2011-2012
National Surveys on Drug Use and Health: Guide to State Tables and Summary of Small Area Estimation Methodology

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Section A: Overview of NSDUH and Model-Based State Estimates

A.1 Introduction

This document provides information on the model-based small area estimates of substance use and mental disorders in States based on data from the combined 2011-2012 National Surveys on Drug Use and Health (NSDUHs). (The estimates are available online along with other related information.[1]) An annual survey of the civilian, noninstitutionalized population aged 12 or older, NSDUH is sponsored by the Substance Abuse and Mental Health Services Administration (SAMHSA). It collects information from persons residing in households, noninstitutionalized group quarters (e.g., shelters, rooming houses, dormitories), and civilians living on military bases. In 2011-2012, NSDUH collected data from 138,418 respondents aged 12 or older and was designed to obtain representative samples from the 50 States and the District of Columbia. The survey is planned and managed by SAMHSA's Center for Behavioral Health Statistics and Quality (CBHSQ). Data collection and analysis were conducted under contract with RTI International.[2]

A summary of NSDUH's methodology is given in Section A.2, followed in Section A.3 by a summary of issues related to the mental disorder measures. Information is given in Section A.4 on the confidence intervals and margin of error and how to make interpretations with respect to the small area estimates. Several related drug measures for which small area estimates are produced are discussed in Section A.5. Section A.6 lists all of the tables and documents associated with the 2011-2012 small area estimates and when and where they can be found. During regular data collection and processing checks for the 2011 NSDUH, data errors were identified that affected the data for Pennsylvania (2006 to 2010) and Maryland (2008 and 2009). Section A.7 discusses the revisions to the 2006 to 2010 NSDUH data and corresponding estimates. However, none of the small area estimates produced from combining the 2011 and 2012 NSDUH data were affected by these data errors.

The survey-weighted hierarchical Bayes (SWHB) estimation methodology used in the production of State estimates from the 1999 to 2011 surveys also was used in the production of the 2011-2012 State estimates. The SWHB methodology is described in Appendix E of the 2001 State report (Wright, 2003b) and by Folsom, Shah, and Vaish (1999). The goals of small area estimation (SAE) modeling and the implementation of SAE modeling remain the same and are described in Appendix E of the 2001 State report (Wright, 2003b). A general model description is given in Section B.1. A list of measures for which small area estimates are produced is given in Section B.2. Predictors used in the 2011-2012 SAE modeling are listed and described in Section B.3. Information is given in Section B.4 on the updated 2013-2018 population projections based on the 2010 census obtained from Claritas Inc. that were used in producing these small area estimates and how they were used to create SAE model predictors. New variable selection was done for all measures, as discussed in Section B.5.

[1] See http://www.samhsa.gov/data/NSDUH/2k12State/NSDUHsae2012/Index.aspx.
[2] RTI International is a trade name of Research Triangle Institute, Research Triangle Park, North Carolina.

NSDUH person-level weights used to produce estimates for the years 2002-2010 were calibrated to population counts derived from the 2000 census. However, beginning in 2011 and continuing in 2012, weights were calibrated to counts derived from the 2010 census. This shift to the 2010 census for national estimates is discussed in Section B.4.3 of the 2011 NSDUH national findings report (CBHSQ, 2012c) and Section B.4.5 of the 2011 NSDUH mental health findings report (CBHSQ, 2012b). For the 2010-2011 small area estimates, the 2010 data used weights based on the 2000 census, while the 2011 data used weights based on the 2010 census except for serious mental illness (SMI) and any mental illness (AMI) where weights for 2010 were also based on 2010 census. The 2011-2012 small area estimates not only used weights based on the 2010 census, but also the source of the predictors was updated to reflect the 2010 census data. To assess the impact of these changes (e.g., new weights, updated source of predictors, new variable selection), the 2010-2011 small area estimates for all outcomes were reproduced using the new weights and predictors. Both sets of 2010-2011 small area estimates then were compared with the 2011-2012 small area estimates, and findings from these comparisons were summarized.[3]

Small area estimates obtained using the SWHB methodology are design consistent (i.e., the small area estimates for States with large sample sizes are close to the robust design-based estimates). The State small area estimates when aggregated using the appropriate population totals result in national small area estimates that are very close to the national design-based estimates. However, for numerous reasons (including internal consistency), it is desirable to have national small area estimates exactly match the national design-based estimates. Beginning in 2002, exact benchmarking was introduced, as described in Section B.6.[4] Tables of the estimated numbers of persons associated with each measure are available online,[5] and an explanation of how these counts and their respective Bayesian confidence intervals[6] are calculated can be found in Section B.7. The definition and explanation of the formula used in estimating the marijuana incidence rate are given in Section B.8.

For all measures except major depressive episode (MDE, i.e., depression), SMI, AMI, and past year serious thoughts of suicide, the age groups for which estimates are provided are 12 to 17, 18 to 25, and 26 or older. Estimates for those aged 12 or older also are provided here. Because it was determined that States may find it useful to have estimates for persons aged 18 or older, estimates for that age group also are available online.[7]

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[3] At http://www.samhsa.gov/data/NSDUH/2k12State/NSDUHsae2012/Index.aspx, see the "Impact of Using Updated Census Data in NSDUH Small Area Estimates and Comparison Tables."

[4] The census region-level estimates in the tables are population-weighted aggregates of the State estimates. The national estimates, however, are benchmarked to exactly match the design-based estimates.

[5] At http://www.samhsa.gov/data/NSDUH/2k12State/NSDUHsae2012/Index.aspx, see Tables 1 to 26 in "NSDUH: 2011-2012 Model-Based Estimated Totals (in Thousands) (50 States and the District of Columbia)."

[6] Note that in the 2004-2005 NSDUH State report and prior reports, the term "prediction interval" (PI) was used to represent uncertainty in the State and regional estimates. However, that term also is used in other applications to estimate future values of a parameter of interest. That interpretation does not apply to NSDUH State report estimates; thus, "prediction interval" was dropped and replaced with "Bayesian confidence interval."

[7] At http://www.samhsa.gov/data/NSDUH/2k12State/NSDUHsae2012/Index.aspx, see Tables 1 to 25 in "NSDUH: Comparison of 2010-2011 and 2011-2012 Model-Based Prevalence Estimates for Adults 18 or Older (50 States and the District of Columbia)."

Estimates of underage (aged 12 to 20) alcohol use and binge alcohol use were also produced.[8] Alcohol consumption is expected to differ significantly across the 18 to 25 age group because of the legalization of alcohol at age 21. Therefore, it was decided that it would be useful to produce small area estimates for persons aged 12 to 20. A short description of the methodology used to produce underage drinking estimates is provided in Section B.9.

The remainder of Section B covers three topics:

- Section B.10 discusses the criteria used to define illicit drug and alcohol dependence and abuse and needing but not receiving treatment.

- Section B.11 discusses the production of estimates for MDE (i.e., depression), SMI, AMI, and suicidal thoughts. For SMI and AMI, a new model was developed in 2013, details of which also are provided in Section B.11. Note that for MDE, there are no 12 or older estimates published; also, for SMI, AMI, and serious thoughts of suicide, no 12 to 17 estimates are produced because youths are not asked these questions.

- Section B.12 discusses the method to compare prevalence rates of a particular measure between two States.

At the end of this document, 2010, 2011, 2012, pooled 2010-2011, and pooled 2011-2012 survey sample sizes, population estimates, and response rates are included in Tables C.1 to C.14. Table C.15 lists all of the measures and the years for which small area estimates were produced going back to the 2002 NSDUH, and Table C.16 lists all of the measures by age groups for which small area estimates were produced. In addition, Table C.17 provides a summary of milestones implemented in the SAE production process from 2002 to 2012.

Increases or decreases that occurred between 2010-2011 and 2011-2012 for these measures also are presented in Tables 1 to 26 of "NSDUH: Comparison of 2010-2011 and 2011-2012 Model-Based Prevalence Estimates (50 States and the District of Columbia)" at http://www.samhsa.gov/data/NSDUH/2k12State/NSDUHsae2012/Index.aspx.

Interview data from 138,418 persons were collected in 2011-2012 (see Table C.9). State estimates have been developed using an SAE procedure in which State-level NSDUH data are combined with county and census block group/tract-level data from the State. Aggregates of these State estimates are presented as regional and national estimates. Note that these estimates are benchmarked to the national design-based estimates (for details, see Section B.6). This model-based methodology provides more precise estimates of substance use and mental disorders at the State level than those based solely on the sample, particularly for States with smaller samples.

Starting in 1999, the NSDUH sample was expanded to produce State-level estimates. The first report with State estimates was published in 2000 (Office of Applied Studies [OAS], 2000). It utilized the 1999 survey data and the SAE procedure. Because the SAE procedure requires significant preparatory steps for the modeling and extensive computation to generate results, the

[8] Binge drinking is defined as having five or more drinks on the same occasion on at least 1 day in the 30 days prior to the survey. Heavy drinking is defined as binge drinking on at least 5 days in the past 30 days.

number of measures estimated has been limited to ones with high policy value. The first report included only seven measures. Subsequent State reports and Web files have been published annually, gradually extending the capabilities of the SAE procedure and increasing the number of measures estimated (Hughes, Muhuri, Sathe, & Spagnola, 2012; Wright, 2002a, 2002b, 2003a, 2003b, 2004; Wright & Sathe, 2005, 2006; Wright, Sathe, & Spagnola, 2007). The current practice is to base annual estimates on a 2-year moving average of NSDUH data in order to enhance the precision for States with smaller samples.

State estimates also have been produced for additional measures by combining multiple years of NSDUH data and using sampling weights and direct estimation. The advantage of this approach is that it can be used on any variable in the NSDUH dataset; however, these direct estimates typically are not as accurate as the estimates based on the SAE methods. Direct State estimates have been included in some reports and tables on the SAMHSA Web site.

A.2 Summary of NSDUH Methodology

NSDUH is the primary source of statistical information on the use of illicit drugs, alcohol, and tobacco by the U.S. civilian, noninstitutionalized population aged 12 or older. The survey also includes several modules of questions that focus on mental health issues. Conducted by the Federal Government since 1971, the survey collects data by administering questionnaires to a representative sample of the population through face-to-face interviews at their place of residence.

The survey covers residents of households, noninstitutional group quarters (e.g., shelters, rooming houses, dormitories), and civilians living on military bases. Persons excluded from the survey include homeless people who do not use shelters, military personnel on active duty, and residents of institutional group quarters, such as jails or prisons and long-term hospitals.

The 1999 survey marked the first year in which the national sample was interviewed using a computer-assisted interviewing (CAI) method. The survey used a combination of computer-assisted personal interviewing (CAPI) conducted by an interviewer and audio computer-assisted self-interviewing (ACASI). Use of ACASI is designed to provide the respondent with a highly private and confidential means of responding to questions and increases the level of honest reporting of illicit drug use and other sensitive behaviors. For further details on the development of the CAI procedures for the 1999 National Household Survey on Drug Abuse (NHSDA, the former name of NSDUH), see OAS (2001).

The 1999 through 2001 NHSDAs and the 2002 through 2012 NSDUHs employed a 50-State design with an independent, multistage area probability sample for each of the 50 States and the District of Columbia. For the 50-State design, 8 States were designated as large sample States (California, Florida, Illinois, Michigan, New York, Ohio, Pennsylvania, and Texas) with target sample sizes of 3,600 per year or 7,200 over a 2-year period. In 2011-2012, sample sizes in these States ranged from 6,654 in Pennsylvania to 7,573 in Florida (Table C.9). For the remaining 42 States and the District of Columbia, the target sample size was 900 per year or 1,800 over a 2-year period. Sample sizes in these States ranged from 1,734 in Alaska to 2,647 in Louisiana in 2011-2012. This approach ensures there is sufficient sample in every State to support SAE while at the same time maintaining efficiency for national estimates. The design

also oversampled youths and young adults, so that each State's sample was approximately equally distributed among three major age groups: 12 to 17 years, 18 to 25 years, and 26 years or older.

In 2002, several changes were introduced to the survey. Incentive payments of $30 were given to respondents for the first time in order to address concerns about the national and State response rates. Other changes included a change in the survey name (i.e., from NHSDA to NSDUH), new data collection quality control procedures, and a shift from the 1990 decennial census to the 2000 census as a basis for population count totals and to calculate any census-related predictor variables that are used in SAE process.

An unanticipated result of these changes was that the prevalence rates for 2002 were in general substantially higher than those for 2001—higher than could be attributable to the usual year-to-year trend—and thus are not comparable with estimates for 2001 and prior years.[9] Therefore, the 2002 NSDUH was established as a new baseline for both the national and the State estimates. Given the varying effects of the incentive and other changes, not only are the estimates for 2002 and later years not comparable with prior years, but the relative rankings of States also may have been affected. Therefore, the rankings of States for 2002-2003 or later should not be compared with those for prior years. By combining data across 2 years, the precision of the small area estimates for the small sample States, and thus their rankings, have been improved significantly. In addition, by combining 2 years of data, the impact of the national model on those States has been reduced significantly relative to estimates based on a single year's data.[10]

Nationally in 2011-2012, 309,921 addresses were screened, and 138,418 persons responded within the screened addresses (see Table C.9). The survey is conducted from January through December each year. The screening response rate (SRR) for 2011-2012 combined averaged 86.5 percent, and the interview response rate (IRR) averaged 73.7 percent, for an overall response rate (ORR) of 63.8 percent (Table C.9). The ORRs for 2011-2012 ranged from 46.3 percent in New York to 76.0 percent in Utah. Estimates have been adjusted to reflect the probability of selection, unit nonresponse, poststratification to known census population estimates, item imputation, and other aspects of the estimation process. These procedures are described in the 2010, 2011, and 2012 NSDUH's methodological resource books (MRBs) (RTI International, 2012, 2013, in press).

The weighted SRR is defined as the weighted number of successfully screened households (or dwelling units)[11] divided by the weighted number of eligible households, or

[9] For an overview of the impact of these changes, see Section C.2 of Appendix C in OAS (2005a).

[10] Combining data across 2 years permits the estimation of change at the State level by expressing it as the difference of two consecutive 2-year SAE moving averages. Comparisons between the combined 2010-2011 data and the combined 2011-2012 data are presented here. This method is similar to the one used to publish the 2010-2011 State estimates (Hughes et al., 2012).

[11] A successfully screened household is one in which all screening questionnaire items were answered by an adult resident of the household and either zero, one, or two household members were selected for the NSDUH interview.

$$SRR = \frac{\sum w_{hh} complete_{hh}}{\sum w_{hh} eligible_{hh}},$$

where w_{hh} is the inverse of the unconditional probability of selection for the household *(hh)* and excludes all adjustments for nonresponse and poststratification.

At the person level, the weighted IRR is defined as the weighted number of respondents divided by the weighted number of selected persons, or

$$IRR = \frac{\sum w_i complete_i}{\sum w_i selected_i},$$

where w_i is the inverse of the probability of selection for ith the person and includes household-level nonresponse and poststratification adjustments. To be considered a completed interview, a respondent must provide enough data to pass the usable case rule.[12]

The weighted ORR is defined as the product of the weighted SRR and the weighted IRR or

$$ORR = SRR \times IRR.$$

A.3 Mental Disorders

To address SAMHSA's need for estimates of SMI and AMI, as well as data on suicidal thoughts (i.e., suicidal ideation), several important changes were made to the adult mental health items in the 2008 NSDUH questionnaire. Items were added that assessed functional impairment due to mental health problems (abbreviated World Health Organization Disability Assessment Schedule [WHODAS]; Novak, 2007) and that assessed suicidal thoughts and behavior among adults. In 2008, CBHSQ also expanded the Kessler-6 (K6) questions to ask about the past 30 days (the time frame for which the K6 was originally designed) (Kessler et al., 2003).

In addition, as part of the Mental Health Surveillance Study (MHSS), a clinical follow-up study was initiated in which a randomly selected subsample of adults (about 1,500 in 2008, 2011, and 2012, and 500 in 2009 and 2010) who had completed the NSDUH interview was administered a standard clinical interview by mental health clinicians via paper and pencil over the telephone to determine their mental illness status; the clinical interview was used as a "gold standard" for measuring mental illness among adults. Using both the clinical interview and the NSDUH CAI data for the respondents who completed the clinical interview (using only 2008 data), statistical models were developed that then were applied to data from all adult respondents who had completed the NSDUH CAI interviews (regardless of whether they had clinical interview data) to produce estimates of mental illness among the adult civilian, noninstitutionalized population. Subsequently, using the entire clinical interview sample of

[12] The usable case rule requires that a respondent answer "yes" or "no" to the question on lifetime use of cigarettes and "yes" or "no" to at least nine additional lifetime use questions.

approximately 5,000 interviews that were collected in 2008 to 2012, CBHSQ developed a more accurate statistical model for adults. This revised model incorporated the NSDUH respondent's age, past year suicidal thoughts, past year MDE, and the variables that were specified in the 2008 model (i.e., the K6 and WHODAS). Results for SMI and AMI from this revised model were closer to the direct estimates of SMI and AMI from the clinical interviews in the MHSS than the previous model's results were, especially for young adults aged 18 to 25. See Section B.11 in this document for a more complete discussion of the revised 2012 model and mental illness estimates.

Estimates of AMI and SMI for 2010-2011 and 2011-2012 were produced using this new model and are presented in the tables mentioned in Section A.6. Because of this change to the model, earlier estimates from 2008-2009 and 2009-2010 have also been revised, along with associated tables and other report materials. These tables and maps with revised estimates include a source note with the text (i.e., "Revised October 2013") to indicate that the estimates are based on the updated 2012 model.

The questionnaire changes introduced in 2008 also caused discontinuities in trends for MDE (i.e., depression) and serious psychological distress (SPD) among adults aged 18 or older. For youths aged 12 to 17, no questionnaire changes were made in 2008 that affected the estimation of youth depression items; so, estimates of youth depression are available for all years beginning with the 2004-2005 report. An analysis was performed to better understand the nature of the changes in the reporting of adult depression associated with the questionnaire changes in 2008. This led to the development of statistical adjustments for the adult depression estimates for the years from 2005 to 2008; thus, comparable adult depression data are now available for the years 2005 and beyond. For more information about these changes, see Section B.11 in Appendix B of the 2008 NSDUH national findings report (OAS, 2009) and Appendix B of the 2012 NSDUH mental health findings report (CBHSQ, in press).

A.4 Confidence Intervals and Margins of Error

At the top of each of the 26 State model-based estimate tables[13] is the design-based national estimate along with a 95 percent design-based confidence interval, all of which are based on survey weights and the reported data. The State and regional estimates are model-based statistics (using SAE methodology) that have been adjusted such that the population-weighted mean of the estimates across the 50 States and the District of Columbia equal the design-based national estimate. For more details on this benchmarking, see Section B.6. Associated with each State and regional estimate is a 95 percent Bayesian confidence interval. These intervals indicate the uncertainty in the estimate due to both sampling variability and model bias. For example, the State with the highest estimated rate of past month use of marijuana for young adults aged 18 to 25 was Vermont, with a rate of 33.2 percent and a 95 percent confidence interval that ranged from 29.6 to 37.0 percent (Table 3 of the State model-based estimates' tables). Therefore, the probability is 0.95 that the true prevalence of past month marijuana use in Vermont for persons aged 18 to 25 is between 29.6 and 37.0 percent. As noted earlier in a Section A.1 footnote, the

[13] At http://www.samhsa.gov/data/NSDUH/2k12State/NSDUHsae2012/Index.aspx, see "2011-2012 NSDUH: Model-Based Prevalence Estimates (50 States and the District of Columbia)" (Tables 1 to 26, by Age Group).

term "prediction interval" (PI) was used in the 2004-2005 NSDUH State report and prior reports to represent uncertainty in the State and regional estimates. However, that term also is used in other applications to estimate future values of a parameter of interest. That interpretation does not apply to NSDUH State model-based estimates, so PI was replaced with "Bayesian confidence interval."

Margin of error is another term used to describe uncertainty in the estimates. For example, if (l, u) is a 95 percent symmetric confidence interval for the population proportion (p) and $\hat{p}$ is an estimate of p obtained from the survey data, then the margin of error of $\hat{p}$ is given by $(u - \hat{p})$ or $(\hat{p} - l)$. Because (l, u) is a symmetric confidence interval, $(u - \hat{p})$ will be the same as $(\hat{p} - l)$. In this case, the probability is 0.95 that the true population value (p) is within $\pm(u - \hat{p})$ or $\pm(\hat{p} - l)$ of the survey estimate $(\hat{p})$. The margin of error defined above will vary for each estimate and will be affected not only by the sample size (e.g., the larger the sample, the smaller the margin of error), but also by the sample design (e.g., telephone surveys using random digit dialing and surveys employing a stratified multistage cluster design will, more than likely, produce a different margin of error) (Scheuren, 2004).

The confidence intervals shown in NSDUH reports are asymmetric, meaning that the distance between the estimate and the lower confidence limit will not be the same as the distance between the upper confidence limit and the estimate. For example, Utah's past month marijuana use rate of 9.8 percent for persons aged 18 to 25 years with a 95 percent confidence interval equal to (7.8, 12.4) (see Table 3 of the State model-based estimates' tables).[14] Therefore Utah's rate is 2.0 (i.e., 9.8 – 7.8) percentage points from the lower 95 percent confidence limit and 2.6 (i.e., 12.4 – 9.8) percentage points from the upper limit. These asymmetric confidence intervals work well for small percentages often found in NSDUH tables and reports while still being appropriate for larger percentages. Some surveys or polls provide only one margin of error for all reported percentages. This single number is usually calculated by setting the sample percentage estimate $(\hat{p})$ equal to 50 percent, which will produce an upper bound or maximum margin of error. Such an approach would not be feasible in NSDUH because the estimates vary from less than 1 percent to over 75 percent; hence, applying a single margin of error to these estimates could significantly overstate or understate the actual precision levels. Therefore, given the differences mentioned above, it is more useful and informative to report the confidence interval for each estimate instead of a margin of error.

When it is indicated that a State has the highest or lowest rate, it does not imply that the State's rate is significantly higher or lower than the next highest or lowest State. When comparing two State prevalence rates, two overlapping 95 percent confidence intervals do not imply that their State prevalence rates are statistically equivalent at the 5 percent level of significance. For details on a more accurate test to compare State prevalence rates, see Section B.12.

[14] See footnote 13.

A.5 Related Drug Measures

Small area estimates are produced for a number of related drug measures, such as marijuana use and illicit drug use. It might appear that one could draw conclusions by subtracting one from the other (e.g., subtracting the percentage who used illicit drugs other than marijuana in the past month from the percentage who used illicit drugs in the past month to find the percentage who only used marijuana in the past month). Because related measures have been estimated with different models, subtracting one measure from another related measure at the State or census region level can give misleading results, perhaps even a "negative" estimate, and should be avoided. However, these comparisons can be made at the national level because these estimates are design-based estimates. For example, at the national level, subtracting cigarette use rates from tobacco use rates will give the rate of persons who did not use cigarettes, but used other forms of tobacco.

A.6 Presentation of Data

In addition to this methodology document, the following files are also available at http://www.samhsa.gov/data/NSDUH/2k12State/NSDUHsae2012/Index.aspx:

- **2011-2012 NSDUH: Model-Based Prevalence Estimates (50 States and the District of Columbia) (Tables 1 to 26, by Age Group)**: Tables of prevalence estimates and associated 95 percent Bayesian confidence intervals are included for youths aged 12 to 17, young adults aged 18 to 25, adults aged 26 or older, and all persons 12 or older. Also included are tables for underage (12 to 20) use of alcohol and underage binge alcohol use. These tables are available in Excel and PDF format.

- **2011-2012 NSDUH National Maps of Prevalence Estimates, by State (Figures 1.a to 26.d)**: The color of each State on the U.S. maps indicates how the State ranks relative to other States for each measure. States could fall into one of five groups according to their ranking by quintiles. Because there are 51 areas to be ranked for each measure, the middle quintile was assigned 11 areas and the remaining groups 10 each. In some cases, a "quintile" could have more or fewer States than desired because two (or more) States have the same estimate (to two decimal places). When such ties occurred at the "boundary" between two quintiles, all States with the same estimate were assigned to the lower quintile. Those States with the highest rates for a given measure are in red, with the exception of the perceptions of risk measures, for which the lowest perceptions of great risk are in red. Those States with the lowest estimates are in white, with the exception of the perceptions of risk measures, for which the highest perceptions of great risk are in white.

  Note that because the average annual incidence of marijuana was so low for the 26 or older age group and had such an abbreviated range, no U.S. map has been included for it.

- **NSDUH: Comparison of 2010-2011 and 2011-2012 Model-Based Prevalence Estimates for Adults 18 or Older (50 States and the District of Columbia) (Tables 1 to 25)**: Tables include 2010-2011 (previously published data) and 2011-2012 prevalence estimates and associated confidence intervals and an indication of the statistical significance of the difference (*p* value).

- **NSDUH: 2011-2012 Model-Based Estimated Totals (in Thousands) (50 States and the District of Columbia) (Tables 1 to 26)**: Tables showing estimated numbers (counts in thousands) and confidence intervals are included for youths aged 12 to 17, young adults aged 18 to 25, adults aged 26 or older, persons aged 18 or older, and all persons aged 12 or older. Also included are tables for underage (12 to 20) alcohol use and underage binge alcohol use.

- **2011-2012 NSDUH State-Specific Tables (Tables 1 to 112)**: Tables are provided for each individual State and the District of Columbia, as well as for the total United States and the four census regions (i.e., Northeast, Midwest, South, and West). The tables (two per area) show prevalence estimates and the number of persons (counts in thousands).

- **NSDUH: Comparison of 2010-2011 and 2011-2012 Model-Based Prevalence Estimates (50 States and the District of Columbia) (Tables 1 to 26)**: Tables are presented that show the 2010-2011 (previously published data) and 2011-2012 NSDUH State estimates and an indication of the statistical significance of the difference (*p* value). Estimates are shown for youths aged 12 to 17, young adults aged 18 to 25, adults aged 26 or older, and all persons aged 12 or older. Also included are tables for underage (12 to 20) alcohol use and underage binge alcohol use.

- **NSDUH: Comparison of 2002-2003 and 2011-2012 Model-Based Prevalence Estimates (50 States and the District of Columbia) (Tables 1 to 22)**: Tables are presented that show the 2002-2003 and 2011-2012 NSDUH State estimates and an indication of the statistical significance of the difference (*p* value). Estimates are shown for youths aged 12 to 17, young adults aged 18 to 25, adults aged 26 or older, and all persons aged 12 or older. Also included are tables for underage (12 to 20) alcohol use and underage binge alcohol use.

- **2011-2012 NSDUH: Other Sources of Data**: This document compares two outcomes (cigarette and alcohol use) from NSDUH with data from the Behavioral Risk Factor Surveillance System (BRFSS).

- **Impact of Using Updated Census Data in NSDUH Small Area Estimates and Comparison Tables**: This document will provide comparisons of the previously published 2010-2011 small area estimates and the 2010-2011 revised small area estimates (which will be published for the first time) with the 2011-2012 small area estimates. Both the 2011-2012 and revised 2010-2011 estimates are based on the 2010 census data, while the previously published 2010-2011 estimates are not. Thus, data users should examine the comparison tables to determine if the changes between the originally published 2010-2011 estimates and 2011-2012 estimates are affected.

A.7 Revised 2006 to 2010 Estimates

During regular data collection and processing checks for the 2011 NSDUH, data errors were identified. These errors affected the data for Pennsylvania (2006 to 2010) and Maryland (2008 and 2009). Cases with erroneous data were removed from the data files, and the remaining cases were reweighted to provide representative estimates. Therefore, some estimates using 2006 to 2010 NSDUH data in the 2011 national findings report and detailed tables, as well as other reports (including the 2009-2010 SAE report), contain estimates that differ from corresponding

estimates found in some previous reports. All of the tables and maps available at http://www.samhsa.gov/data/NSDUH/2k11State/NSDUHsae2011/Index.aspx that are related to the 2010-2011 State estimates have a source note with the text (i.e., "Revised March 2012") included to indicate that the estimates with 2009 and 2010 data are based on updated NSDUH data (excluding the erroneous data for Pennsylvania and Maryland).[15]

The errors had minimal impact on the national estimates and no effect on direct estimates for the other 48 States and the District of Columbia. The direct estimates for an area (e.g., a State or substate) are only based on its data. However, in reports where model-based SAE techniques are used, estimates for all States may be affected, even though the errors were concentrated in only two States. This is because the model-based estimate for a given State is a combination of the direct estimate for that State and the State estimate obtained from a national model. The national model, which has estimated parameter coefficients based on data from all States, changed when the erroneous Pennsylvania and Maryland data were removed and the remaining cases were reweighted. As a result, the model-based estimates in all States changed, although the most notable changes occurred in Pennsylvania and Maryland because the direct estimates in those States changed, as did their estimates based on the national model. In reports that do not use model-based estimates, the only estimates appreciably affected were estimates for Pennsylvania, Maryland, the mid-Atlantic division, and the Northeast region.

It is important to note that after these data errors were detected, small area estimates affected by the errors were updated. Namely, the following small area estimates were updated, and NSDUH tables on the Web were replaced to exclude the cases with erroneous data:

- 2005-2006 State small area estimates and comparisons between the 2004-2005 and 2005-2006 State small area estimates,
- 2006-2007 State small area estimates and comparisons between the 2005-2006 and 2006-2007 State small area estimates,
- 2007-2008 State small area estimates and comparisons between the 2006-2007 and 2007-2008 State small area estimates (also, comparisons between 2002-2003 and 2007-2008 small area estimates were revised),
- 2008-2009 State small area estimates and comparisons between the 2007-2008 and 2008-2009 State small area estimates (also, comparisons between 2002-2003 and 2008-2009 small area estimates were revised), and
- 2006-2008 substate small area estimates and comparisons between the 2004-2006 and 2006-2008 substate estimates.

[15] Note that no 2009-2010 or 2010-2011 model-based estimates were published using the erroneous data. Also note that the 2011-2012 small area estimates were not affected by these data errors.

Section B: State Model-Based Estimation Methodology

B.1 General Model Description

The model can be characterized as a complex mixed[16] model (including both fixed and random effects) of the following form:

$$\log[\pi_{aijk} / (1-\pi_{aijk})] = x'_{aijk}\beta_a + \eta_{ai} + \nu_{aij},$$

where π_{aijk} is the probability of engaging in the behavior of interest (e.g., using marijuana in the past month) for person-*k* belonging to age group-*a* in grouped State sampling region (SSR)-*j* of State-*i*.[17] Let x_{aijk} denote a $p_a \times 1$ vector of auxiliary (predictor) variables associated with age group-*a* (12 to 17, 18 to 25, 26 to 34, and 35 or older) and β_a denote the associated vector of regression parameters. The age group-specific vectors of auxiliary variables are defined for every block group in the Nation and also include person-level demographic variables, such as race/ethnicity and gender. The vectors of State-level random effects $\eta_i = (\eta_{1i}, \cdots, \eta_{Ai})'$ and grouped SSR-level random effects $\nu_{ij} = (\nu_{1ij}, \cdots, \nu_{Aij})'$ are assumed to be mutually independent with $\eta_i \sim N_A(0, D_\eta)$ and $\nu_{ij} \sim N_A(0, D_\nu)$, where A is the total number of individual age groups modeled (generally, $A = 4$). For hierarchical Bayes (HB) estimation purposes, an improper uniform prior distribution is assumed for β_a, and proper Wishart prior distributions are assumed for D_η^{-1} and D_ν^{-1}. The HB solution for π_{aijk} involves a series of complex Markov Chain Monte Carlo (MCMC) steps to generate values of the desired fixed and random effects from the underlying joint posterior distribution. The basic process is described in Folsom et al. (1999), Shah, Barnwell, Folsom, and Vaish (2000), and Wright (2003a, 2003b).

Once the required number of MCMC samples (1,250 in all) for the parameters of interest are generated and tested for convergence properties (see Raftery & Lewis, 1992), the small area estimates for each age group × race/ethnicity × gender cell within a block group can be obtained. These block group-level small area estimates then can be aggregated using the appropriate

[16] The use of mixed models (fixed and random effects) allows additional error components (random effects) to be included. These account for differences between States and within-State variations that are not taken into account by the predictor variables (fixed effects) alone. These models produce estimates that are approximately represented by a weighted combination of the direct estimate from the State data and a regression estimate from the national model, where the weights are obtained by minimizing the mean squared error of the small area estimate. It is also difficult if not impossible to produce valid mean squared errors for small area estimates based solely on a fixed-effect national regression model.

[17] To increase the precision of estimated random effects at the within-State level, three SSRs were grouped together. Each of the 8 large sample States consists of 16 grouped SSRs, and the rest of the States and the District of Columbia each has 4 grouped SSRs.

population count projections to form State-level small area estimates for the desired age group(s). These State-level small area estimates are benchmarked to the national design-based estimates as described in Section B.6.

B.2 Variables Modeled

The 2012 NSDUH data were pooled with the 2011 NSDUH data, and age group-specific State prevalence estimates for 25 binary (0, 1) measures were produced for the following outcomes:

1. past month use of illicit drugs,
2. past year use of marijuana,
3. past month use of marijuana,
4. perception of great risk of smoking marijuana once a month,
5. average annual rate of first use of marijuana,[18]
6. past month use of illicit drugs other than marijuana,
7. past year use of cocaine,
8. past year nonmedical use of pain relievers,
9. past month use of alcohol,
10. past month binge alcohol use,
11. perception of great risk of having five or more drinks of an alcoholic beverage once or twice a week,
12. past month use of tobacco products,
13. past month use of cigarettes,
14. perception of great risk of smoking one or more packs of cigarettes per day,
15. past year alcohol dependence or abuse,
16. past year alcohol dependence,
17. past year illicit drug dependence or abuse,
18. past year illicit drug dependence,

[18] For details on how the average annual rate of marijuana (incidence of marijuana) is calculated, see Section B.8.

19. past year dependence or abuse of illicit drugs or alcohol,

20. needing but not receiving treatment for illicit drug use in the past year,

21. needing but not receiving treatment for alcohol use in the past year,

22. serious mental illness (SMI) in the past year,

23. any mental illness (AMI) in the past year,

24. serious thoughts of suicide in the past year, and

25. past year major depressive episode (MDE, i.e., depression).

Estimates of underage (aged 12 to 20) alcohol use and binge alcohol use were also produced. Comparisons between the 2010-2011 and the 2011-2012 State estimates were produced for all of these measures as well.

B.3 Predictors Used in Mixed Logistic Regression Models

Local area data used as potential predictor variables in the mixed logistic regression models were obtained from several sources, including Claritas Inc., the U.S. Census Bureau, the Federal Bureau of Investigation (FBI) (Uniform Crime Reports), the Bureau of Labor Statistics, the Bureau of Economic Analysis, the Substance Abuse and Mental Health Services Administration (SAMHSA) (National Survey of Substance Abuse Treatment Services [N-SSATS]), and the National Center for Health Statistics (mortality data). The values of these predictor variables are updated every year (when possible). Sources and potential data items used in the modeling are provided in the following text and lists.

- *Claritas*. This demographic data package contains data for 2013 with projections to 2018. The population projections are used to update these predictor variables each year. The 2011 and 2012 population estimates (which were obtained by projecting back the data based on the provided 2013 population and 2018 population counts) were used for producing the 2011-2012 State estimates. For more information on these data, see Section B.4.

- *U.S. Census Bureau*. The 2010 census (demographic and geographic variables) and 2010 food stamp participation rates were used (http://www.census.gov/did/www/saipe/inputdata/cntysnap.xls). The Census Bureau's small area income and poverty estimates division obtains Food Stamp Program (now known as the Supplemental Nutrition Assistance Program [SNAP]) participation rates from the U.S. Department of Agriculture, Food and Nutrition Service.

- *American Community Survey*. The 2007-2011 5-year American Community Survey (ACS) demographic and socioeconomic variables at the tract level and poverty variable at the county level were used (http://www.census.gov/acs/www/data_documentation/data_main/).

- *Federal Bureau of Investigation*. Uniform Crime Report (UCR) arrest totals were obtained from http://www.icpsr.umich.edu/icpsrweb/NACJD/archive.jsp. The most current data used are from 2010 for most counties, with previous years' data substituted in a few cases.

- *Bureau of Labor Statistics (BLS)*. The 2012 county-level unemployment rates were used (http://www.bls.gov/lau/#cntyaa). The BLS uses results from the Current Population Survey (CPS) to provide county-level unemployment rates. The CPS is a monthly survey of households conducted by the Census Bureau for the BLS.

- *Bureau of Economic Analysis (BEA)*. The 2011 county-level per capita income rates were used (http://bea.gov/iTable/index.cfm). These county-level per capita income rates are produced by the Regional Income Division of the BEA.

- *National Center for Health Statistics*. Mortality data using International Classification of Diseases, 10th revision (ICD-10), 2005-2010, were used. The ICD-10 death rate data are from the National Center for Health Statistics at the Centers for Disease Control and Prevention.

- *SAMHSA, Center for Behavioral Health Statistics and Quality (CBHSQ), formerly the Office of Applied Studies (OAS)*. Data were used from the National Survey of Substance Abuse Treatment Services (N-SSATS), formerly known as the Uniform Facility Data Set (UFDS). The 2010-2011 data on drug and alcohol treatment rates were obtained. Maintenance of effort expenditures, block grant awards, cost of services, and total taxable resources data were also used.

The following lists provide the specific independent variables that were potential predictors in the models.

***Claritas Data* (Description)**	***Claritas Data* (Level)**
% Population Aged 0 to 19 in Block Group	Block Group
% Population Aged 20 to 24 in Block Group	Block Group
% Population Aged 25 to 34 in Block Group	Block Group
% Population Aged 35 to 44 in Block Group	Block Group
% Population Aged 45 to 54 in Block Group	Block Group
% Population Aged 55 to 64 in Block Group	Block Group
% Population Aged 65 or Older in Block Group	Block Group
% Non-Hispanic Blacks in Block Group	Block Group
% Hispanics in Block Group	Block Group
% Non-Hispanic Other Races in Block Group	Block Group
% Non-Hispanic Whites in Block Group	Block Group
% Males in Block Group	Block Group
% American Indians, Eskimos, Aleuts in Tract	Tract
% Asians, Pacific Islanders in Tract	Tract
% Population Aged 0 to 19 in Tract	Tract
% Population Aged 20 to 24 in Tract	Tract
% Population Aged 25 to 34 in Tract	Tract
% Population Aged 35 to 44 in Tract	Tract

***Claritas Data* (Description)**	***Claritas Data* (Level)**
% Population Aged 45 to 54 in Tract	Tract
% Population Aged 55 to 64 in Tract	Tract
% Population Aged 65 or Older in Tract	Tract
% Non-Hispanic Blacks in Tract	Tract
% Hispanics in Tract	Tract
% Non-Hispanic Other Races in Tract	Tract
% Non-Hispanic Whites in Tract	Tract
% Males in Tract	Tract
% Population Aged 0 to 19 in County	County
% Population Aged 20 to 24 in County	County
% Population Aged 25 to 34 in County	County
% Population Aged 35 to 44 in County	County
% Population Aged 45 to 54 in County	County
% Population Aged 55 to 64 in County	County
% Population Aged 65 or Older in County	County
% Non-Hispanic Blacks in County	County
% Hispanics in County	County
% Non-Hispanic Other Races in County	County
% Non-Hispanic Whites in County	County
% Males in County	County

***2010 Census Data* (Description)**	***2010 Census Data* (Level)**
% Hispanics Who Are Cuban	Tract

***American Community Survey (ACS)* (Description)**	***ACS Data* (Level)**
% Population Who Dropped Out of High School	Tract
% Housing Units Built in 1940 to 1949	Tract
% Females 16 Years or Older in Labor Force	Tract
% Females Never Married	Tract
% Females Separated, Divorced, Widowed, or Other	Tract
% One-Person Households	Tract
% Males 16 Years or Older in Labor Force	Tract
% Males Never Married	Tract
% Males Separated, Divorced, Widowed, or Other	Tract
% Housing Units Built in 1939 or Earlier	Tract
Average Number of Persons per Room	Tract
% Families below Poverty Level	Tract
% Households with Public Assistance Income	Tract
% Housing Units Rented	Tract
% Population with 9 to 12 Years of School, No High School Diploma	Tract
% Population with 0 to 8 Years of School	Tract
% Population with Associate's Degree	Tract
% Population with Some College and No Degree	Tract
% Population with Bachelor's, Graduate, Professional Degree	Tract
% Housing Units with No Telephone Service Available	Tract

American Community Survey (ACS) (Description)	*ACS Data* (Level)
% Households with No Vehicle Available	Tract
Median Rents for Rental Units	Tract
Median Value of Owner-Occupied Housing Units	Tract
Median Household Income	Tract
% Families below the Poverty Level	County

Uniform Crime Report Data (Description)	*Uniform Crime Report Data* (Level)
Drug Possession Arrest Rate	County
Drug Sale or Manufacture Arrest Rate	County
Drug Violations' Arrest Rate	County
Marijuana Possession Arrest Rate	County
Marijuana Sale or Manufacture Arrest Rate	County
Opium or Cocaine Possession Arrest Rate	County
Opium or Cocaine Sale or Manufacture Arrest Rate	County
Other Drug Possession Arrest Rate	County
Other Dangerous Non-Narcotics Arrest Rate	County
Serious Crime Arrest Rate	County
Violent Crime Arrest Rate	County
Driving under Influence Arrest Rate	County

Other Categorical Data (Description)	*Other Categorical Data* (Source)	*Other Categorical Data* (Level)
= 1 if Hispanic, = 0 Otherwise	NSDUH Sample	Person
= 1 if Non-Hispanic Black, = 0 Otherwise	NSDUH Sample	Person
= 1 if Non-Hispanic Other, = 0 Otherwise	NSDUH Sample	Person
= 1 if Male, = 0 if Female	NSDUH Sample	Person
= 1 if Metropolitan Statistical Area (MSA) with ≥ 1 Million, = 0 Otherwise	2010 Census	County
= 1 if MSA with < 1 Million, = 0 Otherwise	2010 Census	County
= 1 if Non-MSA Urban, = 0 Otherwise	2010 Census	Tract
= 1 if Urban Area, = 0 if Rural Area	2010 Census	Tract
= 1 if No Cubans in Tract, = 0 Otherwise	2010 Census	Tract
= 1 if No Arrests for Dangerous Non-Narcotics, = 0 Otherwise	UCR	County
= 1 if No Arrests for Opium or Cocaine Possession = 0 Otherwise	UCR	County
= 1 if No Housing Units Built in 1939 or Earlier, = 0 Otherwise	ACS	Tract
=1 if No Housing Units Built in 1940 to 1949, = 0 Otherwise	ACS	Tract
= 1 if No Households with Public Assistance Income, = 0 Otherwise	ACS	Tract

Miscellaneous Data (Description)	*Miscellaneous Data* (Source)	*Miscellaneous Data* (Level)
Alcohol Death Rate, Underlying Cause	NCHS-ICD-10	County
Cigarette Death Rate, Underlying Cause	NCHS-ICD-10	County
Drug Death Rate, Underlying Cause	NCHS-ICD-10	County
Alcohol Treatment Rate	N-SSATS (Formerly Called UFDS)	County
Alcohol and Drug Treatment Rate	N-SSATS (Formerly Called UFDS)	County
Drug Treatment Rate	N-SSATS (Formerly Called UFDS)	County
Unemployment Rate	BLS	County
Per Capita Income (in Thousands)	BEA	County
Average Suicide Rate (per 10,000)	NCHS-ICD-10	County
Food Stamp Participation Rate	Census Bureau	County
Single State Agency Maintenance of Effort	National Association of State Alcohol and Drug Abuse Directors (NASADAD)	State
Block Grant Awards	SAMHSA	State
Cost of Services Factor Index	SAMHSA	State
Total Taxable Resources per Capita Index	U.S. Department of Treasury	State

B.4 Updated Claritas Data

For the NSDUH State and substate estimates published using the 2002 to 2006 NSDUH data, Claritas data obtained in 2002 were used to produce the small area estimates. For State estimates published using the 2007 to 2011 NSDUH data, Claritas data obtained in 2008 were used. New this year for State estimates published using the 2012 NSDUH data, Claritas data obtained in 2013 were used. The 2002 Claritas data had 2000 and 2002 population counts, as well as 2007 population projections. The 2008 Claritas data had 2008 population counts, as well as 2012 population projections. Both sets of Claritas data were based on 2000 census geography. The 2013 Claritas data had 2013 population counts, as well as 2018 population projections, and were based on 2010 census geography. Claritas data were used for the following in the NSDUH SAE process:

1. Creating demographic predictor variables (age group, race × ethnicity, and gender) at the block group, tract, and county levels (predictors such as percentage of the population aged 0 to 19 in a block group, percentage of population who are males in a tract). There are 12 such variables defined for each of the census geographies (block group, tract, and county). See Section B.3 for a complete list of these predictors.

2. Creating census block group-level population projections at the age group × race/ethnicity × gender level (4 age groups, 4 races/ethnicities, and 2 genders = 32

cells) that are used in aggregating the block group-level small area estimates to produce State and census region-level small area estimates.[19]

The following steps were taken for the 2011-2012 SAE process:

1. Using the 2013-2018 Claritas data, 2011 and 2012 population counts were obtained (the 2011 and 2012 counts were obtained by doing linear interpolation using the 2013 and 2018 counts and projecting back to obtain 2011 and 2012 counts) and used to create the predictors that were merged onto the 2011 and 2012 sample and universe files (the universe file is a census block-group level file containing SAE predictor variables and population counts). Similarly, 2010 counts were also obtained using the 2013 to 2018 Claritas data.

2. All block group, tract, and county-level continuous predictors were converted into 10-category, semicontinuous variables by using the corresponding 2010-2011 decile values created by pooling the 2010 and 2011 NSDUH data. Whenever possible, the same 2010-2011 decile values will be used for subsequent SAE analyses until new Claritas data containing the 2019 population counts and projections are obtained. Using the same decile values year after year makes it possible to keep track of any temporal changes occurring in the predictor variables, which may help in detecting any changes in State prevalence rates across years in an efficient manner. The 10-category predictor variables subsequently were used to form linear, quadratic, and cubic orthogonal polynomials eventually used in the SAE modeling process.

3. The updated population counts for the 32 cells (age group × race/ethnicity × gender population counts) were used to create the universe files for both years (i.e., 2011 and 2012).

4. The 2010 sample and universe files based on the 2013-2018 Claritas data were used in simultaneous modeling to produce the correlations required to estimate change between the 2010-2011 and 2011-2012 State prevalence rates. Thus, the correlations will be based on the updated Claritas predictors, but the 2010-2011 small area estimates will be based on old predictors (i.e., the 2008-2012 Claritas predictors). For more details, see the methodology discussion in "NSDUH: Comparison of 2010-2011 and 2011-2012 Model-Based Prevalence Estimates (50 States and the District of Columbia)" at http://www.samhsa.gov/data/NSDUH/2k12State/NSDUHsae2012/Index.aspx.

5. The 2002-2007 Claritas projections were used on the 2002-2003 sample and universe files, whereas the 2013-2018 Claritas projections were used on the 2011-2012 sample and universe files to produce the 2002-2003 versus 2011-2012 comparisons. See the methodology discussion in "NSDUH: Comparison of 2002-2003 and 2011-2012 Model-Based Prevalence Estimates (50 States and the District of Columbia)" at http://www.samhsa.gov/data/NSDUH/2k12State/NSDUHsae2012/Index.aspx.

[19] The four age groups are 12 to 17, 18 to 25, 26 to 34, and 35 or older; the four race/ethnicity groups are non-Hispanic white, non-Hispanic black, non-Hispanic other, and Hispanic; and the two genders are male and female.

B.5 Selection of Independent Variables for the Models

New variable selection was done for all measures listed in Section B.2 using 2010-2011 NSDUH data in a manner consistent with how it was done in prior NSDUHs. More information on the variable selection process can be found in the supplementary appendices of Wright (2002b), specifically in Section B.6.5 of Appendix B in that report. The updated versions of fixed-effect predictors that were used in modeling the 2010-2011 data were used to model the 2011-2012 data. Note that although the variable selection was done using the 2010-2011 NSDUH data, those estimates will not be revised using the new predictors. The new set of predictors were only used to produce the 2011-2012 small area estimates and will be used in future SAE reporting.

A decision was made to go through a new variable selection process for the 2011-2012 small area estimates because the 2010 census data had undergone several changes. First, the American Community Survey (ACS) 5-year file was used as a source of predictors for the first time to replace the 2000 census long-form data. This switch resulted in the discontinuation of a few predictors (the percentage of persons aged 16 to 64 with a work disability in tract and the percentage of female heads of households with no spouse and having children less than 18 years of age in tract), but it also resulted in the addition of a few tract-level predictors to the list of predictors for the first time (the percentage of housing units with no telephone service available and the percentage of households with no vehicle available). Also, the percentages of females in block group, tract, and county were dropped because those independent variables were perfect complements to the percentages of males in those geographic entities. In addition, the 2013-2018 Claritas data were obtained based on the 2010 census geography (as opposed to the Claritas data used in prior years that were based on the 2000 census).

B.6 Benchmarking the Age Group-Specific Small Area Estimates

The self-calibration built into the survey-weighted hierarchical Bayes (SWHB) solution ensures that the population-weighted average of the State small area estimates will closely match the national design-based estimates. The national design-based estimates in NSDUH are based entirely on survey-weighted data using a direct estimation approach, whereas the State and census region estimates are model-based. Given the self-calibration ensured by the SWHB solution, for State reports prior to 2002, the standard Bayes prescription was followed; specifically, the posterior mean was used for the point estimate, and the tail percentiles of the posterior distribution were used for the Bayesian confidence interval limits.

Singh and Folsom (2001) extended Ghosh's (1992) results on constrained Bayes estimation to include exact benchmarking to design-based national estimates. In the simplest version of this constrained Bayes solution where only the design-based mean is imposed as a benchmarking constraint, each of the 2011-2012 State-by-age group small area estimates is adjusted by adding the common factor $\Delta_a = (D_a - P_a)$, where D_a is the design-based national prevalence estimate and P_a is the population-weighted mean of the State small area estimates (P_{sa}) for age group-*a*. The exactly benchmarked State-*s* and age group-*a* small area estimates then are given by $\theta_{sa} = P_{sa} + \Delta_a$. Experience with such additive adjustments suggests that the

resulting exactly benchmarked State small area estimates will always be between 0 and 100 percent because the SWHB self-calibration ensures that the adjustment factor is small relative to the size of the State-level small area estimates.

Relative to the Bayes posterior mean, these benchmark-constrained State small area estimates are biased by the common additive adjustment factor. Therefore, the posterior mean-squared error for each benchmarked State small area estimate has the square of this adjustment factor added to its posterior variance. To achieve the desirable feature of exact benchmarking, this constrained Bayes adjustment factor was implemented for the State-by-age group small area estimates. The associated Bayesian confidence (credible) intervals can be re-centered at the benchmarked small area estimates on the logit scale with the symmetric interval end points based on the posterior root mean-squared errors. The adjusted 95 percent Bayesian confidence intervals $(Lower_{sa}, Upper_{sa})$ are defined below:

$$Lower_{sa} = \exp(L_{sa}) / [1 + \exp(L_{sa})] \text{ and } Upper_{sa} = \exp(U_{sa}) / [1 + \exp(U_{sa})],$$

where

$$L_{sa} = \ln[\theta_{sa} / (1 - \theta_{sa})] - 1.96 * \sqrt{MSE_{sa}},$$

$$U_{sa} = \ln[\theta_{sa} / (1 - \theta_{sa})] + 1.96 * \sqrt{MSE_{sa}}, \text{ and}$$

$$MSE_{sa} = (\ln[P_{sa} / (1 - P_{sa})] - \ln[\theta_{sa} / (1 - \theta_{sa})])^2 + \text{posterior variance of } \ln[P_{sa} / (1 - P_{sa})].$$

The associated posterior coverage probabilities for these benchmarked intervals are very close to the prescribed 0.95 value because the State small area estimates have posterior distributions that can be approximated exceptionally well by a Gaussian distribution.

B.7 Calculation of Estimated Number of Persons Associated with Each Outcome

Tables 1 to 26 of "NSDUH: 2011-2012 Model-Based Estimated Totals (in Thousands) (50 States and the District of Columbia)," available at http://www.samhsa.gov/data/NSDUH/2k12State/NSDUHsae2012/Index.aspx, show the estimated numbers of persons (in thousands) associated with each of the 25 outcomes of interest. To calculate these estimated numbers of persons, the benchmarked small area estimates and the associated 95 percent Bayesian confidence intervals are multiplied by the average population across the 2 years (in this case, 2011 and 2012) of the State by age group of interest.

For example, past month use of alcohol among 18 to 25 year olds in Alabama was 52.65 percent.[20] The corresponding Bayesian confidence intervals ranged from 48.90 to 56.38 percent. The population count for 18 to 25 year olds averaged across 2011-2012 in

[20] See Table 9 of the "2011-2012 NSDUH: Model-Based Prevalence Estimates (50 States and the District of Columbia)" at http://www.samhsa.gov/data/NSDUH/2k12State/NSDUHsae2012/Index.aspx.

Alabama was 536,921 (see Table C.10 in Section C of this methodology document). Hence, the estimated number of 18 to 25 year olds using alcohol in the past month in Alabama was 0.5265 * 536,921, which is 282,689.[21] The associated Bayesian confidence intervals ranged from 0.4890 * 536,921 (i.e., 262,554) to 0.5638 * 536,921 (i.e., 302,716). Note that when estimates of the number of persons are calculated for Tables 1 to 26 in "2011-2012 NSDUH: Model-Based Estimated Totals (in Thousands) (50 States and the District of Columbia)" (follow the link in footnote 21), the unrounded prevalence estimates and population counts are used, then the numbers are reported to the nearest thousand. Hence, the number obtained by multiplying the published prevalence rate with the published population estimate may not exactly match the counts that are published in these tables because of rounding differences.

B.8 Calculation of Average Annual Incidence of Marijuana Use

Incidence rates typically are calculated as the number of new initiates of a substance during a period of time (such as in the past year) divided by an estimate of the number of person-years of exposure (in thousands). The incidence definition used here employs a simpler form of the at-risk population based on the model-based methodology. This model-based average annual incidence rate is defined as follows:

$$Average\ annual\ rate = 100 * \{[X_1 \div (0.5 * X_1 + X_2)] \div 2\},$$

where X_1 is the number of marijuana initiates in the past 24 months and X_2 is the number of persons who never used marijuana.

The incidence rate is expressed as a percentage or rate per 100 person-years of exposure. Note that this estimate uses a 2-year time period to accumulate incidence cases from each annual survey. By assuming further that the distribution of first use for the incidence cases is uniform across the 2-year interval, the total number of person-years of exposure is 1 year on average for the incidence cases plus 2 years for all the "never users" at the end of the time period. This approximation to the person-years of exposure permits one to recast the incidence rate as a function of two population prevalence rates, namely, the fraction of persons who first used marijuana in the past 2 years and the fraction who had never used marijuana. Both of these prevalence estimates were estimated using the SWHB estimation approach.

The count of persons who first used marijuana in the past 2 years is based on a "moving" 2-year period that ranges over 3 calendar years. Subjects were asked when they first used marijuana. If a person indicated first use of marijuana between the day of the interview and 2 years prior, the person was included in the count. Thus, it is possible for a person interviewed in the first part of 2012 to indicate first use as early as the first part of 2010 or as late as the first part of 2012. Similarly, a subject interviewed in the last part of 2012 could indicate first use as early as the last part of 2010 or as late as the last part of 2012. Therefore, in the 2012 survey, the reported period of first use ranged from early 2010 to late 2012 and was "centered" in 2011. For example, about half of the 12 to 17 year olds who reported first use in the past 24 months

[21] See Table 9 of "2011-2012 NSDUH: Model-Based Estimated Totals (in Thousands) (50 States and the District of Columbia)" at http://www.samhsa.gov/data/NSDUH/2k12State/NSDUHsae2012/Index.aspx.

reported first use in 2011, while a quarter each reported first use in 2010 and 2012. Persons who responded in 2011 that they had never used marijuana were included in the count of "never used." Similarly, reports of first use in the past 24 months from the 2011 survey ranged from early 2009 to late 2011 and were centered in 2010. Half of the 12 to 17 year olds who reported first use in the past 24 months reported first use in 2010, while a quarter each reported first use in 2009 and 2011. Note that only incidence rates for marijuana use are provided here.

B.9 Underage Drinking

To obtain small area estimates for persons aged 12 to 20 for past month alcohol and binge alcohol use, a separate set of models was fit for these two outcomes for the 12 to 17 age group and the 18 to 20 age group. Model-based estimates for persons aged 12 to 20 were produced by taking the population-weighted average of the individual age group (12 to 17 and 18 to 20) estimates. Estimates for underage drinking for past month alcohol and binge alcohol use were benchmarked to match national design-based estimates for that age group using the process described in Section B.6. Comparisons between the 2010-2011 and the 2011-2012 small area estimates for underage drinking in the States are presented at http://www.samhsa.gov/data/NSDUH/2k12State/NSDUHsae2012/Index.aspx.

B.10 Illicit Drug and Alcohol Dependence or Abuse / Needing But Not Receiving Treatment

The NSDUH computer-assisted interviewing (CAI) instrumentation includes questions that are designed to measure illicit drug and alcohol dependence and abuse. For these substances,[22] dependence and abuse questions were based on the criteria in the *Diagnostic and Statistical Manual of Mental Disorders*, 4th edition (DSM-IV) (American Psychiatric Association [APA], 1994).

Specifically, for marijuana, hallucinogens, inhalants, and tranquilizers, a respondent was defined as having dependence if he or she met three or more of the following six dependence criteria:

1. Spent a great deal of time over a period of a month getting, using, or getting over the effects of the substance.

2. Used the substance more often than intended or was unable to keep set limits on the substance use.

3. Needed to use the substance more than before to get desired effects or noticed that the same amount of substance use had less effect than before.

4. Inability to cut down or stop using the substance every time tried or wanted to.

[22] Substances include alcohol, marijuana, cocaine, heroin, hallucinogens, inhalants, pain relievers, tranquilizers, stimulants, and sedatives.

5. Continued to use the substance even though it was causing problems with emotions, nerves, mental health, or physical problems.

6. The substance use reduced or eliminated involvement or participation in important activities.

For alcohol, cocaine, heroin, pain relievers, sedatives, and stimulants, a seventh withdrawal criterion was added. A respondent was defined as having dependence if he or she met three or more of seven dependence criteria. The seventh withdrawal criterion is defined by a respondent reporting having experienced a certain number of withdrawal symptoms that vary by substance (e.g., having trouble sleeping, cramps, hands tremble).

For each illicit drug and alcohol, a respondent was defined as having abused that substance if he or she met one or more of the following four abuse criteria and was determined not to be dependent on the respective substance in the past year:

1. Serious problems at home, work, or school caused by the substance, such as neglecting your children, missing work or school, doing a poor job at work or school, or losing a job or dropping out of school.

2. Used the substance regularly and then did something that might have put you in physical danger.

3. Use of the substance caused you to do things that repeatedly got you in trouble with the law.

4. Had problems with family or friends that were probably caused by using the substance and continued to use the substance even though you thought the substance use caused these problems.

For additional details on how respondents were classified as having dependence or abuse of illicit drugs and alcohol, see Section B.4.2 in Appendix B of the 2012 NSDUH national findings report (CBHSQ, 2013, pp. 132-135).

Additionally, the NSDUH CAI instrument included a series of questions that are designed to measure treatment need for an alcohol or illicit drug use problem and to determine persons needing but not receiving treatment. Respondents were classified as needing treatment for an alcohol use problem in the past year if they met at least one of three criteria during the past year: (1) dependence on alcohol; (2) abuse of alcohol; or (3) received treatment for alcohol use at a specialty facility (i.e., drug and alcohol rehabilitation facility [inpatient or outpatient], hospital [inpatient only], or mental health center). A respondent was classified as needing but not receiving treatment for an alcohol problem if he or she met the criteria for alcohol dependence or abuse in the past year, but did not receive treatment at a specialty facility for an alcohol problem in the past year.

Respondents were classified as needing treatment for an illicit drug use problem in the past year if they met at least one of three criteria during the past year: (1) dependence on illicit drugs; (2) abuse of illicit drugs; or (3) received treatment for illicit drug use at a specialty facility

(i.e., drug and alcohol rehabilitation facility [inpatient or outpatient], hospital [inpatient only], or mental health center). A respondent was classified as needing but not receiving treatment for an illicit drug problem if he or she met the criteria for illicit drug dependence or abuse in the past year, but did not receive treatment at a specialty facility for an illicit drug problem in the past year.

B.11 Mental Health Measures

This section provides a summary of the measurement issues associated with the four mental health outcome variables—SMI, AMI, serious thoughts of suicide, and MDE. Additional details can be found in Section B.4.7 of Appendix B in the 2008 NSDUH national findings report for MDE (OAS, 2009) and in Sections B.4.2 through B.4.4 of Appendix B in the 2012 NSDUH mental health findings report for all four outcome variables (CBHSQ, in press).

B.11.1 Mental Illness

In the 2000-2001 and 2002-2003 NSDUH State reports, the Kessler-6 (K6) distress scale was used to measure SMI (Kessler et al., 2003). However, SAMHSA discontinued producing State-level SMI estimates beginning with the release of the 2003-2004 State report because of concerns about the validity of using only the K6 distress scale without an impairment scale; see Section B.4.4 of Appendix B in the 2004 NSDUH national findings report (OAS, 2005b). The use of the K6 distress scale continued in the 2003-2004 and the 2004-2005 State reports, not as a measure of SMI, but as a measure of serious psychological distress because it was determined that the K6 scale only measured serious psychological distress (SPD) and only contributed to measuring SMI (see the details that follow).

In December 2006, a technical advisory group meeting of expert consultants was convened by SAMHSA's Center for Mental Health Services to solicit recommendations for mental health surveillance data collection strategies among the U.S. population. The panel recommended that NSDUH should be used to produce estimates of SMI among adults using NSDUH's mental health measures and a gold-standard clinical psychiatric interview.

In response, SAMHSA's CBHSQ initiated a Mental Health Surveillance Study (MHSS) under its NSDUH contract with RTI International to develop and implement methods to estimate SMI. Based on recommendations from this panel, estimates of SMI were presented based on a revised methodology and, thus, were not comparable with estimates for SMI or SPD shown in NSDUH State reports prior to 2009. However, in 2013, another revision to the methodology for creating SMI estimates was made, and the estimates presented for 2011 and 2012 are based on this revised methodology (and therefore are not comparable with previously published estimates of SMI). Thus, the 2008-2009, 2009-2010, and 2010-2011 SMI estimates were reproduced using the new 2013 methodology.

To develop methods for preparing the estimates of SMI and AMI presented in this and other NSDUH reports and documents, the MHSS was initiated as part of the 2008 NSDUH design and analysis. Because of constraints on the interview time in NSDUH and the need for trained mental health clinicians, it was not possible to administer a full structured diagnostic clinical interview to assess mental illness on approximately 45,000 adult respondents; therefore,

the approach adopted by SAMHSA was to utilize short scales separately measuring psychological distress (K6) and functional impairment that could be used in a statistical model to accurately predict whether a respondent had a mental illness. Two impairment scales—the World Health Organization Disability Assessment Schedule (WHODAS) and the Sheehan Disability Scale (SDS)—were included in the 2008 survey for evaluation. The collection of clinical psychiatric interview data was achieved using a subsample of approximately 1,500 adult NSDUH participants in 2008. These participants were recruited for a follow-up clinical interview consisting of a gold-standard diagnostic assessment for mental disorders and functional impairment. In order to determine the optimal scale to measure functional impairment, a split-sample design was incorporated into the full 2008 NSDUH data collection in which half of the adult respondents received the WHODAS and half received the SDS (only the WHODAS scales was used starting in 2009). The 2008 statistical models (subsequently referred to as the "2008 model") using the data from the subsample of respondents collected as part of the MHSS then were developed for each half sample in which the short scales (the K6 in combination with the WHODAS or the K6 in combination with the SDS) were used as predictors in models of mental illness assessed via the clinical interviews. The model parameter estimates then were used to predict SMI in the full 2008 NSDUH sample. SMI probabilities and SMI predicted values (as well as for AMI) were computed for respondents in NSDUH samples from 2008 to 2011 using model parameter estimates from the 2008 model.

In 2010, SAMHSA began preliminary investigations to assess whether improvements to the model were warranted using all of the clinical data that been collected since 2008. In 2011 and 2012, the clinical sample was augmented to include 1,500 respondents per year, leading to a combined sample of approximately 5,000 clinical interviews for 2008 to 2012. SAMHSA determined that the 2008 model had some important shortcomings that had not been detected in the original model fitting because of the small number of respondents in the 2008 clinical subsample. Specifically, the 2008 model substantially overestimated SMI and AMI among young adults aged 18 to 25 relative to the clinical interview data. In addition, improvements were needed in the weighting procedures for the MHSS sample data to account better for nonresponse and undercoverage. Therefore, SAMHSA decided to modify the model for the 2012 estimates using the combined 2008-2012 clinical data (subsequently referred to as the "2012 model"). To reduce bias and improve prediction, additional mental health-related variables and an age variable were added in the 2012 model. To provide consistent data for trend assessment, State mental illness estimates for 2008-2009, 2009-2010, and 2010-2011 were also recomputed using the new 2012 model. Note that tables or maps showing estimates of AMI and SMI based on these 2012 models include "Revised October 2013" in the source line for estimates using 2008 through 2011 data.

The next subsection describes the instruments and items used to measure the variables employed in the 2012 model. Specifically, the instrument used to measure mental illness in the clinical interviews is described, followed by descriptions of the scales and items in the main NSDUH interviews that were used as predictor variables in the model (e.g., the K6 and WHODAS total scores, age, and suicidal thoughts).[23]

[23] MDE (i.e., depression) also was included in the 2012 model and is discussed in more detail in Section B.4.4 of Appendix B in the 2012 NSDUH mental health findings report (CBHSQ, in press).

MHSS Clinical Interviews

As described previously, a subsample of NSDUH participants completed follow-up clinical interviews to provide data for the statistical modeling of the NSDUH interview data of psychological distress and functional impairment on mental health status. The MHSS sample respondents were administered clinical interviews within 4 weeks of the NSDUH main interview to assess the presence of mental disorders and functional impairment. Specifically, each participant was assessed by a trained clinical interviewer (master's or doctoral-level clinician, counselor, or social worker) via paper-and-pencil interviewing (PAPI) over the telephone. The clinical interview used was an adapted version of the Structured Clinical Interview for DSM-IV-TR Axis I Disorders, Research Version, Non-patient Edition (SCID-I/NP) (First, Spitzer, Gibbon, & Williams, 2002). Past year disorders that were assessed through the SCID included mood disorders (e.g., MDE, manic episode), anxiety disorders (e.g., panic disorder, generalized anxiety disorder, posttraumatic stress disorder), eating disorders (e.g., anorexia nervosa), intermittent explosive disorder, and adjustment disorder. In addition, the presence of psychotic symptoms was assessed. Substance use disorders also were assessed, although these disorders were not included in the estimates of mental illness.

Functional impairment ratings were assigned by clinical interviewers using the Global Assessment of Functioning (GAF) scale (Endicott, Spitzer, Fleiss, & Cohen, 1976). Mental illness, measured using the SCID and differentiated by the level of functional impairment, was defined in the MHSS as follows:

- Respondents were defined as having *any mental illness* if they were determined to have any of the mental disorders assessed in the SCID (not including substance use disorders), regardless of the level of functional impairment.

- Respondents were defined as having *serious mental illness* if they had any of the mental disorders assessed in the SCID (not including substance use disorders), and these disorders resulted in substantial impairment in carrying out major life activities, based on GAF scores of 50 or below. The SMI diagnosis was used as the response variable in both the 2008 and 2012 prediction models.

The SCID and the GAF in combination were considered to be the gold standard for measuring mental illness.

Kessler-6 Distress Scale

The K6 in NSDUH consists of two sets of six questions that asked adult respondents how frequently they experienced symptoms of psychological distress during two different time periods: (1) during the past 30 days, and (2) if applicable, the one month in the past year when they were at their worst emotionally. Respondents were asked about the second time period only if they indicated that there was a month in the past 12 months when they felt more depressed, anxious, or emotionally stressed than they felt during the past 30 days.

The six questions comprising the K6 scale for the past month are as follows:

NERVE30 During the past 30 days, how often did you feel nervous?

1 All of the time
2 Most of the time
3 Some of the time
4 A little of the time
5 None of the time
Don't know/Refused

Response categories are the same for the remaining questions shown below.

HOPE30 During the past 30 days, how often did you feel hopeless?

FIDG30 During the past 30 days, how often did you feel restless or fidgety?

NOCHR30 During the past 30 days, how often did you feel so sad or depressed that nothing could cheer you up?

EFFORT30 During the past 30 days, how often did you feel that everything was an effort?

DOWN30 During the past 30 days, how often did you feel down on yourself, no good or worthless?

To create a score, the six items (NERVE30, HOPE30, FIDG30, NOCHR30, EFFORT30, and DOWN30) on the K6 scale were recoded from 0 to 4 so that "all of the time" was coded 4, "most of the time" 3, "some of the time" 2, "a little of the time" 1, and "none of the time" 0, with "don't know" and "refused" also coded as 0. Summing across the transformed responses in these six items resulted in a score with a range from 0 to 24.

If respondents were asked about a month in the past 12 months when they felt more depressed, anxious, or emotionally stressed than they felt during the past 30 days, they were asked comparable K6 items for that particular month in the past 12 months. The scoring procedures for these K6 items for the past 12 months were the same as those described above. The higher of the two K6 total scores for the past 30 days or past 12 months was used both for MHSS analysis purposes and in the adult respondents' final data.

An alternative K6 total score also was created in which K6 scores less than 8 were recoded as 0 and scores from 8 to 24 were recoded as 1 to 17. The rationale for creating the alternative past year K6 score was that SMI prevalence was typically extremely low for respondents with past year K6 scores less than 8, and the prevalence rates started increasing only when scores were 8 or greater. The alternative K6 score was used in both the 2008 and 2012 SMI prediction models.

WHODAS

An initial step of the MHSS was to modify the WHODAS for use in a general population survey, including making minor changes to question wording and reducing its length (Novak, 2007). That is, a subset of 8 items was found to capture the information represented in the full 16-item scale with no significant loss of information.

These eight WHODAS items that were included in the main NSDUH interview were assessed on a 0 to 3 scale, with responses of "no difficulty," "don't know," and "refused" coded as 0; "mild difficulty" coded as 1; "moderate difficulty" coded as 2; and "severe difficulty" coded as 3. Some items had an additional category for respondents who did not engage in a particular activity (e.g., they did not leave the house on their own). Respondents who reported that they did not engage in an activity were asked a follow-up question to determine if they did not do so because of emotions, nerves, or mental health. Those who answered "yes" to this follow-up question were subsequently assigned to the "severe difficulty" category; otherwise (i.e., for responses of "no," "don't know," or "refused"), they were assigned to the "no difficulty" category. Summing across these codes for the eight responses resulted in a total score with a range from 0 to 24. More information about scoring of the WHODAS can be found in the 2011 NSDUH public use file codebook (CBHSQ, 2012a).

An **alternative WHODAS** total score was created in which individual WHODAS item scores of less than 2 were recoded as 0, and item scores of 2 to 3 were recoded as 1. The individual alternative item scores then were summed to yield a total alternative score ranging from 0 to 8. Creation of an alternative version of the WHODAS score was based on the assumption that a dichotomous measure dividing respondents into two groups (i.e., severely impaired vs. less severely impaired) might fit better than a linear continuous measure in models predicting SMI. This alternative WHODAS score was the variable used in both the 2008 and 2012 SMI prediction models.

Suicidal Thoughts, MDE, and Age

In addition to the K6 and WHODAS scales, the 2012 model included the following measures as predictors of SMI: (a) serious thoughts of suicide in the past year; (b) having a past year MDE; and (c) age. The first two variables were added to the model to decrease the error rate in the predictions (i.e., the sum of the false-negative and false-positive rates relative to the clinical interview results). A recoded age variable reduced the biases in estimates for particular age groups, especially 18 to 25 year olds.

Since 2008, all adult respondents in NSDUH have been asked the following question: "At any time in the past 12 months, that is from [DATEFILL] up to and including today, did you seriously think about killing yourself?"[24] Definitions for MDE in the lifetime and past year periods are discussed in Section B.4.4 of Appendix B in the 2012 NSDUH mental health findings report (CBHSQ, in press). For respondents aged 18 to 30, an adjusted age was created by subtracting 18 from the respondent's current age, resulting in values ranging from 0 to 12. For a respondent aged 18, for example, the adjusted age was 0 (i.e., 18 minus 18), and for a respondent aged 30, the adjusted age was 12 (i.e., 30 minus 18). For respondents aged 31 or older, the adjusted age was assigned a value of 12.

[24] In the question about serious thoughts of suicide, [DATEFILL] refers to the date at the start of a respondent's 12-month reference period. The interview program sets the start of the 12-month reference period as the same month and day as the interview date but in the previous calendar year.

2012 SMI Model

Statistical modeling involved developing separate weighted logistic regression prediction models for the K6 and for each of the two impairment scales. With SMI status based on having a SCID diagnosis plus a GAF score less than or equal to 50, the response variable *Y* was defined so that

Y = 1 when an SMI diagnosis is positive; otherwise, *Y* = 0.

If **X** is a vector of explanatory variables, then the response probability $\pi = \Pr(Y = 1 | \mathbf{X})$ can be estimated using the weighted logistic regression model. The final 2012 calibration model was determined as follows:

$$\text{logit}(\hat{\pi}) = \log[\hat{\pi} / (1 - \hat{\pi})] = -5.972664 + 0.0873416X_k + 0.3385193X_w + 1.9552664X_s + 1.1267330\,X_m + 0.1059137X_a \quad (1)$$

or

$$\hat{\pi} = \frac{1}{1 + \exp[-(-5.972664 + 0.0873416X_k + 0.3385193X_w + 1.9552664X_s + 1.1267330\,X_m + 0.1059137X_a)}},$$

where $\hat{\pi}$ refers to an estimate of the SMI response probability π. These covariates in equation (1) came from the main NSDUH interview data:

- X_k = *Alternative Past Year K6 Score*: Past year K6 score less than 8 recoded as 0; past year K6 score 8 to 24 recoded as 1 to 17.
- X_w = *Alternative WHODAS Score*: WHODAS item scores less than 2 recoded as 0; WHODAS item scores 2 to 3 recoded as 1, then summed for a score ranging from 0 to 8.
- X_s = *Serious Thoughts of Suicide in the Past Year*: Coded as 1 if "yes"; coded as 0 otherwise.
- X_m = *Past Year MDE:* Coded as 1 if criteria for past year MDE were met (see Section B.11.3); coded as 0 otherwise.
- X_a = *Adjusted Age:* Coded as age minus 18 if aged 18 to 30; coded as 12 otherwise.

As with the 2008 model, a cut point probability π_0 was determined, so that if $\hat{\pi} \geq \pi_0$ for a particular respondent, then he or she was *predicted* to be SMI positive; otherwise, he or she was predicted to be SMI negative. The cut point (0.260573529) was chosen so that the weighted number of false positives and false negatives in the MHSS dataset were as close to equal as possible The predicted SMI status for all adult NSDUH respondents was used to compute SMI small area estimates. A second cut point probability (0.0192519810) was determined so that respondents with an SMI probability greater than or equal to the cut point were predicted to be positive for AMI, and the remainder were predicted to be negative for AMI. The second cut point

was chosen so that the weighted numbers of AMI false positives and false negatives were as close to equal as possible.

B.11.2 Serious Thoughts of Suicide

Responding to a need for national data on the prevalence of suicidal thoughts and behavior, a set of questions was added beginning with the 2008 NSDUH questionnaire (and the questions were continued to be asked in 2009, 2010, 2011, and 2012). These questions asked all adult respondents aged 18 or older if at any time during the past 12 months they had serious thoughts of suicide (suicidal ideation). State-level estimates of suicidal ideation are included at http://www.samhsa.gov/data/NSDUH/2k12State/NSDUHsae2012/Index.aspx.

B.11.3 Major Depressive Episode (Depression)

According to the DSM-IV, a person is defined as having had MDE in his or her lifetime if he or she has had at least five or more of the following nine symptoms nearly every day in the same 2-week period, where at least one of the symptoms is a depressed mood or loss of interest or pleasure in daily activities (APA, 1994): (1) depressed mood most of the day; (2) markedly diminished interest or pleasure in all or almost all activities most of the day; (3) significant weight loss when not sick or dieting, or weight gain when not pregnant or growing, or decrease or increase in appetite; (4) insomnia or hypersomnia; (5) psychomotor agitation or retardation; (6) fatigue or loss of energy; (7) feelings of worthlessness; (8) diminished ability to think or concentrate or indecisiveness; and (9) recurrent thoughts of death or suicidal ideation. Respondents who have had an MDE in their lifetime are asked if, during the past 12 months, they had a period of depression lasting 2 weeks or longer while also having some of the other symptoms mentioned. Those reporting that they have are defined as having had MDE in the past year and then are asked questions from the SDS to measure the level of functional impairment in major life activities reported to be caused by the MDE in the past 12 months (Leon, Olfson, Portera, Farber, & Sheehan, 1997).

Beginning in 2004, modules related to MDE, derived from DSM-IV (APA, 1994) criteria for major depression, were included in the questionnaire. These questions permit prevalence estimates of MDE to be calculated. Separate modules were administered to adults aged 18 or older and youths aged 12 to 17. The adult questions were adapted from the depression section of the National Comorbidity Survey Replication (NCS-R), and the questions for youths were adapted from the depression section of the National Comorbidity Survey Adolescent (NCS-A) (see http://www.hcp.med.harvard.edu/ncs/). To make the modules developmentally appropriate for youths, there are minor wording differences in a few questions between the adult and youth modules. Revisions to the questions in both modules were made primarily to reduce the length and to modify the NCS questions, which are interviewer-administered, to the audio computer-assisted self-interviewing (ACASI) format used in NSDUH. In addition, some revisions, based on cognitive testing, were made to improve comprehension.

Since 2004, the NSDUH questions that determine MDE have remained unchanged. In the 2008 questionnaire, however, changes were made in other mental health items that precede the MDE questions for adults (K6, suicide, and impairment). Questions also were retained in 2009, 2010, 2011, and 2012 for the WHODAS impairment scale, and the questions for the SDS

impairment scale were deleted; see Sections B.4.2 and B.4.4 in Appendix B of the 2012 NSDUH mental health findings report (CBHSQ, in press) for further details about these questionnaire changes. The questionnaire changes in 2008 appear to have affected the reporting on MDE questions among adults.

Because the WHODAS was selected to be used in the 2009 and subsequent surveys, model-based adjustments were applied to MDE estimates from the SDS half sample in 2008 to remove the context effect differential between the two half samples. Additionally, model-based adjustments were made to the 2005, 2006, and 2007 adult MDE estimates to make them comparable with the 2008 through 2012 MDE estimates (for more information on these adjustments, see Aldworth, Kott, Yu, Mosquin, & Barnett-Walker, 2012). Thus, the 2008-2009 estimates of MDE were produced using the adjusted 2008 MDE variable along with the unadjusted 2009 MDE variable. Revised estimates for 2005-2006, 2006-2007, and 2007-2008 were produced using the adjusted MDE variable.

In addition, changes to the youth mental health service utilization module questions in 2009 that preceded the questions about adolescent depression could have affected adolescents' responses to the adolescent depression questions and estimates of adolescent MDE. However, these changes in 2009 did not appear to affect the estimates of adolescent MDE. Therefore, data on trends in past year MDE from 2004 to 2012 are available for adolescents aged 12 to 17.

B.12 Comparison of Two 2011-2012 Small Area Estimates

This section describes a method for determining whether differences between two 2011-2012 State estimates are statistically significant. This procedure can be used for any two State estimates representing the same age group (e.g., young adults aged 18 to 25) and time period (e.g., 2011-2012).

Let π_{1a} and π_{2a} denote the 2011-2012 age group-a specific prevalence rates for two different States, $s1$ and $s2$, respectively. The null hypothesis of no difference, that is, $\pi_{1a} = \pi_{2a}$, is equivalent to the log-odds ratio equal to zero, that is, $lor_a = 0$, where lor_a is defined as $lor_a = \ln\left[\frac{\pi_{2a}/(1-\pi_{2a})}{\pi_{1a}/(1-\pi_{1a})}\right]$, where ln denotes the natural logarithm. An estimate of lor_a is given by $\hat{l}or_a = \ln\left[\frac{p_{2a}/(1-p_{2a})}{p_{1a}/(1-p_{1a})}\right]$, where p_{1a} and p_{2a} are the 2011-2012 State estimates given in the "2011-2012 NSDUH: Model-Based Prevalence Estimates (50 States and the District of Columbia) (Tables 1 to 26, by Age Group)" at http://www.samhsa.gov/data/NSDUH/2k12State/NSDUHsae2012/Index.aspx. To compute the variance of $\hat{l}or_a$, that is, $v(\hat{l}or_a)$, let $\hat{\theta}_1 = \frac{p_{1a}}{1-p_{1a}}$ and $\hat{\theta}_2 = \frac{p_{2a}}{1-p_{2a}}$, then $v(\hat{l}or_a) = v[\ln(\hat{\theta}_1)] + v[\ln(\hat{\theta}_2)] - 2\,\mathrm{cov}[\ln(\hat{\theta}_1), \ln(\hat{\theta}_2)]$, where $\mathrm{cov}[\ln(\hat{\theta}_1), \ln(\hat{\theta}_2)]$ 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:

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

The quantities $v[\ln(\hat{\theta}_1)]$ and $v[\ln(\hat{\theta}_2)]$ can be obtained by using the 95 percent Bayesian confidence intervals given in the "2011-2012 NSDUH: Model-Based Prevalence Estimates (50 States and the District of Columbia) (Tables 1 to 26, by Age Group)" at http://www.samhsa.gov/data/NSDUH/2k12State/NSDUHsae2012/Index.aspx. For this purpose, let $(lower_1, upper_1)$ and $(lower_2, upper_2)$ denote the 95 percent Bayesian confidence intervals for the two States, $s1$ and $s2$, respectively. Then

$$v[\ln(\hat{\theta}_i)] = \left(\frac{U_i - L_i}{2 \times 1.96}\right)^2 \quad \text{for } i = 1, 2,$$

where $U_i = \ln\dfrac{upper_i}{1 - upper_i}$ and $L_i = \ln\dfrac{lower_i}{1 - lower_i}$.

For all practical purposes, the correlation between $\ln(\hat{\theta}_1)$ and $\ln(\hat{\theta}_2)$ is assumed to be negligible; hence, $v(\hat{lor}_a)$ can be approximated by $v[\ln(\hat{\theta}_1)] + v[\ln(\hat{\theta}_2)]$. The correlation is assumed to be negligible because each State was a stratum in the first level of stratification; therefore, each State sample is selected independently. However, the correlation between the two State estimates is theoretically nonzero because State estimates share common fixed-effect parameters in the SAE models. Hence, the test statistic z (defined below) might result in a different conclusion in a few cases when the correlation between the State estimates is incorporated in calculating $v(\hat{lor}_a)$. To calculate the p value for testing the null hypothesis of no difference ($lor_a = 0$), it is assumed that the posterior distribution of lor_a is normal with $mean = \hat{lor}_a$ and $variance = v(\hat{lor}_a)$. With the null value of $lor_a = 0$, the Bayes p value or posterior probability of no difference is $p\ value = 2 * P[Z \geq abs(z)]$, where Z is a standard normal random variate, $z = \dfrac{\hat{lor}_a}{\sqrt{v[\ln(\hat{\theta}_1)] + v[\ln(\hat{\theta}_2)]}}$, and $abs(z)$ denotes the absolute value of z.

Hence, to test whether differences between two 2011-2012 State estimates are statistically significant, the test statistic z and the associated p value can be used. If $p \leq 0.05$, then the two State estimates can be considered different at the 5 percent level of significance.

When comparing prevalence rates for two States, it is tempting and often convenient to look at their 95 percent Bayesian confidence intervals to decide whether the difference in the State prevalence rates is significant. If the two Bayesian confidence intervals overlap, one would conclude that the difference is not statistically significant. If the two Bayesian confidence intervals do not overlap, it implies that the State prevalence rates are significantly different from each other. However, the type-I error for the overlapping 95 percent Bayesian confidence intervals test is 0.6 percent (assuming that the two State estimates are uncorrelated and have the same variances) as compared with the 5 percent type-I error of the test based on the z statistics

defined above (Payton, Greenstone, & Schenker, 2003). Thus, using the overlap method with 95 percent Bayesian confidence intervals implies a type-I error that is much less than the 5 percent level that is typically prescribed for such tests.

As discussed in Schenker and Gentleman (2001), the method of overlapping Bayesian confidence intervals is more conservative (i.e., it rejects the null hypothesis of no difference less often) than the standard method based on z statistics when the null hypothesis is true. Even if Bayesian confidence intervals for two States overlap, the two prevalence rates may be declared significantly different by the test based on z statistics. Hence, the method of overlapping Bayesian confidence intervals is not recommended to test the equivalence of two State prevalence rates. A detailed description of the method of overlapping confidence intervals and its comparison with the standard methods for testing of a hypothesis is given in Schenker and Gentleman (2001) and Payton et al. (2003).

Example. The prevalence rates for past month alcohol use among 12 to 17 year olds in Minnesota and New Jersey are shown in the following exhibit and also in Table 9 of the "2011-2012 NSDUH: Model-Based Prevalence Estimates (50 States and the District of Columbia)" at http://www.samhsa.gov/data/NSDUH/2k12State/NSDUHsae2012/Index.aspx. Looking at the two 95 percent Bayesian confidence intervals, it would appear that the Minnesota and New Jersey prevalence rates for past month alcohol use are not statistically different at the 5 percent level of significance because the two Bayesian confidence intervals overlap:

State	Point Estimate (%)	95% Bayesian Confidence Interval (%)
Minnesota	13.10	(10.98, 15.56)
New Jersey	17.47	(14.73, 20.61)

However, in the following example, the test based on the z statistic described earlier concludes that they are significantly different at the 5 percent level of significance.

Let $p_{1a} = 0.1310$, $lower_1 = 0.1098$, $upper_1 = 0.1556$, $p_{2a} = 0.1747$, $lower_2 = 0.1473$, $upper_2 = 0.2061$. Then,

$$U_1 = \ln\frac{0.1556}{1-0.1556} = \text{-}1.6913,\ L_1 = \ln\frac{0.1098}{1-0.1098} = \text{-}2.0928,$$

$$U_2 = \ln\frac{0.2061}{1-0.2061} = \text{-}1.3486,\ L_2 = \ln\frac{0.1473}{1-0.1473} = \text{-}1.7559,$$

$$\hat{lor}_a = \ln\left[\frac{p_{2a}/(1-p_{2a})}{p_{1a}/(1-p_{1a})}\right] = \ln\left[\frac{0.1747/(1-0.1747)}{0.1310/(1-0.1310)}\right] = 0.3395,$$

$$v[\ln(\hat{\theta}_1)] = \left(\frac{U_1 - L_1}{2\times 1.96}\right)^2 = \left(\frac{-1.6913 + 2.0928}{2\times 1.96}\right)^2 = 0.01049,$$

$$v[\ln(\hat{\theta}_2)] = \left(\frac{U_2 - L_2}{2\times 1.96}\right)^2 = \left(\frac{-1.3486 + 1.7559}{2\times 1.96}\right)^2 = 0.01080, \text{ and}$$

$$z = \frac{\hat{lor}_a}{\sqrt{v[\ln(\hat{\theta}_1)] + v[\ln(\hat{\theta}_2)]}} = \frac{0.3395}{\sqrt{0.01049 + 0.01080}} = 2.3268.$$

Because the computed absolute value of z is greater than or equal to 1.96 (the critical value of the z statistic), then at the 5 percent level of significance, the hypothesis of no difference (Minnesota prevalence rate = New Jersey prevalence rate) is rejected. Thus, the two State prevalence rates are statistically different. The Bayes *p* value or posterior probability of no difference is p value $= 2 * P[Z \geq 2.3268] = 0.0200$.

Section C: Sample Sizes, Response Rates, and Population Estimates

Table C.1 Sample Sizes, Weighted Screening and Interview Response Rates, and Population Estimates, by State, for Persons Aged 12 or Older: 2010

State	Total Selected DUs	Total Eligible DUs	Total Completed Screeners	Weighted DU Screening Response Rate	Total Selected	Total Responded	Population Estimate	Weighted Interview Response Rate	Weighted Overall Response Rate
Total U.S.	201,865	166,532	147,010	88.42%	84,997	67,804	253,619,107	74.57%	65.94%
Northeast	43,420	36,033	29,645	81.63%	16,782	13,017	46,535,320	72.81%	59.44%
Midwest	54,767	45,892	41,118	89.86%	24,139	19,301	55,345,459	74.81%	67.22%
South	63,813	51,533	46,241	90.54%	25,597	20,769	92,961,895	76.24%	69.03%
West	39,865	33,074	30,006	89.17%	18,479	14,717	58,776,433	73.17%	65.24%
Alabama	2,879	2,284	2,099	91.94%	1,121	878	3,893,688	71.86%	66.07%
Alaska	2,226	1,719	1,583	92.02%	1,057	868	555,964	77.75%	71.55%
Arizona	2,655	2,059	1,861	90.14%	1,149	925	5,386,782	72.97%	65.77%
Arkansas	2,595	2,108	1,948	92.51%	1,123	899	2,375,992	75.16%	69.53%
California	9,282	8,087	6,910	85.48%	4,739	3,715	30,322,142	71.96%	61.52%
Colorado	2,529	2,084	1,912	92.20%	1,117	904	4,151,930	79.29%	73.11%
Connecticut	2,474	2,158	1,812	83.73%	1,151	926	2,951,217	75.17%	62.94%
Delaware	2,621	2,118	1,857	87.67%	1,099	889	737,571	77.52%	67.96%
District of Columbia	5,113	4,192	3,403	79.88%	1,110	935	517,942	81.34%	64.97%
Florida	13,206	9,961	8,891	89.01%	4,460	3,655	15,611,774	77.37%	68.87%
Georgia	2,385	1,978	1,804	91.21%	1,131	910	7,940,651	75.51%	68.88%
Hawaii	2,861	2,443	2,098	85.56%	1,296	974	1,047,745	66.88%	57.22%
Idaho	2,624	2,046	1,932	94.43%	1,113	912	1,250,238	78.24%	73.88%
Illinois	10,614	9,121	7,392	80.95%	4,762	3,609	10,629,517	70.77%	57.29%
Indiana	2,743	2,281	2,104	91.97%	1,142	916	5,286,018	73.88%	67.95%
Iowa	2,574	2,187	2,069	94.61%	1,113	925	2,502,115	78.90%	74.65%
Kansas	2,340	1,988	1,824	91.75%	1,101	885	2,296,286	74.78%	68.61%
Kentucky	2,583	2,147	1,991	92.73%	1,109	900	3,574,784	76.88%	71.29%
Louisiana	2,605	2,092	1,955	93.42%	1,112	906	3,661,821	77.97%	72.84%
Maine	3,327	2,404	2,197	90.98%	1,100	924	1,127,285	80.65%	73.37%
Maryland	2,415	2,061	1,692	82.13%	1,096	883	4,737,806	77.66%	63.78%
Massachusetts	3,116	2,716	2,365	87.32%	1,149	930	5,605,641	78.23%	68.31%
Michigan	10,828	8,669	7,623	87.81%	4,561	3,690	8,313,433	75.65%	66.43%
Minnesota	2,532	2,087	1,949	93.42%	1,149	946	4,382,130	78.32%	73.17%
Mississippi	2,485	1,976	1,839	93.07%	1,087	893	2,373,593	76.50%	71.20%

(continued)

Table C.1 Sample Sizes, Weighted Screening and Interview Response Rates, and Population Estimates, by State, for Persons Aged 12 or Older: 2010 (continued)

State	Total Selected DUs	Total Eligible DUs	Total Completed Screeners	Weighted DU Screening Response Rate	Total Selected	Total Responded	Population Estimate	Weighted Interview Response Rate	Weighted Overall Response Rate
Missouri	2,642	2,170	2,031	93.58%	1,142	921	4,952,896	75.89%	71.01%
Montana	2,713	2,255	2,128	94.34%	1,137	919	820,115	76.91%	72.56%
Nebraska	2,336	1,996	1,883	94.30%	1,120	906	1,469,129	73.19%	69.02%
Nevada	2,674	2,063	1,935	94.68%	1,183	958	2,155,405	71.81%	67.99%
New Hampshire	3,232	2,558	2,219	86.80%	1,160	918	1,128,997	74.48%	64.65%
New Jersey	2,382	2,061	1,831	88.85%	1,157	923	7,269,834	78.46%	69.72%
New Mexico	2,610	2,078	1,959	94.26%	1,117	912	1,641,892	77.09%	72.66%
New York	13,218	11,170	8,452	75.25%	5,061	3,626	16,410,083	66.82%	50.28%
North Carolina	2,674	2,303	2,118	92.18%	1,103	904	7,679,126	76.53%	70.54%
North Dakota	3,053	2,567	2,420	94.30%	1,188	954	540,202	76.32%	71.97%
Ohio	10,268	8,717	7,947	91.17%	4,633	3,731	9,580,362	74.81%	68.20%
Oklahoma	2,626	2,122	1,903	89.71%	1,173	923	2,995,565	73.17%	65.64%
Oregon	2,603	2,293	2,146	93.61%	1,134	907	3,229,211	74.87%	70.09%
Pennsylvania	10,193	8,715	6,952	79.79%	3,853	2,985	10,607,311	73.24%	58.44%
Rhode Island	2,574	2,094	1,866	89.19%	1,117	915	896,384	74.52%	66.46%
South Carolina	2,616	2,152	1,927	89.56%	1,138	927	3,760,624	75.68%	67.78%
South Dakota	2,399	2,048	1,945	95.06%	1,115	929	666,589	80.45%	76.47%
Tennessee	2,588	2,149	1,968	91.41%	1,117	901	5,238,574	73.38%	67.08%
Texas	8,885	7,290	6,697	91.78%	4,431	3,590	19,847,501	76.61%	70.31%
Utah	1,507	1,324	1,252	94.58%	1,105	919	2,180,889	79.81%	75.48%
Vermont	2,904	2,157	1,951	90.39%	1,034	870	538,568	82.45%	74.53%
Virginia	2,609	2,284	2,037	89.17%	1,096	888	6,471,190	76.48%	68.20%
Washington	2,636	2,288	2,103	91.87%	1,194	897	5,585,609	70.16%	64.45%
West Virginia	2,928	2,316	2,112	91.30%	1,091	888	1,543,694	78.37%	71.55%
Wisconsin	2,438	2,061	1,931	93.62%	1,113	889	4,726,785	76.78%	71.88%
Wyoming	2,945	2,335	2,187	93.74%	1,138	907	448,513	73.07%	68.50%

DU = dwelling unit.

Source: SAMHSA, Center for Behavioral Health Statistics and Quality, National Survey on Drug Use and Health, 2010.

Table C.2 Sample Sizes, Weighted Interview Response Rates, and Population Estimates, by State and Three Age Groups: 2010

State	12-17 Total Selected	12-17 Total Responded	12-17 Population Estimate	12-17 Weighted Interview Response Rate	18-25 Total Selected	18-25 Total Responded	18-25 Population Estimate	18-25 Weighted Interview Response Rate	26+ Total Selected	26+ Total Responded	26+ Population Estimate	26+ Weighted Interview Response Rate
Total U.S.	25,908	21,992	24,346,528	84.65%	28,164	23,026	34,072,349	81.20%	30,925	22,786	195,200,229	72.14%
Northeast	4,966	4,105	4,234,758	81.31%	5,612	4,412	6,045,018	77.44%	6,204	4,500	36,255,544	71.05%
Midwest	7,357	6,264	5,334,556	85.18%	8,035	6,589	7,496,530	81.44%	8,747	6,448	42,514,373	72.34%
South	8,029	6,858	8,956,559	85.57%	8,407	7,027	12,418,811	83.30%	9,161	6,884	71,586,525	73.79%
West	5,556	4,765	5,820,656	85.19%	6,110	4,998	8,111,990	80.57%	6,813	4,954	44,843,787	70.31%
Alabama	369	307	374,067	82.98%	345	286	520,974	81.37%	407	285	2,998,646	68.80%
Alaska	312	266	57,362	85.56%	362	310	85,086	85.36%	383	292	413,516	75.09%
Arizona	333	292	538,540	87.31%	428	351	701,269	79.13%	388	282	4,146,973	70.30%
Arkansas	334	284	232,460	84.94%	362	296	305,518	82.20%	427	319	1,838,015	72.68%
California	1,526	1,303	3,086,730	84.79%	1,416	1,151	4,268,110	80.94%	1,797	1,261	22,967,302	68.62%
Colorado	273	231	379,157	82.92%	424	345	566,389	81.41%	420	328	3,206,384	78.51%
Connecticut	331	288	281,757	88.09%	400	326	381,359	81.42%	420	312	2,288,101	72.46%
Delaware	319	268	67,234	83.34%	340	288	93,677	85.05%	440	333	576,660	75.64%
District of Columbia	356	324	34,240	91.90%	384	320	84,993	82.39%	370	291	398,709	80.13%
Florida	1,424	1,215	1,329,956	85.86%	1,419	1,212	1,870,501	85.10%	1,617	1,228	12,411,317	75.23%
Georgia	371	313	818,462	84.43%	355	301	1,076,087	84.73%	405	296	6,046,102	72.53%
Hawaii	400	338	89,846	83.34%	439	335	130,340	78.06%	457	301	827,559	63.29%
Idaho	353	294	130,819	83.21%	356	305	177,534	85.11%	404	313	941,886	76.19%
Illinois	1,357	1,122	1,049,679	82.64%	1,615	1,232	1,453,014	76.32%	1,790	1,255	8,126,824	68.31%
Indiana	389	341	523,789	88.17%	343	280	719,041	81.57%	410	295	4,043,187	70.81%
Iowa	336	287	234,049	85.14%	385	321	359,379	81.94%	392	317	1,908,687	77.57%
Kansas	331	296	225,398	89.33%	357	285	338,453	81.23%	413	304	1,732,436	71.72%
Kentucky	352	299	333,232	85.21%	370	304	461,899	82.16%	387	297	2,779,654	75.08%
Louisiana	382	328	365,624	86.45%	345	285	526,082	82.60%	385	293	2,770,114	75.99%
Maine	325	284	94,501	87.86%	356	302	130,971	85.20%	419	338	901,813	79.28%
Maryland	315	268	448,006	86.14%	367	300	613,529	79.93%	414	315	3,676,271	76.21%
Massachusetts	360	296	491,663	80.42%	392	324	761,003	81.71%	397	310	4,352,974	77.40%
Michigan	1,432	1,212	814,296	84.10%	1,453	1,220	1,105,211	84.44%	1,676	1,258	6,393,926	73.01%
Minnesota	337	296	409,292	87.51%	410	340	590,704	82.82%	402	310	3,382,134	76.41%
Mississippi	333	290	247,423	87.78%	368	316	340,138	85.71%	386	287	1,786,033	73.21%

(continued)

Table C.2 Sample Sizes, Weighted Interview Response Rates, and Population Estimates, by State and Three Age Groups: 2010 (continued)

State	12-17 Total Selected	12-17 Total Responded	12-17 Population Estimate	12-17 Weighted Interview Response Rate	18-25 Total Selected	18-25 Total Responded	18-25 Population Estimate	18-25 Weighted Interview Response Rate	26+ Total Selected	26+ Total Responded	26+ Population Estimate	26+ Weighted Interview Response Rate
Missouri	341	288	472,583	85.51%	386	320	656,859	82.72%	415	313	3,823,454	73.55%
Montana	348	302	72,261	86.91%	343	280	114,819	81.70%	446	337	633,035	75.07%
Nebraska	335	300	141,249	88.32%	372	306	218,880	82.98%	413	300	1,108,999	69.37%
Nevada	298	264	210,434	90.50%	405	339	263,872	83.13%	480	355	1,681,099	67.89%
New Hampshire	300	250	101,483	84.76%	467	387	145,527	82.81%	393	281	881,988	71.74%
New Jersey	387	324	692,595	83.33%	334	264	865,591	81.47%	436	335	5,711,649	77.39%
New Mexico	364	327	161,227	89.38%	370	303	226,963	83.54%	383	282	1,253,702	74.21%
New York	1,457	1,141	1,498,050	77.55%	1,709	1,234	2,188,721	71.54%	1,895	1,251	12,723,312	64.80%
North Carolina	346	311	719,819	89.83%	375	304	1,014,496	82.27%	382	289	5,944,811	73.67%
North Dakota	357	300	46,378	83.63%	393	340	96,560	86.92%	438	314	397,264	72.96%
Ohio	1,395	1,191	918,549	85.27%	1,634	1,371	1,210,150	83.56%	1,604	1,169	7,451,663	72.00%
Oklahoma	394	337	291,436	84.66%	355	278	425,691	76.96%	424	308	2,278,438	71.09%
Oregon	376	318	285,470	83.17%	361	296	412,163	82.85%	397	293	2,531,579	72.45%
Pennsylvania	1,165	955	951,061	82.17%	1,203	946	1,365,550	78.58%	1,485	1,084	8,290,700	71.31%
Rhode Island	322	292	79,082	90.34%	418	350	129,842	83.67%	377	273	687,461	70.69%
South Carolina	351	292	349,533	83.84%	376	325	487,235	85.47%	411	310	2,923,856	73.12%
South Dakota	365	309	62,886	85.00%	338	296	96,018	88.02%	412	324	507,684	78.44%
Tennessee	370	319	489,539	86.92%	364	302	664,620	83.99%	383	280	4,084,416	69.67%
Texas	1,329	1,125	2,131,714	84.76%	1,532	1,288	2,858,101	83.62%	1,570	1,177	14,857,686	74.07%
Utah	283	250	255,595	88.81%	420	357	381,486	85.32%	402	312	1,543,809	77.17%
Vermont	319	275	44,568	87.55%	333	279	76,455	82.92%	382	316	417,546	81.80%
Virginia	349	295	594,024	85.00%	360	301	884,909	83.26%	387	292	4,992,257	74.20%
Washington	365	301	512,686	83.53%	377	280	719,040	71.68%	452	316	4,353,883	68.27%
West Virginia	335	283	129,792	83.49%	390	321	190,362	81.95%	366	284	1,223,540	77.18%
Wisconsin	382	322	436,408	84.04%	349	278	652,261	78.40%	382	289	3,638,115	75.54%
Wyoming	325	279	40,531	85.48%	409	346	64,920	83.34%	404	282	343,061	69.61%

NOTE: Computations in this table are based on a respondent's age at screening. Thus, the data in the Total Responded column(s) could differ from data in other NSDUH tables that use the respondent's age recorded during the interview.

Source: SAMHSA, Center for Behavioral Health Statistics and Quality, National Survey on Drug Use and Health, 2010.

Table C.3 Sample Sizes, Weighted Screening and Interview Response Rates, and Population Estimates, by State, for Persons Aged 12 or Older: 2011

State	Total Selected DUs	Total Eligible DUs	Total Completed Screeners	Weighted DU Screening Response Rate	Total Selected	Total Responded	Population Estimate	Weighted Interview Response Rate	Weighted Overall Response Rate
Total U.S.	216,521	179,293	156,048	86.98%	88,536	70,109	257,598,945	74.38%	64.69%
Northeast	46,446	38,803	31,569	80.08%	17,251	13,090	46,891,412	69.86%	55.94%
Midwest	58,190	48,817	42,805	88.19%	24,570	19,258	55,687,448	73.92%	65.18%
South	70,821	57,462	51,276	89.47%	28,122	22,980	95,181,797	76.88%	68.78%
West	41,064	34,211	30,398	87.20%	18,593	14,781	59,838,287	74.41%	64.88%
Alabama	4,338	3,360	3,032	89.89%	1,708	1,383	3,985,593	74.64%	67.09%
Alaska	2,459	1,911	1,700	88.87%	1,121	905	569,155	79.52%	70.67%
Arizona	2,731	2,149	1,915	89.43%	1,126	928	5,285,358	82.24%	73.55%
Arkansas	2,687	2,180	2,008	92.12%	1,160	919	2,411,125	72.47%	66.76%
California	9,464	8,223	6,869	83.58%	4,692	3,640	31,060,033	72.25%	60.39%
Colorado	3,127	2,571	2,300	88.95%	1,153	921	4,187,811	76.05%	67.64%
Connecticut	2,805	2,398	2,025	84.35%	1,200	951	3,015,283	72.47%	61.13%
Delaware	2,845	2,334	2,054	87.89%	1,109	900	756,390	76.51%	67.24%
District of Columbia	4,627	3,808	3,119	80.97%	1,067	900	534,393	83.28%	67.43%
Florida	13,954	10,951	9,602	86.92%	4,941	4,029	16,131,977	74.96%	65.16%
Georgia	2,255	1,909	1,745	91.50%	1,082	878	7,928,493	77.49%	70.91%
Hawaii	2,835	2,470	2,015	81.14%	1,260	950	1,116,660	72.08%	58.49%
Idaho	2,237	1,842	1,735	94.05%	1,124	916	1,274,823	76.97%	72.39%
Illinois	11,772	10,195	7,912	77.53%	4,929	3,655	10,652,220	68.90%	53.41%
Indiana	2,475	2,015	1,875	93.20%	1,104	896	5,365,682	73.89%	68.86%
Iowa	2,659	2,295	2,137	93.15%	1,137	933	2,537,918	78.95%	73.54%
Kansas	2,579	2,243	2,043	91.08%	1,164	915	2,323,751	75.45%	68.71%
Kentucky	2,619	2,188	2,048	93.62%	1,113	899	3,597,429	76.19%	71.33%
Louisiana	5,114	4,039	3,768	93.48%	2,126	1,746	3,719,351	77.92%	72.83%
Maine	3,568	2,517	2,313	91.74%	1,039	865	1,142,856	79.50%	72.93%
Maryland	2,587	2,290	1,842	80.47%	1,121	924	4,849,618	77.62%	62.47%
Massachusetts	3,419	2,941	2,518	85.24%	1,230	975	5,601,752	74.44%	63.45%
Michigan	11,276	9,000	7,698	85.60%	4,667	3,685	8,291,125	74.32%	63.62%
Minnesota	2,723	2,369	2,135	90.09%	1,160	940	4,434,303	79.23%	71.38%
Mississippi	3,478	2,708	2,504	92.66%	1,462	1,226	2,408,918	77.57%	71.88%

(continued)

Table C.3 Sample Sizes, Weighted Screening and Interview Response Rates, and Population Estimates, by State, for Persons Aged 12 or Older: 2011 (continued)

State	Total Selected DUs	Total Eligible DUs	Total Completed Screeners	Weighted DU Screening Response Rate	Total Selected	Total Responded	Population Estimate	Weighted Interview Response Rate	Weighted Overall Response Rate
Missouri	2,501	2,073	1,925	92.84%	1,127	912	4,967,492	73.10%	67.86%
Montana	3,075	2,483	2,340	94.29%	1,194	956	835,577	76.54%	72.17%
Nebraska	2,547	2,123	1,956	91.82%	1,178	908	1,500,994	71.98%	66.10%
Nevada	2,125	1,680	1,584	95.22%	1,125	907	2,241,024	74.26%	70.71%
New Hampshire	3,003	2,402	2,099	87.19%	1,228	945	1,127,509	72.59%	63.29%
New Jersey	2,534	2,163	1,898	87.73%	1,129	894	7,385,619	71.57%	62.79%
New Mexico	2,478	1,876	1,769	94.23%	1,134	938	1,695,728	79.87%	75.26%
New York	14,528	12,454	9,093	72.46%	5,123	3,531	16,423,062	63.90%	46.31%
North Carolina	2,843	2,319	2,112	90.63%	1,103	935	7,910,951	80.92%	73.34%
North Dakota	3,321	2,629	2,476	94.18%	1,133	904	565,372	74.23%	69.91%
Ohio	11,134	9,463	8,496	89.29%	4,697	3,695	9,616,044	74.43%	66.45%
Oklahoma	2,614	2,068	1,895	91.72%	1,128	890	3,073,328	76.09%	69.79%
Oregon	2,729	2,389	2,171	90.89%	1,190	951	3,261,406	76.65%	69.66%
Pennsylvania	10,738	9,207	7,401	79.86%	4,011	3,074	10,760,673	72.87%	58.19%
Rhode Island	2,634	2,140	1,896	88.56%	1,155	930	893,903	73.56%	65.14%
South Carolina	2,978	2,441	2,205	90.33%	1,143	927	3,853,142	74.53%	67.32%
South Dakota	2,495	2,128	2,027	95.23%	1,107	913	667,896	77.20%	73.52%
Tennessee	2,590	2,149	1,914	89.19%	1,110	911	5,312,944	77.92%	69.50%
Texas	9,328	7,741	7,096	91.51%	4,478	3,636	20,486,703	75.86%	69.43%
Utah	1,797	1,590	1,505	94.62%	1,125	918	2,176,506	77.23%	73.08%
Vermont	3,217	2,581	2,326	90.14%	1,136	925	540,755	78.83%	71.06%
Virginia	2,726	2,431	2,074	85.29%	1,105	939	6,647,559	81.71%	69.69%
Washington	2,950	2,586	2,298	88.23%	1,254	959	5,668,143	72.78%	64.22%
West Virginia	3,238	2,546	2,258	87.80%	1,166	938	1,573,884	75.61%	66.39%
Wisconsin	2,708	2,284	2,125	92.73%	1,167	902	4,764,652	75.45%	69.97%
Wyoming	3,057	2,441	2,197	89.85%	1,095	892	466,065	78.14%	70.21%

DU = dwelling unit.

Source: SAMHSA, Center for Behavioral Health Statistics and Quality, National Survey on Drug Use and Health, 2011.

Table C.4 Sample Sizes, Weighted Interview Response Rates, and Population Estimates, by State and Three Age Groups: 2011

State	12-17 Total Selected	12-17 Total Responded	12-17 Population Estimate	12-17 Weighted Interview Response Rate	18-25 Total Selected	18-25 Total Responded	18-25 Population Estimate	18-25 Weighted Interview Response Rate	26+ Total Selected	26+ Total Responded	26+ Population Estimate	26+ Weighted Interview Response Rate
Total U.S.	27,911	23,549	24,973,646	84.95%	28,589	23,083	34,301,730	80.48%	32,036	23,477	198,323,568	71.96%
Northeast	5,443	4,425	4,277,870	82.07%	5,465	4,270	6,120,583	77.18%	6,343	4,395	36,492,959	67.15%
Midwest	7,649	6,388	5,445,784	83.26%	7,982	6,373	7,340,274	80.46%	8,939	6,497	42,901,391	71.62%
South	9,087	7,870	9,256,114	87.02%	9,028	7,542	12,610,321	83.06%	10,007	7,568	73,315,362	74.47%
West	5,732	4,866	5,993,878	85.37%	6,114	4,898	8,230,553	78.93%	6,747	5,017	45,613,857	72.13%
Alabama	529	452	385,875	85.66%	577	486	536,911	83.41%	602	445	3,062,807	71.72%
Alaska	392	333	60,921	85.33%	368	284	79,374	77.63%	361	288	428,860	79.00%
Arizona	363	308	535,373	86.03%	375	308	705,171	83.29%	388	312	4,044,814	81.51%
Arkansas	351	296	234,612	84.34%	431	352	316,930	81.16%	378	271	1,859,582	69.15%
California	1,403	1,181	3,173,750	84.94%	1,562	1,230	4,401,989	78.04%	1,727	1,229	23,484,294	69.41%
Colorado	376	326	395,811	84.87%	361	290	552,881	80.31%	416	305	3,239,119	74.43%
Connecticut	361	309	292,050	86.67%	389	320	366,697	83.62%	450	322	2,356,536	68.68%
Delaware	347	292	69,137	84.31%	349	295	100,448	82.88%	413	313	586,805	74.47%
District of Columbia	343	304	31,407	88.80%	408	339	97,511	82.66%	316	257	405,475	83.00%
Florida	1,649	1,440	1,380,074	87.03%	1,466	1,222	1,947,535	82.91%	1,826	1,367	12,804,369	72.50%
Georgia	360	312	821,078	87.30%	309	254	1,073,944	81.77%	413	312	6,033,471	75.45%
Hawaii	395	303	98,668	74.86%	412	329	135,970	82.72%	453	318	882,022	70.07%
Idaho	382	331	138,364	87.43%	326	269	173,071	83.08%	416	316	963,388	74.47%
Illinois	1,547	1,254	1,063,049	81.28%	1,630	1,207	1,394,519	73.93%	1,752	1,194	8,194,652	66.32%
Indiana	336	292	540,048	86.96%	374	315	728,277	84.58%	394	289	4,097,357	70.25%
Iowa	395	332	241,080	85.04%	320	273	344,974	84.99%	422	328	1,951,863	77.28%
Kansas	338	279	235,652	82.61%	394	321	320,124	82.19%	432	315	1,767,975	73.31%
Kentucky	359	297	339,927	83.56%	355	300	457,966	84.54%	399	302	2,799,536	73.80%
Louisiana	671	588	367,017	88.27%	666	567	525,065	87.75%	789	591	2,827,268	74.55%
Maine	350	300	97,195	85.41%	348	296	129,785	84.83%	341	269	915,876	77.99%
Maryland	370	324	460,905	87.15%	368	303	624,724	82.56%	383	297	3,763,989	75.67%
Massachusetts	461	384	495,429	83.49%	410	330	765,174	79.20%	359	261	4,341,149	72.35%
Michigan	1,420	1,195	819,033	84.29%	1,569	1,261	1,094,805	80.72%	1,678	1,229	6,377,287	71.97%
Minnesota	370	315	425,134	85.39%	339	274	570,169	81.72%	451	351	3,439,001	78.13%
Mississippi	452	410	248,626	91.19%	453	390	335,084	85.87%	557	426	1,825,208	74.15%

(continued)

Table C.4 Sample Sizes, Weighted Interview Response Rates, and Population Estimates, by State and Three Age Groups: 2011 (continued)

State	12-17 Total Selected	12-17 Total Responded	12-17 Population Estimate	12-17 Weighted Interview Response Rate	18-25 Total Selected	18-25 Total Responded	18-25 Population Estimate	18-25 Weighted Interview Response Rate	26+ Total Selected	26+ Total Responded	26+ Population Estimate	26+ Weighted Interview Response Rate
Missouri	338	293	476,256	82.39%	359	304	654,304	84.44%	430	315	3,836,932	70.24%
Montana	352	299	74,309	83.99%	396	326	106,543	82.17%	446	331	654,725	74.87%
Nebraska	342	298	146,677	87.64%	418	315	205,271	76.00%	418	295	1,149,047	69.10%
Nevada	239	204	218,674	89.40%	446	381	280,630	88.39%	440	322	1,741,720	70.36%
New Hampshire	407	324	103,573	79.53%	404	327	138,419	81.88%	417	294	885,517	70.19%
New Jersey	350	301	712,565	87.81%	360	295	870,975	84.31%	419	298	5,802,078	67.72%
New Mexico	319	280	169,846	87.11%	393	326	226,296	80.21%	422	332	1,299,586	78.88%
New York	1,537	1,180	1,482,881	76.97%	1,702	1,176	2,238,168	68.70%	1,884	1,175	12,702,014	61.53%
North Carolina	379	339	754,179	89.13%	339	282	1,016,089	81.19%	385	314	6,140,683	79.89%
North Dakota	334	291	48,835	87.85%	398	325	89,850	81.27%	401	288	426,688	71.23%
Ohio	1,491	1,220	932,467	81.91%	1,462	1,184	1,228,851	80.53%	1,744	1,291	7,454,725	72.47%
Oklahoma	322	264	302,691	82.91%	389	311	421,806	81.30%	417	315	2,348,831	74.21%
Oregon	414	355	291,549	86.35%	373	286	409,460	76.97%	403	310	2,560,397	75.46%
Pennsylvania	1,252	1,023	969,456	83.05%	1,105	889	1,406,406	81.30%	1,654	1,162	8,384,811	70.33%
Rhode Island	356	301	78,432	84.88%	372	324	132,407	87.65%	427	305	683,065	69.48%
South Carolina	348	302	356,131	86.42%	392	331	511,928	84.82%	403	294	2,985,082	71.06%
South Dakota	363	317	64,382	86.27%	340	295	90,856	85.84%	404	301	512,659	74.58%
Tennessee	336	293	503,104	88.26%	358	297	679,027	82.54%	416	321	4,130,814	75.89%
Texas	1,516	1,314	2,251,878	87.02%	1,426	1,180	2,896,598	82.35%	1,536	1,142	15,338,228	72.77%
Utah	350	317	264,830	90.99%	350	278	362,847	77.60%	425	323	1,548,828	74.74%
Vermont	369	303	46,290	83.39%	375	313	72,552	84.62%	392	309	421,913	77.36%
Virginia	378	332	618,074	87.87%	354	307	879,583	85.65%	373	300	5,149,902	80.14%
Washington	367	309	529,144	83.87%	447	339	733,670	74.35%	440	311	4,405,329	71.11%
West Virginia	377	311	131,399	82.69%	388	326	189,172	84.72%	401	301	1,253,313	73.59%
Wisconsin	375	302	453,172	80.52%	379	299	618,275	81.47%	413	301	3,693,206	73.70%
Wyoming	380	320	42,640	84.62%	305	252	62,649	83.42%	410	320	360,775	76.42%

NOTE: Computations in this table are based on a respondent's age at screening. Thus, the data in the Total Responded column(s) could differ from data in other NSDUH tables that use the respondent's age recorded during the interview.

Source: SAMHSA, Center for Behavioral Health Statistics and Quality, National Survey on Drug Use and Health, 2011.

Table C.5 Sample Sizes, Weighted Screening and Interview Response Rates, and Population Estimates, by State, for Persons Aged 12 or Older: 2012

State	Total Selected DUs	Total Eligible DUs	Total Completed Screeners	Weighted DU Screening Response Rate	Total Selected	Total Responded	Population Estimate	Weighted Interview Response Rate	Weighted Overall Response Rate
Total U.S.	214,274	178,586	153,873	86.07%	87,656	68,309	260,057,325	73.04%	62.87%
Northeast	47,763	40,410	32,868	79.93%	18,301	13,773	47,174,958	69.59%	55.62%
Midwest	58,534	49,381	43,010	87.61%	24,499	19,142	55,924,697	74.27%	65.06%
South	66,141	54,110	47,494	88.15%	26,279	20,886	96,373,144	74.22%	65.42%
West	41,836	34,685	30,501	86.04%	18,577	14,508	60,584,526	72.75%	62.59%
Alabama	3,012	2,372	2,141	90.30%	1,145	901	4,005,432	74.57%	67.34%
Alaska	2,424	1,869	1,642	87.82%	1,076	829	577,147	73.34%	64.40%
Arizona	2,771	2,143	1,928	90.16%	1,139	922	5,362,657	77.11%	69.52%
Arkansas	2,776	2,292	2,090	90.92%	1,212	913	2,422,926	69.77%	63.43%
California	9,489	8,314	6,852	82.37%	4,779	3,608	31,424,054	70.20%	57.82%
Colorado	3,071	2,579	2,201	85.23%	1,188	927	4,260,412	74.95%	63.88%
Connecticut	2,855	2,535	2,107	82.76%	1,261	964	3,034,241	72.36%	59.88%
Delaware	2,847	2,292	2,008	87.57%	1,110	893	765,733	79.90%	69.97%
District of Columbia	5,055	4,104	3,327	80.90%	1,125	962	544,627	80.64%	65.24%
Florida	12,768	10,055	8,516	84.67%	4,579	3,544	16,382,543	70.57%	59.75%
Georgia	2,365	2,042	1,796	87.94%	1,144	885	8,040,955	73.07%	64.26%
Hawaii	3,212	2,761	2,239	80.80%	1,285	938	1,130,820	68.98%	55.73%
Idaho	2,300	1,939	1,821	93.92%	1,136	921	1,288,271	78.38%	73.61%
Illinois	11,385	9,964	7,678	77.04%	4,871	3,672	10,680,769	70.95%	54.66%
Indiana	2,491	2,110	1,921	91.01%	1,171	911	5,391,372	72.95%	66.39%
Iowa	2,529	2,199	2,022	91.72%	1,137	900	2,550,660	74.74%	68.55%
Kansas	2,598	2,198	1,977	89.98%	1,109	912	2,336,047	77.88%	70.07%
Kentucky	2,852	2,407	2,202	91.46%	1,184	927	3,607,428	73.49%	67.21%
Louisiana	2,741	2,143	1,977	92.28%	1,100	901	3,745,460	77.61%	71.63%
Maine	3,866	2,858	2,585	90.56%	1,134	938	1,145,565	79.20%	71.72%
Maryland	2,680	2,308	1,802	78.13%	1,074	874	4,905,827	75.90%	59.30%
Massachusetts	3,064	2,653	2,208	83.22%	1,253	955	5,661,530	71.52%	59.52%
Michigan	11,441	9,207	7,826	85.05%	4,606	3,655	8,319,227	75.75%	64.43%
Minnesota	2,483	2,160	1,975	91.57%	1,092	902	4,470,679	81.16%	74.32%
Mississippi	2,553	2,087	1,951	93.50%	1,100	901	2,419,811	78.58%	73.48%

(continued)

Table C.5 Sample Sizes, Weighted Screening and Interview Response Rates, and Population Estimates, by State, for Persons Aged 12 or Older: 2012 (continued)

State	Total Selected DUs	Total Eligible DUs	Total Completed Screeners	Weighted DU Screening Response Rate	Total Selected	Total Responded	Population Estimate	Weighted Interview Response Rate	Weighted Overall Response Rate
Missouri	2,879	2,409	2,188	90.88%	1,149	915	4,985,565	74.36%	67.58%
Montana	3,295	2,610	2,415	92.62%	1,109	876	842,009	77.46%	71.74%
Nebraska	2,556	2,175	2,018	92.74%	1,170	940	1,511,302	73.14%	67.83%
Nevada	2,354	1,879	1,721	91.75%	1,134	903	2,278,656	75.62%	69.38%
New Hampshire	2,990	2,507	2,191	87.40%	1,259	950	1,133,661	73.08%	63.87%
New Jersey	2,622	2,227	1,935	86.87%	1,155	898	7,440,994	73.64%	63.97%
New Mexico	2,771	2,052	1,889	92.22%	1,101	879	1,702,667	74.17%	68.39%
New York	14,547	12,547	9,115	71.89%	5,267	3,680	16,532,006	64.38%	46.28%
North Carolina	2,848	2,246	1,990	88.48%	1,117	917	8,007,328	75.46%	66.77%
North Dakota	3,374	2,633	2,461	93.42%	1,156	895	577,526	73.47%	68.64%
Ohio	11,722	10,122	9,023	89.14%	4,827	3,687	9,638,652	72.73%	64.84%
Oklahoma	2,960	2,382	2,173	91.22%	1,189	908	3,099,247	72.38%	66.03%
Oregon	2,547	2,250	2,019	89.57%	1,165	923	3,293,097	76.48%	68.51%
Pennsylvania	11,907	10,256	8,453	82.09%	4,705	3,580	10,790,033	70.67%	58.02%
Rhode Island	2,620	2,190	1,957	89.37%	1,131	923	895,345	77.76%	69.50%
South Carolina	3,306	2,666	2,374	88.97%	1,171	938	3,900,041	75.13%	66.85%
South Dakota	2,636	2,163	2,031	93.92%	1,113	878	676,283	76.12%	71.49%
Tennessee	2,532	2,095	1,929	91.91%	1,105	927	5,363,074	81.06%	74.50%
Texas	9,048	7,651	6,792	88.52%	4,612	3,625	20,852,844	73.36%	64.94%
Utah	1,793	1,558	1,474	94.67%	1,099	926	2,214,352	83.26%	78.83%
Vermont	3,292	2,637	2,317	87.81%	1,136	885	541,583	73.81%	64.82%
Virginia	2,576	2,293	2,027	88.47%	1,095	894	6,735,698	76.50%	67.68%
Washington	2,700	2,306	2,078	90.10%	1,218	928	5,736,136	71.82%	64.71%
West Virginia	3,222	2,675	2,399	89.39%	1,217	976	1,574,171	74.07%	66.21%
Wisconsin	2,440	2,041	1,890	92.37%	1,098	875	4,786,617	75.55%	69.79%
Wyoming	3,109	2,425	2,222	91.72%	1,148	928	474,248	77.48%	71.07%

DU = dwelling unit.

Source: SAMHSA, Center for Behavioral Health Statistics and Quality, National Survey on Drug Use and Health, 2012.

Table C.6 Sample Sizes, Weighted Interview Response Rates, and Population Estimates, by State and Three Age Groups: 2012

State	12-17 Total Selected	12-17 Total Responded	12-17 Population Estimate	12-17 Weighted Interview Response Rate	18-25 Total Selected	18-25 Total Responded	18-25 Population Estimate	18-25 Weighted Interview Response Rate	26+ Total Selected	26+ Total Responded	26+ Population Estimate	26+ Weighted Interview Response Rate
Total U.S.	27,147	22,492	24,933,051	82.84%	28,639	22,762	34,589,953	79.26%	31,870	23,055	200,534,321	70.76%
Northeast	5,513	4,421	4,237,419	79.81%	6,114	4,720	6,153,492	76.54%	6,674	4,632	36,784,047	67.26%
Midwest	7,733	6,399	5,416,148	83.34%	7,891	6,270	7,361,823	79.64%	8,875	6,473	43,146,726	72.22%
South	8,292	6,973	9,305,299	83.52%	8,583	7,012	12,758,779	81.70%	9,404	6,901	74,309,066	71.75%
West	5,609	4,699	5,974,186	83.44%	6,051	4,760	8,315,859	77.22%	6,917	5,049	46,294,482	70.61%
Alabama	342	278	384,244	80.41%	383	312	536,932	80.90%	420	311	3,084,257	72.65%
Alaska	304	233	60,308	76.07%	348	286	81,619	82.25%	424	310	435,220	71.44%
Arizona	366	312	539,163	85.61%	371	293	713,584	74.97%	402	317	4,109,911	76.39%
Arkansas	394	312	236,048	78.13%	404	310	317,735	75.45%	414	291	1,869,143	67.71%
California	1,409	1,159	3,139,169	81.82%	1,584	1,216	4,452,711	76.51%	1,786	1,233	23,832,173	67.51%
Colorado	376	319	399,087	86.13%	390	301	560,123	78.11%	422	307	3,301,202	73.13%
Connecticut	361	288	289,862	79.74%	426	339	373,279	80.56%	474	337	2,371,100	70.39%
Delaware	376	307	68,973	82.59%	305	246	102,090	83.85%	429	340	594,670	79.02%
District of Columbia	362	329	31,338	91.77%	398	344	95,556	87.06%	365	289	417,734	78.39%
Florida	1,419	1,193	1,383,312	83.48%	1,535	1,222	1,970,724	79.16%	1,625	1,129	13,028,506	67.81%
Georgia	344	287	828,383	81.72%	360	284	1,096,583	79.58%	440	314	6,115,989	70.82%
Hawaii	377	284	96,933	75.93%	382	308	140,267	80.83%	526	346	893,621	66.50%
Idaho	389	345	139,664	88.85%	334	262	173,325	80.12%	413	314	975,282	76.28%
Illinois	1,517	1,234	1,051,880	81.95%	1,562	1,190	1,393,334	76.45%	1,792	1,248	8,235,555	68.62%
Indiana	330	271	540,535	82.24%	408	328	731,531	80.64%	433	312	4,119,306	70.63%
Iowa	373	314	241,376	82.15%	362	287	347,524	79.41%	402	299	1,961,760	72.90%
Kansas	388	343	236,447	88.15%	318	265	322,233	84.49%	403	304	1,777,368	75.30%
Kentucky	384	318	339,442	81.85%	380	302	461,441	80.21%	420	307	2,806,546	71.39%
Louisiana	330	292	367,661	88.75%	364	303	523,034	82.65%	406	306	2,854,766	75.23%
Maine	359	305	95,666	85.30%	387	325	129,416	84.13%	388	308	920,484	77.79%
Maryland	330	282	458,368	85.48%	363	306	631,975	83.31%	381	286	3,815,483	73.39%
Massachusetts	380	309	493,395	81.19%	408	312	772,360	77.20%	465	334	4,395,776	69.50%
Michigan	1,445	1,178	809,401	81.72%	1,508	1,231	1,101,787	81.78%	1,653	1,246	6,408,038	73.97%
Minnesota	363	324	424,357	89.54%	339	272	571,203	79.91%	390	306	3,475,119	80.32%
Mississippi	384	313	248,208	80.62%	338	297	336,270	88.22%	378	291	1,835,332	76.36%

(continued)

Table C.6 Sample Sizes, Weighted Interview Response Rates, and Population Estimates, by State and Three Age Groups: 2012 (continued)

State	12-17 Total Selected	12-17 Total Responded	12-17 Population Estimate	12-17 Weighted Interview Response Rate	18-25 Total Selected	18-25 Total Responded	18-25 Population Estimate	18-25 Weighted Interview Response Rate	26+ Total Selected	26+ Total Responded	26+ Population Estimate	26+ Weighted Interview Response Rate
Missouri	367	312	474,059	85.89%	356	290	654,819	82.34%	426	313	3,856,687	71.53%
Montana	388	316	73,775	81.81%	350	279	107,843	78.48%	371	281	660,391	76.71%
Nebraska	322	278	147,378	86.79%	433	365	205,771	84.84%	415	297	1,158,152	69.50%
Nevada	333	290	220,899	86.58%	368	289	284,532	79.10%	433	324	1,773,226	73.75%
New Hampshire	405	305	102,103	75.51%	417	324	139,482	78.95%	437	321	892,076	71.84%
New Jersey	349	291	708,659	83.09%	378	292	881,583	78.25%	428	315	5,850,752	71.73%
New Mexico	332	290	168,839	87.22%	369	303	226,708	81.39%	400	286	1,307,120	71.17%
New York	1,564	1,193	1,466,519	75.84%	1,778	1,266	2,246,785	71.75%	1,925	1,221	12,818,701	61.76%
North Carolina	354	298	760,601	83.53%	382	337	1,033,454	87.89%	381	282	6,213,274	72.36%
North Dakota	371	309	48,912	83.61%	339	268	93,645	79.86%	446	318	434,970	70.99%
Ohio	1,628	1,297	926,791	79.72%	1,475	1,148	1,232,694	77.78%	1,724	1,242	7,479,167	71.02%
Oklahoma	385	303	305,458	78.05%	383	297	424,952	76.87%	421	308	2,368,838	70.82%
Oregon	311	270	292,395	87.03%	407	318	409,756	79.10%	447	335	2,590,946	75.05%
Pennsylvania	1,425	1,169	958,552	82.15%	1,536	1,218	1,404,841	79.74%	1,744	1,193	8,426,641	67.91%
Rhode Island	320	276	77,245	86.40%	391	329	132,691	84.47%	420	318	685,409	75.55%
South Carolina	385	317	358,471	81.59%	349	295	515,765	84.67%	437	326	3,025,806	72.71%
South Dakota	316	265	64,543	84.11%	371	300	91,525	82.83%	426	313	520,215	74.13%
Tennessee	299	261	505,108	85.96%	419	352	688,253	83.32%	387	314	4,169,713	80.11%
Texas	1,472	1,246	2,279,511	84.37%	1,471	1,183	2,943,283	80.38%	1,669	1,196	15,630,050	70.45%
Utah	319	287	272,004	90.49%	384	310	363,798	81.78%	396	329	1,578,549	82.34%
Vermont	350	285	45,420	80.52%	393	315	73,055	80.92%	393	285	423,108	71.93%
Virginia	373	322	619,042	85.05%	316	270	891,542	85.19%	406	302	5,225,114	73.95%
Washington	368	301	528,812	81.58%	406	310	737,911	75.50%	444	317	4,469,414	70.24%
West Virginia	359	315	131,131	87.64%	433	352	189,192	81.40%	425	309	1,253,848	71.61%
Wisconsin	313	274	450,470	86.72%	420	326	615,758	77.80%	365	275	3,720,389	73.85%
Wyoming	337	293	43,140	85.79%	358	285	63,681	78.58%	453	350	367,427	76.36%

NOTE: Computations in this table are based on a respondent's age at screening. Thus, the data in the Total Responded column(s) could differ from data in other NSDUH tables that use the respondent's age recorded during the interview.

Source: SAMHSA, Center for Behavioral Health Statistics and Quality, National Survey on Drug Use and Health, 2012.

Table C.7 Sample Sizes, Weighted Screening and Interview Response Rates, and Population Estimates, by State, for Persons Aged 12 or Older: 2010 and 2011

State	Total Selected DUs	Total Eligible DUs	Total Completed Screeners	Weighted DU Screening Response Rate	Total Selected	Total Responded	Population Estimate	Weighted Interview Response Rate	Weighted Overall Response Rate
Total U.S.	418,386	345,825	303,058	87.69%	173,533	137,913	255,609,026	74.47%	65.31%
Northeast	89,866	74,836	61,214	80.86%	34,033	26,107	46,713,366	71.34%	57.69%
Midwest	112,957	94,709	83,923	89.01%	48,709	38,559	55,516,454	74.36%	66.19%
South	134,634	108,995	97,517	90.00%	53,719	43,749	94,071,846	76.56%	68.90%
West	80,929	67,285	60,404	88.16%	37,072	29,498	59,307,360	73.79%	65.05%
Alabama	7,217	5,644	5,131	90.93%	2,829	2,261	3,939,640	73.25%	66.61%
Alaska	4,685	3,630	3,283	90.47%	2,178	1,773	562,560	78.63%	71.13%
Arizona	5,386	4,208	3,776	89.79%	2,275	1,853	5,336,070	77.24%	69.36%
Arkansas	5,282	4,288	3,956	92.32%	2,283	1,818	2,393,558	73.83%	68.16%
California	18,746	16,310	13,779	84.49%	9,431	7,355	30,691,087	72.11%	60.93%
Colorado	5,656	4,655	4,212	90.44%	2,270	1,825	4,169,870	77.62%	70.20%
Connecticut	5,279	4,556	3,837	84.04%	2,351	1,877	2,983,250	73.84%	62.05%
Delaware	5,466	4,452	3,911	87.78%	2,208	1,789	746,980	77.02%	67.60%
District of Columbia	9,740	8,000	6,522	80.39%	2,177	1,835	526,168	82.34%	66.19%
Florida	27,160	20,912	18,493	87.99%	9,401	7,684	15,871,875	76.14%	66.99%
Georgia	4,640	3,887	3,549	91.36%	2,213	1,788	7,934,572	76.54%	69.92%
Hawaii	5,696	4,913	4,113	83.26%	2,556	1,924	1,082,202	69.54%	57.90%
Idaho	4,861	3,888	3,667	94.23%	2,237	1,828	1,262,531	77.58%	73.10%
Illinois	22,386	19,316	15,304	79.23%	9,691	7,264	10,640,868	69.85%	55.34%
Indiana	5,218	4,296	3,979	92.58%	2,246	1,812	5,325,850	73.89%	68.41%
Iowa	5,233	4,482	4,206	93.84%	2,250	1,858	2,520,016	78.93%	74.07%
Kansas	4,919	4,231	3,867	91.40%	2,265	1,800	2,310,019	75.11%	68.65%
Kentucky	5,202	4,335	4,039	93.20%	2,222	1,799	3,586,107	76.54%	71.33%
Louisiana	7,719	6,131	5,723	93.45%	3,238	2,652	3,690,586	77.94%	72.84%
Maine	6,895	4,921	4,510	91.36%	2,139	1,789	1,135,070	80.10%	73.18%
Maryland	5,002	4,351	3,534	81.26%	2,217	1,807	4,793,712	77.64%	63.09%
Massachusetts	6,535	5,657	4,883	86.33%	2,379	1,905	5,603,697	76.41%	65.97%
Michigan	22,104	17,669	15,321	86.70%	9,228	7,375	8,302,279	74.98%	65.01%
Minnesota	5,255	4,456	4,084	91.65%	2,309	1,886	4,408,217	78.79%	72.22%
Mississippi	5,963	4,684	4,343	92.86%	2,549	2,119	2,391,255	77.03%	71.53%

(continued)

Table C.7 Sample Sizes, Weighted Screening and Interview Response Rates, and Population Estimates, by State, for Persons Aged 12 or Older: 2010 and 2011 (continued)

State	Total Selected DUs	Total Eligible DUs	Total Completed Screeners	Weighted DU Screening Response Rate	Total Selected	Total Responded	Population Estimate	Weighted Interview Response Rate	Weighted Overall Response Rate
Missouri	5,143	4,243	3,956	93.20%	2,269	1,833	4,960,194	74.46%	69.39%
Montana	5,788	4,738	4,468	94.32%	2,331	1,875	827,846	76.72%	72.36%
Nebraska	4,883	4,119	3,839	93.08%	2,298	1,814	1,485,062	72.58%	67.56%
Nevada	4,799	3,743	3,519	94.95%	2,308	1,865	2,198,214	73.08%	69.39%
New Hampshire	6,235	4,960	4,318	86.99%	2,388	1,863	1,128,253	73.52%	63.96%
New Jersey	4,916	4,224	3,729	88.31%	2,286	1,817	7,327,726	74.96%	66.20%
New Mexico	5,088	3,954	3,728	94.25%	2,251	1,850	1,668,810	78.53%	74.01%
New York	27,746	23,624	17,545	73.83%	10,184	7,157	16,416,573	65.37%	48.27%
North Carolina	5,517	4,622	4,230	91.40%	2,206	1,839	7,795,039	78.85%	72.07%
North Dakota	6,374	5,196	4,896	94.24%	2,321	1,858	552,787	75.28%	70.94%
Ohio	21,402	18,180	16,443	90.23%	9,330	7,426	9,598,203	74.61%	67.32%
Oklahoma	5,240	4,190	3,798	90.71%	2,301	1,813	3,034,446	74.62%	67.68%
Oregon	5,332	4,682	4,317	92.22%	2,324	1,858	3,245,308	75.79%	69.89%
Pennsylvania	20,931	17,922	14,353	79.82%	7,864	6,059	10,683,992	73.05%	58.31%
Rhode Island	5,208	4,234	3,762	88.87%	2,272	1,845	895,144	74.02%	65.78%
South Carolina	5,594	4,593	4,132	89.95%	2,281	1,854	3,806,883	75.12%	67.57%
South Dakota	4,894	4,176	3,972	95.14%	2,222	1,842	667,242	78.84%	75.01%
Tennessee	5,178	4,298	3,882	90.31%	2,227	1,812	5,275,759	75.73%	68.39%
Texas	18,213	15,031	13,793	91.64%	8,909	7,226	20,167,102	76.24%	69.87%
Utah	3,304	2,914	2,757	94.60%	2,230	1,837	2,178,698	78.58%	74.34%
Vermont	6,121	4,738	4,277	90.26%	2,170	1,795	539,662	80.61%	72.76%
Virginia	5,335	4,715	4,111	87.11%	2,201	1,827	6,559,374	79.09%	68.89%
Washington	5,586	4,874	4,401	89.98%	2,448	1,856	5,626,876	71.47%	64.30%
West Virginia	6,166	4,862	4,370	89.51%	2,257	1,826	1,558,789	76.90%	68.83%
Wisconsin	5,146	4,345	4,056	93.17%	2,280	1,791	4,745,719	76.12%	70.92%
Wyoming	6,002	4,776	4,384	91.76%	2,233	1,799	457,289	75.64%	69.41%

DU = dwelling unit.

NOTE: To compute the pooled 2010-2011 weighted response rates, two samples were combined, and the individual year weights were used for the pooled sample. Thus, the response rates presented here are weighted across 2 years of data rather than being a simple average of the 2010 and 2011 individual response rates. The 2010-2011 population estimate is the average of the 2010 and the 2011 population.

Source: SAMHSA, Center for Behavioral Health Statistics and Quality, National Survey on Drug Use and Health, 2010 and 2011.

Table C.8 Sample Sizes, Weighted Interview Response Rates, and Population Estimates, by State and Three Age Groups: 2010 and 2011

State	12-17 Total Selected	12-17 Total Responded	12-17 Population Estimate	12-17 Weighted Interview Response Rate	18-25 Total Selected	18-25 Total Responded	18-25 Population Estimate	18-25 Weighted Interview Response Rate	26+ Total Selected	26+ Total Responded	26+ Population Estimate	26+ Weighted Interview Response Rate
Total U.S.	53,819	45,541	24,660,087	84.80%	56,753	46,109	34,187,040	80.84%	62,961	46,263	196,761,899	72.05%
Northeast	10,409	8,530	4,256,314	81.69%	11,077	8,682	6,082,801	77.31%	12,547	8,895	36,374,251	69.12%
Midwest	15,006	12,652	5,390,170	84.20%	16,017	12,962	7,418,402	80.96%	17,686	12,945	42,707,882	71.98%
South	17,116	14,728	9,106,336	86.31%	17,435	14,569	12,514,566	83.18%	19,168	14,452	72,450,944	74.13%
West	11,288	9,631	5,907,267	85.28%	12,224	9,896	8,171,271	79.75%	13,560	9,971	45,228,822	71.22%
Alabama	898	759	379,971	84.34%	922	772	528,943	82.38%	1,009	730	3,030,727	70.26%
Alaska	704	599	59,141	85.44%	730	594	82,230	81.63%	744	580	421,188	77.02%
Arizona	696	600	536,957	86.69%	803	659	703,220	81.23%	776	594	4,095,893	75.34%
Arkansas	685	580	233,536	84.63%	793	648	311,224	81.67%	805	590	1,848,798	70.96%
California	2,929	2,484	3,130,240	84.87%	2,978	2,381	4,335,049	79.46%	3,524	2,490	23,225,798	69.01%
Colorado	649	557	387,484	83.93%	785	635	559,635	80.89%	836	633	3,222,752	76.39%
Connecticut	692	597	286,904	87.37%	789	646	374,028	82.49%	870	634	2,322,318	70.59%
Delaware	666	560	68,185	83.83%	689	583	97,063	83.96%	853	646	581,733	75.06%
District of Columbia	699	628	32,823	90.41%	792	659	91,252	82.53%	686	548	402,092	81.60%
Florida	3,073	2,655	1,355,015	86.45%	2,885	2,434	1,909,018	84.00%	3,443	2,595	12,607,843	73.83%
Georgia	731	625	819,770	85.85%	664	555	1,075,015	83.21%	818	608	6,039,787	74.05%
Hawaii	795	641	94,257	78.95%	851	664	133,155	80.46%	910	619	854,791	66.75%
Idaho	735	625	134,591	85.35%	682	574	175,303	84.12%	820	629	952,637	75.29%
Illinois	2,904	2,376	1,056,364	81.95%	3,245	2,439	1,423,767	75.16%	3,542	2,449	8,160,738	67.34%
Indiana	725	633	531,919	87.56%	717	595	723,659	83.07%	804	584	4,070,272	70.54%
Iowa	731	619	237,564	85.09%	705	594	352,176	83.43%	814	645	1,930,275	77.42%
Kansas	669	575	230,525	85.92%	751	606	329,289	81.69%	845	619	1,750,205	72.51%
Kentucky	711	596	336,580	84.36%	725	604	459,932	83.37%	786	599	2,789,595	74.46%
Louisiana	1,053	916	366,321	87.36%	1,011	852	525,574	85.26%	1,174	884	2,798,691	75.28%
Maine	675	584	95,848	86.60%	704	598	130,378	85.02%	760	607	908,845	78.67%
Maryland	685	592	454,455	86.65%	735	603	619,127	81.25%	797	612	3,720,130	75.94%
Massachusetts	821	680	493,546	81.94%	802	654	763,089	80.41%	756	571	4,347,062	75.03%
Michigan	2,852	2,407	816,665	84.20%	3,022	2,481	1,100,008	82.61%	3,354	2,487	6,385,606	72.49%
Minnesota	707	611	417,213	86.42%	749	614	580,436	82.28%	853	661	3,410,568	77.31%
Mississippi	785	700	248,024	89.49%	821	706	337,611	85.79%	943	713	1,805,620	73.68%

(continued)

Table C.8 Sample Sizes, Weighted Interview Response Rates, and Population Estimates, by State and Three Age Groups: 2010 and 2011 (continued)

State	12-17 Total Selected	12-17 Total Responded	12-17 Population Estimate	12-17 Weighted Interview Response Rate	18-25 Total Selected	18-25 Total Responded	18-25 Population Estimate	18-25 Weighted Interview Response Rate	26+ Total Selected	26+ Total Responded	26+ Population Estimate	26+ Weighted Interview Response Rate
Missouri	679	581	474,419	83.92%	745	624	655,582	83.56%	845	628	3,830,193	71.84%
Montana	700	601	73,285	85.43%	739	606	110,681	81.92%	892	668	643,880	74.97%
Nebraska	677	598	143,963	87.96%	790	621	212,075	79.60%	831	595	1,129,023	69.24%
Nevada	537	468	214,554	89.94%	851	720	272,251	85.86%	920	677	1,711,409	69.17%
New Hampshire	707	574	102,528	82.05%	871	714	141,973	82.36%	810	575	883,752	70.95%
New Jersey	737	625	702,580	85.59%	694	559	868,283	82.88%	855	633	5,756,864	72.46%
New Mexico	683	607	165,536	88.22%	763	629	226,630	81.87%	805	614	1,276,644	76.65%
New York	2,994	2,321	1,490,465	77.26%	3,411	2,410	2,213,444	70.09%	3,779	2,426	12,712,663	63.19%
North Carolina	725	650	736,999	89.48%	714	586	1,015,292	81.72%	767	603	6,042,747	76.99%
North Dakota	691	591	47,606	85.83%	791	665	93,205	84.30%	839	602	411,976	72.09%
Ohio	2,886	2,411	925,508	83.58%	3,096	2,555	1,219,501	82.05%	3,348	2,460	7,453,194	72.24%
Oklahoma	716	601	297,063	83.77%	744	589	423,749	79.16%	841	623	2,313,634	72.62%
Oregon	790	673	288,509	84.77%	734	582	410,811	79.85%	800	603	2,545,988	74.01%
Pennsylvania	2,417	1,978	960,258	82.61%	2,308	1,835	1,385,978	79.94%	3,139	2,246	8,337,756	70.81%
Rhode Island	678	593	78,757	87.53%	790	674	131,124	85.69%	804	578	685,263	70.06%
South Carolina	699	594	352,832	85.13%	768	656	499,582	85.13%	814	604	2,954,469	72.13%
South Dakota	728	626	63,634	85.65%	678	591	93,437	87.00%	816	625	510,171	76.52%
Tennessee	706	612	496,321	87.59%	722	599	671,823	83.26%	799	601	4,107,615	72.93%
Texas	2,845	2,439	2,191,796	85.93%	2,958	2,468	2,877,349	82.98%	3,106	2,319	15,097,957	73.43%
Utah	633	567	260,212	89.94%	770	635	372,167	81.78%	827	635	1,546,318	76.02%
Vermont	688	578	45,429	85.42%	708	592	74,503	83.74%	774	625	419,730	79.52%
Virginia	727	627	606,049	86.46%	714	608	882,246	84.48%	760	592	5,071,079	77.15%
Washington	732	610	520,915	83.71%	824	619	726,355	73.02%	892	627	4,379,606	69.69%
West Virginia	712	594	130,595	83.09%	778	647	189,767	83.35%	767	585	1,238,427	75.24%
Wisconsin	757	624	444,790	82.25%	728	577	635,268	79.88%	795	590	3,665,660	74.63%
Wyoming	705	599	41,586	85.02%	714	598	63,785	83.38%	814	602	351,918	73.08%

NOTE: Computations in this table are based on a respondent's age at screening. Thus, the data in the Total Responded column(s) could differ from data in other NSDUH tables that use the respondent's age recorded during the interview.

NOTE: To compute the pooled 2010-2011 weighted response rates, two samples were combined, and the individual year weights were used for the pooled sample. Thus, the response rates presented here are weighted across 2 years of data rather than being a simple average of the 2010 and 2011 individual response rates. The 2010-2011 population estimate is the average of the 2010 and the 2011 population.

Source: SAMHSA, Center for Behavioral Health Statistics and Quality, National Survey on Drug Use and Health, 2010 and 2011.

Table C.9 Sample Sizes, Weighted Screening and Interview Response Rates, and Population Estimates, by State, for Persons Aged 12 or Older: 2011 and 2012

State	Total Selected DUs	Total Eligible DUs	Total Completed Screeners	Weighted DU Screening Response Rate	Total Selected	Total Responded	Population Estimate	Weighted Interview Response Rate	Weighted Overall Response Rate
Total U.S.	430,795	357,879	309,921	86.53%	176,192	138,418	258,828,135	73.70%	63.77%
Northeast	94,209	79,213	64,437	80.01%	35,552	26,863	47,033,185	69.72%	55.78%
Midwest	116,724	98,198	85,815	87.90%	49,069	38,400	55,806,073	74.09%	65.12%
South	136,962	111,572	98,770	88.81%	54,401	43,866	95,777,470	75.54%	67.08%
West	82,900	68,896	60,899	86.64%	37,170	29,289	60,211,407	73.56%	63.73%
Alabama	7,350	5,732	5,173	90.09%	2,853	2,284	3,995,513	74.60%	67.21%
Alaska	4,883	3,780	3,342	88.34%	2,197	1,734	573,151	76.26%	67.37%
Arizona	5,502	4,292	3,843	89.78%	2,265	1,850	5,324,007	79.55%	71.42%
Arkansas	5,463	4,472	4,098	91.51%	2,372	1,832	2,417,026	71.09%	65.05%
California	18,953	16,537	13,721	82.98%	9,471	7,248	31,242,043	71.20%	59.09%
Colorado	6,198	5,150	4,501	87.22%	2,341	1,848	4,224,111	75.50%	65.85%
Connecticut	5,660	4,933	4,132	83.54%	2,461	1,915	3,024,762	72.41%	60.49%
Delaware	5,692	4,626	4,062	87.74%	2,219	1,793	761,061	78.28%	68.68%
District of Columbia	9,682	7,912	6,446	80.94%	2,192	1,862	539,510	81.91%	66.29%
Florida	26,722	21,006	18,118	85.78%	9,520	7,573	16,257,260	72.77%	62.42%
Georgia	4,620	3,951	3,541	89.79%	2,226	1,763	7,984,724	75.23%	67.55%
Hawaii	6,047	5,231	4,254	80.97%	2,545	1,888	1,123,740	70.47%	57.06%
Idaho	4,537	3,781	3,556	93.99%	2,260	1,837	1,281,547	77.64%	72.97%
Illinois	23,157	20,159	15,590	77.28%	9,800	7,327	10,666,494	69.94%	54.05%
Indiana	4,966	4,125	3,796	92.12%	2,275	1,807	5,378,527	73.40%	67.61%
Iowa	5,188	4,494	4,159	92.40%	2,274	1,833	2,544,289	76.95%	71.10%
Kansas	5,177	4,441	4,020	90.55%	2,273	1,827	2,329,899	76.66%	69.41%
Kentucky	5,471	4,595	4,250	92.49%	2,297	1,826	3,602,428	74.81%	69.19%
Louisiana	7,855	6,182	5,745	92.89%	3,226	2,647	3,732,406	77.76%	72.23%
Maine	7,434	5,375	4,898	91.15%	2,173	1,803	1,144,211	79.35%	72.33%
Maryland	5,267	4,598	3,644	79.32%	2,195	1,798	4,877,722	76.79%	60.91%
Massachusetts	6,483	5,594	4,726	84.24%	2,483	1,930	5,631,641	72.92%	61.43%
Michigan	22,717	18,207	15,524	85.33%	9,273	7,340	8,305,176	75.03%	64.02%
Minnesota	5,206	4,529	4,110	90.85%	2,252	1,842	4,452,491	80.17%	72.84%
Mississippi	6,031	4,795	4,455	93.10%	2,562	2,127	2,414,364	78.07%	72.68%

(continued)

Table C.9 Sample Sizes, Weighted Screening and Interview Response Rates, and Population Estimates, by State, for Persons Aged 12 or Older: 2011 and 2012 (continued)

State	Total Selected DUs	Total Eligible DUs	Total Completed Screeners	Weighted DU Screening Response Rate	Total Selected	Total Responded	Population Estimate	Weighted Interview Response Rate	Weighted Overall Response Rate
Missouri	5,380	4,482	4,113	91.84%	2,276	1,827	4,976,528	73.71%	67.69%
Montana	6,370	5,093	4,755	93.46%	2,303	1,832	838,793	76.96%	71.93%
Nebraska	5,103	4,298	3,974	92.27%	2,348	1,848	1,506,148	72.57%	66.96%
Nevada	4,479	3,559	3,305	94.07%	2,259	1,810	2,259,840	74.94%	70.50%
New Hampshire	5,993	4,909	4,290	87.29%	2,487	1,895	1,130,585	72.84%	63.58%
New Jersey	5,156	4,390	3,833	87.30%	2,284	1,792	7,413,306	72.59%	63.37%
New Mexico	5,249	3,928	3,658	93.26%	2,235	1,817	1,699,198	77.04%	71.84%
New York	29,075	25,001	18,208	72.18%	10,390	7,211	16,477,534	64.14%	46.29%
North Carolina	5,691	4,565	4,102	89.63%	2,220	1,852	7,959,139	78.20%	70.09%
North Dakota	6,695	5,262	4,937	93.80%	2,289	1,799	571,449	73.84%	69.26%
Ohio	22,856	19,585	17,519	89.22%	9,524	7,382	9,627,348	73.58%	65.65%
Oklahoma	5,574	4,450	4,068	91.46%	2,317	1,798	3,086,287	74.22%	67.88%
Oregon	5,276	4,639	4,190	90.22%	2,355	1,874	3,277,252	76.56%	69.07%
Pennsylvania	22,645	19,463	15,854	80.97%	8,716	6,654	10,775,353	71.76%	58.11%
Rhode Island	5,254	4,330	3,853	88.96%	2,286	1,853	894,624	75.65%	67.30%
South Carolina	6,284	5,107	4,579	89.63%	2,314	1,865	3,876,591	74.84%	67.08%
South Dakota	5,131	4,291	4,058	94.58%	2,220	1,791	672,090	76.65%	72.49%
Tennessee	5,122	4,244	3,843	90.53%	2,215	1,838	5,338,009	79.50%	71.97%
Texas	18,376	15,392	13,888	89.98%	9,090	7,261	20,669,774	74.57%	67.10%
Utah	3,590	3,148	2,979	94.65%	2,224	1,844	2,195,429	80.29%	75.99%
Vermont	6,509	5,218	4,643	89.01%	2,272	1,810	541,169	76.27%	67.88%
Virginia	5,302	4,724	4,101	86.82%	2,200	1,833	6,691,628	79.04%	68.63%
Washington	5,650	4,892	4,376	89.16%	2,472	1,887	5,702,140	72.27%	64.44%
West Virginia	6,460	5,221	4,657	88.63%	2,383	1,914	1,574,028	74.85%	66.34%
Wisconsin	5,148	4,325	4,015	92.56%	2,265	1,777	4,775,635	75.50%	69.89%
Wyoming	6,166	4,866	4,419	90.79%	2,243	1,820	470,156	77.80%	70.63%

DU = dwelling unit.

NOTE: To compute the pooled 2011-2012 weighted response rates, two samples were combined, and the individual year weights were used for the pooled sample. Thus, the response rates presented here are weighted across 2 years of data rather than being a simple average of the 2011 and 2012 individual response rates. The 2011-2012 population estimate is the average of the 2011 and the 2012 population.

Source: SAMHSA, Center for Behavioral Health Statistics and Quality, National Survey on Drug Use and Health, 2011 and 2012.

Table C.10 Sample Sizes, Weighted Interview Response Rates, and Population Estimates, by State and Three Age Groups: 2011 and 2012

State	12-17 Total Selected	12-17 Total Responded	12-17 Population Estimate	12-17 Weighted Interview Response Rate	18-25 Total Selected	18-25 Total Responded	18-25 Population Estimate	18-25 Weighted Interview Response Rate	26+ Total Selected	26+ Total Responded	26+ Population Estimate	26+ Weighted Interview Response Rate
Total U.S.	55,058	46,041	24,953,349	83.90%	57,228	45,845	34,445,842	79.86%	63,906	46,532	199,428,944	71.35%
Northeast	10,956	8,846	4,257,645	80.95%	11,579	8,990	6,137,038	76.86%	13,017	9,027	36,638,503	67.21%
Midwest	15,382	12,787	5,430,966	83.30%	15,873	12,643	7,351,049	80.05%	17,814	12,970	43,024,058	71.92%
South	17,379	14,843	9,280,706	85.27%	17,611	14,554	12,684,550	82.38%	19,411	14,469	73,812,214	73.09%
West	11,341	9,565	5,984,032	84.40%	12,165	9,658	8,273,206	78.06%	13,664	10,066	45,954,169	71.35%
Alabama	871	730	385,060	83.04%	960	798	536,921	82.17%	1,022	756	3,073,532	72.17%
Alaska	696	566	60,614	80.86%	716	570	80,497	79.96%	785	598	432,040	74.94%
Arizona	729	620	537,268	85.82%	746	601	709,377	79.02%	790	629	4,077,362	78.80%
Arkansas	745	608	235,330	81.32%	835	662	317,333	78.29%	792	562	1,864,363	68.41%
California	2,812	2,340	3,156,459	83.38%	3,146	2,446	4,427,350	77.27%	3,513	2,462	23,658,234	68.44%
Colorado	752	645	397,449	85.51%	751	591	556,502	79.14%	838	612	3,270,160	73.78%
Connecticut	722	597	290,956	83.31%	815	659	369,988	82.08%	924	659	2,363,818	69.61%
Delaware	723	599	69,055	83.47%	654	541	101,269	83.37%	842	653	590,737	76.88%
District of Columbia	705	633	31,373	90.29%	806	683	96,533	84.87%	681	546	411,604	80.57%
Florida	3,068	2,633	1,381,693	85.23%	3,001	2,444	1,959,129	81.01%	3,451	2,496	12,916,437	70.17%
Georgia	704	599	824,731	84.45%	669	538	1,085,263	80.65%	853	626	6,074,730	73.07%
Hawaii	772	587	97,800	75.39%	794	637	138,119	81.76%	979	664	887,821	68.20%
Idaho	771	676	139,014	88.14%	660	531	173,198	81.56%	829	630	969,335	75.31%
Illinois	3,064	2,488	1,057,464	81.61%	3,192	2,397	1,393,927	75.19%	3,544	2,442	8,215,103	67.50%
Indiana	666	563	540,292	84.57%	782	643	729,904	82.60%	827	601	4,108,332	70.45%
Iowa	768	646	241,228	83.57%	682	560	346,249	82.22%	824	627	1,956,812	75.23%
Kansas	726	622	236,049	85.41%	712	586	321,178	83.34%	835	619	1,772,671	74.30%
Kentucky	743	615	339,685	82.71%	735	602	459,703	82.38%	819	609	2,803,041	72.56%
Louisiana	1,001	880	367,339	88.51%	1,030	870	524,049	85.18%	1,195	897	2,841,017	74.90%
Maine	709	605	96,430	85.36%	735	621	129,601	84.48%	729	577	918,180	77.89%
Maryland	700	606	459,636	86.32%	731	609	628,350	82.93%	764	583	3,789,736	74.57%
Massachusetts	841	693	494,412	82.35%	818	642	768,767	78.23%	824	595	4,368,462	70.85%
Michigan	2,865	2,373	814,217	83.01%	3,077	2,492	1,098,296	81.24%	3,331	2,475	6,392,662	72.96%
Minnesota	733	639	424,745	87.45%	678	546	570,686	80.80%	841	657	3,457,060	79.18%
Mississippi	836	723	248,417	85.92%	791	687	335,677	87.06%	935	717	1,830,270	75.23%

(continued)

Table C.10 Sample Sizes, Weighted Interview Response Rates, and Population Estimates, by State and Three Age Groups: 2011 and 2012 (continued)

State	12-17 Total Selected	12-17 Total Responded	12-17 Population Estimate	12-17 Weighted Interview Response Rate	18-25 Total Selected	18-25 Total Responded	18-25 Population Estimate	18-25 Weighted Interview Response Rate	26+ Total Selected	26+ Total Responded	26+ Population Estimate	26+ Weighted Interview Response Rate
Missouri	705	605	475,157	84.15%	715	594	654,561	83.39%	856	628	3,846,810	70.85%
Montana	740	615	74,042	82.91%	746	605	107,193	80.32%	817	612	657,558	75.70%
Nebraska	664	576	147,027	87.22%	851	680	205,521	80.34%	833	592	1,153,600	69.30%
Nevada	572	494	219,786	87.94%	814	670	282,581	83.77%	873	646	1,757,473	72.05%
New Hampshire	812	629	102,838	77.50%	821	651	138,951	80.42%	854	615	888,797	71.03%
New Jersey	699	592	710,612	85.48%	738	587	876,279	81.17%	847	613	5,826,415	69.69%
New Mexico	651	570	169,342	87.16%	762	629	226,502	80.79%	822	618	1,303,353	75.06%
New York	3,101	2,373	1,474,700	76.41%	3,480	2,442	2,242,476	70.22%	3,809	2,396	12,760,358	61.64%
North Carolina	733	637	757,390	86.25%	721	619	1,024,771	84.52%	766	596	6,176,978	76.15%
North Dakota	705	600	48,873	85.72%	737	593	91,747	80.54%	847	606	430,829	71.11%
Ohio	3,119	2,517	929,629	80.81%	2,937	2,332	1,230,773	79.16%	3,468	2,533	7,466,946	71.75%
Oklahoma	707	567	304,074	80.48%	772	608	423,379	79.07%	838	623	2,358,834	72.49%
Oregon	725	625	291,972	86.68%	780	604	409,608	78.02%	850	645	2,575,672	75.24%
Pennsylvania	2,677	2,192	964,004	82.60%	2,641	2,107	1,405,623	80.50%	3,398	2,355	8,405,726	69.11%
Rhode Island	676	577	77,839	85.62%	763	653	132,549	86.08%	847	623	684,237	72.52%
South Carolina	733	619	357,301	83.98%	741	626	513,846	84.74%	840	620	3,005,444	71.92%
South Dakota	679	582	64,463	85.20%	711	595	91,190	84.33%	830	614	516,437	74.34%
Tennessee	635	554	504,106	87.13%	777	649	683,640	82.94%	803	635	4,150,263	78.02%
Texas	2,988	2,560	2,265,694	85.69%	2,897	2,363	2,919,940	81.38%	3,205	2,338	15,484,139	71.56%
Utah	669	604	268,417	90.74%	734	588	363,323	79.82%	821	652	1,563,689	78.55%
Vermont	719	588	45,855	81.98%	768	628	72,804	82.71%	785	594	422,511	74.58%
Virginia	751	654	618,558	86.47%	670	577	885,563	85.42%	779	602	5,187,508	76.94%
Washington	735	610	528,978	82.76%	853	649	735,790	74.94%	884	628	4,437,371	70.65%
West Virginia	736	626	131,265	85.18%	821	678	189,182	83.12%	826	610	1,253,581	72.62%
Wisconsin	688	576	451,821	83.56%	799	625	617,016	79.62%	778	576	3,706,797	73.78%
Wyoming	717	613	42,890	85.21%	663	537	63,165	81.03%	863	670	364,101	76.39%

NOTE: Computations in this table are based on a respondent's age at screening. Thus, the data in the Total Responded column(s) could differ from data in other NSDUH tables that use the respondent's age recorded during the interview.

NOTE: To compute the pooled 2011-2012 weighted response rates, two samples were combined, and the individual year weights were used for the pooled sample. Thus, the response rates presented here are weighted across 2 years of data rather than being a simple average of the 2011 and 2012 individual response rates. The 2011-2012 population estimate is the average of the 2011 and the 2012 population.

Source: SAMHSA, Center for Behavioral Health Statistics and Quality, National Survey on Drug Use and Health, 2011 and 2012.

Table C.11 Sample Sizes, Weighted Interview Response Rates, and Population Estimates among Persons Aged 12 to 20, by State: 2010, 2011, and 2012

State	2010 Total Selected	2010 Total Responded	2010 Population Estimate	2010 Weighted Interview Response Rate	2011 Total Selected	2011 Total Responded	2011 Population Estimate	2011 Weighted Interview Response Rate	2012 Total Selected	2012 Total Responded	2012 Population Estimate	2012 Weighted Interview Response Rate
Total U.S.	36,493	30,926	37,977,621	84.37%	38,505	32,349	38,497,742	84.37%	37,391	30,912	38,205,953	82.59%
Northeast	7,068	5,812	6,622,750	80.74%	7,493	6,098	6,824,455	82.10%	7,735	6,239	6,646,927	80.21%
Midwest	10,415	8,841	8,359,258	84.73%	10,686	8,872	8,368,112	82.81%	10,454	8,616	8,152,530	82.67%
South	11,208	9,600	14,070,149	85.73%	12,390	10,682	14,024,266	86.28%	11,385	9,547	14,063,463	83.57%
West	7,802	6,673	8,925,464	84.62%	7,936	6,697	9,280,909	84.53%	7,817	6,510	9,343,033	82.70%
Alabama	510	425	587,014	82.65%	744	631	604,574	84.49%	469	384	584,363	81.07%
Alaska	433	370	86,119	86.09%	515	431	89,332	83.83%	441	352	95,819	80.24%
Arizona	509	441	834,235	85.27%	511	433	798,580	85.99%	503	424	816,941	83.45%
Arkansas	458	380	334,786	82.16%	528	442	374,992	83.30%	550	439	370,165	79.62%
California	2,058	1,755	4,745,134	84.60%	2,003	1,685	5,066,496	84.30%	2,016	1,646	5,018,845	81.44%
Colorado	406	337	551,247	81.84%	480	411	564,436	84.33%	501	421	594,406	85.04%
Connecticut	494	422	446,654	85.63%	516	441	436,152	86.19%	520	427	455,720	82.40%
Delaware	439	375	105,183	85.49%	465	393	105,240	84.25%	493	407	107,644	84.15%
District of Columbia	442	401	56,178	91.06%	487	422	65,173	83.44%	498	451	64,190	91.18%
Florida	2,038	1,759	2,165,742	86.98%	2,250	1,949	2,211,773	86.30%	1,980	1,649	2,109,563	82.68%
Georgia	508	430	1,222,236	84.71%	480	413	1,207,618	86.51%	478	397	1,309,366	82.78%
Hawaii	561	468	142,051	82.88%	541	424	149,682	78.74%	500	388	145,487	78.38%
Idaho	479	409	202,052	85.98%	493	422	205,495	85.84%	515	441	206,195	85.69%
Illinois	1,948	1,593	1,638,431	81.51%	2,144	1,711	1,619,137	79.79%	2,036	1,637	1,553,772	80.89%
Indiana	511	445	808,335	87.62%	489	424	852,672	85.97%	480	393	813,060	81.75%
Iowa	464	400	369,554	85.30%	523	443	382,062	85.81%	485	404	353,403	82.15%
Kansas	452	397	349,540	87.74%	484	398	344,035	82.51%	508	443	380,034	86.86%
Kentucky	508	430	515,140	84.34%	481	400	501,556	83.75%	511	422	505,420	82.23%
Louisiana	507	431	567,474	85.18%	918	804	573,374	88.93%	451	395	552,954	87.18%
Maine	458	405	152,571	89.02%	495	424	153,910	85.35%	504	433	145,895	86.56%
Maryland	428	367	671,790	86.29%	487	422	657,919	85.91%	438	372	655,351	84.43%
Massachusetts	474	387	730,933	80.15%	620	520	822,796	83.78%	520	420	763,162	80.74%
Michigan	1,998	1,690	1,266,567	84.36%	2,034	1,702	1,293,907	83.70%	1,992	1,638	1,251,079	82.84%
Minnesota	496	425	635,101	85.43%	488	411	622,236	84.21%	471	411	629,891	86.19%
Mississippi	483	422	393,379	87.64%	597	539	365,463	90.08%	517	426	376,196	82.30%

(continued)

Table C.11 Sample Sizes, Weighted Interview Response Rates, and Population Estimates among Persons Aged 12 to 20, by State: 2010, 2011, and 2012 (continued)

State	2010 Total Selected	2010 Total Responded	2010 Population Estimate	2010 Weighted Interview Response Rate	2011 Total Selected	2011 Total Responded	2011 Population Estimate	2011 Weighted Interview Response Rate	2012 Total Selected	2012 Total Responded	2012 Population Estimate	2012 Weighted Interview Response Rate
Missouri	474	400	741,708	85.70%	465	398	714,937	82.47%	486	407	700,548	84.33%
Montana	480	416	118,731	86.51%	491	411	112,790	82.79%	522	431	123,289	83.41%
Nebraska	469	415	227,519	87.62%	514	427	225,527	83.87%	475	413	228,674	87.51%
Nevada	467	410	329,077	89.28%	440	385	370,767	90.91%	474	403	339,091	85.10%
New Hampshire	485	406	163,192	85.20%	589	479	177,762	82.39%	599	472	181,715	80.39%
New Jersey	518	429	1,033,688	82.93%	494	424	1,119,943	88.15%	475	389	1,041,104	81.91%
New Mexico	502	447	255,942	88.87%	469	404	258,176	84.99%	459	396	247,385	86.18%
New York	2,091	1,629	2,367,030	76.92%	2,120	1,607	2,330,810	76.15%	2,182	1,674	2,352,294	76.70%
North Carolina	487	434	1,158,894	89.02%	487	433	1,114,423	88.06%	474	404	1,096,473	85.11%
North Dakota	516	438	84,291	85.53%	476	414	80,431	86.41%	495	415	90,131	84.87%
Ohio	2,085	1,791	1,450,314	85.68%	2,081	1,715	1,474,645	82.49%	2,134	1,696	1,382,707	79.58%
Oklahoma	510	430	445,994	83.55%	454	373	462,928	83.45%	523	407	474,162	76.65%
Oregon	510	425	435,243	82.04%	534	450	424,881	83.95%	457	391	462,560	85.86%
Pennsylvania	1,641	1,344	1,529,660	81.90%	1,677	1,377	1,583,008	83.76%	1,980	1,620	1,506,219	82.23%
Rhode Island	472	419	127,717	88.13%	483	413	126,155	85.65%	460	399	127,152	87.11%
South Carolina	498	421	554,128	84.56%	482	414	521,289	85.95%	496	414	537,771	83.64%
South Dakota	500	429	98,463	86.31%	470	411	87,535	86.40%	444	378	101,364	85.52%
Tennessee	521	448	783,233	87.28%	462	401	768,020	86.68%	439	378	731,381	84.81%
Texas	1,918	1,638	3,337,978	85.37%	2,010	1,738	3,303,733	86.40%	2,002	1,690	3,407,153	84.28%
Utah	412	364	375,829	88.48%	463	406	364,611	85.21%	434	386	396,005	88.78%
Vermont	435	371	71,307	85.97%	499	413	73,919	84.39%	495	405	73,666	81.68%
Virginia	489	415	974,776	85.04%	516	452	966,316	86.34%	484	416	952,855	85.21%
Washington	501	410	783,258	81.66%	510	424	809,041	82.70%	516	419	825,920	81.17%
West Virginia	464	394	196,221	84.13%	542	456	219,874	85.17%	582	496	228,456	84.92%
Wisconsin	502	418	689,435	82.92%	518	418	670,989	81.33%	448	381	667,867	84.74%
Wyoming	484	421	66,546	86.75%	486	411	66,621	85.07%	479	412	71,089	84.48%

NOTE: Computations in this table are based on a respondent's age at screening. Thus, the data in the Total Responded column(s) could differ from data in other NSDUH tables that use the respondent's age recorded during the interview.

Source: SAMHSA, Center for Behavioral Health Statistics and Quality, National Survey on Drug Use and Health, 2010, 2011, and 2012 (2010 Data – Revised March 2012).

Table C.12 Sample Sizes, Weighted Interview Response Rates, and Population Estimates among Persons Aged 12 to 20, by State: 2010-2011 and 2011-2012

State	2010-2011 Total Selected	2010-2011 Total Responded	2010-2011 Population Estimate	2010-2011 Weighted Interview Response Rate	2011-2012 Total Selected	2011-2012 Total Responded	2011-2012 Population Estimate	2011-2012 Weighted Interview Response Rate
Total U.S.	74,998	63,275	38,237,681	84.37%	75,896	63,261	38,351,848	83.48%
Northeast	14,561	11,910	6,723,602	81.43%	15,228	12,337	6,735,691	81.17%
Midwest	21,101	17,713	8,363,685	83.77%	21,140	17,488	8,260,321	82.74%
South	23,598	20,282	14,047,208	86.01%	23,775	20,229	14,043,864	84.93%
West	15,738	13,370	9,103,187	84.57%	15,753	13,207	9,311,971	83.61%
Alabama	1,254	1,056	595,794	83.58%	1,213	1,015	594,469	82.82%
Alaska	948	801	87,725	84.92%	956	783	92,576	82.01%
Arizona	1,020	874	816,408	85.62%	1,014	857	807,761	84.71%
Arkansas	986	822	354,889	82.76%	1,078	881	372,578	81.52%
California	4,061	3,440	4,905,815	84.44%	4,019	3,331	5,042,671	82.86%
Colorado	886	748	557,842	83.09%	981	832	579,421	84.71%
Connecticut	1,010	863	441,403	85.91%	1,036	868	445,936	84.34%
Delaware	904	768	105,212	84.87%	958	800	106,442	84.20%
District of Columbia	929	823	60,676	86.89%	985	873	64,681	87.24%
Florida	4,288	3,708	2,188,757	86.64%	4,230	3,598	2,160,668	84.51%
Georgia	988	843	1,214,927	85.62%	958	810	1,258,492	84.59%
Hawaii	1,102	892	145,867	80.76%	1,041	812	147,585	78.56%
Idaho	972	831	203,773	85.91%	1,008	863	205,845	85.76%
Illinois	4,092	3,304	1,628,784	80.65%	4,180	3,348	1,586,454	80.33%
Indiana	1,000	869	830,504	86.77%	969	817	832,866	83.88%
Iowa	987	843	375,808	85.56%	1,008	847	367,732	84.07%
Kansas	936	795	346,788	85.09%	992	841	362,035	84.71%
Kentucky	989	830	508,348	84.05%	992	822	503,488	83.00%
Louisiana	1,425	1,235	570,424	87.09%	1,369	1,199	563,164	88.07%
Maine	953	829	153,241	87.12%	999	857	149,902	85.94%
Maryland	915	789	664,855	86.10%	925	794	656,635	85.18%
Massachusetts	1,094	907	776,864	82.07%	1,140	940	792,979	82.34%
Michigan	4,032	3,392	1,280,237	84.03%	4,026	3,340	1,272,493	83.28%
Minnesota	984	836	628,669	84.82%	959	822	626,064	85.18%
Mississippi	1,080	961	379,421	88.81%	1,114	965	370,830	86.07%

(continued)

Table C.12 Sample Sizes, Weighted Interview Response Rates, and Population Estimates among Persons Aged 12 to 20, by State: 2010-2011 and 2011-2012 (continued)

State	2010-2011 Total Selected	2010-2011 Total Responded	2010-2011 Population Estimate	2010-2011 Weighted Interview Response Rate	2011-2012 Total Selected	2011-2012 Total Responded	2011-2012 Population Estimate	2011-2012 Weighted Interview Response Rate
Missouri	939	798	728,322	84.09%	951	805	707,743	83.39%
Montana	971	827	115,761	84.69%	1,013	842	118,039	83.11%
Nebraska	983	842	226,523	85.63%	989	840	227,100	85.62%
Nevada	907	795	349,922	90.14%	914	788	354,929	88.06%
New Hampshire	1,074	885	170,477	83.73%	1,188	951	179,739	81.37%
New Jersey	1,012	853	1,076,815	85.58%	969	813	1,080,523	85.12%
New Mexico	971	851	257,059	86.88%	928	800	252,781	85.58%
New York	4,211	3,236	2,348,920	76.54%	4,302	3,281	2,341,552	76.42%
North Carolina	974	867	1,136,658	88.55%	961	837	1,105,448	86.55%
North Dakota	992	852	82,361	85.95%	971	829	85,281	85.62%
Ohio	4,166	3,506	1,462,479	84.09%	4,215	3,411	1,428,676	81.08%
Oklahoma	964	803	454,461	83.50%	977	780	468,545	80.03%
Oregon	1,044	875	430,062	82.98%	991	841	443,721	84.92%
Pennsylvania	3,318	2,721	1,556,334	82.84%	3,657	2,997	1,544,613	83.01%
Rhode Island	955	832	126,936	86.87%	943	812	126,654	86.38%
South Carolina	980	835	537,709	85.23%	978	828	529,530	84.79%
South Dakota	970	840	92,999	86.35%	914	789	94,450	85.95%
Tennessee	983	849	775,627	86.99%	901	779	749,701	85.76%
Texas	3,928	3,376	3,320,856	85.89%	4,012	3,428	3,355,443	85.34%
Utah	875	770	370,220	86.84%	897	792	380,308	87.03%
Vermont	934	784	72,613	85.17%	994	818	73,792	83.04%
Virginia	1,005	867	970,546	85.70%	1,000	868	959,586	85.79%
Washington	1,011	834	796,149	82.18%	1,026	843	817,480	81.94%
West Virginia	1,006	850	208,048	84.69%	1,124	952	224,165	85.05%
Wisconsin	1,020	836	680,212	82.12%	966	799	669,428	83.00%
Wyoming	970	832	66,584	85.91%	965	823	68,855	84.76%

NOTE: Computations in this table are based on a respondent's age at screening. Thus, the data in the Total Responded column(s) could differ from data in other NSDUH tables that use the respondent's age recorded during the interview.

NOTE: To compute the pooled weighted response rates, the two samples were combined, and the individual-year weights were used for the pooled sample. Thus, the response rates presented here are weighted across 2 years of data rather than being a simple average of the individual response rates. The population estimate is the average of the population across the 2 years.

Source: SAMHSA, Center for Behavioral Health Statistics and Quality, National Survey on Drug Use and Health, 2010, 2011, and 2012 (2010 Data – Revised March 2012).

Table C.13 Sample Sizes, Weighted Interview Response Rates, and Population Estimates among Persons Aged 18 or Older, by State: 2010, 2011, and 2012

State	2010 Total Selected	2010 Total Responded	2010 Population Estimate	2010 Weighted Interview Response Rate	2011 Total Selected	2011 Total Responded	2011 Population Estimate	2011 Weighted Interview Response Rate	2012 Total Selected	2012 Total Responded	2012 Population Estimate	2012 Weighted Interview Response Rate
Total U.S.	59,089	45,812	229,272,579	73.49%	60,625	46,560	232,625,299	73.22%	60,509	45,817	235,124,274	72.00%
Northeast	11,816	8,912	42,300,562	71.96%	11,808	8,665	42,613,542	68.62%	12,788	9,352	42,937,539	68.59%
Midwest	16,782	13,037	50,010,904	73.71%	16,921	12,870	50,241,664	72.89%	16,766	12,743	50,508,549	73.29%
South	17,568	13,911	84,005,336	75.22%	19,035	15,110	85,925,683	75.76%	17,987	13,913	87,067,845	73.21%
West	12,923	9,952	52,955,777	71.84%	12,861	9,915	53,844,410	73.17%	12,968	9,809	54,610,340	71.60%
Alabama	752	571	3,519,621	70.68%	1,179	931	3,599,718	73.44%	803	623	3,621,189	73.90%
Alaska	745	602	498,602	76.86%	729	572	508,235	78.77%	772	596	516,839	73.05%
Arizona	816	633	4,848,242	71.45%	763	620	4,749,984	81.79%	773	610	4,823,495	76.18%
Arkansas	789	615	2,143,532	74.10%	809	623	2,176,513	71.07%	818	601	2,186,878	68.89%
California	3,213	2,412	27,235,412	70.49%	3,289	2,459	27,886,283	70.78%	3,370	2,449	28,284,885	68.90%
Colorado	844	673	3,772,773	78.94%	777	595	3,792,000	75.18%	812	608	3,861,324	73.85%
Connecticut	820	638	2,669,460	73.79%	839	642	2,723,233	70.84%	900	676	2,744,379	71.67%
Delaware	780	621	670,337	76.96%	762	608	687,253	75.70%	734	586	696,760	79.66%
District of Columbia	754	611	483,703	80.56%	724	596	502,986	82.93%	763	633	513,289	79.99%
Florida	3,036	2,440	14,281,818	76.56%	3,292	2,589	14,751,904	73.85%	3,160	2,351	14,999,230	69.34%
Georgia	760	597	7,122,189	74.41%	722	566	7,107,414	76.39%	800	598	7,212,572	72.11%
Hawaii	896	636	957,900	65.29%	865	647	1,017,992	71.81%	908	654	1,033,888	68.36%
Idaho	760	618	1,119,419	77.60%	742	585	1,136,459	75.69%	747	576	1,148,607	76.93%
Illinois	3,405	2,487	9,579,838	69.50%	3,382	2,401	9,589,171	67.45%	3,354	2,438	9,628,889	69.74%
Indiana	753	575	4,762,228	72.40%	768	604	4,825,634	72.44%	841	640	4,850,837	72.01%
Iowa	777	638	2,268,066	78.26%	742	601	2,296,838	78.35%	764	586	2,309,284	73.90%
Kansas	770	589	2,070,889	73.21%	826	636	2,088,098	74.63%	721	569	2,099,601	76.67%
Kentucky	757	601	3,241,553	76.04%	754	602	3,257,502	75.37%	800	609	3,267,986	72.62%
Louisiana	730	578	3,296,197	77.01%	1,455	1,158	3,352,333	76.72%	770	609	3,377,799	76.40%
Maine	775	640	1,032,784	80.01%	689	565	1,045,661	78.89%	775	633	1,049,900	78.59%
Maryland	781	615	4,289,800	76.76%	751	600	4,388,713	76.64%	744	592	4,447,458	74.85%
Massachusetts	789	634	5,113,977	78.02%	769	591	5,106,323	73.51%	873	646	5,168,136	70.62%
Michigan	3,129	2,478	7,499,137	74.75%	3,247	2,490	7,472,092	73.25%	3,161	2,477	7,509,825	75.11%
Minnesota	812	650	3,972,838	77.37%	790	625	4,009,170	78.60%	729	578	4,046,322	80.26%
Mississippi	754	603	2,126,170	75.20%	1,010	816	2,160,292	75.97%	716	588	2,171,602	78.33%

(continued)

Table C.13 Sample Sizes, Weighted Interview Response Rates, and Population Estimates among Persons Aged 18 or Older, by State: 2010, 2011, and 2012 (continued)

State	2010 Total Selected	2010 Total Responded	2010 Population Estimate	2010 Weighted Interview Response Rate	2011 Total Selected	2011 Total Responded	2011 Population Estimate	2011 Weighted Interview Response Rate	2012 Total Selected	2012 Total Responded	2012 Population Estimate	2012 Weighted Interview Response Rate
Missouri	801	633	4,480,314	74.91%	789	619	4,491,236	72.16%	782	603	4,511,506	73.10%
Montana	789	617	747,854	76.00%	842	657	761,268	75.83%	721	560	768,234	76.98%
Nebraska	785	606	1,327,879	71.62%	836	610	1,354,318	70.17%	848	662	1,363,924	71.68%
Nevada	885	694	1,944,971	69.92%	886	703	2,022,350	72.78%	801	613	2,057,758	74.47%
New Hampshire	860	668	1,027,514	73.45%	821	621	1,023,936	71.86%	854	645	1,031,559	72.83%
New Jersey	770	599	6,577,240	77.93%	779	593	6,673,054	69.81%	806	607	6,732,336	72.63%
New Mexico	753	585	1,480,665	75.70%	815	658	1,525,882	79.08%	769	589	1,533,828	72.67%
New York	3,604	2,485	14,912,033	65.77%	3,586	2,351	14,940,181	62.61%	3,703	2,487	15,065,487	63.25%
North Carolina	757	593	6,959,307	75.02%	724	596	7,156,772	80.07%	763	619	7,246,727	74.56%
North Dakota	831	654	493,824	75.68%	799	613	516,537	72.93%	785	586	528,614	72.53%
Ohio	3,238	2,540	8,661,813	73.64%	3,206	2,475	8,683,577	73.60%	3,199	2,390	8,711,861	71.96%
Oklahoma	779	586	2,704,129	71.96%	806	626	2,770,637	75.32%	804	605	2,793,790	71.76%
Oregon	758	589	2,943,741	73.99%	776	596	2,969,857	75.67%	854	653	3,000,702	75.56%
Pennsylvania	2,688	2,030	9,656,250	72.35%	2,759	2,051	9,791,217	71.86%	3,280	2,411	9,831,482	69.58%
Rhode Island	795	623	817,303	72.92%	799	629	815,472	72.44%	811	647	818,100	76.97%
South Carolina	787	635	3,411,091	74.84%	795	625	3,497,010	73.23%	786	621	3,541,570	74.46%
South Dakota	750	620	603,702	80.01%	744	596	603,514	76.24%	797	613	611,740	75.34%
Tennessee	747	582	4,749,036	71.83%	774	618	4,809,840	76.82%	806	666	4,857,966	80.57%
Texas	3,102	2,465	17,715,787	75.65%	2,962	2,322	18,234,826	74.41%	3,140	2,379	18,573,333	72.01%
Utah	822	669	1,925,295	78.73%	775	601	1,911,676	75.26%	780	639	1,942,347	82.23%
Vermont	715	595	494,001	81.98%	767	622	494,466	78.40%	786	600	496,163	73.23%
Virginia	747	593	5,877,166	75.57%	727	607	6,029,485	81.02%	722	572	6,116,656	75.62%
Washington	829	596	5,072,923	68.75%	887	650	5,138,999	71.57%	850	627	5,207,324	70.94%
West Virginia	756	605	1,413,902	77.86%	789	627	1,442,485	75.00%	858	661	1,443,040	72.82%
Wisconsin	731	567	4,290,376	75.98%	792	600	4,311,481	74.87%	785	601	4,336,147	74.41%
Wyoming	813	628	407,981	71.88%	715	572	423,425	77.45%	811	635	431,108	76.66%

NOTE: Computations in this table are based on a respondent's age at screening. Thus, the data in the Total Responded column(s) could differ from data in other NSDUH tables that use the respondent's age recorded during the interview.

Source: SAMHSA, Center for Behavioral Health Statistics and Quality, National Survey on Drug Use and Health, 2010, 2011, and 2012 (2010 Data – Revised March 2012).

Table C.14 Sample Sizes, Weighted Interview Response Rates, and Population Estimates among Persons Aged 18 or Older, by State: 2010-2011 and 2011-2012

State	2010-2011 Total Selected	2010-2011 Total Responded	2010-2011 Population Estimate	2010-2011 Weighted Interview Response Rate	2011-2012 Total Selected	2011-2012 Total Responded	2011-2012 Population Estimate	2011-2012 Weighted Interview Response Rate
Total U.S.	119,714	92,372	230,948,939	73.36%	121,134	92,377	233,874,786	72.60%
Northeast	23,624	17,577	42,457,052	70.30%	24,596	18,017	42,775,541	68.60%
Midwest	33,703	25,907	50,126,284	73.30%	33,687	25,613	50,375,107	73.09%
South	36,603	29,021	84,965,509	75.50%	37,022	29,023	86,496,764	74.47%
West	25,784	19,867	53,400,093	72.50%	25,829	19,724	54,227,375	72.36%
Alabama	1,931	1,502	3,559,669	72.06%	1,982	1,554	3,610,453	73.67%
Alaska	1,474	1,174	503,418	77.80%	1,501	1,168	512,537	75.73%
Arizona	1,579	1,253	4,799,113	76.18%	1,536	1,230	4,786,739	78.83%
Arkansas	1,598	1,238	2,160,022	72.61%	1,627	1,224	2,181,695	69.95%
California	6,502	4,871	27,560,847	70.63%	6,659	4,908	28,085,584	69.82%
Colorado	1,621	1,268	3,782,387	77.01%	1,589	1,203	3,826,662	74.51%
Connecticut	1,659	1,280	2,696,347	72.33%	1,739	1,318	2,733,806	71.28%
Delaware	1,542	1,229	678,795	76.33%	1,496	1,194	692,007	77.78%
District of Columbia	1,478	1,207	493,344	81.78%	1,487	1,229	508,138	81.39%
Florida	6,328	5,029	14,516,861	75.18%	6,452	4,940	14,875,567	71.60%
Georgia	1,482	1,163	7,114,802	75.44%	1,522	1,164	7,159,993	74.20%
Hawaii	1,761	1,283	987,946	68.62%	1,773	1,301	1,025,940	70.01%
Idaho	1,502	1,203	1,127,939	76.62%	1,489	1,161	1,142,533	76.27%
Illinois	6,787	4,888	9,584,505	68.50%	6,736	4,839	9,609,030	68.62%
Indiana	1,521	1,179	4,793,931	72.42%	1,609	1,244	4,838,235	72.21%
Iowa	1,519	1,239	2,282,452	78.31%	1,506	1,187	2,303,061	76.26%
Kansas	1,596	1,225	2,079,494	73.91%	1,547	1,205	2,093,849	75.65%
Kentucky	1,511	1,203	3,249,527	75.71%	1,554	1,211	3,262,744	73.96%
Louisiana	2,185	1,736	3,324,265	76.86%	2,225	1,767	3,365,066	76.56%
Maine	1,464	1,205	1,039,223	79.47%	1,464	1,198	1,047,780	78.74%
Maryland	1,532	1,215	4,339,257	76.70%	1,495	1,192	4,418,086	75.78%
Massachusetts	1,558	1,225	5,110,150	75.87%	1,642	1,237	5,137,229	72.01%
Michigan	6,376	4,968	7,485,614	73.99%	6,408	4,967	7,490,959	74.17%
Minnesota	1,602	1,275	3,991,004	78.01%	1,519	1,203	4,027,746	79.41%
Mississippi	1,764	1,419	2,143,231	75.58%	1,726	1,404	2,165,947	77.12%

(continued)

Table C.14 Sample Sizes, Weighted Interview Response Rates, and Population Estimates among Persons Aged 18 or Older, by State: 2010-2011 and 2011-2012 (continued)

State	2010-2011 Total Selected	2010-2011 Total Responded	2010-2011 Population Estimate	2010-2011 Weighted Interview Response Rate	2011-2012 Total Selected	2011-2012 Total Responded	2011-2012 Population Estimate	2011-2012 Weighted Interview Response Rate
Missouri	1,590	1,252	4,485,775	73.50%	1,571	1,222	4,501,371	72.61%
Montana	1,631	1,274	754,561	75.92%	1,563	1,217	764,751	76.36%
Nebraska	1,621	1,216	1,341,099	70.89%	1,684	1,272	1,359,121	70.94%
Nevada	1,771	1,397	1,983,660	71.40%	1,687	1,316	2,040,054	73.62%
New Hampshire	1,681	1,289	1,025,725	72.65%	1,675	1,266	1,027,747	72.35%
New Jersey	1,549	1,192	6,625,147	73.80%	1,585	1,200	6,702,695	71.21%
New Mexico	1,568	1,243	1,503,274	77.45%	1,584	1,247	1,529,855	75.90%
New York	7,190	4,836	14,926,107	64.21%	7,289	4,838	15,002,834	62.93%
North Carolina	1,481	1,189	7,058,040	77.70%	1,487	1,215	7,201,750	77.34%
North Dakota	1,630	1,267	505,181	74.31%	1,584	1,199	522,576	72.73%
Ohio	6,444	5,015	8,672,695	73.62%	6,405	4,865	8,697,719	72.78%
Oklahoma	1,585	1,212	2,737,383	73.62%	1,610	1,231	2,782,213	73.52%
Oregon	1,534	1,185	2,956,799	74.86%	1,630	1,249	2,985,280	75.61%
Pennsylvania	5,447	4,081	9,723,733	72.10%	6,039	4,462	9,811,349	70.71%
Rhode Island	1,594	1,252	816,387	72.67%	1,610	1,276	816,786	74.71%
South Carolina	1,582	1,260	3,454,051	74.06%	1,581	1,246	3,519,290	73.86%
South Dakota	1,494	1,216	603,608	78.15%	1,541	1,209	607,627	75.78%
Tennessee	1,521	1,200	4,779,438	74.42%	1,580	1,284	4,833,903	78.71%
Texas	6,064	4,787	17,975,306	75.03%	6,102	4,701	18,404,079	73.17%
Utah	1,597	1,270	1,918,485	77.09%	1,555	1,240	1,927,012	78.79%
Vermont	1,482	1,217	494,233	80.16%	1,553	1,222	495,314	75.75%
Virginia	1,474	1,200	5,953,325	78.29%	1,449	1,179	6,073,071	78.24%
Washington	1,716	1,246	5,105,961	70.16%	1,737	1,277	5,173,161	71.23%
West Virginia	1,545	1,232	1,428,194	76.33%	1,647	1,288	1,442,762	73.94%
Wisconsin	1,523	1,167	4,300,929	75.43%	1,577	1,201	4,323,814	74.63%
Wyoming	1,528	1,200	415,703	74.69%	1,526	1,207	427,266	77.04%

NOTE: Computations in this table are based on a respondent's age at screening. Thus, the data in the Total Responded column(s) could differ from data in other NSDUH tables that use the respondent's age recorded during the interview.

NOTE: To compute the pooled weighted response rates, the two samples were combined, and the individual-year weights were used for the pooled sample. Thus, the response rates presented here are weighted across 2 years of data rather than being a simple average of the individual response rates. The population estimate is the average of the population across the 2 years.

Source: SAMHSA, Center for Behavioral Health Statistics and Quality, National Survey on Drug Use and Health, 2010, 2011, and 2012 (2010 Data – Revised March 2012).

Table C.15 Outcomes, by Survey Year, for Which Small Area Estimates Are Available

Measure	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012
Illicit Drug Use in Past Month	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Marijuana Use in Past Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Marijuana Use in Past Month	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Perceptions of Great Risk of Smoking Marijuana Once a Month	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
First Use of Marijuana	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Illicit Drug Use Other Than Marijuana in Past Month	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cocaine Use in Past Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Nonmedical Use of Pain Relievers in Past Year	No[1]	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Alcohol Use in Past Month	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Underage Past Month Use of Alcohol	No[1]	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Binge Alcohol Use in Past Month	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Underage Past Month Binge Alcohol Use	No[1]	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Perceptions of Great Risk of Having Five or More Drinks of an Alcoholic Beverage Once or Twice a Week	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Tobacco Product Use in Past Month	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cigarette Use in Past Month	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Perceptions of Great Risk of Smoking One or More Packs of Cigarettes per Day	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Alcohol Dependence or Abuse in Past Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Alcohol Dependence in Past Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Illicit Drug Dependence or Abuse in Past Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Illicit Drug Dependence in Past Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Dependence or Abuse of Illicit Drugs or Alcohol in Past Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Needing But Not Receiving Treatment for Illicit Drug Use in Past Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Needing But Not Receiving Treatment for Alcohol Use in Past Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Serious Psychological Distress in Past Year[2]	Yes	Yes	Yes	No	No	No	No	No	No	No
Had at Least One Major Depressive Episode in Past Year[3]	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Serious Mental Illness in Past Year	No	No	No	No	No	No	Yes	Yes	Yes	Yes
Any Mental Illness in Past Year	No	No	No	No	No	No	Yes	Yes	Yes	Yes
Had Serious Thoughts of Suicide in Past Year	No	No	No	No	No	No	Yes	Yes	Yes	Yes

[1] Estimates for these outcomes were not included in the 2002-2003 State report (Wright & Sathe, 2005), but the 2002-2003 estimates are included in the 2003-2004 State report as part of the comparison tables (see Wright & Sathe, 2006). However, the Bayesian confidence intervals associated with these were not published.

[2] Estimates for serious psychological distress (SPD) in the years 2002-2003 and 2003-2004 are not comparable with the 2004-2005 SPD estimates. For more details, see Section A.7 in Appendix A of the 2004-2005 State report (Wright et al., 2007). Note that, in 2002-2003, SPD was referred to as "serious mental illness."

[3] Questions that were used to determine a major depressive episode (MDE) were added in 2004. Note that the adult MDE estimates shown in the 2004-2005 report are not comparable with the adult MDE estimates for later years.

Yes = available, No = not available.

Source: SAMHSA, Center for Behavioral Health Statistics and Quality, National Survey on Drug Use and Health, 2002-2012.

Table C.16 Outcomes, by Age Groups, for Which Small Area Estimates Are Available

Measure	Age Group					
	12+	12-17	12-20	18-25	26+	18+
Illicit Drug Use in Past Month	Yes	Yes	No	Yes	Yes	Yes
Marijuana Use in Past Year	Yes	Yes	No	Yes	Yes	Yes
Marijuana Use in Past Month	Yes	Yes	No	Yes	Yes	Yes
Perceptions of Great Risk of Smoking Marijuana Once a Month	Yes	Yes	No	Yes	Yes	Yes
First Use of Marijuana	Yes	Yes	No	Yes	Yes	Yes
Illicit Drug Use Other Than Marijuana in Past Month	Yes	Yes	No	Yes	Yes	Yes
Cocaine Use in Past Year	Yes	Yes	No	Yes	Yes	Yes
Nonmedical Use of Pain Relievers in Past Year	Yes	Yes	No	Yes	Yes	Yes
Alcohol Use in Past Month	Yes	Yes	Yes	Yes	Yes	Yes
Binge Alcohol Use in Past Month	Yes	Yes	Yes	Yes	Yes	Yes
Perceptions of Great Risk of Having Five or More Drinks of an Alcoholic Beverage Once or Twice a Week	Yes	Yes	No	Yes	Yes	Yes
Tobacco Product Use in Past Month	Yes	Yes	No	Yes	Yes	Yes
Cigarette Use in Past Month	Yes	Yes	No	Yes	Yes	Yes
Perceptions of Great Risk of Smoking One or More Packs of Cigarettes per Day	Yes	Yes	No	Yes	Yes	Yes
Alcohol Dependence or Abuse in Past Year	Yes	Yes	No	Yes	Yes	Yes
Alcohol Dependence in Past Year	Yes	Yes	No	Yes	Yes	Yes
Illicit Drug Dependence or Abuse in Past Year	Yes	Yes	No	Yes	Yes	Yes
Illicit Drug Dependence in Past Year	Yes	Yes	No	Yes	Yes	Yes
Dependence or Abuse of Illicit Drugs or Alcohol in Past Year	Yes	Yes	No	Yes	Yes	Yes
Needing But Not Receiving Treatment for Illicit Drug Use in Past Year	Yes	Yes	No	Yes	Yes	Yes
Needing But Not Receiving Treatment for Alcohol Use in Past Year	Yes	Yes	No	Yes	Yes	Yes
Serious Psychological Distress in Past Year	No	No	No	Yes	Yes	Yes
Had at Least One Major Depressive Episode in Past Year[1]	No	Yes	No	Yes	Yes	Yes
Serious Mental Illness in Past Year	No	No	No	Yes	Yes	Yes
Any Mental Illness in Past Year	No	No	No	Yes	Yes	Yes
Had Serious Thoughts of Suicide in Past Year	No	No	No	Yes	Yes	Yes

NOTE: For details on which years small area estimates are available for these outcomes, see Table C.15.

NOTE: Tables containing 18 or older estimates were first presented with the 2005-2006 small area estimation (SAE) tables.

[1] There are minor wording differences in the questions for the adult and adolescent major depressive episode (MDE) modules. Therefore, data from youths aged 12 to 17 were not combined with data from persons aged 18 or older to get an overall MDE estimate (12 or older).

Yes = available, No = not available.

Source: SAMHSA, Center for Behavioral Health Statistics and Quality, National Survey on Drug Use and Health, 2002-2012.

Table C.17 Summary of Milestones Implemented in the SAE Production Process, 2002-2012

SAE Production Items	Years for Which Pooled 2-Year Small Area Estimates Were Published									
	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012
Weights Based on Projections from 2000 Census Control Totals	X	X	X	X	X	X	X	X	X[1]	
Weights Based on Projections from 2010 Census Control Totals									X[1]	X
Small Area Estimates Produced Based on Variable Selection Done Using 2002-2003 Data[2]	X	X	X	X	X	X	X	X	X[3]	
Small Area Estimates Produced Based on Variable Selection Done Using 2010-2011 Data[4]									X[3]	X
Small Area Estimates Reproduced Using Data Omitting Falsified Data[5]				X	X	X	X			
SMI and AMI Small Area Estimates Based on Updated 2013 Model[6]							X	X	X	X
MDE Small Area Estimates Based on Adjusted MDE Variable[7]				X	X	X	X			

AMI = any mental illness; MDE = major depressive episode; NSDUH = National Survey on Drug Use and Health; SAE = small area estimation; SMI = serious mental illness.

[1] The weight used for 2010 was based on projections from the 2000 census control totals, and the 2011 weight was based on projections from the 2010 census control totals. For SMI and AMI, the weights used for both years were based on the 2010 census control totals.

[2] Variable selection was done using 2002-2003 NSDUH data for all outcomes with the following exception: For SMI, AMI, suicidal thoughts in the past year, and MDE, variable selection was done using 2008-2009 NSDUH data. Note that the 2005-2006, 2006-2007, and 2007-2008 MDE small area estimates were based on the variable selection done in 2008-2009.

[3] For all outcomes except SMI and AMI, the 2010-2011 small area estimates were produced based on 2002-2003 variable selection (see note 2 for an exception). For SMI and AMI, variable selection was done using 2010-2011 NSDUH data.

[4] When new variable selection was done using 2010-2011 NSDUH data, one source of predictor data was revised: The American Community Survey (ACS) estimates were used in place of 2000 long-form census estimates, which resulted in dropping several predictors and adding several new predictors.

[5] The 2005-2006 through 2008-2009 small area estimates were revised and republished with falsified data removed. For more information, see Section A.7 of this document.

[6] The 2008-2009, 2009-2010, and 2010-2011 small area estimates were revised and republished based on the new SMI and AMI variables. These new variables will continue to be used to produce SMI and AMI small area estimates. For more information, see Section B.12.1 of this document.

[7] An adjusted MDE variable was created for 2005-2008 that is comparable with the 2009-2012 MDE variables. Hence, MDE small area estimates were produced using the adjusted variable. For more information, see Section B.12.3 of this document.

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Section E: List of Contributors

This National Survey on Drug Use and Health (NSDUH) document was prepared by the Center for Behavioral Health Statistics and Quality (CBHSQ), Substance Abuse and Mental Health Services Administration (SAMHSA), U.S. Department of Health and Human Services (HHS), and by RTI International (a trade name of Research Triangle Institute), Research Triangle Park, North Carolina. Work by RTI was performed under Contract No. HHSS283201000003C.

At SAMHSA, Arthur Hughes reviewed the document and provided substantive revisions. At RTI, Neeraja S. Sathe and Kathryn Spagnola were responsible for the writing of the document, and Ralph E. Folsom and Akhil K. Vaish were responsible for the overall methodology and estimation for the model-based Bayes estimates and confidence intervals.

The following staff were responsible for generating the estimates and providing other support and analysis: Akhil K. Vaish, Neeraja S. Sathe, Kathryn Spagnola, and Brenda K. Porter. Ms. Spagnola provided oversight for production of the document. Richard S. Straw edited it; Debbie Bond, Valerie Garner, and Roxanne Snaauw formatted its text and tables; and Teresa F. Bass, Kimberly Cone, Danny Occoquan, Margaret Smith, Marissa R. Straw, Pamela Tuck, and Cheryl Velez prepared the Web versions. Justine L. Allpress and E. Andrew Jessup prepared and processed the maps used in the associated files.