

**National Survey on Drug Use and Health:
Comparison of 2008-2009 and 2016-2017
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 2016-2017 NSDUHs

State	12+ (2008- 2009)	12+ (2016- 2017)	12+ (P Value)	12-17 (2008- 2009)	12-17 (2016- 2017)	12-17 (P Value)	18-25 (2008- 2009)	18-25 (2016- 2017)	18-25 (P Value)	26+ (2008- 2009)	26+ (2016- 2017)	26+ (P Value)	18+ (2008- 2009)	18+ (2016- 2017)	18+ (P Value)
Total U.S.	10.88 ^a	14.50	0.000	13.37 ^a	12.19	0.000	29.31 ^a	33.91	0.000	7.38 ^a	11.61	0.000	10.61 ^a	14.73	0.000
Northeast	11.95 ^a	15.10	0.000	14.22 ^a	12.29	0.001	34.64 ^a	37.92	0.001	7.84 ^a	11.77	0.000	11.71 ^a	15.36	0.000
Midwest	10.36 ^a	13.88	0.000	12.84	12.74	0.820	28.53 ^a	33.63	0.000	6.90 ^a	10.74	0.000	10.08 ^a	14.00	0.000
South	9.59 ^a	12.25	0.000	12.06 ^a	10.99	0.014	25.38 ^a	30.28	0.000	6.62 ^a	9.49	0.000	9.32 ^a	12.38	0.000
West	12.55 ^a	18.17	0.000	15.26 ^a	13.58	0.010	31.83 ^a	36.86	0.000	8.69 ^a	15.62	0.000	12.25 ^a	18.64	0.000
Alabama	8.49 ^a	10.54	0.008	10.11	9.67	0.741	22.60 ^b	26.35	0.085	5.89 ^a	8.08	0.009	8.31 ^a	10.63	0.005
Alaska	16.25 ^a	22.73	0.000	15.89	16.51	0.735	35.51	39.44	0.147	12.67 ^a	20.74	0.000	16.29 ^a	23.43	0.000
Arizona	10.89 ^a	13.85	0.003	14.28 ^a	11.05	0.045	29.42	29.75	0.898	7.29 ^a	11.55	0.000	10.50 ^a	14.14	0.001
Arkansas	10.78 ^a	12.60	0.047	12.33	10.87	0.315	27.59	27.09	0.832	7.85 ^a	10.43	0.011	10.61 ^a	12.78	0.027
California	12.91 ^a	17.39	0.000	15.12 ^b	13.30	0.074	32.15 ^a	36.53	0.004	8.91 ^a	14.63	0.000	12.65 ^a	17.81	0.000
Colorado	15.12 ^a	24.86	0.000	18.55	16.97	0.424	38.59 ^a	48.81	0.000	10.79 ^a	21.88	0.000	14.76 ^a	25.65	0.000
Connecticut	12.56 ^a	16.22	0.000	15.91	14.73	0.519	37.10 ^a	45.21	0.004	8.25 ^a	11.68	0.003	12.20 ^a	16.37	0.000
Delaware	11.82 ^a	14.80	0.003	15.53	13.48	0.235	35.92	37.20	0.629	7.35 ^a	11.60	0.000	11.43 ^a	14.92	0.001
District of Columbia	14.34 ^a	26.35	0.000	14.59	14.60	0.995	33.16 ^a	53.20	0.000	10.11 ^a	21.90	0.000	14.33 ^a	27.01	0.000
Florida	10.12 ^a	13.69	0.000	12.94	13.46	0.620	26.58 ^a	35.77	0.000	7.38 ^a	10.69	0.000	9.85 ^a	13.71	0.000
Georgia	11.03	11.64	0.496	12.69 ^b	10.39	0.098	26.60	29.91	0.150	8.15	8.73	0.556	10.84	11.78	0.328
Hawaii	12.06	13.14	0.363	14.45 ^b	11.43	0.091	31.14	27.14	0.140	8.74 ^b	11.39	0.053	11.82	13.29	0.249
Idaho	10.66 ^a	12.62	0.030	13.44	12.00	0.362	28.30	28.40	0.968	7.15 ^a	10.09	0.003	10.32 ^a	12.70	0.015
Illinois	10.54 ^a	13.83	0.000	13.33	13.34	0.998	27.95 ^a	35.26	0.000	7.01 ^a	10.42	0.000	10.22 ^a	13.88	0.000
Indiana	10.28 ^a	14.42	0.000	12.90	13.31	0.798	27.22 ^a	33.87	0.008	7.08 ^a	11.16	0.000	9.99 ^a	14.54	0.000
Iowa	7.68 ^a	11.39	0.000	11.72	10.22	0.307	20.54 ^a	30.88	0.000	4.90 ^a	8.05	0.000	7.25 ^a	11.51	0.000
Kansas	9.39 ^a	11.93	0.003	12.12	11.76	0.815	25.63	28.87	0.180	6.00 ^a	8.93	0.002	9.09 ^a	11.95	0.002
Kentucky	8.83 ^a	12.86	0.000	10.91	11.94	0.496	24.66 ^b	28.74	0.087	6.10 ^a	10.39	0.000	8.61 ^a	12.95	0.000
Louisiana	8.52 ^a	12.23	0.000	9.76	9.92	0.905	23.23 ^a	28.98	0.014	5.51 ^a	9.76	0.000	8.37 ^a	12.48	0.000
Maine	13.55 ^a	21.94	0.000	14.20	15.81	0.364	39.68 ^a	45.67	0.030	9.85 ^a	19.36	0.000	13.49 ^a	22.46	0.000
Maryland	10.69 ^a	15.48	0.000	13.73	13.76	0.988	30.32 ^a	39.47	0.001	6.98 ^a	12.00	0.000	10.36 ^a	15.65	0.000
Massachusetts	14.57 ^a	19.96	0.000	16.44	16.39	0.978	40.19 ^b	44.93	0.094	9.81 ^a	16.03	0.000	14.39 ^a	20.28	0.000
Michigan	12.20 ^a	16.69	0.000	14.21	14.15	0.959	32.33 ^a	38.00	0.001	8.51 ^a	13.41	0.000	11.97 ^a	16.94	0.000
Minnesota	10.37 ^a	13.71	0.000	11.29	12.95	0.268	29.92	32.75	0.257	6.92 ^a	10.78	0.000	10.27 ^a	13.78	0.000
Mississippi	7.88 ^a	11.40	0.000	9.92	10.69	0.576	20.36 ^a	26.78	0.004	5.30 ^a	8.82	0.000	7.64 ^a	11.48	0.000
Missouri	9.73 ^a	13.75	0.000	11.54	11.81	0.857	27.19 ^b	31.87	0.064	6.62 ^a	11.03	0.000	9.53 ^a	13.95	0.000
Montana	12.23 ^a	19.53	0.000	15.50	15.91	0.815	34.96 ^a	40.51	0.033	8.04 ^a	16.57	0.000	11.90 ^a	19.86	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 2016-2017 NSDUHs (continued)

State	12+ (2008- 2009)	12+ (2016- 2017)	12+ (P Value)	12-17 (2008- 2009)	12-17 (2016- 2017)	12-17 (P Value)	18-25 (2008- 2009)	18-25 (2016- 2017)	18-25 (P Value)	26+ (2008- 2009)	26+ (2016- 2017)	26+ (P Value)	18+ (2008- 2009)	18+ (2016- 2017)	18+ (P Value)
Nebraska	9.25 ^a	11.51	0.005	10.87	12.04	0.433	24.63 ^a	30.55	0.013	6.12 ^a	8.06	0.027	9.07 ^a	11.46	0.006
Nevada	11.09 ^a	16.82	0.000	16.45	14.37	0.244	28.98 ^a	35.81	0.011	7.74 ^a	14.34	0.000	10.49 ^a	17.06	0.000
New Hampshire	14.87 ^a	18.62	0.002	16.56	15.44	0.537	41.83	43.17	0.637	10.55 ^a	15.15	0.001	14.69 ^a	18.90	0.002
New Jersey	9.19 ^a	12.04	0.000	11.63	10.28	0.337	30.00 ^a	35.36	0.033	5.67 ^a	8.77	0.001	8.93 ^a	12.21	0.000
New Mexico	10.95 ^a	17.51	0.000	16.83	15.62	0.516	29.23	33.63	0.104	6.82 ^a	15.09	0.000	10.30 ^a	17.71	0.000
New York	12.82 ^a	14.50	0.008	14.87 ^a	11.88	0.004	36.36	36.10	0.878	8.34 ^a	11.26	0.000	12.61 ^a	14.74	0.002
North Carolina	10.46 ^b	12.06	0.051	13.41 ^a	10.48	0.029	28.35	29.70	0.544	7.20 ^a	9.47	0.015	10.14 ^a	12.23	0.019
North Dakota	8.29 ^a	10.95	0.001	9.42	10.27	0.535	23.06	24.99	0.416	4.85 ^a	8.13	0.000	8.18 ^a	11.02	0.001
Ohio	10.08 ^a	13.76	0.000	12.97	12.17	0.418	29.54 ^a	34.53	0.001	6.52 ^a	10.65	0.000	9.77 ^a	13.92	0.000
Oklahoma	10.19 ^a	12.09	0.040	12.69	11.31	0.389	25.06	29.15	0.103	7.16 ^a	9.26	0.038	9.91 ^a	12.18	0.022
Oregon	14.41 ^a	26.51	0.000	18.34	17.01	0.485	37.33 ^a	47.57	0.000	10.40 ^a	24.36	0.000	14.01 ^a	27.38	0.000
Pennsylvania	10.04 ^a	13.21	0.000	12.87 ^a	10.36	0.019	28.78 ^a	33.74	0.003	6.62 ^a	10.34	0.000	9.75 ^a	13.47	0.000
Rhode Island	14.34 ^a	20.76	0.000	16.31	15.27	0.572	39.48	43.67	0.159	9.39 ^a	17.21	0.000	14.14 ^a	21.24	0.000
South Carolina	9.36 ^a	11.09	0.045	11.75	10.57	0.406	25.58	28.27	0.250	6.40 ^a	8.48	0.030	9.10 ^a	11.14	0.027
South Dakota	8.96 ^a	12.35	0.000	12.05	12.51	0.774	25.67	29.11	0.148	5.55 ^a	9.48	0.000	8.62 ^a	12.33	0.000
Tennessee	9.61 ^a	13.38	0.000	10.52	11.68	0.407	26.28 ^a	32.11	0.015	6.95 ^a	10.61	0.000	9.52 ^a	13.55	0.000
Texas	8.31 ^a	10.55	0.000	11.24 ^b	9.61	0.073	22.03 ^a	26.19	0.002	5.29 ^a	7.88	0.000	7.95 ^a	10.67	0.000
Utah	7.18 ^a	10.40	0.000	9.73	9.20	0.699	17.70 ^a	23.74	0.009	4.13 ^a	7.64	0.000	6.83 ^a	10.58	0.000
Vermont	15.95 ^a	23.84	0.000	16.67	17.88	0.540	45.25	50.08	0.101	11.09 ^a	19.86	0.000	15.88 ^a	24.34	0.000
Virginia	9.75 ^a	11.78	0.011	13.80 ^a	10.35	0.014	27.03 ^b	30.99	0.076	6.32 ^a	8.87	0.004	9.33 ^a	11.92	0.003
Washington	12.81 ^a	22.49	0.000	15.24	14.97	0.877	34.11 ^a	42.12	0.003	9.08 ^a	20.30	0.000	12.55 ^a	23.21	0.000
West Virginia	9.60 ^a	12.91	0.000	12.05	10.70	0.354	26.63	28.80	0.379	6.88 ^a	10.81	0.000	9.37 ^a	13.10	0.000
Wisconsin	10.65 ^a	12.70	0.023	13.71	12.61	0.481	31.13	30.13	0.691	6.82 ^a	9.84	0.003	10.33 ^a	12.71	0.013
Wyoming	9.88 ^a	12.15	0.012	14.19	11.75	0.145	27.24	29.33	0.401	6.27 ^a	9.46	0.001	9.43 ^a	12.19	0.004

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 2016-2017 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 2016-2017 population percentages is statistically significant at the 0.05 level.

^b Difference between the 2008-2009 and 2016-2017 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, 2016, and 2017 (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 2016-2017 NSDUHs

State	12+ (2008- 2009)	12+ (2016- 2017)	12+ (P Value)	12-17 (2008- 2009)	12-17 (2016- 2017)	12-17 (P Value)	18-25 (2008- 2009)	18-25 (2016- 2017)	18-25 (P Value)	26+ (2008- 2009)	26+ (2016- 2017)	26+ (P Value)	18+ (2008- 2009)	18+ (2016- 2017)	18+ (P Value)
Total U.S.	6.40 ^a	9.23	0.000	7.03 ^a	6.46	0.020	17.42 ^a	21.45	0.000	4.42 ^a	7.56	0.000	6.33 ^a	9.51	0.000
Northeast	7.14 ^a	9.83	0.000	7.94 ^a	6.76	0.005	21.45 ^a	24.86	0.000	4.63 ^a	7.77	0.000	7.06 ^a	10.12	0.000
Midwest	6.07 ^a	8.76	0.000	7.03 ^b	6.40	0.057	16.57 ^a	20.83	0.000	4.14 ^a	7.04	0.000	5.97 ^a	9.00	0.000
South	5.47 ^a	7.47	0.000	6.06	5.78	0.360	15.21 ^a	18.44	0.000	3.76 ^a	5.91	0.000	5.41 ^a	7.65	0.000
West	7.57 ^a	11.98	0.000	7.86	7.42	0.357	18.43 ^a	24.18	0.000	5.56 ^a	10.51	0.000	7.54 ^a	12.45	0.000
Alabama	5.04 ^a	6.37	0.021	5.70	5.26	0.622	14.49	16.48	0.279	3.35 ^a	4.86	0.018	4.97 ^a	6.48	0.014
Alaska	11.52 ^a	15.81	0.001	9.14	8.84	0.820	25.16	26.27	0.665	9.30 ^a	14.97	0.000	11.81 ^a	16.59	0.000
Arizona	6.70 ^a	8.38	0.041	7.28	6.31	0.359	17.08	19.09	0.342	4.86 ^a	6.85	0.036	6.63 ^a	8.59	0.028
Arkansas	6.11 ^a	8.19	0.003	6.73	5.81	0.344	16.16	15.96	0.916	4.40 ^a	7.21	0.001	6.04 ^a	8.44	0.002
California	7.67 ^a	11.33	0.000	7.70	6.93	0.282	18.67 ^a	24.07	0.000	5.57 ^a	9.70	0.000	7.67 ^a	11.78	0.000
Colorado	9.77 ^a	16.43	0.000	10.17	9.02	0.399	24.18 ^a	31.74	0.004	7.31 ^a	14.81	0.000	9.72 ^a	17.18	0.000
Connecticut	7.26 ^a	10.59	0.000	8.35	7.91	0.728	22.56 ^a	30.35	0.004	4.70 ^a	7.69	0.002	7.14 ^a	10.86	0.000
Delaware	6.97 ^a	9.95	0.000	7.54	7.45	0.937	22.67	23.73	0.663	4.29 ^a	8.17	0.000	6.91 ^a	10.18	0.000
District of Columbia	8.46 ^a	17.17	0.000	7.50	8.26	0.549	19.59 ^a	34.85	0.000	6.07 ^a	14.32	0.000	8.54 ^a	17.67	0.000
Florida	5.80 ^a	8.65	0.000	6.31	7.48	0.102	15.21 ^a	22.39	0.000	4.35 ^a	6.88	0.000	5.75 ^a	8.75	0.000
Georgia	6.06	6.74	0.261	5.50	5.39	0.889	15.87	18.38	0.159	4.46	4.95	0.471	6.12	6.89	0.243
Hawaii	8.46	8.17	0.763	7.72	6.54	0.344	19.15	17.45	0.456	6.84	7.06	0.848	8.54	8.31	0.832
Idaho	5.89 ^a	7.62	0.012	7.50	6.34	0.270	14.13	16.07	0.301	4.21 ^a	6.40	0.006	5.69 ^a	7.78	0.005
Illinois	5.91 ^a	8.81	0.000	7.29	6.89	0.603	16.23 ^a	23.51	0.000	3.86 ^a	6.66	0.000	5.76 ^a	9.01	0.000
Indiana	6.08 ^a	9.29	0.000	7.24	6.51	0.478	16.48 ^a	20.70	0.045	4.17 ^a	7.65	0.000	5.95 ^a	9.59	0.000
Iowa	4.48 ^a	6.65	0.000	6.88 ^b	5.11	0.067	11.62 ^a	17.29	0.002	2.92 ^a	4.93	0.001	4.23 ^a	6.80	0.000
Kansas	5.02 ^a	6.62	0.013	5.97	5.16	0.383	13.04	16.04	0.102	3.40 ^a	5.12	0.018	4.91 ^a	6.78	0.007
Kentucky	4.81 ^a	7.77	0.000	5.27	6.01	0.441	14.25 ^b	17.38	0.099	3.27 ^a	6.41	0.000	4.76 ^a	7.95	0.000
Louisiana	5.14 ^a	7.60	0.000	4.82	5.67	0.357	15.19 ^b	18.80	0.062	3.26 ^a	5.99	0.000	5.18 ^a	7.80	0.000
Maine	9.81 ^a	15.81	0.000	8.43	9.89	0.283	26.13 ^a	34.38	0.002	7.69 ^a	13.89	0.000	9.94 ^a	16.31	0.000
Maryland	5.66 ^a	10.68	0.000	7.01	7.13	0.919	17.03 ^a	26.24	0.000	3.56 ^a	8.71	0.000	5.51 ^a	11.04	0.000
Massachusetts	8.74 ^a	13.38	0.000	9.09	8.91	0.885	24.84 ^a	30.27	0.034	5.84 ^a	10.94	0.000	8.70 ^a	13.78	0.000
Michigan	7.52 ^a	11.61	0.000	7.88	7.73	0.843	18.99 ^a	24.24	0.000	5.52 ^a	9.95	0.000	7.48 ^a	12.00	0.000
Minnesota	5.98 ^a	7.71	0.012	5.58	5.81	0.805	17.10	19.12	0.321	4.13 ^a	6.13	0.012	6.02 ^a	7.91	0.012
Mississippi	4.54 ^a	6.96	0.000	5.02	5.05	0.981	11.72 ^a	15.79	0.022	3.15 ^a	5.67	0.000	4.48 ^a	7.17	0.000
Missouri	5.94 ^a	8.42	0.001	5.74	5.80	0.950	16.91	18.57	0.424	4.15 ^a	7.08	0.001	5.96 ^a	8.68	0.001
Montana	8.12 ^a	13.01	0.000	8.78	8.80	0.987	21.99	25.13	0.171	5.72 ^a	11.52	0.000	8.05 ^a	13.40	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 2016-2017 NSDUHs (continued)

State	12+ (2008- 2009)	12+ (2016- 2017)	12+ (P Value)	12-17 (2008- 2009)	12-17 (2016- 2017)	12-17 (P Value)	18-25 (2008- 2009)	18-25 (2016- 2017)	18-25 (P Value)	26+ (2008- 2009)	26+ (2016- 2017)	26+ (P Value)	18+ (2008- 2009)	18+ (2016- 2017)	18+ (P Value)
Nebraska	5.36 ^a	7.70	0.000	6.09	6.00	0.926	14.70 ^a	18.76	0.043	3.50 ^a	5.96	0.001	5.28 ^a	7.89	0.000
Nevada	7.00 ^a	11.81	0.000	8.96	8.82	0.910	18.34 ^a	25.86	0.001	5.06 ^a	10.11	0.000	6.78 ^a	12.11	0.000
New Hampshire	9.62 ^a	12.90	0.002	9.66	8.64	0.427	27.28	28.93	0.522	6.91 ^a	10.86	0.001	9.61 ^a	13.28	0.001
New Jersey	5.04 ^a	7.15	0.000	6.16	5.16	0.267	17.42 ^a	22.34	0.018	2.99 ^a	5.12	0.002	4.92 ^a	7.35	0.000
New Mexico	6.54 ^a	11.96	0.000	9.25	9.74	0.724	15.74 ^a	24.39	0.000	4.49 ^a	10.19	0.000	6.24 ^a	12.20	0.000
New York	7.73 ^a	9.47	0.001	8.50 ^a	6.75	0.019	23.09	23.35	0.856	4.87 ^a	7.50	0.000	7.65 ^a	9.72	0.000
North Carolina	6.30 ^a	7.92	0.016	7.19	6.04	0.216	16.85	19.04	0.239	4.49 ^a	6.40	0.015	6.21 ^a	8.12	0.009
North Dakota	4.67 ^a	6.44	0.005	5.06	4.99	0.935	10.65 ^a	14.50	0.028	3.30 ^a	4.93	0.021	4.64 ^a	6.57	0.004
Ohio	5.96 ^a	8.58	0.000	7.63 ^b	6.33	0.070	17.26 ^a	21.27	0.004	3.89 ^a	6.83	0.000	5.77 ^a	8.81	0.000
Oklahoma	5.60 ^b	6.90	0.067	6.23	5.38	0.395	14.18	16.80	0.186	3.96 ^b	5.39	0.072	5.53 ^a	7.06	0.044
Oregon	9.29 ^a	19.23	0.000	8.66	10.35	0.208	23.87 ^a	33.15	0.000	7.11 ^a	18.07	0.000	9.36 ^a	20.04	0.000
Pennsylvania	5.81 ^a	8.23	0.000	7.19 ^a	5.59	0.024	17.08 ^a	21.38	0.002	3.80 ^a	6.48	0.000	5.67 ^a	8.47	0.000
Rhode Island	10.04 ^a	15.75	0.000	9.09	9.49	0.771	27.14 ^b	31.86	0.086	6.94 ^a	13.51	0.000	10.13 ^a	16.30	0.000
South Carolina	5.91	6.66	0.259	5.55	5.47	0.935	16.88	18.38	0.445	4.16	4.97	0.279	5.95	6.77	0.246
South Dakota	5.14 ^a	7.13	0.003	6.61	5.94	0.521	13.55 ^a	18.25	0.014	3.44 ^a	5.40	0.010	4.98 ^a	7.26	0.002
Tennessee	5.42 ^a	8.00	0.000	5.19	5.75	0.529	16.64	19.49	0.154	3.72 ^a	6.44	0.000	5.44 ^a	8.23	0.000
Texas	4.74 ^a	5.98	0.001	6.11 ^a	4.86	0.042	13.45	14.63	0.293	2.91 ^a	4.59	0.000	4.58 ^a	6.11	0.000
Utah	3.60 ^a	6.25	0.000	4.78	4.71	0.930	8.21 ^a	14.71	0.000	2.27 ^a	4.63	0.000	3.44 ^a	6.47	0.000
Vermont	10.85 ^a	18.64	0.000	9.73	10.75	0.488	30.56 ^a	38.80	0.004	7.75 ^a	15.91	0.000	10.96 ^a	19.30	0.000
Virginia	5.33 ^a	6.96	0.007	6.33	5.48	0.363	15.70	18.47	0.121	3.45 ^a	5.28	0.006	5.23 ^a	7.10	0.003
Washington	7.21 ^a	15.30	0.000	7.74	8.96	0.321	17.19 ^a	26.48	0.000	5.53 ^a	14.28	0.000	7.15 ^a	15.90	0.000
West Virginia	5.50 ^a	7.59	0.002	5.74	5.45	0.746	17.46	16.94	0.796	3.74 ^a	6.44	0.000	5.47 ^a	7.78	0.001
Wisconsin	6.19 ^a	7.89	0.016	7.20	5.91	0.214	17.49	18.82	0.496	4.16 ^a	6.33	0.007	6.09 ^a	8.09	0.008
Wyoming	5.42 ^a	7.10	0.011	7.55 ^b	5.76	0.091	15.50	16.50	0.611	3.37 ^a	5.77	0.002	5.19 ^a	7.24	0.004

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 2016-2017 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 2016-2017 population percentages is statistically significant at the 0.05 level.

^b Difference between the 2008-2009 and 2016-2017 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, 2016, and 2017 (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 2016-2017 NSDUHs

State	12+ (2008- 2009)	12+ (2016- 2017)	12+ (P Value)	12-17 (2008- 2009)	12-17 (2016- 2017)	12-17 (P Value)	18-25 (2008- 2009)	18-25 (2016- 2017)	18-25 (P Value)	26+ (2008- 2009)	26+ (2016- 2017)	26+ (P Value)	18+ (2008- 2009)	18+ (2016- 2017)	18+ (P Value)
Total U.S.	1.75 ^a	2.03	0.000	5.74 ^a	5.22	0.001	7.09 ^a	7.98	0.002	0.13 ^a	0.45	0.000	1.07 ^a	1.48	0.000
Northeast	1.80 ^a	2.17	0.000	5.92 ^a	5.34	0.032	7.96 ^a	9.06	0.023	0.13 ^a	0.53	0.000	1.12 ^a	1.65	0.000
Midwest	1.79 ^a	2.21	0.000	5.57	5.51	0.783	7.41 ^a	8.74	0.000	0.12 ^a	0.46	0.000	1.12 ^a	1.62	0.000
South	1.56 ^a	1.70	0.019	5.22 ^a	4.75	0.017	6.34	6.59	0.398	0.12 ^a	0.35	0.000	0.95 ^a	1.20	0.000
West	2.00 ^a	2.33	0.001	6.57 ^a	5.66	0.003	7.38 ^a	8.89	0.002	0.14 ^a	0.57	0.000	1.18 ^a	1.73	0.000
Alabama	1.38	1.55	0.257	4.47	3.91	0.357	5.53	6.30	0.374	0.12 ^a	0.35	0.000	0.87 ^a	1.18	0.027
Alaska	2.30 ^a	3.22	0.002	6.35	7.09	0.394	7.33	8.96	0.210	0.17 ^a	1.05	0.000	1.34 ^a	2.31	0.000
Arizona	1.72	1.87	0.447	6.10 ^a	4.32	0.014	6.58	6.83	0.816	0.12 ^a	0.53	0.000	0.95 ^a	1.43	0.004
Arkansas	1.56	1.60	0.778	5.15	4.61	0.401	6.99	5.62	0.155	0.12 ^a	0.33	0.000	0.95	1.10	0.277
California	2.06	2.12	0.606	6.66 ^a	5.60	0.021	7.39	8.43	0.141	0.14 ^a	0.45	0.000	1.23 ^a	1.54	0.012
Colorado	2.45 ^a	3.99	0.000	8.11	7.89	0.825	9.23 ^a	15.56	0.001	0.17 ^a	1.09	0.000	1.38 ^a	3.14	0.000
Connecticut	2.14 ^a	2.72	0.017	7.09	6.65	0.611	8.98	10.92	0.169	0.14 ^a	0.70	0.000	1.23 ^a	1.99	0.000
Delaware	2.13	2.05	0.705	6.67	5.66	0.222	9.55	8.22	0.302	0.14 ^a	0.49	0.000	1.32	1.46	0.446
District of Columbia	2.33 ^a	3.99	0.000	7.25	7.35	0.918	8.38 ^a	14.57	0.000	0.24 ^a	1.36	0.000	1.68 ^a	3.54	0.000
Florida	1.39 ^a	1.69	0.004	5.35	5.70	0.428	6.22 ^a	7.73	0.027	0.10 ^a	0.37	0.000	0.83 ^a	1.15	0.001
Georgia	1.87	1.67	0.241	5.46	4.47	0.116	6.90	6.33	0.521	0.17 ^a	0.33	0.007	1.17	1.18	0.929
Hawaii	1.71	1.93	0.303	6.42	5.87	0.545	7.57	8.87	0.325	0.11 ^a	0.44	0.005	1.01 ^b	1.36	0.062
Idaho	1.86	2.01	0.457	5.50	4.68	0.243	7.18	7.18	0.998	0.13 ^a	0.42	0.000	1.14 ^b	1.46	0.069
Illinois	1.74 ^a	2.10	0.005	5.65	5.84	0.705	6.85 ^a	8.45	0.031	0.12 ^a	0.41	0.000	1.07 ^a	1.47	0.001
Indiana	1.76 ^a	2.43	0.001	5.81	6.03	0.783	7.37	8.83	0.208	0.11 ^a	0.48	0.000	1.05 ^a	1.73	0.000
Iowa	1.55 ^a	1.92	0.044	5.34 ^a	4.05	0.047	5.97 ^a	8.43	0.016	0.10 ^a	0.40	0.000	0.95 ^a	1.56	0.000
Kansas	1.72 ^b	2.06	0.088	5.65	4.98	0.356	6.85	7.63	0.464	0.10 ^a	0.49	0.000	1.06 ^a	1.54	0.006
Kentucky	1.48 ^a	1.85	0.032	5.46	5.16	0.675	6.09	6.74	0.485	0.14 ^a	0.38	0.000	0.86 ^a	1.29	0.002
Louisiana	1.33	1.58	0.111	3.89	4.53	0.286	5.53	5.81	0.753	0.12 ^a	0.33	0.000	0.91	1.08	0.206
Maine	1.73 ^a	2.53	0.000	5.43	6.24	0.278	8.97	10.62	0.250	0.14 ^a	0.70	0.000	1.09 ^a	1.87	0.000
Maryland	1.81 ^b	2.15	0.100	5.61	5.88	0.734	8.20	8.99	0.537	0.12 ^a	0.51	0.000	1.17 ^b	1.52	0.058
Massachusetts	2.27 ^a	3.42	0.000	7.13	7.88	0.411	9.69 ^a	13.10	0.044	0.16 ^a	0.87	0.000	1.42 ^a	2.60	0.000
Michigan	2.10 ^a	2.46	0.020	5.97	6.02	0.926	8.72	8.91	0.826	0.13 ^a	0.58	0.000	1.33 ^a	1.80	0.001
Minnesota	1.77 ^a	2.45	0.001	4.85	5.67	0.246	7.89 ^b	10.12	0.071	0.12 ^a	0.52	0.000	1.20 ^a	1.85	0.001
Mississippi	1.34 ^a	1.76	0.011	4.09	4.84	0.237	5.22 ^b	6.83	0.072	0.11 ^a	0.27	0.002	0.88 ^a	1.24	0.015
Missouri	1.64 ^a	2.21	0.005	5.11	4.93	0.783	7.12	8.95	0.116	0.12 ^a	0.47	0.000	1.02 ^a	1.72	0.000
Montana	2.04 ^a	2.78	0.002	6.67	6.53	0.869	9.79	10.95	0.424	0.13 ^a	0.67	0.000	1.25 ^a	2.09	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 2016-2017 NSDUHs (continued)

State	12+ (2008- 2009)	12+ (2016- 2017)	12+ (P Value)	12-17 (2008- 2009)	12-17 (2016- 2017)	12-17 (P Value)	18-25 (2008- 2009)	18-25 (2016- 2017)	18-25 (P Value)	26+ (2008- 2009)	26+ (2016- 2017)	26+ (P Value)	18+ (2008- 2009)	18+ (2016- 2017)	18+ (P Value)
Nebraska	1.54 ^a	2.27	0.000	4.48	5.20	0.277	6.32 ^a	9.72	0.003	0.10 ^a	0.39	0.000	1.05 ^a	1.73	0.000
Nevada	1.85 ^b	2.21	0.087	7.16	6.31	0.318	6.55 ^b	8.52	0.092	0.15 ^a	0.55	0.000	0.91 ^a	1.50	0.000
New Hampshire	2.25 ^a	2.83	0.030	6.29	6.37	0.918	10.53	11.37	0.599	0.15 ^a	0.57	0.000	1.44 ^a	2.13	0.005
New Jersey	1.50 ^b	1.78	0.089	4.89	4.23	0.289	7.69	8.54	0.449	0.10 ^a	0.39	0.000	0.96 ^a	1.38	0.006
New Mexico	2.06 ^a	2.80	0.004	7.84	7.54	0.764	8.01	9.54	0.268	0.12 ^a	0.72	0.000	1.09 ^a	1.90	0.000
New York	1.81	2.02	0.101	6.05 ^b	5.21	0.065	7.38	8.16	0.295	0.13 ^a	0.51	0.000	1.12 ^a	1.53	0.001
North Carolina	1.69	1.81	0.447	6.24 ^a	4.93	0.050	6.67	6.90	0.805	0.13 ^a	0.41	0.000	0.96 ^a	1.30	0.017
North Dakota	1.56 ^b	1.89	0.083	4.28	3.79	0.410	6.59	7.46	0.416	0.08 ^a	0.42	0.000	1.15 ^a	1.61	0.018
Ohio	1.78 ^a	2.10	0.014	5.59	5.37	0.620	7.47 ^b	8.80	0.085	0.13 ^a	0.39	0.000	1.10 ^a	1.51	0.001
Oklahoma	1.47 ^a	1.88	0.025	4.87	4.66	0.771	5.77	6.64	0.363	0.11 ^a	0.47	0.000	0.91 ^a	1.37	0.003
Oregon	2.42 ^a	3.18	0.010	7.87	6.85	0.265	9.63 ^b	12.36	0.080	0.19 ^a	0.87	0.000	1.39 ^a	2.45	0.000
Pennsylvania	1.61 ^b	1.83	0.092	5.37 ^a	4.39	0.033	7.47	7.99	0.528	0.10 ^a	0.41	0.000	1.01 ^a	1.40	0.001
Rhode Island	2.27 ^b	2.79	0.054	7.20	6.51	0.428	9.16	10.10	0.525	0.16 ^a	0.81	0.000	1.40 ^a	2.17	0.002
South Carolina	1.46	1.64	0.275	4.77	4.55	0.729	6.41	6.85	0.650	0.12 ^a	0.35	0.000	0.93 ^b	1.18	0.071
South Dakota	1.59	1.84	0.167	5.17	4.65	0.451	6.70	7.02	0.752	0.09 ^a	0.42	0.000	1.01 ^a	1.37	0.022
Tennessee	1.26 ^a	1.68	0.006	4.11	4.77	0.268	6.00	6.37	0.690	0.12 ^a	0.31	0.000	0.81 ^a	1.16	0.012
Texas	1.59	1.54	0.702	5.20 ^a	4.21	0.016	5.86	5.56	0.598	0.11 ^a	0.27	0.001	0.95	1.06	0.248
Utah	1.29 ^a	1.70	0.029	3.94	3.19	0.197	3.64 ^a	6.10	0.004	0.10 ^a	0.36	0.001	0.82 ^a	1.40	0.001
Vermont	2.47 ^a	3.35	0.005	7.37	7.25	0.894	11.93	12.14	0.908	0.15 ^a	0.88	0.000	1.56 ^a	2.60	0.000
Virginia	1.90	1.82	0.647	5.98 ^a	4.52	0.025	7.59	7.06	0.582	0.13 ^a	0.41	0.000	1.20	1.35	0.341
Washington	1.94 ^a	2.91	0.000	5.68	5.81	0.870	8.53	10.30	0.200	0.16 ^a	1.02	0.000	1.24 ^a	2.36	0.000
West Virginia	1.27	1.52	0.101	5.33	4.61	0.284	5.76	5.95	0.836	0.12 ^a	0.33	0.000	0.72 ^a	1.05	0.010
Wisconsin	1.92	2.16	0.241	6.16	5.56	0.433	8.39	8.34	0.964	0.12 ^a	0.50	0.000	1.17 ^a	1.57	0.032
Wyoming	1.92	1.87	0.800	6.47 ^a	4.45	0.006	7.70	7.28	0.708	0.11 ^a	0.50	0.000	1.15	1.42	0.127

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 2016-2017 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 (%)* = $100 * \{[X_1 \div (0.5 * X_1 + X_2)] \div 2\}$, where X_1 is the number of marijuana initiates in the past 24 months and X_2 is the number of individuals who never used marijuana (with the at-risk population defined as $0.5 * X_1 + X_2$). Both of the computation components, X_1 and X_2 , 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 "2016-2017 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 2016-2017 population percentages is statistically significant at the 0.05 level.

^b Difference between the 2008-2009 and 2016-2017 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, 2016, and 2017 (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 2016-2017 NSDUHs

State	12+ (2008- 2009)	12+ (2016- 2017)	12+ (P Value)	12-17 (2008- 2009)	12-17 (2016- 2017)	12-17 (P Value)	18-25 (2008- 2009)	18-25 (2016- 2017)	18-25 (P Value)	26+ (2008- 2009)	26+ (2016- 2017)	26+ (P Value)	18+ (2008- 2009)	18+ (2016- 2017)	18+ (P Value)
Total U.S.	2.01	2.03	0.770	1.11 ^a	0.53	0.000	5.46 ^b	5.88	0.092	1.53	1.59	0.543	2.11	2.19	0.373
Northeast	2.38	2.34	0.793	1.11 ^a	0.53	0.000	6.68	6.69	0.998	1.81	1.85	0.846	2.52	2.51	0.982
Midwest	1.82	1.77	0.660	1.06 ^a	0.51	0.000	5.12	5.22	0.767	1.34	1.34	0.998	1.90	1.90	0.978
South	1.81	1.75	0.529	0.98 ^a	0.42	0.000	4.64	4.99	0.250	1.44	1.39	0.653	1.90	1.89	0.873
West	2.21 ^b	2.49	0.077	1.35 ^a	0.71	0.000	6.08 ^a	7.24	0.018	1.62	1.92	0.116	2.31 ^a	2.67	0.038
Alabama	1.38	1.62	0.390	0.76 ^a	0.36	0.012	3.44	3.84	0.618	1.11	1.41	0.354	1.45	1.75	0.338
Alaska	2.99	2.32	0.175	1.45 ^a	0.71	0.012	7.38	5.76	0.204	2.39	1.95	0.449	3.18	2.50	0.218
Arizona	2.33	2.11	0.562	1.38 ^a	0.66	0.006	6.91	5.85	0.409	1.68	1.67	0.977	2.44	2.27	0.678
Arkansas	1.43	1.48	0.859	0.89 ^a	0.51	0.046	3.52	3.75	0.769	1.16	1.23	0.835	1.49	1.58	0.764
California	2.12 ^a	2.71	0.015	1.39 ^a	0.69	0.002	5.57 ^a	7.99	0.002	1.56 ^b	2.05	0.074	2.20 ^a	2.91	0.008
Colorado	3.28	2.68	0.199	1.37 ^a	0.79	0.049	8.94	8.32	0.675	2.56	1.98	0.247	3.47	2.87	0.239
Connecticut	2.05 ^b	2.74	0.082	1.26 ^a	0.60	0.007	6.25	8.36	0.101	1.49	2.08	0.187	2.14 ^b	2.95	0.065
Delaware	2.36	2.02	0.370	0.91 ^a	0.37	0.002	6.40	6.20	0.865	1.87	1.58	0.492	2.52	2.18	0.423
District of Columbia	3.76	4.34	0.468	0.43 ^b	0.22	0.085	5.14	7.00	0.104	3.76	4.10	0.725	4.01	4.57	0.511
Florida	1.80	1.96	0.506	1.05 ^a	0.45	0.000	4.70 ^a	6.22	0.031	1.46	1.52	0.806	1.88	2.09	0.398
Georgia	1.51	1.74	0.446	0.81 ^a	0.34	0.001	3.93	4.45	0.518	1.20	1.46	0.438	1.60	1.89	0.371
Hawaii	1.76	1.88	0.751	1.25 ^b	0.58	0.052	4.39	5.22	0.444	1.40	1.55	0.712	1.81	1.99	0.650
Idaho	1.31	1.37	0.796	1.24 ^a	0.66	0.040	4.52	4.24	0.770	0.75	0.99	0.318	1.31	1.45	0.597
Illinois	1.91	1.94	0.888	0.99 ^a	0.48	0.001	4.64	5.84	0.103	1.53	1.49	0.860	2.01	2.09	0.757
Indiana	1.66	1.90	0.417	1.09 ^a	0.55	0.011	4.97	5.72	0.479	1.18	1.41	0.471	1.72	2.05	0.333
Iowa	1.11	1.43	0.153	1.11 ^a	0.55	0.016	3.64	4.53	0.319	0.66	0.99	0.177	1.11	1.52	0.102
Kansas	1.52	1.58	0.827	1.11 ^a	0.55	0.011	4.97	4.89	0.939	0.94	1.13	0.486	1.57	1.70	0.670
Kentucky	1.36	1.60	0.370	1.02 ^a	0.54	0.023	4.37	4.74	0.698	0.93	1.21	0.327	1.40	1.70	0.292
Louisiana	2.34 ^a	1.43	0.008	0.84 ^a	0.28	0.000	4.77	3.69	0.223	2.08 ^a	1.19	0.026	2.51 ^a	1.55	0.012
Maine	2.30	1.86	0.186	1.13 ^b	0.70	0.081	7.67	6.62	0.410	1.69	1.33	0.318	2.42	1.96	0.213
Maryland	1.57	2.11	0.133	0.87 ^a	0.35	0.002	4.03 ^a	6.20	0.036	1.24	1.69	0.279	1.64	2.29	0.116
Massachusetts	2.45	3.05	0.151	1.18 ^a	0.64	0.018	7.16	9.35	0.124	1.76	2.22	0.299	2.58	3.27	0.133
Michigan	2.00	1.70	0.182	1.05 ^a	0.44	0.000	5.74	4.75	0.167	1.49	1.33	0.538	2.11	1.82	0.258
Minnesota	1.77	1.70	0.826	1.12 ^a	0.57	0.012	5.14	4.79	0.727	1.27	1.35	0.806	1.84	1.82	0.961
Mississippi	1.36	1.29	0.793	0.63 ^a	0.24	0.007	3.15	2.90	0.730	1.14	1.15	0.971	1.45	1.41	0.888
Missouri	2.01	1.59	0.165	1.00 ^a	0.47	0.006	5.74	4.44	0.205	1.52	1.26	0.431	2.12	1.71	0.215
Montana	2.32	1.91	0.194	1.17	0.89	0.335	7.60	5.81	0.163	1.58	1.39	0.567	2.44	2.00	0.210

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 2016-2017 NSDUHs (continued)

State	12+ (2008- 2009)	12+ (2016- 2017)	12+ (P Value)	12-17 (2008- 2009)	12-17 (2016- 2017)	12-17 (P Value)	18-25 (2008- 2009)	18-25 (2016- 2017)	18-25 (P Value)	26+ (2008- 2009)	26+ (2016- 2017)	26+ (P Value)	18+ (2008- 2009)	18+ (2016- 2017)	18+ (P Value)
Nebraska	1.57	1.68	0.684	1.10 ^a	0.60	0.023	4.61	5.65	0.290	1.06	1.11	0.849	1.62	1.80	0.555
Nevada	2.34	2.33	0.989	1.50 ^a	0.62	0.001	6.72	5.83	0.454	1.79	2.02	0.591	2.43	2.50	0.859
New Hampshire	2.75	2.20	0.150	1.23	0.89	0.222	8.97	8.81	0.921	1.98 ^b	1.32	0.077	2.91	2.32	0.159
New Jersey	1.73	1.87	0.654	1.04 ^a	0.49	0.006	4.93	6.48	0.139	1.33	1.34	0.963	1.81	2.01	0.556
New Mexico	2.17	2.02	0.668	1.30 ^b	0.74	0.053	6.55	5.58	0.435	1.47	1.59	0.763	2.26	2.15	0.774
New York	2.66	2.46	0.466	1.09 ^a	0.44	0.000	7.31 ^b	5.79	0.051	2.02	2.13	0.723	2.83	2.65	0.551
North Carolina	2.10	1.86	0.449	0.93 ^a	0.40	0.002	4.90	5.17	0.765	1.79	1.51	0.429	2.22	2.01	0.542
North Dakota	1.22	1.51	0.247	1.05 ^b	0.61	0.097	3.78	4.68	0.351	0.68	0.96	0.248	1.24	1.60	0.200
Ohio	1.49	1.76	0.170	1.02 ^a	0.50	0.001	4.51	5.17	0.315	1.05	1.37	0.171	1.54	1.89	0.113
Oklahoma	1.50	1.70	0.463	1.14 ^a	0.48	0.002	4.70	5.39	0.505	0.97	1.22	0.366	1.54	1.83	0.336
Oregon	2.63	2.98	0.381	1.23	1.01	0.461	8.04	8.86	0.563	1.95	2.30	0.419	2.77	3.16	0.375
Pennsylvania	2.27	1.98	0.310	1.08 ^a	0.54	0.001	5.86	5.57	0.713	1.82	1.58	0.456	2.39	2.12	0.375
Rhode Island	3.89 ^a	2.66	0.022	1.28 ^a	0.70	0.028	9.39	7.68	0.273	3.17 ^a	1.97	0.039	4.15 ^a	2.84	0.025
South Carolina	2.75 ^b	1.95	0.057	0.83 ^a	0.38	0.010	4.97	5.95	0.341	2.62 ^a	1.50	0.020	2.95 ^b	2.10	0.068
South Dakota	1.17	1.14	0.864	0.95	0.56	0.114	3.91	3.45	0.587	0.71	0.82	0.627	1.20	1.20	0.999
Tennessee	1.57	1.87	0.306	0.93 ^a	0.50	0.018	4.31	5.26	0.317	1.23	1.49	0.422	1.64	2.01	0.256
Texas	1.89 ^a	1.47	0.032	1.16 ^a	0.46	0.000	5.09	4.42	0.303	1.40	1.08	0.151	1.98 ^b	1.59	0.073
Utah	1.43	1.71	0.293	1.16 ^b	0.69	0.076	4.14	4.67	0.579	0.80	1.23	0.122	1.47	1.85	0.205
Vermont	3.01	3.50	0.301	1.22	0.93	0.343	10.17	12.24	0.253	2.05	2.23	0.701	3.19	3.72	0.304
Virginia	1.75	1.93	0.567	1.02 ^a	0.43	0.001	4.95	5.26	0.732	1.30	1.57	0.444	1.83	2.08	0.474
Washington	2.08	2.33	0.477	1.20 ^b	0.70	0.051	6.24	6.52	0.813	1.51	1.87	0.377	2.17	2.49	0.423
West Virginia	2.51 ^a	1.65	0.010	1.05 ^b	0.61	0.051	7.65 ^a	5.07	0.031	1.93 ^b	1.26	0.060	2.65 ^a	1.75	0.013
Wisconsin	2.71 ^b	2.02	0.051	1.19 ^a	0.58	0.008	7.27	6.19	0.398	2.13 ^b	1.50	0.095	2.87 ^b	2.16	0.071
Wyoming	1.46	1.59	0.622	1.13	0.83	0.280	5.25	4.83	0.682	0.83	1.17	0.273	1.49	1.67	0.558

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 2016-2017 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 2016-2017 population percentages is statistically significant at the 0.05 level.

^b Difference between the 2008-2009 and 2016-2017 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, 2016, and 2017 (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 2016-2017 NSDUHs

State	12+ (2008- 2009)	12+ (2016- 2017)	12+ (P Value)	12-17 (2008- 2009)	12-17 (2016- 2017)	12-17 (P Value)	18-25 (2008- 2009)	18-25 (2016- 2017)	18-25 (P Value)	26+ (2008- 2009)	26+ (2016- 2017)	26+ (P Value)	18+ (2008- 2009)	18+ (2016- 2017)	18+ (P Value)
Total U.S.	51.74	51.21	0.156	14.79 ^a	9.54	0.000	61.45 ^a	56.74	0.000	54.80	55.22	0.362	55.78	55.43	0.389
Northeast	56.57	56.44	0.863	16.68 ^a	10.64	0.000	67.33 ^a	63.24	0.001	59.59	60.30	0.420	60.71	60.71	0.998
Midwest	54.26	54.36	0.876	15.24 ^a	10.09	0.000	65.07 ^a	60.78	0.000	57.42	58.62	0.123	58.55	58.92	0.604
South	47.74	47.13	0.323	13.75 ^a	9.05	0.000	57.62 ^a	52.87	0.000	50.43	50.79	0.624	51.47	51.07	0.571
West	51.78	50.99	0.289	14.56 ^a	9.08	0.000	59.40 ^a	54.43	0.000	55.40	55.43	0.975	56.01	55.29	0.379
Alabama	42.94	41.98	0.609	12.70 ^a	8.88	0.003	54.41	50.18	0.115	44.84	44.56	0.904	46.22	45.34	0.669
Alaska	54.52	51.61	0.122	14.22 ^a	10.10	0.005	60.50 ^b	55.68	0.085	59.37	56.35	0.196	59.54	56.25	0.113
Arizona	51.15	50.40	0.701	14.80 ^a	8.26	0.000	59.35 ^a	52.61	0.014	54.60	55.20	0.804	55.29	54.83	0.831
Arkansas	43.29 ^b	39.89	0.076	15.34 ^a	8.92	0.000	55.94 ^a	48.15	0.004	44.80	42.35	0.300	46.36	43.17	0.130
California	50.65	50.45	0.860	14.11 ^a	8.95	0.000	59.79 ^a	53.66	0.000	53.99	54.85	0.522	54.92	54.68	0.838
Colorado	62.22	59.48	0.130	20.22 ^a	9.75	0.000	69.51 ^a	62.66	0.009	66.11	64.79	0.552	66.60	64.49	0.287
Connecticut	59.32	60.21	0.655	18.56 ^a	11.42	0.000	67.86	67.03	0.753	63.08	64.73	0.498	63.73	65.05	0.544
Delaware	56.32 ^a	51.38	0.017	16.35 ^a	8.38	0.000	68.53 ^a	54.78	0.000	59.18	55.51	0.151	60.52 ^a	55.42	0.024
District of Columbia	61.55 ^a	66.79	0.005	15.63 ^a	8.42	0.000	71.82	69.71	0.416	63.53 ^a	70.17	0.004	65.04 ^a	70.08	0.011
Florida	51.41	51.80	0.752	15.30 ^a	9.86	0.000	56.91	56.43	0.789	54.58	55.30	0.629	54.88	55.44	0.677
Georgia	48.89 ^a	44.78	0.022	13.56 ^a	7.76	0.000	58.18 ^a	50.71	0.003	52.19	48.65	0.115	53.06 ^a	48.94	0.040
Hawaii	48.23	45.13	0.130	11.64 ^a	8.13	0.012	57.21	55.13	0.487	50.95	47.54	0.165	51.81	48.46	0.132
Idaho	45.71	46.47	0.682	12.91 ^a	9.07	0.004	52.50	49.44	0.260	49.19	51.25	0.376	49.68	50.99	0.524
Illinois	54.33	54.53	0.870	15.16 ^a	10.33	0.000	64.88 ^a	59.68	0.005	57.60	59.02	0.343	58.72	59.12	0.766
Indiana	48.06	49.89	0.337	14.41 ^a	9.21	0.000	57.94	59.83	0.491	50.82	53.32	0.284	51.85	54.29	0.243
Iowa	56.70	58.44	0.343	17.34 ^a	9.68	0.000	69.06 ^b	64.91	0.093	59.43 ^b	63.21	0.099	60.87	63.46	0.200
Kansas	53.92 ^b	57.20	0.085	15.93 ^a	10.27	0.000	66.34 ^a	59.53	0.009	56.66 ^a	62.94	0.008	58.18 ^a	62.42	0.042
Kentucky	38.74	39.80	0.581	12.21	10.25	0.159	50.64	49.27	0.610	40.10	41.74	0.483	41.52	42.79	0.542
Louisiana	48.24	50.12	0.312	15.26 ^a	10.19	0.001	61.67 ^a	54.27	0.005	50.16 ^b	54.34	0.070	52.02	54.33	0.258
Maine	55.07	56.16	0.600	14.57 ^a	11.24	0.025	65.34	64.29	0.680	58.08	59.37	0.606	58.97	59.96	0.660
Maryland	54.24	53.30	0.652	14.02 ^a	9.48	0.002	61.74	59.08	0.337	58.09	57.41	0.788	58.62	57.64	0.663
Massachusetts	61.54	61.36	0.922	16.89 ^a	12.72	0.016	72.39	70.51	0.450	64.83	64.91	0.972	65.97	65.73	0.906
Michigan	54.65	53.18	0.234	14.56 ^a	10.76	0.000	63.73 ^a	58.90	0.005	58.39	57.21	0.438	59.17	57.45	0.206
Minnesota	60.95	57.93	0.106	14.70 ^a	9.78	0.001	68.13	65.46	0.283	65.51	62.46	0.187	65.90	62.87	0.141
Mississippi	40.39	38.22	0.259	12.70 ^a	7.65	0.000	52.99 ^a	44.24	0.002	41.96	41.12	0.727	43.68	41.58	0.325
Missouri	50.15	50.93	0.693	13.92 ^a	10.80	0.031	61.01 ^b	55.78	0.057	52.95	54.87	0.429	54.09	55.00	0.676
Montana	59.07	57.53	0.445	21.39 ^a	12.82	0.000	69.07 ^b	64.38	0.059	61.95	61.26	0.779	62.97	61.69	0.558

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 2016-2017 NSDUHs (continued)

State	12+ (2008- 2009)	12+ (2016- 2017)	12+ (P Value)	12-17 (2008- 2009)	12-17 (2016- 2017)	12-17 (P Value)	18-25 (2008- 2009)	18-25 (2016- 2017)	18-25 (P Value)	26+ (2008- 2009)	26+ (2016- 2017)	26+ (P Value)	18+ (2008- 2009)	18+ (2016- 2017)	18+ (P Value)
Nebraska	53.59 ^a	58.34	0.012	13.81 ^a	10.21	0.011	64.98	62.94	0.434	56.67 ^a	63.73	0.003	57.99 ^a	63.60	0.007
Nevada	54.47 ^a	48.25	0.003	15.29 ^a	9.63	0.000	60.32 ^a	49.94	0.000	58.63 ^a	52.45	0.016	58.85 ^a	52.14	0.004
New Hampshire	63.98	63.12	0.632	17.83 ^a	11.30	0.000	74.97 ^a	69.33	0.025	67.91	67.56	0.871	68.85	67.80	0.590
New Jersey	54.18	53.13	0.598	15.17 ^a	10.87	0.003	64.96 ^a	59.91	0.046	57.37	56.99	0.877	58.39	57.37	0.643
New Mexico	47.59	48.98	0.469	15.62 ^a	10.32	0.001	57.11	53.37	0.172	50.05	53.04	0.209	51.15	53.09	0.355
New York	55.72	54.73	0.415	16.83 ^a	9.85	0.000	66.32 ^a	62.07	0.015	58.57	58.29	0.849	59.75	58.82	0.482
North Carolina	47.45 ^b	44.43	0.086	12.83 ^a	8.81	0.001	58.35 ^a	49.57	0.001	49.98	47.85	0.319	51.15	48.09	0.111
North Dakota	57.80	59.70	0.304	18.98 ^a	10.97	0.000	71.80 ^b	67.58	0.088	59.46 ^b	63.52	0.084	61.71	64.20	0.217
Ohio	51.67	51.06	0.630	14.99 ^a	9.13	0.000	65.37 ^a	58.68	0.000	54.08	54.80	0.643	55.67	55.33	0.806
Oklahoma	45.62	44.79	0.672	13.86 ^a	8.88	0.001	59.12 ^a	52.60	0.020	47.31	48.05	0.764	49.13	48.72	0.851
Oregon	59.77	58.49	0.500	17.75 ^a	10.54	0.000	66.69	62.70	0.113	63.58	62.88	0.758	64.00	62.86	0.580
Pennsylvania	55.06	56.42	0.290	16.73 ^a	10.06	0.000	66.31 ^a	60.30	0.002	57.81 ^b	60.79	0.055	59.01	60.73	0.219
Rhode Island	59.91	60.15	0.897	18.29 ^a	11.01	0.000	71.17	67.96	0.210	62.78	63.88	0.637	64.10	64.49	0.848
South Carolina	45.89	45.33	0.776	12.45 ^a	8.65	0.003	53.32	53.32	0.998	48.82	48.23	0.804	49.46	48.91	0.801
South Dakota	57.81	59.47	0.377	15.85 ^a	11.27	0.003	70.66 ^a	64.44	0.012	60.93	64.59	0.116	62.41	64.57	0.293
Tennessee	41.06	43.68	0.156	11.39 ^b	9.01	0.059	53.40	50.52	0.292	42.77 ^b	46.63	0.089	44.18	47.16	0.142
Texas	48.42	47.12	0.234	14.09 ^a	8.77	0.000	58.49 ^a	51.65	0.000	51.52	51.74	0.872	52.63	51.72	0.455
Utah	28.11	29.25	0.542	6.73	5.77	0.436	32.09	36.17	0.198	30.72	31.76	0.664	30.98	32.54	0.457
Vermont	60.28	62.09	0.365	18.40 ^a	13.62	0.006	73.56	70.91	0.288	62.87	65.34	0.313	64.37	66.16	0.408
Virginia	50.79	52.31	0.395	13.10 ^a	9.62	0.005	60.21	58.85	0.573	53.83	56.16	0.288	54.75	56.53	0.363
Washington	56.13	55.23	0.636	14.03 ^a	10.05	0.005	60.77	60.41	0.892	60.54	59.42	0.628	60.58	59.55	0.621
West Virginia	38.17	39.73	0.446	13.23 ^a	10.10	0.024	53.45	53.31	0.958	38.66	40.78	0.390	40.53	42.38	0.405
Wisconsin	61.78	61.60	0.923	18.62 ^a	10.73	0.000	71.81	68.43	0.155	65.42	66.42	0.666	66.34	66.71	0.859
Wyoming	54.21 ^a	49.88	0.033	17.06 ^a	9.68	0.000	62.33 ^b	57.76	0.089	57.41	53.37	0.106	58.15 ^b	53.97	0.060

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 2016-2017 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 2016-2017 population percentages is statistically significant at the 0.05 level.

^b Difference between the 2008-2009 and 2016-2017 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, 2016, and 2017 (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 2016-2017 NSDUHs*

State	Alcohol Use in Past Month (2008-2009)	Alcohol Use in Past Month (2016-2017)	Alcohol Use in Past Month (P Value)
Total U.S.	26.83 ^a	19.50	0.000
Northeast	30.69 ^a	22.91	0.000
Midwest	27.60 ^a	21.36	0.000
South	25.18 ^a	17.83	0.000
West	25.76 ^a	18.09	0.000
Alabama	23.65 ^a	18.36	0.001
Alaska	25.51 ^a	19.53	0.001
Arizona	24.59 ^a	17.63	0.000
Arkansas	23.06 ^a	15.57	0.000
California	25.24 ^a	17.90	0.000
Colorado	32.89 ^a	20.73	0.000
Connecticut	31.02 ^a	23.92	0.000
Delaware	32.60 ^a	17.47	0.000
District of Columbia	31.66 ^a	24.17	0.001
Florida	26.62 ^a	20.26	0.000
Georgia	24.21 ^a	15.65	0.000
Hawaii	23.87 ^a	16.73	0.000
Idaho	23.93 ^a	16.94	0.000
Illinois	28.38 ^a	20.67	0.000
Indiana	23.50 ^a	20.16	0.046
Iowa	29.93 ^a	21.72	0.000
Kansas	28.91 ^a	20.59	0.000
Kentucky	23.65 ^a	19.63	0.016
Louisiana	29.69 ^a	19.51	0.000
Maine	26.61	24.13	0.142
Maryland	26.66 ^a	19.12	0.000
Massachusetts	32.97	31.78	0.536
Michigan	26.72 ^a	22.47	0.000
Minnesota	27.61 ^a	22.63	0.003
Mississippi	24.28 ^a	13.92	0.000
Missouri	24.24 ^b	21.05	0.055
Montana	34.33 ^a	24.66	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 2016-2017 NSDUHs (continued)

State	Alcohol Use in Past Month (2008-2009)	Alcohol Use in Past Month (2016-2017)	Alcohol Use in Past Month (P Value)
Nebraska	26.45 ^a	20.72	0.001
Nevada	24.63 ^a	17.08	0.000
New Hampshire	34.84 ^a	25.45	0.000
New Jersey	27.22 ^a	20.97	0.000
New Mexico	25.80 ^a	19.04	0.000
New York	32.01 ^a	20.64	0.000
North Carolina	22.42 ^a	17.58	0.001
North Dakota	36.44 ^a	28.14	0.000
Ohio	28.41 ^a	20.14	0.000
Oklahoma	25.90 ^a	16.13	0.000
Oregon	31.36 ^a	20.83	0.000
Pennsylvania	29.02 ^a	20.92	0.000
Rhode Island	34.78 ^a	25.70	0.000
South Carolina	21.88 ^a	17.90	0.008
South Dakota	32.31 ^a	23.23	0.000
Tennessee	20.16 ^a	16.99	0.038
Texas	26.46 ^a	16.99	0.000
Utah	14.34	12.11	0.192
Vermont	36.53 ^a	28.12	0.000
Virginia	25.83 ^a	18.45	0.000
Washington	27.00 ^a	18.70	0.000
West Virginia	22.75	20.38	0.152
Wisconsin	30.83 ^a	23.26	0.000
Wyoming	30.54 ^a	21.56	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 2016-2017 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 2016-2017 population percentages is statistically significant at the 0.05 level.

^b Difference between the 2008-2009 and 2016-2017 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, 2016, and 2017 (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 2016-2017 NSDUHs

State	12+ (2008- 2009)	12+ (2016- 2017)	12+ (P Value)	12-17 (2008- 2009)	12-17 (2016- 2017)	12-17 (P Value)	18-25 (2008- 2009)	18-25 (2016- 2017)	18-25 (P Value)	26+ (2008- 2009)	26+ (2016- 2017)	26+ (P Value)	18+ (2008- 2009)	18+ (2016- 2017)	18+ (P Value)
Total U.S.	28.06 ^a	22.99	0.000	11.64 ^a	5.10	0.000	41.53 ^a	29.52	0.000	27.85 ^a	24.04	0.000	29.86 ^a	24.80	0.000
Northeast	26.45 ^a	21.91	0.000	11.37 ^a	4.59	0.000	41.23 ^a	29.91	0.000	25.78 ^a	22.50	0.000	28.01 ^a	23.52	0.000
Midwest	30.55 ^a	25.69	0.000	13.24 ^a	5.91	0.000	46.33 ^a	32.75	0.000	30.06 ^a	26.90	0.000	32.45 ^a	27.73	0.000
South	29.54 ^a	24.66	0.000	11.53 ^a	5.46	0.000	41.69 ^a	30.60	0.000	29.79 ^a	26.02	0.000	31.51 ^a	26.65	0.000
West	24.67 ^a	18.74	0.000	10.55 ^a	4.12	0.000	37.12 ^a	24.68	0.000	24.31 ^a	19.50	0.000	26.27 ^a	20.24	0.000
Alabama	32.94 ^b	30.12	0.076	13.26 ^a	7.90	0.000	45.41 ^a	35.28	0.000	33.33	31.91	0.472	35.08	32.38	0.123
Alaska	29.41 ^b	26.68	0.088	13.46 ^a	8.69	0.001	44.60 ^a	34.77	0.000	28.91	27.67	0.536	31.40	28.69	0.128
Arizona	25.71 ^a	21.19	0.003	10.17 ^a	3.60	0.000	39.80 ^a	27.99	0.000	25.39 ^b	22.22	0.091	27.48 ^a	23.04	0.009
Arkansas	35.26 ^a	30.69	0.009	14.99 ^a	7.52	0.000	47.74 ^a	33.90	0.000	35.81	33.01	0.197	37.48 ^a	33.14	0.024
California	22.79 ^a	16.23	0.000	9.47 ^a	3.45	0.000	34.37 ^a	20.56	0.000	22.43 ^a	17.02	0.000	24.35 ^a	17.53	0.000
Colorado	27.37 ^a	20.15	0.000	13.30 ^a	4.66	0.000	43.67 ^a	32.03	0.000	26.37 ^a	20.03	0.000	28.84 ^a	21.71	0.000
Connecticut	25.34 ^a	21.24	0.008	11.01 ^a	4.13	0.000	41.49 ^a	31.68	0.000	24.58	21.52	0.105	26.89 ^a	22.94	0.020
Delaware	30.13 ^a	21.77	0.000	13.07 ^a	4.02	0.000	45.53 ^a	27.74	0.000	29.65 ^a	22.80	0.000	31.92 ^a	23.44	0.000
District of Columbia	27.62 ^a	23.55	0.015	9.48 ^a	3.71	0.000	34.96 ^a	28.77	0.016	27.66 ^b	23.86	0.060	28.99 ^a	24.66	0.014
Florida	26.78 ^a	20.49	0.000	10.61 ^a	4.62	0.000	38.36 ^a	25.51	0.000	26.85 ^a	21.36	0.000	28.33 ^a	21.86	0.000
Georgia	28.86 ^a	24.08	0.001	11.68 ^a	5.45	0.000	40.80 ^a	30.46	0.000	29.20 ^a	25.45	0.036	30.89 ^a	26.17	0.003
Hawaii	22.31 ^a	17.11	0.000	9.93 ^a	3.41	0.000	37.26 ^a	25.14	0.000	21.32 ^a	17.40	0.025	23.51 ^a	18.34	0.001
Idaho	26.80 ^a	22.65	0.004	10.75 ^a	5.99	0.000	39.73 ^a	32.96	0.007	26.82 ^a	23.29	0.049	28.75 ^a	24.67	0.011
Illinois	29.01 ^a	22.44	0.000	12.45 ^a	5.21	0.000	44.24 ^a	29.09	0.000	28.44 ^a	23.45	0.000	30.87 ^a	24.23	0.000
Indiana	31.88 ^a	26.80	0.001	13.97 ^a	6.43	0.000	46.31 ^a	33.29	0.000	31.80 ^b	28.26	0.064	33.89 ^a	29.00	0.004
Iowa	30.23 ^a	26.39	0.013	12.41 ^a	5.01	0.000	44.08 ^a	37.22	0.006	30.01	27.05	0.129	32.12 ^a	28.59	0.038
Kansas	30.69 ^a	24.75	0.000	13.11 ^a	5.37	0.000	47.46 ^a	31.73	0.000	29.91 ^b	26.05	0.051	32.67 ^a	26.91	0.001
Kentucky	38.08 ^a	33.73	0.016	16.82 ^a	9.61	0.000	52.70 ^a	40.64	0.000	38.37	35.45	0.186	40.31 ^a	36.18	0.036
Louisiana	30.67	30.20	0.769	10.72 ^a	6.90	0.001	41.06 ^a	34.52	0.011	31.40	32.34	0.639	32.96	32.65	0.865
Maine	29.82 ^a	24.21	0.001	12.13 ^a	7.90	0.001	47.65 ^a	35.21	0.000	29.28 ^a	24.30	0.015	31.52 ^a	25.59	0.001
Maryland	23.84 ^a	19.10	0.001	9.04 ^a	4.45	0.000	35.70 ^a	26.10	0.000	23.72 ^a	19.69	0.026	25.46 ^a	20.54	0.003
Massachusetts	25.06 ^a	20.70	0.003	10.50 ^a	4.31	0.000	41.42 ^a	29.16	0.000	23.85	20.97	0.105	26.50 ^a	22.17	0.006
Michigan	30.47 ^a	26.18	0.000	12.88 ^a	5.52	0.000	45.86 ^a	30.32	0.000	30.17 ^b	27.91	0.094	32.45 ^a	28.26	0.000
Minnesota	27.59 ^a	22.77	0.001	12.49 ^a	5.24	0.000	47.57 ^a	34.44	0.000	26.07 ^b	23.01	0.075	29.20 ^a	24.57	0.003
Mississippi	31.60	31.32	0.867	12.10 ^a	7.62	0.000	43.29 ^a	33.81	0.000	32.19	33.95	0.394	33.92	33.93	0.994
Missouri	32.65 ^a	27.07	0.001	14.57 ^a	7.27	0.000	47.19 ^a	31.33	0.000	32.55 ^b	28.71	0.054	34.62 ^a	29.08	0.002
Montana	31.17 ^a	27.11	0.013	15.59 ^a	8.33	0.000	49.20 ^a	38.20	0.000	30.03	27.36	0.181	32.78 ^a	28.86	0.028

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 2016-2017 NSDUHs (continued)

State	12+ (2008- 2009)	12+ (2016- 2017)	12+ (P Value)	12-17 (2008- 2009)	12-17 (2016- 2017)	12-17 (P Value)	18-25 (2008- 2009)	18-25 (2016- 2017)	18-25 (P Value)	26+ (2008- 2009)	26+ (2016- 2017)	26+ (P Value)	18+ (2008- 2009)	18+ (2016- 2017)	18+ (P Value)
Nebraska	29.00 ^b	26.34	0.097	12.29 ^a	4.96	0.000	42.14 ^a	35.90	0.016	28.71	27.40	0.510	30.85	28.68	0.222
Nevada	28.44 ^a	24.12	0.010	11.98 ^a	4.61	0.000	40.40 ^a	27.75	0.000	28.78	25.84	0.155	30.28 ^a	26.09	0.023
New Hampshire	28.12 ^a	22.47	0.000	12.55 ^a	6.38	0.000	45.16 ^a	33.53	0.000	27.40 ^a	22.43	0.007	29.76 ^a	23.92	0.000
New Jersey	24.81 ^a	20.78	0.007	9.81 ^a	4.14	0.000	38.34 ^a	29.89	0.000	24.58 ^b	21.34	0.081	26.42 ^a	22.45	0.017
New Mexico	26.72	25.08	0.281	12.82 ^a	4.76	0.000	42.62 ^a	31.42	0.000	25.62	26.56	0.618	28.26	27.24	0.542
New York	24.57 ^a	19.64	0.000	10.73 ^a	3.72	0.000	39.13 ^a	26.09	0.000	23.64 ^a	20.27	0.004	26.00 ^a	21.09	0.000
North Carolina	31.32 ^a	24.78	0.000	12.01 ^a	5.88	0.000	43.70 ^a	33.90	0.000	31.72 ^a	25.58	0.000	33.38 ^a	26.71	0.000
North Dakota	30.37 ^a	26.66	0.020	13.46 ^a	6.99	0.000	46.39 ^a	35.27	0.000	28.87	27.07	0.365	32.07 ^a	28.47	0.038
Ohio	32.29 ^a	28.75	0.001	14.11 ^a	6.85	0.000	49.54 ^a	36.60	0.000	31.76	30.09	0.207	34.27 ^a	30.99	0.005
Oklahoma	34.82 ^a	28.81	0.001	13.78 ^a	6.19	0.000	48.56 ^a	33.92	0.000	35.07 ^b	30.83	0.056	37.14 ^a	31.28	0.003
Oregon	30.12 ^a	23.11	0.000	14.94 ^a	5.50	0.000	45.09 ^a	32.31	0.000	29.56 ^a	23.57	0.001	31.65 ^a	24.71	0.000
Pennsylvania	30.97 ^a	26.48	0.000	13.84 ^a	5.88	0.000	45.29 ^a	34.60	0.000	30.67 ^a	27.43	0.014	32.74 ^a	28.39	0.000
Rhode Island	26.34 ^a	22.31	0.011	10.30 ^a	4.90	0.000	41.51 ^a	28.22	0.000	25.41	23.06	0.224	27.95 ^a	23.84	0.018
South Carolina	31.30 ^a	26.94	0.008	11.78 ^a	6.73	0.000	44.29 ^a	34.25	0.000	31.59 ^b	28.09	0.081	33.37 ^a	28.92	0.013
South Dakota	31.32	29.08	0.163	14.94 ^a	8.36	0.000	49.54 ^a	39.09	0.000	30.16	29.94	0.914	33.12	31.27	0.295
Tennessee	33.55 ^a	29.89	0.028	12.46 ^a	7.11	0.000	46.98 ^a	36.05	0.000	34.05	31.56	0.222	35.77 ^a	32.18	0.050
Texas	27.05 ^a	22.55	0.000	10.01 ^a	3.75	0.000	38.36 ^a	27.24	0.000	27.41 ^a	24.38	0.009	29.15 ^a	24.81	0.000
Utah	18.44 ^a	15.24	0.020	6.72 ^a	3.61	0.002	24.94 ^b	20.35	0.074	18.80	16.10	0.120	20.02 ^a	16.87	0.041
Vermont	27.61	26.56	0.530	12.66 ^a	7.50	0.000	44.28	42.76	0.584	26.58	25.62	0.635	29.07	28.16	0.617
Virginia	27.48 ^a	21.29	0.000	11.74 ^a	5.06	0.000	41.54 ^a	30.23	0.000	27.03 ^a	21.71	0.002	29.13 ^a	22.89	0.000
Washington	26.86 ^a	20.53	0.000	11.87 ^a	5.46	0.000	41.46 ^a	28.07	0.000	26.35 ^a	21.03	0.002	28.44 ^a	21.97	0.000
West Virginia	38.41	37.92	0.796	16.88 ^a	9.45	0.000	54.20 ^a	43.82	0.000	38.44	39.97	0.500	40.43	40.46	0.987
Wisconsin	30.21 ^a	25.23	0.002	12.88 ^a	5.51	0.000	45.41 ^a	32.32	0.000	29.79 ^b	26.36	0.081	32.04 ^a	27.20	0.006
Wyoming	34.32 ^a	26.98	0.000	18.41 ^a	6.62	0.000	49.70 ^a	38.59	0.000	33.58 ^a	27.54	0.004	36.01 ^a	29.06	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 2016-2017 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 2016-2017 population percentages is statistically significant at the 0.05 level.

^b Difference between the 2008-2009 and 2016-2017 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, 2016, and 2017 (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 2016-2017 NSDUHs

State	12+ (2008- 2009)	12+ (2016- 2017)	12+ (P Value)	12-17 (2008- 2009)	12-17 (2016- 2017)	12-17 (P Value)	18-25 (2008- 2009)	18-25 (2016- 2017)	18-25 (P Value)	26+ (2008- 2009)	26+ (2016- 2017)	26+ (P Value)	18+ (2008- 2009)	18+ (2016- 2017)	18+ (P Value)
Total U.S.	23.63 ^a	18.47	0.000	9.09 ^a	3.29	0.000	35.80 ^a	22.90	0.000	23.40 ^a	19.54	0.000	25.23 ^a	20.01	0.000
Northeast	22.40 ^a	17.54	0.000	8.82 ^a	2.94	0.000	35.95 ^a	22.38	0.000	21.75 ^a	18.34	0.000	23.81 ^a	18.90	0.000
Midwest	25.66 ^a	20.61	0.000	10.45 ^a	4.04	0.000	39.92 ^a	25.03	0.000	25.16 ^a	21.88	0.000	27.33 ^a	22.32	0.000
South	24.80 ^a	19.78	0.000	9.12 ^a	3.44	0.000	35.96 ^a	23.74	0.000	24.92 ^a	21.11	0.000	26.52 ^a	21.48	0.000
West	20.86 ^a	15.18	0.000	7.97 ^a	2.63	0.000	31.69 ^a	20.10	0.000	20.62 ^a	15.86	0.000	22.32 ^a	16.46	0.000
Alabama	26.82 ^a	23.46	0.024	10.40 ^a	4.80	0.000	38.16 ^a	25.60	0.000	26.98	25.32	0.369	28.60 ^a	25.36	0.047
Alaska	24.21 ^a	19.65	0.001	9.37 ^a	5.98	0.002	38.26 ^a	27.57	0.000	23.78 ^a	20.11	0.038	26.07 ^a	21.18	0.002
Arizona	21.97 ^a	16.92	0.000	8.70 ^a	2.33	0.000	33.07 ^a	21.92	0.000	21.85 ^a	17.88	0.016	23.48 ^a	18.45	0.001
Arkansas	30.28 ^a	24.65	0.001	12.05 ^a	4.86	0.000	42.83 ^a	27.38	0.000	30.56 ^b	26.64	0.053	32.28 ^a	26.74	0.002
California	19.28 ^a	13.34	0.000	7.05 ^a	2.08	0.000	29.58 ^a	17.04	0.000	19.02 ^a	14.06	0.000	20.71 ^a	14.49	0.000
Colorado	22.33 ^a	15.82	0.000	9.69 ^a	3.22	0.000	36.42 ^a	25.51	0.000	21.52 ^a	15.72	0.000	23.65 ^a	17.09	0.000
Connecticut	21.47 ^a	16.84	0.001	8.67 ^a	2.49	0.000	36.51 ^a	23.71	0.000	20.69 ^b	17.38	0.058	22.85 ^a	18.27	0.003
Delaware	25.41 ^a	18.36	0.000	9.74 ^a	2.56	0.000	39.95 ^a	21.69	0.000	24.90 ^a	19.56	0.004	27.05 ^a	19.84	0.000
District of Columbia	23.85 ^a	18.70	0.001	6.30 ^a	1.78	0.000	30.11 ^a	22.42	0.001	24.08 ^a	19.12	0.007	25.17 ^a	19.65	0.001
Florida	22.66 ^a	16.68	0.000	8.30 ^a	2.76	0.000	32.61 ^a	19.08	0.000	22.76 ^a	17.72	0.000	24.03 ^a	17.89	0.000
Georgia	24.48 ^a	18.90	0.000	8.95 ^a	3.43	0.000	35.71 ^a	23.29	0.000	24.72 ^a	20.20	0.007	26.32 ^a	20.64	0.000
Hawaii	20.24 ^a	13.62	0.000	7.60 ^a	2.63	0.000	34.07 ^a	22.95	0.000	19.46 ^a	13.45	0.000	21.47 ^a	14.61	0.000
Idaho	23.14 ^a	18.24	0.000	9.05 ^a	4.35	0.000	35.00 ^a	27.15	0.001	23.07 ^a	18.72	0.009	24.85 ^a	19.92	0.001
Illinois	24.93 ^a	18.19	0.000	10.01 ^a	3.13	0.000	38.97 ^a	23.57	0.000	24.37 ^a	19.13	0.000	26.60 ^a	19.75	0.000
Indiana	26.78 ^a	21.37	0.000	10.84 ^a	4.55	0.000	40.95 ^a	24.26	0.000	26.49 ^b	23.00	0.063	28.58 ^a	23.18	0.001
Iowa	24.90 ^a	20.97	0.007	10.17 ^a	3.70	0.000	37.13 ^a	28.58	0.001	24.58	21.71	0.109	26.46 ^a	22.75	0.020
Kansas	25.04 ^a	19.68	0.000	10.80 ^a	3.43	0.000	39.71 ^a	23.90	0.000	24.19 ^b	21.06	0.080	26.63 ^a	21.49	0.001
Kentucky	31.94 ^a	26.66	0.001	12.44 ^a	5.88	0.000	44.22 ^a	31.46	0.000	32.38 ^a	28.33	0.045	33.98 ^a	28.77	0.004
Louisiana	26.54 ^b	23.92	0.081	8.41 ^a	4.36	0.000	36.03 ^a	27.11	0.000	27.20	25.79	0.456	28.62	25.98	0.112
Maine	25.64 ^a	20.16	0.000	9.72 ^a	6.17	0.001	42.51 ^a	27.60	0.000	25.03 ^a	20.50	0.016	27.17 ^a	21.35	0.001
Maryland	19.82 ^a	15.70	0.003	7.61 ^a	2.68	0.000	31.15 ^a	19.79	0.000	19.45 ^b	16.56	0.092	21.15 ^a	16.99	0.007
Massachusetts	20.99 ^a	16.57	0.001	7.63 ^a	2.66	0.000	34.67 ^a	21.12	0.000	20.13 ^b	17.25	0.078	22.32 ^a	17.82	0.002
Michigan	26.12 ^a	21.63	0.000	10.34 ^a	3.68	0.000	39.79 ^a	23.56	0.000	25.87 ^a	23.42	0.049	27.89 ^a	23.44	0.000
Minnesota	23.49 ^a	18.26	0.000	9.72 ^a	3.82	0.000	41.01 ^a	25.90	0.000	22.22 ^a	18.76	0.037	24.96 ^a	19.74	0.000
Mississippi	26.35	24.55	0.229	9.66 ^a	4.71	0.000	36.57 ^a	26.43	0.000	26.82	26.79	0.984	28.34	26.73	0.335
Missouri	26.31 ^a	21.33	0.001	10.98 ^a	5.20	0.000	39.48 ^a	24.06	0.000	26.09 ^b	22.79	0.072	27.98 ^a	22.97	0.002
Montana	24.75 ^a	20.53	0.005	11.24 ^a	6.03	0.000	39.49 ^a	28.45	0.000	23.91 ^b	20.83	0.096	26.14 ^a	21.88	0.009

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 2016-2017 NSDUHs (continued)

State	12+ (2008- 2009)	12+ (2016- 2017)	12+ (P Value)	12-17 (2008- 2009)	12-17 (2016- 2017)	12-17 (P Value)	18-25 (2008- 2009)	18-25 (2016- 2017)	18-25 (P Value)	26+ (2008- 2009)	26+ (2016- 2017)	26+ (P Value)	18+ (2008- 2009)	18+ (2016- 2017)	18+ (P Value)
Nebraska	24.27 ^a	20.81	0.015	9.36 ^a	3.68	0.000	36.05 ^a	26.25	0.000	24.00	22.05	0.274	25.91 ^a	22.69	0.040
Nevada	24.45 ^a	19.54	0.002	9.44 ^a	2.78	0.000	33.92 ^a	22.33	0.000	24.97 ^a	21.06	0.047	26.13 ^a	21.22	0.005
New Hampshire	23.36 ^a	17.68	0.000	10.23 ^a	4.87	0.000	39.18 ^a	25.55	0.000	22.53 ^a	17.80	0.005	24.74 ^a	18.84	0.000
New Jersey	20.88 ^a	16.67	0.002	7.59 ^a	2.50	0.000	35.13 ^a	24.00	0.000	20.33 ^b	17.21	0.057	22.32 ^a	18.09	0.004
New Mexico	22.74 ^b	20.06	0.061	10.06 ^a	2.74	0.000	36.12 ^a	25.33	0.000	21.95	21.34	0.736	24.15	21.91	0.157
New York	21.30 ^a	16.16	0.000	8.21 ^a	2.41	0.000	34.38 ^a	19.30	0.000	20.55 ^a	17.10	0.002	22.66 ^a	17.41	0.000
North Carolina	26.45 ^a	20.08	0.000	9.16 ^a	3.45	0.000	37.96 ^a	25.55	0.000	26.73 ^a	21.19	0.001	28.30 ^a	21.79	0.000
North Dakota	24.70 ^a	20.23	0.002	10.42 ^a	5.22	0.000	36.38 ^a	25.49	0.000	23.86	20.82	0.103	26.14 ^a	21.61	0.005
Ohio	26.71 ^a	22.89	0.000	10.93 ^a	4.71	0.000	41.85 ^a	28.04	0.000	26.23	24.22	0.109	28.43 ^a	24.74	0.001
Oklahoma	28.24 ^a	22.91	0.001	11.31 ^a	4.36	0.000	41.18 ^a	26.63	0.000	28.10 ^b	24.66	0.082	30.11 ^a	24.94	0.003
Oregon	25.01 ^a	18.69	0.000	10.32 ^a	3.74	0.000	37.51 ^a	26.59	0.000	24.78 ^a	19.06	0.001	26.49 ^a	20.05	0.000
Pennsylvania	25.69 ^a	20.55	0.000	11.13 ^a	3.71	0.000	38.72 ^a	25.32	0.000	25.30 ^a	21.61	0.004	27.19 ^a	22.11	0.000
Rhode Island	22.58 ^a	17.66	0.001	7.93 ^a	2.97	0.000	35.37 ^a	21.15	0.000	21.93 ^b	18.56	0.060	24.05 ^a	18.95	0.001
South Carolina	26.94 ^a	21.85	0.000	9.52 ^a	4.42	0.000	37.73 ^a	25.15	0.000	27.33 ^a	23.31	0.025	28.80 ^a	23.56	0.001
South Dakota	25.04 ^b	22.56	0.085	11.43 ^a	6.48	0.000	39.83 ^a	29.34	0.000	24.14	23.40	0.682	26.53	24.26	0.152
Tennessee	28.20 ^a	23.40	0.001	9.69 ^a	4.72	0.000	39.48 ^a	27.56	0.000	28.71 ^a	24.91	0.044	30.14 ^a	25.27	0.003
Texas	22.51 ^a	18.33	0.000	8.17 ^a	2.41	0.000	33.64 ^a	22.38	0.000	22.51 ^a	19.87	0.016	24.27 ^a	20.25	0.000
Utah	16.42 ^a	13.34	0.012	5.39 ^a	2.66	0.001	22.29 ^b	17.78	0.053	16.83 ^b	14.20	0.098	17.91 ^a	14.84	0.027
Vermont	22.31	20.55	0.246	8.73 ^a	5.75	0.005	38.02 ^b	33.38	0.098	21.29	19.77	0.415	23.64	21.79	0.265
Virginia	23.23 ^a	17.02	0.000	9.56 ^a	3.36	0.000	35.65 ^a	23.78	0.000	22.79 ^a	17.50	0.001	24.66 ^a	18.37	0.000
Washington	22.91 ^a	16.50	0.000	8.89 ^a	3.40	0.000	35.68 ^a	21.96	0.000	22.56 ^a	17.11	0.001	24.38 ^a	17.76	0.000
West Virginia	30.76	29.93	0.638	13.14 ^a	6.42	0.000	47.13 ^a	33.51	0.000	30.30	31.81	0.485	32.42	32.03	0.839
Wisconsin	25.74 ^a	20.23	0.000	10.57 ^a	3.85	0.000	40.34 ^a	23.46	0.000	25.15 ^b	21.61	0.053	27.35 ^a	21.88	0.001
Wyoming	26.58 ^a	19.95	0.000	12.60 ^a	4.48	0.000	39.19 ^a	29.28	0.000	26.09 ^a	20.29	0.002	28.06 ^a	21.52	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 2016-2017 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 2016-2017 population percentages is statistically significant at the 0.05 level.

^b Difference between the 2008-2009 and 2016-2017 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, 2016, and 2017 (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 2016-2017 NSDUHs

State	12+ (2008- 2009)	12+ (2016- 2017)	12+ (P Value)	12-17 (2008- 2009)	12-17 (2016- 2017)	12-17 (P Value)	18-25 (2008- 2009)	18-25 (2016- 2017)	18-25 (P Value)	26+ (2008- 2009)	26+ (2016- 2017)	26+ (P Value)	18+ (2008- 2009)	18+ (2016- 2017)	18+ (P Value)
Total U.S.	7.42 ^a	5.46	0.000	4.76 ^a	1.87	0.000	16.76 ^a	10.35	0.000	6.16 ^a	5.09	0.000	7.72 ^a	5.82	0.000
Northeast	7.42 ^a	5.61	0.000	4.73 ^a	1.82	0.000	17.81 ^a	10.98	0.000	5.99 ^a	5.17	0.010	7.70 ^a	5.97	0.000
Midwest	7.84 ^a	5.82	0.000	5.14 ^a	1.99	0.000	18.24 ^a	11.47	0.000	6.39 ^a	5.35	0.000	8.13 ^a	6.22	0.000
South	6.90 ^a	4.99	0.000	4.14 ^a	1.67	0.000	15.18 ^a	9.28	0.000	5.86 ^a	4.69	0.000	7.20 ^a	5.33	0.000
West	7.86 ^a	5.77	0.000	5.37 ^a	2.11	0.000	16.97 ^a	10.54	0.000	6.54 ^a	5.42	0.001	8.14 ^a	6.15	0.000
Alabama	6.40 ^a	4.51	0.003	4.12 ^a	1.54	0.000	13.75 ^a	7.93	0.000	5.45	4.30	0.117	6.65 ^a	4.81	0.007
Alaska	8.06 ^b	6.57	0.066	5.31 ^a	2.21	0.000	16.94 ^a	11.26	0.002	6.80	6.35	0.644	8.40	7.06	0.128
Arizona	7.73 ^a	5.49	0.002	5.40 ^a	1.85	0.000	18.24 ^a	11.31	0.000	6.26	4.97	0.120	8.00 ^a	5.88	0.007
Arkansas	6.75 ^a	5.38	0.040	4.90 ^a	2.12	0.000	15.57 ^a	9.32	0.000	5.54	5.14	0.594	6.95 ^b	5.73	0.088
California	7.87 ^a	5.51	0.000	5.27 ^a	2.01	0.000	16.36 ^a	9.90	0.000	6.61 ^a	5.18	0.006	8.18 ^a	5.87	0.000
Colorado	8.97 ^a	6.30	0.001	6.32 ^a	2.07	0.000	21.03 ^a	12.23	0.000	7.28	5.83	0.101	9.25 ^a	6.73	0.002
Connecticut	8.64 ^a	6.10	0.002	5.92 ^a	2.68	0.000	19.92 ^a	11.18	0.000	7.19	5.68	0.105	8.93 ^a	6.44	0.004
Delaware	7.88 ^a	6.15	0.025	4.86 ^a	1.79	0.000	18.98 ^a	10.09	0.000	6.40	6.03	0.684	8.19 ^a	6.56	0.048
District of Columbia	9.26	9.08	0.851	3.04 ^b	1.97	0.085	17.04 ^b	13.62	0.070	8.10	8.67	0.626	9.73	9.48	0.805
Florida	6.93 ^a	5.29	0.000	4.33 ^a	2.03	0.000	14.60 ^a	9.95	0.000	6.08 ^a	4.97	0.042	7.18 ^a	5.57	0.001
Georgia	6.68 ^a	4.42	0.000	3.38 ^a	1.27	0.000	15.02 ^a	7.83	0.000	5.72 ^a	4.26	0.039	7.07 ^a	4.78	0.000
Hawaii	7.58 ^a	5.23	0.004	5.83 ^a	2.15	0.000	16.34 ^a	11.26	0.008	6.38 ^b	4.72	0.072	7.75 ^a	5.51	0.009
Idaho	7.14 ^b	5.90	0.075	5.16 ^a	2.31	0.000	16.35 ^a	10.39	0.000	5.79	5.65	0.862	7.37	6.33	0.167
Illinois	7.58 ^a	6.25	0.009	4.32 ^a	2.39	0.000	17.59 ^a	12.16	0.000	6.19	5.76	0.463	7.94 ^a	6.65	0.018
Indiana	6.99 ^a	5.24	0.007	5.01 ^a	1.58	0.000	17.00 ^a	10.69	0.000	5.57	4.75	0.261	7.22 ^a	5.63	0.024
Iowa	8.64 ^a	7.08	0.045	6.67 ^a	2.25	0.000	19.79 ^a	14.25	0.003	6.92	6.39	0.550	8.85	7.58	0.127
Kansas	8.06 ^a	5.52	0.000	5.68 ^a	2.39	0.000	19.37 ^a	11.27	0.000	6.27 ^b	4.91	0.087	8.33 ^a	5.87	0.001
Kentucky	5.98	4.94	0.115	3.83 ^a	1.61	0.000	14.21 ^a	8.95	0.001	4.95	4.68	0.724	6.20	5.28	0.191
Louisiana	7.02	6.16	0.241	3.63 ^a	2.26	0.039	14.96 ^a	10.03	0.003	5.95	6.00	0.955	7.40	6.57	0.292
Maine	6.76	5.62	0.112	4.06 ^a	2.26	0.008	17.72 ^a	10.50	0.000	5.52	5.29	0.774	7.01	5.91	0.147
Maryland	7.05 ^a	5.37	0.020	3.70 ^a	1.44	0.000	15.17 ^a	10.46	0.006	6.10	5.04	0.203	7.42 ^a	5.76	0.033
Massachusetts	7.42	7.12	0.703	4.74 ^a	2.18	0.001	18.97 ^a	14.10	0.018	5.68	6.44	0.390	7.68	7.56	0.887
Michigan	7.63 ^a	5.49	0.000	4.90 ^a	1.81	0.000	16.79 ^a	9.64	0.000	6.43 ^a	5.22	0.039	7.93 ^a	5.86	0.000
Minnesota	9.20 ^a	5.06	0.000	5.77 ^a	1.70	0.000	21.08 ^a	10.94	0.000	7.60 ^a	4.53	0.000	9.56 ^a	5.41	0.000
Mississippi	6.29 ^a	4.42	0.003	3.68 ^a	1.25	0.000	13.24 ^a	7.91	0.000	5.38	4.23	0.115	6.60 ^a	4.77	0.007
Missouri	7.63 ^a	5.33	0.001	5.15 ^a	1.86	0.000	17.62 ^a	9.49	0.000	6.29	5.06	0.112	7.90 ^a	5.68	0.003
Montana	9.78 ^a	7.65	0.016	8.23 ^a	3.72	0.000	24.59 ^a	13.85	0.000	7.49	7.08	0.689	9.94 ^a	8.01	0.041

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 2016-2017 NSDUHs (continued)

State	12+ (2008- 2009)	12+ (2016- 2017)	12+ (P Value)	12-17 (2008- 2009)	12-17 (2016- 2017)	12-17 (P Value)	18-25 (2008- 2009)	18-25 (2016- 2017)	18-25 (P Value)	26+ (2008- 2009)	26+ (2016- 2017)	26+ (P Value)	18+ (2008- 2009)	18+ (2016- 2017)	18+ (P Value)
Nebraska	8.50 ^a	5.80	0.000	5.65 ^a	2.17	0.000	19.05 ^a	12.54	0.001	6.88 ^a	5.06	0.035	8.81 ^a	6.19	0.001
Nevada	7.61 ^a	5.66	0.009	5.40 ^a	2.33	0.000	16.76 ^a	11.75	0.006	6.53	5.16	0.107	7.86 ^a	6.00	0.019
New Hampshire	7.50 ^b	6.13	0.071	5.09 ^a	1.98	0.000	19.31 ^a	12.94	0.002	5.98	5.52	0.587	7.75	6.51	0.127
New Jersey	6.61 ^a	4.71	0.002	3.71 ^a	1.54	0.000	15.87 ^a	11.11	0.002	5.54 ^a	4.13	0.047	6.93 ^a	5.03	0.004
New Mexico	8.64 ^a	6.01	0.001	6.64 ^a	2.22	0.000	18.71 ^a	10.87	0.000	7.05	5.68	0.129	8.86 ^a	6.42	0.004
New York	7.88 ^a	5.67	0.000	5.31 ^a	1.79	0.000	18.10 ^a	9.80	0.000	6.36	5.41	0.101	8.15 ^a	6.02	0.000
North Carolina	6.27 ^a	4.38	0.001	3.40 ^a	1.31	0.000	14.65 ^a	7.34	0.000	5.28	4.28	0.141	6.58 ^a	4.69	0.003
North Dakota	8.38 ^a	6.55	0.019	5.29 ^a	2.07	0.000	20.61 ^a	12.49	0.000	6.03	5.83	0.812	8.69 ^a	6.97	0.037
Ohio	7.62 ^a	5.60	0.000	5.19 ^a	1.71	0.000	17.80 ^a	11.41	0.000	6.26 ^b	5.13	0.051	7.89 ^a	5.99	0.000
Oklahoma	7.55 ^a	5.90	0.020	4.96 ^a	1.97	0.000	16.78 ^a	9.93	0.000	6.21	5.71	0.542	7.84 ^a	6.33	0.049
Oregon	8.54	7.46	0.192	6.33 ^a	2.94	0.000	18.71 ^a	12.49	0.001	7.22	7.18	0.966	8.76	7.87	0.312
Pennsylvania	6.91 ^a	4.97	0.000	4.21 ^a	1.50	0.000	17.07 ^a	10.32	0.000	5.56 ^b	4.52	0.053	7.18 ^a	5.29	0.000
Rhode Island	8.26 ^b	6.74	0.060	4.86 ^a	2.25	0.001	18.03 ^a	12.48	0.004	6.84	6.17	0.478	8.60 ^b	7.13	0.090
South Carolina	7.90 ^a	5.43	0.001	3.98 ^a	1.57	0.000	16.24 ^a	11.44	0.004	7.03 ^a	4.93	0.016	8.32 ^a	5.80	0.002
South Dakota	9.68 ^a	7.51	0.015	6.74 ^a	3.47	0.002	23.35 ^a	13.57	0.000	7.59	6.99	0.558	10.00 ^a	7.94	0.032
Tennessee	6.18 ^a	4.82	0.031	3.28 ^a	1.66	0.004	14.18 ^a	9.42	0.003	5.30	4.46	0.249	6.48 ^a	5.14	0.048
Texas	6.98 ^a	4.58	0.000	4.63 ^a	1.60	0.000	14.76 ^a	9.06	0.000	5.85 ^a	4.20	0.001	7.26 ^a	4.94	0.000
Utah	6.07 ^b	4.89	0.057	3.31 ^a	1.75	0.009	12.42 ^a	8.92	0.027	4.96	4.52	0.546	6.44	5.33	0.103
Vermont	7.84	7.26	0.467	4.92 ^a	2.53	0.003	20.15 ^b	16.03	0.056	6.16	6.20	0.966	8.12	7.65	0.582
Virginia	8.04 ^a	5.49	0.000	5.07 ^a	1.90	0.000	19.44 ^a	10.77	0.000	6.47 ^b	5.05	0.062	8.35 ^a	5.84	0.000
Washington	7.08	6.09	0.168	4.74 ^a	2.29	0.001	16.26 ^a	10.55	0.001	5.88	5.82	0.940	7.32	6.45	0.256
West Virginia	6.54 ^a	4.44	0.002	4.45 ^a	1.67	0.000	15.43 ^a	9.28	0.000	5.48 ^a	4.02	0.049	6.73 ^a	4.69	0.004
Wisconsin	8.06	6.96	0.154	5.43 ^a	2.27	0.000	19.67 ^a	14.44	0.006	6.43	6.28	0.862	8.34	7.43	0.272
Wyoming	8.51 ^a	6.34	0.005	6.96 ^a	2.68	0.000	19.54 ^a	11.90	0.000	6.75	5.88	0.320	8.67 ^a	6.71	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 2016-2017 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 2016-2017 population percentages is statistically significant at the 0.05 level.

^b Difference between the 2008-2009 and 2016-2017 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, 2016, and 2017 (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 2016-2017 NSDUHs*

State	18+ (2008-2009)	18+ (2016-2017)	18+ (P Value)	18-25 (2008-2009)	18-25 (2016-2017)	18-25 (P Value)	26+ (2008-2009)	26+ (2016-2017)	26+ (P Value)
Total U.S.	3.70 ^a	4.38	0.000	3.55 ^a	6.68	0.000	3.72 ^b	4.01	0.057
Northeast	3.64 ^a	4.16	0.023	3.65 ^a	6.58	0.000	3.64	3.78	0.588
Midwest	4.00 ^a	4.64	0.002	3.79 ^a	7.09	0.000	4.04	4.24	0.395
South	3.59 ^a	4.31	0.000	3.28 ^a	6.25	0.000	3.64 ^b	4.00	0.079
West	3.63 ^a	4.43	0.001	3.66 ^a	7.05	0.000	3.62	3.99	0.159
Alabama	3.57 ^a	4.80	0.032	3.44 ^a	5.95	0.001	3.59	4.62	0.116
Alaska	3.49 ^a	5.02	0.010	3.11 ^a	8.53	0.000	3.56	4.43	0.185
Arizona	3.84	4.13	0.607	3.72 ^a	6.37	0.002	3.86	3.76	0.887
Arkansas	4.74	5.44	0.315	3.99 ^a	6.65	0.002	4.86	5.25	0.624
California	3.20 ^a	3.94	0.036	3.62 ^a	6.61	0.000	3.12	3.48	0.358
Colorado	4.65	5.08	0.532	3.67 ^a	8.67	0.000	4.81	4.49	0.672
Connecticut	3.52	4.16	0.249	3.53 ^a	7.43	0.000	3.51	3.63	0.847
Delaware	3.55 ^a	4.90	0.023	3.49 ^a	7.70	0.000	3.56	4.48	0.156
District of Columbia	3.06 ^a	4.43	0.012	3.00 ^a	6.25	0.000	3.07	4.08	0.108
Florida	3.64	3.83	0.614	3.39 ^a	6.41	0.000	3.67	3.48	0.640
Georgia	3.39 ^b	4.35	0.092	2.78 ^a	5.83	0.000	3.49	4.09	0.338
Hawaii	3.11	3.49	0.466	3.89 ^a	6.76	0.003	2.98	3.04	0.922
Idaho	4.75	5.81	0.121	3.74 ^a	7.90	0.000	4.93	5.47	0.487
Illinois	3.62	4.14	0.199	3.51 ^a	6.41	0.000	3.64	3.77	0.776
Indiana	4.71	5.19	0.476	4.02 ^a	7.85	0.000	4.82	4.72	0.895
Iowa	3.83	4.59	0.171	3.76 ^a	6.99	0.000	3.84	4.16	0.607
Kansas	3.51 ^a	4.79	0.027	3.78 ^a	7.17	0.000	3.46	4.37	0.160
Kentucky	4.18 ^a	5.58	0.042	3.42 ^a	7.53	0.000	4.30	5.26	0.209
Louisiana	3.59 ^a	4.72	0.043	3.49 ^a	5.47	0.009	3.61	4.60	0.121
Maine	4.00	4.60	0.326	4.33 ^a	7.71	0.000	3.95	4.19	0.723
Maryland	3.28	3.90	0.222	3.46 ^a	6.48	0.000	3.25	3.51	0.644
Massachusetts	3.73 ^b	4.76	0.086	3.21 ^a	7.46	0.000	3.82	4.29	0.480
Michigan	3.98	4.56	0.174	4.12 ^a	6.64	0.000	3.96	4.21	0.607
Minnesota	4.37	4.24	0.831	3.84 ^a	7.33	0.000	4.46	3.75	0.276
Mississippi	3.43 ^a	4.64	0.039	2.99 ^a	5.94	0.000	3.51	4.41	0.168
Missouri	4.09	4.91	0.183	3.58 ^a	6.85	0.000	4.18	4.59	0.544
Montana	3.95 ^a	5.18	0.049	3.98 ^a	7.75	0.000	3.95	4.77	0.235

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 2016-2017 NSDUHs (continued)

State	18+ (2008-2009)	18+ (2016-2017)	18+ (P Value)	18-25 (2008-2009)	18-25 (2016-2017)	18-25 (P Value)	26+ (2008-2009)	26+ (2016-2017)	26+ (P Value)
Nebraska	3.57	4.30	0.169	3.59 ^a	6.58	0.000	3.57	3.89	0.588
Nevada	4.37	4.28	0.891	3.81 ^a	6.49	0.002	4.45	3.96	0.494
New Hampshire	3.75 ^a	5.28	0.014	3.98 ^a	8.90	0.000	3.72	4.72	0.140
New Jersey	3.35	3.67	0.516	3.77 ^a	6.31	0.002	3.29	3.28	0.995
New Mexico	3.45	4.39	0.107	3.61 ^a	6.29	0.001	3.42	4.08	0.314
New York	3.84	3.83	0.977	3.80 ^a	5.87	0.000	3.85	3.50	0.429
North Carolina	3.63 ^b	4.66	0.075	3.02 ^a	6.27	0.000	3.73	4.41	0.293
North Dakota	3.25 ^a	4.61	0.008	3.36 ^a	7.39	0.000	3.23	4.03	0.163
Ohio	4.10 ^b	4.95	0.060	3.69 ^a	7.60	0.000	4.17	4.53	0.470
Oklahoma	3.97	4.99	0.106	4.07 ^a	7.04	0.002	3.95	4.64	0.332
Oregon	4.23 ^b	5.37	0.087	3.82 ^a	8.32	0.000	4.30	4.93	0.385
Pennsylvania	3.31 ^a	4.44	0.006	3.43 ^a	6.66	0.000	3.29 ^b	4.10	0.079
Rhode Island	5.38	4.52	0.237	4.29 ^a	7.07	0.005	5.58 ^b	4.06	0.059
South Carolina	3.57	4.36	0.166	3.26 ^a	6.12	0.000	3.62	4.09	0.461
South Dakota	3.19 ^a	4.44	0.015	3.44 ^a	7.48	0.000	3.14	3.93	0.170
Tennessee	3.80 ^a	5.19	0.026	3.25 ^a	7.12	0.000	3.89	4.89	0.147
Texas	3.33	3.76	0.226	3.08 ^a	5.90	0.000	3.37	3.38	0.984
Utah	4.64 ^a	6.18	0.025	3.78 ^a	9.51	0.000	4.86	5.43	0.466
Vermont	3.78 ^a	5.41	0.014	3.97 ^a	7.78	0.000	3.75 ^b	5.00	0.096
Virginia	3.34	4.01	0.184	3.55 ^a	5.99	0.001	3.30	3.70	0.482
Washington	3.78 ^a	5.37	0.011	3.55 ^a	7.01	0.000	3.82 ^b	5.12	0.062
West Virginia	4.87	5.69	0.283	3.66 ^a	7.55	0.000	5.04	5.41	0.659
Wisconsin	4.12	4.88	0.197	4.16 ^a	7.53	0.000	4.11	4.45	0.605
Wyoming	4.20	4.84	0.301	3.49 ^a	7.66	0.000	4.32	4.39	0.920

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 2016-2017 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 "2016-2017 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 2016-2017 population percentages is statistically significant at the 0.05 level.

^b Difference between the 2008-2009 and 2016-2017 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, 2016, and 2017 (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 2016-2017 NSDUHs*

State	18+ (2008-2009)	18+ (2016-2017)	18+ (P Value)	18-25 (2008-2009)	18-25 (2016-2017)	18-25 (P Value)	26+ (2008-2009)	26+ (2016-2017)	26+ (P Value)
Total U.S.	17.92 ^a	18.57	0.022	18.25 ^a	23.93	0.000	17.86	17.69	0.584
Northeast	18.18	18.01	0.748	18.61 ^a	24.10	0.000	18.10 ^b	17.03	0.079
Midwest	18.36	18.78	0.350	19.22 ^a	24.92	0.000	18.21	17.76	0.377
South	17.33 ^a	18.18	0.039	17.06 ^a	22.47	0.000	17.38	17.49	0.810
West	18.23 ^a	19.41	0.041	18.88 ^a	25.19	0.000	18.12	18.45	0.610
Alabama	17.44 ^b	19.95	0.068	16.53 ^a	21.52	0.006	17.59	19.69	0.180
Alaska	16.72 ^a	20.32	0.010	15.79 ^a	27.34	0.000	16.90	19.14	0.156
Arizona	17.15	18.02	0.543	18.31 ^a	22.39	0.044	16.95	17.30	0.833
Arkansas	19.60	20.73	0.442	19.89 ^a	24.46	0.021	19.55	20.11	0.736
California	17.44	18.18	0.388	18.49 ^a	24.75	0.000	17.23	17.06	0.860
Colorado	18.95	19.86	0.530	17.74 ^a	27.72	0.000	19.15	18.58	0.726
Connecticut	17.87	18.18	0.829	19.35 ^a	25.56	0.003	17.64	16.98	0.685
Delaware	17.75	18.65	0.529	18.41 ^a	23.52	0.009	17.64	17.93	0.860
District of Columbia	17.99 ^a	21.17	0.029	17.44 ^a	23.89	0.001	18.12	20.65	0.138
Florida	16.99	17.54	0.538	16.69 ^a	22.74	0.000	17.03	16.83	0.844
Georgia	16.50	18.07	0.219	16.16 ^a	21.26	0.003	16.56	17.53	0.501
Hawaii	17.52	16.27	0.378	19.54	22.94	0.111	17.20	15.36	0.247
Idaho	19.51 ^a	25.03	0.000	19.37 ^a	27.79	0.000	19.54 ^a	24.57	0.004
Illinois	16.68	16.76	0.932	17.19 ^a	22.82	0.000	16.59	15.78	0.445
Indiana	20.37	20.90	0.720	20.62 ^a	27.45	0.001	20.33	19.75	0.730
Iowa	17.23	19.02	0.175	18.24 ^a	25.26	0.000	17.05	17.90	0.570
Kansas	17.24 ^b	19.71	0.072	17.89 ^a	24.72	0.001	17.13	18.81	0.280
Kentucky	19.23 ^a	22.29	0.042	17.78 ^a	22.83	0.007	19.46	22.21	0.105
Louisiana	17.46	19.11	0.223	16.81	19.67	0.120	17.59	19.02	0.357
Maine	19.25	19.01	0.866	19.59 ^a	26.59	0.001	19.20	17.99	0.450
Maryland	16.86	16.94	0.952	17.72 ^a	23.18	0.006	16.72	15.99	0.631
Massachusetts	18.01 ^b	20.57	0.073	18.31 ^a	26.23	0.000	17.95	19.59	0.311
Michigan	18.63	18.34	0.759	19.81 ^a	24.05	0.001	18.43	17.39	0.327
Minnesota	18.94	18.21	0.590	19.72 ^a	28.73	0.000	18.81	16.55	0.138
Mississippi	16.95	19.04	0.144	17.28	19.70	0.195	16.89	18.92	0.214
Missouri	19.11	20.05	0.516	21.43	23.27	0.386	18.72	19.52	0.624
Montana	19.18	19.78	0.670	19.20 ^a	26.11	0.000	19.17	18.77	0.803

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 2016-2017 NSDUHs (continued)

State	18+ (2008-2009)	18+ (2016-2017)	18+ (P Value)	18-25 (2008-2009)	18-25 (2016-2017)	18-25 (P Value)	26+ (2008-2009)	26+ (2016-2017)	26+ (P Value)
Nebraska	17.56	17.88	0.811	17.25 ^a	24.79	0.000	17.63	16.64	0.511
Nevada	20.59	18.87	0.260	20.46 ^a	24.82	0.038	20.60	18.01	0.128
New Hampshire	18.35	19.15	0.558	19.88 ^a	26.70	0.001	18.11	17.98	0.931
New Jersey	17.65	16.19	0.283	18.52	20.96	0.171	17.51	15.48	0.184
New Mexico	17.85	17.73	0.930	18.04 ^a	24.08	0.002	17.82	16.68	0.474
New York	18.35	17.61	0.419	18.27 ^a	23.63	0.000	18.37 ^b	16.63	0.098
North Carolina	17.74	18.02	0.829	16.43 ^a	22.32	0.001	17.95	17.34	0.670
North Dakota	15.46 ^a	18.30	0.029	15.32 ^a	23.90	0.000	15.50	17.15	0.272
Ohio	18.41	19.85	0.136	18.75 ^a	25.42	0.000	18.36	18.97	0.576
Oklahoma	20.33	20.02	0.838	20.56	23.59	0.154	20.28	19.40	0.611
Oregon	19.55 ^a	23.59	0.011	20.51 ^a	27.85	0.001	19.40 ^a	22.95	0.046
Pennsylvania	17.83	17.98	0.870	18.55 ^a	24.38	0.000	17.71	16.99	0.512
Rhode Island	23.53 ^a	19.59	0.015	22.77	24.76	0.380	23.67 ^a	18.67	0.007
South Carolina	16.95	18.56	0.253	16.99 ^a	23.73	0.000	16.94	17.76	0.607
South Dakota	16.40	17.70	0.330	16.94 ^a	23.75	0.000	16.31	16.68	0.809
Tennessee	19.12	19.24	0.935	17.43 ^a	23.90	0.001	19.38	18.50	0.582
Texas	16.47	16.32	0.859	16.11 ^a	21.62	0.000	16.54	15.37	0.224
Utah	21.78	23.47	0.250	21.53 ^a	28.99	0.001	21.85	22.24	0.822
Vermont	18.66	19.84	0.407	19.42 ^a	30.05	0.000	18.53	18.06	0.771
Virginia	16.33 ^b	18.78	0.052	18.33 ^a	25.39	0.000	15.99	17.72	0.221
Washington	19.85 ^b	22.81	0.063	20.00 ^a	24.81	0.023	19.82	22.51	0.138
West Virginia	20.00 ^b	22.89	0.070	21.21	23.96	0.194	19.83	22.73	0.104
Wisconsin	19.96	18.54	0.321	22.43	25.53	0.139	19.55	17.40	0.180
Wyoming	20.24	20.25	0.996	20.38 ^a	26.55	0.002	20.22	19.25	0.568

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 2016-2017 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 "2016-2017 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 2016-2017 population percentages is statistically significant at the 0.05 level.

^b Difference between the 2008-2009 and 2016-2017 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, 2016, and 2017 (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 2016-2017 NSDUHs*

State	18+ (2008-2009)	18+ (2016-2017)	18+ (P Value)	18-25 (2008-2009)	18-25 (2016-2017)	18-25 (P Value)	26+ (2008-2009)	26+ (2016-2017)	26+ (P Value)
Total U.S.	3.73 ^a	4.19	0.000	6.42 ^a	9.64	0.000	3.26	3.31	0.759
Northeast	3.73	3.99	0.246	6.64 ^a	9.50	0.000	3.24	3.11	0.590
Midwest	4.10	4.35	0.215	6.79 ^a	9.98	0.000	3.64	3.41	0.291
South	3.41 ^a	4.03	0.000	5.91 ^a	9.24	0.000	2.99	3.20	0.261
West	3.87 ^a	4.45	0.013	6.66 ^a	10.07	0.000	3.36	3.52	0.531
Alabama	3.73	3.89	0.784	6.42 ^a	8.71	0.032	3.28	3.11	0.785
Alaska	3.76 ^a	5.34	0.011	6.00 ^a	13.26	0.000	3.34	4.01	0.317
Arizona	3.98	4.02	0.950	6.60 ^a	9.28	0.019	3.54	3.15	0.546
Arkansas	4.11	4.59	0.406	6.67 ^a	9.83	0.005	3.69	3.73	0.947
California	3.39 ^b	4.04	0.052	6.53 ^a	9.68	0.000	2.79	3.09	0.418
Colorado	4.30 ^b	5.41	0.100	6.14 ^a	11.25	0.000	4.00	4.46	0.532
Connecticut	3.95	4.05	0.871	6.61 ^a	10.03	0.003	3.53	3.08	0.487
Delaware	3.02 ^a	4.16	0.029	6.09 ^a	9.61	0.001	2.51	3.35	0.136
District of Columbia	4.47	4.11	0.557	5.73 ^a	8.55	0.005	4.18	3.24	0.181
Florida	3.54	3.49	0.893	6.10 ^a	9.38	0.000	3.16	2.69	0.229
Georgia	2.80 ^a	4.38	0.001	5.26 ^a	8.73	0.000	2.38 ^a	3.65	0.016
Hawaii	3.81	4.08	0.662	7.53 ^b	10.08	0.055	3.21	3.26	0.947
Idaho	4.76	5.60	0.205	7.07 ^a	10.59	0.004	4.35	4.78	0.567
Illinois	4.28	3.87	0.334	6.31 ^a	9.33	0.000	3.91 ^a	2.98	0.047
Indiana	4.21	5.04	0.180	6.56 ^a	11.05	0.000	3.82	3.99	0.799
Iowa	4.01	4.69	0.239	6.44 ^a	10.58	0.000	3.59	3.64	0.934
Kansas	3.60 ^a	4.87	0.025	6.42 ^a	10.29	0.001	3.07	3.90	0.190
Kentucky	3.96	4.71	0.215	6.28 ^a	10.47	0.000	3.60	3.78	0.790
Louisiana	3.11 ^a	4.25	0.029	5.84 ^a	8.07	0.030	2.58 ^b	3.62	0.071
Maine	4.56	3.99	0.351	7.07 ^a	9.98	0.012	4.21	3.19	0.122
Maryland	3.41	4.00	0.266	6.51 ^a	9.04	0.022	2.89	3.23	0.554
Massachusetts	3.93	4.57	0.288	5.99 ^a	10.07	0.000	3.57	3.63	0.927
Michigan	4.26	3.99	0.503	7.67 ^a	9.33	0.040	3.69	3.10	0.192
Minnesota	3.67	4.52	0.130	6.59 ^a	10.17	0.002	3.18	3.63	0.456
Mississippi	3.29	4.01	0.162	6.35 ^a	8.54	0.035	2.72	3.22	0.380
Missouri	3.87	4.04	0.773	6.34 ^a	9.75	0.002	3.47	3.11	0.561
Montana	4.35	4.91	0.382	6.85 ^a	11.26	0.000	3.93	3.90	0.965

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 2016-2017 NSDUHs (continued)

State	18+ (2008-2009)	18+ (2016-2017)	18+ (P Value)	18-25 (2008-2009)	18-25 (2016-2017)	18-25 (P Value)	26+ (2008-2009)	26+ (2016-2017)	26+ (P Value)
Nebraska	3.91	4.05	0.798	6.04 ^a	9.21	0.003	3.51	3.13	0.535
Nevada	4.41	4.62	0.771	6.71 ^a	10.40	0.003	4.07	3.78	0.701
New Hampshire	3.40 ^a	4.89	0.011	6.82 ^a	10.87	0.001	2.88 ^b	3.97	0.084
New Jersey	3.28	3.41	0.785	6.97 ^a	9.14	0.042	2.71	2.56	0.759
New Mexico	4.15	4.01	0.817	6.85 ^b	8.78	0.083	3.65	3.23	0.522
New York	3.82	3.68	0.716	6.62 ^a	9.22	0.001	3.32	2.79	0.207
North Carolina	3.55 ^b	4.57	0.061	5.80 ^a	9.67	0.000	3.18	3.77	0.328
North Dakota	3.56 ^b	4.57	0.063	5.39 ^a	10.07	0.000	3.14	3.43	0.628
Ohio	4.25	4.56	0.482	6.90 ^a	10.09	0.000	3.82	3.68	0.771
Oklahoma	3.53	4.10	0.305	6.31 ^a	9.03	0.016	3.02	3.25	0.700
Oregon	4.43	5.18	0.266	6.64 ^a	11.01	0.000	4.08	4.32	0.758
Pennsylvania	3.52 ^b	4.28	0.052	6.73 ^a	9.30	0.002	2.99	3.51	0.230
Rhode Island	5.11	4.78	0.641	6.79 ^a	10.62	0.001	4.79	3.73	0.167
South Carolina	3.51	4.11	0.275	6.21 ^a	9.27	0.004	3.07	3.31	0.684
South Dakota	4.23	4.40	0.768	7.18 ^a	9.85	0.018	3.70	3.48	0.730
Tennessee	3.26 ^a	4.50	0.021	5.64 ^a	9.29	0.000	2.90	3.74	0.158
Texas	3.27	3.72	0.177	5.42 ^a	9.31	0.000	2.86	2.72	0.694
Utah	5.39	5.99	0.392	7.49 ^a	12.23	0.001	4.85	4.60	0.754
Vermont	4.49	5.31	0.231	7.04 ^a	11.29	0.001	4.07	4.27	0.795
Virginia	3.31 ^b	4.20	0.067	6.25 ^a	9.26	0.003	2.80	3.40	0.272
Washington	4.56	5.06	0.457	7.18 ^a	10.08	0.013	4.14	4.30	0.831
West Virginia	4.29	4.75	0.488	7.28 ^a	10.01	0.022	3.86	3.99	0.864
Wisconsin	4.05	4.60	0.334	7.90 ^a	10.87	0.016	3.40	3.57	0.783
Wyoming	4.52	4.39	0.836	6.32 ^a	10.57	0.000	4.20	3.41	0.243

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 2016-2017 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 2016-2017 population percentages is statistically significant at the 0.05 level.

^b Difference between the 2008-2009 and 2016-2017 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, 2016, and 2017 (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 2016-2017 NSDUHs

State	18+ (2008-2009)	18+ (2016-2017)	18+ (P Value)	12-17 (2008-2009)	12-17 (2016-2017)	12-17 (P Value)	18-25 (2008-2009)	18-25 (2016-2017)	18-25 (P Value)	26+ (2008-2009)	26+ (2016-2017)	26+ (P Value)
Total U.S.	6.53 ^a	6.89	0.032	8.22 ^a	13.01	0.000	8.21 ^a	11.95	0.000	6.24	6.07	0.367
Northeast	6.42	6.76	0.274	7.92 ^a	12.14	0.000	8.06 ^a	11.77	0.000	6.15	5.96	0.579
Midwest	6.72 ^a	7.24	0.039	8.35 ^a	13.93	0.000	8.50 ^a	12.61	0.000	6.41	6.35	0.832
South	6.44	6.66	0.339	8.07 ^a	12.39	0.000	7.79 ^a	10.91	0.000	6.22	5.98	0.374
West	6.57	7.05	0.116	8.53 ^a	13.79	0.000	8.67 ^a	13.11	0.000	6.19	6.05	0.685
Alabama	6.35	7.24	0.263	7.99 ^a	11.90	0.001	7.35 ^a	10.47	0.012	6.19	6.72	0.553
Alaska	5.86 ^a	7.69	0.024	7.70 ^a	14.27	0.000	7.31 ^a	13.28	0.000	5.59	6.76	0.191
Arizona	6.94	6.53	0.616	8.99 ^a	13.06	0.003	8.88	10.62	0.212	6.61	5.86	0.404
Arkansas	7.86	8.19	0.718	9.03 ^a	13.36	0.001	8.98 ^a	12.24	0.019	7.67	7.53	0.888
California	6.05	6.48	0.341	8.14 ^a	13.23	0.000	8.50 ^a	13.14	0.000	5.58	5.36	0.655
Colorado	7.56	7.70	0.866	9.16 ^a	13.89	0.000	8.40 ^a	15.01	0.000	7.41	6.51	0.342
Connecticut	5.95	6.97	0.177	8.03 ^a	13.16	0.000	8.11 ^a	13.10	0.000	5.61	5.98	0.651
Delaware	6.43	7.07	0.419	7.86 ^a	11.58	0.002	8.55 ^a	11.82	0.020	6.08	6.37	0.741
District of Columbia	5.93 ^a	7.89	0.013	6.93 ^a	10.49	0.004	7.39 ^a	12.25	0.001	5.60	7.04	0.105
Florida	6.40	6.20	0.702	8.53 ^a	13.09	0.000	7.93 ^a	11.15	0.000	6.17	5.52	0.267
Georgia	6.26	6.90	0.395	7.88 ^a	11.44	0.002	7.65 ^a	10.48	0.016	6.02	6.30	0.742
Hawaii	6.15	5.67	0.540	8.08 ^a	11.97	0.007	8.68 ^b	11.22	0.088	5.74	4.91	0.321
Idaho	7.47	8.32	0.321	8.90 ^a	16.22	0.000	9.19 ^a	14.15	0.001	7.16	7.35	0.843
Illinois	6.17	6.30	0.803	7.48 ^a	14.00	0.000	7.93 ^a	11.59	0.000	5.85	5.44	0.498
Indiana	8.14	7.98	0.858	9.25 ^a	13.77	0.001	8.51 ^a	13.52	0.001	8.08	7.02	0.287
Iowa	5.87 ^a	7.73	0.013	8.07 ^a	14.10	0.000	7.75 ^a	12.94	0.000	5.54	6.80	0.134
Kansas	6.61	7.58	0.239	8.58 ^a	13.84	0.000	8.38 ^a	11.87	0.012	6.29	6.81	0.567
Kentucky	7.14	7.87	0.395	8.42 ^a	11.94	0.006	7.98 ^a	12.09	0.002	7.00	7.19	0.847
Louisiana	5.75 ^b	7.17	0.063	7.67 ^a	10.76	0.011	6.97	8.80	0.125	5.51	6.90	0.115
Maine	6.81	7.48	0.411	8.08 ^a	15.07	0.000	8.78 ^a	15.31	0.000	6.53	6.44	0.917
Maryland	6.17	6.93	0.335	7.31 ^a	12.91	0.000	8.18 ^a	12.93	0.001	5.83	6.02	0.831
Massachusetts	6.77	7.56	0.323	8.03 ^a	13.60	0.000	8.51 ^a	14.11	0.000	6.47	6.44	0.976
Michigan	6.65	7.13	0.371	8.21 ^a	13.87	0.000	9.15 ^a	11.85	0.004	6.23	6.34	0.852
Minnesota	7.55	6.77	0.337	8.60 ^a	13.56	0.000	8.87 ^a	15.20	0.000	7.33 ^a	5.44	0.036
Mississippi	5.80	7.02	0.103	7.26 ^a	11.56	0.000	6.60 ^a	10.08	0.004	5.66	6.49	0.321
Missouri	7.03	7.96	0.277	8.91 ^a	14.57	0.000	9.15 ^b	11.87	0.054	6.68	7.33	0.499
Montana	6.76	7.94	0.141	9.07 ^a	14.07	0.000	8.85 ^a	13.90	0.000	6.41	6.99	0.516

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 2016-2017 NSDUHs (continued)

State	18+ (2008-2009)	18+ (2016-2017)	18+ (P Value)	12-17 (2008-2009)	12-17 (2016-2017)	12-17 (P Value)	18-25 (2008-2009)	18-25 (2016-2017)	18-25 (P Value)	26+ (2008-2009)	26+ (2016-2017)	26+ (P Value)
Nebraska	6.31	6.64	0.644	8.20 ^a	13.01	0.000	7.59 ^a	11.60	0.002	6.07	5.76	0.704
Nevada	6.88	6.74	0.862	7.38 ^a	14.97	0.000	8.89 ^a	12.79	0.007	6.58	5.86	0.428
New Hampshire	7.61	8.29	0.457	8.80 ^a	13.91	0.000	8.88 ^a	14.23	0.000	7.41	7.37	0.967
New Jersey	5.98	6.05	0.918	7.35 ^a	11.17	0.001	8.12	10.03	0.125	5.65	5.46	0.814
New Mexico	6.47	6.63	0.842	8.95 ^a	14.88	0.000	8.56 ^b	11.18	0.069	6.08	5.88	0.820
New York	6.64	6.49	0.767	8.22 ^a	11.46	0.000	7.84 ^a	10.70	0.001	6.42	5.80	0.286
North Carolina	6.85	6.72	0.867	8.43 ^a	12.03	0.002	8.07 ^b	10.35	0.056	6.65	6.15	0.553
North Dakota	6.26	7.10	0.265	9.03 ^a	12.13	0.014	7.21 ^a	11.86	0.000	6.05	6.13	0.929
Ohio	6.18 ^a	7.56	0.010	8.31 ^a	14.35	0.000	8.16 ^a	12.63	0.000	5.85	6.76	0.137
Oklahoma	7.40	7.75	0.692	8.04 ^a	13.86	0.000	9.47	11.81	0.117	7.03	7.06	0.976
Oregon	7.44	8.49	0.242	10.18 ^a	16.34	0.000	9.83 ^a	15.16	0.001	7.07	7.49	0.670
Pennsylvania	5.92	6.82	0.103	7.54 ^a	12.23	0.000	7.64 ^a	12.13	0.000	5.64	6.01	0.547
Rhode Island	9.34 ^b	7.41	0.052	9.35 ^a	13.30	0.005	10.87	12.06	0.468	9.05 ^a	6.57	0.026
South Carolina	7.02	6.76	0.750	8.90 ^a	12.31	0.006	8.43 ^b	10.70	0.072	6.79	6.15	0.487
South Dakota	5.71	6.73	0.159	8.47 ^a	12.56	0.003	6.90 ^a	13.06	0.000	5.50	5.66	0.846
Tennessee	6.83	7.18	0.657	8.53 ^a	12.79	0.001	7.19 ^a	12.34	0.000	6.78	6.37	0.635
Texas	5.97	5.76	0.648	7.49 ^a	12.19	0.000	7.25 ^a	9.89	0.001	5.73	5.02	0.176
Utah	7.51 ^b	9.06	0.061	8.43 ^a	15.48	0.000	8.37 ^a	14.95	0.000	7.29	7.75	0.632
Vermont	6.52	7.60	0.172	8.10 ^a	12.83	0.000	9.43 ^a	14.33	0.001	6.04	6.43	0.657
Virginia	6.30	6.77	0.512	8.78 ^a	13.22	0.000	8.57 ^a	12.35	0.003	5.92	5.88	0.966
Washington	7.19	8.52	0.145	9.39 ^a	13.98	0.001	9.07 ^a	12.50	0.022	6.88	7.91	0.318
West Virginia	7.77	8.52	0.423	8.39 ^a	14.05	0.000	8.81 ^a	13.06	0.004	7.62	7.86	0.816
Wisconsin	7.28	7.50	0.778	8.83 ^a	13.66	0.000	9.55 ^a	13.99	0.003	6.89	6.44	0.614
Wyoming	7.37	7.15	0.785	8.50 ^a	14.20	0.000	9.50 ^a	12.85	0.018	6.99	6.25	0.411

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 2016-2017 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 "2016-2017 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 2016-2017 population percentages is statistically significant at the 0.05 level.

^b Difference between the 2008-2009 and 2016-2017 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, 2016, and 2017 (2008 and 2009 Data – Revised March 2012).

Methodology Used to Estimate the Bayes Significance Level for the Null Hypothesis of No Change between the 2008-2009 and 2016-2017 Population Percentages

Estimating *P* Values

To determine whether the differences between the 2008-2009¹ and 2016-2017 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 2016-2017 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 2016-2017 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 2016-2017 Bayesian confidence intervals given here, respectively. The correlation between $\ln(\hat{\theta}_1)$ and $\ln(\hat{\theta}_2)$ is estimated using generalized correlations,² 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 2016-2017 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 Rubin³ 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,

² In previous years (with the exception of 2002-2003 vs. 2011-2012), the correlations were produced by simultaneously modeling the 4 years of data instead of using the generalized correlations. For more information about simultaneous modeling, see the following document at <https://www.samhsa.gov/data/>: "NSDUH: Comparison of 2015-2016 and 2016-2017 Population Percentages."

³ 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.

- two sets of 2002-2003 versus 2009-2010,⁴
- 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

⁴ 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.

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 significance⁵ 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.

⁵ 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.