

# State Estimates of Major Depressive Episode from the 2006-2007 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 included in the 2006-2007 National Survey on Drug Use and Health (NSDUH) State report.<sup>1</sup> However, these estimates are not comparable with the 2007-2008 and 2008-2009 adult MDE estimates published in the 2008-2009 State report.<sup>2</sup> In the 2008 NSDUH questionnaire, changes made to other mental health items preceding the adult MDE questions (Kessler-6 [K6], suicide, and impairment) appeared to affect the reporting on the MDE questions among adults. These changes 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. Adding the impairment scales affected responses to the MDE questions differently between the two half samples. In 2009, all adults were asked the WHODAS impairment questions.

To account for the changes to the questionnaire, model-based adjustments were applied to MDE estimates from the 2008 SDS half sample to make them comparable with those from the 2008 WHODAS half sample. Additionally, model-based adjustments were made to the 2005, 2006, and 2007 adult MDE estimates to make them comparable with the 2008 and 2009 MDE estimates.<sup>3</sup>

Because the 18 or older 2006-2007 MDE estimates from the 2006-2007 State report are not comparable with adult 2007-2008 and 2008-2009 MDE estimates from the 2008-2009 State report, revised 2006-2007 MDE estimates are shown in the following tables using the adjusted MDE variable. The first table shows the percentages, and the second table shows the estimated numbers in thousands. Both tables display the associated confidence intervals.

MDE estimates for youths aged 12 to 17 that were produced for the 2006-2007 State report (see footnote 1) were unchanged 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 (see footnote 2).

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<sup>1</sup> Hughes, A., Sathe, N., & Spagnola, K. (2009). *State estimates of substance use from the 2006-2007 National Surveys on Drug Use and Health* (HHS Publication No. SMA 09-4362, NSDUH Series H-35). Rockville, MD: Substance Abuse and Mental Health Services Administration, Office of Applied Studies.

<sup>2</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.

<sup>3</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.

**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 2006 and 2007 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.	6.58	(6.34 - 6.84)	8.04	(7.71 - 8.37)	6.33	(6.06 - 6.62)
Northeast	6.34	(5.87 - 6.83)	7.88	(7.32 - 8.47)	6.08	(5.56 - 6.64)
Midwest	6.84	(6.46 - 7.24)	8.62	(8.16 - 9.11)	6.52	(6.09 - 6.98)
South	6.78	(6.40 - 7.19)	7.88	(7.44 - 8.35)	6.59	(6.16 - 7.05)
West	6.23	(5.77 - 6.73)	7.84	(7.23 - 8.48)	5.94	(5.41 - 6.51)
Alabama	5.98	(4.87 - 7.31)	7.65	(6.28 - 9.29)	5.69	(4.47 - 7.22)
Alaska	6.74	(5.45 - 8.31)	8.40	(6.82 - 10.31)	6.43	(5.00 - 8.23)
Arizona	6.67	(5.43 - 8.17)	8.20	(6.66 - 10.06)	6.41	(5.05 - 8.11)
Arkansas	7.49	(6.17 - 9.06)	9.16	(7.53 - 11.11)	7.21	(5.76 - 8.99)
California	5.79	(5.08 - 6.59)	7.40	(6.50 - 8.42)	5.48	(4.69 - 6.41)
Colorado	6.61	(5.37 - 8.12)	8.61	(6.98 - 10.58)	6.27	(4.91 - 7.98)
Connecticut	6.30	(5.07 - 7.81)	8.03	(6.50 - 9.88)	6.03	(4.70 - 7.70)
Delaware	6.59	(5.33 - 8.12)	8.02	(6.49 - 9.87)	6.35	(4.97 - 8.07)
District of Columbia	7.49	(6.14 - 9.10)	8.37	(6.72 - 10.39)	7.29	(5.78 - 9.16)
Florida	6.23	(5.45 - 7.11)	7.29	(6.37 - 8.32)	6.07	(5.21 - 7.06)
Georgia	6.85	(5.51 - 8.49)	7.37	(5.91 - 9.16)	6.76	(5.29 - 8.61)
Hawaii	4.63	(3.64 - 5.88)	6.83	(5.40 - 8.59)	4.29	(3.23 - 5.68)
Idaho	7.31	(6.05 - 8.79)	8.38	(6.89 - 10.15)	7.11	(5.71 - 8.81)
Illinois	5.94	(5.22 - 6.76)	7.98	(7.01 - 9.07)	5.57	(4.76 - 6.51)
Indiana	7.61	(6.27 - 9.21)	9.77	(8.16 - 11.65)	7.23	(5.76 - 9.05)
Iowa	6.89	(5.72 - 8.28)	8.94	(7.34 - 10.85)	6.52	(5.22 - 8.10)
Kansas	6.70	(5.48 - 8.17)	8.59	(6.98 - 10.54)	6.34	(4.99 - 8.01)
Kentucky	8.29	(6.76 - 10.13)	9.04	(7.40 - 10.99)	8.17	(6.48 - 10.25)
Louisiana	7.13	(5.83 - 8.70)	8.20	(6.74 - 9.95)	6.92	(5.46 - 8.74)
Maine	8.19	(6.71 - 9.97)	10.00	(8.24 - 12.09)	7.94	(6.32 - 9.92)
Maryland	5.88	(4.75 - 7.26)	7.69	(6.17 - 9.54)	5.58	(4.37 - 7.11)
Massachusetts	7.13	(5.81 - 8.72)	8.18	(6.61 - 10.07)	6.95	(5.50 - 8.74)
Michigan	7.27	(6.46 - 8.17)	9.19	(8.18 - 10.30)	6.94	(6.03 - 7.96)
Minnesota	6.31	(5.14 - 7.73)	7.81	(6.31 - 9.63)	6.05	(4.77 - 7.63)
Mississippi	5.68	(4.60 - 7.00)	7.05	(5.62 - 8.80)	5.42	(4.23 - 6.93)
Missouri	7.78	(6.42 - 9.40)	8.90	(7.37 - 10.72)	7.59	(6.08 - 9.42)
Montana	6.99	(5.77 - 8.44)	8.93	(7.35 - 10.80)	6.65	(5.32 - 8.29)

(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 2006 and 2007 NSDUHs (continued)**

State	18+ (Estimate)	18+ (95% Confidence Interval)	18-25 (Estimate)	18-25 (95% Confidence Interval)	26+ (Estimate)	26+ (95% Confidence Interval)
Nebraska	6.25	(5.06 - 7.71)	7.59	(6.14 - 9.34)	6.00	(4.69 - 7.65)
Nevada	7.97	(6.45 - 9.81)	9.68	(7.85 - 11.88)	7.71	(6.06 - 9.76)
New Hampshire	8.43	(6.92 - 10.24)	9.31	(7.65 - 11.28)	8.30	(6.63 - 10.34)
New Jersey	5.73	(4.55 - 7.18)	7.19	(5.81 - 8.86)	5.51	(4.23 - 7.14)
New Mexico	6.74	(5.42 - 8.34)	8.28	(6.71 - 10.17)	6.45	(4.99 - 8.30)
New York	6.11	(5.34 - 6.98)	7.58	(6.63 - 8.66)	5.85	(4.99 - 6.84)
North Carolina	6.75	(5.50 - 8.26)	7.66	(6.23 - 9.39)	6.60	(5.23 - 8.31)
North Dakota	7.43	(6.15 - 8.96)	9.48	(7.89 - 11.35)	6.97	(5.52 - 8.76)
Ohio	6.97	(6.19 - 7.84)	8.48	(7.55 - 9.53)	6.72	(5.84 - 7.72)
Oklahoma	8.25	(6.64 - 10.21)	9.50	(7.70 - 11.66)	8.01	(6.23 - 10.25)
Oregon	6.55	(5.38 - 7.96)	8.96	(7.38 - 10.85)	6.17	(4.89 - 7.75)
Pennsylvania	6.12	(5.40 - 6.94)	8.11	(7.19 - 9.14)	5.80	(5.00 - 6.72)
Rhode Island	7.34	(5.99 - 8.96)	8.46	(6.89 - 10.36)	7.13	(5.65 - 8.97)
South Carolina	6.99	(5.73 - 8.51)	8.31	(6.79 - 10.14)	6.77	(5.39 - 8.48)
South Dakota	5.46	(4.36 - 6.82)	7.39	(5.90 - 9.22)	5.10	(3.90 - 6.63)
Tennessee	8.74	(7.13 - 10.68)	8.86	(7.25 - 10.79)	8.72	(6.95 - 10.90)
Texas	6.23	(5.49 - 7.06)	7.32	(6.41 - 8.34)	6.02	(5.19 - 6.97)
Utah	6.94	(5.74 - 8.37)	8.40	(6.83 - 10.30)	6.56	(5.20 - 8.23)
Vermont	7.76	(6.40 - 9.40)	9.36	(7.77 - 11.23)	7.50	(6.00 - 9.34)
Virginia	7.10	(5.81 - 8.65)	8.87	(7.24 - 10.83)	6.81	(5.41 - 8.55)
Washington	6.50	(5.24 - 8.02)	7.46	(6.07 - 9.15)	6.34	(4.97 - 8.04)
West Virginia	8.47	(6.92 - 10.33)	10.48	(8.66 - 12.63)	8.17	(6.47 - 10.27)
Wisconsin	6.79	(5.53 - 8.30)	8.78	(7.19 - 10.68)	6.44	(5.07 - 8.14)
Wyoming	7.75	(6.41 - 9.34)	10.10	(8.32 - 12.21)	7.32	(5.85 - 9.13)

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, 2006 and 2007.

**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 2006 and 2007 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.	14,588	(14,052 - 15,149)	2,630	(2,524 - 2,742)	11,958	(11,437 - 12,506)
Northeast	2,621	(2,430 - 2,827)	463	(430 - 499)	2,158	(1,975 - 2,357)
Midwest	3,356	(3,171 - 3,553)	632	(598 - 668)	2,724	(2,545 - 2,915)
South	5,444	(5,137 - 5,772)	921	(870 - 976)	4,523	(4,227 - 4,842)
West	3,166	(2,930 - 3,421)	614	(567 - 665)	2,552	(2,326 - 2,800)
Alabama	204	(167 - 250)	38	(31 - 46)	166	(130 - 211)
Alaska	32	(26 - 39)	6	(5 - 8)	25	(20 - 33)
Arizona	302	(246 - 369)	55	(44 - 67)	247	(194 - 312)
Arkansas	156	(128 - 188)	27	(22 - 33)	128	(102 - 160)
California	1,534	(1,346 - 1,747)	312	(274 - 355)	1,222	(1,045 - 1,427)
Colorado	235	(190 - 288)	45	(36 - 55)	190	(149 - 242)
Connecticut	165	(133 - 205)	28	(23 - 35)	137	(107 - 175)
Delaware	42	(34 - 52)	7	(6 - 9)	35	(27 - 44)
District of Columbia	34	(28 - 42)	7	(6 - 9)	28	(22 - 35)
Florida	861	(753 - 983)	130	(113 - 148)	731	(628 - 850)
Georgia	463	(373 - 574)	74	(59 - 92)	390	(305 - 496)
Hawaii	44	(34 - 56)	9	(7 - 11)	35	(27 - 47)
Idaho	77	(64 - 93)	14	(11 - 17)	63	(51 - 79)
Illinois	561	(493 - 638)	114	(101 - 130)	446	(382 - 522)
Indiana	354	(292 - 429)	67	(56 - 80)	287	(228 - 359)
Iowa	153	(127 - 184)	31	(25 - 37)	123	(98 - 152)
Kansas	135	(110 - 165)	28	(22 - 34)	107	(85 - 136)
Kentucky	260	(212 - 318)	39	(32 - 47)	221	(176 - 278)
Louisiana	222	(181 - 271)	41	(34 - 50)	180	(142 - 228)
Maine	84	(69 - 102)	13	(11 - 15)	71	(57 - 89)
Maryland	245	(198 - 302)	45	(36 - 56)	199	(156 - 254)
Massachusetts	350	(285 - 429)	59	(47 - 72)	292	(231 - 367)
Michigan	545	(484 - 612)	101	(90 - 113)	444	(386 - 510)
Minnesota	244	(198 - 298)	46	(37 - 56)	198	(156 - 250)
Mississippi	119	(96 - 146)	23	(19 - 29)	95	(74 - 122)
Missouri	337	(278 - 407)	56	(47 - 68)	281	(225 - 349)
Montana	50	(41 - 61)	9	(8 - 11)	41	(33 - 51)

(continued)

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State	18+ (Estimate)	18+ (95% Confidence Interval)	18-25 (Estimate)	18-25 (95% Confidence Interval)	26+ (Estimate)	26+ (95% Confidence Interval)
Nebraska	81	(65 - 100)	16	(13 - 20)	65	(51 - 83)
Nevada	148	(120 - 182)	24	(19 - 29)	124	(98 - 157)
New Hampshire	85	(69 - 103)	12	(10 - 15)	72	(58 - 90)
New Jersey	373	(296 - 468)	61	(50 - 76)	312	(240 - 404)
New Mexico	96	(77 - 119)	19	(15 - 23)	77	(60 - 99)
New York	890	(778 - 1,017)	165	(144 - 189)	725	(618 - 848)
North Carolina	444	(361 - 543)	69	(56 - 85)	374	(296 - 471)
North Dakota	35	(29 - 43)	8	(7 - 10)	27	(21 - 34)
Ohio	595	(529 - 670)	104	(93 - 117)	491	(427 - 564)
Oklahoma	216	(173 - 267)	39	(32 - 48)	177	(137 - 226)
Oregon	185	(152 - 225)	35	(29 - 42)	150	(119 - 189)
Pennsylvania	577	(509 - 654)	107	(95 - 121)	470	(405 - 544)
Rhode Island	60	(49 - 73)	11	(9 - 13)	49	(39 - 61)
South Carolina	225	(184 - 274)	38	(31 - 46)	187	(149 - 234)
South Dakota	31	(25 - 39)	7	(5 - 8)	25	(19 - 32)
Tennessee	397	(324 - 485)	55	(45 - 67)	342	(273 - 427)
Texas	1,038	(916 - 1,176)	198	(173 - 225)	841	(725 - 973)
Utah	123	(102 - 148)	31	(25 - 38)	92	(73 - 115)
Vermont	38	(31 - 46)	6	(5 - 8)	31	(25 - 39)
Virginia	400	(327 - 487)	71	(58 - 87)	329	(261 - 413)
Washington	312	(252 - 385)	50	(41 - 61)	262	(205 - 332)
West Virginia	119	(97 - 145)	19	(16 - 23)	100	(79 - 125)
Wisconsin	284	(231 - 347)	54	(45 - 66)	229	(181 - 290)
Wyoming	30	(25 - 36)	6	(5 - 7)	24	(19 - 30)

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Source: SAMHSA, Center for Behavioral Health Statistics and Quality (formerly the Office of Applied Studies), National Survey on Drug Use and Health, 2006 and 2007.

