

# State Estimates of Major Depressive Episode from the 2007-2008 National Surveys on Drug Use and Health for Adults Aged 18 or Older: June 2011 Addendum

State-level estimates of major depressive episode (MDE) for adults aged 18 or older were not included in the 2007-2008 National Survey on Drug Use and Health (NSDUH) State report because of lack of comparability in estimates resulting from questionnaire changes that occurred in 2008.<sup>1</sup> In the 2008 NSDUH questionnaire, changes were made to other mental health items that preceded the adult MDE questions (Kessler-6 [K6], suicide, and impairment) that appeared to affect the reporting on MDE questions among adults. This change caused the 2008 MDE estimates for adults to no longer be comparable with those for 2007 and prior years. Also, the addition of an impairment scale in 2008 was implemented such that half of the adults received the World Health Organization Disability Assessment Schedule (WHODAS) module and the other half received the Sheehan Disability Scale (SDS) module. The addition of the impairment scales affected responses to MDE questions differently between the two half samples. In 2009, all adults were asked the WHODAS impairment questions.

After the 2007-2008 State report was published, model-based adjustments were applied to MDE estimates from the SDS half sample to make them comparable with those from the WHODAS half sample. Additionally, model-based adjustments were made to the 2005 to 2007 adult MDE estimates to make them comparable with the 2008 and 2009 MDE estimates.<sup>2</sup>

The 2008-2009 State report includes 2008-2009 MDE estimates and 95 percent Bayesian confidence intervals (CIs).<sup>3</sup> The 2008 adjusted MDE variable was combined with the comparable 2009 MDE variable to produce these estimates. Additionally, the adjusted 2007-2008 MDE estimates are included in the report's Appendix C tables that compare the 2007-2008 estimates with the 2008-2009 estimates. Because the 18 or older 2007-2008 MDE small area estimates are shown for the first time in the 2008-2009 State report, these estimates and their associated 95 percent CIs are shown in the following tables (just the estimates and not the CIs are included in Appendix C of the 2008-2009 State report). The first table shows the percentages, and the second table shows the estimated numbers in thousands. Both tables display the associated CIs.

MDE estimates for youths aged 12 to 17 were produced for the 2007-2008 State report because those estimates were unaffected by questionnaire changes. For more information on MDE estimates, see Section A.11 in Appendix A of the 2008-2009 NSDUH State report.

---

<sup>1</sup> Hughes, A., Muhuri, P., Sathe, N., & Spagnola, K. (2010). *State estimates of substance use from the 2007-2008 National Surveys on Drug Use and Health* (HHS Publication No. SMA 10-4472, NSDUH Series H-37). Rockville, MD: Substance Abuse and Mental Health Services Administration, Office of Applied Studies.

<sup>2</sup> Aldworth, J., Kott, P., Yu, F., Mosquin, P., & Barnett-Walker, K. (2011). *Analysis of effects of 2008 NSDUH questionnaire changes: Methods to adjust adult MDE and SPD estimates and to estimate SMI in 2005-2007* (RTI/0209009.486.024, prepared for the Substance Abuse and Mental Health Services Administration, Office of Applied Studies, under Contract No. 283-2004-00022). Research Triangle Park, NC: RTI International.

<sup>3</sup> Hughes, A., Muhuri, P., Sathe, N., & Spagnola, K. (2011). *State estimates of substance use and mental disorders from the 2008-2009 National Surveys on Drug Use and Health* (HHS Publication No. SMA 11-4641, NSDUH Series H-40). Rockville, MD: Substance Abuse and Mental Health Services Administration, Center for Behavioral Health Statistics and Quality.

**Had at Least One Major Depressive Episode in the Past Year among Persons Aged 18 or Older, by Age Group and State: Percentages, Annual Averages Based on 2007 and 2008 NSDUHs**

State	18+ (Estimate)	18+ (95% Confidence Interval)	18-25 (Estimate)	18-25 (95% Confidence Interval)	26+ (Estimate)	26+ (95% Confidence Interval)
Total U.S.	6.56	(6.31 - 6.82)	8.15	(7.84 - 8.48)	6.29	(6.01 - 6.59)
Northeast	6.30	(5.85 - 6.77)	7.92	(7.37 - 8.52)	6.02	(5.53 - 6.56)
Midwest	6.72	(6.33 - 7.14)	8.51	(8.04 - 9.00)	6.42	(5.97 - 6.89)
South	6.59	(6.21 - 6.99)	7.78	(7.33 - 8.27)	6.39	(5.96 - 6.84)
West	6.59	(6.09 - 7.12)	8.55	(7.91 - 9.23)	6.24	(5.68 - 6.85)
Alabama	5.81	(4.70 - 7.17)	7.57	(6.13 - 9.32)	5.51	(4.30 - 7.04)
Alaska	6.23	(5.07 - 7.64)	7.79	(6.25 - 9.67)	5.94	(4.65 - 7.55)
Arizona	7.13	(5.84 - 8.67)	9.06	(7.35 - 11.11)	6.80	(5.40 - 8.53)
Arkansas	7.36	(6.05 - 8.93)	8.52	(6.94 - 10.42)	7.17	(5.73 - 8.94)
California	6.10	(5.35 - 6.94)	8.32	(7.36 - 9.40)	5.67	(4.84 - 6.64)
Colorado	6.87	(5.63 - 8.36)	8.40	(6.87 - 10.25)	6.62	(5.27 - 8.29)
Connecticut	6.77	(5.54 - 8.25)	8.53	(7.02 - 10.33)	6.49	(5.14 - 8.17)
Delaware	6.15	(4.99 - 7.55)	7.66	(6.18 - 9.48)	5.90	(4.63 - 7.48)
District of Columbia	6.55	(5.39 - 7.94)	7.94	(6.40 - 9.81)	6.24	(4.94 - 7.86)
Florida	6.52	(5.73 - 7.42)	7.72	(6.75 - 8.81)	6.34	(5.47 - 7.35)
Georgia	6.53	(5.31 - 8.02)	7.35	(5.93 - 9.09)	6.39	(5.05 - 8.07)
Hawaii	5.88	(4.67 - 7.38)	8.10	(6.50 - 10.06)	5.53	(4.21 - 7.24)
Idaho	7.48	(6.22 - 8.96)	8.42	(6.90 - 10.24)	7.31	(5.91 - 9.00)
Illinois	5.84	(5.13 - 6.64)	7.73	(6.79 - 8.79)	5.50	(4.69 - 6.43)
Indiana	8.25	(6.79 - 9.98)	9.31	(7.72 - 11.19)	8.07	(6.46 - 10.03)
Iowa	6.20	(5.13 - 7.48)	8.09	(6.60 - 9.88)	5.86	(4.69 - 7.31)
Kansas	7.29	(5.95 - 8.90)	8.39	(6.80 - 10.31)	7.08	(5.59 - 8.93)
Kentucky	7.66	(6.28 - 9.31)	8.32	(6.81 - 10.14)	7.55	(6.04 - 9.41)
Louisiana	6.19	(5.08 - 7.53)	7.12	(5.78 - 8.74)	6.01	(4.77 - 7.54)
Maine	7.38	(6.01 - 9.03)	9.27	(7.62 - 11.23)	7.12	(5.63 - 8.96)
Maryland	5.90	(4.75 - 7.29)	7.90	(6.45 - 9.65)	5.56	(4.33 - 7.12)
Massachusetts	6.54	(5.37 - 7.94)	8.43	(6.92 - 10.23)	6.21	(4.92 - 7.80)
Michigan	6.61	(5.86 - 7.44)	9.20	(8.22 - 10.28)	6.16	(5.32 - 7.13)
Minnesota	7.07	(5.79 - 8.61)	8.48	(6.88 - 10.42)	6.83	(5.43 - 8.56)
Mississippi	5.35	(4.28 - 6.67)	6.48	(5.21 - 8.04)	5.14	(3.96 - 6.64)
Missouri	7.06	(5.85 - 8.50)	9.03	(7.48 - 10.87)	6.73	(5.41 - 8.35)
Montana	6.72	(5.52 - 8.16)	9.16	(7.58 - 11.03)	6.30	(4.99 - 7.93)

(continued)

**Had at Least One Major Depressive Episode in the Past Year among Persons Aged 18 or Older, by Age Group and State: Percentages, Annual Averages Based on 2007 and 2008 NSDUHs (continued)**

State	18+ (Estimate)	18+ (95% Confidence Interval)	18-25 (Estimate)	18-25 (95% Confidence Interval)	26+ (Estimate)	26+ (95% Confidence Interval)
Nebraska	5.51	(4.47 - 6.78)	7.17	(5.71 - 8.97)	5.20	(4.05 - 6.64)
Nevada	7.02	(5.66 - 8.68)	9.61	(7.79 - 11.79)	6.64	(5.17 - 8.48)
New Hampshire	7.78	(6.40 - 9.42)	8.69	(7.06 - 10.66)	7.64	(6.12 - 9.48)
New Jersey	5.75	(4.63 - 7.14)	7.14	(5.77 - 8.82)	5.54	(4.31 - 7.09)
New Mexico	7.37	(5.99 - 9.05)	8.86	(7.14 - 10.94)	7.10	(5.56 - 9.03)
New York	6.55	(5.78 - 7.42)	8.22	(7.24 - 9.33)	6.26	(5.39 - 7.25)
North Carolina	7.09	(5.74 - 8.72)	8.44	(6.88 - 10.30)	6.87	(5.41 - 8.70)
North Dakota	6.54	(5.38 - 7.91)	8.08	(6.63 - 9.81)	6.19	(4.89 - 7.80)
Ohio	6.57	(5.84 - 7.40)	8.24	(7.32 - 9.26)	6.30	(5.48 - 7.23)
Oklahoma	7.96	(6.52 - 9.67)	9.52	(7.72 - 11.67)	7.67	(6.10 - 9.61)
Oregon	7.09	(5.81 - 8.63)	9.63	(8.08 - 11.43)	6.70	(5.29 - 8.45)
Pennsylvania	5.61	(4.92 - 6.40)	7.14	(6.24 - 8.16)	5.36	(4.60 - 6.25)
Rhode Island	7.56	(6.22 - 9.17)	9.05	(7.36 - 11.09)	7.29	(5.80 - 9.12)
South Carolina	6.18	(5.03 - 7.56)	7.64	(6.14 - 9.45)	5.94	(4.70 - 7.48)
South Dakota	5.97	(4.81 - 7.38)	7.53	(6.17 - 9.17)	5.68	(4.40 - 7.31)
Tennessee	7.65	(6.28 - 9.28)	7.28	(5.95 - 8.87)	7.70	(6.19 - 9.55)
Texas	6.05	(5.34 - 6.85)	7.23	(6.31 - 8.27)	5.83	(5.02 - 6.76)
Utah	7.02	(5.86 - 8.38)	8.34	(6.79 - 10.20)	6.68	(5.36 - 8.30)
Vermont	6.45	(5.25 - 7.91)	8.53	(7.05 - 10.29)	6.11	(4.79 - 7.77)
Virginia	6.94	(5.71 - 8.41)	9.12	(7.45 - 11.13)	6.58	(5.23 - 8.24)
Washington	7.57	(6.18 - 9.23)	8.54	(7.02 - 10.34)	7.41	(5.88 - 9.29)
West Virginia	8.51	(7.04 - 10.25)	9.84	(8.11 - 11.91)	8.31	(6.71 - 10.26)
Wisconsin	7.38	(6.03 - 9.01)	9.18	(7.64 - 10.99)	7.08	(5.58 - 8.94)
Wyoming	7.89	(6.49 - 9.56)	10.04	(8.31 - 12.08)	7.50	(5.96 - 9.41)

NOTE: Major depressive episode is defined as in the 4th edition of the *Diagnostic and Statistical Manual of Mental Disorders (DSM-IV)*, which specifies a period of at least 2 weeks when a person 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 A.11 in Appendix A of the report on *State Estimates of Substance Use and Mental Disorders from the 2008-2009 NSDUHs*.

NOTE: State and census region estimates, along with the 95 percent Bayesian confidence (credible) intervals, are based on a survey-weighted hierarchical Bayes estimation approach and are generated by Markov Chain Monte Carlo techniques. For the "Total U.S." row, design-based (direct) estimates and corresponding 95 percent confidence intervals are given.

Source: SAMHSA, Center for Behavioral Health Statistics and Quality (formerly the Office of Applied Studies), National Survey on Drug Use and Health, 2007 and 2008.

**Had at Least One Major Depressive Episode in the Past Year among Persons Aged 18 or Older, by Age Group and State: Estimated Numbers (in Thousands), Annual Averages Based on 2007 and 2008 NSDUHs**

<b>State</b>	<b>18+ (Estimate)</b>	<b>18+ (95% Confidence Interval)</b>	<b>18-25 (Estimate)</b>	<b>18-25 (95% Confidence Interval)</b>	<b>26+ (Estimate)</b>	<b>26+ (95% Confidence Interval)</b>
Total U.S.	14,688	(14,098 - 15,303)	2,677	(2,569 - 2,788)	12,011	(11,440 - 12,610)
Northeast	2,617	(2,434 - 2,813)	471	(438 - 506)	2,146	(1,969 - 2,337)
Midwest	3,316	(3,121 - 3,523)	619	(586 - 655)	2,697	(2,510 - 2,896)
South	5,361	(5,054 - 5,685)	913	(859 - 969)	4,448	(4,152 - 4,763)
West	3,394	(3,139 - 3,669)	674	(623 - 728)	2,721	(2,477 - 2,987)
Alabama	200	(162 - 247)	38	(31 - 47)	162	(127 - 207)
Alaska	30	(24 - 37)	6	(5 - 7)	24	(19 - 30)
Arizona	331	(271 - 402)	61	(49 - 75)	270	(214 - 339)
Arkansas	154	(127 - 187)	25	(20 - 31)	129	(103 - 161)
California	1,629	(1,430 - 1,853)	354	(314 - 400)	1,274	(1,086 - 1,493)
Colorado	249	(204 - 303)	44	(36 - 53)	205	(163 - 257)
Connecticut	178	(146 - 217)	30	(25 - 37)	147	(117 - 185)
Delaware	40	(32 - 49)	7	(6 - 9)	33	(26 - 42)
District of Columbia	31	(25 - 37)	7	(5 - 8)	24	(19 - 30)
Florida	909	(798 - 1,034)	137	(120 - 157)	771	(665 - 894)
Georgia	449	(365 - 551)	73	(59 - 91)	376	(296 - 474)
Hawaii	56	(45 - 71)	10	(8 - 13)	46	(35 - 60)
Idaho	81	(67 - 97)	14	(11 - 17)	67	(54 - 82)
Illinois	554	(486 - 630)	112	(98 - 127)	442	(378 - 517)
Indiana	386	(318 - 467)	63	(52 - 76)	323	(258 - 401)
Iowa	139	(115 - 167)	28	(23 - 34)	111	(89 - 139)
Kansas	148	(121 - 181)	27	(22 - 33)	121	(96 - 153)
Kentucky	243	(199 - 295)	35	(29 - 43)	207	(166 - 258)
Louisiana	196	(161 - 238)	37	(30 - 45)	159	(126 - 200)
Maine	76	(62 - 92)	12	(10 - 14)	64	(51 - 80)
Maryland	246	(199 - 305)	47	(39 - 58)	199	(155 - 255)
Massachusetts	324	(266 - 393)	62	(51 - 75)	262	(208 - 329)
Michigan	495	(439 - 557)	100	(89 - 112)	395	(341 - 457)
Minnesota	275	(225 - 335)	49	(40 - 60)	226	(180 - 283)
Mississippi	112	(90 - 140)	21	(17 - 27)	91	(70 - 117)
Missouri	308	(255 - 371)	56	(47 - 68)	252	(202 - 312)
Montana	49	(40 - 59)	10	(8 - 12)	39	(31 - 49)

(continued)

**Had at Least One Major Depressive Episode in the Past Year among Persons Aged 18 or Older, by Age Group and State: Percentages Estimated Numbers (in Thousands), Annual Averages Based on 2007 and 2008 NSDUHs (continued)**

State	18+ (Estimate)	18+ (95% Confidence Interval)	18-25 (Estimate)	18-25 (95% Confidence Interval)	26+ (Estimate)	26+ (95% Confidence Interval)
Nebraska	72	(58 - 88)	15	(12 - 19)	57	(44 - 73)
Nevada	133	(107 - 164)	23	(19 - 29)	109	(85 - 140)
New Hampshire	78	(64 - 95)	12	(9 - 14)	67	(53 - 83)
New Jersey	375	(301 - 465)	61	(50 - 76)	313	(244 - 401)
New Mexico	107	(86 - 131)	20	(16 - 25)	86	(68 - 110)
New York	965	(851 - 1,092)	182	(161 - 207)	782	(674 - 907)
North Carolina	475	(385 - 585)	78	(64 - 95)	397	(313 - 503)
North Dakota	31	(26 - 38)	7	(6 - 9)	24	(19 - 31)
Ohio	563	(500 - 633)	100	(89 - 112)	463	(403 - 531)
Oklahoma	210	(172 - 255)	39	(32 - 48)	171	(136 - 214)
Oregon	203	(166 - 247)	37	(31 - 44)	166	(131 - 209)
Pennsylvania	530	(465 - 604)	95	(83 - 108)	435	(373 - 508)
Rhode Island	61	(50 - 74)	11	(9 - 14)	50	(39 - 62)
South Carolina	202	(165 - 248)	35	(28 - 44)	167	(132 - 211)
South Dakota	35	(28 - 43)	7	(6 - 8)	28	(22 - 36)
Tennessee	353	(290 - 428)	45	(37 - 55)	308	(247 - 382)
Texas	1,026	(905 - 1,162)	195	(171 - 223)	831	(715 - 963)
Utah	129	(107 - 154)	31	(25 - 38)	97	(78 - 121)
Vermont	31	(25 - 38)	6	(5 - 7)	25	(20 - 32)
Virginia	395	(325 - 479)	75	(61 - 91)	320	(255 - 402)
Washington	369	(301 - 450)	57	(47 - 70)	311	(247 - 390)
West Virginia	119	(99 - 144)	17	(14 - 21)	102	(82 - 126)
Wisconsin	311	(254 - 380)	56	(47 - 67)	255	(201 - 322)
Wyoming	31	(25 - 37)	6	(5 - 7)	25	(20 - 31)

NOTE: Major depressive episode is defined as in the 4th edition of the *Diagnostic and Statistical Manual of Mental Disorders (DSM-IV)*, which specifies a period of at least 2 weeks when a person 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 A.11 in Appendix A of the report on *State Estimates of Substance Use and Mental Disorders from the 2008-2009 NSDUHs*.

NOTE: State and census region estimates, along with the 95 percent Bayesian confidence (credible) intervals, are based on a survey-weighted hierarchical Bayes estimation approach and are generated by Markov Chain Monte Carlo techniques. For the "Total U.S." row, design-based (direct) estimates and corresponding 95 percent confidence intervals are given.

Source: SAMHSA, Center for Behavioral Health Statistics and Quality (formerly the Office of Applied Studies), National Survey on Drug Use and Health, 2007 and 2008.

