

**National Survey on Drug Use and Health:
Comparison of 2008-2009 and 2017-2018
Population Percentages
(50 States and the District of Columbia)**

Table 1 Marijuana Use in the Past Year, by Age Group and State: Percentages, Annual Averages, and P Values from Tests of Differences between Percentages, 2008-2009 and 2017-2018 NSDUHs

State	12+ (2008- 2009)	12+ (2017- 2018)	12+ (P Value)	12-17 (2008- 2009)	12-17 (2017- 2018)	12-17 (P Value)	18-25 (2008- 2009)	18-25 (2017- 2018)	18-25 (P Value)	26+ (2008- 2009)	26+ (2017- 2018)	26+ (P Value)	18+ (2008- 2009)	18+ (2017- 2018)	18+ (P Value)
Total U.S.	10.88 ^a	15.47	0.000	13.37 ^a	12.45	0.004	29.31 ^a	34.80	0.000	7.38 ^a	12.73	0.000	10.61 ^a	15.77	0.000
Northeast	11.95 ^a	15.97	0.000	14.22 ^a	13.00	0.043	34.64 ^a	38.99	0.000	7.84 ^a	12.69	0.000	11.71 ^a	16.24	0.000
Midwest	10.36 ^a	14.99	0.000	12.84	12.58	0.597	28.53 ^a	34.75	0.000	6.90 ^a	12.05	0.000	10.08 ^a	15.24	0.000
South	9.59 ^a	12.92	0.000	12.06 ^b	11.20	0.055	25.38 ^a	30.14	0.000	6.62 ^a	10.40	0.000	9.32 ^a	13.10	0.000
West	12.55 ^a	19.57	0.000	15.26 ^b	13.96	0.051	31.83 ^a	39.08	0.000	8.69 ^a	17.07	0.000	12.25 ^a	20.14	0.000
Alabama	8.49 ^a	12.59	0.000	10.11	10.24	0.924	22.60 ^a	27.09	0.042	5.89 ^a	10.55	0.000	8.31 ^a	12.82	0.000
Alaska	16.25 ^a	23.72	0.000	15.89	16.42	0.777	35.51	39.30	0.167	12.67 ^a	22.14	0.000	16.29 ^a	24.52	0.000
Arizona	10.89 ^a	16.71	0.000	14.28	11.97	0.181	29.42	32.34	0.270	7.29 ^a	14.72	0.000	10.50 ^a	17.20	0.000
Arkansas	10.78 ^a	13.40	0.005	12.33	11.38	0.516	27.59	26.85	0.758	7.85 ^a	11.46	0.001	10.61 ^a	13.61	0.003
California	12.91 ^a	18.43	0.000	15.12	13.82	0.203	32.15 ^a	39.23	0.000	8.91 ^a	15.54	0.000	12.65 ^a	18.89	0.000
Colorado	15.12 ^a	26.78	0.000	18.55	16.93	0.435	38.59 ^a	49.23	0.000	10.79 ^a	24.37	0.000	14.76 ^a	27.77	0.000
Connecticut	12.56 ^a	18.45	0.000	15.91	16.09	0.928	37.10 ^a	46.38	0.001	8.25 ^a	14.22	0.000	12.20 ^a	18.68	0.000
Delaware	11.82 ^a	17.11	0.000	15.53	14.03	0.393	35.92 ^b	41.09	0.056	7.35 ^a	13.97	0.000	11.43 ^a	17.40	0.000
District of Columbia	14.34 ^a	26.47	0.000	14.59	16.41	0.347	33.16 ^a	51.93	0.000	10.11 ^a	22.44	0.000	14.33 ^a	27.03	0.000
Florida	10.12 ^a	14.34	0.000	12.94	13.01	0.947	26.58 ^a	34.58	0.000	7.38 ^a	11.75	0.000	9.85 ^a	14.45	0.000
Georgia	11.03 ^a	13.50	0.009	12.69	11.61	0.455	26.60 ^b	30.91	0.063	8.15 ^a	10.86	0.011	10.84 ^a	13.71	0.005
Hawaii	12.06 ^b	14.29	0.064	14.45 ^b	11.20	0.069	31.14	28.28	0.297	8.74 ^a	12.73	0.004	11.82 ^a	14.56	0.033
Idaho	10.66 ^a	13.78	0.001	13.44	12.29	0.466	28.30	28.29	0.997	7.15 ^a	11.58	0.000	10.32 ^a	13.96	0.000
Illinois	10.54 ^a	15.27	0.000	13.33	13.94	0.592	27.95 ^a	34.93	0.000	7.01 ^a	12.31	0.000	10.22 ^a	15.41	0.000
Indiana	10.28 ^a	15.61	0.000	12.90	13.01	0.944	27.22 ^a	35.80	0.001	7.08 ^a	12.46	0.000	9.99 ^a	15.89	0.000
Iowa	7.68 ^a	12.41	0.000	11.72	10.42	0.387	20.54 ^a	31.69	0.000	4.90 ^a	9.25	0.000	7.25 ^a	12.61	0.000
Kansas	9.39 ^a	13.71	0.000	12.12	11.68	0.773	25.63	29.44	0.120	6.00 ^a	11.19	0.000	9.09 ^a	13.93	0.000
Kentucky	8.83 ^a	12.87	0.000	10.91	11.62	0.637	24.66	27.04	0.305	6.10 ^a	10.75	0.000	8.61 ^a	13.00	0.000
Louisiana	8.52 ^a	12.22	0.000	9.76	9.16	0.658	23.23 ^a	28.68	0.017	5.51 ^a	9.95	0.000	8.37 ^a	12.54	0.000
Maine	13.55 ^a	23.85	0.000	14.20	15.70	0.405	39.68 ^a	49.15	0.001	9.85 ^a	21.34	0.000	13.49 ^a	24.53	0.000
Maryland	10.69 ^a	14.59	0.000	13.73	12.33	0.401	30.32 ^a	37.68	0.010	6.98 ^a	11.39	0.000	10.36 ^a	14.81	0.000
Massachusetts	14.57 ^a	20.56	0.000	16.44	17.07	0.740	40.19 ^a	46.36	0.029	9.81 ^a	16.52	0.000	14.39 ^a	20.87	0.000
Michigan	12.20 ^a	18.45	0.000	14.21	13.78	0.702	32.33 ^a	40.92	0.000	8.51 ^a	15.28	0.000	11.97 ^a	18.91	0.000
Minnesota	10.37 ^a	15.58	0.000	11.29	12.46	0.445	29.92 ^a	36.96	0.006	6.92 ^a	12.61	0.000	10.27 ^a	15.90	0.000
Mississippi	7.88 ^a	11.58	0.000	9.92	10.77	0.541	20.36 ^b	24.71	0.053	5.30 ^a	9.45	0.000	7.64 ^a	11.67	0.000
Missouri	9.73 ^a	14.57	0.000	11.54	12.10	0.710	27.19 ^b	31.90	0.063	6.62 ^a	12.10	0.000	9.53 ^a	14.82	0.000
Montana	12.23 ^a	19.61	0.000	15.50	14.69	0.647	34.96 ^b	40.15	0.057	8.04 ^a	16.92	0.000	11.90 ^a	20.07	0.000

See notes at end of table.

(continued)

Table 1 Marijuana Use in the Past Year, by Age Group and State: Percentages, Annual Averages, and P Values from Tests of Differences between Percentages, 2008-2009 and 2017-2018 NSDUHs (continued)

State	12+ (2008- 2009)	12+ (2017- 2018)	12+ (P Value)	12-17 (2008- 2009)	12-17 (2017- 2018)	12-17 (P Value)	18-25 (2008- 2009)	18-25 (2017- 2018)	18-25 (P Value)	26+ (2008- 2009)	26+ (2017- 2018)	26+ (P Value)	18+ (2008- 2009)	18+ (2017- 2018)	18+ (P Value)
Nebraska	9.25 ^a	12.68	0.000	10.87	12.46	0.304	24.63 ^a	31.94	0.002	6.12 ^a	9.31	0.001	9.07 ^a	12.70	0.000
Nevada	11.09 ^a	21.85	0.000	16.45	14.27	0.238	28.98 ^a	42.55	0.000	7.74 ^a	19.79	0.000	10.49 ^a	22.61	0.000
New Hampshire	14.87 ^a	20.49	0.000	16.56	16.07	0.794	41.83	45.17	0.265	10.55 ^a	17.19	0.000	14.69 ^a	20.89	0.000
New Jersey	9.19 ^a	12.30	0.000	11.63	11.07	0.694	30.00	33.96	0.105	5.67 ^a	9.27	0.000	8.93 ^a	12.42	0.000
New Mexico	10.95 ^a	18.72	0.000	16.83	16.18	0.736	29.23	33.37	0.125	6.82 ^a	16.66	0.000	10.30 ^a	18.99	0.000
New York	12.82 ^a	15.28	0.000	14.87 ^a	12.49	0.025	36.36	37.99	0.317	8.34 ^a	11.98	0.000	12.61 ^a	15.53	0.000
North Carolina	10.46 ^a	12.81	0.006	13.41	11.40	0.153	28.35	30.50	0.355	7.20 ^a	10.21	0.002	10.14 ^a	12.96	0.002
North Dakota	8.29 ^a	11.96	0.000	9.42	9.80	0.785	23.06 ^b	27.49	0.072	4.85 ^a	9.11	0.000	8.18 ^a	12.17	0.000
Ohio	10.08 ^a	13.76	0.000	12.97	11.72	0.225	29.54 ^a	34.75	0.001	6.52 ^a	10.69	0.000	9.77 ^a	13.96	0.000
Oklahoma	10.19 ^a	12.93	0.004	12.69	10.85	0.256	25.06 ^a	30.16	0.049	7.16 ^a	10.28	0.003	9.91 ^a	13.15	0.001
Oregon	14.41 ^a	27.53	0.000	18.34	16.09	0.239	37.33 ^a	49.57	0.000	10.40 ^a	25.48	0.000	14.01 ^a	28.56	0.000
Pennsylvania	10.04 ^a	14.18	0.000	12.87 ^b	11.03	0.090	28.78 ^a	34.65	0.000	6.62 ^a	11.41	0.000	9.75 ^a	14.47	0.000
Rhode Island	14.34 ^a	20.74	0.000	16.31	15.36	0.605	39.48	42.90	0.249	9.39 ^a	17.39	0.000	14.14 ^a	21.21	0.000
South Carolina	9.36 ^a	13.69	0.000	11.75	12.32	0.707	25.58	29.50	0.107	6.40 ^a	11.44	0.000	9.10 ^a	13.82	0.000
South Dakota	8.96 ^a	12.12	0.000	12.05	10.83	0.438	25.67	28.62	0.228	5.55 ^a	9.52	0.000	8.62 ^a	12.26	0.000
Tennessee	9.61 ^a	13.09	0.000	10.52	11.61	0.436	26.28	29.95	0.123	6.95 ^a	10.64	0.000	9.52 ^a	13.24	0.000
Texas	8.31 ^a	11.07	0.000	11.24	9.90	0.148	22.03 ^a	26.36	0.002	5.29 ^a	8.54	0.000	7.95 ^a	11.21	0.000
Utah	7.18 ^a	10.87	0.000	9.73	8.81	0.512	17.70 ^a	24.23	0.004	4.13 ^a	8.26	0.000	6.83 ^a	11.16	0.000
Vermont	15.95 ^a	25.33	0.000	16.67 ^a	20.69	0.048	45.25 ^a	51.44	0.036	11.09 ^a	21.27	0.000	15.88 ^a	25.71	0.000
Virginia	9.75 ^a	11.93	0.007	13.80 ^a	10.69	0.033	27.03 ^b	31.48	0.056	6.32 ^a	8.99	0.003	9.33 ^a	12.05	0.002
Washington	12.81 ^a	23.48	0.000	15.24	16.11	0.633	34.11 ^a	44.50	0.000	9.08 ^a	21.16	0.000	12.55 ^a	24.18	0.000
West Virginia	9.60 ^a	14.39	0.000	12.05	11.42	0.681	26.63	30.39	0.145	6.88 ^a	12.40	0.000	9.37 ^a	14.65	0.000
Wisconsin	10.65 ^a	13.58	0.002	13.71	11.66	0.184	31.13	30.66	0.852	6.82 ^a	11.04	0.000	10.33 ^a	13.77	0.001
Wyoming	9.88 ^a	13.08	0.001	14.19	12.53	0.329	27.24	30.40	0.217	6.27 ^a	10.49	0.000	9.43 ^a	13.14	0.000

NOTE: State and census region estimates are based on a survey-weighted hierarchical Bayes estimation approach, with their *p* values being the Bayes significance levels for the null hypothesis of no change between the 2008-2009 and 2017-2018 population percentages. The "Total U.S." estimates, along with the *p* values, are based on design-based (direct) estimation methods.

^a Difference between the 2008-2009 and 2017-2018 population percentages is statistically significant at the 0.05 level.

^b Difference between the 2008-2009 and 2017-2018 population percentages is statistically significant at the 0.10 level.

Source: SAMHSA, Center for Behavioral Health Statistics and Quality, National Survey on Drug Use and Health, 2008, 2009, 2017, and 2018 (2008 and 2009 Data – Revised March 2012).

Table 2 *Marijuana Use in the Past Month*, by Age Group and State: Percentages, Annual Averages, and *P* Values from Tests of Differences between Percentages, 2008-2009 and 2017-2018 NSDUHs

State	12+ (2008- 2009)	12+ (2017- 2018)	12+ (<i>P</i> Value)	12-17 (2008- 2009)	12-17 (2017- 2018)	12-17 (<i>P</i> Value)	18-25 (2008- 2009)	18-25 (2017- 2018)	18-25 (<i>P</i> Value)	26+ (2008- 2009)	26+ (2017- 2018)	26+ (<i>P</i> Value)	18+ (2008- 2009)	18+ (2017- 2018)	18+ (<i>P</i> Value)
Total U.S.	6.40 ^a	9.83	0.000	7.03 ^b	6.56	0.056	17.42 ^a	22.12	0.000	4.42 ^a	8.25	0.000	6.33 ^a	10.16	0.000
Northeast	7.14 ^a	10.25	0.000	7.94 ^a	6.82	0.011	21.45 ^a	24.74	0.000	4.63 ^a	8.35	0.000	7.06 ^a	10.56	0.000
Midwest	6.07 ^a	9.39	0.000	7.03	6.47	0.104	16.57 ^a	21.85	0.000	4.14 ^a	7.70	0.000	5.97 ^a	9.69	0.000
South	5.47 ^a	7.96	0.000	6.06	5.89	0.600	15.21 ^a	18.89	0.000	3.76 ^a	6.47	0.000	5.41 ^a	8.17	0.000
West	7.57 ^a	12.89	0.000	7.86	7.55	0.519	18.43 ^a	25.51	0.000	5.56 ^a	11.48	0.000	7.54 ^a	13.44	0.000
Alabama	5.04 ^a	8.31	0.000	5.70	6.18	0.626	14.49 ^a	18.67	0.024	3.35 ^a	6.91	0.000	4.97 ^a	8.53	0.000
Alaska	11.52 ^a	16.56	0.000	9.14	7.88	0.337	25.16	26.27	0.675	9.30 ^a	16.10	0.000	11.81 ^a	17.51	0.000
Arizona	6.70 ^a	10.93	0.000	7.28	6.28	0.369	17.08 ^b	21.07	0.081	4.86 ^a	9.83	0.000	6.63 ^a	11.41	0.000
Arkansas	6.11 ^a	8.60	0.001	6.73	5.62	0.263	16.16	16.20	0.984	4.40 ^a	7.73	0.000	6.04 ^a	8.91	0.000
California	7.67 ^a	11.97	0.000	7.70	7.05	0.373	18.67 ^a	25.06	0.000	5.57 ^a	10.39	0.000	7.67 ^a	12.46	0.000
Colorado	9.77 ^a	17.33	0.000	10.17	9.39	0.581	24.18 ^a	33.21	0.000	7.31 ^a	15.73	0.000	9.72 ^a	18.12	0.000
Connecticut	7.26 ^a	12.06	0.000	8.35	8.35	0.998	22.56 ^a	30.08	0.004	4.70 ^a	9.58	0.000	7.14 ^a	12.42	0.000
Delaware	6.97 ^a	11.16	0.000	7.54	8.19	0.597	22.67	26.72	0.105	4.29 ^a	9.22	0.000	6.91 ^a	11.44	0.000
District of Columbia	8.46 ^a	16.63	0.000	7.50	8.47	0.450	19.59 ^a	32.49	0.000	6.07 ^a	14.25	0.000	8.54 ^a	17.09	0.000
Florida	5.80 ^a	9.28	0.000	6.31	7.06	0.298	15.21 ^a	22.88	0.000	4.35 ^a	7.67	0.000	5.75 ^a	9.47	0.000
Georgia	6.06 ^a	8.23	0.001	5.50	6.05	0.552	15.87 ^a	20.18	0.019	4.46 ^a	6.53	0.006	6.12 ^a	8.47	0.001
Hawaii	8.46	8.80	0.738	7.72 ^a	5.31	0.044	19.15	16.70	0.292	6.84	8.09	0.285	8.54	9.11	0.593
Idaho	5.89 ^a	8.21	0.001	7.50	6.28	0.242	14.13	16.49	0.212	4.21 ^a	7.11	0.001	5.69 ^a	8.45	0.000
Illinois	5.91 ^a	9.64	0.000	7.29	6.86	0.581	16.23 ^a	22.59	0.000	3.86 ^a	7.92	0.000	5.76 ^a	9.93	0.000
Indiana	6.08 ^a	10.20	0.000	7.24	6.77	0.662	16.48 ^a	22.85	0.003	4.17 ^a	8.46	0.000	5.95 ^a	10.57	0.000
Iowa	4.48 ^a	7.04	0.000	6.88	5.36	0.138	11.62 ^a	17.54	0.001	2.92 ^a	5.39	0.000	4.23 ^a	7.21	0.000
Kansas	5.02 ^a	6.34	0.037	5.97	4.53	0.110	13.04	14.54	0.406	3.40 ^a	5.13	0.017	4.91 ^a	6.54	0.017
Kentucky	4.81 ^a	8.19	0.000	5.27	5.93	0.496	14.25 ^b	17.42	0.097	3.27 ^a	6.98	0.000	4.76 ^a	8.42	0.000
Louisiana	5.14 ^a	7.69	0.000	4.82	5.12	0.744	15.19 ^b	18.83	0.064	3.26 ^a	6.22	0.000	5.18 ^a	7.96	0.000
Maine	9.81 ^a	16.57	0.000	8.43	10.31	0.185	26.13 ^a	35.17	0.001	7.69 ^a	14.75	0.000	9.94 ^a	17.09	0.000
Maryland	5.66 ^a	9.90	0.000	7.01	6.96	0.960	17.03 ^a	24.71	0.001	3.56 ^a	8.01	0.000	5.51 ^a	10.19	0.000
Massachusetts	8.74 ^a	13.60	0.000	9.09	9.33	0.856	24.84 ^a	31.39	0.011	5.84 ^a	11.02	0.000	8.70 ^a	13.98	0.000
Michigan	7.52 ^a	12.61	0.000	7.88	7.87	0.982	18.99 ^a	27.50	0.000	5.52 ^a	10.70	0.000	7.48 ^a	13.08	0.000
Minnesota	5.98 ^a	9.48	0.000	5.58	6.25	0.493	17.10 ^a	22.09	0.021	4.13 ^a	7.89	0.000	6.02 ^a	9.81	0.000
Mississippi	4.54 ^a	6.98	0.000	5.02	4.96	0.943	11.72 ^a	15.26	0.044	3.15 ^a	5.83	0.000	4.48 ^a	7.21	0.000
Missouri	5.94 ^a	8.57	0.000	5.74	6.21	0.633	16.91	19.96	0.144	4.15 ^a	7.03	0.001	5.96 ^a	8.81	0.000
Montana	8.12 ^a	14.46	0.000	8.78	9.65	0.511	21.99 ^a	27.30	0.026	5.72 ^a	12.96	0.000	8.05 ^a	14.91	0.000

See notes at end of table.

(continued)

Table 2 Marijuana Use in the Past Month, by Age Group and State: Percentages, Annual Averages, and P Values from Tests of Differences between Percentages, 2008-2009 and 2017-2018 NSDUHs (continued)

State	12+ (2008- 2009)	12+ (2017- 2018)	12+ (P Value)	12-17 (2008- 2009)	12-17 (2017- 2018)	12-17 (P Value)	18-25 (2008- 2009)	18-25 (2017- 2018)	18-25 (P Value)	26+ (2008- 2009)	26+ (2017- 2018)	26+ (P Value)	18+ (2008- 2009)	18+ (2017- 2018)	18+ (P Value)
Nebraska	5.36 ^a	8.21	0.000	6.09	6.16	0.947	14.70 ^a	20.54	0.004	3.50 ^a	6.30	0.000	5.28 ^a	8.43	0.000
Nevada	7.00 ^a	15.05	0.000	8.96	9.17	0.881	18.34 ^a	32.09	0.000	5.06 ^a	13.31	0.000	6.78 ^a	15.64	0.000
New Hampshire	9.62 ^a	14.24	0.000	9.66	8.84	0.535	27.28	29.95	0.329	6.91 ^a	12.41	0.000	9.61 ^a	14.72	0.000
New Jersey	5.04 ^a	7.89	0.000	6.16	5.61	0.550	17.42 ^b	21.08	0.069	2.99 ^a	6.21	0.000	4.92 ^a	8.11	0.000
New Mexico	6.54 ^a	12.98	0.000	9.25	9.58	0.821	15.74 ^a	23.96	0.000	4.49 ^a	11.62	0.000	6.24 ^a	13.34	0.000
New York	7.73 ^a	9.77	0.000	8.50 ^a	6.62	0.013	23.09	24.22	0.423	4.87 ^a	7.81	0.000	7.65 ^a	10.05	0.000
North Carolina	6.30 ^a	7.79	0.027	7.19	6.66	0.592	16.85	19.24	0.209	4.49 ^a	6.13	0.034	6.21 ^a	7.91	0.019
North Dakota	4.67 ^a	7.62	0.000	5.06	4.93	0.882	10.65 ^a	17.12	0.000	3.30 ^a	6.03	0.000	4.64 ^a	7.87	0.000
Ohio	5.96 ^a	8.34	0.000	7.63 ^a	6.16	0.050	17.26 ^a	20.67	0.011	3.89 ^a	6.66	0.000	5.77 ^a	8.56	0.000
Oklahoma	5.60 ^a	7.51	0.009	6.23	5.31	0.355	14.18 ^b	17.57	0.094	3.96 ^a	6.09	0.010	5.53 ^a	7.75	0.005
Oregon	9.29 ^a	18.83	0.000	8.66	9.71	0.440	23.87 ^a	33.11	0.000	7.11 ^a	17.68	0.000	9.36 ^a	19.65	0.000
Pennsylvania	5.81 ^a	8.38	0.000	7.19 ^a	5.31	0.010	17.08 ^b	19.71	0.055	3.80 ^a	6.98	0.000	5.67 ^a	8.66	0.000
Rhode Island	10.04 ^a	14.65	0.000	9.09	8.61	0.719	27.14	29.26	0.436	6.94 ^a	12.70	0.000	10.13 ^a	15.17	0.000
South Carolina	5.91 ^a	8.32	0.001	5.55	6.34	0.409	16.88	19.18	0.241	4.16 ^a	6.89	0.001	5.95 ^a	8.51	0.001
South Dakota	5.14 ^a	7.12	0.003	6.61	5.26	0.185	13.55 ^a	17.70	0.026	3.44 ^a	5.58	0.005	4.98 ^a	7.31	0.001
Tennessee	5.42 ^a	8.55	0.000	5.19	6.11	0.329	16.64	19.88	0.107	3.72 ^a	7.07	0.000	5.44 ^a	8.79	0.000
Texas	4.74 ^a	6.06	0.000	6.11 ^a	4.82	0.045	13.45	14.67	0.273	2.91 ^a	4.72	0.000	4.58 ^a	6.21	0.000
Utah	3.60 ^a	6.06	0.000	4.78	4.46	0.708	8.21 ^a	13.81	0.001	2.27 ^a	4.62	0.000	3.44 ^a	6.28	0.000
Vermont	10.85 ^a	19.30	0.000	9.73 ^b	12.67	0.063	30.56 ^a	37.67	0.009	7.75 ^a	16.76	0.000	10.96 ^a	19.84	0.000
Virginia	5.33 ^a	7.27	0.001	6.33	5.64	0.474	15.70 ^a	19.50	0.039	3.45 ^a	5.53	0.002	5.23 ^a	7.43	0.001
Washington	7.21 ^a	16.39	0.000	7.74 ^b	9.94	0.096	17.19 ^a	30.44	0.000	5.53 ^a	15.01	0.000	7.15 ^a	17.01	0.000
West Virginia	5.50 ^a	9.42	0.000	5.74	6.25	0.599	17.46	18.91	0.493	3.74 ^a	8.37	0.000	5.47 ^a	9.70	0.000
Wisconsin	6.19 ^a	8.89	0.000	7.20	6.09	0.297	17.49 ^b	21.24	0.061	4.16 ^a	7.22	0.000	6.09 ^a	9.17	0.000
Wyoming	5.42 ^a	7.73	0.001	7.55	6.34	0.264	15.50	17.57	0.302	3.37 ^a	6.38	0.000	5.19 ^a	7.88	0.000

NOTE: State and census region estimates are based on a survey-weighted hierarchical Bayes estimation approach, with their *p* values being the Bayes significance levels for the null hypothesis of no change between the 2008-2009 and 2017-2018 population percentages. The "Total U.S." estimates, along with the *p* values, are based on design-based (direct) estimation methods.

^a Difference between the 2008-2009 and 2017-2018 population percentages is statistically significant at the 0.05 level.

^b Difference between the 2008-2009 and 2017-2018 population percentages is statistically significant at the 0.10 level.

Source: SAMHSA, Center for Behavioral Health Statistics and Quality, National Survey on Drug Use and Health, 2008, 2009, 2017, and 2018 (2008 and 2009 Data – Revised March 2012).

Table 3 First Use of Marijuana, by Age Group and State: Average Annual Initiation Estimates (Expressed as Percentages of the At-Risk Population) and P Values from Tests of Differences between Percentages, 2008-2009 and 2017-2018 NSDUHs

State	12+ (2008- 2009)	12+ (2017- 2018)	12+ (P Value)	12-17 (2008- 2009)	12-17 (2017- 2018)	12-17 (P Value)	18-25 (2008- 2009)	18-25 (2017- 2018)	18-25 (P Value)	26+ (2008- 2009)	26+ (2017- 2018)	26+ (P Value)	18+ (2008- 2009)	18+ (2017- 2018)	18+ (P Value)
Total U.S.	1.75 ^a	2.17	0.000	5.74	5.50	0.174	7.09 ^a	8.32	0.000	0.13 ^a	0.53	0.000	1.07 ^a	1.60	0.000
Northeast	1.80 ^a	2.27	0.000	5.92	5.78	0.613	7.96 ^a	9.47	0.002	0.13 ^a	0.55	0.000	1.12 ^a	1.70	0.000
Midwest	1.79 ^a	2.31	0.000	5.57	5.61	0.862	7.41 ^a	8.94	0.000	0.12 ^a	0.52	0.000	1.12 ^a	1.71	0.000
South	1.56 ^a	1.76	0.002	5.22	4.93	0.153	6.34	6.72	0.228	0.12 ^a	0.38	0.000	0.95 ^a	1.24	0.000
West	2.00 ^a	2.71	0.000	6.57	6.17	0.212	7.38 ^a	9.76	0.000	0.14 ^a	0.83	0.000	1.18 ^a	2.08	0.000
Alabama	1.38	1.59	0.231	4.47	4.06	0.523	5.53	6.06	0.553	0.12 ^a	0.37	0.001	0.87 ^b	1.19	0.055
Alaska	2.30 ^a	3.39	0.001	6.35	7.80	0.112	7.33	8.50	0.371	0.17 ^a	1.14	0.000	1.34 ^a	2.35	0.001
Arizona	1.72 ^a	2.38	0.011	6.10	5.11	0.216	6.58	7.78	0.318	0.12 ^a	0.87	0.000	0.95 ^a	1.88	0.000
Arkansas	1.56	1.63	0.669	5.15	5.01	0.839	6.99	5.92	0.294	0.12 ^a	0.29	0.012	0.95	1.08	0.425
California	2.06 ^a	2.56	0.001	6.66	6.40	0.593	7.39 ^a	9.59	0.003	0.14 ^a	0.68	0.000	1.23 ^a	1.90	0.000
Colorado	2.45 ^a	3.85	0.000	8.11	7.65	0.653	9.23 ^a	13.09	0.016	0.17 ^a	1.32	0.000	1.38 ^a	3.01	0.000
Connecticut	2.14 ^a	3.21	0.000	7.09	8.08	0.295	8.98 ^b	11.55	0.089	0.14 ^a	0.84	0.000	1.23 ^a	2.27	0.000
Delaware	2.13	2.30	0.485	6.67	6.72	0.950	9.55	8.30	0.354	0.14 ^a	0.63	0.000	1.32	1.57	0.283
District of Columbia	2.33 ^a	4.17	0.000	7.25 ^b	9.03	0.082	8.38 ^a	13.31	0.004	0.24 ^a	1.53	0.000	1.68 ^a	3.51	0.000
Florida	1.39 ^a	1.72	0.004	5.35	5.51	0.708	6.22 ^a	7.75	0.027	0.10 ^a	0.38	0.000	0.83 ^a	1.20	0.000
Georgia	1.87	1.84	0.873	5.46	5.30	0.822	6.90	6.31	0.531	0.17 ^a	0.35	0.015	1.17	1.22	0.767
Hawaii	1.71	2.02	0.194	6.42	6.09	0.730	7.57	7.71	0.914	0.11 ^a	0.51	0.005	1.01 ^b	1.39	0.094
Idaho	1.86	1.99	0.549	5.50	5.47	0.970	7.18	6.40	0.466	0.13 ^a	0.32	0.012	1.14	1.27	0.498
Illinois	1.74 ^a	2.22	0.001	5.65	6.27	0.249	6.85	8.02	0.125	0.12 ^a	0.48	0.000	1.07 ^a	1.52	0.002
Indiana	1.76 ^a	2.58	0.000	5.81	5.98	0.838	7.37 ^b	9.67	0.064	0.11 ^a	0.52	0.000	1.05 ^a	1.90	0.000
Iowa	1.55 ^a	1.96	0.047	5.34 ^b	4.16	0.083	5.97 ^a	8.55	0.022	0.10 ^a	0.42	0.000	0.95 ^a	1.58	0.001
Kansas	1.72 ^a	2.37	0.005	5.65	5.38	0.720	6.85	8.65	0.128	0.10 ^a	0.57	0.000	1.06 ^a	1.80	0.001
Kentucky	1.48 ^a	1.90	0.024	5.46	5.08	0.597	6.09	7.02	0.340	0.14 ^a	0.42	0.001	0.86 ^a	1.36	0.003
Louisiana	1.33 ^b	1.66	0.058	3.89	4.22	0.599	5.53	6.77	0.190	0.12 ^a	0.37	0.001	0.91 ^a	1.23	0.049
Maine	1.73 ^a	3.76	0.000	5.43	6.13	0.385	8.97 ^a	15.78	0.000	0.14 ^a	1.70	0.000	1.09 ^a	3.31	0.000
Maryland	1.81	2.06	0.264	5.61	5.45	0.833	8.20	8.42	0.857	0.12 ^a	0.49	0.000	1.17	1.48	0.137
Massachusetts	2.27 ^a	3.72	0.000	7.13	8.05	0.334	9.69 ^a	14.86	0.003	0.16 ^a	0.90	0.000	1.42 ^a	2.93	0.000
Michigan	2.10 ^a	2.85	0.000	5.97	6.43	0.379	8.72 ^b	10.44	0.054	0.13 ^a	0.73	0.000	1.33 ^a	2.18	0.000
Minnesota	1.77 ^a	2.43	0.006	4.85	5.01	0.815	7.89	9.98	0.111	0.12 ^a	0.68	0.000	1.20 ^a	1.94	0.002
Mississippi	1.34 ^a	1.74	0.022	4.09	4.76	0.295	5.22	6.39	0.198	0.11 ^a	0.33	0.001	0.88 ^a	1.23	0.034
Missouri	1.64 ^a	2.23	0.005	5.11	5.09	0.982	7.12	8.83	0.144	0.12 ^a	0.50	0.000	1.02 ^a	1.73	0.000
Montana	2.04 ^a	2.85	0.002	6.67	6.24	0.593	9.79	12.03	0.161	0.13 ^a	0.71	0.000	1.25 ^a	2.22	0.000

See notes at end of table.

(continued)

Table 3 First Use of Marijuana, by Age Group and State: Average Annual Initiation Estimates (Expressed as Percentages of the At-Risk Population) and P Values from Tests of Differences between Percentages, 2008-2009 and 2017-2018 NSDUHs (continued)

State	12+ (2008- 2009)	12+ (2017- 2018)	12+ (P Value)	12-17 (2008- 2009)	12-17 (2017- 2018)	12-17 (P Value)	18-25 (2008- 2009)	18-25 (2017- 2018)	18-25 (P Value)	26+ (2008- 2009)	26+ (2017- 2018)	26+ (P Value)	18+ (2008- 2009)	18+ (2017- 2018)	18+ (P Value)
Nebraska	1.54 ^a	2.08	0.008	4.48 ^b	5.76	0.081	6.32	7.65	0.222	0.10 ^a	0.34	0.001	1.05 ^b	1.42	0.058
Nevada	1.85 ^a	2.75	0.001	7.16	5.83	0.148	6.55 ^a	11.68	0.000	0.15 ^a	0.92	0.000	0.91 ^a	2.18	0.000
New Hampshire	2.25 ^a	3.19	0.002	6.29	7.34	0.221	10.53	12.73	0.210	0.15 ^a	0.73	0.000	1.44 ^a	2.37	0.001
New Jersey	1.50 ^b	1.82	0.070	4.89	4.92	0.968	7.69	8.39	0.538	0.10 ^a	0.39	0.000	0.96 ^a	1.33	0.023
New Mexico	2.06 ^a	2.99	0.001	7.84	7.88	0.976	8.01	9.66	0.245	0.12 ^a	0.87	0.000	1.09 ^a	2.08	0.000
New York	1.81	1.97	0.248	6.05 ^b	5.24	0.089	7.38	8.36	0.200	0.13 ^a	0.49	0.000	1.12 ^a	1.49	0.005
North Carolina	1.69	1.83	0.433	6.24	5.18	0.134	6.67	6.86	0.846	0.13 ^a	0.40	0.000	0.96 ^a	1.27	0.046
North Dakota	1.56	1.75	0.335	4.28	4.04	0.697	6.59	6.93	0.758	0.08 ^a	0.37	0.000	1.15	1.41	0.209
Ohio	1.78 ^a	2.23	0.002	5.59	5.27	0.504	7.47 ^a	9.31	0.023	0.13 ^a	0.50	0.000	1.10 ^a	1.69	0.000
Oklahoma	1.47 ^a	1.94	0.017	4.87	4.87	0.994	5.77	7.14	0.187	0.11 ^a	0.47	0.000	0.91 ^a	1.41	0.006
Oregon	2.42 ^a	3.72	0.000	7.87	6.75	0.230	9.63 ^a	14.44	0.005	0.19 ^a	1.43	0.000	1.39 ^a	3.13	0.000
Pennsylvania	1.61 ^b	1.88	0.053	5.37	4.98	0.423	7.47	7.74	0.755	0.10 ^a	0.38	0.000	1.01 ^a	1.36	0.012
Rhode Island	2.27 ^a	3.24	0.002	7.20	7.07	0.889	9.16	11.54	0.144	0.16 ^a	1.02	0.000	1.40 ^a	2.57	0.000
South Carolina	1.46 ^b	1.81	0.054	4.77	5.51	0.296	6.41	6.89	0.632	0.12 ^a	0.34	0.001	0.93 ^b	1.22	0.073
South Dakota	1.59	1.58	0.962	5.17	4.17	0.155	6.70	6.85	0.887	0.09 ^a	0.31	0.001	1.01	1.16	0.369
Tennessee	1.26 ^a	1.60	0.036	4.11	5.07	0.131	6.00	5.53	0.622	0.12 ^a	0.27	0.029	0.81	1.02	0.179
Texas	1.59	1.69	0.356	5.20 ^b	4.37	0.051	5.86	6.22	0.540	0.11 ^a	0.36	0.000	0.95 ^a	1.22	0.015
Utah	1.29	1.60	0.116	3.94 ^a	2.79	0.047	3.64 ^a	5.57	0.022	0.10 ^a	0.38	0.003	0.82 ^a	1.35	0.006
Vermont	2.47 ^a	4.01	0.000	7.37 ^a	9.57	0.032	11.93	14.66	0.164	0.15 ^a	0.88	0.000	1.56 ^a	2.96	0.000
Virginia	1.90	1.68	0.234	5.98 ^a	4.66	0.046	7.59	6.50	0.266	0.13 ^a	0.37	0.001	1.20	1.19	0.962
Washington	1.94 ^a	3.59	0.000	5.68	6.24	0.499	8.53 ^a	12.51	0.007	0.16 ^a	1.48	0.000	1.24 ^a	3.07	0.000
West Virginia	1.27 ^a	1.66	0.021	5.33	5.31	0.978	5.76	6.35	0.552	0.12 ^a	0.34	0.003	0.72 ^a	1.10	0.011
Wisconsin	1.92	1.95	0.887	6.16	5.46	0.363	8.39	7.56	0.497	0.12 ^a	0.39	0.001	1.17	1.35	0.357
Wyoming	1.92	1.98	0.785	6.47	5.29	0.127	7.70	6.97	0.522	0.11 ^a	0.50	0.000	1.15	1.39	0.238

NOTE: State and census region estimates are based on a survey-weighted hierarchical Bayes estimation approach, with their *p* values being the Bayes significance levels for the null hypothesis of no change between the 2008-2009 and 2017-2018 population percentages. The "Total U.S." estimates, along with the *p* values, are based on design-based (direct) estimation methods.

NOTE: *Average annual initiation of marijuana (%) = 100 * {[X₁ ÷ (0.5 * X₁ + X₂)] ÷ 2}*, where X₁ is the number of marijuana initiates in the past 24 months and X₂ is the number of individuals who never used marijuana (with the at-risk population defined as 0.5 * X₁ + X₂). Both of the computation components, X₁ and X₂, are based on a survey-weighted hierarchical Bayes estimation approach. The age group shown is based on a respondent's age at the time of the interview, not his or her age at first use. For details, see Section B of the "2017-2018 NSDUH: Guide to State Tables and Summary of Small Area Estimation Methodology" at <https://www.samhsa.gov/data/>.

^a Difference between the 2008-2009 and 2017-2018 population percentages is statistically significant at the 0.05 level.

^b Difference between the 2008-2009 and 2017-2018 population percentages is statistically significant at the 0.10 level.

Source: SAMHSA, Center for Behavioral Health Statistics and Quality, National Survey on Drug Use and Health, 2008, 2009, 2017, and 2018 (2008 and 2009 Data – Revised March 2012).

Table 4 Cocaine Use in the Past Year, by Age Group and State: Percentages, Annual Averages, and P Values from Tests of Differences between Percentages, 2008-2009 and 2017-2018 NSDUHs

State	12+ (2008- 2009)	12+ (2017- 2018)	12+ (P Value)	12-17 (2008- 2009)	12-17 (2017- 2018)	12-17 (P Value)	18-25 (2008- 2009)	18-25 (2017- 2018)	18-25 (P Value)	26+ (2008- 2009)	26+ (2017- 2018)	26+ (P Value)	18+ (2008- 2009)	18+ (2017- 2018)	18+ (P Value)
Total U.S.	2.01	2.10	0.256	1.11 ^a	0.48	0.000	5.46 ^a	5.99	0.030	1.53	1.67	0.127	2.11 ^b	2.26	0.078
Northeast	2.38	2.32	0.690	1.11 ^a	0.46	0.000	6.68	6.84	0.739	1.81	1.82	0.982	2.52	2.50	0.898
Midwest	1.82	1.93	0.329	1.06 ^a	0.50	0.000	5.12 ^b	5.72	0.086	1.34	1.48	0.320	1.90	2.07	0.169
South	1.81	1.77	0.645	0.98 ^a	0.42	0.000	4.64	4.88	0.408	1.44	1.43	0.932	1.90	1.90	0.994
West	2.21 ^a	2.63	0.010	1.35 ^a	0.56	0.000	6.08 ^a	7.35	0.008	1.62 ^a	2.11	0.011	2.31 ^a	2.84	0.003
Alabama	1.38	1.69	0.278	0.76 ^a	0.38	0.026	3.44	4.49	0.216	1.11	1.40	0.374	1.45	1.83	0.244
Alaska	2.99	2.19	0.103	1.45 ^a	0.45	0.000	7.38 ^b	5.09	0.069	2.39	1.95	0.439	3.18	2.38	0.145
Arizona	2.33	1.97	0.330	1.38 ^a	0.55	0.001	6.91	5.51	0.286	1.68	1.56	0.753	2.44	2.12	0.434
Arkansas	1.43	1.40	0.888	0.89 ^a	0.48	0.028	3.52	3.73	0.797	1.16	1.13	0.914	1.49	1.49	0.999
California	2.12 ^a	2.80	0.005	1.39 ^a	0.51	0.000	5.57 ^a	7.68	0.004	1.56 ^a	2.27	0.013	2.20 ^a	3.04	0.002
Colorado	3.28	3.82	0.293	1.37 ^b	0.78	0.075	8.94 ^b	11.64	0.098	2.56	2.94	0.511	3.47	4.13	0.257
Connecticut	2.05	2.05	0.999	1.26 ^a	0.41	0.000	6.25	6.17	0.943	1.49	1.58	0.817	2.14	2.21	0.845
Delaware	2.36	2.20	0.682	0.91 ^a	0.37	0.003	6.40	6.88	0.697	1.87	1.72	0.732	2.52	2.37	0.743
District of Columbia	3.76	4.51	0.343	0.43	0.26	0.222	5.14 ^b	7.40	0.061	3.76	4.26	0.598	4.01	4.75	0.382
Florida	1.80	2.00	0.378	1.05 ^a	0.48	0.001	4.70 ^a	6.08	0.046	1.46	1.60	0.564	1.88	2.13	0.295
Georgia	1.51	1.82	0.308	0.81 ^a	0.34	0.003	3.93	4.64	0.393	1.20	1.54	0.323	1.60	1.98	0.256
Hawaii	1.76	2.10	0.370	1.25 ^a	0.35	0.002	4.39	6.02	0.153	1.40	1.75	0.400	1.81	2.25	0.287
Idaho	1.31	1.37	0.798	1.24 ^a	0.55	0.012	4.52	3.96	0.544	0.75	1.05	0.213	1.31	1.46	0.565
Illinois	1.91	2.23	0.192	0.99 ^a	0.50	0.003	4.64 ^a	6.07	0.050	1.53	1.83	0.295	2.01	2.41	0.147
Indiana	1.66	2.14	0.128	1.09 ^a	0.63	0.044	4.97	6.53	0.165	1.18	1.57	0.235	1.72	2.30	0.103
Iowa	1.11	1.47	0.113	1.11 ^a	0.49	0.007	3.64	4.69	0.242	0.66	1.02	0.140	1.11 ^b	1.57	0.071
Kansas	1.52	1.63	0.679	1.11 ^a	0.55	0.012	4.97	4.87	0.923	0.94	1.20	0.337	1.57	1.75	0.537
Kentucky	1.36	1.72	0.173	1.02 ^a	0.51	0.017	4.37	4.92	0.573	0.93	1.35	0.151	1.40	1.85	0.129
Louisiana	2.34 ^a	1.50	0.017	0.84 ^a	0.31	0.001	4.77	3.97	0.387	2.08 ^a	1.25	0.037	2.51 ^a	1.62	0.024
Maine	2.30	2.04	0.442	1.13 ^a	0.63	0.034	7.67	7.54	0.924	1.69	1.46	0.529	2.42	2.16	0.494
Maryland	1.57	1.92	0.314	0.87 ^a	0.30	0.001	4.03	5.32	0.193	1.24	1.59	0.382	1.64	2.08	0.269
Massachusetts	2.45	2.91	0.260	1.18 ^a	0.54	0.006	7.16	9.03	0.173	1.76	2.11	0.420	2.58	3.12	0.226
Michigan	2.00	1.94	0.786	1.05 ^a	0.46	0.000	5.74	6.02	0.713	1.49	1.44	0.829	2.11	2.08	0.927
Minnesota	1.77 ^b	2.40	0.060	1.12 ^a	0.52	0.005	5.14	6.65	0.181	1.27 ^b	1.96	0.065	1.84 ^a	2.59	0.044
Mississippi	1.36	1.47	0.699	0.63 ^a	0.32	0.038	3.15	3.25	0.892	1.14	1.32	0.592	1.45	1.60	0.642
Missouri	2.01 ^b	1.45	0.051	1.00 ^a	0.42	0.002	5.74	4.14	0.113	1.52	1.14	0.222	2.12 ^b	1.55	0.075
Montana	2.32	1.91	0.193	1.17 ^a	0.65	0.047	7.60	6.12	0.248	1.58	1.38	0.544	2.44	2.03	0.234

See notes at end of table.

(continued)

Table 4 Cocaine Use in the Past Year, by Age Group and State: Percentages, Annual Averages, and P Values from Tests of Differences between Percentages, 2008-2009 and 2017-2018 NSDUHs (continued)

State	12+ (2008- 2009)	12+ (2017- 2018)	12+ (P Value)	12-17 (2008- 2009)	12-17 (2017- 2018)	12-17 (P Value)	18-25 (2008- 2009)	18-25 (2017- 2018)	18-25 (P Value)	26+ (2008- 2009)	26+ (2017- 2018)	26+ (P Value)	18+ (2008- 2009)	18+ (2017- 2018)	18+ (P Value)
Nebraska	1.57	1.83	0.336	1.10 ^a	0.54	0.011	4.61	6.20	0.134	1.06	1.23	0.527	1.62	1.98	0.249
Nevada	2.34	2.27	0.847	1.50 ^a	0.54	0.000	6.72	5.84	0.470	1.79	1.96	0.689	2.43	2.44	0.984
New Hampshire	2.75	2.72	0.943	1.23	0.80	0.153	8.97	10.65	0.318	1.98	1.70	0.504	2.91	2.89	0.966
New Jersey	1.73	1.47	0.335	1.04 ^a	0.34	0.001	4.93	4.27	0.492	1.33	1.19	0.649	1.81	1.58	0.458
New Mexico	2.17	2.09	0.837	1.30 ^a	0.67	0.031	6.55	5.86	0.588	1.47	1.66	0.632	2.26	2.24	0.958
New York	2.66	2.62	0.894	1.09 ^a	0.39	0.000	7.31	6.88	0.599	2.02	2.18	0.622	2.83	2.82	0.995
North Carolina	2.10	1.85	0.434	0.93 ^a	0.43	0.005	4.90	4.86	0.961	1.79	1.54	0.493	2.22	1.99	0.516
North Dakota	1.22	1.48	0.295	1.05 ^a	0.45	0.014	3.78	4.52	0.434	0.68	1.00	0.200	1.24	1.58	0.218
Ohio	1.49	1.59	0.611	1.02 ^a	0.44	0.001	4.51	4.99	0.466	1.05	1.19	0.542	1.54	1.70	0.450
Oklahoma	1.50	1.94	0.121	1.14 ^a	0.51	0.005	4.70	5.88	0.272	0.97	1.46	0.105	1.54 ^b	2.10	0.083
Oregon	2.63	3.09	0.245	1.23	0.80	0.138	8.04	9.72	0.244	1.95	2.36	0.346	2.77	3.30	0.227
Pennsylvania	2.27	2.12	0.599	1.08 ^a	0.53	0.001	5.86	6.60	0.347	1.82	1.61	0.494	2.39	2.27	0.692
Rhode Island	3.89 ^a	2.61	0.014	1.28 ^a	0.56	0.004	9.39	7.34	0.178	3.17 ^a	1.99	0.039	4.15 ^a	2.79	0.017
South Carolina	2.75	2.07	0.115	0.83 ^b	0.46	0.056	4.97	6.24	0.240	2.62 ^a	1.62	0.039	2.95	2.23	0.128
South Dakota	1.17	1.14	0.877	0.95 ^a	0.43	0.028	3.91	3.60	0.722	0.71	0.82	0.624	1.20	1.22	0.939
Tennessee	1.57	1.88	0.300	0.93 ^a	0.47	0.011	4.31	5.02	0.448	1.23	1.55	0.338	1.64	2.02	0.249
Texas	1.89 ^a	1.42	0.015	1.16 ^a	0.44	0.000	5.09 ^b	3.99	0.079	1.40	1.10	0.171	1.98 ^a	1.54	0.038
Utah	1.43	1.61	0.486	1.16 ^a	0.52	0.012	4.14	4.52	0.697	0.80	1.16	0.179	1.47	1.76	0.318
Vermont	3.01	3.42	0.379	1.22	0.81	0.171	10.17	11.06	0.600	2.05	2.35	0.533	3.19	3.63	0.375
Virginia	1.75	1.82	0.819	1.02 ^a	0.37	0.000	4.95	5.19	0.792	1.30	1.45	0.646	1.83	1.96	0.690
Washington	2.08	2.46	0.284	1.20 ^a	0.63	0.023	6.24	6.85	0.603	1.51	2.01	0.222	2.17	2.64	0.244
West Virginia	2.51 ^a	1.82	0.049	1.05 ^b	0.61	0.065	7.65 ^b	5.27	0.052	1.93	1.45	0.205	2.65 ^b	1.93	0.060
Wisconsin	2.71	2.30	0.265	1.19 ^a	0.60	0.011	7.27	6.98	0.821	2.13	1.74	0.322	2.87	2.47	0.324
Wyoming	1.46	1.31	0.563	1.13 ^a	0.54	0.024	5.25	4.23	0.314	0.83	0.95	0.664	1.49	1.39	0.711

NOTE: State and census region estimates are based on a survey-weighted hierarchical Bayes estimation approach, with their *p* values being the Bayes significance levels for the null hypothesis of no change between the 2008-2009 and 2017-2018 population percentages. The "Total U.S." estimates, along with the *p* values, are based on design-based (direct) estimation methods.

^a Difference between the 2008-2009 and 2017-2018 population percentages is statistically significant at the 0.05 level.

^b Difference between the 2008-2009 and 2017-2018 population percentages is statistically significant at the 0.10 level.

Source: SAMHSA, Center for Behavioral Health Statistics and Quality, National Survey on Drug Use and Health, 2008, 2009, 2017, and 2018 (2008 and 2009 Data – Revised March 2012).

Table 5 Alcohol Use in the Past Month, by Age Group and State: Percentages, Annual Averages, and P Values from Tests of Differences between Percentages, 2008-2009 and 2017-2018 NSDUHs

State	12+ (2008- 2009)	12+ (2017- 2018)	12+ (P Value)	12-17 (2008- 2009)	12-17 (2017- 2018)	12-17 (P Value)	18-25 (2008- 2009)	18-25 (2017- 2018)	18-25 (P Value)	26+ (2008- 2009)	26+ (2017- 2018)	26+ (P Value)	18+ (2008- 2009)	18+ (2017- 2018)	18+ (P Value)
Total U.S.	51.74	51.37	0.357	14.79 ^a	9.43	0.000	61.45 ^a	55.73	0.000	54.80	55.57	0.112	55.78	55.59	0.649
Northeast	56.57	55.62	0.204	16.68 ^a	10.37	0.000	67.33 ^a	61.60	0.000	59.59	59.48	0.902	60.71	59.77	0.257
Midwest	54.26	54.10	0.807	15.24 ^a	9.94	0.000	65.07 ^a	59.96	0.000	57.42	58.39	0.207	58.55	58.61	0.934
South	47.74	47.65	0.878	13.75 ^a	9.15	0.000	57.62 ^a	51.31	0.000	50.43 ^b	51.65	0.094	51.47	51.61	0.842
West	51.78	51.76	0.979	14.56 ^a	8.78	0.000	59.40 ^a	54.62	0.000	55.40	56.38	0.281	56.01	56.13	0.889
Alabama	42.94	44.36	0.464	12.70 ^a	9.25	0.009	54.41 ^a	49.01	0.047	44.84	47.71	0.235	46.22	47.89	0.436
Alaska	54.52	51.83	0.151	14.22 ^a	8.96	0.000	60.50 ^a	53.85	0.018	59.37	56.99	0.304	59.54	56.56	0.148
Arizona	51.15	49.96	0.539	14.80 ^a	8.48	0.000	59.35 ^a	49.43	0.001	54.60	55.07	0.842	55.29	54.27	0.632
Arkansas	43.29	40.63	0.164	15.34 ^a	8.68	0.000	55.94 ^a	47.80	0.003	44.80	43.37	0.542	46.36	43.99	0.259
California	50.65	51.77	0.310	14.11 ^a	8.33	0.000	59.79 ^a	55.18	0.008	53.99 ^b	56.32	0.090	54.92	56.15	0.316
Colorado	62.22	61.45	0.670	20.22 ^a	10.54	0.000	69.51 ^b	64.98	0.083	66.11	66.81	0.751	66.60	66.56	0.983
Connecticut	59.32	62.10	0.162	18.56 ^a	12.60	0.001	67.86	68.43	0.831	63.08	66.68	0.133	63.73	66.92	0.139
Delaware	56.32 ^b	52.91	0.097	16.35 ^a	9.43	0.000	68.53 ^a	56.41	0.000	59.18	57.02	0.395	60.52	56.95	0.113
District of Columbia	61.55 ^a	66.67	0.006	15.63 ^a	8.74	0.000	71.82	70.80	0.710	63.53 ^a	69.78	0.005	65.04 ^a	69.93	0.013
Florida	51.41	50.74	0.587	15.30 ^a	10.12	0.000	56.91 ^a	52.42	0.013	54.58	54.48	0.945	54.88	54.24	0.635
Georgia	48.89	47.03	0.293	13.56 ^a	8.34	0.000	58.18 ^a	47.78	0.000	52.19	51.94	0.911	53.06	51.35	0.381
Hawaii	48.23	47.23	0.626	11.64 ^a	7.18	0.001	57.21	55.53	0.576	50.95	50.19	0.759	51.81	50.83	0.661
Idaho	45.71	45.23	0.796	12.91 ^a	7.84	0.000	52.50 ^a	47.11	0.050	49.19	50.17	0.673	49.68	49.73	0.980
Illinois	54.33	55.97	0.183	15.16 ^a	9.86	0.000	64.88 ^a	57.80	0.000	57.60 ^a	61.15	0.018	58.72	60.69	0.143
Indiana	48.06	50.30	0.228	14.41 ^a	9.25	0.000	57.94	59.99	0.466	50.82	53.79	0.191	51.85	54.70	0.161
Iowa	56.70	58.31	0.373	17.34 ^a	10.68	0.000	69.06	66.36	0.294	59.43	62.66	0.146	60.87	63.20	0.238
Kansas	53.92	54.93	0.606	15.93 ^a	10.40	0.000	66.34 ^a	59.61	0.013	56.66	59.90	0.178	58.18	59.85	0.434
Kentucky	38.74	39.97	0.522	12.21	9.93	0.112	50.64 ^b	45.76	0.076	40.10	42.56	0.293	41.52	43.00	0.481
Louisiana	48.24	50.01	0.359	15.26 ^a	10.97	0.010	61.67 ^a	56.37	0.047	50.16	53.71	0.133	52.02	54.08	0.327
Maine	55.07	55.77	0.733	14.57 ^a	11.15	0.030	65.34	63.36	0.463	58.08	58.99	0.710	58.97	59.50	0.810
Maryland	54.24	57.20	0.160	14.02 ^a	9.62	0.003	61.74	59.70	0.473	58.09	62.20	0.110	58.62	61.88	0.158
Massachusetts	61.54	61.68	0.940	16.89 ^a	12.64	0.014	72.39	68.42	0.123	64.83	65.62	0.726	65.97	66.02	0.981
Michigan	54.65	53.53	0.362	14.56 ^a	10.21	0.000	63.73 ^a	59.82	0.032	58.39	57.48	0.548	59.17	57.81	0.317
Minnesota	60.95 ^a	57.05	0.036	14.70 ^a	9.27	0.000	68.13	65.51	0.324	65.51 ^b	61.40	0.073	65.90 ^b	61.96	0.054
Mississippi	40.39	39.95	0.818	12.70 ^a	8.71	0.004	52.99 ^a	41.93	0.000	41.96	43.61	0.492	43.68	43.36	0.881
Missouri	50.15	49.02	0.569	13.92 ^a	10.68	0.029	61.01 ^a	53.29	0.005	52.95	52.82	0.955	54.09	52.88	0.576
Montana	59.07	57.94	0.573	21.39 ^a	13.33	0.000	69.07 ^a	62.04	0.008	61.95	62.09	0.956	62.97	62.08	0.684

See notes at end of table.

(continued)

Table 5 Alcohol Use in the Past Month, by Age Group and State: Percentages, Annual Averages, and P Values from Tests of Differences between Percentages, 2008-2009 and 2017-2018 NSDUHs (continued)

State	12+ (2008- 2009)	12+ (2017- 2018)	12+ (P Value)	12-17 (2008- 2009)	12-17 (2017- 2018)	12-17 (P Value)	18-25 (2008- 2009)	18-25 (2017- 2018)	18-25 (P Value)	26+ (2008- 2009)	26+ (2017- 2018)	26+ (P Value)	18+ (2008- 2009)	18+ (2017- 2018)	18+ (P Value)
Nebraska	53.59 ^b	56.79	0.085	13.81 ^a	9.53	0.004	64.98	62.51	0.356	56.67 ^a	61.90	0.024	57.99 ^b	61.98	0.051
Nevada	54.47 ^a	49.23	0.011	15.29 ^a	8.06	0.000	60.32 ^a	52.10	0.004	58.63 ^a	53.52	0.043	58.85 ^a	53.35	0.016
New Hampshire	63.98	63.26	0.698	17.83 ^a	11.66	0.000	74.97 ^a	69.03	0.025	67.91	67.66	0.909	68.85	67.84	0.617
New Jersey	54.18	52.53	0.414	15.17 ^a	11.01	0.006	64.96 ^a	58.89	0.020	57.37	56.32	0.673	58.39	56.66	0.435
New Mexico	47.59	46.29	0.506	15.62 ^a	9.79	0.000	57.11 ^a	50.23	0.016	50.05	50.14	0.971	51.15	50.15	0.641
New York	55.72 ^a	52.71	0.013	16.83 ^a	9.23	0.000	66.32 ^a	59.09	0.000	58.57	56.22	0.112	59.75 ^a	56.61	0.018
North Carolina	47.45	46.89	0.750	12.83 ^a	9.87	0.021	58.35 ^a	51.15	0.005	49.98	50.56	0.789	51.15	50.64	0.790
North Dakota	57.80	57.47	0.861	18.98 ^a	10.07	0.000	71.80	68.92	0.255	59.46	60.58	0.630	61.71	61.96	0.904
Ohio	51.67	50.92	0.554	14.99 ^a	9.60	0.000	65.37 ^a	56.79	0.000	54.08	54.81	0.633	55.67	55.08	0.669
Oklahoma	45.62	47.31	0.397	13.86 ^a	8.91	0.001	59.12 ^a	52.81	0.030	47.31	51.29	0.104	49.13	51.50	0.275
Oregon	59.77	57.30	0.195	17.75 ^a	10.59	0.000	66.69 ^a	60.80	0.026	63.58	61.62	0.393	64.00	61.52	0.233
Pennsylvania	55.06	55.70	0.626	16.73 ^a	9.31	0.000	66.31 ^a	59.48	0.000	57.81	60.04	0.157	59.01	59.97	0.501
Rhode Island	59.91	58.21	0.375	18.29 ^a	10.39	0.000	71.17 ^a	65.04	0.022	62.78	61.93	0.718	64.10	62.39	0.408
South Carolina	45.89	49.03	0.118	12.45 ^a	9.20	0.015	53.32	50.95	0.395	48.82 ^b	53.19	0.074	49.46	52.89	0.118
South Dakota	57.81	58.06	0.897	15.85 ^a	9.99	0.000	70.66 ^a	64.91	0.027	60.93	62.87	0.404	62.41	63.16	0.719
Tennessee	41.06	43.55	0.190	11.39	9.35	0.126	53.40	48.84	0.101	42.77 ^b	46.67	0.093	44.18	46.96	0.183
Texas	48.42 ^b	46.30	0.058	14.09 ^a	8.20	0.000	58.49 ^a	50.25	0.000	51.52	50.96	0.684	52.63	50.84	0.151
Utah	28.11	27.93	0.920	6.73	5.09	0.194	32.09	31.99	0.974	30.72	30.98	0.915	30.98	31.14	0.941
Vermont	60.28	62.44	0.282	18.40 ^b	15.21	0.085	73.56	70.49	0.222	62.87	65.64	0.257	64.37	66.34	0.364
Virginia	50.79	51.02	0.899	13.10 ^a	9.13	0.002	60.21	56.81	0.178	53.83	54.87	0.640	54.75	55.13	0.849
Washington	56.13	56.64	0.784	14.03 ^b	11.13	0.053	60.77	60.08	0.798	60.54	61.08	0.811	60.58	60.96	0.850
West Virginia	38.17	39.23	0.613	13.23 ^a	9.72	0.015	53.45	50.35	0.282	38.66	40.62	0.434	40.53	41.84	0.562
Wisconsin	61.78	59.56	0.251	18.62 ^a	10.46	0.000	71.81 ^a	66.17	0.022	65.42	64.16	0.596	66.34	64.44	0.367
Wyoming	54.21 ^a	48.90	0.009	17.06 ^a	10.36	0.000	62.33 ^a	54.70	0.007	57.41 ^b	52.56	0.052	58.15 ^a	52.85	0.017

NOTE: State and census region estimates are based on a survey-weighted hierarchical Bayes estimation approach, with their *p* values being the Bayes significance levels for the null hypothesis of no change between the 2008-2009 and 2017-2018 population percentages. The "Total U.S." estimates, along with the *p* values, are based on design-based (direct) estimation methods.

^a Difference between the 2008-2009 and 2017-2018 population percentages is statistically significant at the 0.05 level.

^b Difference between the 2008-2009 and 2017-2018 population percentages is statistically significant at the 0.10 level.

Source: SAMHSA, Center for Behavioral Health Statistics and Quality, National Survey on Drug Use and Health, 2008, 2009, 2017, and 2018 (2008 and 2009 Data – Revised March 2012).

Table 6 Alcohol Use in the Past Month among Individuals Aged 12 to 20, by State: Percentages and P Values from Tests of Differences between Percentages, 2008-2009 and 2017-2018 NSDUHs

State	Alcohol Use in Past Month (2008-2009)	Alcohol Use in Past Month (2017-2018)	Alcohol Use in Past Month (P Value)
Total U.S.	26.83 ^a	19.25	0.000
Northeast	30.69 ^a	22.01	0.000
Midwest	27.60 ^a	21.20	0.000
South	25.18 ^a	17.54	0.000
West	25.76 ^a	18.35	0.000
Alabama	23.65 ^a	18.85	0.003
Alaska	25.51 ^a	17.67	0.000
Arizona	24.59 ^a	17.19	0.000
Arkansas	23.06 ^a	16.84	0.000
California	25.24 ^a	18.09	0.000
Colorado	32.89 ^a	21.70	0.000
Connecticut	31.02 ^a	26.18	0.012
Delaware	32.60 ^a	17.72	0.000
District of Columbia	31.66 ^a	23.27	0.000
Florida	26.62 ^a	19.24	0.000
Georgia	24.21 ^a	15.95	0.000
Hawaii	23.87 ^a	15.88	0.000
Idaho	23.93 ^a	14.27	0.000
Illinois	28.38 ^a	19.84	0.000
Indiana	23.50 ^a	18.90	0.006
Iowa	29.93 ^a	24.26	0.001
Kansas	28.91 ^a	20.91	0.000
Kentucky	23.65 ^a	18.14	0.001
Louisiana	29.69 ^a	20.74	0.000
Maine	26.61 ^b	23.27	0.054
Maryland	26.66 ^a	19.01	0.000
Massachusetts	32.97 ^b	29.84	0.100
Michigan	26.72 ^a	22.66	0.000
Minnesota	27.61 ^a	21.90	0.002
Mississippi	24.28 ^a	14.48	0.000
Missouri	24.24 ^a	20.29	0.021
Montana	34.33 ^a	25.57	0.000

See notes at end of table.

(continued)

Table 6 Alcohol Use in the Past Month among Individuals Aged 12 to 20, by State: Percentages and P Values from Tests of Differences between Percentages, 2008-2009 and 2017-2018 NSDUHs (continued)

State	Alcohol Use in Past Month (2008-2009)	Alcohol Use in Past Month (2017-2018)	Alcohol Use in Past Month (P Value)
Nebraska	26.45 ^a	21.26	0.004
Nevada	24.63 ^a	16.76	0.000
New Hampshire	34.84 ^a	23.47	0.000
New Jersey	27.22 ^a	22.04	0.002
New Mexico	25.80 ^a	18.11	0.000
New York	32.01 ^a	19.37	0.000
North Carolina	22.42 ^a	18.36	0.008
North Dakota	36.44 ^a	26.47	0.000
Ohio	28.41 ^a	20.38	0.000
Oklahoma	25.90 ^a	16.26	0.000
Oregon	31.36 ^a	21.73	0.000
Pennsylvania	29.02 ^a	18.67	0.000
Rhode Island	34.78 ^a	27.40	0.000
South Carolina	21.88 ^a	17.69	0.007
South Dakota	32.31 ^a	22.27	0.000
Tennessee	20.16 ^a	16.20	0.011
Texas	26.46 ^a	16.43	0.000
Utah	14.34 ^a	10.51	0.026
Vermont	36.53 ^a	31.51	0.012
Virginia	25.83 ^a	17.35	0.000
Washington	27.00 ^a	21.86	0.004
West Virginia	22.75 ^a	19.24	0.044
Wisconsin	30.83 ^a	23.65	0.000
Wyoming	30.54 ^a	21.10	0.000

NOTE: State and census region estimates are based on a survey-weighted hierarchical Bayes estimation approach, with their *p* values being the Bayes significance levels for the null hypothesis of no change between the 2008-2009 and 2017-2018 population percentages. The "Total U.S." estimates, along with the *p* values, are based on design-based (direct) estimation methods.

^a Difference between the 2008-2009 and 2017-2018 population percentages is statistically significant at the 0.05 level.

^b Difference between the 2008-2009 and 2017-2018 population percentages is statistically significant at the 0.10 level.

Source: SAMHSA, Center for Behavioral Health Statistics and Quality, National Survey on Drug Use and Health, 2008, 2009, 2017, and 2018 (2008 and 2009 Data – Revised March 2012).

Table 7 Tobacco Product Use in the Past Month, by Age Group and State: Percentages, Annual Averages, and P Values from Tests of Differences between Percentages, 2008-2009 and 2017-2018 NSDUHs

State	12+ (2008- 2009)	12+ (2017- 2018)	12+ (P Value)	12-17 (2008- 2009)	12-17 (2017- 2018)	12-17 (P Value)	18-25 (2008- 2009)	18-25 (2017- 2018)	18-25 (P Value)	26+ (2008- 2009)	26+ (2017- 2018)	26+ (P Value)	18+ (2008- 2009)	18+ (2017- 2018)	18+ (P Value)
Total U.S.	28.06 ^a	21.96	0.000	11.64 ^a	4.55	0.000	41.53 ^a	27.46	0.000	27.85 ^a	23.11	0.000	29.86 ^a	23.70	0.000
Northeast	26.45 ^a	20.30	0.000	11.37 ^a	4.18	0.000	41.23 ^a	27.70	0.000	25.78 ^a	20.85	0.000	28.01 ^a	21.77	0.000
Midwest	30.55 ^a	24.22	0.000	13.24 ^a	5.00	0.000	46.33 ^a	30.05	0.000	30.06 ^a	25.55	0.000	32.45 ^a	26.18	0.000
South	29.54 ^a	23.86	0.000	11.53 ^a	5.03	0.000	41.69 ^a	28.95	0.000	29.79 ^a	25.30	0.000	31.51 ^a	25.80	0.000
West	24.67 ^a	18.16	0.000	10.55 ^a	3.63	0.000	37.12 ^a	22.64	0.000	24.31 ^a	19.15	0.000	26.27 ^a	19.63	0.000
Alabama	32.94 ^a	29.78	0.050	13.26 ^a	7.34	0.000	45.41 ^a	33.79	0.000	33.33	31.75	0.431	35.08 ^b	32.03	0.085
Alaska	29.41 ^a	24.12	0.001	13.46 ^a	7.45	0.000	44.60 ^a	29.83	0.000	28.91 ^b	25.34	0.064	31.40 ^a	25.96	0.002
Arizona	25.71 ^a	20.96	0.002	10.17 ^a	3.29	0.000	39.80 ^a	25.73	0.000	25.39	22.31	0.103	27.48 ^a	22.80	0.006
Arkansas	35.26 ^a	30.72	0.009	14.99 ^a	7.53	0.000	47.74 ^a	32.52	0.000	35.81	33.26	0.236	37.48 ^a	33.16	0.023
California	22.79 ^a	15.12	0.000	9.47 ^a	2.73	0.000	34.37 ^a	18.76	0.000	22.43 ^a	15.97	0.000	24.35 ^a	16.37	0.000
Colorado	27.37 ^a	21.42	0.000	13.30 ^a	4.86	0.000	43.67 ^a	29.83	0.000	26.37 ^a	22.01	0.017	28.84 ^a	23.08	0.000
Connecticut	25.34 ^a	19.72	0.000	11.01 ^a	3.45	0.000	41.49 ^a	27.33	0.000	24.58 ^a	20.34	0.021	26.89 ^a	21.31	0.001
Delaware	30.13 ^a	23.59	0.000	13.07 ^a	4.94	0.000	45.53 ^a	27.40	0.000	29.65 ^a	25.02	0.021	31.92 ^a	25.32	0.000
District of Columbia	27.62 ^a	22.57	0.002	9.48 ^a	4.64	0.000	34.96 ^a	26.82	0.002	27.66 ^a	22.98	0.016	28.99 ^a	23.58	0.002
Florida	26.78 ^a	20.13	0.000	10.61 ^a	4.55	0.000	38.36 ^a	23.61	0.000	26.85 ^a	21.18	0.000	28.33 ^a	21.47	0.000
Georgia	28.86 ^a	23.27	0.000	11.68 ^a	4.36	0.000	40.80 ^a	29.03	0.000	29.20 ^a	24.78	0.012	30.89 ^a	25.38	0.000
Hawaii	22.31 ^a	16.12	0.000	9.93 ^a	2.76	0.000	37.26 ^a	22.25	0.000	21.32 ^a	16.65	0.008	23.51 ^a	17.31	0.000
Idaho	26.80 ^a	21.68	0.000	10.75 ^a	5.02	0.000	39.73 ^a	28.20	0.000	26.82 ^a	22.95	0.031	28.75 ^a	23.69	0.002
Illinois	29.01 ^a	20.55	0.000	12.45 ^a	3.86	0.000	44.24 ^a	24.83	0.000	28.44 ^a	21.85	0.000	30.87 ^a	22.26	0.000
Indiana	31.88 ^a	27.01	0.002	13.97 ^a	4.85	0.000	46.31 ^a	31.61	0.000	31.80	29.00	0.149	33.89 ^a	29.38	0.009
Iowa	30.23 ^a	25.51	0.002	12.41 ^a	4.45	0.000	44.08 ^a	32.17	0.000	30.01	26.89	0.103	32.12 ^a	27.68	0.009
Kansas	30.69 ^a	24.65	0.000	13.11 ^a	4.32	0.000	47.46 ^a	28.96	0.000	29.91 ^b	26.53	0.095	32.67 ^a	26.90	0.001
Kentucky	38.08 ^a	32.10	0.001	16.82 ^a	9.12	0.000	52.70 ^a	35.06	0.000	38.37 ^b	34.31	0.063	40.31 ^a	34.41	0.002
Louisiana	30.67	29.29	0.396	10.72 ^a	5.76	0.000	41.06 ^a	33.61	0.004	31.40	31.44	0.983	32.96	31.74	0.499
Maine	29.82 ^a	22.90	0.000	12.13 ^a	6.51	0.000	47.65 ^a	34.32	0.000	29.28 ^a	22.97	0.002	31.52 ^a	24.27	0.000
Maryland	23.84 ^a	18.84	0.001	9.04 ^a	4.26	0.000	35.70 ^a	24.51	0.000	23.72 ^a	19.64	0.025	25.46 ^a	20.27	0.002
Massachusetts	25.06 ^a	19.74	0.000	10.50 ^a	5.07	0.000	41.42 ^a	25.05	0.000	23.85 ^b	20.35	0.051	26.50 ^a	21.04	0.001
Michigan	30.47 ^a	24.30	0.000	12.88 ^a	5.00	0.000	45.86 ^a	28.74	0.000	30.17 ^a	25.79	0.001	32.45 ^a	26.20	0.000
Minnesota	27.59 ^a	21.71	0.000	12.49 ^a	4.73	0.000	47.57 ^a	31.83	0.000	26.07 ^a	22.15	0.023	29.20 ^a	23.46	0.000
Mississippi	31.60	31.45	0.926	12.10 ^a	7.40	0.001	43.29 ^a	33.18	0.000	32.19	34.23	0.331	33.92	34.07	0.933
Missouri	32.65 ^a	25.52	0.000	14.57 ^a	6.10	0.000	47.19 ^a	27.49	0.000	32.55 ^a	27.47	0.012	34.62 ^a	27.48	0.000
Montana	31.17 ^a	25.65	0.001	15.59 ^a	7.10	0.000	49.20 ^a	40.84	0.002	30.03 ^a	25.27	0.014	32.78 ^a	27.38	0.002

See notes at end of table.

(continued)

Table 7 Tobacco Product Use in the Past Month, by Age Group and State: Percentages, Annual Averages, and P Values from Tests of Differences between Percentages, 2008-2009 and 2017-2018 NSDUHs (continued)

State	12+ (2008- 2009)	12+ (2017- 2018)	12+ (P Value)	12-17 (2008- 2009)	12-17 (2017- 2018)	12-17 (P Value)	18-25 (2008- 2009)	18-25 (2017- 2018)	18-25 (P Value)	26+ (2008- 2009)	26+ (2017- 2018)	26+ (P Value)	18+ (2008- 2009)	18+ (2017- 2018)	18+ (P Value)
Nebraska	29.00 ^a	24.37	0.003	12.29 ^a	3.89	0.000	42.14 ^a	33.48	0.001	28.71 ^b	25.42	0.086	30.85 ^a	26.63	0.013
Nevada	28.44 ^a	24.82	0.036	11.98 ^a	4.22	0.000	40.40 ^a	28.06	0.000	28.78	26.72	0.332	30.28 ^b	26.89	0.074
New Hampshire	28.12 ^a	20.71	0.000	12.55 ^a	5.49	0.000	45.16 ^a	32.11	0.000	27.40 ^a	20.52	0.000	29.76 ^a	22.05	0.000
New Jersey	24.81 ^a	19.03	0.000	9.81 ^a	3.59	0.000	38.34 ^a	28.32	0.000	24.58 ^a	19.42	0.005	26.42 ^a	20.56	0.000
New Mexico	26.72	24.42	0.137	12.82 ^a	5.47	0.000	42.62 ^a	30.48	0.000	25.62	25.76	0.940	28.26	26.42	0.278
New York	24.57 ^a	17.96	0.000	10.73 ^a	3.53	0.000	39.13 ^a	25.06	0.000	23.64 ^a	18.34	0.000	26.00 ^a	19.25	0.000
North Carolina	31.32 ^a	24.38	0.000	12.01 ^a	5.31	0.000	43.70 ^a	31.56	0.000	31.72 ^a	25.49	0.000	33.38 ^a	26.31	0.000
North Dakota	30.37 ^a	26.40	0.012	13.46 ^a	6.24	0.000	46.39 ^a	33.23	0.000	28.87	27.33	0.436	32.07 ^a	28.31	0.030
Ohio	32.29 ^a	26.74	0.000	14.11 ^a	6.39	0.000	49.54 ^a	34.65	0.000	31.76 ^a	27.86	0.003	34.27 ^a	28.78	0.000
Oklahoma	34.82 ^a	28.66	0.000	13.78 ^a	5.40	0.000	48.56 ^a	35.98	0.000	35.07 ^a	30.40	0.031	37.14 ^a	31.20	0.002
Oregon	30.12 ^a	21.03	0.000	14.94 ^a	4.60	0.000	45.09 ^a	29.97	0.000	29.56 ^a	21.41	0.000	31.65 ^a	22.51	0.000
Pennsylvania	30.97 ^a	24.73	0.000	13.84 ^a	4.89	0.000	45.29 ^a	31.67	0.000	30.67 ^a	25.78	0.000	32.74 ^a	26.56	0.000
Rhode Island	26.34 ^a	20.18	0.000	10.30 ^a	3.79	0.000	41.51 ^a	26.84	0.000	25.41 ^a	20.69	0.012	27.95 ^a	21.61	0.000
South Carolina	31.30 ^a	26.62	0.005	11.78 ^a	7.19	0.001	44.29 ^a	31.16	0.000	31.59 ^b	28.09	0.084	33.37 ^a	28.50	0.007
South Dakota	31.32 ^a	26.55	0.002	14.94 ^a	7.17	0.000	49.54 ^a	35.71	0.000	30.16	27.42	0.152	33.12 ^a	28.60	0.008
Tennessee	33.55 ^a	28.28	0.002	12.46 ^a	6.52	0.000	46.98 ^a	35.78	0.000	34.05 ^a	29.62	0.033	35.77 ^a	30.45	0.004
Texas	27.05 ^a	21.27	0.000	10.01 ^a	3.43	0.000	38.36 ^a	24.94	0.000	27.41 ^a	23.14	0.000	29.15 ^a	23.40	0.000
Utah	18.44 ^a	14.88	0.010	6.72 ^a	3.08	0.001	24.94 ^a	16.51	0.001	18.80	16.57	0.203	20.02 ^a	16.55	0.025
Vermont	27.61 ^a	24.20	0.036	12.66 ^a	7.27	0.000	44.28 ^a	37.16	0.009	26.58	23.60	0.131	29.07 ^a	25.60	0.048
Virginia	27.48 ^a	20.13	0.000	11.74 ^a	4.39	0.000	41.54 ^a	30.92	0.000	27.03 ^a	20.22	0.000	29.13 ^a	21.68	0.000
Washington	26.86 ^a	21.60	0.000	11.87 ^a	5.66	0.000	41.46 ^a	24.95	0.000	26.35 ^a	22.84	0.050	28.44 ^a	23.11	0.001
West Virginia	38.41 ^b	34.95	0.065	16.88 ^a	8.06	0.000	54.20 ^a	43.23	0.000	38.44	36.48	0.387	40.43	37.33	0.128
Wisconsin	30.21 ^a	23.36	0.000	12.88 ^a	4.55	0.000	45.41 ^a	30.53	0.000	29.79 ^a	24.37	0.005	32.04 ^a	25.22	0.000
Wyoming	34.32 ^a	27.13	0.000	18.41 ^a	6.77	0.000	49.70 ^a	38.50	0.000	33.58 ^a	27.79	0.008	36.01 ^a	29.22	0.000

NOTE: State and census region estimates are based on a survey-weighted hierarchical Bayes estimation approach, with their *p* values being the Bayes significance levels for the null hypothesis of no change between the 2008-2009 and 2017-2018 population percentages. The "Total U.S." estimates, along with the *p* values, are based on design-based (direct) estimation methods.

NOTE: Tobacco Products include cigarettes, smokeless tobacco (i.e., snuff, dip, chewing tobacco, or snus), cigars, or pipe tobacco.

^a Difference between the 2008-2009 and 2017-2018 population percentages is statistically significant at the 0.05 level.

^b Difference between the 2008-2009 and 2017-2018 population percentages is statistically significant at the 0.10 level.

Source: SAMHSA, Center for Behavioral Health Statistics and Quality, National Survey on Drug Use and Health, 2008, 2009, 2017, and 2018 (2008 and 2009 Data – Revised March 2012).

Table 8 Cigarette Use in the Past Month, by Age Group and State: Percentages, Annual Averages, and P Values from Tests of Differences between Percentages, 2008-2009 and 2017-2018 NSDUHs

State	12+ (2008- 2009)	12+ (2017- 2018)	12+ (P Value)	12-17 (2008- 2009)	12-17 (2017- 2018)	12-17 (P Value)	18-25 (2008- 2009)	18-25 (2017- 2018)	18-25 (P Value)	26+ (2008- 2009)	26+ (2017- 2018)	26+ (P Value)	18+ (2008- 2009)	18+ (2017- 2018)	18+ (P Value)
Total U.S.	23.63 ^a	17.52	0.000	9.09 ^a	2.93	0.000	35.80 ^a	20.73	0.000	23.40 ^a	18.71	0.000	25.23 ^a	18.99	0.000
Northeast	22.40 ^a	16.22	0.000	8.82 ^a	2.60	0.000	35.95 ^a	20.28	0.000	21.75 ^a	17.03	0.000	23.81 ^a	17.47	0.000
Midwest	25.66 ^a	19.43	0.000	10.45 ^a	3.35	0.000	39.92 ^a	22.67	0.000	25.16 ^a	20.81	0.000	27.33 ^a	21.07	0.000
South	24.80 ^a	18.95	0.000	9.12 ^a	3.22	0.000	35.96 ^a	21.72	0.000	24.92 ^a	20.39	0.000	26.52 ^a	20.57	0.000
West	20.86 ^a	14.53	0.000	7.97 ^a	2.30	0.000	31.69 ^a	17.79	0.000	20.62 ^a	15.45	0.000	22.32 ^a	15.77	0.000
Alabama	26.82 ^b	24.16	0.089	10.40 ^a	4.91	0.000	38.16 ^a	25.60	0.000	26.98	26.18	0.678	28.60	26.10	0.143
Alaska	24.21 ^a	17.24	0.000	9.37 ^a	4.32	0.000	38.26 ^a	22.21	0.000	23.78 ^a	18.09	0.001	26.07 ^a	18.66	0.000
Arizona	21.97 ^a	17.03	0.000	8.70 ^a	2.22	0.000	33.07 ^a	20.34	0.000	21.85 ^a	18.28	0.034	23.48 ^a	18.57	0.001
Arkansas	30.28 ^a	24.22	0.000	12.05 ^a	5.02	0.000	42.83 ^a	24.79	0.000	30.56 ^a	26.48	0.040	32.28 ^a	26.24	0.001
California	19.28 ^a	12.07	0.000	7.05 ^a	1.54	0.000	29.58 ^a	14.52	0.000	19.02 ^a	12.91	0.000	20.71 ^a	13.13	0.000
Colorado	22.33 ^a	17.10	0.000	9.69 ^a	3.61	0.000	36.42 ^a	24.00	0.000	21.52 ^a	17.57	0.019	23.65 ^a	18.45	0.001
Connecticut	21.47 ^a	15.06	0.000	8.67 ^a	1.83	0.000	36.51 ^a	19.67	0.000	20.69 ^a	15.81	0.005	22.85 ^a	16.35	0.000
Delaware	25.41 ^a	18.99	0.000	9.74 ^a	2.81	0.000	39.95 ^a	20.65	0.000	24.90 ^a	20.47	0.019	27.05 ^a	20.50	0.000
District of Columbia	23.85 ^a	19.01	0.002	6.30 ^a	2.43	0.000	30.11 ^a	21.48	0.001	24.08 ^a	19.66	0.017	25.17 ^a	19.94	0.001
Florida	22.66 ^a	16.34	0.000	8.30 ^a	2.85	0.000	32.61 ^a	16.87	0.000	22.76 ^a	17.58	0.000	24.03 ^a	17.50	0.000
Georgia	24.48 ^a	17.77	0.000	8.95 ^a	2.72	0.000	35.71 ^a	20.28	0.000	24.72 ^a	19.31	0.001	26.32 ^a	19.44	0.000
Hawaii	20.24 ^a	13.11	0.000	7.60 ^a	2.18	0.000	34.07 ^a	19.77	0.000	19.46 ^a	13.32	0.000	21.47 ^a	14.08	0.000
Idaho	23.14 ^a	17.18	0.000	9.05 ^a	3.75	0.000	35.00 ^a	22.99	0.000	23.07 ^a	18.11	0.003	24.85 ^a	18.80	0.000
Illinois	24.93 ^a	16.68	0.000	10.01 ^a	2.27	0.000	38.97 ^a	19.30	0.000	24.37 ^a	17.97	0.000	26.60 ^a	18.15	0.000
Indiana	26.78 ^a	22.01	0.001	10.84 ^a	3.47	0.000	40.95 ^a	24.96	0.000	26.49	23.84	0.144	28.58 ^a	24.00	0.005
Iowa	24.90 ^a	20.15	0.001	10.17 ^a	3.41	0.000	37.13 ^a	23.37	0.000	24.58 ^b	21.61	0.094	26.46 ^a	21.87	0.004
Kansas	25.04 ^a	19.03	0.000	10.80 ^a	2.84	0.000	39.71 ^a	20.96	0.000	24.19 ^b	20.80	0.060	26.63 ^a	20.82	0.000
Kentucky	31.94 ^a	25.83	0.000	12.44 ^a	5.80	0.000	44.22 ^a	27.74	0.000	32.38 ^a	27.86	0.024	33.98 ^a	27.85	0.001
Louisiana	26.54 ^a	22.24	0.005	8.41 ^a	3.47	0.000	36.03 ^a	25.07	0.000	27.20	24.06	0.101	28.62 ^a	24.20	0.009
Maine	25.64 ^a	19.30	0.000	9.72 ^a	5.20	0.000	42.51 ^a	26.68	0.000	25.03 ^a	19.67	0.004	27.17 ^a	20.48	0.000
Maryland	19.82 ^a	14.88	0.001	7.61 ^a	2.42	0.000	31.15 ^a	16.64	0.000	19.45 ^a	16.02	0.050	21.15 ^a	16.10	0.001
Massachusetts	20.99 ^a	15.92	0.000	7.63 ^a	2.91	0.000	34.67 ^a	18.70	0.000	20.13 ^a	16.80	0.038	22.32 ^a	17.07	0.000
Michigan	26.12 ^a	19.51	0.000	10.34 ^a	3.02	0.000	39.79 ^a	20.93	0.000	25.87 ^a	21.18	0.000	27.89 ^a	21.14	0.000
Minnesota	23.49 ^a	17.10	0.000	9.72 ^a	3.27	0.000	41.01 ^a	25.50	0.000	22.22 ^a	17.42	0.003	24.96 ^a	18.52	0.000
Mississippi	26.35	24.99	0.387	9.66 ^a	4.51	0.000	36.57 ^a	25.58	0.000	26.82	27.51	0.732	28.34	27.23	0.523
Missouri	26.31 ^a	21.01	0.000	10.98 ^a	4.37	0.000	39.48 ^a	21.47	0.000	26.09 ^b	22.88	0.081	27.98 ^a	22.69	0.001
Montana	24.75 ^a	19.42	0.000	11.24 ^a	5.12	0.000	39.49 ^a	31.04	0.001	23.91 ^a	19.13	0.008	26.14 ^a	20.75	0.001

See notes at end of table.

(continued)

Table 8 Cigarette Use in the Past Month, by Age Group and State: Percentages, Annual Averages, and P Values from Tests of Differences between Percentages, 2008-2009 and 2017-2018 NSDUHs (continued)

State	12+ (2008- 2009)	12+ (2017- 2018)	12+ (P Value)	12-17 (2008- 2009)	12-17 (2017- 2018)	12-17 (P Value)	18-25 (2008- 2009)	18-25 (2017- 2018)	18-25 (P Value)	26+ (2008- 2009)	26+ (2017- 2018)	26+ (P Value)	18+ (2008- 2009)	18+ (2017- 2018)	18+ (P Value)
Nebraska	24.27 ^a	18.98	0.000	9.36 ^a	2.84	0.000	36.05 ^a	23.59	0.000	24.00 ^a	20.26	0.032	25.91 ^a	20.75	0.001
Nevada	24.45 ^a	20.02	0.008	9.44 ^a	2.79	0.000	33.92 ^a	21.95	0.000	24.97	21.71	0.111	26.13 ^a	21.74	0.017
New Hampshire	23.36 ^a	15.55	0.000	10.23 ^a	3.84	0.000	39.18 ^a	24.26	0.000	22.53 ^a	15.42	0.000	24.74 ^a	16.59	0.000
New Jersey	20.88 ^a	15.36	0.000	7.59 ^a	2.17	0.000	35.13 ^a	21.06	0.000	20.33 ^a	16.03	0.008	22.32 ^a	16.67	0.000
New Mexico	22.74 ^a	19.87	0.050	10.06 ^a	3.02	0.000	36.12 ^a	24.40	0.000	21.95	21.20	0.685	24.15	21.65	0.121
New York	21.30 ^a	14.65	0.000	8.21 ^a	2.13	0.000	34.38 ^a	18.10	0.000	20.55 ^a	15.40	0.000	22.66 ^a	15.77	0.000
North Carolina	26.45 ^a	19.45	0.000	9.16 ^a	3.10	0.000	37.96 ^a	23.68	0.000	26.73 ^a	20.70	0.000	28.30 ^a	21.11	0.000
North Dakota	24.70 ^a	20.26	0.003	10.42 ^a	4.56	0.000	36.38 ^a	25.49	0.000	23.86	21.01	0.126	26.14 ^a	21.75	0.007
Ohio	26.71 ^a	21.47	0.000	10.93 ^a	4.43	0.000	41.85 ^a	25.24	0.000	26.23 ^a	22.87	0.006	28.43 ^a	23.19	0.000
Oklahoma	28.24 ^a	22.91	0.001	11.31 ^a	4.27	0.000	41.18 ^a	29.03	0.000	28.10 ^b	24.26	0.052	30.11 ^a	24.95	0.003
Oregon	25.01 ^a	16.54	0.000	10.32 ^a	3.25	0.000	37.51 ^a	23.66	0.000	24.78 ^a	16.87	0.000	26.49 ^a	17.74	0.000
Pennsylvania	25.69 ^a	19.31	0.000	11.13 ^a	3.17	0.000	38.72 ^a	22.79	0.000	25.30 ^a	20.48	0.000	27.19 ^a	20.79	0.000
Rhode Island	22.58 ^a	16.65	0.000	7.93 ^a	2.55	0.000	35.37 ^a	20.76	0.000	21.93 ^a	17.38	0.010	24.05 ^a	17.88	0.000
South Carolina	26.94 ^a	21.64	0.000	9.52 ^a	4.92	0.000	37.73 ^a	24.65	0.000	27.33 ^a	23.04	0.020	28.80 ^a	23.26	0.001
South Dakota	25.04 ^a	19.50	0.000	11.43 ^a	4.88	0.000	39.83 ^a	24.22	0.000	24.14 ^a	20.52	0.039	26.53 ^a	21.05	0.000
Tennessee	28.20 ^a	21.35	0.000	9.69 ^a	4.34	0.000	39.48 ^a	25.19	0.000	28.71 ^a	22.71	0.002	30.14 ^a	23.04	0.000
Texas	22.51 ^a	17.19	0.000	8.17 ^a	2.24	0.000	33.64 ^a	19.66	0.000	22.51 ^a	18.86	0.001	24.27 ^a	18.98	0.000
Utah	16.42 ^a	12.24	0.001	5.39 ^a	1.98	0.000	22.29 ^a	13.51	0.000	16.83 ^b	13.74	0.057	17.91 ^a	13.68	0.003
Vermont	22.31 ^a	19.18	0.037	8.73 ^a	5.49	0.008	38.02 ^a	29.32	0.001	21.29	18.75	0.166	23.64 ^a	20.31	0.041
Virginia	23.23 ^a	15.51	0.000	9.56 ^a	2.78	0.000	35.65 ^a	23.13	0.000	22.79 ^a	15.75	0.000	24.66 ^a	16.76	0.000
Washington	22.91 ^a	17.58	0.000	8.89 ^a	3.57	0.000	35.68 ^a	19.55	0.000	22.56 ^a	18.81	0.027	24.38 ^a	18.91	0.000
West Virginia	30.76 ^b	27.73	0.087	13.14 ^a	5.82	0.000	47.13 ^a	32.17	0.000	30.30	29.31	0.646	32.42	29.67	0.153
Wisconsin	25.74 ^a	18.68	0.000	10.57 ^a	3.09	0.000	40.34 ^a	23.31	0.000	25.15 ^a	19.73	0.003	27.35 ^a	20.23	0.000
Wyoming	26.58 ^a	20.02	0.000	12.60 ^a	4.72	0.000	39.19 ^a	30.07	0.000	26.09 ^a	20.28	0.002	28.06 ^a	21.58	0.000

NOTE: State and census region estimates are based on a survey-weighted hierarchical Bayes estimation approach, with their *p* values being the Bayes significance levels for the null hypothesis of no change between the 2008-2009 and 2017-2018 population percentages. The "Total U.S." estimates, along with the *p* values, are based on design-based (direct) estimation methods.

^a Difference between the 2008-2009 and 2017-2018 population percentages is statistically significant at the 0.05 level.

^b Difference between the 2008-2009 and 2017-2018 population percentages is statistically significant at the 0.10 level.

Source: SAMHSA, Center for Behavioral Health Statistics and Quality, National Survey on Drug Use and Health, 2008, 2009, 2017, and 2018 (2008 and 2009 Data – Revised March 2012).

Table 9 Alcohol Use Disorder in the Past Year, by Age Group and State: Percentages, Annual Averages, and P Values from Tests of Differences between Percentages, 2008-2009 and 2017-2018 NSDUHs

State	12+ (2008- 2009)	12+ (2017- 2018)	12+ (P Value)	12-17 (2008- 2009)	12-17 (2017- 2018)	12-17 (P Value)	18-25 (2008- 2009)	18-25 (2017- 2018)	18-25 (P Value)	26+ (2008- 2009)	26+ (2017- 2018)	26+ (P Value)	18+ (2008- 2009)	18+ (2017- 2018)	18+ (P Value)
Total U.S.	7.42 ^a	5.37	0.000	4.76 ^a	1.69	0.000	16.76 ^a	10.05	0.000	6.16 ^a	5.05	0.000	7.72 ^a	5.74	0.000
Northeast	7.42 ^a	5.50	0.000	4.73 ^a	1.66	0.000	17.81 ^a	10.76	0.000	5.99 ^a	5.08	0.005	7.70 ^a	5.85	0.000
Midwest	7.84 ^a	5.56	0.000	5.14 ^a	1.76	0.000	18.24 ^a	10.99	0.000	6.39 ^a	5.13	0.000	8.13 ^a	5.95	0.000
South	6.90 ^a	4.81	0.000	4.14 ^a	1.50	0.000	15.18 ^a	8.73	0.000	5.86 ^a	4.58	0.000	7.20 ^a	5.15	0.000
West	7.86 ^a	6.01	0.000	5.37 ^a	1.97	0.000	16.97 ^a	10.76	0.000	6.54 ^a	5.72	0.017	8.14 ^a	6.42	0.000
Alabama	6.40 ^a	4.69	0.008	4.12 ^a	1.58	0.000	13.75 ^a	7.91	0.000	5.45	4.53	0.221	6.65 ^a	5.00	0.018
Alaska	8.06	6.88	0.159	5.31 ^a	2.07	0.000	16.94 ^a	12.73	0.024	6.80	6.56	0.808	8.40	7.41	0.281
Arizona	7.73 ^a	5.34	0.001	5.40 ^a	1.83	0.000	18.24 ^a	9.87	0.000	6.26	5.02	0.138	8.00 ^a	5.70	0.005
Arkansas	6.75 ^a	5.31	0.033	4.90 ^a	2.04	0.000	15.57 ^a	9.27	0.000	5.54	5.06	0.536	6.95 ^b	5.65	0.076
California	7.87 ^a	5.89	0.000	5.27 ^a	1.85	0.000	16.36 ^a	10.28	0.000	6.61 ^b	5.65	0.070	8.18 ^a	6.30	0.000
Colorado	8.97	8.34	0.473	6.32 ^a	2.27	0.000	21.03 ^a	15.10	0.006	7.28	7.97	0.501	9.25	8.94	0.751
Connecticut	8.64 ^a	5.99	0.001	5.92 ^a	1.93	0.000	19.92 ^a	12.13	0.000	7.19 ^b	5.46	0.062	8.93 ^a	6.39	0.003
Delaware	7.88 ^a	6.19	0.036	4.86 ^a	1.56	0.000	18.98 ^a	10.38	0.000	6.40	6.07	0.730	8.19 ^b	6.62	0.069
District of Columbia	9.26	10.10	0.408	3.04 ^b	1.89	0.056	17.04 ^b	13.67	0.080	8.10	9.99	0.123	9.73	10.57	0.440
Florida	6.93 ^a	4.52	0.000	4.33 ^a	1.55	0.000	14.60 ^a	8.28	0.000	6.08 ^a	4.31	0.001	7.18 ^a	4.78	0.000
Georgia	6.68 ^a	4.50	0.000	3.38 ^a	1.33	0.000	15.02 ^a	8.03	0.000	5.72 ^a	4.33	0.046	7.07 ^a	4.86	0.001
Hawaii	7.58 ^a	5.27	0.004	5.83 ^a	2.19	0.000	16.34 ^a	11.60	0.012	6.38 ^b	4.74	0.069	7.75 ^a	5.55	0.009
Idaho	7.14 ^a	5.46	0.014	5.16 ^a	1.75	0.000	16.35 ^a	9.92	0.000	5.79	5.24	0.481	7.37 ^a	5.91	0.050
Illinois	7.58 ^a	6.01	0.002	4.32 ^a	1.95	0.000	17.59 ^a	11.40	0.000	6.19	5.64	0.352	7.94 ^a	6.43	0.006
Indiana	6.99 ^a	4.79	0.001	5.01 ^a	1.43	0.000	17.00 ^a	10.11	0.000	5.57 ^b	4.30	0.077	7.22 ^a	5.15	0.003
Iowa	8.64 ^a	6.71	0.010	6.67 ^a	2.15	0.000	19.79 ^a	14.25	0.004	6.92	5.93	0.246	8.85 ^a	7.18	0.039
Kansas	8.06 ^a	5.14	0.000	5.68 ^a	1.91	0.000	19.37 ^a	10.23	0.000	6.27 ^a	4.66	0.044	8.33 ^a	5.50	0.000
Kentucky	5.98 ^a	4.65	0.039	3.83 ^a	1.61	0.000	14.21 ^a	8.10	0.000	4.95	4.46	0.501	6.20 ^b	4.96	0.073
Louisiana	7.02	6.42	0.420	3.63 ^a	1.86	0.003	14.96 ^a	10.60	0.008	5.95	6.30	0.687	7.40	6.90	0.529
Maine	6.76	6.14	0.391	4.06 ^a	2.37	0.013	17.72 ^a	11.64	0.001	5.52	5.78	0.752	7.01	6.45	0.467
Maryland	7.05 ^a	4.76	0.001	3.70 ^a	1.29	0.000	15.17 ^a	8.53	0.000	6.10 ^b	4.59	0.065	7.42 ^a	5.10	0.003
Massachusetts	7.42	6.69	0.331	4.74 ^a	1.99	0.000	18.97 ^a	13.83	0.009	5.68	5.96	0.745	7.68	7.10	0.473
Michigan	7.63 ^a	5.31	0.000	4.90 ^a	1.57	0.000	16.79 ^a	9.60	0.000	6.43 ^a	5.03	0.015	7.93 ^a	5.68	0.000
Minnesota	9.20 ^a	5.20	0.000	5.77 ^a	1.55	0.000	21.08 ^a	10.80	0.000	7.60 ^a	4.76	0.001	9.56 ^a	5.57	0.000
Mississippi	6.29 ^a	4.37	0.004	3.68 ^a	1.21	0.000	13.24 ^a	7.36	0.000	5.38	4.26	0.143	6.60 ^a	4.71	0.009
Missouri	7.63 ^a	5.02	0.000	5.15 ^a	1.65	0.000	17.62 ^a	8.59	0.000	6.29 ^b	4.84	0.066	7.90 ^a	5.36	0.001
Montana	9.78 ^a	7.47	0.009	8.23 ^a	3.14	0.000	24.59 ^a	14.06	0.000	7.49	6.91	0.564	9.94 ^a	7.87	0.028

See notes at end of table.

(continued)

Table 9 Alcohol Use Disorder in the Past Year, by Age Group and State: Percentages, Annual Averages, and P Values from Tests of Differences between Percentages, 2008-2009 and 2017-2018 NSDUHs (continued)

State	12+ (2008- 2009)	12+ (2017- 2018)	12+ (P Value)	12-17 (2008- 2009)	12-17 (2017- 2018)	12-17 (P Value)	18-25 (2008- 2009)	18-25 (2017- 2018)	18-25 (P Value)	26+ (2008- 2009)	26+ (2017- 2018)	26+ (P Value)	18+ (2008- 2009)	18+ (2017- 2018)	18+ (P Value)
Nebraska	8.50 ^a	5.82	0.000	5.65 ^a	1.86	0.000	19.05 ^a	12.35	0.000	6.88 ^b	5.18	0.051	8.81 ^a	6.25	0.002
Nevada	7.61 ^a	5.50	0.005	5.40 ^a	1.80	0.000	16.76 ^a	10.28	0.000	6.53	5.25	0.132	7.86 ^a	5.88	0.014
New Hampshire	7.50	6.67	0.287	5.09 ^a	2.00	0.000	19.31 ^a	14.62	0.027	5.98	5.94	0.963	7.75	7.08	0.429
New Jersey	6.61 ^a	4.75	0.003	3.71 ^a	1.50	0.000	15.87 ^a	9.86	0.000	5.54	4.37	0.109	6.93 ^a	5.07	0.007
New Mexico	8.64 ^a	5.21	0.000	6.64 ^a	1.83	0.000	18.71 ^a	9.68	0.000	7.05 ^a	4.90	0.019	8.86 ^a	5.56	0.000
New York	7.88 ^a	5.31	0.000	5.31 ^a	1.46	0.000	18.10 ^a	8.97	0.000	6.36 ^a	5.13	0.033	8.15 ^a	5.65	0.000
North Carolina	6.27 ^a	4.78	0.012	3.40 ^a	1.53	0.000	14.65 ^a	8.28	0.000	5.28	4.61	0.332	6.58 ^a	5.10	0.022
North Dakota	8.38 ^a	6.54	0.016	5.29 ^a	2.30	0.000	20.61 ^a	13.07	0.000	6.03	5.71	0.706	8.69 ^a	6.94	0.032
Ohio	7.62 ^a	5.15	0.000	5.19 ^a	1.66	0.000	17.80 ^a	10.44	0.000	6.26 ^a	4.73	0.007	7.89 ^a	5.50	0.000
Oklahoma	7.55 ^a	5.94	0.027	4.96 ^a	1.71	0.000	16.78 ^a	10.83	0.001	6.21	5.65	0.504	7.84 ^b	6.40	0.070
Oregon	8.54	7.29	0.135	6.33 ^a	2.42	0.000	18.71 ^a	12.75	0.001	7.22	6.99	0.815	8.76	7.73	0.247
Pennsylvania	6.91 ^a	5.14	0.000	4.21 ^a	1.63	0.000	17.07 ^a	11.13	0.000	5.56 ^b	4.60	0.085	7.18 ^a	5.46	0.001
Rhode Island	8.26 ^a	6.63	0.046	4.86 ^a	1.92	0.000	18.03 ^a	12.01	0.002	6.84	6.17	0.475	8.60 ^b	7.05	0.075
South Carolina	7.90 ^a	5.57	0.002	3.98 ^a	1.58	0.000	16.24 ^a	11.49	0.005	7.03 ^a	5.12	0.035	8.32 ^a	5.96	0.005
South Dakota	9.68 ^a	6.79	0.001	6.74 ^a	2.60	0.000	23.35 ^a	13.87	0.000	7.59	6.13	0.138	10.00 ^a	7.24	0.003
Tennessee	6.18 ^a	4.57	0.013	3.28 ^a	1.74	0.006	14.18 ^a	8.16	0.000	5.30	4.34	0.201	6.48 ^a	4.86	0.020
Texas	6.98 ^a	4.43	0.000	4.63 ^a	1.31	0.000	14.76 ^a	8.30	0.000	5.85 ^a	4.18	0.001	7.26 ^a	4.80	0.000
Utah	6.07 ^a	4.38	0.008	3.31 ^a	1.51	0.003	12.42 ^a	8.09	0.006	4.96	4.05	0.211	6.44 ^a	4.79	0.018
Vermont	7.84	7.42	0.602	4.92 ^a	2.91	0.017	20.15 ^a	14.34	0.003	6.16	6.67	0.577	8.12	7.80	0.701
Virginia	8.04 ^a	5.17	0.000	5.07 ^a	1.63	0.000	19.44 ^a	10.15	0.000	6.47 ^a	4.78	0.025	8.35 ^a	5.52	0.000
Washington	7.08 ^b	5.89	0.089	4.74 ^a	2.49	0.003	16.26 ^a	11.13	0.003	5.88	5.48	0.609	7.32	6.21	0.140
West Virginia	6.54 ^a	4.29	0.001	4.45 ^a	1.57	0.000	15.43 ^a	8.41	0.000	5.48 ^a	3.98	0.046	6.73 ^a	4.53	0.002
Wisconsin	8.06	6.84	0.121	5.43 ^a	2.11	0.000	19.67 ^a	14.58	0.010	6.43	6.13	0.741	8.34	7.31	0.224
Wyoming	8.51 ^a	5.61	0.000	6.96 ^a	2.67	0.000	19.54 ^a	11.14	0.000	6.75 ^b	5.10	0.058	8.67 ^a	5.91	0.001

NOTE: State and census region estimates are based on a survey-weighted hierarchical Bayes estimation approach, with their *p* values being the Bayes significance levels for the null hypothesis of no change between the 2008-2009 and 2017-2018 population percentages. The "Total U.S." estimates, along with the *p* values, are based on design-based (direct) estimation methods.

NOTE: Alcohol Use Disorder is defined as meeting criteria for alcohol dependence or abuse. Dependence or abuse is based on definitions found in the 4th edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-IV).

^a Difference between the 2008-2009 and 2017-2018 population percentages is statistically significant at the 0.05 level.

^b Difference between the 2008-2009 and 2017-2018 population percentages is statistically significant at the 0.10 level.

Source: SAMHSA, Center for Behavioral Health Statistics and Quality, National Survey on Drug Use and Health, 2008, 2009, 2017, and 2018 (2008 and 2009 Data – Revised March 2012).

Table 10 *Serious Mental Illness in the Past Year, by Age Group and State: Percentages, Annual Averages, and P Values from Tests of Differences between Percentages, 2008-2009 and 2017-2018 NSDUHs*

State	18+ (2008-2009)	18+ (2017-2018)	18+ (P Value)	18-25 (2008-2009)	18-25 (2017-2018)	18-25 (P Value)	26+ (2008-2009)	26+ (2017-2018)	26+ (P Value)
Total U.S.	3.70 ^a	4.55	0.000	3.55 ^a	7.59	0.000	3.72 ^a	4.06	0.023
Northeast	3.64 ^a	4.22	0.013	3.65 ^a	7.46	0.000	3.64	3.71	0.777
Midwest	4.00 ^a	4.91	0.000	3.79 ^a	8.16	0.000	4.04	4.38	0.164
South	3.59 ^a	4.44	0.000	3.28 ^a	7.07	0.000	3.64 ^b	4.02	0.065
West	3.63 ^a	4.66	0.000	3.66 ^a	7.98	0.000	3.62 ^b	4.12	0.064
Alabama	3.57 ^a	5.75	0.001	3.44 ^a	7.17	0.000	3.59 ^a	5.53	0.009
Alaska	3.49 ^a	5.40	0.002	3.11 ^a	8.96	0.000	3.56 ^b	4.83	0.064
Arizona	3.84	4.80	0.135	3.72 ^a	8.05	0.000	3.86	4.27	0.567
Arkansas	4.74	5.55	0.259	3.99 ^a	7.47	0.000	4.86	5.24	0.640
California	3.20 ^a	4.14	0.009	3.62 ^a	7.39	0.000	3.12	3.60	0.235
Colorado	4.65	5.64	0.179	3.67 ^a	9.89	0.000	4.81	4.97	0.846
Connecticut	3.52	4.34	0.155	3.53 ^a	8.31	0.000	3.51	3.70	0.766
Delaware	3.55 ^a	5.65	0.001	3.49 ^a	7.72	0.000	3.56 ^a	5.35	0.014
District of Columbia	3.06 ^a	4.82	0.003	3.00 ^a	6.85	0.000	3.07 ^a	4.44	0.043
Florida	3.64	3.90	0.497	3.39 ^a	7.09	0.000	3.67	3.47	0.638
Georgia	3.39 ^b	4.33	0.096	2.78 ^a	6.64	0.000	3.49	3.94	0.467
Hawaii	3.11	3.89	0.161	3.89 ^a	8.07	0.000	2.98	3.34	0.563
Idaho	4.75	5.61	0.216	3.74 ^a	8.93	0.000	4.93	5.06	0.869
Illinois	3.62	4.15	0.187	3.51 ^a	7.79	0.000	3.64	3.58	0.885
Indiana	4.71	5.26	0.418	4.02 ^a	8.27	0.000	4.82	4.75	0.918
Iowa	3.83 ^a	5.38	0.011	3.76 ^a	8.66	0.000	3.84	4.79	0.156
Kansas	3.51 ^a	5.18	0.007	3.78 ^a	8.64	0.000	3.46	4.56	0.108
Kentucky	4.18 ^a	5.62	0.039	3.42 ^a	7.89	0.000	4.30	5.26	0.220
Louisiana	3.59 ^a	5.17	0.008	3.49 ^a	6.85	0.000	3.61 ^b	4.90	0.056
Maine	4.00 ^a	5.67	0.014	4.33 ^a	10.59	0.000	3.95	5.04	0.146
Maryland	3.28	3.94	0.207	3.46 ^a	7.71	0.000	3.25	3.37	0.828
Massachusetts	3.73 ^b	4.77	0.088	3.21 ^a	8.04	0.000	3.82	4.21	0.567
Michigan	3.98	4.61	0.148	4.12 ^a	7.56	0.000	3.96	4.12	0.739
Minnesota	4.37	4.35	0.978	3.84 ^a	8.77	0.000	4.46	3.66	0.237
Mississippi	3.43 ^a	5.41	0.002	2.99 ^a	6.93	0.000	3.51 ^a	5.15	0.021
Missouri	4.09 ^a	5.51	0.030	3.58 ^a	7.87	0.000	4.18	5.13	0.189
Montana	3.95 ^a	5.36	0.031	3.98 ^a	9.09	0.000	3.95	4.78	0.251

See notes at end of table.

(continued)

Table 10 Serious Mental Illness in the Past Year, by Age Group and State: Percentages, Annual Averages, and P Values from Tests of Differences between Percentages, 2008-2009 and 2017-2018 NSDUHs (continued)

State	18+ (2008-2009)	18+ (2017-2018)	18+ (P Value)	18-25 (2008-2009)	18-25 (2017-2018)	18-25 (P Value)	26+ (2008-2009)	26+ (2017-2018)	26+ (P Value)
Nebraska	3.57	4.39	0.129	3.59 ^a	7.84	0.000	3.57	3.78	0.728
Nevada	4.37	4.76	0.574	3.81 ^a	7.61	0.000	4.45	4.36	0.903
New Hampshire	3.75 ^a	5.34	0.014	3.98 ^a	9.05	0.000	3.72	4.77	0.138
New Jersey	3.35	3.60	0.624	3.77 ^a	7.21	0.000	3.29	3.07	0.684
New Mexico	3.45 ^b	4.51	0.072	3.61 ^a	7.73	0.000	3.42	3.99	0.386
New York	3.84	3.85	0.987	3.80 ^a	6.82	0.000	3.85	3.38	0.281
North Carolina	3.63	4.56	0.113	3.02 ^a	7.17	0.000	3.73	4.15	0.520
North Dakota	3.25 ^a	4.92	0.001	3.36 ^a	8.15	0.000	3.23 ^b	4.27	0.078
Ohio	4.10 ^a	5.37	0.007	3.69 ^a	8.39	0.000	4.17	4.89	0.170
Oklahoma	3.97 ^b	5.23	0.052	4.07 ^a	8.48	0.000	3.95	4.68	0.312
Oregon	4.23	5.27	0.124	3.82 ^a	8.76	0.000	4.30	4.76	0.535
Pennsylvania	3.31 ^a	4.49	0.005	3.43 ^a	7.42	0.000	3.29	4.04	0.108
Rhode Island	5.38	4.93	0.565	4.29 ^a	7.77	0.001	5.58	4.44	0.184
South Carolina	3.57 ^a	4.76	0.049	3.26 ^a	7.53	0.000	3.62	4.34	0.286
South Dakota	3.19 ^a	4.60	0.008	3.44 ^a	9.39	0.000	3.14	3.80	0.263
Tennessee	3.80 ^b	4.91	0.078	3.25 ^a	7.71	0.000	3.89	4.48	0.396
Texas	3.33	3.86	0.145	3.08 ^a	6.45	0.000	3.37	3.40	0.950
Utah	4.64 ^a	6.37	0.013	3.78 ^a	10.05	0.000	4.86	5.55	0.386
Vermont	3.78 ^a	5.45	0.013	3.97 ^a	9.71	0.000	3.75	4.71	0.197
Virginia	3.34	4.12	0.132	3.55 ^a	6.89	0.000	3.30	3.68	0.505
Washington	3.78 ^a	5.26	0.017	3.55 ^a	7.85	0.000	3.82	4.88	0.124
West Virginia	4.87	5.78	0.239	3.66 ^a	8.49	0.000	5.04	5.39	0.686
Wisconsin	4.12 ^a	5.48	0.039	4.16 ^a	8.57	0.000	4.11	4.99	0.237
Wyoming	4.20	4.84	0.316	3.49 ^a	9.03	0.000	4.32	4.20	0.863

NOTE: State and census region estimates are based on a survey-weighted hierarchical Bayes estimation approach, with their *p* values being the Bayes significance levels for the null hypothesis of no change between the 2008-2009 and 2017-2018 population percentages. The "Total U.S." estimates, along with the *p* values, are based on design-based (direct) estimation methods.

NOTE: Serious mental illness (SMI) is defined as having a diagnosable mental, behavioral, or emotional disorder, other than a developmental or substance use disorder, assessed by the Mental Health Surveillance Study (MHSS) *Structured Clinical Interview for the Diagnostic and Statistical Manual of Mental Disorders—Fourth Edition—Research Version—Axis I Disorders* (MHSS-SCID), which is based on the 4th edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-IV). SMI includes individuals with diagnoses resulting in serious functional impairment. For details, see Section B of the "2017-2018 NSDUH: Guide to State Tables and Summary of Small Area Estimation Methodology" at <https://www.samhsa.gov/data/>.

^a Difference between the 2008-2009 and 2017-2018 population percentages is statistically significant at the 0.05 level.

^b Difference between the 2008-2009 and 2017-2018 population percentages is statistically significant at the 0.10 level.

Source: SAMHSA, Center for Behavioral Health Statistics and Quality, National Survey on Drug Use and Health, 2008, 2009, 2017, and 2018 (2008 and 2009 Data – Revised March 2012 and October 2013).

Table 11 Any Mental Illness in the Past Year, by Age Group and State: Percentages, Annual Averages, and P Values from Tests of Differences between Percentages, 2008-2009 and 2017-2018 NSDUHs

State	18+ (2008-2009)	18+ (2017-2018)	18+ (P Value)	18-25 (2008-2009)	18-25 (2017-2018)	18-25 (P Value)	26+ (2008-2009)	26+ (2017-2018)	26+ (P Value)
Total U.S.	17.92 ^a	19.00	0.000	18.25 ^a	26.04	0.000	17.86	17.88	0.957
Northeast	18.18	18.53	0.504	18.61 ^a	26.47	0.000	18.10	17.30	0.184
Midwest	18.36 ^a	19.88	0.001	19.22 ^a	27.47	0.000	18.21	18.63	0.410
South	17.33 ^a	18.18	0.045	17.06 ^a	24.11	0.000	17.38	17.24	0.774
West	18.23 ^a	19.90	0.004	18.88 ^a	27.44	0.000	18.12	18.68	0.393
Alabama	17.44 ^a	21.39	0.007	16.53 ^a	24.24	0.000	17.59 ^a	20.93	0.043
Alaska	16.72 ^a	20.50	0.007	15.79 ^a	28.47	0.000	16.90	19.22	0.141
Arizona	17.15	19.24	0.165	18.31 ^a	24.56	0.002	16.95	18.37	0.407
Arkansas	19.60	20.27	0.645	19.89 ^a	25.64	0.003	19.55	19.40	0.930
California	17.44	18.54	0.207	18.49 ^a	26.53	0.000	17.23	17.22	0.991
Colorado	18.95 ^b	21.50	0.095	17.74 ^a	31.44	0.000	19.15	19.92	0.651
Connecticut	17.87	19.03	0.434	19.35 ^a	28.12	0.000	17.64	17.56	0.963
Delaware	17.75	20.03	0.125	18.41 ^a	28.10	0.000	17.64	18.86	0.464
District of Columbia	17.99 ^a	22.21	0.004	17.44 ^a	27.02	0.000	18.12 ^b	21.32	0.061
Florida	16.99	17.39	0.663	16.69 ^a	24.38	0.000	17.03	16.45	0.570
Georgia	16.50	18.09	0.225	16.16 ^a	24.46	0.000	16.56	17.03	0.750
Hawaii	17.52	17.58	0.967	19.54 ^a	25.02	0.012	17.20	16.59	0.710
Idaho	19.51 ^a	24.46	0.001	19.37 ^a	30.54	0.000	19.54 ^a	23.46	0.024
Illinois	16.68	18.06	0.149	17.19 ^a	26.42	0.000	16.59	16.73	0.898
Indiana	20.37	22.51	0.156	20.62 ^a	29.43	0.000	20.33	21.32	0.559
Iowa	17.23 ^b	19.89	0.051	18.24 ^a	25.59	0.000	17.05	18.88	0.237
Kansas	17.24 ^b	19.59	0.098	17.89 ^a	27.09	0.000	17.13	18.26	0.480
Kentucky	19.23 ^b	22.14	0.055	17.78 ^a	24.71	0.000	19.46	21.73	0.183
Louisiana	17.46 ^a	20.63	0.026	16.81 ^a	24.87	0.000	17.59	19.95	0.145
Maine	19.25	20.82	0.318	19.59 ^a	31.23	0.000	19.20	19.47	0.875
Maryland	16.86	16.96	0.946	17.72 ^a	25.32	0.000	16.72	15.70	0.516
Massachusetts	18.01 ^a	21.22	0.028	18.31 ^a	28.22	0.000	17.95	20.03	0.210
Michigan	18.63	19.07	0.648	19.81 ^a	25.88	0.000	18.43	17.95	0.663
Minnesota	18.94	19.32	0.784	19.72 ^a	30.77	0.000	18.81	17.53	0.417
Mississippi	16.95 ^b	19.49	0.073	17.28 ^a	23.40	0.001	16.89	18.83	0.229
Missouri	19.11	21.44	0.119	21.43 ^a	27.61	0.004	18.72	20.45	0.300
Montana	19.18	20.00	0.566	19.20 ^a	27.96	0.000	19.17	18.75	0.791

See notes at end of table.

(continued)

Table 11 Any Mental Illness in the Past Year, by Age Group and State: Percentages, Annual Averages, and P Values from Tests of Differences between Percentages, 2008-2009 and 2017-2018 NSDUHs (continued)

State	18+ (2008-2009)	18+ (2017-2018)	18+ (P Value)	18-25 (2008-2009)	18-25 (2017-2018)	18-25 (P Value)	26+ (2008-2009)	26+ (2017-2018)	26+ (P Value)
Nebraska	17.56	18.08	0.697	17.25 ^a	26.49	0.000	17.63	16.60	0.492
Nevada	20.59	20.67	0.960	20.46 ^a	27.17	0.002	20.60	19.75	0.636
New Hampshire	18.35	20.56	0.135	19.88 ^a	28.85	0.000	18.11	19.30	0.470
New Jersey	17.65	16.14	0.271	18.52 ^a	23.25	0.010	17.51	15.09	0.115
New Mexico	17.85	19.10	0.400	18.04 ^a	25.43	0.000	17.82	18.07	0.880
New York	18.35	18.25	0.907	18.27 ^a	25.96	0.000	18.37	17.03	0.202
North Carolina	17.74	18.77	0.427	16.43 ^a	25.52	0.000	17.95	17.72	0.873
North Dakota	15.46 ^a	19.13	0.005	15.32 ^a	27.22	0.000	15.50	17.51	0.183
Ohio	18.41 ^a	21.40	0.003	18.75 ^a	27.99	0.000	18.36 ^b	20.36	0.075
Oklahoma	20.33	20.43	0.948	20.56 ^a	27.50	0.002	20.28	19.23	0.539
Oregon	19.55 ^b	22.45	0.063	20.51 ^a	29.56	0.000	19.40	21.40	0.250
Pennsylvania	17.83	18.23	0.676	18.55 ^a	27.16	0.000	17.71	16.87	0.438
Rhode Island	23.53	21.32	0.193	22.77	24.97	0.328	23.67	20.68	0.123
South Carolina	16.95	18.31	0.340	16.99 ^a	23.53	0.000	16.94	17.52	0.719
South Dakota	16.40	17.49	0.420	16.94 ^a	28.51	0.000	16.31	15.65	0.664
Tennessee	19.12	18.26	0.549	17.43 ^a	25.39	0.000	19.38	17.16	0.171
Texas	16.47	16.21	0.761	16.11 ^a	21.42	0.000	16.54	15.29	0.204
Utah	21.78 ^a	25.25	0.023	21.53 ^a	30.79	0.000	21.85	24.02	0.225
Vermont	18.66	20.65	0.174	19.42 ^a	29.59	0.000	18.53	19.10	0.728
Virginia	16.33	17.38	0.405	18.33 ^a	25.57	0.000	15.99	16.08	0.947
Washington	19.85	22.23	0.120	20.00 ^a	29.52	0.000	19.82	21.15	0.441
West Virginia	20.00 ^a	23.80	0.020	21.21 ^a	26.28	0.019	19.83 ^a	23.44	0.048
Wisconsin	19.96	19.26	0.635	22.43 ^a	27.49	0.014	19.55	17.94	0.331
Wyoming	20.24	20.34	0.950	20.38 ^a	28.46	0.000	20.22	19.09	0.512

NOTE: State and census region estimates are based on a survey-weighted hierarchical Bayes estimation approach, with their *p* values being the Bayes significance levels for the null hypothesis of no change between the 2008-2009 and 2017-2018 population percentages. The "Total U.S." estimates, along with the *p* values, are based on design-based (direct) estimation methods.

NOTE: Any mental illness (AMI) is defined as having a diagnosable mental, behavioral, or emotional disorder, other than a developmental or substance use disorder, assessed by the Mental Health Surveillance Study (MHSS) *Structured Clinical Interview for the Diagnostic and Statistical Manual of Mental Disorders—Fourth Edition—Research Version—Axis I Disorders* (MHSS-SCID), which is based on the 4th edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-IV). For details, see Section B of the "2017-2018 NSDUH: Guide to State Tables and Summary of Small Area Estimation Methodology" at <https://www.samhsa.gov/data/>.

^a Difference between the 2008-2009 and 2017-2018 population percentages is statistically significant at the 0.05 level.

^b Difference between the 2008-2009 and 2017-2018 population percentages is statistically significant at the 0.10 level.

Source: SAMHSA, Center for Behavioral Health Statistics and Quality, National Survey on Drug Use and Health, 2008, 2009, 2017, and 2018 (2008 and 2009 Data – Revised March 2012 and October 2013).

Table 12 *Had Serious Thoughts of Suicide in the Past Year, by Age Group and State: Percentages, Annual Averages, and P Values from Tests of Differences between Percentages, 2008-2009 and 2017-2018 NSDUHs*

State	18+ (2008-2009)	18+ (2017-2018)	18+ (P Value)	18-25 (2008-2009)	18-25 (2017-2018)	18-25 (P Value)	26+ (2008-2009)	26+ (2017-2018)	26+ (P Value)
Total U.S.	3.73 ^a	4.34	0.000	6.42 ^a	10.73	0.000	3.26	3.32	0.674
Northeast	3.73	4.04	0.165	6.64 ^a	10.35	0.000	3.24	3.06	0.454
Midwest	4.10 ^a	4.65	0.006	6.79 ^a	11.52	0.000	3.64	3.53	0.608
South	3.41 ^a	4.14	0.000	5.91 ^a	10.20	0.000	2.99	3.18	0.303
West	3.87 ^a	4.61	0.002	6.66 ^a	11.15	0.000	3.36	3.55	0.461
Alabama	3.73	4.45	0.233	6.42 ^a	10.90	0.000	3.28	3.43	0.822
Alaska	3.76 ^a	5.85	0.001	6.00 ^a	13.92	0.000	3.34 ^b	4.55	0.081
Arizona	3.98	4.43	0.468	6.60 ^a	10.87	0.001	3.54	3.38	0.817
Arkansas	4.11	4.71	0.317	6.67 ^a	10.80	0.000	3.69	3.72	0.960
California	3.39 ^a	4.10	0.035	6.53 ^a	10.23	0.000	2.79	3.09	0.407
Colorado	4.30 ^b	5.51	0.077	6.14 ^a	13.33	0.000	4.00	4.28	0.707
Connecticut	3.95	4.48	0.394	6.61 ^a	11.73	0.000	3.53	3.32	0.745
Delaware	3.02 ^a	5.06	0.001	6.09 ^a	10.84	0.000	2.51 ^a	4.22	0.009
District of Columbia	4.47	4.17	0.635	5.73 ^a	9.01	0.002	4.18	3.28	0.206
Florida	3.54	3.67	0.718	6.10 ^a	10.16	0.000	3.16	2.80	0.370
Georgia	2.80 ^a	4.03	0.008	5.26 ^a	9.49	0.000	2.38	3.13	0.131
Hawaii	3.81	4.59	0.227	7.53 ^a	12.09	0.001	3.21	3.60	0.583
Idaho	4.76	5.45	0.289	7.07 ^a	12.49	0.000	4.35	4.29	0.934
Illinois	4.28	3.87	0.334	6.31 ^a	10.29	0.000	3.91 ^a	2.85	0.021
Indiana	4.21	5.23	0.102	6.56 ^a	12.41	0.000	3.82	3.99	0.799
Iowa	4.01 ^a	5.40	0.027	6.44 ^a	11.72	0.000	3.59	4.29	0.306
Kansas	3.60 ^a	4.82	0.029	6.42 ^a	11.75	0.000	3.07	3.60	0.388
Kentucky	3.96	4.65	0.256	6.28 ^a	11.00	0.000	3.60	3.63	0.966
Louisiana	3.11 ^a	4.57	0.008	5.84 ^a	10.05	0.000	2.58 ^b	3.70	0.061
Maine	4.56	4.81	0.701	7.07 ^a	12.93	0.000	4.21	3.76	0.531
Maryland	3.41	4.07	0.216	6.51 ^a	10.78	0.000	2.89	3.07	0.744
Massachusetts	3.93	4.92	0.114	5.99 ^a	11.46	0.000	3.57	3.81	0.722
Michigan	4.26	4.13	0.753	7.67 ^a	10.75	0.000	3.69	3.04	0.162
Minnesota	3.67	4.59	0.111	6.59 ^a	12.44	0.000	3.18	3.36	0.756
Mississippi	3.29 ^a	4.82	0.005	6.35 ^a	11.21	0.000	2.72 ^b	3.73	0.092
Missouri	3.87	4.72	0.160	6.34 ^a	11.91	0.000	3.47	3.58	0.858
Montana	4.35	5.21	0.187	6.85 ^a	12.74	0.000	3.93	4.03	0.884

See notes at end of table.

(continued)

Table 12 Had Serious Thoughts of Suicide in the Past Year, by Age Group and State: Percentages, Annual Averages, and P Values from Tests of Differences between Percentages, 2008-2009 and 2017-2018 NSDUHs (continued)

State	18+ (2008-2009)	18+ (2017-2018)	18+ (P Value)	18-25 (2008-2009)	18-25 (2017-2018)	18-25 (P Value)	26+ (2008-2009)	26+ (2017-2018)	26+ (P Value)
Nebraska	3.91	4.29	0.488	6.04 ^a	10.72	0.000	3.51	3.16	0.566
Nevada	4.41	4.65	0.729	6.71 ^a	12.05	0.000	4.07	3.61	0.535
New Hampshire	3.40 ^a	4.91	0.010	6.82 ^a	12.23	0.000	2.88	3.80	0.139
New Jersey	3.28	3.47	0.690	6.97 ^a	9.83	0.010	2.71	2.54	0.735
New Mexico	4.15	4.25	0.874	6.85 ^a	10.74	0.001	3.65	3.20	0.496
New York	3.82	3.63	0.616	6.62 ^a	9.52	0.000	3.32	2.70	0.142
North Carolina	3.55 ^b	4.57	0.063	5.80 ^a	11.02	0.000	3.18	3.56	0.518
North Dakota	3.56 ^a	5.11	0.006	5.39 ^a	12.06	0.000	3.14	3.72	0.341
Ohio	4.25 ^a	5.18	0.042	6.90 ^a	11.99	0.000	3.82	4.11	0.561
Oklahoma	3.53 ^b	4.53	0.080	6.31 ^a	11.21	0.000	3.02	3.41	0.525
Oregon	4.43	5.36	0.182	6.64 ^a	12.50	0.000	4.08	4.32	0.759
Pennsylvania	3.52 ^b	4.17	0.096	6.73 ^a	10.32	0.000	2.99	3.24	0.558
Rhode Island	5.11	4.66	0.523	6.79 ^a	11.11	0.000	4.79 ^b	3.53	0.097
South Carolina	3.51 ^a	4.90	0.022	6.21 ^a	11.68	0.000	3.07	3.87	0.220
South Dakota	4.23	4.21	0.981	7.18 ^a	12.35	0.000	3.70	2.86	0.168
Tennessee	3.26 ^a	4.48	0.026	5.64 ^a	10.69	0.000	2.90	3.52	0.296
Texas	3.27	3.66	0.252	5.42 ^a	9.10	0.000	2.86	2.70	0.667
Utah	5.39	6.47	0.141	7.49 ^a	13.74	0.000	4.85	4.85	0.998
Vermont	4.49	5.22	0.295	7.04 ^a	12.12	0.000	4.07	4.03	0.951
Virginia	3.31 ^b	4.16	0.081	6.25 ^a	10.33	0.000	2.80	3.19	0.460
Washington	4.56	5.30	0.290	7.18 ^a	11.48	0.000	4.14	4.39	0.746
West Virginia	4.29	5.26	0.169	7.28 ^a	11.60	0.001	3.86	4.35	0.521
Wisconsin	4.05 ^b	5.17	0.070	7.90 ^a	12.16	0.001	3.40	4.05	0.339
Wyoming	4.52	5.04	0.425	6.32 ^a	12.84	0.000	4.20	3.84	0.614

NOTE: State and census region estimates are based on a survey-weighted hierarchical Bayes estimation approach, with their *p* values being the Bayes significance levels for the null hypothesis of no change between the 2008-2009 and 2017-2018 population percentages. The "Total U.S." estimates, along with the *p* values, are based on design-based (direct) estimation methods.

NOTE: Respondents were asked, "At any time in the past 12 months, did you seriously think about trying to kill yourself?" If they answered "Yes," they were categorized as having serious thoughts of suicide in the past year.

^a Difference between the 2008-2009 and 2017-2018 population percentages is statistically significant at the 0.05 level.

^b Difference between the 2008-2009 and 2017-2018 population percentages is statistically significant at the 0.10 level.

Source: SAMHSA, Center for Behavioral Health Statistics and Quality, National Survey on Drug Use and Health, 2008, 2009, 2017, and 2018 (2008 and 2009 Data – Revised March 2012).

Table 13 Major Depressive Episode in the Past Year, by Age Group and State: Percentages, Annual Averages, and P Values from Tests of Differences between Percentages, 2008-2009 and 2017-2018 NSDUHs

State	18+ (2008-2009)	18+ (2017-2018)	18+ (P Value)	12-17 (2008-2009)	12-17 (2017-2018)	12-17 (P Value)	18-25 (2008-2009)	18-25 (2017-2018)	18-25 (P Value)	26+ (2008-2009)	26+ (2017-2018)	26+ (P Value)
Total U.S.	6.53 ^a	7.14	0.000	8.22 ^a	13.84	0.000	8.21 ^a	13.40	0.000	6.24	6.14	0.592
Northeast	6.42	6.76	0.268	7.92 ^a	12.34	0.000	8.06 ^a	12.84	0.000	6.15	5.82	0.339
Midwest	6.72 ^a	7.76	0.000	8.35 ^a	14.75	0.000	8.50 ^a	14.26	0.000	6.41	6.70	0.320
South	6.44	6.80	0.127	8.07 ^a	13.44	0.000	7.79 ^a	12.51	0.000	6.22	5.91	0.240
West	6.57 ^a	7.39	0.009	8.53 ^a	14.71	0.000	8.67 ^a	14.44	0.000	6.19	6.26	0.836
Alabama	6.35 ^a	8.37	0.023	7.99 ^a	13.13	0.000	7.35 ^a	11.59	0.001	6.19 ^b	7.86	0.096
Alaska	5.86 ^a	8.05	0.010	7.70 ^a	15.21	0.000	7.31 ^a	14.25	0.000	5.59	7.05	0.114
Arizona	6.94	7.16	0.797	8.99 ^a	15.93	0.000	8.88 ^a	13.22	0.004	6.61	6.17	0.651
Arkansas	7.86	8.24	0.688	9.03 ^a	14.74	0.000	8.98 ^a	13.94	0.001	7.67	7.32	0.738
California	6.05	6.72	0.152	8.14 ^a	13.71	0.000	8.50 ^a	13.91	0.000	5.58	5.54	0.940
Colorado	7.56	8.56	0.280	9.16 ^a	13.99	0.001	8.40 ^a	17.61	0.000	7.41	7.13	0.784
Connecticut	5.95	7.02	0.180	8.03 ^a	14.24	0.000	8.11 ^a	13.69	0.000	5.61	5.94	0.701
Delaware	6.43 ^b	8.03	0.065	7.86 ^a	13.05	0.000	8.55 ^a	13.49	0.001	6.08	7.25	0.228
District of Columbia	5.93 ^a	8.25	0.004	6.93 ^a	10.53	0.004	7.39 ^a	13.17	0.000	5.60 ^b	7.35	0.057
Florida	6.40	6.14	0.626	8.53 ^a	13.17	0.000	7.93 ^a	12.33	0.000	6.17	5.31	0.142
Georgia	6.26	7.09	0.268	7.88 ^a	12.52	0.000	7.65 ^a	13.65	0.000	6.02	6.01	0.990
Hawaii	6.15	6.22	0.928	8.08 ^a	12.93	0.001	8.68 ^a	11.82	0.042	5.74	5.48	0.767
Idaho	7.47	8.43	0.270	8.90 ^a	16.70	0.000	9.19 ^a	16.79	0.000	7.16	7.05	0.908
Illinois	6.17	6.80	0.239	7.48 ^a	14.86	0.000	7.93 ^a	13.39	0.000	5.85	5.76	0.884
Indiana	8.14	8.65	0.583	9.25 ^a	15.71	0.000	8.51 ^a	14.68	0.000	8.08	7.62	0.656
Iowa	5.87 ^a	8.27	0.003	8.07 ^a	15.09	0.000	7.75 ^a	13.52	0.000	5.54 ^a	7.34	0.046
Kansas	6.61	7.51	0.276	8.58 ^a	14.95	0.000	8.38 ^a	13.05	0.001	6.29	6.54	0.786
Kentucky	7.14	8.42	0.162	8.42 ^a	13.61	0.000	7.98 ^a	12.88	0.000	7.00	7.71	0.493
Louisiana	5.75 ^a	8.24	0.003	7.67 ^a	12.84	0.000	6.97 ^a	12.46	0.000	5.51 ^a	7.57	0.029
Maine	6.81	8.26	0.101	8.08 ^a	15.45	0.000	8.78 ^a	17.09	0.000	6.53	7.12	0.544
Maryland	6.17	6.37	0.809	7.31 ^a	13.02	0.000	8.18 ^a	13.72	0.000	5.83	5.27	0.517
Massachusetts	6.77	7.21	0.583	8.03 ^a	13.86	0.000	8.51 ^a	14.30	0.000	6.47	6.01	0.611
Michigan	6.65	7.44	0.161	8.21 ^a	15.36	0.000	9.15 ^a	13.46	0.000	6.23	6.45	0.726
Minnesota	7.55	7.42	0.874	8.60 ^a	14.04	0.000	8.87 ^a	17.21	0.000	7.33	5.89	0.128
Mississippi	5.80 ^a	7.75	0.015	7.26 ^a	12.15	0.000	6.60 ^a	11.74	0.000	5.66	7.08	0.118
Missouri	7.03 ^a	9.07	0.027	8.91 ^a	14.78	0.000	9.15 ^a	13.35	0.005	6.68 ^b	8.39	0.100
Montana	6.76	7.81	0.197	9.07 ^a	14.40	0.000	8.85 ^a	15.39	0.000	6.41	6.62	0.812

See notes at end of table.

(continued)

Table 13 Major Depressive Episode in the Past Year, by Age Group and State: Percentages, Annual Averages, and P Values from Tests of Differences between Percentages, 2008-2009 and 2017-2018 NSDUHs (continued)

State	18+ (2008-2009)	18+ (2017-2018)	18+ (P Value)	12-17 (2008-2009)	12-17 (2017-2018)	12-17 (P Value)	18-25 (2008-2009)	18-25 (2017-2018)	18-25 (P Value)	26+ (2008-2009)	26+ (2017-2018)	26+ (P Value)
Nebraska	6.31	6.82	0.495	8.20 ^a	14.20	0.000	7.59 ^a	13.55	0.000	6.07	5.64	0.605
Nevada	6.88	7.05	0.840	7.38 ^a	15.11	0.000	8.89 ^a	15.00	0.000	6.58	5.93	0.496
New Hampshire	7.61	8.17	0.547	8.80 ^a	15.08	0.000	8.88 ^a	15.07	0.000	7.41	7.12	0.776
New Jersey	5.98	5.58	0.575	7.35 ^a	11.95	0.000	8.12 ^a	11.65	0.005	5.65	4.70	0.219
New Mexico	6.47	7.25	0.356	8.95 ^a	17.43	0.000	8.56 ^a	14.19	0.000	6.08	6.13	0.958
New York	6.64	6.43	0.687	8.22 ^a	11.40	0.000	7.84 ^a	11.71	0.000	6.42	5.60	0.164
North Carolina	6.85	7.00	0.844	8.43 ^a	15.05	0.000	8.07 ^a	12.83	0.000	6.65	6.09	0.517
North Dakota	6.26 ^a	8.40	0.009	9.03 ^a	13.75	0.001	7.21 ^a	14.05	0.000	6.05	7.28	0.184
Ohio	6.18 ^a	8.00	0.001	8.31 ^a	13.73	0.000	8.16 ^a	14.83	0.000	5.85 ^b	6.93	0.086
Oklahoma	7.40	8.17	0.402	8.04 ^a	16.48	0.000	9.47 ^a	14.65	0.001	7.03	7.08	0.960
Oregon	7.44	8.86	0.126	10.18 ^a	17.57	0.000	9.83 ^a	15.32	0.000	7.07	7.92	0.411
Pennsylvania	5.92 ^a	7.27	0.020	7.54 ^a	11.88	0.000	7.64 ^a	13.54	0.000	5.64	6.32	0.287
Rhode Island	9.34	8.06	0.230	9.35 ^a	13.40	0.007	10.87	12.56	0.315	9.05	7.27	0.139
South Carolina	7.02	6.99	0.972	8.90 ^a	13.56	0.000	8.43 ^a	12.34	0.003	6.79	6.18	0.518
South Dakota	5.71	6.41	0.345	8.47 ^a	12.53	0.004	6.90 ^a	15.11	0.000	5.50	4.96	0.512
Tennessee	6.83	6.94	0.898	8.53 ^a	12.27	0.004	7.19 ^a	12.59	0.000	6.78	6.06	0.425
Texas	5.97	5.89	0.867	7.49 ^a	13.20	0.000	7.25 ^a	11.41	0.000	5.73	4.93	0.125
Utah	7.51 ^a	9.97	0.005	8.43 ^a	16.64	0.000	8.37 ^a	16.09	0.000	7.29	8.61	0.191
Vermont	6.52 ^a	8.52	0.019	8.10 ^a	14.65	0.000	9.43 ^a	15.96	0.000	6.04	7.24	0.209
Virginia	6.30	6.26	0.949	8.78 ^a	14.28	0.000	8.57 ^a	12.74	0.001	5.92	5.24	0.398
Washington	7.19	8.53	0.137	9.39 ^a	15.66	0.000	9.07 ^a	14.42	0.000	6.88	7.66	0.438
West Virginia	7.77	8.81	0.290	8.39 ^a	14.66	0.000	8.81 ^a	14.69	0.000	7.62	7.98	0.743
Wisconsin	7.28	8.14	0.305	8.83 ^a	15.31	0.000	9.55 ^a	15.30	0.000	6.89	6.99	0.921
Wyoming	7.37	6.98	0.645	8.50 ^a	14.91	0.000	9.50 ^a	14.14	0.002	6.99	5.89	0.242

NOTE: State and census region estimates are based on a survey-weighted hierarchical Bayes estimation approach, with their *p* values being the Bayes significance levels for the null hypothesis of no change between the 2008-2009 and 2017-2018 population percentages. The "Total U.S." estimates, along with the *p* values, are based on design-based (direct) estimation methods.

NOTE: Major depressive episode (MDE) is defined as in the 5th edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-5), which specifies a period of at least 2 weeks when an individual experienced a depressed mood or loss of interest or pleasure in daily activities and had a majority of specified depression symptoms. For details, see Section B of the "2017-2018 NSDUH: Guide to State Tables and Summary of Small Area Estimation Methodology" at <https://www.samhsa.gov/data/>.

NOTE: There are minor wording differences in the questions in the adult and adolescent MDE modules. Therefore, data from youths aged 12 to 17 were not combined with data from adults aged 18 or older to produce an estimate for those aged 12 or older.

^a Difference between the 2008-2009 and 2017-2018 population percentages is statistically significant at the 0.05 level.

^b Difference between the 2008-2009 and 2017-2018 population percentages is statistically significant at the 0.10 level.

Source: SAMHSA, Center for Behavioral Health Statistics and Quality, National Survey on Drug Use and Health, 2008, 2009, 2017, and 2018 (2008 and 2009 Data – Revised March 2012).

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Methodology Used to Estimate the Bayes Significance Level for the Null Hypothesis of No Change between the 2008-2009 and 2017-2018 Population Percentages

Estimating *P* Values

To determine whether the differences between the 2008-2009¹ and 2017-2018 National Survey on Drug Use and Health (NSDUH) state prevalence rates are statistically significant, let $\pi_{sa(1)}$ and $\pi_{sa(2)}$ denote the 2008-2009 and 2017-2018 prevalence rates, respectively, for state-*s* and age group-*a*. The difference between $\pi_{sa(1)}$ and $\pi_{sa(2)}$ is defined in terms of the log-odds ratio (lor_{sa}) as opposed to the simple difference because the posterior distribution of lor_{sa} is closer to Gaussian than the posterior distribution of the simple difference ($\pi_{sa(2)} - \pi_{sa(1)}$). The lor_{sa} is defined as follows:

$$lor_{sa} = \ln \left[\frac{\pi_{sa(2)} / (1 - \pi_{sa(2)})}{\pi_{sa(1)} / (1 - \pi_{sa(1)})} \right].$$

In this equation, the ln denotes the natural logarithm. The *p* value given in each of the tables in this document (i.e., [Tables 1 to 13](#)) is computed to test the null hypothesis of no change (i.e., $\pi_{sa(2)} = \pi_{sa(1)}$ or equivalently, $lor_{sa} = 0$). An estimate of lor_{sa} is given by

$$\hat{lor}_{sa} = \ln \left[\frac{p_{sa(2)} / (1 - p_{sa(2)})}{p_{sa(1)} / (1 - p_{sa(1)})} \right],$$

where $p_{sa(1)}$ are the previously published 2008-2009 state estimates and $p_{sa(2)}$ are the 2017-2018 state estimates presented in [Tables 1 to 13](#) and elsewhere at <https://www.samhsa.gov/data/>. To compute the variance of \hat{lor}_{sa} , that is, $v(\hat{lor}_{sa})$, let

$$\hat{\theta}_1 = \frac{p_{sa(1)}}{1 - p_{sa(1)}} \text{ and } \hat{\theta}_2 = \frac{p_{sa(2)}}{1 - p_{sa(2)}}, \text{ then}$$

$$v(\hat{lor}_{sa}) = v[\ln(\hat{\theta}_1)] + v[\ln(\hat{\theta}_2)] - 2 \text{ cov}[\ln(\hat{\theta}_1), \ln(\hat{\theta}_2)],$$

¹ Note that in state small area estimation (SAE) documents prior to 2014-2015, 2002-2003 aggregated data were used as the baseline against which long-term changes for state-level estimates were compared. However, starting with 2014-2015 documents, 2008-2009 aggregated data are now used as the baseline so that mental health measures can also be included in long-term change testing.

where $\text{cov}[\ln(\hat{\theta}_1), \ln(\hat{\theta}_2)]$ denotes the covariance between $\ln(\hat{\theta}_1)$ and $\ln(\hat{\theta}_2)$. This covariance is defined in terms of the associated correlation as follows:

$$\text{cov}[\ln(\hat{\theta}_1), \ln(\hat{\theta}_2)] = \text{correlation} [\ln(\hat{\theta}_1), \ln(\hat{\theta}_2)] \times \sqrt{v[\ln(\hat{\theta}_1)] \times v[\ln(\hat{\theta}_2)]}.$$

Note that $v[\ln(\hat{\theta}_1)]$ and $v[\ln(\hat{\theta}_2)]$ used here to calculate $v(\hat{l}or_{sa})$ are the same variances used in calculating the previously published 2008-2009 Bayesian confidence intervals and the 2017-2018 Bayesian confidence intervals, respectively. The correlation between $\ln(\hat{\theta}_1)$ and $\ln(\hat{\theta}_2)$ is estimated using generalized correlations, which are described in detail in the next section.

To calculate the p value for testing the null hypothesis of no difference ($lor = 0$) between the 2008-2009 and 2017-2018 state estimates, it is assumed that the posterior distribution of lor is normal with $mean = \hat{l}or_{sa}$ and $variance = v(\hat{l}or_{sa})$. With the null value of ($lor = 0$), the Bayes p value or significance level for the null hypothesis of no difference is

$$p \text{ value} = 2 * P[Z \geq \text{abs}(z)], \text{ where } Z \text{ is a standard normal random variate, } z = \frac{\hat{l}or_{sa}}{\sqrt{v(\hat{l}or_{sa})}}, \text{ and}$$

$\text{abs}(z)$ denotes the absolute value of z . This Bayesian significance level (or p value) for the null value of lor , say lor_0 , is defined following Rubin² as the posterior probability for the collection of the lor values that are less likely or have smaller posterior density $d(lor)$ than the null (no change) value lor_0 . That is, $p \text{ value}(lor_0) = \text{probability}[d(lor) \leq d(lor_0)]$. With the posterior distribution of lor approximately normal, $p \text{ value}(lor_0)$ is given by the above expression.

Estimating Generalized Correlations

The correlation between $\ln(\hat{\theta}_1)$ and $\ln(\hat{\theta}_2)$ for each substance use outcome measure by state by age group combination was estimated by taking the average of seven correlations for each outcome measure by state by age group, as follows:

- 2002-2003 versus 2007-2008,
- 2002-2003 versus 2008-2009,
- two sets of 2002-2003 versus 2009-2010,³

² See the following reference: Rubin, D. B. (1987). *Multiple imputation for nonresponse in surveys* (Wiley Series in Probability and Mathematical Statistics: Applied Probability and Statistics). New York, NY: John Wiley & Sons.

³ Correlations were available for 2002-2003 versus 2009-2010 for NSDUH data that included falsified cases, as well as 2009-2010 data excluding falsified cases. For more details on falsification and the revision of 2006 to 2010 data, see Section A.7 of the "2010-2011 National Survey on Drug Use and Health: Guide to State Tables and Summary of Small Area Estimation Methodology" at <https://www.samhsa.gov/data/>. Note that the correlations for 2002-2003 versus 2007-2008 and 2002-2003 versus 2008-2009 were also based on falsified data.

- 2002-2003 versus 2010-2011,
- 2002-2003 versus 2012-2013, and
- 2002-2003 versus 2013-2014.

The average of these seven correlations is henceforth referred to as a "generalized correlation."

The generalized correlation between $\ln(\hat{\theta}_1)$ and $\ln(\hat{\theta}_2)$ for any mental illness (AMI), serious mental illness (SMI), and suicidal thoughts by state and age group was estimated by taking the average of six correlations for each outcome by state by age group, as follows:

- 2008-2009 versus 2010-2011,
- 2008-2009 versus 2011-2012,
- 2008-2009 versus 2012-2013,
- 2009-2010 versus 2011-2012,
- 2009-2010 versus 2012-2013, and
- 2010-2011 versus 2012-2013.

The generalized correlation between $\ln(\hat{\theta}_1)$ and $\ln(\hat{\theta}_2)$ for the fourth mental health measure—major depressive episode (MDE)—was estimated by taking the average of eight correlations for each outcome by age group by state, as follows:

- 2005-2006 versus 2007-2008,
- 2005-2006 versus 2008-2009,
- 2005-2006 versus 2009-2010,
- 2005-2006 versus 2010-2011,
- 2005-2006 versus 2011-2012,
- 2005-2006 versus 2012-2013,
- 2006-2007 versus 2009-2010, and
- 2008-2009 versus 2010-2011.

Each of these individual sets of correlations was produced by simultaneously fitting 4 years of NSDUH data separately for each outcome measure. For example, to produce correlations between the 2002-2003 and 2007-2008 state estimates for past month marijuana use, four age groups (12 to 17, 18 to 25, 26 to 34, and 35 or older) by two time periods (2002-2003 and 2007-2008), that is, eight subpopulation-specific models, were fitted each with its own set of fixed and random effects. In this case, the general covariance matrices for the state and within-state random effects were 8×8 matrices corresponding to the eight element (age group \times time period) vectors of random effects.

An unpublished study was conducted using 2002-2003 versus 2007-2008 data and 2002-2003 versus 2008-2009 data. When the actual (modeled) correlation was replaced by an average correlation of those 2 years, the p values of testing differences between estimates from both sets of comparisons were fairly similar. In most cases, they had the same conclusion of whether the test between 2002-2003 and 2007-2008 and the test between 2002-2003 and 2008-2009 was statistically significant or not. Only a few tests changed their significance⁴ depending on which correlation (actual or the average) was used. For all of these cases where significance changed, the p values were close to 0.05 (i.e., borderline cases). Given these results, it was decided, starting in 2014-2015 and going forward, that generalized correlations could be used to estimate long-term change.

⁴ A total of 61 out of 9,632 tests across all outcomes, states, and age groups changed their conclusion from significant to nonsignificant and vice versa.