

**2023-2024**  
**National Surveys on Drug Use and Health:**  
**Other Sources of State-Level Data**

## Introduction

A variety of surveys and data systems other than the National Survey on Drug Use and Health (NSDUH) collect data on substance use and mental health. This document briefly describes one of these other data systems that publishes state estimates and presents selected comparisons with NSDUH state estimates. The state-level survey that collects data on substance use discussed in this document is the Behavioral Risk Factor Surveillance System (BRFSS), sponsored by the U.S. Centers for Disease Control and Prevention (CDC).

Another CDC data system that provides state-level substance use estimates for most, but not all, states is the Youth Risk Behavior Survey (YRBS). Differences between the YRBS and NSDUH sampling designs, as well as the wider range of age groups used in NSDUH state small area estimates mean that comparisons of estimates are not straightforward. However, ignoring these differences and examining estimates at the national level, the YRBS has generally been shown to have higher estimates than NSDUH (Center for Behavioral Health Statistics and Quality [CBHSQ], 2023).<sup>1</sup> Note that comparisons between the state YRBS estimates and the NSDUH state small area estimates are not presented because of some of the differences discussed earlier.

When considering the information presented in this document, it is important to understand the methodological differences between BRFSS and NSDUH and the impact that these differences could have on estimates of substance use and mental health. Several studies have compared NSDUH estimates with estimates from other studies and have evaluated how differences may have been affected by differences in survey methodology (Brener et al., 2006; CBHSQ, 2012; Gfroerer et al., 1997; Grucza et al., 2007; Hennessy & Ginsberg, 2001; Miller et al., 2004). These studies suggest that the goals and approaches of surveys are often different, making comparisons among them difficult. Some methodological differences that have been identified as affecting comparisons include populations covered, sampling methods, mode of data collection, survey setting, questionnaires, and estimation methods.

Because of the coronavirus disease 2019 (COVID-19) pandemic, an additional web data collection mode was introduced to the 2020 NSDUH. The 2023 and 2024 surveys continued the use of multimode data collection procedures that were first implemented in October 2020 for the 2020 NSDUH. In 2023, 36.1 percent of interviews were completed via the web, and 63.9 percent were completed in person. In 2024, 39.8 percent of the interviews were completed via the web, and 60.2 percent were completed in person.<sup>2</sup>

BRFSS is an annual state-based system of health surveys that collects information using landline and cellular telephones on health-related risk behaviors (including cigarette and alcohol use), chronic health conditions, healthcare access, and use of preventive services among the noninstitutionalized adult population aged 18 or older. During 2023 and 2024, all 50 states, the District of Columbia, Guam, Puerto Rico, and the U.S. Virgin Islands collected BRFSS data

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<sup>1</sup> For further details about the YRBS and the Youth Risk Behavior Surveillance System (YRBSS), see CDC's [YRBSS](#) web page.

<sup>2</sup> For more details about NSDUH, see Section 2 of the *2024 National Survey on Drug Use and Health: Methodological Summary and Definitions* report on the [NSDUH Data Collection](#) web page.

using computer-assisted telephone interviewing (CATI). Note that in 2023, Kentucky and Pennsylvania were unable to collect enough BRFSS data to meet the minimum requirements for inclusion in the 2023 public dataset. Thus, the estimates shown in this report for Kentucky and Pennsylvania are based on only 2024 data. In 2024, Tennessee was unable to collect enough BRFSS data to meet the minimum requirements for inclusion in the 2024 public dataset. Thus, the estimates for Tennessee are based on only 2023 data. The 2023-2024 BRFSS state estimates and confidence intervals presented here are design-based (direct) estimates (i.e., each respondent is weighted in a way that accounts for the survey design).<sup>3</sup>

In BRFSS and NSDUH, data are collected on the following three common substance use measures in each of the 50 states and the District of Columbia:<sup>4</sup>

- past month alcohol use,
- cigarette use (“past month” use for NSDUH and “current” use for BRFSS), and
- past month binge alcohol use.

Note that estimates for these measures are compared in this document. The BRFSS and NSDUH questions that were used for the three measures are shown in the next section.

Past month alcohol use is defined consistently in BRFSS and NSDUH as having an alcoholic beverage in the past month. Similarly, past month binge alcohol use is defined consistently in the two surveys as drinking five or more drinks (for males) or four or more drinks (for females) on the same occasion (i.e., at the same time or within a couple of hours of each other) on at least 1 day in the past 30 days.

In NSDUH, past month cigarette use is defined as having smoked part or all of a cigarette during the past 30 days (i.e., the 30 days prior to the interview). In BRFSS, the cigarette use measure reported is current cigarette use, which is defined as having smoked at least 100 cigarettes during the lifetime and indicating smoking every day or some days at the time of the survey. Because of these subtle but present differences in definitions, NSDUH’s cigarette use estimates tend to be higher in that they cover two groups of people that the BRFSS estimates would not: (1) respondents who have not smoked 100 cigarettes in their lifetime but had smoked in the past month, and (2) respondents who had smoked a cigarette earlier in the month but were not smoking at the time of the survey.

This document presents findings comparing 2023-2024 BRFSS state design-based estimates with corresponding 2023-2024 NSDUH state small area estimates<sup>5</sup> for past month alcohol use, past month binge alcohol use, and cigarette use (“past month” use for NSDUH and “current” use for BRFSS). In [Tables 1, 2, and 3](#) (shown after this text discussion), the 2023-2024 BRFSS state design-based estimates for adults aged 18 or older are shown alongside the 2023-2024 NSDUH small area estimates for the same age group. The BRFSS estimates were calculated using SUDAAN<sup>®</sup> Software for Statistical Analysis of Correlated Data (RTI

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<sup>3</sup> For more details about BRFSS in general, see CDC’s [BRFSS](#) web page.

<sup>4</sup> The District of Columbia is referred to as a “state” in this document.

<sup>5</sup> For more information about NSDUH’s small area estimation, see Section B of *2023-2024 National Surveys on Drug Use and Health: Guide to State Tables and Summary of Small Area Estimation Methodology* on the [NSDUH Data Collection](#) web page.

International, 2020) and the publicly available BRFSS SAS® (SAS Institute Inc., 2017) datasets. [Tables 1](#) and [2](#) also include *p* values that indicate whether the BRFSS and NSDUH alcohol use and binge alcohol use population percentages are significantly different from each other for a given state. The statistical test used for calculating the *p* values is described in the Methodology for Comparing BRFSS and NSDUH Estimates section. Users are advised to use caution when interpreting these significant differences due to the methodological differences in the two surveys.

Due to definitional differences in the cigarette use measure, no formal statistical tests of differences between NSDUH and BRFSS estimates were produced.

## NSDUH and BRFSS Questions

The NSDUH questions that were used to determine past month alcohol use and past month binge alcohol use were as follows:<sup>6</sup>

**AL01** Have you **ever**, even once, had a drink of any type of alcoholic beverage? Please do not include times when you only had a sip or two from a drink.

- 1 Yes
- 2 No
- DK/REF<sup>7</sup>

**ALLAST3** [IF AL01 = 1 OR ALREF = 1] How long has it been since you **last** drank an alcoholic beverage?

- 1 Within the past 30 days — that is, since [DATEFILL]
- 2 More than 30 days ago but within the past 12 months
- 3 More than 12 months ago

DK/REF

PROGRAMMER: SHOW 12 MONTH CALENDAR

**AL08** [IF ALC30DAY = 1 – 30 OR ALCEST30 = (1 – 6, DK OR REF)] During the past 30 days, that is, since [DATEFILL], on how many days did you have [IF RSEX=5 THEN FILL 5 IF RSEX=9 THEN FILL 4] **or more** drinks on the same occasion? By ‘occasion,’ we mean at the same time or within a couple of hours of each other.

# OF DAYS: \_\_\_\_\_ days in the past 30 days [RANGE: 0 - 30]

DK/REF

PROGRAMMER: SHOW 30 DAY CALENDAR

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<sup>6</sup> A PDF of the complete [2024 NSDUH questionnaire](#) is available on the Substance Abuse and Mental Health Services Administration’s website.

<sup>7</sup> “DK” = “don’t know” and “REF” = “refused.”

The BRFSS questions that were used to determine past month alcohol use and past month binge alcohol use were as follows:<sup>8</sup>

**CALC.01** During the past 30 days, how many days per week or per month did you have at least one drink of any alcoholic beverage?

INTERVIEWER NOTE: A 40-ounce beer would count as 3 drinks, or a cocktail with 2 shots would count as 2 drinks.

1 __	Days per week
2 __	Days in past 30 days
888	No drinks in past 30 days
777	Don't know / Not sure
999	Refused

**CALC.03** Considering all types of alcoholic beverages, how many times during the past 30 days did you have X [CATI X = 5 for men, X = 4 for women] or more drinks on an occasion?

__	Number of times
77	Don't know / Not sure
88	No days
99	Refused

The NSDUH questions that were used to determine past month cigarette use were as follows:

**CG01** Have you **ever** smoked part or all of a cigarette?

1	Yes
2	No
DK/REF	

**CG05** [IF CG01 = 1 OR CGREF1 = 1] Now think about the past 30 days, that is, from [DATEFILL] up to and including today. During the past 30 days, have you smoked part or all of a cigarette?

1	Yes
2	No
DK/REF	

PROGRAMMER: SHOW 30 DAY CALENDAR

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<sup>8</sup> A PDF of the complete [2023 BRFSS questionnaire](#) is available on CDC's website.

The BRFSS questions that were used to determine current cigarette use were as follows:

**CTOB.01** Have you smoked at least 100 cigarettes in your entire life?

- 1 Yes
- 2 No
- 7 Don't know / Not sure
- 9 Refused

INTERVIEWER NOTE: Do not include: electronic cigarettes (e-cigarettes, njoy, bluetip, JUUL), herbal cigarettes, cigars, cigarillos, little cigars, pipes, bidis, kreteks, water pipes (hookahs) or marijuana. 5 packs = 100 cigarettes.

**CTOB.02** Do you now smoke cigarettes every day, some days, or not at all?

- 1 Every day
- 2 Some days
- 3 Not at all
- 7 Don't know / Not sure
- 9 Refused

## Methodology for Comparing BRFSS and NSDUH Population Percentages

Let  $\pi_b$  be the expected value<sup>2</sup> of the BRFSS estimate and  $\pi_n$  be the expected value of the NSDUH estimate. To test the null hypothesis of no difference, that is,  $\pi_b = \pi_n$  or

equivalently the log-odds ratio is zero ( $lor = 0$ ), where  $lor$  is defined as  $lor = \ln \left[ \frac{\pi_b / (1 - \pi_b)}{\pi_n / (1 - \pi_n)} \right]$ ,

and  $\ln$  denotes the natural logarithm. An estimate of  $lor$  is given by  $\hat{lor} = \ln \left[ \frac{\hat{\pi}_b / (1 - \hat{\pi}_b)}{\hat{\pi}_n / (1 - \hat{\pi}_n)} \right]$ ,

where  $\hat{\pi}_b$  and  $\hat{\pi}_n$  are the 2023-2024 BRFSS state-level design-based estimates and the 2023-2024 NSDUH state model-based estimates, respectively (as given in [Tables 1](#) and [2](#)). To

compute the variance of  $\hat{lor}$ , that is,  $v(\hat{lor})$ , let  $\hat{\theta}_b = \frac{\hat{\pi}_b}{1 - \hat{\pi}_b}$  and  $\hat{\theta}_n = \frac{\hat{\pi}_n}{1 - \hat{\pi}_n}$ , then

$$v(\hat{lor}) = v \left[ \ln(\hat{\theta}_b) \right] + v \left[ \ln(\hat{\theta}_n) \right] - 2 \text{cov} \left[ \ln(\hat{\theta}_b), \ln(\hat{\theta}_n) \right].$$

The covariance term can be assumed to be zero because the BRFSS and NSDUH samples are independent.

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<sup>2</sup> The expected value of an estimate is defined as the mean of the observed values of the estimate over repeated samples.

The quantity  $v[\ln(\hat{\theta}_n)]$  can be obtained by using the 95 percent Bayesian confidence intervals in [Tables 1](#) and [2](#). For this purpose, let  $(lower_n, upper_n)$  denote the 95 percent Bayesian confidence interval<sup>10</sup> for a given state:

$$v[\ln(\hat{\theta}_n)] = \left( \frac{U_n - L_n}{2 \times 1.96} \right)^2,$$

where  $U_n = \ln\left(\frac{upper_n}{1 - upper_n}\right)$  and  $L_n = \ln\left(\frac{lower_n}{1 - lower_n}\right)$ .

The quantity  $v[\ln(\hat{\theta}_b)]$  can be obtained by using the 95 percent confidence intervals in [Tables 1](#) and [2](#). For this purpose, let  $(lower_b, upper_b)$  denote the 95 percent BRFSS confidence interval for a given state, then  $v(\hat{\pi}_b)$  is given by

$$v(\hat{\pi}_b) = \left( \frac{upper_b - lower_b}{2 \times 1.96} \right)^2.$$

Now, using the first-order Taylor series approximation,<sup>11</sup>  $v[\ln(\hat{\theta}_b)]$  can be calculated from  $v(\hat{\pi}_b)$  as follows:

$$v[\ln(\hat{\theta}_b)] = v\left[\ln\left(\frac{\hat{\pi}_b}{1 - \hat{\pi}_b}\right)\right] = v(\hat{\pi}_b) \times \left(\frac{1}{\hat{\pi}_b(1 - \hat{\pi}_b)}\right)^2.$$

The  $p$  value that is given in [Tables 1](#) and [2](#) for testing the null hypothesis of no difference ( $lor = 0$ ) is provided by  $p \text{ value} = 2 \times P[Z \geq abs(z)]$ , where  $Z$  is a standard normal random variate,  $z = \frac{l\hat{or}}{\sqrt{v[\ln(\hat{\theta}_b)] + v[\ln(\hat{\theta}_n)]}}$ , and  $abs(z)$  denotes the absolute value of  $z$ .

## Results: Alcohol Use, Binge Alcohol Use, and Cigarette Use

As seen in [Table 1](#), for past month alcohol use, the 2023-2024 NSDUH estimates and the 2023-2024 BRFSS estimates were statistically significantly different (i.e., at the 5 percent level of significance) for three states (Delaware, Texas, and Wyoming). Overall, these two sets of

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<sup>10</sup> For more information about NSDUH's small area estimation confidence intervals, see Section A of *2023-2024 National Surveys on Drug Use and Health: Guide to State Tables and Summary of Small Area Estimation Methodology* on the [NSDUH Data Collection](#) web page.

<sup>11</sup> The first-order Taylor series approximation is defined as  $v[f(x)] \approx v(x)[f'(x)]^2$ , where  $f'(x)$  is the first-order derivative of  $f(x)$ . If  $f(x) = \ln\left(\frac{x}{1-x}\right)$ , then  $f'(x) = \left(\frac{1}{x(1-x)}\right)$ .

estimates were highly correlated (correlation coefficient = 0.93). [Figures 1](#) and [2](#), which follow this document's three tables, were created by using state estimates from BRFSS and NSDUH and categorizing the states into five quintiles similar to the process described on the title page of *2023-2024 National Surveys on Drug Use and Health: National Maps of Prevalence Estimates, by State*.<sup>12</sup>

As can be seen in [Figures 1](#) and [2](#), seven states with the highest estimates of alcohol use (states shown in orange) were the same in the two surveys: Colorado, District of Columbia, Minnesota, Montana, New Hampshire, Vermont, and Wisconsin. Similarly, eight states with the lowest estimates of alcohol use were the same in the two surveys: Alabama, Arkansas, Idaho, Kentucky, Mississippi, Oklahoma, Utah, and West Virginia. The lowest estimate of past month alcohol use was in Utah for BRFSS and NSDUH (see [Table 1](#) and [Figures 1](#) and [2](#)).

The NSDUH estimates of past month binge alcohol use were significantly larger than the BRFSS estimates for all states except Alaska (see [Table 2](#)). As noted previously, NSDUH and BRFSS used the same thresholds for binge alcohol use among males and females in the 2023 and 2024 surveys; therefore, these differences can be partly attributed to differences in data collection methodologies of BRFSS and NSDUH. First, the 2023-2024 NSDUHs used audio computer-assisted self-interviewing (ACASI) for in-person data collection and self-administration for web data collection, whereas BRFSS used CATI. Self-administration (including ACASI for in-person data collection) can increase respondent privacy for reporting of sensitive behaviors (e.g., binge drinking) and therefore may yield higher prevalence estimates than interviewer-administered modes such as CATI (Kreuter et al., 2008; Lind et al., 2013; Tourangeau & Smith, 1996; Turner et al., 1998). Although the NSDUH estimates were larger, these two sets of estimates are moderately correlated (correlation coefficient = 0.77).

[Figures 3](#) and [4](#) were created using the same method used to produce [Figures 1](#) and [2](#). As can be seen in [Figures 3](#) and [4](#), six states with the highest estimates of binge alcohol use (states shown in orange) were the same in the two surveys: District of Columbia, Illinois, Iowa, Nebraska, North Dakota, and Wisconsin. Five states with the lowest estimates of binge alcohol use were the same in the two surveys: Kentucky, Oklahoma, Tennessee, Utah, and West Virginia.

[Table 3](#) shows the NSDUH estimates of past month cigarette use and the BRFSS estimates of current cigarette use. Statistical tests to examine significant differences between the NSDUH and BRFSS cigarette use population percentages are not included because the definitions are different, as discussed earlier in this document. Although the NSDUH estimates tended to be larger generally, these two sets of estimates were highly correlated (correlation coefficient = 0.88).

[Figures 5](#) and [6](#) were created using the same method used to produce [Figures 1](#) through [4](#). As can be seen in [Figures 5](#) and [6](#), nine states with the highest estimates of cigarette use (states shown in orange) were the same in the two surveys: Arkansas, Kentucky, Louisiana, Mississippi, Missouri, Ohio, Oklahoma, Tennessee, and West Virginia. Eight states with the lowest estimates

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<sup>12</sup> See the [NSDUH Data Collection](#) web page for this document.

of cigarette use were the same in the two surveys: California, Connecticut, Hawaii, Maryland, Massachusetts, New Jersey, Utah, and Washington.

## Sample Size Comparisons

The BRFSS estimates are design based, whereas the NSDUH estimates are model based. Both sets of estimates are based on 2 years of pooled data (2023-2024). The BRFSS sample sizes for a given state were, in general, much larger than the sample sizes for NSDUH. In the 2023-2024 NSDUHs, the sample sizes for adults aged 18 or older in the states ranged from approximately 1,240 to 7,100 respondents, with a median sample size of 1,660.<sup>13</sup> For the 2023-2024 BRFSS, states had larger sample sizes as compared with their counterparts in NSDUH. Overall, the BRFSS sample sizes for the states varied from a low of 3,513 respondents in Pennsylvania<sup>14</sup> to a high of 61,262 in New York, with a median sample size of 14,468.<sup>15</sup> Sample size differences of this magnitude explain why the NSDUH Bayesian confidence intervals were generally wider than the corresponding BRFSS design-based confidence intervals.

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<sup>13</sup> See Table C.6 in *2023-2024 National Surveys on Drug Use and Health: Guide to State Tables and Summary of Small Area Estimation Methodology* on the [NSDUH Data Collection](#) web page.

<sup>14</sup> Pennsylvania BRFSS estimates are based on only 2024 data.

<sup>15</sup> For details, see the [2024 BRFSS survey data and documentation](#) on the CDC website.

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**Table 1 Alcohol Use in the Past Month: Among People Aged 18 or Older, by State: Annual Average Percentages, BRFSS and NSDUH, 2023-2024**

State	2023-2024 BRFSS (Estimate)	2023-2024 BRFSS (95% Confidence Interval)	2023-2024 NSDUH (Estimate)	2023-2024 NSDUH (95% Confidence Interval)	P Value
Alabama	44.75	(43.40 - 46.10)	44.45	(41.47 - 47.47)	0.858
Alaska	53.34	(51.91 - 54.76)	50.45	(46.73 - 54.18)	0.157
Arizona	50.87	(49.68 - 52.06)	47.22	(43.51 - 50.96)	0.068
Arkansas	42.35	(41.07 - 43.64)	43.21	(39.84 - 46.64)	0.645
California	50.90	(49.83 - 51.97)	51.48	(49.68 - 53.27)	0.585
Colorado	60.04	(59.17 - 60.91)	58.22	(55.04 - 61.35)	0.275
Connecticut	57.74	(56.52 - 58.96)	56.73	(52.47 - 60.89)	0.652
Delaware	52.38	(50.72 - 54.03)	57.24	(54.05 - 60.38)	0.008
District of Columbia	66.71	(65.02 - 68.40)	64.14	(60.57 - 67.57)	0.192
Florida	53.07	(51.76 - 54.38)	51.31	(49.15 - 53.48)	0.174
Georgia	49.25	(48.00 - 50.50)	48.74	(45.61 - 51.89)	0.767
Hawaii	48.42	(47.19 - 49.66)	44.97	(41.25 - 48.75)	0.088
Idaho	46.49	(45.20 - 47.77)	45.30	(41.72 - 48.91)	0.542
Illinois	54.52	(53.51 - 55.52)	54.54	(52.16 - 56.90)	0.985
Indiana	49.31	(48.47 - 50.15)	47.04	(43.96 - 50.14)	0.165
Iowa	56.45	(55.48 - 57.41)	53.16	(49.70 - 56.58)	0.070
Kansas	52.50	(51.56 - 53.44)	53.87	(50.40 - 57.29)	0.455
Kentucky <sup>1</sup>	41.80	(40.04 - 43.56)	44.92	(41.66 - 48.22)	0.100
Louisiana	50.35	(49.04 - 51.65)	49.50	(46.23 - 52.77)	0.638
Maine	55.31	(54.39 - 56.24)	56.37	(52.12 - 60.53)	0.633
Maryland	52.31	(51.39 - 53.23)	51.91	(47.91 - 55.88)	0.847
Massachusetts	58.69	(57.64 - 59.75)	56.15	(52.12 - 60.10)	0.225
Michigan	52.24	(51.23 - 53.24)	54.69	(52.41 - 56.96)	0.053
Minnesota	58.24	(57.43 - 59.05)	57.49	(53.98 - 60.93)	0.681
Mississippi	42.44	(40.89 - 43.98)	40.48	(37.19 - 43.86)	0.300
Missouri	49.71	(48.56 - 50.85)	52.10	(48.68 - 55.49)	0.193
Montana	58.94	(57.87 - 60.00)	57.01	(53.42 - 60.53)	0.309
Nebraska	56.65	(55.79 - 57.52)	56.20	(52.93 - 59.43)	0.793
Nevada	52.69	(50.40 - 54.97)	51.00	(47.61 - 54.39)	0.419
New Hampshire	61.13	(59.82 - 62.43)	61.81	(58.02 - 65.47)	0.735
New Jersey	54.88	(53.77 - 55.98)	53.79	(50.73 - 56.82)	0.510
New Mexico	46.53	(44.66 - 48.41)	49.37	(45.91 - 52.85)	0.158
New York	52.71	(52.04 - 53.37)	51.57	(49.36 - 53.77)	0.331
North Carolina	47.35	(45.91 - 48.79)	48.97	(45.91 - 52.05)	0.348
North Dakota	57.45	(56.23 - 58.68)	60.76	(57.11 - 64.29)	0.092
Ohio	51.94	(50.96 - 52.92)	53.15	(50.82 - 55.47)	0.348
Oklahoma	42.32	(41.29 - 43.36)	44.77	(41.52 - 48.05)	0.161
Oregon	55.32	(54.16 - 56.49)	56.00	(52.28 - 59.66)	0.730
Pennsylvania <sup>1</sup>	52.16	(49.78 - 54.55)	54.68	(52.13 - 57.21)	0.157
Rhode Island	57.08	(55.67 - 58.49)	58.89	(54.99 - 62.69)	0.391
South Carolina	50.09	(48.91 - 51.26)	52.93	(48.93 - 56.89)	0.180
South Dakota	57.51	(55.24 - 59.77)	54.41	(50.65 - 58.13)	0.165
Tennessee <sup>1</sup>	47.72	(45.89 - 49.55)	44.80	(41.36 - 48.30)	0.146
Texas	49.65	(48.39 - 50.91)	45.43	(43.51 - 47.36)	0.000
Utah	32.45	(31.63 - 33.27)	31.02	(28.30 - 33.87)	0.340
Vermont	61.12	(59.89 - 62.35)	61.42	(57.37 - 65.33)	0.887
Virginia	51.60	(50.30 - 52.90)	51.57	(48.50 - 54.63)	0.987
Washington	56.29	(55.71 - 56.87)	54.45	(50.97 - 57.89)	0.303
West Virginia	39.11	(37.91 - 40.30)	40.92	(37.51 - 44.42)	0.329
Wisconsin	57.95	(57.04 - 58.86)	59.50	(56.06 - 62.85)	0.391
Wyoming	50.50	(49.12 - 51.89)	55.95	(51.71 - 60.10)	0.017

NOTE: NSDUH estimates, along with 95 percent Bayesian confidence (credible) intervals, are based on the survey-weighted hierarchical Bayes estimation approach and are generated by Markov Chain Monte Carlo techniques. BRFSS estimates are based on a survey-weighted direct estimation approach.

NOTE: The *p* value is the probability of more extreme values than the observed difference between the BRFSS and NSDUH estimates under the null hypothesis of no difference.

<sup>1</sup> In 2023, Kentucky and Pennsylvania were unable to collect enough BRFSS data to meet the minimum requirements for inclusion in the 2023 annual aggregate dataset. Thus, the BRFSS estimates for Kentucky and Pennsylvania are based on only the 2024 BRFSS data. In 2024, Tennessee was unable to collect enough BRFSS data to meet the minimum requirements for inclusion in the 2024 annual aggregate dataset. Thus, the BRFSS estimate for Tennessee are based on only the 2023 BRFSS data.

Source: SAMHSA, Center for Behavioral Health Statistics and Quality, National Surveys on Drug Use and Health, 2023-2024; U.S. Centers for Disease Control and Prevention, Behavioral Risk Factor Surveillance System, 2023-2024.

**Table 2 Binge Alcohol Use in the Past Month: Among People Aged 18 or Older, by State: Annual Average Percentages, BRFSS and NSDUH, 2023-2024**

State	2023-2024 BRFSS (Estimate)	2023-2024 BRFSS (95% Confidence Interval)	2023-2024 NSDUH (Estimate)	2023-2024 NSDUH (95% Confidence Interval)	P Value
Alabama	14.08	(13.05 - 15.10)	22.63	(20.26 - 25.20)	0.000
Alaska	17.76	(16.60 - 18.91)	19.62	(17.00 - 22.53)	0.212
Arizona	14.96	(14.08 - 15.83)	21.17	(18.54 - 24.06)	0.000
Arkansas	13.90	(12.93 - 14.87)	19.75	(17.51 - 22.20)	0.000
California	14.64	(13.91 - 15.37)	22.89	(21.47 - 24.37)	0.000
Colorado	17.78	(17.09 - 18.47)	23.62	(21.07 - 26.38)	0.000
Connecticut	14.92	(14.05 - 15.78)	21.97	(18.99 - 25.27)	0.000
Delaware	13.36	(12.18 - 14.53)	23.54	(21.05 - 26.22)	0.000
District of Columbia	26.23	(24.64 - 27.82)	31.61	(28.29 - 35.12)	0.004
Florida	14.31	(13.35 - 15.27)	21.85	(20.29 - 23.49)	0.000
Georgia	13.71	(12.82 - 14.59)	22.56	(20.26 - 25.03)	0.000
Hawaii	17.24	(16.29 - 18.20)	20.32	(17.77 - 23.13)	0.027
Idaho	14.44	(13.48 - 15.40)	20.25	(17.72 - 23.03)	0.000
Illinois	18.33	(17.55 - 19.10)	26.45	(24.47 - 28.54)	0.000
Indiana	14.95	(14.33 - 15.57)	20.69	(18.49 - 23.09)	0.000
Iowa	20.46	(19.64 - 21.29)	26.04	(23.34 - 28.94)	0.000
Kansas	16.22	(15.50 - 16.94)	24.01	(21.43 - 26.79)	0.000
Kentucky <sup>1</sup>	13.63	(12.33 - 14.93)	19.56	(17.14 - 22.24)	0.000
Louisiana	16.56	(15.59 - 17.54)	25.47	(22.76 - 28.38)	0.000
Maine	14.81	(14.09 - 15.52)	21.09	(18.26 - 24.22)	0.000
Maryland	12.93	(12.30 - 13.56)	21.86	(19.15 - 24.84)	0.000
Massachusetts	16.06	(15.28 - 16.84)	22.55	(19.70 - 25.69)	0.000
Michigan	15.25	(14.50 - 15.99)	24.48	(22.75 - 26.29)	0.000
Minnesota	17.53	(16.91 - 18.14)	23.84	(21.18 - 26.72)	0.000
Mississippi	13.16	(12.08 - 14.23)	21.67	(19.31 - 24.24)	0.000
Missouri	16.26	(15.37 - 17.14)	24.91	(22.28 - 27.74)	0.000
Montana	19.93	(19.02 - 20.85)	24.42	(21.60 - 27.48)	0.003
Nebraska	19.38	(18.65 - 20.10)	26.27	(23.66 - 29.06)	0.000
Nevada	15.70	(14.05 - 17.34)	25.01	(22.22 - 28.01)	0.000
New Hampshire	15.53	(14.46 - 16.61)	22.68	(19.95 - 25.65)	0.000
New Jersey	14.68	(13.91 - 15.44)	22.60	(20.30 - 25.09)	0.000
New Mexico	13.91	(12.52 - 15.29)	21.14	(18.65 - 23.86)	0.000
New York	15.09	(14.64 - 15.54)	21.04	(19.43 - 22.74)	0.000
North Carolina	13.44	(12.45 - 14.43)	20.98	(18.85 - 23.28)	0.000
North Dakota	20.29	(19.27 - 21.31)	27.08	(24.19 - 30.17)	0.000
Ohio	15.83	(15.11 - 16.55)	24.95	(23.13 - 26.85)	0.000
Oklahoma	13.22	(12.47 - 13.97)	20.41	(18.09 - 22.94)	0.000
Oregon	14.53	(13.72 - 15.34)	21.35	(18.80 - 24.15)	0.000
Pennsylvania <sup>1</sup>	16.38	(14.57 - 18.19)	24.34	(22.41 - 26.38)	0.000
Rhode Island	16.62	(15.53 - 17.71)	23.49	(20.71 - 26.51)	0.000
South Carolina	15.02	(14.15 - 15.90)	25.71	(22.54 - 29.15)	0.000
South Dakota	18.92	(17.10 - 20.74)	24.31	(21.39 - 27.48)	0.002
Tennessee <sup>1</sup>	13.59	(12.29 - 14.89)	20.66	(18.21 - 23.35)	0.000
Texas	16.65	(15.64 - 17.66)	21.66	(20.24 - 23.16)	0.000
Utah	11.57	(10.97 - 12.16)	14.67	(12.74 - 16.83)	0.002
Vermont	16.11	(15.21 - 17.01)	24.13	(21.05 - 27.51)	0.000
Virginia	13.46	(12.57 - 14.35)	21.03	(18.87 - 23.35)	0.000
Washington	15.11	(14.69 - 15.54)	19.19	(16.84 - 21.78)	0.001
West Virginia	12.96	(12.06 - 13.86)	20.21	(17.75 - 22.92)	0.000
Wisconsin	18.74	(17.99 - 19.50)	26.51	(23.80 - 29.41)	0.000
Wyoming	15.53	(14.44 - 16.62)	23.80	(20.82 - 27.07)	0.000

NOTE: Binge alcohol use is defined as drinking five or more drinks (for males) or four or more drinks (for females) on the same occasion (i.e., at the same time or within a couple of hours of each other) on at least 1 day in the past 30 days.

NOTE: NSDUH estimates, along with 95 percent Bayesian confidence (credible) intervals, are based on the survey-weighted hierarchical Bayes estimation approach and are generated by Markov Chain Monte Carlo techniques. BRFSS estimates are based on a survey-weighted direct estimation approach.

NOTE: The *p* value is the probability of more extreme values than the observed difference between the BRFSS and NSDUH estimates under the null hypothesis of no difference.

<sup>1</sup> In 2023, Kentucky and Pennsylvania were unable to collect enough BRFSS data to meet the minimum requirements for inclusion in the 2023 annual aggregate dataset. Thus, the BRFSS estimates for Kentucky and Pennsylvania are based on only the 2024 BRFSS data. In 2024, Tennessee was unable to collect enough BRFSS data to meet the minimum requirements for inclusion in the 2024 annual aggregate dataset. Thus, the BRFSS estimate for Tennessee are based on only the 2023 BRFSS data.

Source: SAMHSA, Center for Behavioral Health Statistics and Quality, National Surveys on Drug Use and Health, 2023-2024; U.S. Centers for Disease Control and Prevention, Behavioral Risk Factor Surveillance System, 2023-2024.

**Table 3 Cigarette Use: Among People Aged 18 or Older, by State: Annual Average Percentages, BRFSS and NSDUH, 2023-2024**

State	2023-2024 BRFSS <sup>1</sup> (Estimate)	2023-2024 BRFSS <sup>1</sup> (95% Confidence Interval)	2023-2024 NSDUH <sup>2</sup> (Estimate)	2023-2024 NSDUH <sup>2</sup> (95% Confidence Interval)
Alabama	14.11	(13.14 - 15.09)	21.57	(19.14 - 24.21)
Alaska	15.00	(13.98 - 16.03)	13.85	(11.76 - 16.24)
Arizona	10.06	(9.38 - 10.74)	14.97	(12.76 - 17.49)
Arkansas	15.75	(14.81 - 16.68)	20.63	(18.22 - 23.27)
California	8.14	(7.59 - 8.69)	9.83	(8.93 - 10.81)
Colorado	9.92	(9.38 - 10.46)	11.92	(10.12 - 13.98)
Connecticut	8.67	(8.00 - 9.33)	12.56	(10.44 - 15.05)
Delaware	10.71	(9.75 - 11.67)	15.92	(13.86 - 18.22)
District of Columbia	9.14	(8.01 - 10.27)	12.69	(10.68 - 15.01)
Florida	10.57	(9.75 - 11.40)	12.87	(11.58 - 14.27)
Georgia	11.66	(10.88 - 12.45)	18.61	(16.41 - 21.03)
Hawaii	8.60	(7.94 - 9.26)	10.88	(8.93 - 13.18)
Idaho	10.05	(9.26 - 10.83)	13.78	(11.67 - 16.21)
Illinois	10.61	(9.99 - 11.23)	14.89	(13.31 - 16.61)
Indiana	14.16	(13.57 - 14.75)	18.81	(16.63 - 21.21)
Iowa	13.29	(12.63 - 13.95)	18.25	(15.84 - 20.93)
Kansas	13.80	(13.13 - 14.46)	14.49	(12.43 - 16.82)
Kentucky <sup>3</sup>	17.18	(15.83 - 18.53)	21.94	(19.51 - 24.57)
Louisiana	15.40	(14.46 - 16.34)	21.98	(19.44 - 24.74)
Maine	14.18	(13.52 - 14.84)	17.89	(15.17 - 20.98)
Maryland	8.50	(8.00 - 9.00)	10.67	(8.82 - 12.85)
Massachusetts	9.31	(8.67 - 9.95)	10.81	(8.91 - 13.06)
Michigan	13.53	(12.82 - 14.23)	17.54	(15.92 - 19.30)
Minnesota	11.24	(10.73 - 11.75)	12.88	(10.88 - 15.19)
Mississippi	14.86	(13.70 - 16.02)	20.82	(18.39 - 23.48)
Missouri	14.98	(14.14 - 15.81)	19.63	(17.23 - 22.28)
Montana	12.31	(11.57 - 13.04)	15.99	(13.53 - 18.80)
Nebraska	12.14	(11.58 - 12.71)	12.58	(10.77 - 14.65)
Nevada	13.04	(11.39 - 14.69)	16.16	(13.99 - 18.60)
New Hampshire	9.77	(8.97 - 10.57)	13.51	(11.44 - 15.90)
New Jersey	8.88	(8.27 - 9.49)	11.26	(9.59 - 13.19)
New Mexico	12.08	(10.89 - 13.28)	17.15	(14.71 - 19.90)
New York	9.75	(9.37 - 10.13)	12.26	(11.03 - 13.61)
North Carolina	12.35	(11.34 - 13.37)	15.96	(14.04 - 18.08)
North Dakota	12.84	(11.99 - 13.69)	16.61	(14.31 - 19.20)
Ohio	14.61	(13.91 - 15.31)	18.86	(17.17 - 20.66)
Oklahoma	14.90	(14.15 - 15.65)	20.23	(17.65 - 23.09)
Oregon	10.62	(9.90 - 11.33)	14.85	(12.68 - 17.31)
Pennsylvania <sup>3</sup>	11.70	(10.31 - 13.08)	16.08	(14.42 - 17.90)
Rhode Island	9.69	(8.91 - 10.47)	13.25	(11.15 - 15.68)
South Carolina	12.33	(11.56 - 13.10)	17.06	(14.50 - 19.96)
South Dakota	14.36	(12.79 - 15.93)	15.08	(12.78 - 17.70)
Tennessee <sup>3</sup>	16.99	(15.54 - 18.43)	19.13	(16.63 - 21.91)
Texas	10.60	(9.83 - 11.37)	14.00	(12.79 - 15.31)
Utah	5.83	(5.41 - 6.24)	9.04	(7.61 - 10.71)
Vermont	10.95	(10.12 - 11.78)	14.63	(12.15 - 17.52)
Virginia	10.96	(10.16 - 11.76)	12.71	(11.08 - 14.53)
Washington	8.46	(8.15 - 8.78)	11.84	(9.98 - 13.99)
West Virginia	20.62	(19.59 - 21.65)	22.69	(19.94 - 25.70)
Wisconsin	11.98	(11.42 - 12.54)	14.36	(12.25 - 16.76)
Wyoming	13.35	(12.41 - 14.28)	18.34	(15.56 - 21.48)

NOTE: NSDUH estimates, along with 95 percent Bayesian confidence (credible) intervals, are based on the survey-weighted hierarchical Bayes estimation approach and are generated by Markov Chain Monte Carlo techniques. BRFSS estimates are based on a survey-weighted direct estimation approach.

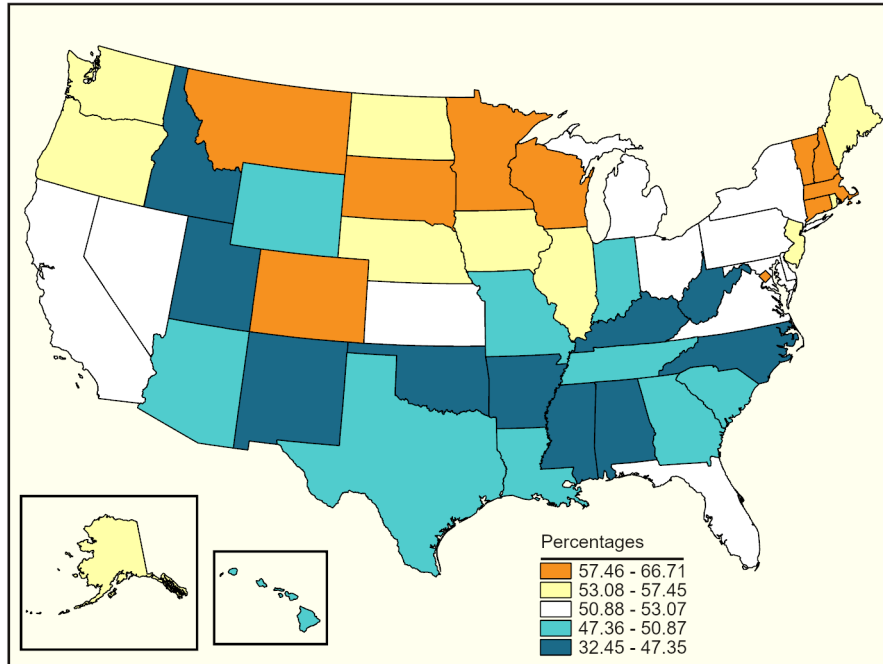
<sup>1</sup> BRFSS respondents were classified as current smokers if they reported having smoked at least 100 cigarettes during their lifetime and indicated that they smoked every day or some days at the time of the survey.

<sup>2</sup> NSDUH respondents were classified as past month cigarette users if they smoked all or part of a cigarette during the past 30 days.

<sup>3</sup> In 2023, Kentucky and Pennsylvania were unable to collect enough BRFSS data to meet the minimum requirements for inclusion in the 2023 annual aggregate dataset. Thus, the BRFSS estimates for Kentucky and Pennsylvania are based on only the 2024 BRFSS data. In 2024, Tennessee was unable to collect enough BRFSS data to meet the minimum requirements for inclusion in the 2024 annual aggregate dataset. Thus, the BRFSS estimate for Tennessee are based on only the 2023 BRFSS data.

Source: SAMHSA, Center for Behavioral Health Statistics and Quality, National Surveys on Drug Use and Health, 2023-2024; U.S. Centers for Disease Control and Prevention, Behavioral Risk Factor Surveillance System, 2023-2024.

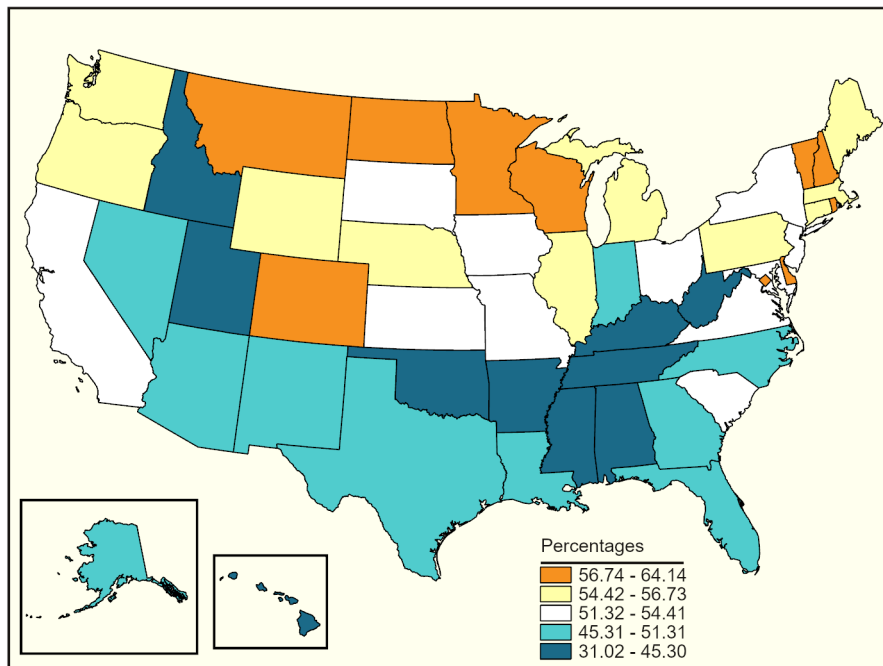
**Figure 1 Alcohol Use in the Past Month: Among People Aged 18 or Older; by State, Annual Average Percentages, BRFSS, 2023-2024**



NOTE: In 2023, Kentucky and Pennsylvania were unable to collect enough BRFSS data to meet the minimum requirements for inclusion in the 2023 annual aggregate dataset. Thus, the BRFSS estimates for Kentucky and Pennsylvania are based on only the 2024 BRFSS data. In 2024, Tennessee was unable to collect enough BRFSS data to meet the minimum requirements for inclusion in the 2024 annual aggregate dataset. Thus, the BRFSS estimate for Tennessee are based on only the 2023 BRFSS data.

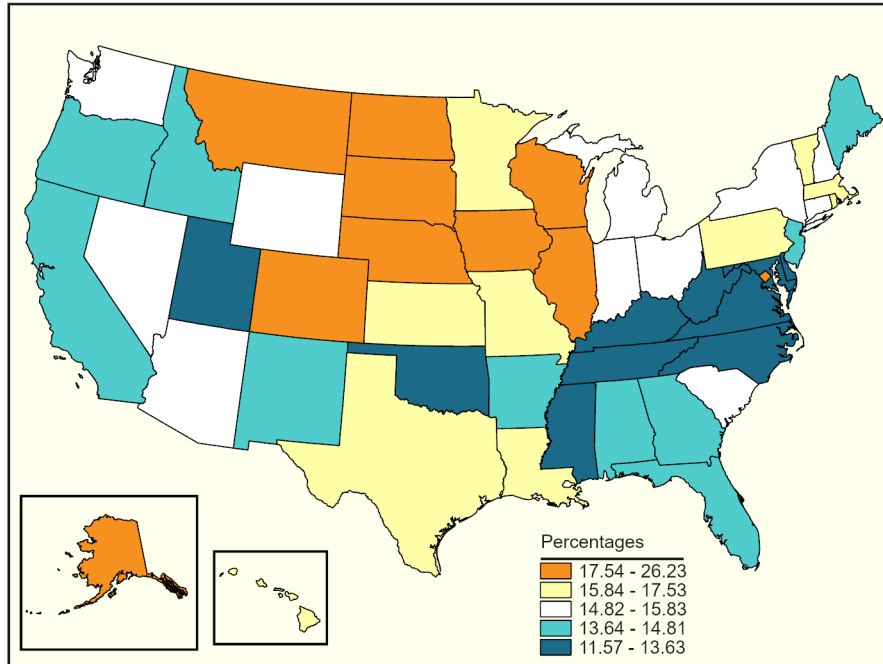
Source: U.S. Centers for Disease Control and Prevention, Behavioral Risk Factor Surveillance System, 2023-2024.

**Figure 2 Alcohol Use in the Past Month: Among People Aged 18 or Older; by State, Annual Average Percentages, NSDUH, 2023-2024**



Source: SAMHSA, Center for Behavioral Health Statistics and Quality, National Surveys on Drug Use and Health, 2023-2024.

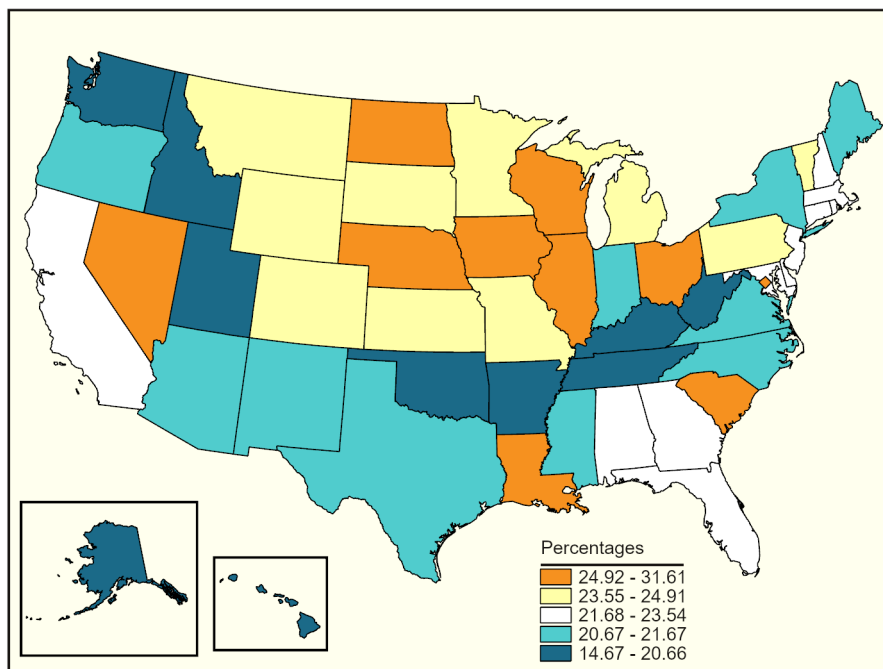
**Figure 3** *Binge Alcohol Use in the Past Month: Among People Aged 18 or Older; by State, Annual Average Percentages, BRFSS, 2023-2024*



NOTE: In 2023, Kentucky and Pennsylvania were unable to collect enough BRFSS data to meet the minimum requirements for inclusion in the 2023 annual aggregate dataset. Thus, the BRFSS estimates for Kentucky and Pennsylvania are based on only the 2024 BRFSS data. In 2024, Tennessee was unable to collect enough BRFSS data to meet the minimum requirements for inclusion in the 2024 annual aggregate dataset. Thus, the BRFSS estimate for Tennessee are based on only the 2023 BRFSS data.

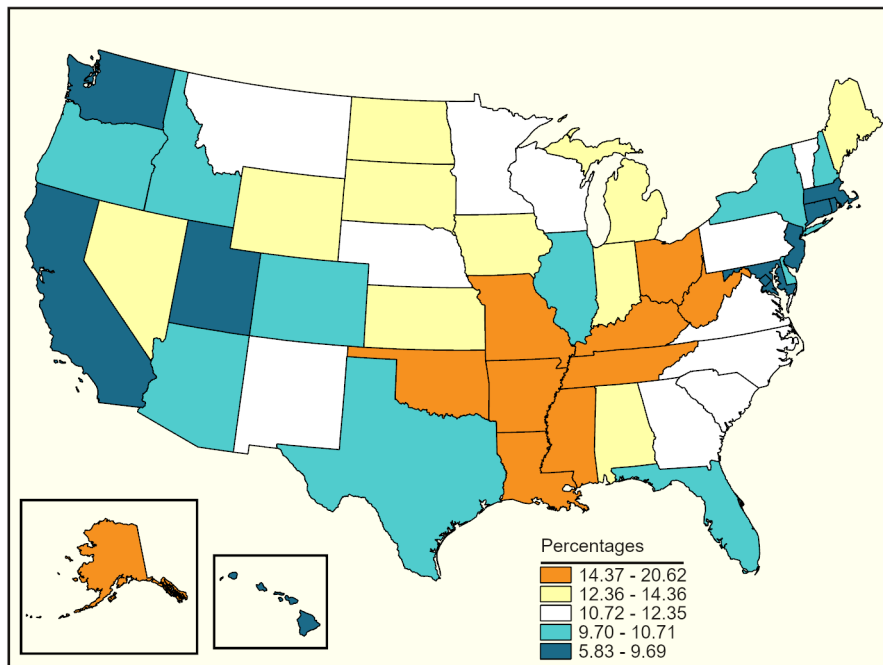
Source: U.S. Centers for Disease Control and Prevention, Behavioral Risk Factor Surveillance System, 2023-2024.

**Figure 4** *Binge Alcohol Use in the Past Month: Among People Aged 18 or Older; by State, Annual Average Percentages, NSDUH, 2023-2024*



Source: SAMHSA, Center for Behavioral Health Statistics and Quality, National Surveys on Drug Use and Health, 2023-2024.

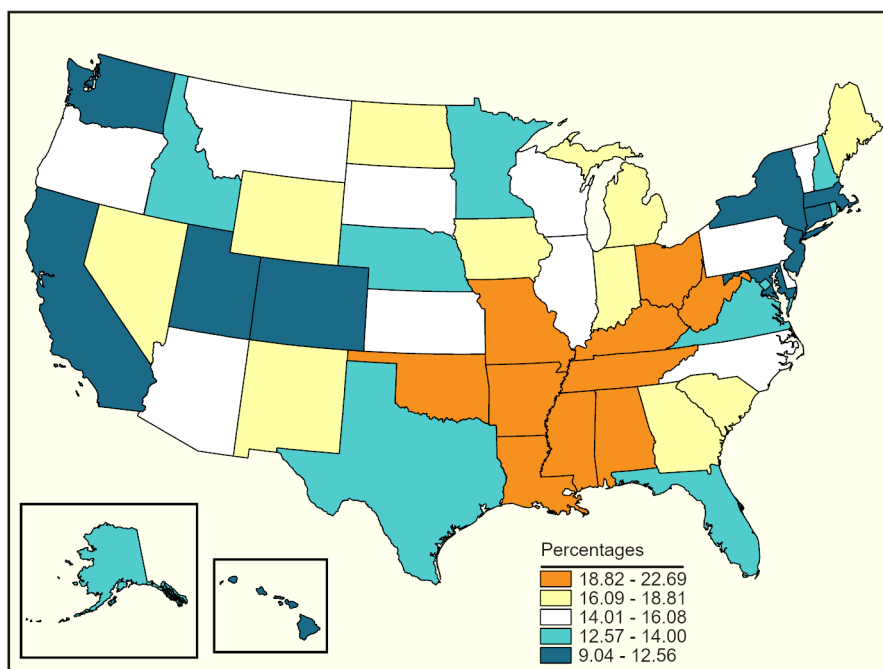
**Figure 5 Current Cigarette Use: Among People Aged 18 or Older; by State, Annual Average Percentages, BRFSS, 2023-2024**



NOTE: In 2023, Kentucky and Pennsylvania were unable to collect enough BRFSS data to meet the minimum requirements for inclusion in the 2023 annual aggregate dataset. Thus, the BRFSS estimates for Kentucky and Pennsylvania are based on only the 2024 BRFSS data. In 2024, Tennessee was unable to collect enough BRFSS data to meet the minimum requirements for inclusion in the 2024 annual aggregate dataset. Thus, the BRFSS estimate for Tennessee are based on only the 2023 BRFSS data.

Source: U.S. Centers for Disease Control and Prevention, Behavioral Risk Factor Surveillance System, 2023-2024.

**Figure 6 Cigarette Use in the Past Month: Among People Aged 18 or Older; by State, Annual Average Percentages, NSDUH, 2023-2024**



Source: SAMHSA, Center for Behavioral Health Statistics and Quality, National Surveys on Drug Use and Health, 2023-2024.