–6.5)	10.4	(8.1–12.6)	0.7	(0.3–1.1)
Idaho	5.7	(4.6–6.7)	10.5	(8.5–12.6)	0.8	(0.4–1.2)
Alaska	5.8	(4.5–7.0)	8.9	(6.7–11.1)	2.5	(1.3–3.6)
Kansas	5.9	(5.3–6.4)	10.8	(9.8–11.8)	1.1	(0.9–1.3)
South Dakota	6.2	(5.3–7.2)	11.9	(10.0–13.7)	0.7	(0.4–1.1)
Alabama	6.6	(5.5–7.7)	11.8	(9.7–13.9)	1.9	(1.3–2.5)
North Dakota	6.6	(5.3–7.8)	11.4	(9.1–13.6)	1.8	(0.8–2.8)
Kentucky	6.7	(5.7–7.7)	12.4	(10.4–14.4)	1.3	(0.8–1.8)
Oklahoma	7.3	(6.3–8.2)	13.9	(12.0–15.7)	1.0	(0.6–1.4)
Arkansas	7.4	(6.0–8.8)	13.9	(11.1–16.7)	1.3	(0.7–1.9)
Montana	7.4	(6.4–8.5)	13.4	(11.4–15.4)	1.5	(1.0–2.1)
Mississippi	7.5	(6.7–8.3)	13.1	(11.5–14.6)	2.4	(1.9–2.8)
West Virginia	8.5	(7.3–9.7)	17.1	(14.8–19.4)	0.4	(0.1–0.6)
Wyoming	9.1	(7.8–10.4)	16.9	(14.6–19.3)	1.2	(0.6–1.7)
U.S. Virgin Islands	0.8	(0.4–1.1)	0.8	(0.2–1.4)	0.7	(0.2–1.2)
Puerto Rico	1.4	(0.6–2.2)	2.2	(0.5–3.8)	0.7	(0.3–1.2)
Guam	4.1	(2.7–5.6)	5.6	(3.1–8.1)	2.6	(1.2–4.0)

* Persons aged ≥18 years who reported currently using chewing tobacco, snuff, or snus (a small pouch of smokeless tobacco) every day or some days.

† Confidence interval.

DC (1.5%), Massachusetts (1.5%), and Rhode Island (1.5%) (Table 2). Among U.S. territories, the prevalence of smokeless tobacco was 0.8% in USVI, 1.4% in Puerto Rico, and 4.1% in Guam. Smokeless tobacco use prevalence among men in the 50 states and DC ranged from 2.0% (DC) to 17.1% (West Virginia) and smokeless tobacco use among men was significantly higher than among women in all 50 states. Among the 50 states and DC, smokeless tobacco use was most common among persons aged 18–24 years (range: 1.0% [Nevada] to 17.4% [Wyoming]). Smokeless tobacco use tended to decrease with increasing education (adults with less than a high school education, range: 0.6% [California] to 14.2% [Alaska]); adults with a high school education, range: 1.6% [Connecticut] to 10.8% [Wyoming]; adults with some college, range: 0.4% [DC] to 7.7% [West Virginia]; and among adults with at least a college degree, range: 0.9% [New York] to 6.1% [South Dakota]). Nearly one quarter (23.4%) of men in Wyoming who smoke cigarettes and one fifth (20.8%) of men in Arkansas who smoke cigarettes reported also using smokeless tobacco (Table 3).

Among the 25% of states in which cigarette smoking prevalence was greatest ($n = 13$), seven also had the highest prevalence of smokeless tobacco use: Alabama, Alaska, Arkansas, Kentucky, Mississippi, Oklahoma, and West Virginia (Figure). In these states, at least one of every nine men who smoked cigarettes also reported using smokeless tobacco (range: 11.8% [Kentucky] to 20.8% [Arkansas]) (Table 3).

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Editorial Note

Healthy People 2010 calls for reductions in adult cigarette smoking to 12% and adult smokeless (spit) tobacco use to 0.4%.[¶] This report indicates that states vary substantially in prevalence of cigarette smoking and smokeless tobacco use. Utah, Puerto Rico, and USVI have met the *Healthy People 2010* target for adult cigarette smoking, and California (12.9%) is close to meeting the target, but the only state or U.S.

What is already known on this topic?

Current cigarette smoking and smokeless tobacco use prevalence varies state-to-state, and by age, sex, and education.

What is added by this report?

In 2009, cigarette smoking prevalence among adults in the United States and territories varied from 6.4% in the U.S. Virgin Islands (USVI) to 25.6% in Kentucky and West Virginia, and smokeless tobacco use, which ranged from 0.8% in USVI to 9.1% in Wyoming, was more frequently reported by men, young adults aged 18–24 years, adults with a high school education or less, and adults in states with high smoking prevalence.

What are the implications for public health practice?

Health-care providers, including dentists and dental hygienists, should encourage and assist their patients in quitting all forms of tobacco use, and comprehensive tobacco control measures that reduce tobacco use prevalence should be implemented in all states.

territory close to meeting the target for smokeless tobacco use is USVI (0.8%). Neither cigarette nor smokeless tobacco use has declined during the past few years in the United States (3,4), and with the possible exception of cigarette smoking in California, the *Healthy People 2010* targets for adult cigarette smoking and adult smokeless tobacco use are unlikely to be reached by any additional states during 2010.

This is the first report on smokeless tobacco use to include state-specific data for all 50 states, DC, USVI, Puerto Rico, and Guam from BRFSS. These data suggest that smokeless tobacco use is predominantly a public health problem among men, young adults, and persons with lower education, and in certain states. Nationally, in 2005, the prevalence of smokeless tobacco use was 3.1% among adults aged 18–24 years, 3.0% among adults aged 25–44 years, 1.4% among adults aged 45–64 years, and 1.6% among adults aged ≥65 years. Additionally, the national prevalence of smokeless tobacco use was 2.5% for adults with less than a high school education 3.0% for adults with a high school education, and 1.6% for adults with at least some college education.** Other national reports support BRFSS findings of higher use among these demographic groups (4), and indicate that smokeless tobacco use has increased. For example,

[¶] *Healthy People 2010* objective 27-1: reduce tobacco use by adults. Available at <http://www.healthypeople.gov/document/pdf/volume2/27tobacco.pdf>.

** Additional data from the 2005 National Health Interview Survey are available from the National Center for Health Statistics, CDC, at <http://www.cdc.gov/nchs/nhis.htm>.

TABLE 3. Percentage of current cigarette smokers* who also currently use smokeless tobacco,† by state/area — Behavioral Risk Surveillance System, United States, 2009

State/Area	Total		Men		Women	
	%	(95% CI) [§]	%	(95% CI)	%	(95% CI)
Delaware	2.9	(1.3–4.6)	4.8	(1.7–7.9)	0.8	(0.1–1.5)
District of Columbia	3.0	(0.8–5.2)	4.2	(0.4–8.1)	1.8	(0.0–4.2)
Rhode Island	3.0	(1.9–4.2)	3.8	(1.7–5.8)	2.3	(1.1–3.5)
California	3.2	(2.0–4.4)	4.7	(2.8–6.6)	0.9	(0.1–1.7)
Maryland	3.6	(2.0–5.2)	3.5	(1.3–5.8)	3.7	(1.4–6.1)
Massachusetts	4.1	(2.4–5.8)	6.1	(3.0–9.3)	1.9	(0.9–3.0)
New Jersey	4.4	(2.2–6.5)	6.9	(3.0–10.9)	1.4	(0.6–2.1)
Maine	4.7	(3.1–6.2)	5.4	(3.0–7.7)	3.9	(1.9–5.9)
Louisiana	4.8	(3.1–6.5)	7.2	(4.3–10.2)	1.8	(0.6–3.1)
Illinois	5.2	(3.2–7.2)	7.3	(3.8–10.8)	2.7	(1.4–4.0)
Nevada	5.2	(2.2–8.2)	6.7	(1.7–11.8)	3.6	(0.7–6.5)
New York	5.2	(2.8–7.5)	8.3	(3.8–12.8)	1.9	(0.9–2.8)
Arizona	5.7	(1.9–9.5)	9.2	(2.6–15.9)	1.4	(0.3–2.4)
Hawaii	5.7	(3.1–8.3)	7.7	(3.4–12.0)	3.3	(0.8–5.7)
Connecticut	5.8	(3.1–8.5)	9.7	(4.6–14.8)	1.8	(0.4–3.2)
Colorado	6.1	(4.1–8.1)	9.2	(5.8–12.6)	1.9	(0.7–3.1)
Wisconsin	6.1	(3.0–9.2)	8.7	(3.5–13.9)	3.2	(0.4–5.9)
Georgia	6.4	(4.2–8.6)	9.3	(5.5–13.1)	2.8	(1.2–4.3)
Ohio	6.5	(4.6–8.4)	11.0	(7.5–14.6)	1.9	(0.9–3.0)
Tennessee	6.5	(4.0–9.0)	9.9	(5.7–14.2)	2.4	(0.0–4.8)
North Carolina	6.6	(4.5–8.7)	10.2	(6.6–13.7)	2.3	(1.0–3.6)
Florida	6.7	(4.3–9.1)	11.6	(7.1–16.1)	1.6	(0.6–2.6)
New Mexico	6.8	(4.6–9.0)	10.6	(6.8–14.5)	2.3	(1.0–3.5)
Nebraska	6.9	(4.6–9.2)	10.9	(6.8–15.1)	2.1	(1.2–3.0)
Missouri	7.0	(3.7–10.3)	12.2	(6.1–18.3)	1.7	(0.4–3.0)
South Carolina	7.0	(4.5–9.4)	11.1	(6.7–15.6)	2.7	(0.8–4.6)
Pennsylvania	7.1	(4.7–9.4)	11.5	(7.1–15.9)	2.4	(1.3–3.6)
Kansas	7.5	(5.8–9.1)	12.6	(9.6–15.7)	2.1	(1.4–2.9)
Kentucky	7.7	(5.6–9.7)	11.8	(8.2–15.5)	3.4	(1.6–5.2)
Washington	7.8	(6.1–9.6)	12.9	(9.8–16.0)	2.0	(1.0–3.1)
Indiana	8.0	(5.8–10.2)	12.5	(8.6–16.4)	3.0	(1.6–4.4)
Vermont	8.1	(5.4–10.8)	11.4	(7.5–15.3)	4.1	(0.5–7.7)
Iowa	8.3	(5.3–11.3)	14.3	(9.2–19.5)	0.6	(0.0–1.4)
West Virginia	8.3	(5.6–10.9)	15.7	(10.8–20.5)	0.2	(0.0–0.4)
Texas	8.4	(5.7–11.1)	11.5	(7.2–15.9)	3.4	(1.8–5.1)
Mississippi	8.5	(6.6–10.4)	12.8	(9.6–16.1)	3.0	(1.8–4.3)
Oregon	8.7	(4.6–12.9)	15.0	(7.4–22.6)	2.2	(0.3–4.2)
South Dakota	8.7	(5.7–11.7)	15.7	(9.9–21.6)	2.3	(0.9–3.7)
Alaska	8.8	(5.6–11.9)	12.9	(7.5–18.3)	4.3	(1.4–7.2)
New Hampshire	9.2	(5.4–12.9)	12.5	(6.5–18.5)	5.3	(1.3–9.4)
Oklahoma	9.2	(7.0–11.4)	14.8	(10.8–18.7)	3.2	(1.7–4.8)
Idaho	9.6	(6.5–12.8)	14.2	(9.1–19.3)	3.5	(1.1–6.0)
Alabama	9.8	(6.7–12.9)	15.5	(10.1–20.8)	3.1	(1.0–5.2)
Michigan	9.9	(7.5–12.3)	15.5	(11.4–19.6)	3.9	(2.1–5.7)
Minnesota	10.5	(6.5–14.5)	15.9	(9.1–22.6)	3.9	(1.3–6.6)
Virginia	10.5	(4.1–16.8)	16.3	(5.8–26.9) [¶]	2.6	(0.6–4.5)
Utah	10.9	(7.4–14.4)	16.3	(10.8–21.9)	2.5	(0.7–4.4)
Arkansas	11.7	(8.1–15.4)	20.8	(13.9–27.7)	3.6	(1.4–5.9)
North Dakota	11.8	(7.4–16.1)	18.3	(10.8–25.8)	4.7	(1.6–7.8)
Montana	12.1	(8.9–15.4)	16.8	(11.1–22.5)	7.8	(4.7–10.8)
Wyoming	13.7	(9.8–17.6)	23.4	(16.6–30.2)	3.7	(1.5–5.8)
Puerto Rico	0.9	(0.0–2.2)	1.5	(0.0–3.6)	0.0	
Guam	3.2	(0.2–6.1)	4.4	(0.0–8.8)	0.8	(0.0–2.4)
U.S. Virgin Islands	4.2	(0.5–7.9)	3.5	(0.0–8.1)	5.1	(0.0–11.1)

* Persons aged ≥18 years who reported having smoked ≥100 cigarettes during their life and currently smoke every day or some days.

† Persons aged ≥18 years who reported currently using chewing tobacco, snuff, or snus (a small pouch of smokeless tobacco) every day or some days.

§ Confidence interval.

¶ Confidence interval half-width >10, which might indicate an unreliable estimate.

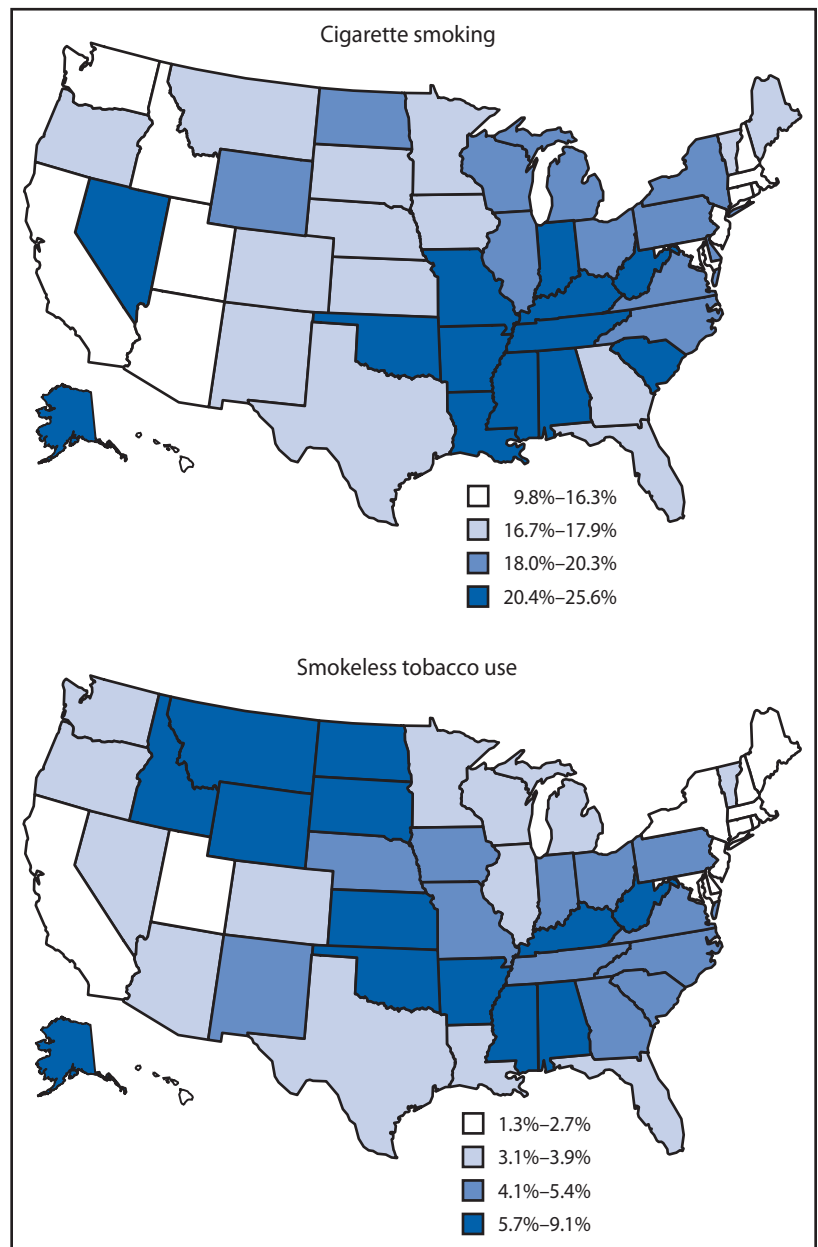
among men aged 18–25 years in the United States smokeless tobacco use increased from 3.1% in 2002 to 3.7% in 2007 (4). Prevalence of smokeless tobacco use among men in some states, such as West Virginia (17.1%) and Wyoming (16.9%), has nearly reached the national level of smoking prevalence among all adults (20.8%) (3).

Within states, up to 23.4% (Wyoming) of cigarette smoking men also use smokeless tobacco. Research suggests that persons who use multiple tobacco products might have a more difficult time quitting, which might result in longer durations of product use and an increased likelihood of experiencing tobacco-related morbidity and mortality (5,6). Other reports also have found that young men have a high prevalence of cigarette smoking and smokeless tobacco use in the United States and that smokeless tobacco might be a starter product for cigarette smoking among young men (6,7). However, BRFSS data do not assess age of initiation for cigarette smoking or smokeless tobacco use, and the order of when these products were first used cannot be determined.

Recent tobacco industry advertising has encouraged cigarette smokers to use smokeless tobacco as an alternative product in locations where cigarette smoking is not permitted (e.g., smoke-free workplaces, airlines, and theaters) (8). Continued surveillance of the co-use of tobacco products is needed to determine the effect of such marketing messages and the reasons for the high prevalence of smokeless tobacco use among cigarette smokers in some states. Antitobacco media messages, policies, and other interventions that prevent initiation and encourage cessation of both products also are needed, particularly in states with a high prevalence of smokeless tobacco use and cigarette smoking.

The findings in this report are subject to at least three limitations. First, BRFSS does not include adults without telephone service (1.7%) or with wireless-only service (24.5%), and adults with wireless-only service are twice as likely to smoke cigarettes as the rest of the U.S. population (9). Because wireless-only service varies by state (9), these data likely underestimate the actual prevalence of cigarette smoking in some states and might underestimate smokeless tobacco use. Second, estimates for current smoking and smokeless tobacco use prevalence are based on self-report and were not validated with biochemical tests. Self-reported current cigarette smoking status has been demonstrated to have a high validity (10),

FIGURE. Prevalence of current cigarette smoking* and smokeless tobacco use† among adults aged ≥18 years, by state — Behavioral Risk Factor Surveillance System, United States, 2009



* Persons who reported having smoked ≥100 cigarettes during their life and currently smoke every day.

† Persons who reported currently using chewing tobacco, snuff, or snus (a small pouch of smokeless tobacco) every day or some days.

but the validity of self-reported smokeless tobacco use has not been evaluated. Finally, the median response rate for 2009 was 52.5%. Lower response rates in surveys increase the potential for bias; however, national estimates from state-aggregated BRFSS data have been shown to be comparable to smoking estimates from other surveys with higher response rates (10).

The findings in this report underscore the importance of assessing cigarette smoking, as well as the use of other tobacco products, including smokeless tobacco, among U.S. adults by state. Several states were identified with high prevalence of both cigarette smoking and smokeless tobacco use. Additionally, co-use of smokeless tobacco among men who smoke cigarettes, a behavior that might hinder successful smoking cessation (5,6), was common in several states.

Public Health Service guidelines recommend the use of both medication and counseling to help cigarette smokers in quitting.^{††} These guidelines note that dentists and dental hygienists also can be effective in identifying smokeless tobacco use and advising users to quit. To promote cessation among tobacco users, health-care providers, including dentists and dental hygienists, should 1) ask their patients about all forms of tobacco use, 2) advise them to quit using all forms of tobacco, 3) assess their willingness to quit, 4) assist them in quitting, and 5) arrange for follow-up contacts. This approach, in combination with comprehensive tobacco control measures, as recommended by the WHO^{§§} and CDC's *Community Guide to Preventive Services*^{¶¶} that address all forms of tobacco, including raising excise taxes on cigarettes and all other tobacco products, can help to prevent tobacco-related deaths.

^{††} Specific PHS recommendations are included in the *2008 Update to the Clinical Practice Guideline on Treating Tobacco Use and Dependence*, available at http://www.surgeongeneral.gov/tobacco/treating_tobacco_use08.pdf.

^{§§} Specific WHO recommendations are available at http://whqlibdoc.who.int/publications/2009/9789241563918_eng_full.pdf.

^{¶¶} CDC's *Guide to Community Preventive Services* reviews the effectiveness of interventions to reduce or prevent tobacco use and is available at <http://www.thecommunityguide.org/tobacco>.

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