2012 NATIONAL SURVEY ON DRUG USE AND HEALTH

PERSON-LEVEL SAMPLING WEIGHT CALIBRATION

Prepared for the 2012 Methodological Resource Book

Contract No. HHSS283201000003C
RTI Project No. 0212800.001.107.004
Phase I, Deliverable No. 41

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February 2014

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Preface

This report contains a brief review of the sampling weight calibration methodology used for the 2012 National Survey on Drug Use and Health (NSDUH), which was known as the National Household Survey on Drug Abuse (NHSDA) prior to 2002. This report also lists detailed documentation on the implementation steps and evaluation results from the weight calibration application. The constrained exponential modeling (CEM) method used in the surveys prior to 1999 (referred to in this report as the generalized exponential model [GEM]) was modified to provide more flexibility in dealing internally with the extreme weights and for setting bounds directly on the weight adjustment factors so they can become suitable for nonresponse (nr) and poststratification (ps) adjustments. The highlights of the method are summarized below.

- The inherent two-phase nature of the NSDUH design (viewing the large screener sample as the first phase and the actual questionnaire sample as the second phase) allows for the additional step of poststratifying the selected persons to estimated controls from the large first-phase sample of persons. This additional step results in stable controls for the later step of nonresponse adjustment at the respondent-person level. These two steps had been combined as one step in surveys prior to 1999, but they have been kept separate from 1999 onward.
- A poststratification step at the respondent-household level in the first phase of the screening interview reduced coverage bias resulting from the first-phase sampling and produced controls for use in poststratification at the selected-person level, respondent person-pair level, and respondent-household level in the second phase of the drug use interview. This step again takes advantage of the inherent two-phase design of the study.
- The built-in control on extreme weights in GEM was supplemented by a separate step of extreme value adjustment after the final poststratification whenever the extreme weight percentage in the initial unadjusted weights was considered to be too large. This was accomplished by using GEM so that the sample demographic distribution was preserved. This method represents an improvement over the trimming method implemented before the nonresponse adjustment in surveys prior to 1999 and the extreme value adjustment before the nonresponse adjustment used for the 1999 NHSDA. For the 2012 NSDUH, this final extreme value adjustment was judged to be unnecessary.

The GEM calibration method provides a unified approach to handling problems of extreme weights, nonresponse, and poststratification, and it uses current state-of-the-art technology. The implementation of GEM under a tight project schedule was a challenge, but it was met successfully by the diligence and perseverance of the members of the weighting team consisting of Patrick Chen, Devon Cribb, Lanting Dai, Harper Gordek, Jeff Laufenberg, Neeraja Sathe, and Matthew Westlake.

This report consists of several chapters describing the implementation and evaluation of GEM and of appendices composed mainly of tables. In the interest of reducing the size of the report, detailed domain-specific evaluation results are presented in the supplement to this report, which is available upon request. This work was completed for the Substance Abuse and Mental

Health Services Administration (SAMHSA), Center for Behavioral Health Statistics and Quality (CBHSQ), by RTI International,[1] North Carolina, under Contract No. HHSS283201000003C. The authors are grateful to Art Hughes of SAMHSA for his useful comments and suggestions.

Ralph Folsom, Senior Advisor
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[1] RTI International is a trade name of Research Triangle Institute.

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List of Terms and Abbreviations

C	Center point.
CAI	Computer-assisted interviewing.
DU	Dwelling unit.
ev	Extreme weight adjustment. See Section 4.1 for more detail.
FI	Field interviewer.
GEM	Generalized exponential model. See Chapter 2 for more detail.
half-step	This refers to halving the increment in the Newton-Raphson iterative process for fitting GEM.
IQR	Interquartile range.
L	Lower bound on adjustment factor.
MPMN	Multivariate predictive mean neighbor.
nr	Nonresponse adjustment.
Outwinsor	Signifies the percentages of weights trimmed after extreme weight adjustment via winsorization.
PMN	Predictive mean neighborhood.
ps	Poststratification adjustment.
res.sdu.nr	Respondent screener dwelling unit nonresponse adjustment step. See Section 5.1.2 for more detail.
res.sdu.ps	Respondent screener dwelling unit poststratification adjustment step. See Section 5.1.3 for more detail.
res.sdu.ev	Respondent screener dwelling unit extreme weight adjustment step. See Section 5.1.4 for more detail.
sel.per.ps	Selected person poststratification adjustment step. See Section 5.2.2 for more detail.
res.per.nr	Respondent person nonresponse adjustment step. See Section 5.2.3 for more detail.
res.per.ps	Respondent person poststratification adjustment step. See Section 5.2.4 for more detail.
res.per.ev	Respondent person extreme weight adjustment step. See Section 5.2.5 for more detail.
SAE	Small area estimate.
SDU	Screener dwelling unit.
SE	Standard error.
SES	Socioeconomic status indicator. See Exhibit 3.1 for more detail.
SS	State sampling.
U	Upper bound on adjustment factor.
UPMN	Univariate predictive mean neighbor.
UWE	Unequal weighting effect. It refers to the contribution in the design effect due to unequal selection probability and is defined as $1 + [(n - 1)/n]*CV^2$ where CV = coefficient of variation of weights, and n is the sample size.
VESTR	Variance estimation stratum.
VEREP	Variance estimation replicates.
Winsorization	A method of extreme weight adjustment that replaces extreme weights with the critical values used for defining low and high extreme weights.

1. Introduction

The target population for the 2012 National Survey on Drug Use and Health (NSDUH) was the civilian, noninstitutionalized population aged 12 years or older residing within the United States. A coordinated sample design was developed for the 2005 through 2009 NSDUHs. The 2010 through 2011 and 2012 through 2013 samples are two extensions of the 5-year sample. Although there is no planned overlap with the 1999 to 2004 samples, the coordinated design for 2005 through 2009 facilitated 50 percent overlap in second-stage units (area segments) within each successive 2-year period from 2005 through 2009. This design was intended to reduce field costs and increase the precision of estimates in year-to-year trend analyses, using the expected positive correlation resulting from the overlapping sample between successive NSDUH years. The 2012 NSDUH main sample continues the 50 percent overlap by retaining half of the second-stage units from the 2011 survey.

The 2012 design provides for estimates by State in all 50 States plus the District of Columbia. States may therefore be viewed as the first level of stratification as well as a reporting variable. Eight States (California, Florida, Illinois, Michigan, New York, Ohio, Pennsylvania, and Texas), referred to as the "large" States, had a sample designed to yield 3,600 respondents per State, while the remaining 43 "small" States (which include the District of Columbia) had a sample designed to yield 900 respondents per State. Sample in these 43 States supports reliable State estimates based on small area estimation (SAE) or direct estimation methodology when several years of data are combined. The target national sample size for the 2012 NSDUH was 67,500 persons, and the achieved sample for the 2012 NSDUH was 68,309 persons—corresponding to 48,850 responding dwelling units [DUs] selected at the second phase out of 153,858[2] DUs screened at the first phase, in which the first phase is screening and the second phase is interview. The achieved sample has a low of 829 for Arkansas to a high of 976 for West Virginia among small States, and a low of 3,544 for Florida to a high of 3,687 for Ohio among large States.

In the 2012 NSDUH design, States served as the primary strata; within each State, State sampling (SS) regions were formed and served as the secondary strata. Based on a composite size measure, States were geographically partitioned into roughly equal-sized regions according to population. The smaller States were partitioned into 12 SS regions, whereas the 8 large States were divided into 48 SS regions. Therefore, the partitioning of the United States resulted in the formation of a total of 900 SS regions.

Unlike previous NSDUHs, the first stage of selection for the 2005 through 2012 NSDUHs was census tracts selected from SS regions. This stage was included to contain sample segments within a single census tract to the extent possible. Prior to the 2005 NSDUH, segments that crossed census tract boundaries made merging to external data sources difficult.

The first stage of selection began with the construction of an area sample frame that contained one record for each census tract in the United States. If necessary, census tracts were

[2] The number of DUs that completed the first-phase screening was 153,873, but some DUs did not have eligible persons, so they were removed from DU poststratification and person-level calibration steps. The number of DUs that had eligible persons in them was 153,858.

aggregated within SS regions until each tract had, at a minimum, 150 DUs in urban areas and 100 DUs in rural areas. There were 48 census tracts per SS region selected with probabilities proportionate to a composite size measure and with minimum replacement (Chromy, 1979).

Because census tracts generally exceed the minimum DU requirement, one smaller geographic region was selected within each sampled census tract. For this second stage of sampling, each selected census tract was partitioned into compact clusters[3] of DUs by aggregating adjacent census blocks. Consistent with the terminology used in previous NSDUHs, these geographic clusters of blocks are referred to as "segments." A sample DU in NSDUH refers to either a housing unit or a group-quarters listing unit, such as a dormitory room or a shelter bed. Similar to census tracts, segments were formed to contain a minimum of 150 DUs in urban areas and 100 DUs in rural areas. This minimum DU requirement will support the overlapping sample design and any special supplemental samples or field tests that SAMHSA may wish to conduct.

One segment was selected within each sampled census tract with probability proportionate to size. The 48 selected segments then were randomly assigned to a survey year and quarter of data collection.

After sample segments for the 2012 NSDUH were selected, specially trained field household listers visited the areas and obtained complete and accurate lists of all eligible DUs within the sample segment boundaries. These lists served as the frames for the third stage of sample selection. Using a random start point and interval-based (systematic) selection, the actual listing units were selected from the segment frame.

After DU selections were made, an interviewer visited each selected DU to obtain a roster of all persons residing in the DU. Using the roster information obtained from an eligible member of the selected DU, zero, one, or two persons were selected for the survey. Sampling rates were preset by age group and State. Roster information was entered directly into the electronic screening instrument, which automatically implemented this fourth stage of selection based on the State and age group sampling parameters.

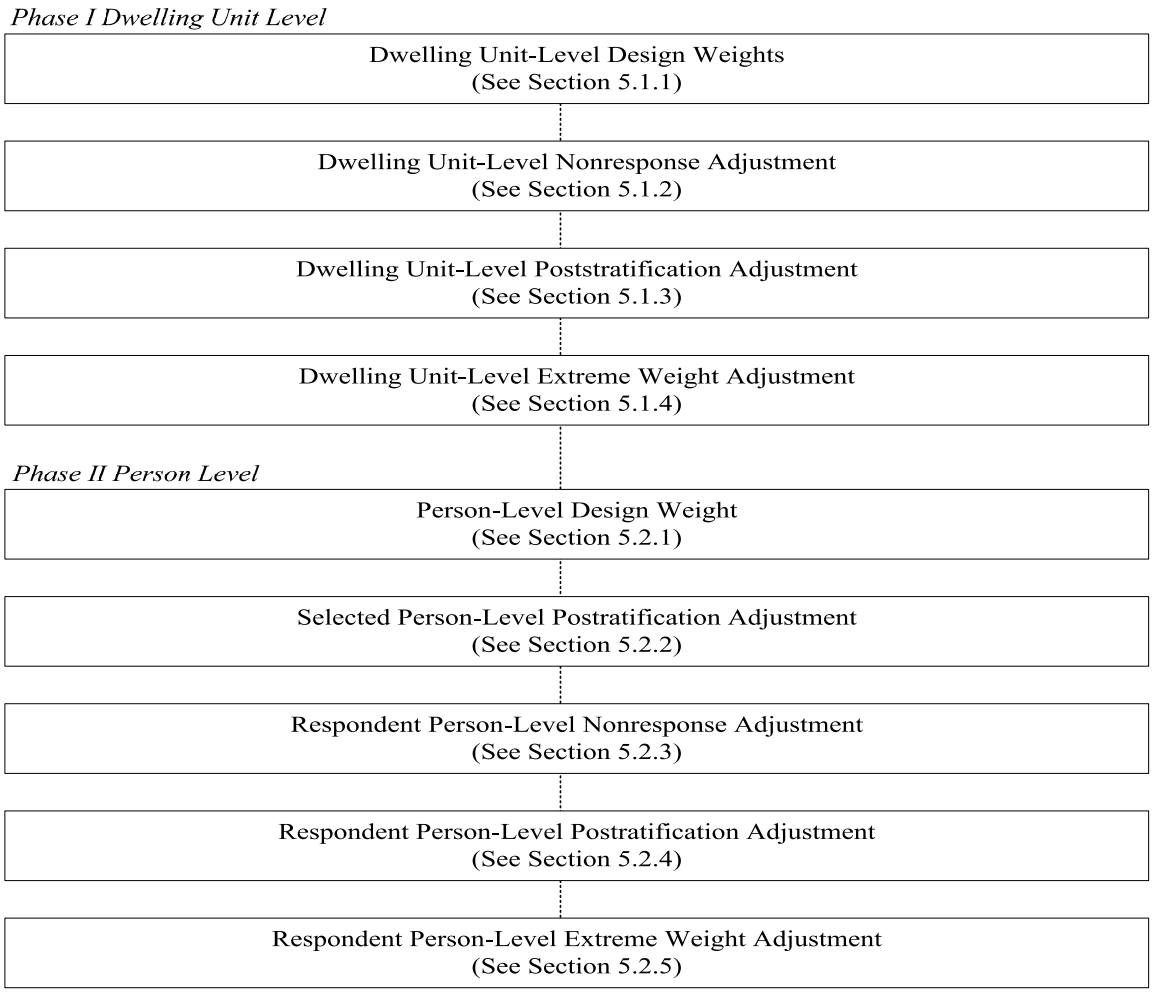
As in previous years of the survey,[4] the 2012 NSDUH sample weighting posed challenges because of the sheer magnitude of the number of State-specific predictors used for nonresponse (nr) and poststratification (ps) adjustments. With the 51-State survey, using a single model for each of the adjustments was not practical; however, treating each State separately was not desirable because individual State sample sizes were not large enough to support reliable estimation of a number of parameters. Therefore, the 51 States were grouped into nine model groups corresponding to the nine U.S. Census Bureau divisions. This helped to keep a substantial number of predictor variables in each model and reduced the computing time that would be associated with fitting a larger model.

[3] Although the entire cluster is compact, the final sample of DUs represents a noncompact cluster. Noncompact clusters (selection from a list) differ from compact clusters in that not all units within the cluster are included in the sample. Although compact cluster designs are less costly and more stable, a noncompact cluster design was used because it provides for greater heterogeneity of dwellings within the sample. Also, social interaction (contagion) among neighboring dwellings is sometimes introduced with compact clusters (Kish, 1965).

[4] The survey was known as the National Household Surveys on Drug Abuse (NHSDA) prior to 2002.

As with each survey after 1999, an important feature of the 2012 NSDUH sample weighting was to capitalize on the inherent two-phase nature of the NSDUH design (although the design was primarily viewed as multistage) by adding a step to poststratify the household weights in the first phase of the screening interview (see Exhibit 1.1). This reduced coverage bias resulting from the first phase of sampling and produced estimated controls for use in poststratification of person-pair weights and household weights in the second phase of the drug use interview. No other suitable source was available for obtaining these controls for poststratification. Note also that screener DU weights were poststratified to population counts by adjusting the DU's weighted contribution of person counts to various demographic domains. The second important feature was to add a step to poststratify selected persons (including respondents and nonrespondents) to estimated controls from the large first-phase sample of persons for various predictor variables at the segment, DU, and person levels. This provided stable controls for the step involving the nonresponse adjustment of respondent weights. Incorporating this important feature would not have been possible without screener data on the sociodemographics of members of the selected households.

Exhibit 1.1 Sampling Weight Calibration Steps



As in previous NSDUHs, a modification of the earlier methodology of scaled constrained exponential modeling (CEM) (Folsom & Witt, 1994) was used to meet the new demands on the weighting mentioned previously (i.e., the two-phase design and large number of available predictors). The modified methodology, called the generalized exponential model (GEM) (Folsom & Singh, 2000), has several features:

- Like CEM, GEM can use a large number of predictor variables, such as those obtained from the first-phase screener sample for the 50 States plus the District of Columbia, and some of their interactions.
- GEM allows unit-specific bounds for the weights initially identified as extreme, which provide tight controls on the extreme weights. This built-in control is often adequate, in that the frequency of extreme weights, after the nonresponse and poststratification adjustments, is not usually high. However, if this is not the case, GEM can be used for a separate extreme weight adjustment after poststratification. This extra adjustment, which uses tighter bounds, will preserve the demographic population controls used in the poststratification step.
- GEM provides a unified approach to nonresponse, poststratification, and extreme weight adjustments. The differences are only in terms of the bounds and control totals that are used.
- GEM can be implemented efficiently using software developed at RTI.
- GEM is a generalization of the commonly used raking-ratio method in which a distance function is minimized such that (1) the initial weights are perturbed only a little and lie within certain bounds, and (2) control totals are met. It is also a generalization of Deville and Särndal's (1992) logit method in that the bounds on weights are not required to be uniform. Moreover, the lower bound can be set to one, which is desirable for the nonresponse adjustment. Like the previously mentioned methods, fitting GEM requires iterations (such as Newton-Raphson).

The report is organized as follows. In Chapter 2, GEM is reviewed, and a heuristic description outlines how GEM provides a unified approach to all three procedures' adjustments for nonresponse, poststratification, and extreme weight adjustment. In Chapter 3, potential predictor variables for use with nonresponse, poststratification, and extreme weight are discussed, and the strategy for dealing with many predictors via modeling groups of States is reviewed. In Chapter 4, practical steps for implementing GEM for the 2012 NSDUH are presented, and in Chapter 5, details of the weight calibrations, including all weight components corresponding to Phases I and II, are given. Chapter 6 presents the evaluation measures of calibrated weights and a sensitivity analysis of point estimates and standard errors (adjusted for calibration) of selected drug prevalence estimates. The sensitivity analysis compares the estimates and standard errors from final models to those of the baseline models (which consist of only main effects). Nine appendices also are included. Appendix A presents technical details about GEM; Appendix B documents the creation and source of the poststratification control totals; and Appendix C contains information on the imputation methodology. Appendix D summarizes the GEM modeling, and the remaining five appendices contain various tables on weighted response rates, percentages of extreme weights and outwinsors, slippage rates, and weight adjustment summary statistics.

2. Generalized Exponential Model for Weight Calibration

In survey practice, design weights are typically adjusted in three steps via the following methods: (1) weighting class adjustments for nonresponse, (2) raking-ratio adjustments for poststratification, and (3) winsorization for extreme weights. The bias introduced by winsorization is alleviated to some extent through poststratification. The nonresponse (nr) adjustment is a correction for bias that is introduced when estimates are based only on responding units; poststratification is an adjustment for coverage (typically undercoverage) bias, as well as for variance reduction (which is possibly due to correlation between the study and control, usually demographic, variables). If weights are not treated for extreme weight adjustment, the resulting estimates, although unbiased, will tend to have low precision.

There are limitations in the existing methods of weight adjustment for nonresponse, poststratification, and extreme weight. For the nonresponse step, there are general raking-type methods, such as the scaled constrained exponential model developed by Folsom and Witt (1994), where the lower and upper bounds can be suitably chosen by using a separate scaling factor. The factor is set as the inverse of the overall response propensity. It would be beneficial to have a model for the nonresponse adjustment factor that incorporates the desired lower and upper bounds on the factor as part of the model. Note that the lower bound on the nonresponse adjustment factor should be 1 because it is interpreted as the inverse of the probability of response for a particular unit. For the poststratification step, the general calibration methods of Deville and Särndal (1992), such as the logit method, allow for built-in lower (L) and upper (U) bounds (for poststratification, typically $L < 1 < U$). However, it would be useful to have nonuniform bounds (L_k, U_k) depending on the unit k, such that the final adjusted weights, w_k, could be controlled within certain limits. An important application of this feature would be weight adjustments to allow the user to have some control over the final adjustment of weights initially identified as extreme weights. It would be advantageous to adjust for bias introduced in the extreme weight adjustment step (such as when extreme weights are treated via winsorization) so that the sample distribution for various demographic characteristics is preserved.

A modification of the earlier method of the scaled constrained exponential model of Folsom and Witt (1994), termed the generalized exponential model (GEM) and proposed by Folsom and Singh (2000), provides a unified approach to the three weight adjustments for nonresponse, poststratification, and extreme weight, and it has the valuable features mentioned previously. The functional form of the GEM adjustment factor is given in Appendix A. It generalizes the logit model of Deville and Särndal (1992), typically used for poststratification, such that the bounds (L, U) may depend on k. Thus, it provides a built-in control on extreme weights, during both nonresponse adjustments and poststratification. In addition, the bounds are internal to the model and can be set to chosen values (e.g., $L_k = 1$ in the nonresponse step). If the frequency of extreme weights is low after the final poststratification, a separate extreme weight adjustment step may not be necessary.

Note that in view of the nonresponse adjustment factor being defined as the inverse of response propensity, GEM requires it to be greater than 1. However, the built-in extreme weight

control feature of GEM essentially defines adjustment factors with regard to the critical value under winsorization. Therefore, although the adjustment factor with regard to the cutoff point is always greater than 1, with regard to the original weight, it can be less than 1.

In fitting GEM to a particular problem, choosing a large number of predictor variables along with tight bounds will have an impact on the resulting unequal weighting effect (UWE) and the percentage of extreme weights. In practice, this leads to somewhat subjective evaluations of trade-offs between the target set of bounds for a given set of factor effects, the target UWE, and the target proportions of extreme weights. The percentage of "outwinsors" (a term coined to signify the extent of residual weights after extreme weight adjustment via winsorization) is probably a more realistic benchmark in determining the robustness of estimates in the presence of extreme weights. Chapter 4 provides details about the GEM process and some practical guidelines about fitting such a model. In particular, an adaptive method based on realized minimum and maximum bounds after setting loose initial bounds is recommended for choosing bounds more objectively.

A large increase in the number of predictor variables in GEM typically would result in a higher UWE, indicating a possible loss in precision. By looking at the change in variance calculated for a model run with the minimal number of predictor variables versus the final model we reached during the weighting process, a more precise measure of loss (or gain) in precision can be obtained for variance of selected study variables. The results are presented in Chapter 6.

3. Predictor Variables in GEM for the 2012 NSDUH

For the 2012 National Survey on Drug Use and Health (NSDUH), the initial set of predictor variables was identical to the set used for the 2011 NSDUH. Exhibit 3.1 shows the definitions and levels of these predictor variables. Typical predictors used for the screener dwelling unit (DU) nonresponse adjustment were State, Quarter, Group-Quarters Indicator, Population Density, Percentage Hispanic or Latino in Segment, Percentage Black or African American in Segment, Percentage Owner-Occupied DUs in Segment, and Segment-Combined Median Rent and Housing Value, which is also called the Socioeconomic Status (SES) indicator. The SES indicator was a composite measure based on (standardized) median rent, median housing value, and the percentage of dwellings that are owner occupied. Typical predictors for the person-level nonresponse adjustments were, in addition to those stated previously, Age, Gender, Race, Hispanicity, and Relation to Householder (i.e., the head of the household). For poststratification, predictors typically used were State, Age, Race, Gender, Hispanicity, and Quarter. In all cases, the model consisted of main effects and some interactions of these predictors. For a separate extreme weight adjustment with the generalized exponential model (GEM) after poststratification, the predictors were the same as those used in the poststratification (ps) adjustment.

Generally, it is desirable to include, whenever possible, poststratification predictors (correlated with the outcome variable) as part of nonresponse predictors (correlated with the response variable) because of the potential variance reduction; this works to offset the variance inflation, which is due to the random controls used in the nonresponse (nr) adjustment. In general, this is not possible because demographic information (often used for poststratification) is not available for nonrespondents. However, with a two-phase design, such as NSDUH's, this problem does not exist because the screener data contain the necessary information. There is, of course, the cost in time and effort required to edit and impute the screener-based predictors in advance of this nonresponse adjustment. Many times, the need to edit, impute, or both edit and impute nonresponse predictors for the full sample, which consists of respondents and nonrespondents, is eliminated because the poststratification and nonresponse adjustments are combined into a single poststratification step. However, the processes leading to nonresponse and coverage errors are likely to be different enough to benefit from separate modeling. The nonresponse-adjustment models also can benefit from bias reduction when segment-level variables, such as the percentage of owner-occupied DUs, are included in the model. Population totals for these segment-level variables have not been developed for use as poststratification controls.

Exhibit 3.1 Definition of Levels for Variables

Age (years)
1: 12-17, 2: 18-25, 3: 26-34, 4: 35-49, 5: 50+[1,4]

Gender
1: Male, 2: Female[1]

Group Quarters Indicator
1: College Dorm, 2: Other Group Quarter, 3: Non-Group Quarter[1]

Hispanicity
1: Hispanic or Latino, 2: Non-Hispanic or Latino[1]

Percent of Owner-Occupied Dwelling Units in Segment (% Owner-Occupied)
1: 50% - 100%,[1] 2: 10% - 50%, 3: <10%

Percent of Segments That Are Black or African American
1: 50% - 100%, 2: 10% - 50%, 3: <10%[1]

Percent of Segments That Are Hispanic or Latino
1: 50% - 100%, 2: 10% - 50%, 3: <10%[1]

Population Density
1: MSA 1,000,000 or More, 2: MSA Less than 1,000,000, 3: Non-MSA Urban, 4: Non-MSA Rural[1]

Quarter
1: Quarter 1, 2: Quarter 2, 3: Quarter 3, 4: Quarter 4[1]

Race (3 level)
1: White,[1] 2: Black or African American, 3: Other

Race (5 level)
1: White,[1] 2: Black or African American, 3: American Indian or Alaska Native, 4: Asian, 5: Two or More Races

Relation to Householder
1: Householder or Spouse,[1] 2: Child, 3: Other Relative, 4: Nonrelative

Segment-Combined Median Rent and Housing Value (Rent/Housing)[2]
1: First Quintile, 2: Second Quintile, 3: Third Quintile, 4: Fourth Quintile, 5: Fifth Quintile[1]

States[3]

Model Group 1:	1: Connecticut, 2: Maine, 3: New Hampshire, 4: Rhode Island, 5: Vermont, 6: Massachusetts[1]
Model Group 2:	1: New Jersey,[1] 2: New York, 3: Pennsylvania
Model Group 3:	1: Illinois, 2: Indiana,[1] 3: Michigan, 4: Wisconsin, 5: Ohio
Model Group 4:	1: Iowa, 2: Kansas, 3: Minnesota, 4: Missouri,[1] 5: Nebraska, 6: South Dakota, 7: North Dakota
Model Group 5:	1: Delaware, 2: District of Columbia, 3: Georgia,[1] 4: Maryland, 5: North Carolina, 6: South Carolina, 7: Virginia, 8: West Virginia, 9: Florida
Model Group 6:	1: Alabama, 2: Kentucky, 3: Mississippi, 4: Tennessee[1]
Model Group 7:	1: Arkansas,[1] 2: Louisiana, 3: Oklahoma, 4: Texas
Model Group 8:	1: Colorado, 2: Idaho, 3: Montana, 4: Nevada, 5: New Mexico, 6: Utah, 7: Wyoming, 8: Arizona[1]
Model Group 9:	1: Alaska, 2: Hawaii, 3: Oregon, 4: Washington,[1] 5: California

MSA = metropolitan statistical area.

[1] The reference level for this variable. This is the level against which effects of other factor levels are measured.

[2] Segment-Combined Median Rent and Housing Value (also known as the Socioeconomic Status [SES] indicator) is a composite measure based on rent, housing value, and percent owner occupied.

[3] The States assigned to a particular model are based on census divisions.

[4] The age group 50+ was further broken down into 50-64 and 65+ for Person-Level Poststratification Adjustment, for which 65+ was used as the reference level.

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

Heuristically, the suitable number of State-specific controls should depend on the size of the realized sample in each State; because of this, the nature of the problem of too many controls in nonresponse- and poststratification-adjustment models is State specific. Therefore, for the 2012 NSDUH, the strategy proposed by Singh, Penne, and Gordek (1999) was followed and is discussed in the following paragraphs. Also using Singh et al. (1999), some general guidelines were used to choose an initial set of State-specific controls, and the initial set was modified iteratively as problems in maintaining them arose. The process began with the baseline model of one-factor effects and then proceeded with the addition of second- and third-order effects; collapsing was performed as necessary, depending on the individual State sample sizes. To obtain more precise State-level estimates, every effort was made to include as many important State-specific covariates as possible in models for nonresponse and poststratification weight adjustments. These covariates typically were defined by sociodemographic domains. However, keeping a multitude of State-specific covariates, especially higher order interactions, was not possible because individual State sample sizes were not large enough to support stable estimation of an adequate number of model parameters. Therefore, a hierarchical order was used for including covariates in the model; the order started with covariates at the national level, followed by covariates at the census division level within the Nation, then covariates at the combined State level within the census division, and finally, whenever possible, covariates at the State level within the combined States.

When adding certain covariates to the model resulted in parameters that could not be estimated or were unstable, the hierarchy strategy mentioned previously was used to combine States within a census division so that covariates at the combined level could be included. However, this problem typically arose with State-specific higher order interactions, and States were collapsed only when combining levels of covariates within a State was not a reasonable alternative. This was thought to be beneficial in obtaining more reliable State-level estimates using small area estimation (SAE) techniques. The eight large States were not combined with other smaller States, to the extent possible, so that direct State-level estimates could be obtained without relying on SAE.

As an objective check for the suitability of the number of factors, once a satisfactory convergent model was obtained (see Section 6.5 for details), the relative efficiency of a more complex model (with many effects) versus a simpler model (with fewer effects) was measured. In addition to the relative efficiency, the increase in the unequal weighting effect (UWE) was checked.

For the 2012 NSDUH data, as for the previous years' data, it became apparent that the number of controls could be very high (in excess of 1,000). This many controls would be computationally prohibitive because the implementation of GEM involves iterative steps, and a matrix (whose dimension corresponds to the number of controls) must be inverted in each of these iterations. A solution would be to use separate models within groups of States rather than a single overall model. It can be shown that, if effects (two-factor or higher order) are always collapsed within a group of States, then fitting an overall model of GEM is equivalent to fitting separate models for each group. In this way, the computational problems associated with too many controls could be reduced. Therefore, in the 2012 NSDUH, as in the 1999 through 2011 surveys, nine model groups corresponding to the nine census divisions were used.

4. Practical Aspects of Implementing GEM for the NSDUH

As explained in Chapter 2, the generalized exponential model (GEM) can be used for nonresponse (nr) adjustment, poststratification (ps), and extreme weight adjustment (see Exhibit 4.1 for a schematic presentation of the steps). These steps were implemented using the GEM macro developed at RTI. A detailed discussion can be found in Chen, Penne, and Singh (2000).

4.1 Definition of Extreme Weights of Sampling Weights

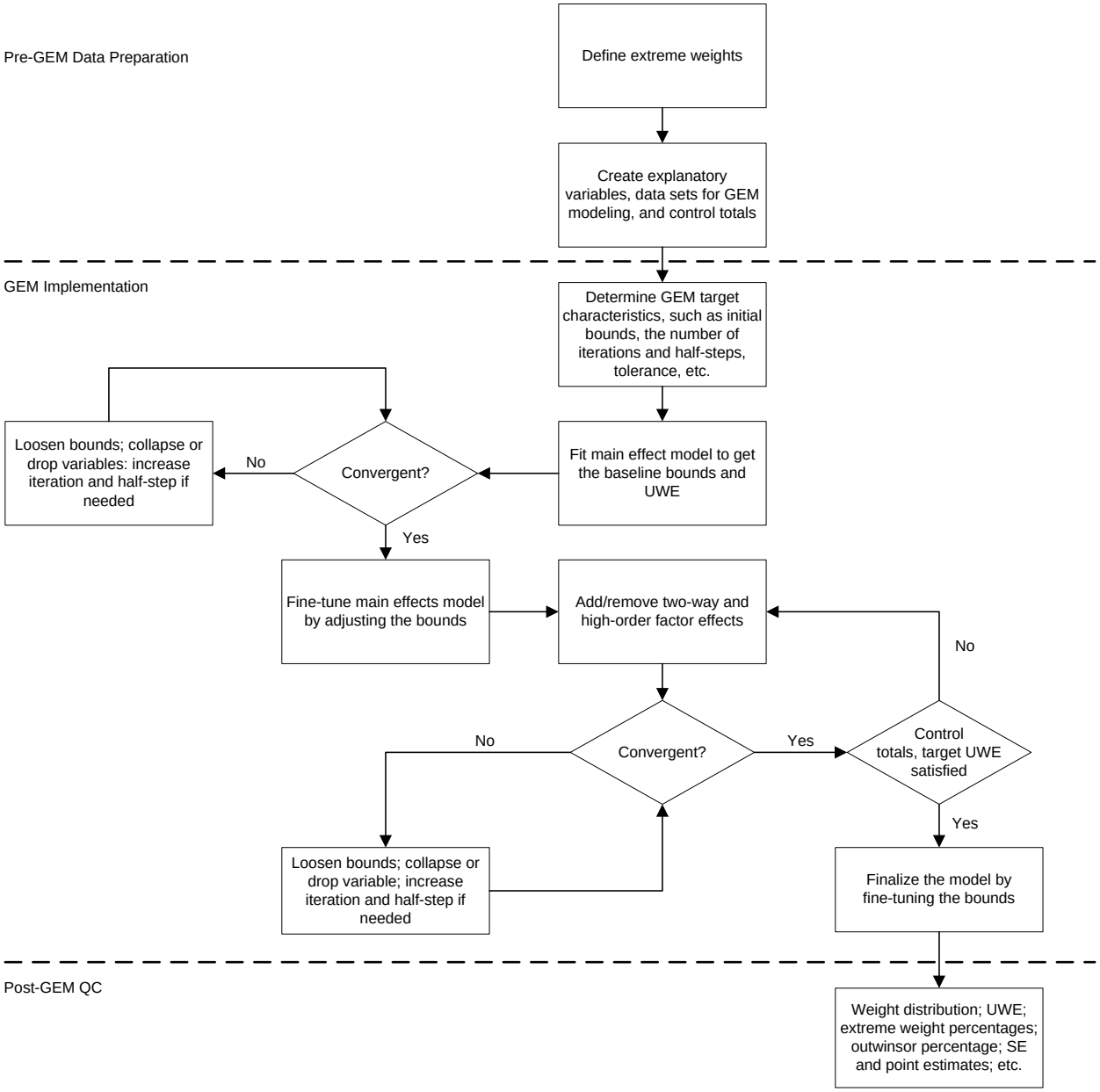
An important aspect of GEM is the built-in provision of extreme weight adjustment. Sampling weights for the survey generally were classified as extreme (high or low) if they fell outside the commonly used interval defined by the median $\pm 3 \times$ interquartile range (IQR) for some prespecified domains; these domains were usually defined by design strata, taking into account deep stratification. For example, the dwelling unit (DU)-level weight for the 2012 National Survey on Drug Use and Health (NSDUH) used the State sampling (SS) region as the domain. The person-level weight adjustments used a hierarchy of four domains: (1) SS region × Age group, (2) State × Age group, (3) SS region, and (4) State. A minimum of 30 observations was required for defining the boundaries, or critical values, for extreme weights. If this minimum was not met at the lower level, the next level up in the hierarchy was used.

Although the SS region × Age group domain corresponded to a deep stratum, it could be unsuitable for defining extreme weights because of insufficient sample sizes. So, collapsing SS regions within a State gave rise to such domains as State × Age group. Even at this level, sample sizes could be insufficient, so SS regions and, later, States themselves could be used as domains to define extreme weights. The critical values for low and high extreme weights are denoted by $b_{k(l)}$ and $b_{k(u)}$, respectively. The critical points for extreme weights within GEM modeling were defined as the median $\pm 2.5 \times$ IQR, which was conservative when compared with the commonly used standard of the median $\pm 3 \times$ IQR. This is because, to better prevent the adjusted weights from crossing the standard boundary and those at or beyond the boundary, weights near but below it (which have the most potential to become extreme) were treated as extreme by GEM.

4.2 Definition of Lower and Upper Bounds for Weight Adjustment Factors

For implementing extreme weight control via GEM, the variable m_k was defined as $b_{k(u)} / w_k$ for high extreme weights, and $b_{k(l)} / w_k$ for low extreme weights, where w_k represents the sampling weight before adjustment, and $b_{k(u)}, b_{k(l)}$ denote the critical values for the extreme weights. (Note that under this definition, nonextreme weights has a value of 1 for m_k; for high extreme weights, the more extreme the weight is, the smaller m_k will be; conversely for low extreme weights, the more extreme the weight is, the bigger m_k will be.)

Exhibit 4.1 Generalized Exponential Model Steps



GEM = generalized exponential model; SE = standard error; UWE = unequal weighting effect.

The upper and lower bounds for the adjustment factors were defined, respectively, as the product of m_k and the upper and lower boundary parameters specified in the modeling of GEM.

GEM allows inputs of three different upper (U) and lower (L) boundary parameters (L_1, and U_1, L_2, and U_2, L_3, and U_3, respectively) for high, non-, and low extreme weights. By applying a small upper boundary parameter for high extreme weights and a large lower boundary parameter for low extreme weights, the extreme weights could be controlled in the modeling.

GEM also requires specification of centers (C), such that L < C < U. For nonresponse adjustment, it was constructive to require all adjustments to be greater than 1 because the adjustments represented the inverse of response propensities. The value of C in this case was chosen as the inverse of the overall response propensity. For poststratification, centers were set to 1 so the adjusted weights would not be too far away from the original design weights. Here, lower bounds were chosen to be less than 1 and upper bounds were greater than 1 because the control totals could be larger or smaller than the estimated totals based on the design weights. The extreme weight adjustment is analogous to the poststratification adjustment (see Appendix A) in that it is a repeated poststratification with tighter bounds for extreme weights identified after the poststratification step. Section 4.7 gives guidelines for the choice of lower, center, and upper parameters.

4.3 Definition of Control Totals

GEM modeling for nonresponse adjustment, poststratification, and extreme weight adjustment involved estimation of parameters of the adjustment factor model, such that specified control totals were satisfied. There were two types of control totals. For nonresponse adjustment, the control totals were from the full sample (i.e., respondents and nonrespondents), while for poststratification, control totals were obtained from external sources, such as the Census Bureau or a large first-phase screener sample. Specifically, for the 2012 NSDUH, the control totals for various domains for the selected person-level poststratification adjustment (sel.per.ps, see Section 5.2.2) were obtained from the first-phase sample containing roster information, and the control totals for the respondent person-level poststratification (res.per.ps, see Section 5.2.4) were obtained from the Census Bureau's Postcensal Population Estimates for various demographic domains. Controls used for extreme weight adjustment were the same as those for poststratification because they were based on the poststratified weight. (See Appendix B for more information.)

4.4 Efficient Computation Using Grouped Data

Because adjustment factors remained the same for units (DUs or persons) having common values for all explanatory variables used in the model, the size of the sample data was reduced by grouping units having common values of these variables. Also, within the groupings, the units with extreme weights were further grouped such that, in addition to the common values of the explanatory variables, they also had common values of m_k. This significantly saved computation time, especially because the original sample size was large. Modeling GEM with grouped data was implemented by treating each group as a single record, with the associated weight defined as the sum of the individual weights in the group. Note that when using GEM with grouped data, the unequal weighting effect (UWE) and *t*-test statistics normally produced in

the output would be misleading because the weights in grouped data are sums of the weights for the individual units within each group. Also, the definition of variance estimation stratum (VESTR) and replicates (VEREP) required for variance calculation would not be correct. To avoid these misleading results from using the grouped data, the final model was rerun with the full (ungrouped) data.

4.5 Steps in GEM Fitting

Exhibit 4.1 depicts the GEM steps. After specifying the GEM parameters, such as the initial upper and lower bounds, the number of the Newton-Raphson iterations and half-steps, and the type of weight adjustment (nonresponse adjustment, poststratification, or extreme weight adjustment), a forward selection method for modeling was used. A model with only main effects and loose bounds was first fit to obtain a set of realized baseline upper and lower bounds for extreme and nonextreme weights and to calculate a baseline UWE. Next, using the realized bounds, as many higher order interactions as possible were added to the model to help reduce bias, without unduly increasing the UWE and the extreme weight percentages. Convergence problems were addressed by loosening lower bounds and upper bounds and collapsing or dropping variables. In GEM, *t* tests and *p* values for significance of various effects could be computed for a previously converged model, which would be helpful in deciding about the collapsing of effects when convergence problems arose with realized bounds.

For this application, "collapsing" implies combining the "levels" of variables with other levels explicitly present in the model, while "dropping" implies combining with the reference levels, which are not explicitly represented in the model. Collapsing or dropping lower order interactions had a direct impact on the inclusion of the number of higher order interactions. For the 2012 NSDUH, when adding higher order terms, all previously selected explanatory variables were retained in the model. Possible reasons for nonconvergence included explanatory variables corresponding to domains with small sample sizes, or domains with large discrepancies between estimated totals based on the initial weights and the target control totals. The variables causing problems with convergence were identified by the high magnitude of the estimated model parameters. Once the explanatory variables were finalized, finer adjustments of upper bounds and lower bounds could optimize the model by reducing UWE and the extreme weight percentages.

4.6 Quality Control Checks

The distributions of the weights before and after each adjustment were compared to uncover any unusual impact of the weight adjustment on the initial weights. In addition to the weight distributions, the ratios of the maximum weight to the mean weight and the UWEs were compared across various domains both before and after each adjustment. The percentages of extreme weights were checked after each adjustment to see how effective the modeling was in controlling extreme weights. Coverage bias analysis based on the slippage rates also was conducted to check the impact of poststratification on various noncontrolled domains (i.e., those factors that were dropped or collapsed in the model).

4.7 Practical Guidelines in Using GEM

1. Collapsing checks for domains with small sample sizes. The number of observations in various domains defined by levels of the factor effects was examined. If the domain sample size was 0 and the control total corresponding to this domain also was 0, the factor generally was dropped. This automatically collapsed the factor level with the reference level; however, if the control total was not 0, the factor could not be dropped because collapsing the domains together for the sample also would collapse the population domains together. The result would be that control totals could not be met for the reference levels involved. In these cases, the factor level corresponding to a 0 domain sample size should be collapsed with another level for which we are willing to compromise on satisfying the control total.

In general, domains with small sample sizes may cause problems during GEM modeling and prevent the model from converging. For the 2012 NSDUH, if the model did not converge because a domain sample size was small, the corresponding factor effect was collapsed with another effect based on substantive considerations. For example, if State was involved, then it was better, in general, to collapse within States; collapsing of geographically adjacent States was done only when there was no other reasonable alternative (see Section 4.8 for more details). The necessity of collapsing was checked at each stage of model enlargement in the forward selection of factors. If variables were collapsed at a previous stage, the corresponding factor levels were also collapsed using the hierarchy principle at succeeding stages involving higher order factor effects.

2. Singularity checks. As in the case of collapsing checks, singularity checks (i.e., linear dependence checks of realized value columns of the predictors) were performed for the baseline model; in addition, they were performed at each stage of model enlargement because singularities depended on what other predictors were in the model. (Note that, although all variables were linearly independent of each other, it was possible for the columns of their realized values to have been linearly dependent.) For nonresponse adjustment, any variable that was a linear combination of other variables was either dropped from the model or collapsed with other variables. To decide whether to drop or to collapse, a singularity check was performed for both respondents only and the full sample. If both samples showed the same set of variables causing singularity, then these singularity variables could be dropped; if not, collapsing needed to be performed. For poststratification adjustment, any variable that was a linear combination of other variables had to be collapsed with other variables because the variables corresponding to poststratification controls typically were linearly independent.

3. Finding the initial factor set. After the collapsing and singularity checks, the remaining factor effects at a given stage of model enlargement formed the initial factor set.

4. Baseline model. Starting with the model consisting of all one-factor effects from the initial factor set, a convergent version was found (after any required collapsing) under no restrictions on the bounds. The model was optimized by trying to reduce the UWE and tighten the bounds. If necessary (to obtain convergence), factors corresponding to large parameter estimates were collapsed. As an option, *p* values could have been used to determine which factors to collapse.

5. Baseline plus two-factor effects. All two-factor interactions from the initial factor set were added to the baseline model. A convergent version under no bound restrictions then was found, and the model was optimized using criteria described in Guideline 4. The non-State two-factor effects were added first, and then, in a separate step, the State two-factor effects were added.

6. Baseline with two and higher order factor effects. Starting with the optimized model from Guideline 5, the higher order factor effects were added—first the non-State three-factor effects, then, in a separate step, the State three-factor effects. Again, criteria from Guideline 4 were followed to obtain an optimal model.

7. Optimizing a model with respect to the target model characteristics. These are summarized in the following points:

- For each step of model enlargement, the UWE for the initial weights was computed. It was allowed to increase up to 20 percent, or the maximum allowable UWE (generally under six), whichever was lower.
- The following guidelines, based on empirical considerations, were used for setting the bounds. In the case of poststratification and separate extreme weight adjustments, the center was set as $C_1 = C_2 = C_3 = 1$. Instead of tightening the bounds to as close to 1 as possible, as was done for surveys prior to 2002, we used an adaptive approach to choose the bounds starting from the 2003 NSDUH; that is, starting with loose bounds of (0.1, 10), we performed GEM iteratively four times, each with the realized bounds from the previous iteration. The final bounds for nonextreme weights were desired to be around (0.2, 5). The iterations based on the adaptive approach generally met this desired criterion. If this was not the case, then collapsing of some model variables was allowed to meet this criterion. Finally, the bounds U_1 and L_3 were further tightened to be as close to 1 as possible to better control high and low extreme weights, while maintaining $L_3 \geq L_2$ and $U_1 \leq U_2$.
- In the case of nonresponse, the centers were set equal to the common value of the overall inverse response propensity, and all the three lower bounds (L_1, L_2, and L_3) were set to 1. Next, starting with the loose bounds of (1, 10), the bounds were chosen iteratively as mentioned above using the realized bounds from the previous GEM iteration. The bounds U_1 and L_3 were further tightened to as close to center as possible, while maintaining $L_3 \geq L_2$ and $U_1 \leq U_2$.
- Targets for the maximum acceptable percentages of extreme weights and outwinsors within GEM for nonresponse and poststratification were as follows: 3 percent for the unweighted extreme weights, 15 percent for weighted extreme weights, and 5 percent for outwinsors. These percentages are liberal and serve as guidelines only. In practice, reducing them by half is preferable. If these guidelines were not met after all stages of calibration, a separate GEM for adjustment of extreme weights was implemented after poststratification.

8. Evaluation measures. After each stage of model enlargement, various characteristics were examined for large values. These included the UWE, the ratio of the maximum to the mean

for adjusted weight, the percentage of extreme weights and outwinsors, the distance between the total sample weighted count and the target population count (i.e., slippage rates for different domains), and other characteristics, such as weight summary statistics. In addition, the distributions of adjustment factors were checked for highly asymmetric tails. With the set of realized bounds for the final model, the baseline model was rerun, and then point estimates and SEs for selected outcome variables for the two models were compared. Generally, the two estimates were likely to be close, but not the SEs. The SEs for the final model were expected to be smaller but, at times, could be larger. Larger SEs were identified and examined because they could be an indication of instability of the model parameter estimates because of possible overfitting or insufficient sample sizes. In such situations, the final model was revised to get a more parsimonious model.

4.8 Variable Collapsing Guide

As discussed in Section 4.5, convergence problems in GEM were solved by either loosening bounds or collapsing model variables. Grouping proposed levels into a smaller number of categories could be done in several ways, but care was taken so that they remained meaningful. When constructing the model and attempting to obtain convergence, maintenance of logical groupings was a top priority. The following are some general guidelines that were followed when collapsing variables.

- *Ordinal variables*. Most of the proposed explanatory variables were ordinal. Thus, collapsing was done in a meaningful way, following the order. For example, the combined rental/house quintile had five levels (i.e., 1st, 2nd, 3rd, 4th, and 5th quintile) with the 5th quintile set for the reference. If the 4th quintile needed to be collapsed, it would be collapsed with either the 3rd or 5th quintile.
- *Age groups*. Age group had five levels: 12 to 17, 18 to 25, 26 to 34, 35 to 49, and 50 or older (50 or older was further broken down into 50 to 64 and 65 or older for the person-level poststratification adjustment and the person-level extreme weight adjustment to increase the accuracy of estimates for these age groups). For the main effects, the age covariate with five or six levels was easy to incorporate in the model. For the interactions, every effort was made to maintain the age group, and, therefore, collapsing was performed within age groups first. Collapsing across age groups occurred only if the age groups could not be maintained separately.
- *Large and adjacent States*. In the main effects, fitting States separately in the model was not a problem. For the State-specific interactions, collapsing was done within the State first, collapsing with other adjacent States was done only if needed. For the eight States with large sample sizes (California, Florida, Illinois, Michigan, New York, Ohio, Pennsylvania, Texas), every effort was made to preserve all factor levels within States so that direct estimates could be made for the large States.
- *Race*. In the main effects and State-specific two-factor interactions, Race had five levels (white, black or African American, American Indian or Alaska Native, Asian, and two or more races), while in non-State-specific two- and three-factor effects, Race had three levels (white, black or African American, and other). If maintaining all five levels was difficult in the main effects or State × Race interactions, the following guidelines were followed: (1) collapse American Indian or Alaska Native

and Asian if either of them caused a convergence problem; (2) collapse black or African American with two or more races if black or African American caused a convergence problem; (3) collapse two or more races with American Indian or Alaska Native or Asian, whichever had a smaller sample size, if two or more races caused a convergence problem; and (4) collapse American Indian or Alaska Native, Asian, and two or more races, or collapse all nonwhite Race groups if necessary. In the State × Race interactions, collapsing Race was done within State. If the three-level Race could not be maintained, the levels were collapsed to white and nonwhite.

5. Weight Calibration at Phase I Dwelling Unit and Phase II Person Levels

The 2012 National Survey on Drug Use and Health (NSDUH) was based on probability sampling so that valid inferences could be made from survey findings to the target population. Probability sampling refers to sampling in which every unit on the frame is given a known, nonzero probability of inclusion in the survey. This is required for unbiased estimation of the population total. The assumption of nonzero inclusion probability for every pair of units in the frame also is required for unbiased variance estimation. The basic sampling plan involved four stages of selection across two phases of design (see Exhibit 5.1). The first phase of the design was the dwelling unit (DU) level, and the second phase was the person level. The four stages of selection were as follows: within Phase I, (1) the selection of census tracts within the State sampling (SS) region; (2) the selection of segments within each sampled census tract; (3) the selection of DUs within these segments; and within Phase II, (4) the selection of eligible individuals within DUs (Table 5.1). Specific details of the sample design and sample selection procedures can be found in the 2012 NSDUH sample design report (Morton, Martin, Shook-Sa, Chromy, & Hirsch, 2013).

As part of the postsurvey data-processing activities, analysis weights were calculated for the 2012 NSDUH respondents that reflected the selection probabilities from various stages of the sample design. These sample weights were adjusted at both the DU level (screening sample) and person level (drug questionnaire sample) to account for bias due to extreme weights, nonresponse, and coverage.

The final Phase I DU-level and Phase II person-level sample weights for the 2012 NSDUH sample are products of several factors (see Exhibit 5.1), each representing either a probability of selection at some particular stage or some form of extreme weight, nonresponse, or poststratification adjustment. In the following sections, these components are described in greater detail. In summary, the first 10 factors are defined for all screener-complete DUs and reflect the fully adjusted DU-level weight. The latter five components reflect the person-level selection within each screened DU, as well as any additional adjustments for person-level extreme weight, nonresponse, and poststratification error. Note that the unconditional, final person-level weights for the 2012 NSDUH sample are the product of all 15 weight components, as illustrated in Exhibit 5.1.

Exhibit 5.2 shows the U.S. Census Bureau divisions and model groups used in the 2012 NSDUH person-level weight calibration.

Exhibit 5.1 Summary of 2012 NSDUH Sample Weight Components

Phase I Dwelling Unit Level

Design Weight Components	
#1	Inverse Probability of Selecting Census Tract
#2	Inverse Probability of Selecting Segment
#3	Quarter Segment Weight Adjustment
#4	Subsegmentation Inflation Adjustment
#5	Inverse Probability of Selecting Dwelling Unit
#6	Inverse Probability of Added/Subsampled Dwelling Unit
#7	Dwelling Unit Release Adjustment

Weight Adjustment Components	
#8	Dwelling Unit Nonresponse Adjustment ***(res.sdu.nr)****
#9	Dwelling Unit Poststratification Adjustment ***(res.sdu.ps)****
#10	Dwelling Unit Extreme Weight Adjustment ***(res.sdu.ev)****

Phase II Person Level

Design Weight Components	
#11	Inverse Probability of Selecting a Person within a Dwelling Unit

Weight Adjustment Components	
#12	Selected Person-Level Poststratification Adjustment to Screener Data Controls ***(sel.per.ps)****
#13	Person-Level Nonresponse Adjustment ***(res.per.nr)****
#14	Person-Level Poststratification Adjustment ***(res.per.ps)****
#15	Person-Level Extreme Weight Adjustment ***(res.per.ev)****

* These adjustments use the generalized exponential model (GEM), which also involves pre- and postprocessing in addition to running the GEM macro. See Exhibit 4.1. For computational feasibility, all weight adjustments were done using the nine model groups based on U.S. Census divisions defined in Exhibit 5.2.

Exhibit 5.2 U.S. Census Bureau Divisions/Model Groups

Model Group	Census Division
1	**New England (6 States)**
	Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont
2	**Middle Atlantic (3 States)**
	New Jersey, New York, Pennsylvania
3	**East North Central (5 States)**
	Illinois, Indiana, Michigan, Ohio, Wisconsin
4	**West North Central (7 States)**
	Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota
5	**South Atlantic (8 States and the District of Columbia)**
	Delaware, District of Columbia, Florida, Georgia, Maryland, North Carolina, South Carolina, Virginia, West Virginia
6	**East South Central (4 States)**
	Alabama, Kentucky, Mississippi, Tennessee
7	**West South Central (4 States)**
	Arkansas, Louisiana, Oklahoma, Texas
8	**Mountain (8 States)**
	Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Utah, Wyoming
9	**Pacific (5 States)**
	Alaska, California, Hawaii, Oregon, Washington

Table 5.1 Sample Size, by Model Group for Each Stage of Sampling

Model Group	Eligible DU	Completed DU	Eligible Persons	Selected Persons	Completed Persons
1	15,380	13,365	27,964	7,174	5,615
2	25,030	19,503	42,272	11,127	8,158
3	33,444	28,338	59,924	16,573	12,800
4	15,937	14,672	29,581	7,926	6,342
5	30,681	26,239	54,883	13,632	10,883
6	8,961	8,223	16,782	4,534	3,656
7	14,468	13,032	27,530	8,113	6,347
8	17,185	15,671	32,856	9,054	7,282
9	17,500	14,830	33,849	9,523	7,226
Total	178,586	153,873	325,641	87,656	68,309

DU = dwelling unit.

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

In the 2012 NSDUH, as in the 2000 through 2011 surveys, the order of the extreme weight adjustment step at both the DU and person level was different from the order used in the 1999 National Household Survey on Drug Abuse (NHSDA) computer-assisted interviewing (CAI). In the 1999 NHSDA CAI, the extreme weight adjustment step was introduced before nonresponse and poststratification, which was analogous to the traditional trimming step before nonresponse and poststratification. In the 1999 NHSDA, the initially identified extreme weights were held fixed at their winsorized values, and the nonextreme weights were adjusted so that the original sample distribution of the weights for various domains was preserved. As a better alternative for the surveys after 1999, the generalized exponential model (GEM) first was allowed to control the extreme weights during the nonresponse and poststratification steps, and then a separate extreme weight adjustment step was performed after poststratification, if necessary. This step would be like a repeated poststratification, except that the extreme weights identified after poststratification would have tighter bounds, thus preserving the sample distributions in various domains (equivalent to satisfying the poststratification controls). For the 2012 NSDUH, the extreme weight adjustment step was not necessary either at the DU level or at the person level.

5.1 Phase I Household-Level Weight Components

5.1.1 Weight Components #1 to #7: Selection of a Dwelling Unit

The first seven components in the Phase I sample weights reflect the probability of selecting the DUs. These components were derived from (1) the probability of selecting the census tract within each State SS region, (2) the probability of selecting the segment within each census tract, (3) a quarter segment weight adjustment, (4) a subsegmentation inflation factor, (5) the probability of selecting a DU from within each counted and listed sampled segment, (6) the probability of inclusion of added DUs, and (7) DU percent release adjustment.

Segments were selected with probabilities representing a full year's sample; therefore, Weight Component #3 was set to 1 in the 12-month analysis and was set to 2 in the 6-month analysis (because only half of the segments were used in the analysis). Also, when the field staff, who were responsible for counting and listing, traveled to a specified segment, occasionally they may have found the number of potential DUs to be much greater than what the sample frame (constructed from 2000 U.S. Census Bureau data adjusted for 2005 Claritas projections) indicated. This happened either because of errors in the frame or, more commonly, because of rapid growth in a particular geographic area. When this occurred, the original segment was partitioned and a subsegment was randomly selected. There was an occasional second subsegmentation step when the initial partitioning of segments was insufficient due to out-of-date census counts or the segment was still too large to list after the original subsegmentation. Weight Component #4 (i.e., subsegmentation inflation factor) is an adjustment that accounts for this selection process.

As noted in the 2012 and earlier sample design reports, a lengthy process of determining the optimal DU sample was used during the design of the survey. Weight Component #5 is a result of this process and is equal to the inverse of the DU sample size divided by the total number of DUs counted and listed within a selected segment.

Furthermore, the list of DUs, which includes housing units and group quarters, was constructed by the counting and listing staff during the summer and fall of 2010. Because the listing was done a short time before the 2012 screening and interviewing activities began, no major discrepancies were expected. However, such factors as new construction, demolition, and inaccurate listing were present in some cases. More commonly, DUs may have been "hidden" and, therefore, overlooked by the counter and lister. For all DUs to be given a chance of being selected, the NSDUH has a procedure for locating and adding missed DUs. The current procedure requires field interviewers (FIs) to look both on the property of selected DUs and between each DU and the next listed DU (half-open interval [HOI] rule). In order to make the HOI rule easier to implement in the field, starting from the 2000 survey, the rule was modified such that the HOI would be closed on each map page. Therefore, if the selected DU was the last on a page, the "next listed DU" would be the first one listed on the same page. If the number of added DUs linked to any particular DU did not exceed 5, or if the number for the entire segment was less than or equal to 10, the FI was instructed to consider these DUs as part of his or her assignment. However, if either of these limits was exceeded, the FI would contact RTI for subsampling to be considered. Weight Component #6 accounts for any subsampling that occurred because of added DUs.

To account for corrections, modifications, or both that occurred during the process of design optimization, an additional sample was included throughout all four quarters. Weight Component #7 is the adjustment for the percentage of the DU sample released to FIs in these quarters.

For more detailed information on Weight Components #1 through #7, refer to the 2012 NSDUH sample design report (Morton et al., 2013).

5.1.2 Weight Component #8: Dwelling Unit–Level Nonresponse Adjustment

After DUs were selected, an FI was sent to the DU to screen the residence. Failure to obtain the screening interview from eligible DUs represented the first type of nonresponse encountered in the survey. To account for this nonresponse, as in previous surveys, the (unconditional) sample weights up to this point (equal to the product of Weight Components #1 through #7) were adjusted using a multiplicative adjustment factor derived from modeling response propensity via GEM.

5.1.3 Weight Component #9: Dwelling Unit–Level Poststratification Adjustment

The screener data provided a large sample with information on some demographic variables for the households; therefore, as in two-phase sampling, the screener dwelling unit (SDU) weights first were adjusted for nonresponse and poststratification. Later, estimates for household variables (which were based on screener data) were used as control totals for weight adjustments at the second phase and for person pair-level weights. This was useful because, unlike census controls that were available for individual persons, no controls were available for person pairs. Note that for SDU poststratification, census controls still could be used because each SDU's contribution was computed as the number of persons in the SDU who had certain demographic characteristics multiplied by the SDU weight. It follows that, although explanatory variables used for modeling the weight adjustment were counts instead of binary (0/1), as is often the case, person-level census controls still could be used. For example, age group had five

categories (12 to 17, 18 to 25, 26 to 34, 35 to 49, and 50 or older); in SDU poststratification, category 12 to 17 was the number of the persons in this age category within a DU, and so on. The intercept was the total number of persons in the DU, which varied by SDU because SDU size was not constant. Note that when defining interaction control variables for count variables, the corresponding count variables were not simply multiplied, as was done for the binary case; instead, the counts for the category defined by the interaction term (say, Age × Gender) were used.

In addition, the screening process only required the reporting of age for each person rostered; as a result, some fields of demographic information (e.g., race, Hispanic or Latino origin, gender, and two or more races) were missing. Missing data for race and Hispanic or Latino origin were imputed using the predictive mean neighborhood (PMN) methodology (see Appendix C). The probability of observing race (white, black or African American, American Indian or Alaska Native, Asian, and two or more races) was modeled using PROC MULTILOG in SUDAAN®, and the probability of observing Hispanic or Latino origin was modeled using PROC LOGISTIC in SAS. Those probabilities were used in computing predictive means and delta neighborhoods. The "hot deck" method then was used to randomly pick a donor from the neighborhood to impute a missing value for each case. Missing data for gender were imputed using an unweighted hot-deck methodology (see Appendix C). The data file was sorted by auxiliary variables that were considered relevant to the variable being imputed. The sort order of these auxiliary variables was chosen to reflect the degree of importance of the auxiliary variables in relation to the variable being imputed. Exhibit 5.3 displays the order in which demographic variables were imputed, along with explanatory variables used in the model or in hot-deck sorting.

Exhibit 5.3 Imputed Demographic Variables and Corresponding Explanatory or Auxiliary Sort Variables

Imputed Variable	Methodology	Explanatory or Auxiliary Sort Variables
Race	Multivariate predictive mean neighborhood (MPMN)	Census region, household type (white, black or African American, Hispanic or Latino), percent of segments that are black or African American, percent of segments that are Hispanic or Latino, percent of owner-occupied dwelling units in segment, segment-combined median rent and housing value, age group
Hispanic or Latino Origin	Univariate predictive mean neighborhood (UPMN)	Census region, imputed race, household type (white, black or African American, Hispanic or Latino), percent of segments that are black or African American, percent of segments that are Hispanic or Latino, percent of owner-occupied dwelling units in segment, segment-combined median rent and housing value, age group
Gender	Hot deck	Census division, imputation-revised Hispanic or Latino origin, imputation-revised race and a random sort number

5.1.4 Weight Component #10: Dwelling Unit–Level Extreme Weight Adjustment

The product of Weight Components #1 through #9 was checked to see if the extreme weight adjustment step was needed. Using the SS region as the domain for the extreme weight definition, weights were defined as extreme if they were outside the range defined by the median

±3 × interquartile range (IQR). Because the unweighted, weighted, and winsorized extreme weight percentages were not high, the extreme weight adjustment was not necessary (see results in Appendix F). Therefore, Weight Component #10 was set to 1 for every DU for which roster information was collected (i.e., every DU with a completed screener).

After this adjustment was completed, the final DU weight was calculated as the product of Weight Components #1 through #10 described previously. This adjusted weight was used to compute household-level estimates from the screener data. It also was used to compute person-level estimates derived from the full roster sample. In addition, these 10 weight components became the first 10 components of the final interview respondent sample weight. The remaining five weight components discussed in the next section account for the person probability of selection for those persons for which a NSDUH interview was sought; they also account for person-level nonresponse, extreme weights, and coverage errors resulting from the last stages of the sample design.

Details on the final models used for DU nonresponse (nr) and poststratification (ps) adjustment for each respective model group can be found in Appendix D.

Table 5.2 presents the weight distribution for design-based weight and unequal weighting effect (UWE) before the implementation of any weight adjustment and after the DU-level nonresponse adjustment and poststratification.

Table 5.2 Weight Distribution for Design-Based Weight and Weight after DU-Level Adjustments

	Minimum	25% Percentile	Median	75% Percentile	Maximum	Mean	*n*	UWE
Design-Based Weight	30	377	520	822	5,182	607	178,586	1.44
Weight after DU-Level Adjustments	9	417	644	1,043	9546	774	153,858	1.54

DU = dwelling unit; UWE = unequal weighting effect.

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

5.2 Phase II Person-Level Weight Components

5.2.1 Weight Component #11: Selection of a Person within a Dwelling Unit

The rate at which persons were selected within each DU depended on the age group and was determined during the design of the 2012 study; this also was done for the probabilities of selecting DUs (i.e., Weight Component #5). Note that, similar to the previous surveys, all possible pairs of eligible rostered persons were given some nonzero probability of selection to facilitate unbiased variance estimation. With the use of the Apple Newton handheld computer used by FIs, selection probabilities were adjusted to reflect the total household composition. The survey design restricted the number of interviews to two per DU. With this restriction, a modified Brewer's selection method was used to select either zero, one, or two persons from the DU. (Three ghost units were defined for each DU to allow for the selection of no persons and to avoid division by 0 in Brewer's algorithm.) In short, if the sum of the selection probabilities for all eligible DU members was greater than 2, then the probabilities were ratio-adjusted to sum to 2; sums less than 2 were unadjusted. These adjusted rates then were retained as the final

selection probabilities. An additional design change was made in 2002 and continued through 2012. A new pair-sampling strategy was implemented that increased the number of person pairs selected in DUs with older persons on the roster (Chromy & Penne, 2002). Weight Component #11 represents the inverse of this probability of selection.

5.2.2 Weight Component #12: Selected Person-Level Poststratification Adjustment

The selected person-level poststratification step was started during the 1999 NHSDA. In NHSDAs prior to 1999, a combined step of person-level nonresponse and poststratification to estimated totals from the screener person data was used as a compromise to this step. As was done for the previous surveys, the combined step was divided into two separate steps; the first step was poststratification of the selected persons (i.e., respondents and nonrespondents) to estimated control totals from the screener person data; the second step was respondent person-level nonresponse adjustment (see Component #13) to reproduce control totals from the selected person data (i.e., the full sample). Using two separate steps takes advantage of the inherent two-phase nature of the survey design (although the design is viewed primarily as multistage). With this step, more stable controls for the nonresponse adjustment were obtained (as compared with the traditional nonresponse adjustment) because of the additional selected-person poststratification. Note that this would not have been possible in the absence of screener data on the member demographics of the selected DUs. See Appendix D for details on the final models.

5.2.3 Weight Component #13: Respondent Person-Level Nonresponse Adjustment

The next step was to adjust the sample weights of the interview respondents to the weighted distributions over various demographic domains based on the full sample.

Demographic information for the drug questionnaire respondents was available from two sources—screener data and questionnaire data—while only screener data were available for the large first-phase sample of rostered individuals of all the screened DUs. However, to be consistent with respect to the data source, screener data for both respondents and nonrespondents were used for the person-level nonresponse adjustment. It may be noted that during screening, the only required demographic was the age of each person who was rostered. Thus, such demographics as race/ethnicity and gender of all the rostered eligible persons were not required, and imputation procedures were needed to replace missing data for race/ethnicity and gender. For race/ethnicity, imputations were created using PMN methodology, and for gender, imputations were created using hot-deck methodology. It should be noted that answers from the questionnaire respondents potentially could cause discrepancies between screener values of demographics and their final imputation-revised values. Details on the final models used for the person nonresponse adjustment for each model group can be found in Appendix D.

5.2.4 Weight Component #14: Respondent Person-Level Poststratification Adjustment

This adjustment was to calibrate the weighted respondent-sample data for various demographic domains to the specified control totals obtained from the Census Bureau's estimates of the civilian, noninstitutionalized population aged 12 or older for the year 2012 based on the 2010 census. See Appendix B for details on the derivation of control totals.

After computing the various control totals that were needed, appropriate poststratification factors were applied to the sample weights using GEM to (1) control the resulting UWE and

thereby reduce the potential variance inflation that could result from this weight adjustment, and (2) control for a larger number of main effect and lower order interaction control variables. Details on the final models used for the person-level poststratification adjustment for each model group can be found in Appendix D.

5.2.5 Weight Component #15: Respondent Person-Level Extreme Weight Adjustment

The weights for the product of Weight Components #1 through #14 were checked to see if the extreme weight adjustment step was needed, with extreme weights defined as described in Section 4.1. As in the case of Weight Components #10, unweighted, weighted, and winsorized extreme weight percentages were acceptably low. Therefore, it was decided that the extreme weight adjustment was not required at this stage either. See Appendix G for results. Therefore, Weight Component #15 was set to 1 for each responding person.

Table 5.3 presents the weight distribution and UWE before the implementation of any person-level weight adjustment and after selected person-level poststratification and person-level nonresponse adjustment and poststratification.

Table 5.3 Weight Distribution for Weight before Any Person-Level Adjustment and after Person-Level Adjustments

	Minimum	25% Percentile	Median	75% Percentile	Maximum	Mean	*n*	UWE
Weight before Any Person-Level Adjustment	19	677	1,334	3,483	75,644	2,968	87,656	2.89
Weight after Person-Level Adjustments	1	726	1,549	4,069	133,926	3,807	68,309	3.55

UWE = unequal weighting effect.

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

6. Evaluation of Calibration Weights

During the weight calibration process, several criteria for quality control were implemented to assess model adequacy. This chapter describes the individual procedures and presents a summary of their results. All tables referred to in this chapter can be found in Appendices E, F, G, H, and I. More details can be found in the supplement to the appendices.

6.1 Response Rates

Table E.1 in Appendix E displays the final sample sizes for the categories "selected," "eligible," and "completed" at the dwelling unit (DU) level, and for "selected" and "respondents" at the person level from the 2012 National Survey on Drug Use and Health (NSDUH), for both the national and State levels. This table also shows the weighted eligibility rates and weighted response rates for DU screeners and person-level interviews. Table E.1, at the national level, indicates an overall eligibility rate of 83.43 percent as compared with 83.14 percent for 2011. This similarity in overall rates held in nearly all States, with a few notable exceptions: the eligibility rate decreased from 85.38 to 81.98 percent for South Dakota and increased from 68.75 to 73.00 percent for Maine. The screening rate at the national level was also similar for the 2 years (86.07 percent for 2012 vs. 86.98 percent for 2011). The national interview response rate was 72.92 percent, a decrease of 1.39 percentage points compared with 74.31 percent for 2011, with the biggest decrease for Virginia (from 82.23 percent for 2011 to 76.10 percent for 2012) and the biggest increase for Tennessee (from 78.24 percent for 2011 to 80.99 percent for 2012). Table 6.1 presents summary statistics of overall response rates across individual States.

Table 6.1 Summary Statistics of Overall Weighted Response Rates across Individual States

Domain	National Level	Minimum	Median	Maximum
Dwelling Unit Level				
Eligibility Rate	83.43%	73.00% (Maine)	83.62% (Missouri)	88.97% (Virginia)
Screener Response Rate	86.07%	71.89% (New York)	89.57% (Oregon)	94.67% (Utah)
Person Level				
Interview Response Rate	72.92%	63.25% (New York)	74.74% (West Virginia)	83.60% (Utah)

6.2 Percentages of Extreme Weights and Outwinsors

During the stages of modeling adjustments (i.e., nonresponse and poststratification), a major factor in deciding the adequacy of a particular model was the extent of resulting extreme weights among the weights. As explained in Section 4.1, the percentages of extreme weights for the input weight were calculated for some domains of interest prior to adjustment. These values then were compared with the resulting percentages of extreme weights using the product of weight components that included the new adjustment.

Table F.1 in Appendix F and Tables G.1 and G.2 in Appendix G present percentages of extreme weights at both the DU level for the Nation and the person level for the individual States. Unweighted percentages are based on the actual counts of units and are defined as the ratio of extreme weights relative to the total sample size. Weighted percentages reflect the percentage of total extreme value weights relative to the total sample weight, while outwinsor percentages represent the total amount of residual weight (given that the weights are trimmed to the critical values that were used for extreme weight definition) relative to the total sample weight. For evaluation purposes, the outwinsor percentage is considered the most important of the three percentages. This assessment stems from the fact that its value reflects only the actual amount of weight that would be affected if trimming were implemented.

For the 2012 NSDUH sample, domains for extreme weight definitions were defined as follows for various weight adjustments via the generalized exponential model (GEM) (see Section 4.1):

- DU nonresponse by State sampling (SS) region;
- DU poststratification by SS region;
- selected person-level poststratification by SS region and age group,[5] State and age group, SS region, and State;
- person-level nonresponse by SS region and age group, State and age group, SS region, and State; and
- person-level poststratification by SS region and age group, State and age group, SS region, and State.

Before any weight adjustment was implemented, the percentage of unweighted extreme weights was 3.51 percent and the outwinsor was 0.44 percent for the product of design weight components weight 1 to weight 7. After DU-level nonresponse adjustment and poststratification, the percentage of unweighted extreme weights decreased to 1.80 percent and the outwinsor increased to 1.02 percent. When the design weight component weight 11 (inverse probability of selecting a person within a dwelling unit) was introduced, the percentage of unweighted extreme weights increased to 3.41 percent and the outwinsor increased to 1.86 percent. The person-level adjustments, which consisted of selected person-level poststratification, person-level nonresponse adjustment, and person-level poststratification, were able to bring down the percentage of unweighted extreme weights to 1.04 percent and the outwinsor to 0.66 percent.

6.3 Slippage Rates

The slippage rate for a given domain is defined as the percentage difference between the design-based domain population estimate and the census control total, relative to the census control, both before and after poststratification. The tables in Appendix H display national and State-level, domain-specific weight sums for both before and after poststratification. They also present the control totals to be met through poststratification and the relative percentage difference (or the amount of adjustment necessary [positive or negative] to meet the given totals). The first relative difference was used explicitly during the poststratification modeling procedure to identify potential problems for convergence; this was done because large

[5] Age group categories are 12 to 17, 18 to 25, 26 to 34, 35 to 49, and 50 or older.

differences in domains with relatively small sample sizes indicate potentially large adjustment factors, which may cause problems in convergence. The reason is that adjustments required for one domain may have an adverse effect for another domain when a unit belongs to both domains.

Consider Table H.11 for Florida, which indicates a sample size of 2,427 for race domain "white"; an initial total, also known as the design-based weight, of 12,427,353; a census total of 13,089,877; and an initial slippage rate of -5.06 percent. The ratio of the census total to the initial total gives the value of the weight adjustment: 1.05. Similar to this example, but in the opposite direction, is Table H.38 for Oklahoma. The domain "Hispanic or Latino" contains a sample size of 133 and an initial slippage rate of 13.75 percent. The initial total of 281,088 and the census total of 247,101 indicate an adjustment of 0.88 would be required.

6.4 Weight Adjustment Summary Statistics

Tables I.1 to I.3 in Appendix I display summary statistics on the product of weight components for before and after all stages of adjustment, for both the DU and person levels. Note that these tables have before and after categories for all adjustments except for the DU poststratification (res.du.ps); this is because the before and after statistics are the same and are, therefore, displayed only as the category after. Note also that there could be changes, although minimal, in person-level specific demographic distributions from screener data to questionnaire data, so the respondent sample unequal weighting effect (UWE) prior to poststratification based on the questionnaire data (e.g., see Table I.1, under the heading "After res.per.nr") would be only slightly different from what would be obtained after the nonresponse adjustment (e.g., see Table I.1, under the heading "Before res.per.ps"). The sample size (n) for the demographic domains from res.per.nr tables also could be different from the res.per.ps tables.

6.5 Sensitivity Analysis of Drug Use Estimates to Baseline Models

In general, there is a trade-off between bias reduction and variance reduction. For instance, with GEM (for nonresponse or poststratification), enlarging a simple model (such as the one with only main effects) has the potential of further reducing the bias. At the same time, this enlargement may be associated with a corresponding increase in the variance of the estimate of the population total. The increased variability comes from estimating the additional parameters included in the model. To check for possible overfitting of the GEM model, a sensitivity analysis was conducted for the poststratification step, where a simple baseline model was fitted with the same bounds and maximum number of iterations as that used for the final, more complex model. Then, point estimates and standard errors (SEs) were examined for substantial changes. If the SE increased only slightly under the complex model or, even better, if it decreased (which is possible because of the correlation between the study and predictor variables), then we would feel comfortable fitting the more complex model.

The SE, a ratio-adjusted estimator denoted by SE1, computed under the DESCRIPT procedure in SUDAAN®, treats the calibration adjustment factors as nonrandom. A more complete method of estimation would take into account the variability present in the weight adjustment. The sandwich formula for the Taylor linearization (see Vaish et al., 2000) is designed to provide an estimate of the variance that adjusts for the random calibration factors to sampling weights via GEM. This "sandwich variance," adjusting for the poststratification variability, is denoted by SE2. Both SE1 and SE2 were calculated, as well as point estimates for

a few important drug recency variables (past year marijuana, alcohol, and cigarette use), across four age groups (12 to17, 18 to 25, 26 to 34, and 35 or older), for the eight States with large sample sizes.

When referring to the standard SUDAAN variance estimator for a survey weighted prevalence estimator, we call it the "naïve Taylor Series" standard error. The sandwich variance, also referred to as the variance estimate from a bias corrected estimating function (BCEF) (Singh & Folsom, 2000), is the "correct" Taylor Series linearization for the survey weighted prevalence estimate when the weights have been calibrated for nonresponse or poststratification. The sandwich variance estimates account for the variance contribution from the weight calibration. It was found in a preliminary study that the naïve Taylor linearization variance is somewhat conservative in comparison with the sandwich variance. The variance estimates of selected outcomes in Tables 6.2 to 6.7 show that, in general, sandwich variances (SE2) are smaller than the naïve Taylor linearization variances (SE1), with a few exceptions. These results confirm the conjecture that BCEF variances, or sandwich variances, are smaller despite the possibility of inflating variance due to adding the weight adjustment variation.

As noted previously, to check for overfitting, the variances of the baseline and final models were compared. In Tables 6.2 to 6.7, there are cases where the SE from the final model is slightly larger than the SE from the baseline model, indicating possible overfitting. However, the variance estimates for the two models (baseline and final) are generally similar to each other. Note that smaller variance estimates for the final model would indicate that the complex model for the poststratification adjustment resulted in better variance reduction (because of correlation between study and predictor variables) and bias reduction (because of meeting control totals corresponding to a number of factor effects). Therefore, the evidence does not favor the view that fitting a large number of parameters in GEM creates instability in estimates.

Table 6.2 Point Estimates, Ratio-Adjusted Standard Errors (SE1), and Sandwich Standard Errors (SE2) for Baseline and Final Models—Drug Estimates (United States and Eight Large States): Lifetime Licit Drug Estimates, Cigarettes and Alcohol: 2012 NSDUH

Variables		United States		California		Florida		Illinois		Michigan	
		Baseline	Final	Baseline	Final	Baseline	Final	Baseline	Final	Baseline	Final
Cigarettes Lifetime											
Total	Point Estimates	62.11	61.93	55.67	55.37	60.94	61.42	61.90	61.64	65.39	65.19
	SE1	0.36	0.36	1.32	1.34	1.40	1.43	1.17	1.17	1.23	1.27
	SE2	0.33	0.32	1.19	1.13	1.31	1.22	1.14	1.04	1.22	1.13
12-17	Point Estimates	17.41	17.40	13.83	13.85	16.24	16.08	16.63	16.53	20.55	20.28
	SE1	0.34	0.35	1.12	1.16	1.22	1.22	1.34	1.29	1.27	1.27
	SE2	0.34	0.34	1.12	1.15	1.22	1.21	1.33	1.29	1.28	1.23
18-25	Point Estimates	59.42	59.53	54.64	55.19	54.31	54.17	62.05	62.71	59.78	59.56
	SE1	0.48	0.49	1.88	1.87	1.65	1.66	1.94	1.88	1.84	1.86
	SE2	0.48	0.47	1.87	1.78	1.64	1.65	1.92	1.74	1.85	1.84
26-34	Point Estimates	69.27	69.00	63.05	63.38	63.06	62.66	69.06	68.73	72.69	72.67
	SE1	0.75	0.78	2.65	2.67	3.29	3.34	2.55	2.66	2.66	2.67
	SE2	0.74	0.74	2.59	2.43	3.27	3.16	2.56	2.41	2.66	2.51
35+	Point Estimates	67.88	67.63	61.03	60.23	67.43	68.22	67.35	66.85	71.88	71.66
	SE1	0.50	0.51	1.99	2.04	1.80	1.83	1.68	1.68	1.77	1.81
	SE2	0.48	0.46	1.89	1.79	1.73	1.69	1.66	1.54	1.76	1.66
Alcohol Lifetime											
Total	Point Estimates	82.50	82.29	79.78	79.62	82.89	83.05	82.78	82.64	85.38	85.25
	SE1	0.26	0.27	0.97	1.00	0.99	1.03	0.94	1.01	0.75	0.77
	SE2	0.23	0.22	0.89	0.85	0.91	0.84	0.89	0.81	0.75	0.67
12-17	Point Estimates	32.41	32.36	30.90	31.18	33.08	33.15	30.65	30.82	32.31	32.17
	SE1	0.44	0.44	1.39	1.43	1.62	1.65	1.59	1.60	1.46	1.46
	SE2	0.43	0.43	1.36	1.37	1.61	1.65	1.57	1.54	1.46	1.43
18-25	Point Estimates	84.36	84.40	84.04	84.28	82.73	82.68	84.39	84.87	85.04	84.98
	SE1	0.36	0.37	1.24	1.25	1.25	1.26	1.35	1.32	1.24	1.24
	SE2	0.36	0.35	1.23	1.19	1.23	1.26	1.33	1.25	1.25	1.20
26-34	Point Estimates	90.67	90.66	87.39	87.67	86.93	86.04	92.64	92.57	93.99	93.87
	SE1	0.50	0.52	1.80	1.82	1.90	2.07	1.44	1.51	1.56	1.63
	SE2	0.49	0.48	1.78	1.75	1.91	2.06	1.44	1.42	1.55	1.47
35+	Point Estimates	87.90	87.57	85.02	84.48	88.49	88.85	88.36	88.00	91.77	91.64
	SE1	0.36	0.38	1.40	1.48	1.26	1.32	1.28	1.42	0.98	1.00
	SE2	0.34	0.32	1.35	1.30	1.21	1.21	1.25	1.16	0.97	0.95

(continued)

Table 6.2 Point Estimates, Ratio-Adjusted Standard Errors (SE1), and Sandwich Standard Errors (SE2) for Baseline and Final Models—Drug Estimates (United States and Eight Large States): Lifetime Licit Drug Estimates, Cigarettes and Alcohol: 2012 NSDUH (continued)

Variables		New York		Ohio		Pennsylvania		Texas	
		Baseline	Final	Baseline	Final	Baseline	Final	Baseline	Final
Cigarettes Lifetime									
Total	Point Estimates	60.12	59.54	68.41	68.06	66.54	66.20	56.66	56.50
	SE1	1.51	1.59	1.18	1.21	1.23	1.23	1.35	1.36
	SE2	1.42	1.36	1.17	1.19	1.23	1.17	1.23	1.21
12-17	Point Estimates	14.84	15.02	19.31	19.24	18.50	18.68	15.96	15.76
	SE1	1.19	1.23	1.34	1.34	1.39	1.39	1.21	1.22
	SE2	1.19	1.22	1.33	1.31	1.39	1.41	1.22	1.21
18-25	Point Estimates	56.31	57.27	65.18	65.00	62.46	62.35	62.41	61.87
	SE1	1.59	1.67	1.67	1.69	1.59	1.56	1.70	1.78
	SE2	1.58	1.60	1.66	1.61	1.59	1.54	1.71	1.76
26-34	Point Estimates	69.35	66.93	78.00	77.42	78.79	77.54	67.39	66.85
	SE1	3.17	3.40	2.38	2.44	2.47	2.47	2.70	2.82
	SE2	3.15	3.24	2.39	2.36	2.48	2.53	2.65	2.74
35+	Point Estimates	65.11	64.59	74.35	74.05	71.38	71.22	60.00	60.00
	SE1	2.03	2.15	1.65	1.68	1.63	1.66	1.98	2.00
	SE2	1.96	1.88	1.66	1.69	1.64	1.64	1.87	1.84
Alcohol Lifetime									
Total	Point Estimates	83.03	82.17	85.89	85.66	86.57	86.22	77.41	77.09
	SE1	1.12	1.27	0.81	0.83	0.76	0.78	1.11	1.17
	SE2	1.09	1.05	0.79	0.71	0.76	0.73	1.00	0.97
12-17	Point Estimates	34.56	34.81	32.71	32.66	33.31	33.30	30.23	29.62
	SE1	1.55	1.57	1.47	1.48	1.54	1.53	1.50	1.52
	SE2	1.56	1.60	1.46	1.47	1.55	1.53	1.48	1.45
18-25	Point Estimates	86.57	86.32	89.34	89.20	85.97	85.84	83.70	83.34
	SE1	1.46	1.47	0.98	0.98	1.23	1.22	1.35	1.44
	SE2	1.45	1.41	0.97	0.96	1.24	1.19	1.33	1.41
26-34	Point Estimates	92.30	91.67	93.91	94.00	95.97	95.00	90.92	90.62
	SE1	1.63	1.81	1.40	1.40	1.21	1.60	1.62	1.70
	SE2	1.65	1.82	1.39	1.36	1.22	1.61	1.59	1.75
35+	Point Estimates	86.84	85.74	91.43	91.17	92.00	91.77	81.09	80.77
	SE1	1.68	1.89	1.07	1.11	1.05	1.08	1.56	1.62
	SE2	1.65	1.55	1.06	1.02	1.03	0.99	1.49	1.43

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

Table 6.3 Point Estimates, Ratio-Adjusted Standard Errors (SE1), and Sandwich Standard Errors (SE2) for Baseline and Final Models—Drug Estimates (United States and Eight Large States): Lifetime Illicit Drug Estimates, Marijuana and Cocaine: 2012 NSDUH

Variables		United States		California		Florida		Illinois		Michigan	
		Baseline	Final	Baseline	Final	Baseline	Final	Baseline	Final	Baseline	Final
Marijuana Lifetime											
Total	Point Estimates	42.98	42.77	42.70	42.27	42.58	42.50	41.92	41.77	49.49	49.14
	SE1	0.38	0.38	1.36	1.41	1.63	1.68	1.31	1.30	1.26	1.28
	SE2	0.33	0.32	1.18	1.20	1.55	1.36	1.27	1.12	1.26	1.16
12-17	Point Estimates	17.07	16.97	18.80	18.75	17.64	17.72	16.22	16.00	19.28	19.29
	SE1	0.33	0.34	1.14	1.18	1.21	1.22	1.32	1.28	1.31	1.32
	SE2	0.33	0.33	1.13	1.16	1.20	1.21	1.30	1.24	1.31	1.29
18-25	Point Estimates	52.32	52.19	52.23	52.08	49.08	48.96	53.40	54.01	54.91	54.87
	SE1	0.51	0.51	2.09	2.13	1.74	1.75	1.87	1.83	1.73	1.73
	SE2	0.51	0.49	2.09	2.05	1.73	1.75	1.88	1.82	1.73	1.72
26-34	Point Estimates	55.36	55.18	53.73	53.69	50.55	50.54	52.64	53.30	65.87	65.88
	SE1	0.85	0.88	2.89	2.96	3.43	3.40	2.91	2.97	3.01	2.97
	SE2	0.84	0.80	2.81	2.77	3.39	3.19	2.91	2.85	3.01	2.93
35+	Point Estimates	42.16	41.92	41.65	40.97	43.07	42.94	41.04	40.53	49.76	49.23
	SE1	0.55	0.55	2.04	2.09	2.23	2.31	1.95	1.94	1.78	1.80
	SE2	0.48	0.45	1.83	1.73	2.11	1.86	1.89	1.65	1.79	1.64
Cocaine Lifetime											
Total	Point Estimates	14.58	14.49	17.13	17.17	15.55	15.31	13.90	13.74	15.13	15.05
	SE1	0.26	0.27	1.04	1.05	1.34	1.35	1.02	1.01	1.01	1.00
	SE2	0.25	0.24	0.97	0.94	1.32	1.24	1.01	0.93	1.01	0.96
12-17	Point Estimates	1.10	1.06	1.43	1.37	0.62	0.60	0.97	0.98	0.81	0.79
	SE1	0.09	0.09	0.38	0.37	0.23	0.23	0.28	0.28	0.28	0.27
	SE2	0.09	0.09	0.38	0.36	0.23	0.23	0.28	0.28	0.28	0.26
18-25	Point Estimates	12.38	12.34	13.28	13.45	12.94	12.92	9.68	9.74	9.81	9.77
	SE1	0.32	0.32	1.31	1.31	1.28	1.29	0.94	0.94	1.23	1.24
	SE2	0.32	0.31	1.31	1.28	1.29	1.28	0.94	0.92	1.23	1.23
26-34	Point Estimates	19.46	19.13	18.49	18.43	18.32	18.12	15.36	15.43	21.53	21.46
	SE1	0.65	0.65	2.25	2.29	2.49	2.46	1.88	1.87	2.61	2.57
	SE2	0.64	0.60	2.23	2.15	2.50	2.25	1.88	1.83	2.61	2.55
35+	Point Estimates	16.00	15.95	20.32	20.33	17.40	17.07	16.47	16.19	17.14	17.04
	SE1	0.39	0.39	1.62	1.63	1.84	1.87	1.55	1.53	1.39	1.38
	SE2	0.36	0.35	1.52	1.43	1.81	1.73	1.53	1.39	1.40	1.33

(continued)

Table 6.3 Point Estimates, Ratio-Adjusted Standard Errors (SE1), and Sandwich Standard Errors (SE2) for Baseline and Final Models—Drug Estimates (United States and Eight Large States): Lifetime Illicit Drug Estimates, Marijuana and Cocaine: 2012 NSDUH (continued)

Variables		New York		Ohio		Pennsylvania		Texas	
		Baseline	Final	Baseline	Final	Baseline	Final	Baseline	Final
Marijuana Lifetime									
Total	Point Estimates	44.47	43.83	46.54	46.31	42.86	42.32	35.32	35.57
	SE1	1.44	1.45	1.31	1.30	1.38	1.40	1.29	1.31
	SE2	1.37	1.30	1.30	1.11	1.35	1.11	1.17	1.17
12-17	Point Estimates	15.76	16.10	17.49	17.51	16.49	16.44	15.27	15.05
	SE1	1.31	1.34	1.11	1.11	1.27	1.28	1.19	1.19
	SE2	1.31	1.32	1.10	1.07	1.28	1.25	1.19	1.16
18-25	Point Estimates	54.46	55.38	55.50	55.41	54.31	54.46	49.79	49.00
	SE1	1.73	1.70	1.80	1.82	1.59	1.58	1.61	1.67
	SE2	1.72	1.59	1.78	1.74	1.60	1.60	1.57	1.68
26-34	Point Estimates	61.43	58.87	60.48	60.60	61.89	61.16	48.93	49.14
	SE1	3.67	3.78	3.26	3.23	3.18	3.31	2.91	3.02
	SE2	3.65	3.51	3.25	3.04	3.18	3.15	2.86	3.00
35+	Point Estimates	42.21	41.73	46.18	45.90	40.36	39.74	31.99	32.58
	SE1	2.09	2.10	1.80	1.79	1.92	1.95	1.80	1.85
	SE2	2.03	1.93	1.79	1.55	1.86	1.52	1.73	1.75
Cocaine Lifetime									
Total	Point Estimates	14.59	14.27	13.21	13.28	15.45	15.06	12.98	13.04
	SE1	1.02	1.04	0.95	0.95	1.07	1.06	0.81	0.82
	SE2	0.97	0.90	0.95	0.89	1.06	0.92	0.76	0.77
12-17	Point Estimates	0.75	0.76	1.09	1.09	0.71	0.69	2.26	2.25
	SE1	0.27	0.28	0.30	0.30	0.23	0.22	0.47	0.48
	SE2	0.27	0.27	0.30	0.29	0.23	0.22	0.47	0.47
18-25	Point Estimates	12.20	12.60	10.66	10.65	11.31	11.37	14.26	13.73
	SE1	1.18	1.10	0.97	0.98	1.07	1.08	1.16	1.12
	SE2	1.16	1.09	0.97	0.96	1.07	1.08	1.14	1.11
26-34	Point Estimates	19.72	17.65	21.27	21.60	21.91	20.87	22.75	22.73
	SE1	2.53	2.43	2.46	2.44	2.79	2.66	2.46	2.51
	SE2	2.53	2.34	2.46	2.43	2.80	2.64	2.43	2.45
35+	Point Estimates	15.83	15.74	13.84	13.94	16.97	16.61	12.10	12.32
	SE1	1.47	1.53	1.34	1.34	1.50	1.48	1.16	1.21
	SE2	1.41	1.32	1.33	1.26	1.47	1.30	1.13	1.16

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

Table 6.4 Point Estimates, Ratio-Adjusted Standard Errors (SE1), and Sandwich Standard Errors (SE2) for Baseline and Final Models—Drug Estimates (United States and Eight Large States): Past Year Licit Drug Estimates, Cigarettes and Alcohol: 2012 NSDUH

Variables		United States		California		Florida		Illinois		Michigan	
		Baseline	Final	Baseline	Final	Baseline	Final	Baseline	Final	Baseline	Final
Cigarettes Past Year											
Total	Point Estimates	26.11	26.07	20.48	20.82	24.19	24.03	28.43	28.30	30.47	30.28
	SE1	0.33	0.34	1.16	1.19	1.29	1.30	1.29	1.29	1.18	1.16
	SE2	0.31	0.30	1.09	1.09	1.28	1.21	1.28	1.22	1.17	1.09
12-17	Point Estimates	11.88	11.83	8.94	8.92	9.86	9.66	10.60	10.76	14.68	14.36
	SE1	0.30	0.30	0.96	0.98	1.04	1.04	0.92	0.94	1.08	1.07
	SE2	0.29	0.29	0.95	0.96	1.04	1.03	0.92	0.94	1.09	1.04
18-25	Point Estimates	40.99	41.04	34.49	34.74	36.78	36.55	41.70	42.23	43.83	43.75
	SE1	0.48	0.48	1.82	1.81	1.63	1.60	2.09	2.06	1.87	1.87
	SE2	0.47	0.46	1.82	1.75	1.61	1.62	2.08	2.00	1.87	1.85
26-34	Point Estimates	38.65	38.23	28.57	28.54	42.10	41.43	38.57	38.37	45.95	46.02
	SE1	0.80	0.81	2.56	2.63	3.19	3.22	2.83	2.82	3.13	3.07
	SE2	0.79	0.77	2.59	2.54	3.18	3.09	2.83	2.79	3.12	2.99
35+	Point Estimates	22.30	22.34	17.07	17.58	20.35	20.29	26.06	25.77	27.10	26.86
	SE1	0.45	0.46	1.63	1.73	1.61	1.65	1.77	1.77	1.67	1.65
	SE2	0.43	0.42	1.58	1.59	1.59	1.58	1.76	1.69	1.67	1.55
Alcohol Past Year											
Total	Point Estimates	66.96	66.74	65.23	65.29	66.84	66.72	69.30	69.26	69.34	69.05
	SE1	0.36	0.37	1.39	1.43	1.32	1.37	1.24	1.28	1.33	1.33
	SE2	0.34	0.33	1.34	1.34	1.26	1.15	1.20	1.10	1.33	1.32
12-17	Point Estimates	26.35	26.29	23.94	24.05	26.85	26.85	25.30	25.45	26.60	26.44
	SE1	0.42	0.42	1.33	1.36	1.62	1.64	1.44	1.47	1.38	1.38
	SE2	0.41	0.41	1.29	1.30	1.61	1.61	1.44	1.44	1.38	1.34
18-25	Point Estimates	77.47	77.42	77.36	77.64	76.38	76.27	78.37	78.81	77.58	77.60
	SE1	0.42	0.43	1.55	1.58	1.43	1.45	1.46	1.45	1.41	1.41
	SE2	0.41	0.40	1.53	1.49	1.40	1.39	1.45	1.41	1.42	1.40
26-34	Point Estimates	80.67	80.52	75.92	76.30	76.61	75.33	84.60	84.86	83.79	83.83
	SE1	0.66	0.70	2.33	2.40	2.54	2.68	2.13	2.14	2.19	2.15
	SE2	0.65	0.67	2.32	2.36	2.54	2.68	2.13	2.02	2.19	2.01
35+	Point Estimates	67.84	67.54	66.57	66.43	68.35	68.41	70.72	70.48	71.28	70.86
	SE1	0.52	0.54	2.00	2.08	1.83	1.91	1.87	1.94	1.89	1.88
	SE2	0.50	0.48	1.99	2.02	1.76	1.64	1.83	1.66	1.90	1.92

(continued)

Table 6.4 Point Estimates, Ratio-Adjusted Standard Errors (SE1), and Sandwich Standard Errors (SE2) for Baseline and Final Models—Drug Estimates (United States and Eight Large States): Past Year Licit Drug Estimates, Cigarettes and Alcohol: 2012 NSDUH (continued)

Variables		New York		Ohio		Pennsylvania		Texas	
		Baseline	Final	Baseline	Final	Baseline	Final	Baseline	Final
Cigarettes Past Year									
Total	Point Estimates	24.50	24.10	31.39	31.24	28.69	28.36	24.29	24.10
	SE1	1.26	1.26	1.41	1.41	1.34	1.33	1.25	1.28
	SE2	1.23	1.24	1.38	1.28	1.31	1.14	1.18	1.18
12-17	Point Estimates	9.91	10.00	13.21	13.19	13.36	13.38	10.87	10.84
	SE1	1.01	1.05	1.07	1.08	1.11	1.10	1.04	1.06
	SE2	1.01	1.03	1.06	1.07	1.11	1.11	1.03	1.03
18-25	Point Estimates	38.47	39.35	47.40	47.22	45.03	45.15	42.77	42.23
	SE1	1.56	1.58	1.74	1.75	1.65	1.62	1.64	1.68
	SE2	1.56	1.57	1.74	1.69	1.65	1.63	1.65	1.65
26-34	Point Estimates	39.69	37.11	49.24	48.57	47.71	47.74	36.65	35.98
	SE1	3.36	3.52	3.11	3.12	3.49	3.50	3.06	3.12
	SE2	3.33	3.42	3.12	3.11	3.50	3.48	2.95	2.88
35+	Point Estimates	19.80	19.75	27.23	27.25	23.74	23.27	19.10	19.09
	SE1	1.64	1.69	1.81	1.81	1.69	1.67	1.63	1.66
	SE2	1.63	1.71	1.79	1.70	1.66	1.49	1.60	1.63
Alcohol Past Year									
Total	Point Estimates	70.54	69.99	68.38	68.45	71.81	71.36	61.70	61.66
	SE1	1.38	1.49	1.26	1.27	1.24	1.26	1.46	1.46
	SE2	1.34	1.31	1.26	1.21	1.22	1.15	1.30	1.26
12-17	Point Estimates	30.51	31.01	26.04	26.02	28.56	28.58	24.91	24.40
	SE1	1.43	1.47	1.32	1.33	1.48	1.49	1.43	1.43
	SE2	1.45	1.47	1.32	1.33	1.49	1.50	1.43	1.38
18-25	Point Estimates	82.57	82.31	82.62	82.53	80.43	80.42	75.47	74.74
	SE1	1.56	1.56	1.30	1.31	1.49	1.47	1.61	1.71
	SE2	1.55	1.46	1.29	1.27	1.49	1.44	1.56	1.56
26-34	Point Estimates	82.96	82.58	80.62	81.09	86.30	85.18	80.65	80.16
	SE1	2.27	2.37	2.64	2.54	2.10	2.28	2.28	2.34
	SE2	2.28	2.36	2.63	2.53	2.10	2.29	2.23	2.31
35+	Point Estimates	70.52	69.88	69.31	69.41	73.06	72.67	60.24	60.54
	SE1	2.10	2.25	1.76	1.78	1.80	1.84	2.08	2.08
	SE2	2.05	1.98	1.77	1.73	1.76	1.67	1.96	1.90

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

Table 6.5 Point Estimates, Ratio-Adjusted Standard Errors (SE1), and Sandwich Standard Errors (SE2) for Baseline and Final Models—Drug Estimates (United States and Eight Large States): Past Year Illicit Drug Estimates, Marijuana and Cocaine: 2012 NSDUH

Variables		United States		California		Florida		Illinois		Michigan	
		Baseline	Final	Baseline	Final	Baseline	Final	Baseline	Final	Baseline	Final
Marijuana Past Year											
Total	Point Estimates	12.19	12.12	14.11	13.96	11.16	11.28	11.02	11.14	14.67	14.54
	SE1	0.21	0.21	0.86	0.85	0.82	0.85	0.68	0.68	0.73	0.72
	SE2	0.19	0.19	0.80	0.79	0.80	0.80	0.67	0.63	0.72	0.65
12-17	Point Estimates	13.60	13.49	13.96	13.90	13.28	13.35	12.19	12.01	15.99	16.02
	SE1	0.30	0.30	1.04	1.08	1.17	1.18	1.08	1.05	1.21	1.22
	SE2	0.30	0.30	1.04	1.09	1.16	1.17	1.08	1.05	1.21	1.19
18-25	Point Estimates	31.62	31.48	34.25	34.03	29.78	29.61	30.85	31.20	33.15	32.98
	SE1	0.49	0.49	2.00	2.00	1.56	1.58	1.82	1.80	1.52	1.53
	SE2	0.49	0.47	2.01	1.88	1.55	1.58	1.82	1.79	1.53	1.52
26-34	Point Estimates	18.34	18.17	19.14	19.19	17.41	17.68	15.19	15.54	22.69	22.31
	SE1	0.64	0.64	2.26	2.30	2.36	2.41	2.00	2.06	2.89	2.83
	SE2	0.64	0.61	2.22	2.12	2.33	2.18	1.99	1.99	2.89	2.84
35+	Point Estimates	6.48	6.45	8.12	7.95	6.34	6.50	5.72	5.76	9.11	9.02
	SE1	0.25	0.25	1.10	1.08	0.96	1.00	0.88	0.89	0.92	0.91
	SE2	0.24	0.24	1.08	1.04	0.95	1.00	0.87	0.85	0.91	0.87
Cocaine Past Year											
Total	Point Estimates	1.81	1.80	2.33	2.32	2.03	2.09	1.85	1.85	0.98	0.95
	SE1	0.08	0.09	0.32	0.33	0.36	0.40	0.36	0.36	0.20	0.20
	SE2	0.08	0.08	0.32	0.32	0.36	0.38	0.36	0.34	0.20	0.20
12-17	Point Estimates	0.75	0.72	1.00	0.93	0.41	0.39	0.40	0.41	0.26	0.25
	SE1	0.08	0.08	0.31	0.30	0.19	0.19	0.18	0.18	0.13	0.13
	SE2	0.08	0.08	0.31	0.29	0.19	0.19	0.18	0.18	0.13	0.13
18-25	Point Estimates	4.69	4.63	6.46	6.51	5.88	5.87	3.07	3.06	2.54	2.42
	SE1	0.22	0.22	0.94	0.94	0.93	0.92	0.59	0.59	0.59	0.59
	SE2	0.22	0.21	0.94	0.93	0.93	0.91	0.58	0.57	0.59	0.59
26-34	Point Estimates	3.17	3.14	3.43	3.54	5.10	5.20	2.17	2.17	1.82	1.84
	SE1	0.31	0.31	0.97	1.01	1.42	1.48	0.80	0.79	0.83	0.84
	SE2	0.31	0.30	0.97	1.01	1.42	1.46	0.80	0.78	0.83	0.82
35+	Point Estimates	1.05	1.06	1.30	1.26	0.96	1.04	1.75	1.74	0.60	0.58
	SE1	0.10	0.10	0.42	0.42	0.38	0.45	0.51	0.50	0.26	0.25
	SE2	0.10	0.10	0.41	0.41	0.39	0.43	0.51	0.48	0.26	0.25

(continued)

Table 6.5 Point Estimates, Ratio-Adjusted Standard Errors (SE1), and Sandwich Standard Errors (SE2) for Baseline and Final Models—Drug Estimates (United States and Eight Large States): Past Year Illicit Drug Estimates, Marijuana and Cocaine: 2012 NSDUH (continued)

Variables		New York		Ohio		Pennsylvania		Texas	
		Baseline	Final	Baseline	Final	Baseline	Final	Baseline	Final
Marijuana Past Year									
Total	Point Estimates	14.68	14.81	13.58	13.64	11.15	11.14	9.96	9.89
	SE1	0.99	1.01	0.77	0.77	0.78	0.77	0.65	0.66
	SE2	0.95	1.01	0.76	0.71	0.75	0.64	0.60	0.59
12-17	Point Estimates	13.31	13.56	14.57	14.59	13.96	13.89	12.59	12.35
	SE1	1.19	1.21	1.06	1.06	1.15	1.15	1.09	1.10
	SE2	1.18	1.20	1.05	1.05	1.15	1.12	1.08	1.04
18-25	Point Estimates	36.38	37.18	30.97	30.74	32.93	33.08	26.08	25.71
	SE1	1.64	1.68	1.65	1.65	1.65	1.64	1.34	1.36
	SE2	1.66	1.67	1.64	1.59	1.66	1.68	1.31	1.31
26-34	Point Estimates	23.45	23.24	20.77	21.07	22.14	21.72	17.58	17.47
	SE1	2.90	3.01	2.78	2.71	2.88	2.85	2.19	2.26
	SE2	2.91	3.02	2.78	2.73	2.88	2.80	2.15	2.20
35+	Point Estimates	7.95	8.17	8.50	8.60	4.29	4.32	3.61	3.67
	SE1	1.12	1.19	0.92	0.94	0.75	0.76	0.59	0.62
	SE2	1.11	1.36	0.92	0.89	0.74	0.69	0.59	0.61
Cocaine Past Year									
Total	Point Estimates	2.54	2.50	1.73	1.75	1.91	1.95	1.50	1.46
	SE1	0.35	0.32	0.31	0.32	0.34	0.37	0.18	0.19
	SE2	0.35	0.33	0.31	0.31	0.34	0.35	0.18	0.19
12-17	Point Estimates	0.61	0.62	0.33	0.34	0.29	0.27	1.65	1.63
	SE1	0.25	0.26	0.15	0.15	0.15	0.14	0.41	0.42
	SE2	0.25	0.26	0.15	0.15	0.15	0.14	0.41	0.41
18-25	Point Estimates	5.90	6.39	3.73	3.66	3.62	3.67	4.45	4.16
	SE1	0.76	0.82	0.59	0.60	0.58	0.59	0.58	0.58
	SE2	0.74	0.80	0.59	0.59	0.58	0.60	0.58	0.60
26-34	Point Estimates	4.57	4.17	3.08	2.94	2.97	3.23	2.19	2.22
	SE1	1.43	1.18	1.03	0.97	1.07	1.29	0.77	0.79
	SE2	1.44	1.20	1.03	0.95	1.07	1.25	0.77	0.78
35+	Point Estimates	1.58	1.54	1.26	1.34	1.58	1.59	0.58	0.59
	SE1	0.39	0.39	0.41	0.45	0.45	0.46	0.22	0.22
	SE2	0.40	0.40	0.41	0.42	0.45	0.44	0.21	0.21

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

Table 6.6 Point Estimates, Ratio-Adjusted Standard Errors (SE1), and Sandwich Standard Errors (SE2) for Baseline and Final Models—Drug Estimates (United States and Eight Large States): Past Month Licit Drug Estimates, Cigarettes and Alcohol: 2012 NSDUH

Variables		United States		California		Florida		Illinois		Michigan	
		Baseline	Final	Baseline	Final	Baseline	Final	Baseline	Final	Baseline	Final
Cigarettes Past Month											
Total	Point Estimates	22.17	22.12	16.30	16.64	20.33	20.22	24.01	23.89	26.66	26.54
	SE1	0.31	0.32	1.05	1.09	1.25	1.27	1.19	1.19	1.19	1.18
	SE2	0.30	0.29	1.02	1.02	1.25	1.20	1.18	1.13	1.19	1.12
12-17	Point Estimates	6.64	6.55	4.40	4.35	5.45	5.31	5.58	5.68	8.62	8.53
	SE1	0.22	0.22	0.69	0.69	0.83	0.81	0.72	0.74	0.81	0.82
	SE2	0.22	0.21	0.68	0.68	0.84	0.81	0.72	0.74	0.81	0.80
18-25	Point Estimates	31.78	31.82	25.15	25.24	26.82	26.89	32.94	33.27	34.54	34.44
	SE1	0.46	0.46	1.60	1.60	1.45	1.48	1.74	1.73	1.95	1.94
	SE2	0.45	0.45	1.60	1.57	1.44	1.54	1.73	1.69	1.95	1.93
26-34	Point Estimates	32.90	32.60	22.06	21.91	37.69	37.12	33.63	33.45	41.13	40.90
	SE1	0.77	0.78	2.32	2.35	3.10	3.09	2.87	2.84	3.22	3.17
	SE2	0.76	0.74	2.34	2.27	3.10	2.96	2.86	2.81	3.21	3.03
35+	Point Estimates	20.08	20.08	14.75	15.32	17.78	17.69	22.77	22.54	24.96	24.85
	SE1	0.43	0.44	1.52	1.62	1.60	1.64	1.64	1.65	1.63	1.62
	SE2	0.41	0.40	1.49	1.50	1.59	1.58	1.63	1.57	1.62	1.53
Alcohol Past Month											
Total	Point Estimates	52.25	52.10	49.18	49.05	51.64	51.83	55.16	55.15	54.94	54.38
	SE1	0.39	0.40	1.42	1.47	1.53	1.56	1.35	1.38	1.41	1.41
	SE2	0.37	0.35	1.38	1.35	1.46	1.35	1.31	1.22	1.41	1.35
12-17	Point Estimates	12.96	12.90	11.54	11.33	12.86	12.97	12.20	12.31	13.96	13.87
	SE1	0.32	0.32	1.02	1.03	1.14	1.17	1.16	1.18	0.99	1.01
	SE2	0.31	0.31	1.01	1.00	1.14	1.12	1.16	1.17	0.99	0.97
18-25	Point Estimates	60.28	60.21	58.53	58.62	58.53	58.72	63.88	64.55	62.30	62.31
	SE1	0.49	0.50	1.79	1.82	1.75	1.76	1.72	1.71	1.72	1.72
	SE2	0.49	0.48	1.77	1.71	1.72	1.66	1.71	1.68	1.73	1.73
26-34	Point Estimates	64.65	64.46	59.99	60.19	58.82	57.74	67.39	66.87	68.72	68.36
	SE1	0.81	0.84	2.83	2.91	3.10	3.16	2.93	2.97	2.93	2.93
	SE2	0.81	0.81	2.81	2.82	3.09	3.07	2.93	2.74	2.94	2.85
35+	Point Estimates	53.74	53.58	50.52	50.22	53.96	54.38	57.23	57.17	56.93	56.15
	SE1	0.56	0.57	1.99	2.06	2.09	2.14	2.00	2.04	1.98	1.96
	SE2	0.53	0.50	1.97	1.95	2.02	1.89	1.96	1.79	1.98	1.90

(continued)

Table 6.6 Point Estimates, Ratio-Adjusted Standard Errors (SE1), and Sandwich Standard Errors (SE2) for Baseline and Final Models—Drug Estimates (United States and Eight Large States): Past Month Licit Drug Estimates, Cigarettes and Alcohol: 2012 NSDUH (continued)

Variables		New York		Ohio		Pennsylvania		Texas	
		Baseline	Final	Baseline	Final	Baseline	Final	Baseline	Final
Cigarettes Past Month									
Total	Point Estimates	20.91	20.57	27.86	27.74	25.46	25.17	19.77	19.60
	SE1	1.20	1.20	1.32	1.32	1.29	1.28	1.10	1.12
	SE2	1.17	1.17	1.30	1.22	1.27	1.11	1.06	1.07
12-17	Point Estimates	4.99	5.10	8.56	8.57	7.89	7.80	5.63	5.54
	SE1	0.71	0.75	0.81	0.81	0.83	0.82	0.79	0.79
	SE2	0.71	0.74	0.81	0.82	0.83	0.81	0.78	0.76
18-25	Point Estimates	30.30	31.16	38.65	38.53	36.38	36.48	31.85	31.22
	SE1	1.66	1.61	1.77	1.77	1.52	1.49	1.71	1.71
	SE2	1.65	1.60	1.76	1.73	1.52	1.51	1.73	1.73
26-34	Point Estimates	32.89	31.10	44.44	43.86	42.30	42.67	31.66	30.95
	SE1	2.95	3.13	3.04	3.02	3.46	3.46	2.88	2.93
	SE2	2.92	3.09	3.04	3.01	3.47	3.46	2.78	2.69
35+	Point Estimates	18.18	18.00	25.16	25.19	22.32	21.86	16.38	16.43
	SE1	1.58	1.60	1.71	1.71	1.65	1.63	1.45	1.47
	SE2	1.57	1.62	1.69	1.61	1.62	1.46	1.43	1.46
Alcohol Past Month									
Total	Point Estimates	56.30	55.91	53.22	53.22	56.25	55.61	46.76	46.65
	SE1	1.52	1.57	1.41	1.41	1.50	1.54	1.39	1.38
	SE2	1.48	1.39	1.40	1.35	1.47	1.41	1.30	1.26
12-17	Point Estimates	16.25	16.56	13.08	13.08	13.59	13.59	12.22	11.95
	SE1	1.19	1.23	1.00	1.02	1.10	1.10	1.00	1.01
	SE2	1.19	1.20	1.00	1.01	1.11	1.11	1.01	0.99
18-25	Point Estimates	65.06	65.64	64.40	64.31	64.68	64.90	57.14	56.25
	SE1	1.74	1.74	1.64	1.65	1.94	1.93	1.93	1.95
	SE2	1.76	1.68	1.62	1.57	1.95	1.88	1.90	1.81
26-34	Point Estimates	71.58	69.74	66.63	66.76	70.07	68.95	60.71	60.23
	SE1	2.72	2.94	2.85	2.84	3.31	3.46	2.90	2.93
	SE2	2.75	2.85	2.84	2.78	3.30	3.28	2.91	2.95
35+	Point Estimates	56.31	56.13	54.18	54.25	57.60	56.87	47.00	47.17
	SE1	2.25	2.33	1.92	1.92	2.08	2.16	2.04	2.01
	SE2	2.19	2.04	1.93	1.87	2.04	2.00	1.95	1.86

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

Table 6.7 Point Estimates, Ratio-Adjusted Standard Errors (SE1), and Sandwich Standard Errors (SE2) for Baseline and Final Models—Drug Estimates (United States and Eight Large States): Past Month Illicit Drug Estimates, Marijuana and Cocaine: 2012 NSDUH

Variables		United States		California		Florida		Illinois		Michigan	
		Baseline	Final	Baseline	Final	Baseline	Final	Baseline	Final	Baseline	Final
Marijuana Past Month											
Total	Point Estimates	7.31	7.25	9.37	9.23	6.77	6.94	6.26	6.37	9.25	9.12
	SE1	0.17	0.16	0.74	0.73	0.68	0.70	0.51	0.52	0.59	0.58
	SE2	0.16	0.15	0.72	0.70	0.67	0.68	0.50	0.47	0.59	0.56
12-17	Point Estimates	7.30	7.22	7.08	7.02	6.85	7.07	4.97	5.11	9.82	9.92
	SE1	0.23	0.22	0.82	0.83	0.85	0.89	0.65	0.68	0.93	0.95
	SE2	0.23	0.22	0.81	0.82	0.85	0.88	0.65	0.68	0.93	0.93
18-25	Point Estimates	18.86	18.75	22.61	22.35	18.38	18.43	19.95	20.23	22.24	22.00
	SE1	0.39	0.39	1.63	1.63	1.29	1.32	1.49	1.49	1.54	1.53
	SE2	0.38	0.38	1.64	1.54	1.29	1.32	1.51	1.52	1.54	1.52
26-34	Point Estimates	11.48	11.30	11.92	11.90	12.13	12.49	10.31	10.46	14.58	14.32
	SE1	0.52	0.51	1.83	1.84	1.99	2.06	1.75	1.77	2.37	2.29
	SE2	0.52	0.49	1.79	1.75	1.99	1.94	1.75	1.74	2.36	2.29
35+	Point Estimates	3.93	3.91	5.99	5.85	3.64	3.81	2.65	2.70	5.45	5.36
	SE1	0.21	0.21	1.02	0.99	0.80	0.84	0.57	0.59	0.73	0.72
	SE2	0.20	0.19	1.01	0.96	0.80	0.83	0.57	0.56	0.73	0.71
Cocaine Past Month											
Total	Point Estimates	0.63	0.63	0.73	0.73	0.68	0.72	0.87	0.85	0.42	0.41
	SE1	0.05	0.05	0.20	0.20	0.24	0.28	0.24	0.23	0.16	0.16
	SE2	0.05	0.05	0.20	0.20	0.24	0.27	0.24	0.23	0.16	0.16
12-17	Point Estimates	0.13	0.12	0.23	0.15	0.13	0.14	0.00	0.00	0.00	0.00
	SE1	0.03	0.03	0.14	0.09	0.09	0.10	0.00	0.00	0.00	0.00
	SE2	0.03	0.03	0.14	0.09	0.09	0.10	0.00	0.00	0.00	0.00
18-25	Point Estimates	1.19	1.15	1.23	1.25	1.80	1.73	1.07	1.02	0.81	0.82
	SE1	0.10	0.10	0.38	0.38	0.45	0.42	0.32	0.32	0.38	0.39
	SE2	0.10	0.10	0.38	0.38	0.45	0.42	0.32	0.31	0.38	0.39
26-34	Point Estimates	1.19	1.15	1.02	1.09	0.97	0.92	1.43	1.38	0.26	0.26
	SE1	0.21	0.20	0.52	0.56	0.57	0.55	0.69	0.67	0.26	0.26
	SE2	0.21	0.19	0.52	0.55	0.57	0.55	0.69	0.67	0.26	0.26
35+	Point Estimates	0.47	0.49	0.63	0.61	0.49	0.57	0.83	0.81	0.43	0.42
	SE1	0.07	0.07	0.29	0.29	0.33	0.40	0.33	0.33	0.24	0.23
	SE2	0.07	0.07	0.29	0.29	0.33	0.38	0.33	0.32	0.24	0.23

(continued)

Table 6.7 Point Estimates, Ratio-Adjusted Standard Errors (SE1), and Sandwich Standard Errors (SE2) for Baseline and Final Models—Drug Estimates (United States and Eight Large States): Past Month Illicit Drug Estimates, Marijuana and Cocaine: 2012 NSDUH (continued)

Variables		New York		Ohio		Pennsylvania		Texas	
		Baseline	Final	Baseline	Final	Baseline	Final	Baseline	Final
Marijuana Past Month									
Total	Point Estimates	8.88	8.82	8.05	8.16	5.88	5.92	5.15	5.13
	SE1	0.69	0.72	0.55	0.56	0.48	0.49	0.48	0.49
	SE2	0.66	0.64	0.55	0.52	0.47	0.42	0.46	0.47
12-17	Point Estimates	8.03	8.06	8.36	8.34	7.23	7.22	6.74	6.55
	SE1	1.01	1.02	0.78	0.78	0.86	0.86	0.82	0.82
	SE2	1.01	1.01	0.78	0.78	0.86	0.85	0.82	0.78
18-25	Point Estimates	22.24	22.59	19.18	19.13	18.08	18.22	13.70	13.45
	SE1	1.37	1.39	1.45	1.45	1.19	1.21	0.97	0.98
	SE2	1.38	1.40	1.45	1.40	1.19	1.23	0.99	0.99
26-34	Point Estimates	14.93	13.86	12.89	13.42	12.79	12.87	8.99	8.93
	SE1	2.39	2.24	2.02	2.01	2.06	2.12	1.70	1.74
	SE2	2.39	2.16	2.02	2.01	2.06	2.08	1.70	1.77
35+	Point Estimates	4.58	4.77	4.80	4.89	1.92	1.93	1.80	1.89
	SE1	0.83	0.93	0.68	0.71	0.45	0.44	0.45	0.48
	SE2	0.82	0.86	0.68	0.68	0.44	0.42	0.46	0.48
Cocaine Past Month									
Total	Point Estimates	0.80	0.75	0.56	0.56	0.74	0.71	0.58	0.58
	SE1	0.21	0.19	0.19	0.19	0.23	0.23	0.12	0.13
	SE2	0.21	0.19	0.19	0.19	0.23	0.22	0.12	0.13
12-17	Point Estimates	0.31	0.32	0.13	0.12	0.07	0.07	0.34	0.34
	SE1	0.18	0.18	0.09	0.09	0.07	0.07	0.16	0.16
	SE2	0.18	0.18	0.09	0.09	0.07	0.07	0.16	0.15
18-25	Point Estimates	1.10	1.18	1.08	1.04	0.81	0.81	1.15	1.03
	SE1	0.31	0.33	0.39	0.38	0.30	0.30	0.26	0.24
	SE2	0.32	0.34	0.39	0.37	0.30	0.30	0.26	0.29
26-34	Point Estimates	1.50	1.23	0.86	0.81	2.14	1.95	1.37	1.40
	SE1	0.97	0.82	0.51	0.48	0.90	0.82	0.64	0.66
	SE2	0.97	0.80	0.50	0.47	0.90	0.82	0.64	0.66
35+	Point Estimates	0.64	0.61	0.46	0.48	0.53	0.54	0.29	0.29
	SE1	0.24	0.23	0.27	0.28	0.29	0.30	0.14	0.15
	SE2	0.24	0.23	0.27	0.27	0.29	0.29	0.14	0.14

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

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Appendix A: Technical Details about the Generalized Exponential Model

Appendix A: Technical Details about the Generalized Exponential Model

A.1 Distance Function

Let $\Delta(w,d)$ denote the distance between the initial weights $d=\{d_k : k\in s\}$ and the adjusted weights *w*, with *k* being the k^{th} unit in the sample and *s* being the sample selected. The distance function minimized under the generalized exponential model (GEM), subject to calibration constraints, is given by

$$\Delta(w,d)=\sum_{k\in s}\frac{d_k}{A_k}\left\{(a_k-\ell_k)\log\frac{a_k-\ell_k}{c_k-\ell_k}+(u_k-a_k)\log\frac{u_k-a_k}{u_k-c_k}\right\}, \tag{A.1.1}$$

where $a_k=w_k/d_k, A_k=(u_k-\ell_k)/[(u_k-c_k)(c_k-\ell_k)]$ and ℓ_k, c_k, and u_k are prescribed real numbers. Let T_x denote the *p*-vector of control totals corresponding to predictor variables $(x_1, ..., x_p)$. Then, the calibration constraints for the above minimization problem are

$$\sum_{k\in s} x_k d_k a_k = T_x. \tag{A.1.2}$$

The solution for the above minimization problem, if it exists, is given by a GEM with model parameters λ; that is,

$$a_k(\lambda)=\frac{\ell_k(u_k-c_k)+u_k(c_k-\ell_k)\exp\{A_k x_k'\lambda\}}{(u_k-c_k)+(c_k-\ell_k)\exp\{A_k x_k'\lambda\}}. \tag{A.1.3}$$

Note that the number of parameters in the GEM should be $\le n$, where *n* is the size of the sample *s*. This is also the dimension of vectors *d* and *w*. It follows from Equation A.1.3 that

$$\ell_k < a_k < u_k,\ k=1,\ldots,n. \tag{A.1.4}$$

The usual raking ratio method (Singh & Mohl, 1996) of weight adjustment is a special case of the GEM, noting that for $\ell_k=0$, $u_k=\infty$, $c_k=1$, and $k=1,\ldots,n$, we have

$$\Delta(w,d)=\sum_{k\in s} d_k a_k \log a_k - \sum_{k\in s} d_k (a_k-1) \tag{A.1.5}$$

and $a_k(\lambda)=\exp(x_k'\lambda)$.

The logit method of Deville and Särndal (1992) is also a special case of the GEM, by setting $\ell_k=\ell$, $u_k=u$, and $c_k=1$ for all *k*. The new method was introduced by Folsom and Singh (2000).

A.2 GEM Adjustments for Extreme Value Treatment, Nonresponse, and Poststratification

By choosing the user-specified parameters ℓ_k, c_k, and u_k appropriately, the unified GEM formula (A.1.3) can be justified for all three types of adjustment: extreme value treatment, nonresponse, and poststratification. For extreme value treatment via winsorization, denote the winsorized weights by $\{b_k\}$, where $b_k = d_k$ if d_k is not an extreme weight, and $b_k = \text{med}\{d_k\} \pm 3 * \text{IQR}$ if d_k is an extreme weight, where IQR denotes the interquartile range, and the median and quartiles for the weights are defined with respect to a suitable design-based stratum.

For the nonresponse adjustment, the sample is first divided into two parts: the nonextreme weight subsample and the extreme weight subsample. For nonextreme weights, the following are set: $\ell_2 = 1, c_2 = \rho^{-1}, u_2 = u > \rho^{-1},$ where ρ is the overall response propensity. For extreme weights with high weights, $\ell_k = \ell_1 m_k$, $c_k = \rho^{-1} m_k$, and $u_k = u_1 m_k$, where $m_k = b_k / d_k$ and $1 \le \ell_1 < \rho^{-1} = c_1 < u_1$ are prescribed numbers. Similarly, for extreme weights with low weights, $\ell_k = \ell_3 m_k$, $c_k = \rho^{-1} m_k$, $u_k = u_3 m_k$, and $1 \le \ell_3 < \rho^{-1} = c_3 < u_3$.

For the poststratification adjustment, the following weights are set: for nonextreme weights, $\ell_k = \ell_2$, $c_k = c_2 = 1$, and $u_k = u_2$; for high extreme weights, $\ell_k = \ell_1 m_k$, $c_k = m_k$, and $u_k = u_1 m_k$; and similarly, for low extreme weights, $\ell_k = \ell_3 m_k$, $c_k = m_k$, and $u_k = u_3 m_k$. The extreme value adjustment is identical to poststratifcation, except for tighter bounds on extreme weights resulting from the final poststratification.

Notice that the GEM allows the flexibility of specifying different bounds for different subsamples. In addition, the lower bound (in the case of nonresponse adjustments) can be made to equal one by choosing the center $c_k > 1$.

A.3 Newton-Raphson Steps

Let X denote the $n \times p$ matrix of predictor values, and for the v^{th} iteration,

$$\Gamma_{\phi v} = \text{diag}\left(d_k \phi_k^{(v)}\right), \phi_k^{(o)} = 1,$$

where $\phi_k^{(v)} = \left[\left(u_k - a_k^{(v)}\right)\left(a_k^{(v)} - \ell_k\right)\right] \Big/ \left[\left(u_k - c_k\right)\left(c_k - \ell_k\right)\right]$.

Then, for the Newton-Raphson iteration v, the value of the p-vector λ is adjusted as

$$\lambda^{(v)} = \lambda^{(v-1)} + \left(X'\Gamma_{\phi,v-1}X\right)^{-1}\left(T_x - \hat{T}_x^{(v-1)}\right),$$

where $\lambda^{(0)} = 1$.

The convergence criterion is based on the Euclidean distance $\left\|T_x - \hat{T}_x^{(v)}\right\|$, which is defined as $\sqrt{\left(T_x - \hat{T}_x^{(v)}\right)'\left(T_x - \hat{T}_x^{(v)}\right)}$. At each iteration, it is checked to determine whether it is decreasing. If it is not, a half step is used in the iteration increment.

A.4 Scaled Constrained Exponential Model

In National Household Surveys on Drug Abuse (NHSDAs)[1] prior to 1999, constrained exponential models (CEMs) were used for poststratification, and scaled CEMs were used for nonresponse adjustments. The CEM refers to the logit model of Deville and Särndal (1992), in which lower and upper bounds do not vary with k; that is, $\ell_k = \ell$, $u_k = u$, and $c_k = c = 1$, such that $\ell < 1 < u$. Thus, the CEM is a special case of the GEM. For the nonresponse adjustment, Folsom and Witt (1994) modified the CEM estimating equations by a scaling factor (ρ^{-1}, the inverse of the overall response propensity), such that $1 < \rho^{-1}a_k < \rho^{-1}u$. This implies that choosing ℓ in the CEM as ρ ensures that the scaled adjustment factor for nonresponse is at least one.

[1] The National Household Survey on Drug Abuse (NHSDA) was renamed the National Survey on Drug Use and Health (NSDUH) in the 2002 survey year.

Appendix B: Poststratification Control Totals

Appendix B: Poststratification Control Totals

For poststratification, quarterly State-specific totals for the target population (civilian, noninstitutionalized, aged 12 or older) are required for 120 demographic domains defined by Age, Race, Gender, and Hispanicity (6 × 5 × 2 × 2) (Exhibit B.1). The Population Estimates Branch of the U.S. Bureau of the Census produced, in response to a special request, the necessary population estimates based on monthly State-level estimates of the target population, which were based on the enumerated population from Census 2010.

To arrive at quarterly estimates, approximations at the midpoints of the quarters were needed. To get these approximations, the estimates from the last 2 months in each quarter were averaged. For example, to obtain an approximation for the first quarter of 2012, the U.S. census estimates for February 1 and March 1 were averaged, resulting in a population estimate appropriate for February 15 (i.e., the midpoint of Quarter 1).

Exhibit B.1 Definition of Levels for Variables

Age (years)
1: 12-17, 2: 18-25, 3: 26-34, 4: 35-49, 5: 50-64, 6: 65+

Race
1: White, 2: Black or African American, 3: American Indian or Alaska Native, 4: Asian or Native Hawaiian or Pacific Islander, 5: Two or More Races

Gender
1: Male, 2: Female

Hispanicity
1: Hispanic or Latino, 2: Non-Hispanic or Latino

Appendix C: Imputation Methodology

Appendix C: Imputation Methodology

C.1 Unweighted Hot Deck

The adjustments of (1) dwelling unit (DU) poststratification, (2) poststratification of the selected sample to all eligible rostered persons, and (3) person-level nonresponse required the use of demographic information obtained from the 2012 National Survey on Drug Use and Health (NSDUH) screener interview. However, at the time of screening, the only required information for an individual was age, and, thus, some demographic information (i.e., Gender, Hispanic or Latino origin, and race) was missing. Therefore, some form of imputation was required for cases with missing data.[1] This imputation was performed using an unweighted hot-deck methodology. The unweighted hot-deck method of imputing a variable with missing responses (which is called the base variable in this appendix) involved three basic steps.

1. *Forming imputation classes.* When a strong logical association existed between the base variable and certain auxiliary variables, the data set was partitioned by the auxiliary variables, and imputation procedures were implemented independently within classes defined by the cross of the auxiliary variables.
2. *Sorting the file.* Within each imputation class, the file was sorted by auxiliary variables that were relevant to the item being imputed. The sort order of the auxiliary variables was chosen to reflect the degree of importance of the auxiliary variables in relation to the base variable being imputed (i.e., those auxiliary variables that were better predictors for the item being imputed were used as the first sorting variables).

   For the 2012 NSDUH, two types of sorting procedures were used to sort the files prior to imputation:

   (a) Straight Sort. A set of variables was sorted in ascending order by the first variable specified, then, within each level of the first variable, the file was sorted in ascending order by the second variable specified, and so on. For example:

1	1	1
1	1	2
1	2	1
1	2	2
1	3	1
1	3	2
2	1	1
2	1	2
2	2	1
2	2	2
2	3	1
2	3	2

[1] Because the imputation of these demographic variables was not required for the main NSDUH analysis, it is documented here in the weighting report.

(b) Serpentine Sort. A set of variables was sorted so that the direction of the sort (ascending or descending) changed each time the value of a variable changed. For example:

1	1	1
1	1	2
1	2	2
1	2	1
1	3	1
1	3	2
2	3	2
2	3	1
2	2	1
2	2	2
2	1	2
2	1	1

The serpentine sort has the advantage of minimizing the change in the entire set of auxiliary variables whenever any one of the variables changes its value.

3. *Replace missing values.* The file was sorted and then read sequentially. Each time an item respondent was encountered (i.e., the base variable was nonmissing), the base variable response was stored, updating the donor response, and any subsequent nonrespondent encountered received the stored donor response, creating the statistically imputed response. A starting value was needed if an item nonrespondent was the first record on a sorted file. Typically, the response from the first respondent on the sorted file was used as the starting value.

   Note that because the file was sorted by relevant auxiliary variables, the preceding item respondent (donor) closely matched the neighboring item nonrespondent (recipient) with respect to the auxiliary variables.

For more information on the general hot-deck method of item imputation, see Little and Rubin, 1987 (pp. 62-67).

With the unweighted sequential hot-deck imputation procedure, for any particular item being imputed, there was the risk of several nonrespondents appearing next to one another on the sorted file. To detect this problem in NSDUH, for every variable being imputed, a record was kept of the imputation donor. Then, by examining frequencies by imputation donor, if several nonrespondents were lining up next to one another in the sort, the situation could be detected. When this problem occurred, sort variables were added or eliminated, or the order of the sort variables was rearranged.

C.2 Predictive Mean Neighborhood (PMN)

As in 2002, the predictive mean neighborhood (PMN) methodology was used for the 2012 NSDUH weighting process to impute "race" and "Hispanic or Latino origin" for the screener demographic information, as well as the questionnaire data (Singh, Grau, & Folsom, 2002). Because there was not a good set of predictors for PMN modeling, the unweighted

sequential hot-deck method was used to impute gender. Unweighted sequential hot deck is simple and quick to implement, but it has a number of disadvantages:

- The first few sorting covariates almost entirely determine what donor will be used for a particular respondent with missing data, regardless of how many sorting covariates are included.
- There is no mechanism derived from the data to weight the sorting covariates based on their relationship to the response variable.
- Weights are not used to determine the most appropriate donor for a respondent with missing data.
- The correlations across multiple outcome variables imputed to the same record are not accounted for when finding a donor.
- The choice of donor, after the sort has been completed, may be deterministic; this may introduce bias in estimating means and totals and, thus, make it difficult to determine the variance of the estimator when taking imputation into account.

To address the deficiencies of the unweighted sequential hot deck, the PMN methodology was developed for NSDUH. It is a combination of two commonly used imputation methods: a nonmodel-based hot deck and the model-based predictive mean matching method of Rubin. It enhances the predictive mean matching method in that it can be applied to both discrete and continuous variables either individually or jointly. It also enhances the nearest neighbor hot-deck method in that the distance function used to find neighbors is no longer ad hoc. It is easily applicable to problems of both univariate (UPMN) and multivariate (MPMN) imputations. Univariate imputation is used for imputing a single continuous or dichotomous discrete variable independently, while multivariate imputation arises when values of two or more variables are missing for a single respondent or when a single polytomous variable has missing values. (A polytomous variable is a categorical variable with three or more possible values, such as marital status, which is categorical and has the possible values of married, widowed, divorced, and never married.)

The procedure for implementing univariate and multivariable imputations can be summarized with the following six steps. Steps 2 through 5, and sometimes Step 6, were cycled through each of the variables in the order determined by Step 1. Steps 4 and 5 (Steps 4 through 6, when applicable) could be considered a variant of a random nearest neighbor hot deck.

Step 1: Hierarchy definition. Determine the order in which variables are modeled, so that variables early in the hierarchy may be used for modeling the conditional predictive mean (i.e., variables early in the hierarchy have the potential to be part of the set of covariates for variables later in the hierarchy).

For each variable:

Step 2: Setup for model building and hot-deck assignment. For each model that is fitted, two groups must be created: complete and incomplete data respondents (item respondents and item

nonrespondents). Complete data respondents have complete data across the variables of interest, and incomplete data respondents encompass the remainder of respondents.

Step 3: Sequential hierarchical modeling. The model is built using the complete data for respondents only, with weights adjusted for item nonresponse.

Step 4: Computation of predictive means and delta neighborhoods. The predictive means for item respondents and item nonrespondents are calculated using the model coefficients. Then those item respondents whose predictive means are determined to be "close" (based on a distance function taking values within delta) to the item nonrespondents are considered part of the "delta" neighborhood.

Step 5: Assignment of imputed values using a univariate predictive mean. Using a simple random draw from the neighborhood developed in Step 4, a donor is chosen for each item nonrespondent.

If the variables for which Steps 2 through 5 have been completed are part of a complete multivariate set for which multivariate imputation is to be applied, Step 6 is the next step in the process. If the variables for which Steps 2 through 5 are completed are not part of a complete multivariate set, and other variables are still to be imputed, Step 2 is the next step. Otherwise, the process is finished.

Step 6: Determination of multivariate predictive mean neighborhood and assignment of imputed values. With multivariate imputation, the neighborhood is defined based on a vector of predictive means, rather than from a single predictive mean as in the univariate case.

The PMN methodology addresses all of the shortcomings of the unweighted sequential hot-deck method and was widely used for the imputation of a variety of variables in NSDUH, including both continuous and categorical variables with one or more levels. The models were fit using standard modeling procedures in SAS and SUDAAN®, while SAS macros were used to implement the hot-deck step, including the restrictions on the neighborhoods. Although creating a different neighborhood for each item nonrespondent was computationally intensive, the method was implemented successfully. For more details on PMN, see Frechtel et al. (2014).

Appendix D: Generalized Exponential Model Summary

Appendix D: Generalized Exponential Model Summary

This appendix summarizes each model group throughout all stages of modeling the weight calibrations. Unlike much of the other information presented in this report, this appendix provides a model-specific overview of weight calibration, as opposed to a State- or domain-specific one.

The modeling for the 2012 National Survey on Drug Use and Health (NSDUH) involved taking nine generalized exponential model (GEM) groups through five adjustment steps: (1) dwelling unit (DU)–level nonresponse adjustment, (2) DU-level poststratification, (3) selected person-level poststratification, (4) person-level nonresponse adjustment, and (5) respondent person-level poststratification. The sampling weights after DU-level poststratification for this year were reasonably distributed and did not require the additional treatment of the extreme weight adjustment step at the DU level. Because the adaptive fitting strategy for choosing bounds introduced this year does not require the bounds to be as tight as possible (see Section 4.5), an extreme weight adjustment step was performed after respondent person-level poststratification to further control the extreme weight. See Table D for a summary of the distributions of each of the weight components at the national level.

Model-specific summary statistics are shown in Tables D.1a and D.1b to D.9a and D.9b. Included in these tables, for each stage of modeling, are the following: the number of effects that were controlled directly; the high, low, and nonextreme weight bounds set to provide the upper and lower limits for GEM; weighted, unweighted, and winsorized weight proportions; the unequal weighting effect (UWE); and weight distributions. The UWE provides an approximate measure of variance and establishes how much impact a particular stage of modeling has on the distribution of the new product of weights. For more details on bounds, see Section 4.2. At each stage in the modeling, these summary statistics were calculated and used to evaluate the model that was constructed and its corresponding product of weights.

Such circumstances as small sample sizes and exact linear combinations (i.e., singularities) in the realized data led to situations where finalizing models with the originally proposed set of covariates was not possible. The text and exhibits in Sections D.1 to D.9 summarize the decisions made regarding final covariates that were included in each model. For a list of the proposed initial covariates considered at each stage of modeling, see Exhibit D.1, and for the list of realized final model covariates, see Exhibits D1.1 through D9.5. The following sections establish a series of guidelines to assist in the interpretation of the covariates.

Table D Distribution of Weight Adjustment Factors and Weight Products for the 2012 NSDUH Person Weight (United States)

	sel.sdu.des[1]	*res.sdu.nr*[1]		*res.sdu.ps*[1]		*sel.per.des*[1]		*sel.per.ps*[1]		*res.per.nr*[1]		*res.per.ps*[1]	
	1-7[2]	**8**[3]	**1-8**[3]	**9**[4]	**1-9**[4]	**11**[5]	**1-11**[5]	**12**[5]	**1-12**[5]	**13**[6]	**1-13**[6]	**14**[6]	**1-14**[6]
Minimum	30	0.41	40	0.08	9	1.01	19	0.07	4	0.22	4	0.06	1
1%	54	1.00	67	0.51	72	1.01	104	0.34	88	1.00	95	0.20	76
5%	89	1.03	98	0.78	111	1.01	209	0.64	194	1.00	225	0.46	194
10%	132	1.05	147	0.89	162	1.01	340	0.74	322	1.03	368	0.80	322
25%	377	1.08	401	0.99	417	1.15	677	0.87	650	1.11	757	0.96	726
Median	520	1.12	602	1.08	644	1.47	1,334	0.99	1,330	1.22	1,556	1.02	1,549
75%	822	1.19	955	1.19	1,043	5.79	3,483	1.12	3,466	1.38	4,107	1.08	4,069
90%	1,225	1.30	1,393	1.34	1,506	10.61	7,678	1.28	7,716	1.59	10,034	1.23	10,009
95%	1,413	1.40	1,637	1.50	1,829	11.84	11,030	1.42	11,353	1.78	15,350	1.37	15,405
99%	1,694	1.87	1,981	2.16	2,510	13.38	19,642	1.93	19,893	2.48	28,234	1.91	29,312
Maximum	5,182	17.03	6,317	6.33	9,546	35.28	75,644	10.93	83,336	15.95	112,786	5.11	133,926
n	178,586	153,873	153,873	153,858	153,858	87,656	87,656	87,656	87,656	68,309	68,309	68,309	68,309
Max/Mean	8.53	-	8.96	-	12.33	-	25.48	-	28.09	-	29.63	-	35.18

Note 1: Weight component 10 and weight products 1-10 are excluded because weight 10 = 1 for all selected dwelling units.
Note 2: Weight component 15 and weight products 1-15 are excluded because weight 15 = 1 for all respondents.
Note 3: Under the generalized exponential model (GEM), nonresponse adjustment factors (weight components #8 and #13) could be less than 1 due to the built-in control for extreme values. For an explanation, see Chapter 2.

[1] Sel.sdu.des refers to selected screener dwelling unit design weight, and sel.per.des refers to selected person design weight. For a key to other modeling abbreviations, see Chapter 5, Exhibit 5.1.
[2] Based on eligible dwelling units.
[3] Based on screener-complete dwelling units.
[4] Based on screener-complete dwelling units, occupants verified eligible.
[5] Based on selected persons.
[6] Based on questionnaire-complete persons.

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

D.1 Final Model Explanatory Variables

For brevity, numeric abbreviations for variable levels are established in Exhibit 3.1 in Chapter 3 (included here as Exhibit D.1 for easy reference). There, a complete list is provided of all variables and associated levels used at any stage of modeling. In this report, each level of a variable is referred to as a covariate. Note that (1) not all variables or levels are present in all stages of modeling; (2) the initial set of covariates, allowing for differences in States across model groups, is the same for all model groups within a stage of modeling; and (3) the initial set of covariates changes across the stages of modeling. Exhibits D.2 through D.5 provide the initial covariates for the stages of modeling, and Exhibits D1.1 through D9.5 provide lists of both the proposed and the final covariates for the nine model groups. This last group of exhibits is grouped by model groups and contains one exhibit for each stage of weight adjustment. The initial variables are found in the "Proposed" column, and the realized covariates are found in the "Final" column.

Section D.3 explains how to create cross-classification tables, which help to illustrate what covariates are controlled for at each stage of the modeling. The general pattern is as follows: directions to follow, semicolon, reason for the change. Sections D.2 and D.3 explain how to use various exhibits for selected model variables to construct these tables. For greater detail on why variable levels are collapsed or dropped, see Section 4.7.

Exhibit D.1 Definition of Levels for Variables

Age (years)
1: 12-17, 2: 18-25, 3: 26-34, 4: 35-49, 5: 50+[1,4]

Gender
1: Male, 2: Female[1]

Group Quarters Indicator
1: College Dorm, 2: Other Group Quarter, 3: Non-Group Quarter[1]

Hispanicity
1: Hispanic or Latino, 2: Non-Hispanic or Latino[1]

Percentage of Owner-Occupied Dwelling Units in Segment (% Owner-Occupied)
1: 50% - 100%,[1] 2: 10% - > 50%, 3: 0 - >10%

Percentage of Segments That Are Black or African American
1: 50% - 100%, 2: 10% - >50%, 3: 0 - >10%[1]

Percentage of Segments That Are Hispanic or Latino
1: 50% - 100%, 2: 10% - >50%, 3: 0 - >10%[1]

Population Density
1: MSA 1,000,000 or More, 2: MSA Less than 1,000,000, 3: Non-MSA Urban, 4: Non-MSA Rural[1]

Quarter
1: Quarter 1, 2: Quarter 2, 3: Quarter 3, 4: Quarter 4[1]

Race (3 levels)
1: White,[1] 2: Black or African American, 3: Other

Race (5 levels)
1: White,[1] 2: Black or African American, 3: American Indian or Alaska Native, 4: Asian, 5: Two or More Races

Relation to Householder
1: Householder or Spouse,[1] 2: Child, 3: Other Relative, 4: Nonrelative

Segment-Combined Median Rent and Housing Value (Rent/Housing)[2]
1: First Quintile, 2: Second Quintile, 3: Third Quintile, 4: Fourth Quintile, 5: Fifth Quintile[1]

States[3]

Model Group 1:	1: Connecticut, 2: Maine, 3: New Hampshire, 4: Rhode Island, 5: Vermont, 6: Massachusetts[1]
Model Group 2:	1: New Jersey,[1] 2: New York, 3: Pennsylvania
Model Group 3:	1: Illinois, 2: Indiana,[1] 3: Michigan, 4: Wisconsin, 5: Ohio
Model Group 4:	1: Iowa, 2: Kansas, 3: Minnesota, 4: Missouri,[1] 5: Nebraska, 6: South Dakota, 7: North Dakota
Model Group 5:	1: Delaware, 2: District of Columbia, 3: Georgia,[1] 4: Maryland, 5: North Carolina, 6: South Carolina, 7: Virginia, 8: West Virginia, 9: Florida
Model Group 6:	1: Alabama, 2: Kentucky, 3: Mississippi, 4: Tennessee[1]
Model Group 7:	1: Arkansas,[1] 2: Louisiana, 3: Oklahoma, 4: Texas
Model Group 8:	1: Colorado, 2: Idaho, 3: Montana, 4: Nevada, 5: New Mexico, 6: Utah, 7: Wyoming, 8: Arizona[1]
Model Group 9:	1: Alaska, 2: Hawaii, 3: Oregon, 4: Washington,[1] 5: California

MSA = metropolitan statistical area.

[1] The reference level for this variable. This is the level against which effects of other factor levels are measured.

[2] Segment-Combined Median Rent and Housing Value (also known as the Socioeconomic Status [SES] indicator) is a composite measure based on rent, housing value, and percent owner occupied.

[3] The States or district assigned to a particular model are based on census divisions.

[4] The age group 50+ was further broken down into 50-64 and 65+ for Person-Level Poststratification Adjustment and Person-Level Extreme Weight Adjustment.

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

D.2 Glossary of Terms Used in the Exhibits and Descriptions of the Variables in the Final Model

This glossary provides a list of general terms. Certain other specific terms are sometimes used within a particular section.

All levels present. All levels of the variable under consideration were included in the final model.

Coll. Collapse (levels). These levels of the factor effect were collapsed together. Levels that have been collapsed together no longer appear in the model as separate variables, but rather manifest themselves jointly in the model.

Conv. If model is not convergent, dropping or collapsing of variables is performed.

Drop all levels. All levels of a factor effect were completely removed from the model, as well as any combinations involving this factor.

Drop *level(s)*. These levels of a factor effect were collapsed into the reference set. The dropped levels manifest themselves jointly with the appropriate reference levels.

Drop *level(s)*; singularity/zero sample. During the modeling process, the levels of factor effect(s) listed were removed from the model because of either singularities or sample sizes of zero.

Drop or collapse using *. The asterisk is used as a wildcard character to indicate all levels of that factor effect.

Factor effects. Another name for covariates, or variables, such as "Age." In addition to one-factor effects, two-, and three-factor effects also are referenced, such as "Age × Race" and "Age × Race × Gender."

Hier. Factor effects collapsed/dropped at lower order and the hierarchical effect carries up. This indicates that one or more levels of factor effects were collapsed/dropped in an earlier stage, and that the same action (collapse/drop) was performed on the corresponding levels in all higher-order factor effects containing the dropped/collapsed levels.

Keep *level(s)*. These levels of the factor effect were kept in the model and the remainder into the reference set.

Reference/reference set. The reference levels of factor effects (see Exhibit D.1) are not explicitly listed in the set of model variables, but are represented implicitly in the model in the intercept term. These include one-, two-, and three-factor effects.

Repeat or **Do the same for *(effects)*.** The previous action was repeated for all effect levels listed.

Sing. Singularity is the linear dependence of columns of realized values of the predictors in the model. Any variable that is a linear combination of other variables is either dropped from the model or collapsed with other variables.

D.3 How to Interpret Collapsing and Dropping of Factor Effects

To help visualize what effects were directly controlled for in the model, a table that reflects the collapsing scheme employed can be constructed. The following is a complex example from the 2004 modeling, which demonstrates how to use the information found in Exhibits D1.1 through D9.5.

1. Consider the following entry for the factor effect of State × Age × Race (3 levels), for Model Group 9, for the Person-Level Nonresponse Adjustment.

Three-Factor Effects	Comments
State × Age × Race (3 Levels)	Coll. (2,1,2) & (2,1,3); hier. Repeat for all age levels in State (2); hier. Coll. (1,4,2) & (1,4,3); conv. Drop (3,4,2); sing. Drop (3,*,*); conv. Coll. (5,1,2) & (5,1,3); conv. Repeat for all age levels in State (5).

2. Determine the initial range of possible levels for the variables by referring to the variable definitions shown in Exhibit D.1:

State (for the model group in question, in this case, Model Group 9)

Model Group 9: 1: Alaska, 2: Hawaii, 3: Oregon, 4: Washington,[1] 5: California

Age (years)

1: 12-17, 2: 18-25, 3: 26-34, 4: 35-49, 5: 50+[1]

Race (3 levels)

1: White,[1] 2: Black or African American, 3: Other

3. Construct the cross-classification table.

For example, Race (5 levels) is defined this way:

Race (5 Levels)	White	Black or African American	Asian	American Indian or Alaska Native	Two or More Races

Shading indicates the reference-level set.

[1] This is the reference level for this variable. This is the level against which effects of other factor levels are measured.

This is the cross-classification table for State × Race (5 levels):

State × Race (5 levels)	White	Black or African American	Asian	American Indian or Alaska Native	Two or More Races
AK					
HI					
OR					
WA					
CA					

Shading indicates the reference-level set.

The cross-classification table of interest [State × Age × Race (3 levels)] is as follows:

State × Age × Race (3 Levels)	White	Black or African American	Other
AK × 12-17			
18-25			
26-34			
35-49			
50+			
HI × 12-17			
18-25			
26-34			
35-49			
50+			
OR × 12-17			
18-25			
26-34			
35-49			
50+			
WA × 12-17			
18-25			
26-34			
35-49			
50+			
CA × 12-17			
18-25			
26-34			
35-49			
50+			

Shading indicates the reference-level set.

The number of respondents in that class at this stage of modeling would appear within each cell of the table. Construction of the other cross-classification tables follows the same logic and is only necessary to the point of providing an understanding of the final table.

4. Use the information under the "Final" column definition to determine the combination of factors controlled.

Hier. This means the factor effect was collapsed at a lower order. Because this note is present, examine the information on lower-order factor effects that are the components of the interaction term, State × Race (3 levels) × Age; that is, look at the one-factor and two-factor effects for State, Race (5 levels), and Age, and their accompanying information:

One-Factor Effects	Comments
State	All levels present.
Race (5 Levels)	All levels present.
Age	All levels present.

Two-Factor Effects	Comments
State × Age	All levels present.
State × Race (5 Levels)	Coll. (1,3) & (1,4). Do the same for all other States except (2). Coll. (2,2), (2,3), & (2,4).
Age × Race (3 Levels)	All levels present.

Following these directions, the resulting two-factor table is:

State × Race (5 Levels)	White	Black or African American	Asian	American Indian or Alaska Native	Two or More Races
AK					
HI					
OR					
WA					
CA					

Shading indicates the reference-level set.

Continuing on to the three-factor level for the same example:

Three-Factor Effects	**Comments**
State × Age × Race (3 Levels)	Coll. (2,1,2) & (2,1,3); hier. Repeat for all age levels in State (2); hier. Coll. (1,4,2) & (1,4,3); conv. Drop (3,4,2); sing. Drop (3,*,*); conv. Coll. (5,1,2) & (5,1,3); conv. Repeat for all age levels in State (5).

The reason for the note "Hier." in the three-factor effects is that collapsing was done on the two-factor interaction term State × Race (5 levels). Because collapsing was done on this term, all three-factor crosses involving State × Race must maintain this same collapsing scheme.

After following the directions, the cross-classification table should appear as follows:

State × Age × Race (3 Levels)	White	Black or African American	Other
AK × 12-17			
18-25			
26-34			
35-49			
50+			
HI × 12-17			
18-25			
26-34			
35-49			
50+			
OR × 12-17			
18-25			
26-34			
35-49			
50+			
WA × 12-17			
18-25			
26-34			
35-49			
50+			
CA × 12-17			
18-25			
26-34			
35-49			
50+			

Shading indicates the reference-level set.

The unshaded cells represent the factors directly controlled for by the model (i.e., those factors that were not collapsed or dropped). The shaded cells represent the composite reference set, whose values may be obtained by utilizing the marginal sums, although when changes to the initially proposed set occur, it can make certain reference cell counts indistinguishable.

Exhibit D.2 Covariates for 2012 NSDUH Person Weights (res.sdu.nr)

Variables	Levels	Proposed
One-Factor Effects		
Intercept	1	1
State	Model Specific	
Quarter	4	3
Population Density	4	3
Group Quarter	3	2
% Black or African American	3	2
% Hispanic or Latino	3	2
% Owner-Occupied	3	2
Rent/Housing	5	4
Two-Factor Effects		
% Owner-Occupied × % Black or African American	3 × 3	4
% Owner-Occupied × % Hispanic or Latino	3 × 3	4
% Owner-Occupied × Rent/Housing	3 × 5	8
Rent/Housing × % Black of African American	3 × 5	8
Rent/Housing × % Hispanic or Latino	3 × 5	8
State × Quarter	Model Specific	
State × Population Density	Model Specific	
State × Group Quarter	Model Specific	
State × % Black or African American	Model Specific	
State × % Hispanic or Latino	Model Specific	
State × % Owner-Occupied	Model Specific	
State × Rent/Housing	Model Specific	
Three-Factor Effects		
State × % Owner-Occupied × % Black or African American	Model Specific	
State × % Owner-Occupied × % Hispanic or Latino	Model Specific	
State × % Owner-Occupied × Rent/Housing	Model Specific	
State × Rent/Housing × % Black or African American	Model Specific	
State × Rent/Housing × % Hispanic or Latino	Model Specific	

Exhibit D.3 Covariates for 2012 NSDUH Person Weights (res.sdu.ps)

Variables	Levels	Proposed
One-Factor Effects		
Intercept	1	1
State	Model Specific	
Quarter	4	3
Age	5	4
Race (5 levels)	5	4
Gender	2	1
Hispanicity	2	1
Two-Factor Effects		
Age × Race (3 levels)	5 × 3	8
Age × Hispanicity	5 × 2	4
Age × Gender	5 × 2	4
Race (3 levels) × Hispanicity	3 × 2	2
Race (3 levels) × Gender	3 × 2	2
Hispanicity × Gender	3 × 2	1
State × Quarter	Model Specific	
State × Age	Model Specific	
State × Race (5 levels)	Model Specific	
State × Hispanicity	Model Specific	
State × Gender	Model Specific	
Three-Factor Effects		
Age × Race (3 levels) × Hispanicity	5 × 3 × 2	8
Age × Race (3 levels) × Gender	5 × 3 × 2	8
Age × Hispanicity × Gender	5 × 2 × 2	4
Race (3 levels) × Hispanicity × Gender	3 × 2 × 2	2
State × Age × Race (3 levels)	Model Specific	
State × Age × Hispanicity	Model Specific	
State × Age × Gender	Model Specific	
State × Race (3 levels) × Hispanicity	Model Specific	
State × Race (3 levels) × Gender	Model Specific	
State × Hispanicity × Gender	Model Specific	

Exhibit D.4 Covariates for 2012 NSDUH Person Weights (sel.per.ps and res.per.nr)

Variables	Levels	Proposed
One-Factor Effects		
Intercept	1	1
State	Model Specific	
Quarter	4	3
Age	5	4
Race (5 levels)	5	4
Gender	2	1
Hispanicity	2	1
Relation to Householder	4	3
Population Density	4	3
Group Quarter	3	2
% Black or African American	3	2
% Hispanic or Latino	3	2
% Owner-Occupied	2	2
Rent/Housing	5	4
Two-Factor Effects		
Age × Race (3 levels)	5 × 3	8
Age × Hispanicity	5 × 2	4
Age × Gender	5 × 2	4
Race (3 levels) × Hispanicity	3 × 2	2
Race (3 levels) × Gender	3 × 2	2
Hispanicity × Gender	2 × 2	1
% Owner-Occupied × % Black or African American	3 × 3	4
% Owner-Occupied × % Hispanicity	3 × 3	4
% Owner-Occupied × Rent/Housing	3 × 5	8
Rent/Housing × % Black or African American	3 × 5	8
Rent/Housing × % Hispanic or Latino	3 × 5	8
State × Quarter	Model Specific	
State × Age	Model Specific	
State × Race (5 levels)	Model Specific	
State × Hispanicity	Model Specific	
State × Gender	Model Specific	
State × % Black or African American	Model Specific	
State × % Hispanic or Latino	Model Specific	
State × % Owner-Occupied	Model Specific	
State × Rent/Housing	Model Specific	
Three-Factor Effects		
Age × Race (3 levels) × Hispanicity	5 × 3 × 2	8
Age × Race (3 levels) × Gender	5 × 3 × 2	8
Age × Hispanicity × Gender	5 × 2 × 2	4
Race (3 levels) × Hispanicity × Gender	3 × 2 × 2	2
State × Age × Race (3 levels)	Model Specific	
State × Age × Hispanicity	Model Specific	
State × Age × Gender	Model Specific	
State × Race (3 levels) × Hispanicity	Model Specific	
State × Race (3 levels) × Gender	Model Specific	
State × Hispanicity × Gender	Model Specific	

Exhibit D.5 Covariates for 2012 NSDUH Person Weights (res.per.ps and res.per.ev)

Variables	Levels	Proposed
One-Factor Effects		
Intercept	1	1
State	Model Specific	
Quarter	4	3
Age	6	5
Race (5 levels)	5	4
Gender	2	1
Hispanicity	2	1
Two-Factor Effects		
Age × Race (3 levels)	6 × 3	10
Age × Hispanicity	6 × 2	5
Age × Gender	6 × 2	5
Race (3 levels) × Hispanicity	3 × 2	2
Race (3 levels) × Gender	3 × 2	2
Hispanicity × Gender	2 × 2	1
State × Quarter	Model Specific	
State × Age	Model Specific	
State × Race (5 levels)	Model Specific	
State × Hispanicity	Model Specific	
State × Gender	Model Specific	
Three-Factor Effects		
Age × Race (3 levels) × Hispanicity	6 × 3 × 2	10
Age × Race (3 levels) × Gender	6 × 3 × 2	10
Age × Hispanicity × Gender	6 × 2 × 2	5
Race (3 levels) × Hispanicity × Gender	3 × 2 × 2	2
State × Age × Race (3 levels)	Model Specific	
State × Age × Hispanicity	Model Specific	
State × Age × Gender	Model Specific	
State × Race (3 levels) × Hispanicity	Model Specific	
State × Race (3 levels) × Gender	Model Specific	
State × Hispanicity × Gender	Model Specific	

Appendix D1: Model Group 1: New England

(Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont)

Table D.1a 2012 NSDUH Person Weight GEM Modeling Summary (Model Group 1: New England)

Modeling Step[1]	Extreme Weight Proportions			UWE[2]	# XVAR[3]	Bounds[4]	
	% Unweighted	% Weighted	% Outwinsor			Nominal	Realized
res.sdu.nr	5.67	4.48	0.33	1.68366	306	(1.07, 1.50)	(1.07, 1.50)
	5.29	6.08	0.81	1.77527	141	(1.00, 3.57)	(1.00, 3.56)
						(1.10, 1.95)	(1.11, 1.95)
res.sdu.ps	5.29	6.08	0.81	1.77519	232	(0.20, 1.10)	(0.20, 1.10)
	3.23	5.54	1.33	1.95096	222	(0.20, 5.00)	(0.20, 5.00)
						(0.90, 3.15)	(0.90, 3.15)
sel.per.ps	4.15	7.28	2.04	3.72981	332	(0.20, 2.80)	(0.20, 2.80)
	2.24	6.60	1.75	3.86735	277	(0.20, 5.00)	(0.20, 5.00)
						(0.70, 3.58)	(0.70, 3.58)
res.per.nr	2.62	8.60	1.96	3.92329	332	(1.00, 2.90)	(1.00, 2.90)
	2.08	6.73	1.72	4.43213	220	(1.00, 5.00)	(1.00, 5.00)
						(1.10, 2.37)	(1.10, 2.37)
res.per.ps	2.08	6.41	1.73	4.43213	267	(0.20, 1.20)	(0.20, 1.20)
	1.26	2.83	0.51	4.34446	185	(0.20, 5.00)	(0.20, 5.00)
						(0.90, 1.15)	(0.90, 1.15)

[1] For a key to modeling abbreviations, see Chapter 5, Exhibit 5.1.
[2] Unequal weighting effect (UWE) is defined as $1 + [(n - 1)/n]*CV^2$, where CV = coefficient of variation of weights.
[3] Number of proposed covariates (XVAR) on top line and number finalized after modeling.
[4] There are six sets of bounds for each modeling step. Nominal bounds are used in defining maximum/minimum values for the generalized exponential model (GEM) adjustment factors. The realized bound is the actual adjustment produced by the modeling. The set of three bounds listed for each step correspond to the high extreme values, the nonextreme values, and the low extreme values.

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

Table D.1b Distribution of Weight Adjustment Factors and Weight Products for the 2012 NSDUH Person Weight (Model Group 1: New England)

	sel.sdu.des[1]	*res.sdu.nr*[1]		*res.sdu.ps*[1]		*sel.per.des*[1]		*sel.per.ps*[1]		*res.per.nr*[1]		*res.per.ps*[1]	
	1-7[2]	**8**[3]	**1-8**[3]	**9**[4]	**1-9**[4]	**11**[5]	**1-11**[5]	**12**[5]	**1-12**[5]	**13**[6]	**1-13**[6]	**14**[6]	**1-14**[6]
Minimum	66	0.71	70	0.08	18	1.01	19	0.08	8	0.30	8	0.10	3
1%	78	1.00	84	0.30	58	1.01	77	0.28	46	0.84	44	0.20	30
5%	80	1.05	91	0.67	89	1.01	126	0.56	111	1.00	126	0.43	117
10%	88	1.07	100	0.88	103	1.01	167	0.71	156	1.00	179	0.74	164
25%	167	1.09	179	1.00	186	1.14	270	0.84	266	1.06	310	0.95	301
Median	192	1.12	213	1.08	233	1.39	720	0.97	694	1.19	808	1.02	756
75%	453	1.17	533	1.19	577	6.09	1,673	1.14	1,741	1.38	2,168	1.09	2,225
90%	878	1.23	991	1.30	1,121	10.90	4,373	1.34	4,185	1.68	5,301	1.19	5,325
95%	890	1.26	1,090	1.46	1,231	13.10	7,381	1.56	7,332	1.95	9,321	1.44	9,421
99%	907	1.82	1,148	2.20	1,587	15.60	13,779	2.61	13,608	3.00	21,259	2.95	21,451
Maximum	1,456	3.56	2,213	5.00	5,531	27.54	38,702	10.93	47,604	15.95	65,152	5.00	46,935
n	15,380	13,365	13,365	13,363	13,363	7,174	7,174	7,174	7,174	5,615	5,615	5,615	5,615
Max/Mean	4.30	-	5.69	-	12.82	-	22.06	-	27.51	-	29.47	-	21.23

Note 1: Weight component 10 and weight products 1-10 are excluded because weight 10 = 1 for all selected dwelling units.
Note 2: Weight component 15 and weight products 1-15 are excluded because weight 15 = 1 for all respondents.
Note 3: Under the generalized exponential model (GEM), nonresponse adjustment factors (weight components #8 and #13) could be less than 1 due to the built-in control for extreme values. For an explanation, see Chapter 2.

[1] Sel.sdu.des refers to selected screener dwelling unit design weight, and sel.per.des refers to selected person design weight. For a key to other modeling abbreviations, see Chapter 5, Exhibit 5.1.
[2] Based on eligible dwelling units.
[3] Based on screener-complete dwelling units.
[4] Based on screener-complete dwelling units, occupants verified eligible.
[5] Based on selected persons.
[6] Based on questionnaire-complete persons.

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

Model Group 1 Overview

Dwelling Unit Nonresponse

Out of 24 proposed one-factor effects, 23 were included in the model. Variable collapsing was present in the Group Quarter main effect.

For the two-factor effects, variable collapsing or dropping was present in all factors except the percent Owner-Occupied × Rent/Housing, Rent/Housing × percent Hispanic or Latino, State × Group Quarter, State × percent Owner-Occupied, and State × Rent/Housing interactions. Out of 122 proposed variables, 85 were included in the model.

Variable collapsing or dropping was present in all three-factor effects. Out of 160 proposed variables, 33 were included in the model.

In the final model, a total of 141 variables were included; see Exhibit D1.1.

Dwelling Unit Poststratification

All 19 proposed one-factor effects were included in the model.

All 86 proposed two-factor effects were included in the model.

For the three-factor effects, variable collapsing or dropping was present in the State × Age × Race and State × Race × Hispanicity interactions. Out of 127 proposed variables, 117 were included in the model.

In the final model, a total of 222 variables were included; see Exhibit D1.2.

Selected Person-Level Poststratification

All 37 proposed one-factor effects were included in the model.

For the two-factor effects, variable collapsing or dropping was present in the percent Owner-Occupied × percent Black or African American, percent Owner-Occupied × percent Hispanic or Latino, Rent/Housing × percent Black or African American, State × Race, State × percent Black or African American, and State × percent Hispanic or Latino interactions. Out of 168 proposed variables, 150 were included in the model.

For the three-factor effects, variable collapsing or dropping was present in all factors except the Age × Race × Gender, Age × Hispanicity × Gender, Race × Hispanicity × Gender, and State × Age × Gender interactions. Out of 127 proposed variables, 90 were included in the model.

In the final model, a total of 277 variables were included; see Exhibit D1.3.

Respondent Person-Level Nonresponse

All 37 proposed one-factor effects were included in the model.

For the two-factor effects, variable collapsing or dropping was present in the percent Owner-Occupied × percent Black or African American, percent Owner-Occupied × percent Hispanic or Latino, percent Owner-Occupied × Rent/Housing, Rent/Housing × percent Black or African American, State × Race, State × percent Black or African American, State × percent Hispanic or Latino, and State × percent Owner-Occupied interactions. Out of 168 proposed variables, 143 were included in the model.

For the three-factor effects, variable dropping was present in all three-way interactions except State × Age × Gender and State × Hispanicity × Gender. Out of 127 proposed variables, 40 were included in the model.

In the final model, a total of 220 variables were included; see Exhibit D1.4.

Respondent Person-Level Poststratification

All 20 proposed one-factor effects were included in the model.

For the two-factor effects, variable collapsing was present in the State × Race interactions. Out of 95 proposed two-factor effects, 88 were included in the model.

For the three-factor effects, variable collapsing or dropping was present in all interactions except State × Age × Gender and State × Hispanicity × Gender. Out of 152 proposed variables, 77 were included in the model.

In the final model, a total of 185 variables were included; see Exhibit D1.5.

Exhibit D1.1 Covariates for 2012 NSDUH Person Weights (res.sdu.nr), Model Group 1: New England

Variables	Level	Proposed	Final	Comments
One-Factor Effects		**24**	**23**	
Intercept	1	1	1	All levels present.
State	6	5	5	All levels present.
Quarter	4	3	3	All levels present.
Population Density	4	3	3	All levels present.
Group Quarter	3	2	1	Coll. (1,2); conv.
% Black or African American	3	2	2	All levels present.
% Hispanic or Latino	3	2	2	All levels present.
% Owner-Occupied	3	2	2	All levels present.
Rent/Housing	5	4	4	All levels present.
Two-Factor Effects		**122**	**85**	
% Owner-Occupied × % Black or African American	3 × 3	4	3	Drop (2,1); sing.
% Owner-Occupied × % Hispanic or Latino	3 × 3	4	3	Drop (2,1); sing.
% Owner-Occupied × Rent/Housing	3 × 5	8	8	All levels present.
Rent/Housing × % Black or African American	3 × 5	8	6	Drop (2,1), (4,1); sing.
Rent/Housing × % Hispanic or Latino	3 × 5	8	8	All levels present.
State × Quarter	6 × 4	15	15	All levels present.
State × Population Density	6 × 4	15	5	Keep (1,1), (2,2/3), 3(2,2/3). Drop all others; zero/sing.
State × Group Quarter	6 × 3	10	0	Drop all; conv.
State × % Black or African American	6 × 3	10	2	Keep (1/4,2). Drop all others; zero/sing.
State × % Hispanic or Latino	6 × 3	10	5	Keep (1,1/2), (3,2), (4,1/2). Drop all others; zero/sing.
State × % Owner-Occupied	6 × 3	10	10	All levels present.
State × Rent/Housing	6 × 5	20	20	All levels present.
Three-Factor Effects		**160**	**33**	
State × % Owner-Occupied × % Black or African American	6 × 3 × 3	20	3	Keep (1,2/3,2), (4,2,2). Drop all others; hier./zero/sing.
State × % Owner-Occupied × % Hispanic or Latino	6 × 3 × 3	20	3	Keep (1,2,2), (3,3,2),(4,2,2). Drop all others; hier./zero/sing.
State × % Owner-Occupied × Rent/Housing	6 × 3 × 5	40	18	Keep (1,3,1), (1,2,2/4), Coll. (1,2,3) & (1,3,3). Keep (2,3,2), (2,2,1/2), (3,2,2/3), (4,3,2), (4,2,1/2/3/4), (5,2,1/2/3/4). Drop all others; zero/sing.
State × Rent/Housing × % Black or African American	6 × 3 × 5	40	3	Keep (1,2/3/4,2). Drop all others; hier./zero/sing.
State × Rent/Housing × % Hispanic or Latino	6 × 3 × 5	40	6	Keep (1,2,2), (1,3,1/2), (1,4,2), (3,3,2), (4,2,2). Drop all others; hier./zero/sing.
Total		**306**	**141**	

Exhibit D1.2 Covariates for 2012 NSDUH Person Weights (res.sdu.ps), Model Group 1: New England

Variables	Level	Proposed	Final	Comments
One-Factor Effects		**19**	**19**	All levels present.
Intercept	1	1	1	All levels present.
State	6	5	5	All levels present.
Quarter	4	3	3	All levels present.
Age	5	4	4	All levels present.
Race (5 levels)	5	4	4	All levels present.
Gender	2	1	1	All levels present.
Hispanicity	2	1	1	All levels present.
Two-Factor Effects		**86**	**86**	All levels present.
Age × Race (3 levels)	5 × 3	8	8	All levels present.
Age × Hispanicity	5 × 2	4	4	All levels present.
Age × Gender	5 × 2	4	4	All levels present.
Race (3 levels) × Hispanicity	3 × 2	2	2	All levels present.
Race (3 levels) × Gender	3 × 2	2	2	All levels present.
Hispanicity × Gender	2 × 2	1	1	All levels present.
State × Quarter	6 × 4	15	15	All levels present.
State × Age	6 × 5	20	20	All levels present.
State × Race (5 levels)	6 × 5	20	20	All levels present.
State × Hispanicity	6 × 2	5	5	All levels present.
State × Gender	6 × 2	5	5	All levels present.
Three-Factor Effects		**127**	**117**	
Age × Race (3 levels) × Hispanicity	5 × 3 × 2	8	8	All levels present.
Age × Race (3 levels) × Gender	5 × 3 × 2	8	8	All levels present.
Age × Hispanicity × Gender	5 × 2 × 2	4	4	All levels present.
Race (3 levels) × Hispanicity × Gender	3 × 2 × 2	2	2	All levels present.
State × Age × Race (3 levels)	6 × 5 × 3	40	36	Coll. (5,1,2) & (5,1,3), repeat for all age levels; conv.
State × Age × Hispanicity	6 × 5 × 2	20	20	All levels present.
State × Age × Gender	6 × 5 × 2	20	20	All levels present.
State × Race (3 levels) × Hispanicity	6 × 3 × 2	10	4	Coll. (1,2,1) & (1,3,1); repeat for all States; drop State VT; conv.
State × Race (3 levels) × Gender	6 × 3 × 2	10	10	All levels present.
State × Hispanicity × Gender	6 × 2 × 2	5	5	All levels present.
Total		**232**	**222**	

Exhibit D1.3 Covariates for 2012 NSDUH Person Weights (sel.per.ps), Model Group 1: New England

Variables	Levels	Proposed	Final	Comments
One-Factor Effects		**37**	**37**	
Intercept	1	1	1	All levels present.
State	6	5	5	All levels present.
Quarter	4	3	3	All levels present.
Age	5	4	4	All levels present.
Race (5 levels)	5	4	4	All levels present.
Gender	2	1	1	All levels present.
Hispanicity	2	1	1	All levels present.
Relation to Householder	4	3	3	All levels present.
Population Density	4	3	3	All levels present.
Group Quarter	3	2	2	All levels present.
% Black or African American	3	2	2	All levels present.
% Hispanic or Latino	3	2	2	All levels present.
% Owner-Occupied	3	2	2	All levels present.
Rent/Housing	5	4	4	All levels present.
Two-Factor Effects		**168**	**150**	
Age × Race (3 levels)	5 × 3	8	8	All levels present.
Age × Hispanicity	5 × 2	4	4	All levels present.
Age × Gender	5 × 2	4	4	All levels present.
Race (3 levels) × Hispanicity	3 × 2	2	2	All levels present.
Race (3 levels) × Gender	3 × 2	2	2	All levels present.
Hispanicity × Gender	2 × 2	1	1	All levels present.
% Owner-Occupied × % Black or African American	3 × 3	4	3	Drop (2,1); sing.
% Owner-Occupied × % Hispanic or Latino	3 × 3	4	3	Drop (2,1); sing.
% Owner-Occupied × Rent/Housing	3 × 5	8	8	All levels present.
Rent/Housing × % Black or African American	3 × 5	8	6	Drop (2/4,1);sing.
Rent/Housing × % Hispanic or Latino	3 × 5	8	8	All levels present.
State × Quarter	6 × 4	15	15	All levels present.
State × Age	6 × 5	20	20	All levels present.
State × Race (5 levels)	6 × 5	20	19	Coll. (4,3) & (4,4); conv.
State × Hispanicity	6 × 2	5	5	All levels present.
State × Gender	6 × 2	5	5	All levels present.
State × % Black or African American	6 × 3	10	2	Keep (1/4, 2), drop others; zero.
State × % Hispanic or Latino	6 × 3	10	5	Drop (2/5,1/2), (3,1); zero.
State × % Owner-Occupied	6 × 3	10	10	All levels present.
State × Rent/Housing	6 × 5	20	20	All levels present.
Three-Factor Effects		**127**	**90**	
Age × Race (3 levels) × Hispanicity	5 × 3 × 2	8	3	Coll. (1,2,1) & (1,3,1), repeat for all ages and drop age=4; conv.
Age × Race (3 levels) × Gender	5 × 3 × 2	8	8	All levels present.
Age × Hispanicity × Gender	5 × 2 × 2	4	4	All levels present.
Race (3 levels) × Hispanicity × Gender	3 × 2 × 2	2	2	All levels present.
State × Age × Race (3 levels)	6 × 5 × 3	40	26	Coll. (2,1,2) & (2,1,3), repeat for all age levels and States NH and VT. Drop (2,3/4,2/3); zero, sing, conv.
State × Age × Hispanicity	6 × 5 × 2	20	14	Drop (2,*,1), (5,3/4,1); sing. Conv.
State × Age × Gender	6 × 5 × 2	20	20	All levels present.
State × Race (3 levels) × Hispanicity	6 × 3 × 2	10	0	Coll. (1,2,1) & (1,3,1), repeat for all States, drop all; zero, conv.
State × Race (3 levels) × Gender	6 × 3 × 2	10	9	Coll. (2,2,1) & (2,3,1); conv.
State × Hispanicity × Gender	6 × 2 × 2	5	4	Drop (5,1,1); conv.
Total		**332**	**277**	

Exhibit D1.4 Covariates for 2012 NSDUH Person Weights (res.per.nr), Model Group 1: New England

Variables	Levels	Proposed	Final	Comments
One-Factor Effects		**37**	**37**	
Intercept	1	1	1	All levels present.
State	6	5	5	All levels present.
Quarter	4	3	3	All levels present.
Age	5	4	4	All levels present.
Race (5 levels)	5	4	4	All levels present.
Gender	2	1	1	All levels present.
Hispanicity	2	1	1	All levels present.
Relation to Householder	4	3	3	All levels present.
Population Density	4	3	3	All levels present.
Group Quarter	3	2	2	All levels present.
% Black or African American	3	2	2	All levels present.
% Hispanic or Latino	3	2	2	All levels present.
% Owner-Occupied	3	2	2	All levels present.
Rent/Housing	5	4	4	All levels present.
Two-Factor Effects		**168**	**143**	
Age × Race (3 levels)	5 × 3	8	8	All levels present.
Age × Hispanicity	5 × 2	4	4	All levels present.
Age × Gender	5 × 2	4	4	All levels present.
Race (3 levels) × Hispanicity	3 × 2	2	2	All levels present.
Race (3 levels) × Gender	3 × 2	2	2	All levels present.
Hispanicity × Gender	2 × 2	1	1	All levels present.
% Owner-Occupied × % Black or African American	3 × 3	4	3	Drop (2,1); sing.
% Owner-Occupied × % Hispanic or Latino	3 × 3	4	3	Drop (2,1); sing.
% Owner-Occupied × Rent/Housing	3 × 5	8	7	Coll. (3,1) & (3,2); conv.
Rent/Housing × % Black or African American	3 × 5	8	6	Drop (2/4,1); sing.
Rent/Housing × % Hispanic or Latino	3 × 5	8	8	All levels present.
State × Quarter	6 × 4	15	15	All levels present.
State × Age	6 × 5	20	20	All levels present.
State × Race (5 levels)	6 × 5	20	18	Coll. (3,3) & (3,4), repeat for State VT; conv.
State × Hispanicity	6 × 2	5	5	All levels present.
State × Gender	6 × 2	5	5	All levels present.
State × % Black or African American	6 × 3	10	2	Keep (1/4,2), drop all others; zero, sing.
State × % Hispanic or Latino	6 × 3	10	5	Drop (2/3/5,1), (2/5,2); zero.
State × % Owner-Occupied	6 × 3	10	5	Coll. (1,2) & (1,3), repeat for all States; conv.
State × Rent/Housing	6 × 5	20	20	All levels present.
Three-Factor-Effects		**127**	**40**	
Age × Race (3 levels) × Hispanicity	5 × 3 × 2	8	2	Coll. (1,2,1) & (1,3,1), repeat for age level 2, drop all others; sing./conv.
Age × Race (3 levels) × Gender	5 × 3 × 2	8	2	Coll. (1,2,1) & (1,3,1), repeat for age level 2, drop all others; conv.
Age × Hispanicity × Gender	5 × 2 × 2	4	3	Drop (4,1,1); conv.
Race (3 levels) × Hispanicity × Gender	3 × 2 × 2	2	0	Drop all; conv.
State × Age × Race (3 levels)	6 × 5 × 3	40	0	Drop all; zero/sing./conv.
State × Age × Hispanicity	6 × 5 × 2	20	8	Keep (1/3/4,1/2,1), (2/5,1,1), drop all others; sing./conv.
State × Age × Gender	5 × 5 × 2	20	20	All levels present.
State × Race (3 levels) × Hispanicity	5 × 3 × 2	10	0	Drop all; zero/conv.
State × Race (3 levels) × Gender	5 × 3 × 2	10	0	Drop all; conv.
State × Hispanicity × Gender	5 × 2 × 2	5	5	All levels present.
Total		**332**	**220**	

Exhibit D1.5 Covariates for 2012 NSDUH Person Weights (res.per.ps), Model Group 1: New England

Variables	Levels	Proposed	Final	Comments
One-Factor Effects		**20**	**20**	
Intercept	1	1	1	All levels present.
State	6	5	5	All levels present.
Quarter	4	3	3	All levels present.
Age	6	5	5	All levels present.
Race (5 levels)	5	4	4	All levels present.
Gender	2	1	1	All levels present.
Hispanicity	2	1	1	All levels present.
Two-Factor Effects		**95**	**88**	
Age × Race (3 levels)	6 × 3	10	10	All levels present.
Age × Hispanicity	6 × 2	5	5	All levels present.
Age × Gender	6 × 2	5	5	All levels present.
Race (3 levels) × Hispanicity	3 × 2	2	2	All levels present.
Race (3 levels) × Gender	3 × 2	2	2	All levels present.
Hispanicity × Gender	2 × 2	1	1	All levels present.
State × Quarter	6 × 4	15	15	All levels present.
State × Age	6 × 6	25	25	All levels present.
State × Race (5 levels)	6 × 5	20	13	Coll. (1,3) & (1,4), repeat for States NH, RI, and VT, Coll. (2,2) & (2,3) & (2,4) & (2,5); conv.
State × Hispanicity	6 × 2	5	5	All levels present.
State × Gender	6 × 2	5	5	All levels present.
Three-Factor Effects		**152**	**77**	
Age × Race (3 levels) × Hispanicity	6 × 3 × 2	10	3	Coll. (1,2,1) & (1,3,1), repeat for ages levels 2 and 3, drop all others; zero/sing./conv.
Age × Race (3 levels) × Gender	6 × 3 × 2	10	4	Coll. (1,2,1) & (1,3,1), repeat for ages levels 2, 3 and 4, drop all others; conv.
Age × Hispanicity × Gender	6 × 2 × 2	5	4	Drop (5,1,1); conv.
Race (3 levels) × Hispanicity × Gender	3 × 2 × 2	2	1	Coll. (2,1,1) & (3,1,1); conv.
State × Age × Race (3 levels)	6 × 5 × 3	50	10	Coll. (1,1,2) & (1,1,3), repeat for age level 2 and all States; heir./conv. Drop all others; zero/sing./conv.
State × Age × Hispanicity	6 × 6 × 2	25	12	Drop (2,3/4/5,1), repeat for States NH, RI, and VT; drop (1,5,1); zero/sing./conv.
State × Age × Gender	6 × 6 × 2	25	25	All levels present.
State × Race (3 levels) × Hispanicity	6 × 3 × 2	10	5	Coll. (1,2,1) & (1,3,1), repeat for all States; heir./zero/conv.
State × Race (3 levels) × Gender	6 × 3 × 2	10	8	Coll. (2,2,1) & (2,3,1) and then drop; hier./conv. Keep others.
State × Hispanicity × Gender	6 × 2 × 2	5	5	All levels present.
Total		**267**	**185**	

Appendix D2: Model Group 2: Middle Atlantic

(New Jersey, New York, and Pennsylvania)

Table D.2a 2012 NSDUH Person Weight GEM Modeling Summary (Model Group 2: Middle Atlantic)

Modeling Step[1]	Extreme Weight Proportions			UWE[2]	# XVAR[3]	Bounds[4]	
	% Unweighted	% Weighted	% Outwinsor			Nominal	Realized
res.sdu.nr	2.91	2.95	0.17	1.19798	153	(1.13, 2.10)	(1.13, 2.10)
	1.57	2.95	0.70	1.20322	119	(1.00, 3.90)	(1.00, 3.90)
						(1.20, 4.10)	(1.20, 4.10)
res.sdu.ps	1.57	2.95	0.70	1.20325	127	(0.61, 1.10)	(0.61, 1.10)
	1.31	4.01	1.44	1.32677	127	(0.37, 5.00)	(0.39, 5.00)
						(0.93, 2.69)	(0.94, 2.69)
sel.per.ps	3.17	7.55	2.30	2.52375	197	(0.59, 2.50)	(0.59, 2.50)
	2.10	5.76	1.37	2.64893	196	(0.38, 2.75)	(0.38, 2.69)
						(0.90, 5.00)	(0.90, 0.90)
res.per.nr	2.13	5.60	1.43	2.76300	197	(1.00, 2.80)	(1.01, 2.80)
	1.91	6.93	1.34	3.19473	187	(1.00, 4.95)	(1.00, 4.95)
						(1.40, 1.48)	(1.40, 1.48)
res.per.ps	1.95	7.07	1.53	3.19473	147	(0.20, 1.30)	(0.20, 1.30)
	0.94	4.81	0.66	3.31270	139	(0.14, 3.26)	(0.14, 3.21)
						(0.90, 1.05)	(1.05, 1.05)

[1] For a key to modeling abbreviations, see Chapter 5, Exhibit 5.1.

[2] Unequal weighting effect (UWE) is defined as $1 + [(n - 1)/n]*CV^2$, where CV = coefficient of variation of weights.

[3] Number of proposed covariates (XVAR) on top line and number finalized after modeling.

[4] There are six sets of bounds for each modeling step. Nominal bounds are used in defining maximum/minimum values for the generalized exponential model (GEM) adjustment factors. The realized bound is the actual adjustment produced by the modeling. The set of three bounds listed for each step correspond to the high extreme values, the nonextreme values, and the low extreme values.

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

Table D.2b Distribution of Weight Adjustment Factors and Weight Products for the 2012 NSDUH Person Weight (Model Group 2: Middle Atlantic)

	sel.sdu.des[1]	*res.sdu.nr*[1]		*res.sdu.ps*[1]		*sel.per.des*[1]		*sel.per.ps*[1]		*res.per.nr*[1]		*res.per.ps*[1]	
	1-7[2]	**8**[3]	**1-8**[3]	**9**[4]	**1-9**[4]	**11**[5]	**1-11**[5]	**12**[5]	**1-12**[5]	**13**[6]	**1-13**[6]	**14**[6]	**1-14**[6]
Minimum	48	0.65	149	0.24	240	1.01	247	0.23	124	0.41	141	0.11	23
1%	383	1.03	422	0.59	374	1.01	392	0.52	325	1.00	370	0.14	109
5%	388	1.07	438	0.76	424	1.01	498	0.67	469	1.03	544	0.24	448
10%	394	1.09	477	0.87	468	1.01	583	0.77	556	1.07	648	0.82	617
25%	481	1.11	554	0.97	565	1.17	800	0.89	779	1.18	927	0.96	926
Median	531	1.19	643	1.04	678	1.55	1,339	0.99	1,364	1.30	1,627	1.03	1,666
75%	565	1.33	827	1.11	865	6.12	4,221	1.09	4,150	1.46	5,204	1.10	5,048
90%	794	1.59	1,237	1.22	1,314	11.60	7,668	1.24	7,464	1.70	10,556	1.24	10,774
95%	1,142	1.90	1,554	1.37	1,737	12.40	9,667	1.37	10,545	1.88	15,250	1.61	15,957
99%	1,628	2.87	1,948	2.25	2,520	12.51	18,676	1.76	19,085	2.56	31,048	1.93	29,857
Maximum	5,182	17.03	6,317	5.00	7,959	26.55	47,814	2.69	56,420	4.95	81,887	3.21	111,268
n	25,030	19,503	19,503	19,500	19,500	11,127	11,127	11,127	11,127	8,158	8,158	8,158	8,158
Max/Mean	8.83	-	8.39	-	9.86	-	15.31	-	18.06	-	19.22	-	26.11

Note 1: Weight component 10 and weight products 1-10 are excluded because weight 10 = 1 for all selected dwelling units.
Note 2: Weight component 15 and weight products 1-15 are excluded because weight 15 = 1 for all respondents.
Note 3: Under the generalized exponential model (GEM), nonresponse adjustment factors (weight components #8 and #13) could be less than 1 due to the built-in control for extreme values. For an explanation, see Chapter 2.

[1] Sel.sdu.des refers to selected screener dwelling unit design weight, and sel.per.des refers to selected person design weight. For a key to other modeling abbreviations, see Chapter 5, Exhibit 5.1.
[2] Based on eligible dwelling units.
[3] Based on screener-complete dwelling units.
[4] Based on screener-complete dwelling units, occupants verified eligible.
[5] Based on selected persons.
[6] Based on questionnaire-complete persons.

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

Model Group 2 Overview

Dwelling Unit Nonresponse

All 21 proposed one-factor effects were included in the model.

For two-factor effects, variable collapsing or dropping was present in the State × Population Density and State × Group Quarter interactions. Out of 68 proposed variables, 64 were included in the model.

Variable collapsing or dropping was present in all three-factor effects. Out of 64 proposed variables, 34 were included in the model.

In the final model, a total of 119 variables were included; see Exhibit D2.1.

Dwelling Unit Poststratification

All 16 proposed one-factor effects were included in the model.

All 47 proposed two-factor effects were included in the model.

All 64 proposed two-factor effects were included in the model.

In the final model, a total of 127 variables were included; see Exhibit D2.2.

Selected Person-Level Poststratification

All 34 proposed one-factor effects were included in the model.

For two-factor effects, variable collapsing or dropping was present in the State × Rent/Housing interaction. Out of 99 proposed variables, 98 were included in the model.

All 64 proposed two-factor effects were included in the model.

In the final model, a total of 196 variables were included; see Exhibit D2.3.

Respondent Person-Level Nonresponse

All 34 proposed one-factor effects were included in the model.

For two-factor effects, variable collapsing or dropping was present in the State × Race and State × Rent/Housing interactions. Out of 99 proposed variables, 97 were included in the model.

For three-factor effects, variable collapsing or dropping was present in the Age × Race × Hispanicity and State × Race × Hispanicity interactions. Out of 64 proposed variables, 56 were included in the model.

In the final model, a total of 187 variables were included; see Exhibit D2.4.

Respondent Person-Level Poststratification

All 17 proposed one-factor effects were included in the model.

For two-factor effects, variable collapsing was present in the State × Race interaction. Out of 53 proposed variables, 52 were included in the model.

For three-factor effects, variable collapsing was present in the Age × Race × Hispanicity and State × Age × Hispanicity interactions. Out of 77 proposed variables, 70 were included in the model.

In the final model, a total of 139 variables were included; see Exhibit D2.5.

Exhibit D2.1 Covariates for 2012 NSDUH Person Weights (res.sdu.nr), Model Group 2: Middle Atlantic

Variables	Levels	Proposed	Final	Comments
One-Factor Effects		**21**	**21**	
Intercept	1	1	1	All levels present.
State	3	2	2	All levels present.
Quarter	4	3	3	All levels present.
Population Density	4	3	3	All levels present.
Group Quarter	3	2	2	All levels present.
% Black or African American	3	2	2	All levels present.
% Hispanic or Latino	3	2	2	All levels present.
% Owner-Occupied	3	2	2	All levels present.
Rent/Housing	5	4	4	All levels present.
Two-Factor Effects		**68**	**64**	
% Owner-Occupied × % Black or African American	3 × 3	4	4	All levels present.
% Owner-Occupied × % Hispanic or Latino	3 × 3	4	4	All levels present.
% Owner-Occupied × Rent/Housing	3 × 5	8	8	All levels present.
Rent/Housing × % Black or African American	3 × 5	8	8	All levels present.
Rent/Housing × % Hispanic or Latino	3 × 5	8	8	All levels present.
State × Quarter	3 × 4	6	6	All levels present.
State × Population Density	3 × 4	6	4	Drop (2.2), (2,3); sing.
State × Group Quarter	3 × 3	4	3	Coll. (2,1) & (2,2); sing.
State × % Black or African American	3 × 3	4	4	All levels present.
State × % Hispanic or Latino	3 × 3	4	4	All levels present.
State × % Owner-Occupied	3 × 3	4	4	All levels present.
State × Rent/Housing	3 × 5	8	7	Drop (2,1); sing.
Three-Factor Effects		**64**	**34**	
State × % Owner-Occupied × % Black or African American	3 × 3 × 3	8	3	Coll. (2,2,1) & (2,2,1) & (2,3,1) & (2,3,2), (3,2,1), (3,2,2) & (3,3,2), drop others; zero./sing./conv.
State × % Owner-Occupied × % Hispanic or Latino	3 × 3 × 3	8	5	Drop (3,3,1), (3,3,2); zero. Coll. (2,3,1) & (2,3,2); conv.
State × % Owner-Occupied × Rent/Housing	3 × 3 × 5	16	10	Keep (2,2,3), (2,2,4), (3,2,*), (3,3,4), coll. (2,2,1) & (2,2,2), (2,3,1) & (2,3,2), (3,3,1) & (3,3,3); sing. Drop others; zero/sing./conv.
State × Rent/Housing × % Black or African American	3 × 3 × 5	16	9	Keep (2,2,1/2), (2,3,*), (2,4,2), (3,1,*), (3,2,*), (3,3,1/2), drop others; zero/sing./conv.
State × Rent/Housing × % Hispanic or Latino	3 × 3 × 5	16	7	Keep (2,2,1/2), (2,3,*), (2,4,*), (3,1,2), (3,2,2), drop others; zero/sing./conv.
Total		**153**	**119**	

Exhibit D2.2 Covariates for 2012 NSDUH Person Weights (res.sdu.ps), Model Group 2: Middle Atlantic

Variables	Levels	Proposed	Final	Comments
One-Factor Effects		**16**	**16**	
Intercept	1	1	1	All levels present.
State	3	2	2	All levels present.
Quarter	4	3	3	All levels present.
Age	5	4	4	All levels present.
Race (5 levels)	5	4	4	All levels present.
Gender	2	1	1	All levels present.
Hispanicity	2	1	1	All levels present.
Two-Factor Effects		**47**	**47**	
Age × Race (3 levels)	5 × 3	8	8	All levels present.
Age × Hispanicity	5 × 2	4	4	All levels present.
Age × Gender	5 × 2	4	4	All levels present.
Race (3 levels) × Hispanicity	3 × 2	2	2	All levels present.
Race (3 levels) × Gender	3 × 2	2	2	All levels present.
Hispanicity × Gender	2 × 2	1	1	All levels present.
State × Quarter	3 × 4	6	6	All levels present.
State × Age	3 × 5	8	8	All levels present.
State × Race (5 levels)	3 × 5	8	8	All levels present.
State × Hispanicity	3 × 2	2	2	All levels present.
State × Gender	3 × 2	2	2	All levels present.
Three-Factor Effects		**64**	**64**	
Age × Race (3 levels) × Hispanicity	5 × 3 × 2	8	8	All levels present.
Age × Race (3 levels) × Gender	5 × 3 × 2	8	8	All levels present.
Age × Hispanicity × Gender	5 × 2 × 2	4	4	All levels present.
Race (3 levels) × Hispanicity × Gender	3 × 2 × 2	2	2	All levels present.
State × Age × Race (3 levels)	3 × 5 × 3	16	16	All levels present.
State × Age × Hispanicity	3 × 5 × 2	8	8	All levels present.
State × Age × Gender	3 × 5 × 2	8	8	All levels present.
State × Race (3 levels) × Hispanicity	3 × 3 × 2	4	4	All levels present.
State × Race (3 levels) × Gender	3 × 3 × 2	4	4	All levels present.
State × Hispanicity × Gender	3 × 2 × 2	2	2	All levels present.
Total		**127**	**127**	

Exhibit D2.3 Covariates for 2012 NSDUH Person Weights (sel.per.ps), Model Group 2: Middle Atlantic

Variables	Levels	Proposed	Final	Comments
One-Factor Effects		**34**	**34**	
Intercept	1	1	1	All levels present.
State	3	2	2	All levels present.
Quarter	4	3	3	All levels present.
Age	5	4	4	All levels present.
Race (5 levels)	5	4	4	All levels present.
Gender	2	1	1	All levels present.
Hispanicity	2	1	1	All levels present.
Relation to Householder	4	3	3	All levels present.
Population Density	4	3	3	All levels present.
Group Quarter	3	2	2	All levels present.
% Black or African American	3	2	2	All levels present.
% Hispanic or Latino	3	2	2	All levels present.
% Owner-Occupied	3	2	2	All levels present.
Rent/Housing	5	4	4	All levels present.
Two-Factor Effects		**99**	**98**	
Age × Race (3 levels)	5 × 3	8	8	All levels present.
Age × Hispanicity	5 × 2	4	4	All levels present.
Age × Gender	5 × 2	4	4	All levels present.
Race (3 levels) × Hispanicity	3 × 2	2	2	All levels present.
Race (3 levels) × Gender	3 × 2	2	2	All levels present.
Hispanicity × Gender	2 × 2	1	1	All levels present.
% Owner-Occupied × % Black or African American	3 × 3	4	4	All levels present.
% Owner-Occupied × % Hispanic or Latino	3 × 3	4	4	All levels present.
% Owner-Occupied × Rent/Housing	3 × 5	8	8	All levels present.
Rent/Housing × % Black or African American	3 × 5	8	8	All levels present.
Rent/Housing × % Hispanic or Latino	3 × 5	8	8	All levels present.
State × Quarter	3 × 4	6	6	All levels present.
State × Age	3 × 5	8	8	All levels present.
State × Race (5 levels)	3 × 5	8	8	All levels present.
State × Hispanicity	3 × 2	2	2	All levels present.
State × Gender	3 × 2	2	2	All levels present.
State × % Black or African American	3 × 3	4	4	All levels present.
State × % Hispanic or Latino	3 × 3	4	4	All levels present.
State × % Owner-Occupied	3 × 3	4	4	All levels present.
State × Rent/Housing	3 × 5	8	7	Coll. (2.1) & (2.2); sing.
Three-Factor Effects		**64**	**64**	
Age × Race (3 levels) × Hispanicity	5 × 3 × 2	8	8	All levels present.
Age × Race (3 levels) × Gender	5 × 3 × 2	8	8	All levels present.
Age × Hispanicity × Gender	5 × 2 × 2	4	4	All levels present.
Race (3 levels) × Hispanicity × Gender	3 × 2 × 2	2	2	All levels present.
State × Age × Race (3 levels)	3 × 5 × 3	16	16	All levels present.
State × Age × Hispanicity	3 × 5 × 2	8	8	All levels present.
State × Age × Gender	3 × 5 × 2	8	8	All levels present.
State × Race (3 levels) × Hispanicity	3 × 3 × 2	4	4	All levels present.
State × Race (3 levels) × Gender	3 × 3 × 2	4	4	All levels present.
State × Hispanicity × Gender	3 × 2 × 2	2	2	All levels present.
Total		**197**	**196**	

Exhibit D2.4 Covariates for 2012 NSDUH Person Weights (res.per.nr), Model Group 2: Middle Atlantic

Variables	Levels	Proposed	Final	Comments
One-Factor Effects		**34**	**34**	
Intercept	1	1	1	All levels present.
State	3	2	2	All levels present.
Quarter	4	3	3	All levels present.
Age	5	4	4	All levels present.
Race (5 levels)	5	4	4	All levels present.
Gender	2	1	1	All levels present.
Hispanicity	2	1	1	All levels present.
Relation to Householder	4	3	3	All levels present.
Population Density	4	3	3	All levels present.
Group Quarter	3	2	2	All levels present.
% Black or African American	3	2	2	All levels present.
% Hispanic or Latino	3	2	2	All levels present.
% Owner-Occupied	3	2	2	All levels present.
Rent/Housing	5	4	4	All levels present.
Two-Factor Effects		**99**	**97**	
Age × Race (3 levels)	5 × 3	8	8	All levels present.
Age × Hispanicity	5 × 2	4	4	All levels present.
Age × Gender	5 × 2	4	4	All levels present.
Race (3 levels) × Hispanicity	3 × 2	2	2	All levels present.
Race (3 levels) × Gender	3 × 2	2	2	All levels present.
Hispanicity × Gender	2 × 2	1	1	All levels present.
% Owner-Occupied × % Black or African American	3 × 3	4	4	All levels present.
% Owner-Occupied × % Hispanic or Latino	3 × 3	4	4	All levels present.
% Owner-Occupied × Rent/Housing	3 × 5	8	8	All levels present.
Rent/Housing × % Black or African American	3 × 5	8	8	All levels present.
Rent/Housing × % Hispanic or Latino	3 × 5	8	8	All levels present.
State × Quarter	3 × 4	6	6	All levels present.
State × Age	3 × 5	8	8	All levels present.
State × Race (5 levels)	3 × 5	8	7	Coll. (2,3) & (2,4); sing.
State × Hispanicity	3 × 2	2	2	All levels present.
State × Gender	3 × 2	2	2	All levels present.
State × % Black or African American	3 × 3	4	4	All levels present.
State × % Hispanic or Latino	3 × 3	4	4	All levels present.
State × % Owner-Occupied	3 × 3	4	4	All levels present.
State × Rent/Housing	3 × 5	8	7	Coll. (2,1) & (2,2); sing.
Three-Factor Effects		**64**	**56**	
Age × Race (3 levels) × Hispanicity	5 × 3 × 2	8	2	Coll. (4,2,1) & (4,3,1), repeat for all age levels, drop (3,2/3,1) (4,2/3,1); conv.
Age × Race (3 levels) × Gender	5 × 3 × 2	8	8	All levels present.
Age × Hispanicity × Gender	5 × 2 × 2	4	4	All levels present.
Race (3 levels) × Hispanicity × Gender	3 × 2 × 2	2	2	All levels present.
State × Age × Race (3 levels)	3 × 5 × 3	16	16	All levels present.
State × Age × Hispanicity	3 × 5 × 2	8	8	All levels present.
State × Age × Gender	3 × 5 × 2	8	8	All levels present.
State × Race (3 levels) × Hispanicity	3 × 3 × 2	4	2	Coll. (2,2,1) & (2,3,1), (3,2,1) & (3,3,1); conv.
State × Race (3 levels) × Gender	3 × 3 × 2	4	4	All levels present.
State × Hispanicity × Gender	3 × 2 × 2	2	2	All levels present.
Total		**197**	**187**	

Exhibit D2.5 Covariates for 2012 NSDUH Person Weights (res.per.ps), Model Group 2: Middle Atlantic

Variables	Levels	Proposed	Final	Comments
One-Factor Effects		**17**	**17**	
Intercept	1	1	1	All levels present.
State	3	2	2	All levels present.
Quarter	4	3	3	All levels present.
Age	6	5	5	All levels present.
Race (5 levels)	5	4	4	All levels present.
Gender	2	1	1	All levels present.
Hispanicity	2	1	1	All levels present.
Two-Factor Effects		**53**	**52**	
Age × Race (3 levels)	6 × 3	10	10	All levels present.
Age × Hispanicity	6 × 2	5	5	All levels present.
Age × Gender	6 × 2	5	5	All levels present.
Race (3 levels) × Hispanicity	3 × 2	2	2	All levels present.
Race (3 levels) × Gender	3 × 2	2	2	All levels present.
Hispanicity × Gender	2 × 2	1	1	All levels present.
State × Quarter	3 × 4	6	6	All levels present.
State × Age	3 × 6	10	10	All levels present.
State × Race (5 levels)	3 × 5	8	7	Coll. (3,3) & (3,4); conv.
State × Hispanicity	3 × 2	2	2	All levels present.
State × Gender	3 × 2	2	2	All levels present.
Three-Factor Effects		**77**	**70**	
Age × Race (3 levels) × Hispanicity	6 × 3 × 2	10	9	Coll. (5,2,1) & (5,3,1); conv.
Age × Race (3 levels) × Gender	6 × 3 × 2	10	10	All levels present.
Age × Hispanicity × Gender	6 × 2 × 2	5	5	All levels present.
Race (3 levels) × Hispanicity × Gender	3 × 2 × 2	2	2	All levels present.
State × Age × Race(3 levels)	3 × 6 × 3	20	20	All levels present.
State × Age × Hispanicity	3 × 6 × 2	10	4	Drop (3,3,1), (3,4,1), (3,5,1), repeat for State NY; conv.
State × Age × Gender	3 × 6 × 2	10	10	All levels present.
State × Race (3 levels) × Hispanicity	3 × 3 × 2	4	4	All levels present.
State × Race (3 levels) × Gender	3 × 3 × 2	4	4	All levels present.
State × Hispanicity × Gender	3 × 2 × 2	2	2	All levels present.
Total		**147**	**139**	

Appendix D3: Model Group 3: East North Central

(Illinois, Indiana, Michigan, Ohio, and Wisconsin)

Table D.3a 2012 NSDUH Person Weight GEM Modeling Summary (Model Group 3: East North Central)

Modeling Step[1]	Extreme Weight Proportions			UWE[2]	# XVAR[3]	Bounds[4]	
	% Unweighted	% Weighted	% Outwinsor			Nominal	Realized
res.sdu.nr	4.31	4.38	0.18	1.20223	255	(1.03, 1.20)	(1.04, 1.20)
	4.39	5.06	0.52	1.18185	181	(1.00, 4.08)	(1.00, 4.08)
						(1.10, 3.36)	(1.10, 3.36)
res.sdu.ps	4.39	5.06	0.52	1.18186	197	(0.72, 1.10)	(0.72, 1.10)
	0.98	1.99	0.39	1.21947	197	(0.25, 4.96)	(0.26, 4.95)
						(0.90, 3.27)	(0.90, 3.27)
sel.per.ps	2.97	5.04	1.14	2.46105	287	(0.20, 3.00)	(0.20, 3.00)
	1.47	3.08	0.50	2.41330	281	(0.20, 4.74)	(0.20, 4.68)
						(0.90, 1.76)	(0.90, 1.76)
res.per.nr	1.44	3.01	0.57	2.46151	287	(1.00, 2.90)	(1.00, 2.89)
	1.04	2.95	0.44	2.72169	269	(1.00, 5.00)	(1.00, 5.00)
						(1.10, 4.45)	(1.10, 4.44)
res.per.ps	1.06	2.92	0.47	2.72169	227	(0.20, 1.10)	(0.20, 1.10)
	0.40	1.43	0.35	2.78599	211	(0.20, 4.34)	(0.20, 4.33)
						(0.90, 1.05)	(0.90, 1.05)

[1] For a key to modeling abbreviations, see Chapter 5, Exhibit 5.1.

[2] Unequal weighting effect (UWE) is defined as $1 + [(n - 1)/n]*CV^2$, where CV = coefficient of variation of weights.

[3] Number of proposed covariates (XVAR) on top line and number finalized after modeling.

[4] There are six sets of bounds for each modeling step. Nominal bounds are used in defining maximum/minimum values for the generalized exponential model (GEM) adjustment factors. The realized bound is the actual adjustment produced by the modeling. The set of three bounds listed for each step correspond to the high extreme values, the nonextreme values, and the low extreme values.

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

Table D.3b Distribution of Weight Adjustment Factors and Weight Products for the 2012 NSDUH Person Weight (Model Group 3: East North Central)

	sel.sdu.des[1]	*res.sdu.nr*[1]		*res.sdu.ps*[1]		*sel.per.des*[1]		*sel.per.ps*[1]		*res.per.nr*[1]		*res.per.ps*[1]	
	1-7[2]	**8**[3]	**1-8**[3]	**9**[4]	**1-9**[4]	**11**[5]	**1-11**[5]	**12**[5]	**1-12**[5]	**13**[6]	**1-13**[6]	**14**[6]	**1-14**[6]
Minimum	34	0.79	40	0.26	42	1.01	55	0.12	47	0.36	49	0.11	37
1%	302	1.00	345	0.68	325	1.01	348	0.57	327	1.00	377	0.20	166
5%	307	1.04	366	0.89	395	1.01	459	0.75	433	1.03	512	0.72	456
10%	376	1.07	423	0.95	433	1.01	504	0.82	488	1.08	586	0.90	572
25%	399	1.11	453	1.02	478	1.15	641	0.92	627	1.16	760	0.98	765
Median	416	1.14	496	1.07	539	1.38	970	1.00	1,020	1.27	1,236	1.02	1,248
75%	494	1.22	593	1.14	651	5.65	3,125	1.08	3,149	1.38	3,939	1.05	3,954
90%	914	1.33	1,014	1.23	1,109	10.67	6,052	1.22	5,994	1.53	8,032	1.11	8,045
95%	1,117	1.40	1,221	1.31	1,324	11.51	7,171	1.32	7,332	1.66	10,385	1.23	10,498
99%	1,240	1.80	1,390	1.62	1,658	11.91	14,502	1.60	13,979	2.04	19,750	1.56	19,866
Maximum	1,347	6.71	5,490	4.95	6,654	25.29	68,551	4.68	33,793	7.92	47,292	4.33	71,502
n	33,444	28,338	28,338	28,335	28,335	16,573	16,573	16,573	16,573	12,800	12,800	12,800	12,800
Max/Mean	2.70	-	9.34	-	10.40	-	29.14	-	14.43	-	15.59	-	23.58

Note 1: Weight component 10 and weight products 1-10 are excluded because weight 10 = 1 for all selected dwelling units.
Note 2: Weight component 15 and weight products 1-15 are excluded because weight 15 = 1 for all respondents.
Note 3: Under the generalized exponential model (GEM), nonresponse adjustment factors (weight components #8 and #13) could be less than 1 due to the built-in control for extreme values. For an explanation, see Chapter 2.

[1] Sel.sdu.des refers to selected screener dwelling unit design weight, and sel.per.des refers to selected person design weight. For a key to other modeling abbreviations, see Chapter 5, Exhibit 5.1.
[2] Based on eligible dwelling units.
[3] Based on screener-complete dwelling units.
[4] Based on screener-complete dwelling units, occupants verified eligible.
[5] Based on selected persons.
[6] Based on questionnaire-complete persons.

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

Model Group 3 Overview

Dwelling Unit Nonresponse

All 23 proposed one-factor effects were included in the model.

For two-factor effects, variable collapsing or dropping was present in State × Group Quarter and State × percent Hispanic or Latino interactions. Out of 104 proposed variables, 100 were included in the model.

For three-factor effects, variable collapsing or dropping was present in all interactions. Out of 128 proposed variables, 58 were included in the model.

In the final model, a total of 181 variables were included; see Exhibit D3.1.

Dwelling Unit Poststratification

All 18 proposed one-factor effects were included in the model.

All 73 proposed two-factor effects were included in the model.

All 106 proposed three-factor effects were included in the model.

In the final model, a total of 197 variables were included; see Exhibit D3.2.

Selected Person-Level Poststratification

All 36 proposed one-factor effects were included in the model.

For two-factor effects, variable collapsing or dropping was present in the State × percent Hispanic or Latino interaction. Out of 145 proposed variables, 144 were included in the model.

For three-factor effects, variable collapsing or dropping was present in the Age × Race × Hispanicity, State × Age × Race, and State × Race × Hispanicity interactions. Out of 106 proposed variables, 101 were included in the model.

In the final model, a total of 281 variables were included; see Exhibit D3.3.

Respondent Person-Level Nonresponse

All 36 proposed one-factor effects were included in the model.

For two-factor effects, variable collapsing and dropping was present in the State × percent Hispanic or Latino interaction. Out of 145 proposed variables, 144 were included in the model.

For three-factor effects, variable collapsing or dropping was present in the Age × Race × Hispanicity, State × Age × Race, State × Age × Hispanicity, State × Race × Hispanicity, and State × Race × Gender interactions. Out of 106 proposed variables, 89 were included in the model.

In the final model, a total of 269 variables were included; see Exhibit D3.4.

Respondent Person-Level Poststratification

All 19 proposed one-factor effects were included in the model.

All 81 proposed two-factor effects were included in the model.

For three-factor effects, variable collapsing or dropping was present in the Age × Race × Hispanicity, State × Age × Race, State × Age × Hispanicity, and State × Race × Hispanicity interactions. Out of 127 proposed variables, 111 were included in the model.

In the final model, a total of 211 variables were included; see Exhibit D3.5.

Exhibit D3.1 Covariates for 2012 NSDUH Person Weights (res.sdu.nr), Model Group 3: East North Central

Variables	Levels	Proposed	Final	Comments
One-Factor Effects		**23**	**23**	
Intercept	1	1	1	All levels present.
State	5	4	4	All levels present.
Quarter	4	3	3	All levels present.
Population Density	4	3	3	All levels present.
Group Quarter	3	2	2	All levels present.
% Black or African American	3	2	2	All levels present.
% Hispanic or Latino	3	2	2	All levels present.
% Owner-Occupied	3	2	2	All levels present.
Rent/Housing	5	4	4	All levels present.
Two-Factor Effects		**104**	**100**	
% Owner-Occupied × % Black or African American	3 × 3	4	4	All levels present.
% Owner-Occupied × % Hispanic or Latino	3 × 3	4	4	All levels present.
% Owner-Occupied × Rent/Housing	3 × 5	8	8	All levels present.
Rent/Housing × % Black or African American	3 × 5	8	8	All levels present.
Rent/Housing × % Hispanic or Latino	3 × 5	8	8	All levels present.
State × Quarter	5 × 4	12	12	All levels present.
State × Population Density	5 × 4	12	12	All levels present.
State × Group Quarter	5 × 3	8	5	Drop (4,2); sing. Coll. (1,1) & (1,2); conv. Drop (1,1/2); conv.
State × % Black or African American	5 × 3	8	8	All levels present.
State × % Hispanic or Latino	5 × 3	8	7	Drop (4,1); sing.
State × % Owner-Occupied	5 × 3	8	8	All levels present.
State × Rent/Housing	5 × 5	16	16	All levels present.
Three-Factor Effects		**128**	**58**	
State × % Owner-Occupied × % Black or African American	5 × 3 × 3	16	9	Drop (4,3,1), (4,2,2), (3,3,1), (4,3,2); sing. Coll. (1,3,1) & (1,3,2), (1,2,1) & (1,2,2); conv. Drop (4,2,1); conv.
State × % Owner-Occupied × % Hispanic or Latino	5 × 3 × 3	16	4	Drop (4,3,1), (4,2,1); hier. Drop (1,3,1), (5,2,1), (3,2,1), (1,3,1), (5,3,1), (5,3,2), (3,3,1), (3,3,2), (4,3,2); sing. Drop (4,2,2); conv.
State × % Owner-Occupied × Rent/Housing	5 × 3 × 5	32	16	Drop (5,3,4), (3,3,2), (3,3,4), (4,3,2), (3,3,1), (4,3,1), (4,3,3), (4,3,4), (4,2,1); sing. Coll. (5,3,1) & (5,3,2), (5,3,1/2) & (5,3,3), (1,3,3) & (1,3,4), (1,2,1) & (1,2,2), (1,2,1/2) & (1,2,3), (5,2,3) & (5,2,4); conv. Drop (3,3,3); conv.
State × Rent/Housing × % Black or African American	5 × 3 × 5	32	20	Drop (5,4,1), (3,3,1), (3,4,1), (3,4,2), (4,2,1), (4,3,2), (4,1,1), (4,1,2), (4,2,2), (4,3,1), (4,4,1), (4,4,2); sing.
State × Rent/Housing × % Hispanic or Latino	5 × 3 × 5	32	9	Drop (4,1,1), (4,2,1), (4,3,1), (4,4,1); hier. Drop (1,3,1), (1,4,1), (5,1,1), (5,3,1), (3,1,1), (3,2,1), (3,3,2), (3,4,2), (4,2,2), (4,3,2), (5,2,1), (5,3,2), (5,4,1), (3,3,1), (3,4,1), (4,4,2); sing. Drop (1,3,2), (5,1,2), (5,4,2); conv.
Total		**255**	**181**	

Exhibit D3.2 Covariates for 2012 NSDUH Person Weights (res.sdu.ps), Model Group 3: East North Central

Variables	Levels	Proposed	Final	Comments
One-Factor Effects		**18**	**18**	
Intercept	1	1	1	All levels present.
State	5	4	4	All levels present.
Quarter	4	3	3	All levels present.
Age	5	4	4	All levels present.
Race (5 levels)	5	4	4	All levels present.
Gender	2	1	1	All levels present.
Hispanicity	2	1	1	All levels present.
Two-Factor Effects		**73**	**73**	
Age × Race (3 levels)	5 × 3	8	8	All levels present.
Age × Hispanicity	5 × 2	4	4	All levels present.
Age × Gender	5 × 2	4	4	All levels present.
Race (3 levels) × Hispanicity	3 × 2	2	2	All levels present.
Race (3 levels) × Gender	3 × 2	2	2	All levels present.
Hispanicity × Gender	2 × 2	1	1	All levels present.
State × Quarter	5 × 4	12	12	All levels present.
State × Age	5 × 5	16	16	All levels present.
State × Race (5 levels)	5 × 5	16	16	All levels present.
State × Hispanicity	5 × 2	4	4	All levels present.
State × Gender	5 × 2	4	4	All levels present.
Three-Factor Effects		**106**	**106**	
Age × Race (3 levels) × Hispanicity	5 × 3 × 2	8	8	All levels present.
Age × Race (3 levels) × Gender	5 × 3 × 2	8	8	All levels present.
Age × Hispanicity × Gender	5 × 2 × 2	4	4	All levels present.
Race (3 levels) × Hispanicity × Gender	3 × 2 × 2	2	2	All levels present.
State × Age × Race (3 levels)	5 × 5 × 3	32	32	All levels present.
State × Age × Hispanicity	5 × 5 × 2	16	16	All levels present.
State × Age × Gender	5 × 5 × 2	16	16	All levels present.
State × Race (3 levels) × Hispanicity	5 × 3 × 2	8	8	All levels present.
State × Race (3 levels) × Gender	5 × 3 × 2	8	8	All levels present.
State × Hispanicity × Gender	5 × 2 × 2	4	4	All levels present.
Total		**197**	**197**	

Exhibit D3.3 Covariates for 2012 NSDUH Person Weights (sel.per.ps), Model Group 3: East North Central

Variables	Levels	Proposed	Final	Comments
One-Factor Effects		**36**	**36**	
Intercept	1	1	1	All levels present.
State	5	4	4	All levels present.
Quarter	4	3	3	All levels present.
Age	5	4	4	All levels present.
Race (5 levels)	5	4	4	All levels present.
Gender	2	1	1	All levels present.
Hispanicity	2	1	1	All levels present.
Relation to Householder	4	3	3	All levels present.
Population Density	4	3	3	All levels present.
Group Quarter	3	2	2	All levels present.
% Black or African American	3	2	2	All levels present.
% Hispanic or Latino	3	2	2	All levels present.
% Owner-Occupied	3	2	2	All levels present.
Rent/Housing	5	4	4	All levels present.
Two-Factor Effects		**145**	**144**	
Age × Race (3 levels)	5 × 3	8	8	All levels present.
Age × Hispanicity	5 × 2	4	4	All levels present.
Age × Gender	5 × 2	4	4	All levels present.
Race (3 levels) × Hispanicity	3 × 2	2	2	All levels present.
Race (3 levels) × Gender	3 × 2	2	2	All levels present.
Hispanicity × Gender	2 × 2	1	1	All levels present.
% Owner-Occupied × % Black or African American	3 × 3	4	4	All levels present.
% Owner-Occupied × % Hispanic	3 × 3	4	4	All levels present.
% Owner-Occupied × Rent/Housing	3 × 5	8	8	All levels present.
Rent/Housing × % Black or African American	3 × 5	8	8	All levels present.
Rent/Housing × % Hispanic or Latino	3 × 5	8	8	All levels present.
State × Quarter	5 × 4	12	12	All levels present.
State × Age	5 × 5	16	16	All levels present.
State × Race (5 levels)	5 × 5	16	16	All levels present.
State × Hispanicity	5 × 2	4	4	All levels present.
State × Gender	5 × 2	4	4	All levels present.
State × % Black or African American	5 × 3	8	8	All levels present.
State × % Hispanic or Latino	5 × 3	8	7	Drop (4,1); sing.
State × % Owner-Occupied	5 × 3	8	8	All levels present.
State × Rent/Housing	5 × 5	16	16	All levels present.
Three-Factor Effects		**106**	**101**	
Age × Race (3 levels) × Hispanicity	5 × 3 × 2	8	7	Coll. (3,2,1) & (3,3,1); sing.
Age × Race (3 levels) × Gender	5 × 3 × 2	8	8	All levels present.
Age × Hispanicity × Gender	5 × 2 × 2	4	4	All levels present.
Race (3 levels) × Hispanicity × Gender	3 × 2 × 2	2	2	All levels present.
State × Age × Race (3 levels)	5 × 5 × 3	32	31	Coll. (4,3,2) & (4,3,3); conv.
State × Age × Hispanicity	5 × 5 × 2	16	16	All levels present.
State × Age × Gender	5 × 5 × 2	16	16	All levels present.
State × Race (3 levels) × Hispanicity	5 × 3 × 2	8	5	Coll. (4,2,1) & (4,3,1), (3,2,1) & (3,3,1); conv. Drop (3,2/3,1); conv.
State × Race (3 levels) × Gender	5 × 3 × 2	8	8	All levels present.
State × Hispanicity × Gender	5 × 2 × 2	4	4	All levels present.
Total		**287**	**281**	

Exhibit D3.4 Covariates for 2012 NSDUH Person Weights (res.per.nr), Model Group 3: East North Central

Variables	Levels	Proposed	Final	Comments
One-Factor Effects		**36**	**36**	
Intercept	1	1	1	All levels present.
State	5	4	4	All levels present.
Quarter	4	3	3	All levels present.
Age	5	4	4	All levels present.
Race (5 levels)	5	4	4	All levels present.
Gender	2	1	1	All levels present.
Hispanicity	2	1	1	All levels present.
Relation to Householder	4	3	3	All levels present.
Population Density	4	3	3	All levels present.
Group Quarter	3	2	2	All levels present.
% Black or African American	3	2	2	All levels present.
% Hispanic or Latino	3	2	2	All levels present.
% Owner-Occupied	3	2	2	All levels present.
Rent/Housing	5	4	4	All levels present.
Two-Factor Effects		**145**	**144**	
Age × Race (3 levels)	5 × 3	8	8	All levels present.
Age × Hispanicity	5 × 2	4	4	All levels present.
Age × Gender	5 × 2	4	4	All levels present.
Race (3 levels) × Hispanicity	3 × 2	2	2	All levels present.
Race (3 levels) × Gender	3 × 2	2	2	All levels present.
Hispanicity × Gender	2 × 2	1	1	All levels present.
% Owner-Occupied × % Black or African American	3 × 3	4	4	All levels present.
% Owner-Occupied × % Hispanic or Latino	3 × 3	4	4	All levels present.
% Owner-Occupied × Rent/Housing	3 × 5	8	8	All levels present.
Rent/Housing × % Black or African American	3 × 5	8	8	All levels present.
Rent/Housing × % Hispanic or Latino	3 × 5	8	8	All levels present.
State × Quarter	5 × 4	12	12	All levels present.
State × Age	5 × 5	16	16	All levels present.
State × Race (5 levels)	5 × 5	16	16	All levels present.
State × Hispanicity	5 × 2	4	4	All levels present.
State × Gender	5 × 2	4	4	All levels present.
State × % Black or African American	5 × 3	8	8	All levels present.
State × % Hispanic or Latino	5 × 3	8	7	Drop (4,1); sing.
State × % Owner-Occupied	5 × 3	8	8	All levels present.
State × Rent/Housing	5 × 5	16	16	All levels present.
Three-Factor Effects		**106**	**89**	
Age × Race (3 levels) × Hispanicity	5 × 3 × 2	8	5	Coll. (3,2,1) & (3,3,1); sing. Coll. (2,2,1) & (2,3,1), (4,2,1) & (4,3,1); conv.
Age × Race (3 levels) × Gender	5 × 3 × 2	8	8	All levels present.
Age × Hispanicity × Gender	5 × 2 × 2	4	4	All levels present.
Race (3 levels) × Hispanicity × Gender	3 × 2 × 2	2	2	All levels present.
State × Age × Race (3 levels)	5 × 5 × 3	32	26	Coll. (4,4,2) & (4,4,3); sing. Coll. (4,3,2) & (4,3,3), (5,4,2) & (5,4,3), (5,3,2) & (5,3,3); conv. Drop (4,3,2/3), (4,4,2/3); conv.
State × Age × Hispanicity	5 × 5 × 2	16	15	Drop (4,4,1); conv.
State × Age × Gender	5 × 5 × 2	16	16	All levels present.
State × Race (3 levels) × Hispanicity	5 × 3 × 2	8	2	Coll. (4,2,1) & (4,3,1), (3,2,1) & (3,3,1), (5,2,1) & (5,3,1), (1,2,1) & (1,3,1); conv. Drop (3,2/3,1), (4,2/3,1); conv.
State × Race (3 levels) × Gender	5 × 3 × 2	8	7	Coll. (4,2,1) & (4,3,1); conv.
State × Hispanicity × Gender	5 × 2 × 2	4	4	All levels present.
Total		**287**	**269**	

Exhibit D3.5 Covariates for 2012 NSDUH Person Weights (res.per.ps), Model Group 3: East North Central

Variables	Levels	Proposed	Final	Comments
One-Factor Effects		**19**	**19**	
Intercept	1	1	1	All levels present.
State	5	4	4	All levels present.
Quarter	4	3	3	All levels present.
Age	6	5	5	All levels present.
Race (5 levels)	5	4	4	All levels present.
Gender	2	1	1	All levels present.
Hispanicity	2	1	1	All levels present.
Two-Factor Effects		**81**	**81**	
Age × Race (3 levels)	6 × 3	10	10	All levels present.
Age × Hispanicity	6 × 2	5	5	All levels present.
Age × Gender	6 × 2	5	5	All levels present.
Race (3 levels) × Hispanicity	3 × 2	2	2	All levels present.
Race (3 levels) × Gender	3 × 2	2	2	All levels present.
Hispanicity × Gender	2 × 2	1	1	All levels present.
State × Quarter	5 × 4	12	12	All levels present.
State × Age	5 × 6	20	20	All levels present.
State × Race (5 levels)	5 × 5	16	16	All levels present.
State × Hispanicity	5 × 2	4	4	All levels present.
State × Gender	5 × 2	4	4	All levels present.
Three-Factor Effects		**127**	**111**	
Age × Race (3 levels) × Hispanicity	6 × 3 × 2	10	7	Coll. (5,2,1) & (5,3,1); sing. Drop (5,2/3,1); conv. Coll. (4,2,1) & (4,3,1) conv.
Age × Race (3 levels) × Gender	6 × 3 × 2	10	10	All levels present.
Age × Hispanicity × Gender	6 × 2 × 2	5	5	All levels present.
Race (3 levels) × Hispanicity × Gender	3 × 2 × 2	2	2	All levels present.
State × Age × Race (3 levels)	5 × 6 × 3	40	33	Coll. (4,4,2) & (4,4,3); sing. Drop (4,5,2), (4,5,3); sing. Coll. (5,5,2) & (5,5,3), (1,5,2) & (1,5,3), (1,4,2) & (1,4,3); conv. Drop (5,5,2/3); conv.
State × Age × Hispanicity	5 × 6 × 2	20	16	Drop (4,4,1), (4,5,1); sing. Drop (1,5,1), (3,5,1); conv.
State × Age × Gender	5 × 6 × 2	20	20	All levels present.
State × Race (3 levels) × Hispanicity	5 × 3 × 2	8	6	Coll. (4,2,1) & (4,3,1), (3,2,1) & (3,3,1); conv.
State × Race (3 levels) × Gender	5 × 3 × 2	8	8	All levels present.
State × Hispanicity × Gender	5 × 2 × 2	4	4	All levels present.
Total		**227**	**211**	

Appendix D4: Model Group 4: West North Central

(Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, and South Dakota)

Table D.4a 2012 NSDUH Person Weight GEM Modeling Summary (Model Group 4: West North Central)

Modeling Step[1]	Extreme Weight Proportions			UWE[2]	# XVAR[3]	Bounds[4]	
	% Unweighted	% Weighted	% Outwinsor			Nominal	Realized
res.sdu.nr	2.95	2.66	0.22	1.54552	357	(1.05, 1.20)	(1.06, 1.19)
	0.89	1.04	0.10	1.55753	149	(1.00, 2.58)	(1.00, 2.58)
						(1.05, 1.14)	(1.05, 1.14)
res.sdu.ps	0.89	1.04	0.10	1.55756	267	(0.69, 1.05)	(0.69, 1.05)
	2.37	3.90	0.90	1.56469	255	(0.26, 4.98)	(0.27, 4.97)
						(0.95, 1.11)	(0.95, 1.10)
sel.per.ps	3.26	5.76	1.47	3.06000	377	(0.20, 2.75)	(0.20, 2.75)
	2.26	6.01	1.65	3.37592	315	(0.20, 5.00)	(0.20, 5.00)
						(0.35, 1.91)	(0.35, 1.86)
res.per.nr	2.51	6.54	1.87	3.49120	377	(1.00, 2.95)	(1.00, 2.95)
	2.14	7.14	1.70	3.77739	295	(1.00, 5.00)	(1.00, 5.00)
						(1.20, 1.85)	(1.20, 1.85)
res.per.ps	2.19	7.11	1.69	3.77739	307	(0.20, 2.20)	(0.20, 2.20)
	1.69	6.06	1.66	3.96150	243	(0.20, 5.00)	(0.20, 5.00)
						(0.90, 1.77)	(1.33, 1.77)

[1] For a key to modeling abbreviations, see Chapter 5, Exhibit 5.1.
[2] Unequal weighting effect (UWE) is defined as $1 + [(n - 1)/n]*CV^2$, where CV = coefficient of variation of weights.
[3] Number of proposed covariates (XVAR) on top line and number finalized after modeling.
[4] There are six sets of bounds for each modeling step. Nominal bounds are used in defining maximum/minimum values for the generalized exponential model (GEM) adjustment factors. The realized bound is the actual adjustment produced by the modeling. The set of three bounds listed for each step correspond to the high extreme values, the nonextreme values, and the low extreme values.

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

Table D.4b Distribution of Weight Adjustment Factors and Weight Products for the 2012 NSDUH Person Weight (Model Group 4: West North Central)

	sel.sdu.des[1]	*res.sdu.nr*[1]		*res.sdu.ps*[1]		*sel.per.des*[1]		*sel.per.ps*[1]		*res.per.nr*[1]		*res.per.ps*[1]	
	1-7[2]	**8**[3]	**1-8**[3]	**9**[4]	**1-9**[4]	**11**[5]	**1-11**[5]	**12**[5]	**1-12**[5]	**13**[6]	**1-13**[6]	**14**[6]	**1-14**[6]
Minimum	77	0.85	78	0.27	33	1.01	40	0.08	25	0.41	33	0.09	7
1%	78	1.00	82	0.55	87	1.01	98	0.20	72	0.89	85	0.20	61
5%	83	1.01	87	0.74	101	1.01	154	0.47	128	1.00	148	0.49	134
10%	88	1.03	96	0.83	117	1.01	213	0.66	184	1.01	215	0.82	192
25%	153	1.05	158	0.94	172	1.13	455	0.85	426	1.08	475	0.94	453
Median	458	1.08	490	1.05	504	1.43	957	1.00	985	1.17	1,113	1.00	1,111
75%	816	1.10	886	1.17	869	5.82	2,286	1.16	2,174	1.33	2,547	1.08	2,606
90%	1,054	1.14	1,138	1.35	1,137	10.94	5,769	1.36	5,569	1.54	7,177	1.19	6,970
95%	1,091	1.18	1,193	1.51	1,294	12.13	8,332	1.52	9,098	1.78	11,446	1.35	11,201
99%	1,154	1.26	1,377	2.27	1,775	13.08	14,252	2.36	16,619	2.64	22,355	2.83	23,454
Maximum	2,389	2.58	2,673	4.97	5,701	35.28	40,189	5.00	31,554	5.00	63,117	5.00	55,395
n	15,937	14,672	14,672	14,671	14,671	7,926	7,926	7,926	7,926	6,342	6,342	6,342	6,342
Max/Mean	4.70	-	4.84	-	10.05	-	19.00	-	14.62	-	23.40	-	20.54

Note 1: Weight component 10 and weight products 1-10 are excluded because weight 10 = 1 for all selected dwelling units.
Note 2: Weight component 15 and weight products 1-15 are excluded because weight 15 = 1 for all respondents.
Note 3: Under the generalized exponential model (GEM), nonresponse adjustment factors (weight components #8 and #13) could be less than 1 due to the built-in control for extreme values. For an explanation, see Chapter 2.

[1] Sel.sdu.des refers to selected screener dwelling unit design weight, and sel.per.des refers to selected person design weight. For a key to other modeling abbreviations, see Chapter 5, Exhibit 5.1.
[2] Based on eligible dwelling units.
[3] Based on screener-complete dwelling units.
[4] Based on screener-complete dwelling units, occupants verified eligible.
[5] Based on selected persons.
[6] Based on questionnaire-complete persons.

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

Model Group 4 Overview

Dwelling Unit Nonresponse

All 25 proposed one-factor effects were included in the model.

For two-factor effects, variable collapsing or dropping was present in all effects except percent Owner-Occupied × percent Hispanic or Latino, percent Owner-Occupied × Rent/Housing, State × Quarter, State × percent Owner-Occupied, and State × Rent/Housing. Out of 140 proposed variables, 109 were included in the model.

Variable collapsing or dropping was present in all three-factor effects. Out of 192 proposed variables, 15 were included in the model.

In the final model, a total of 149 variables were included; see Exhibit D4.1.

Dwelling Unit Poststratification

All 20 proposed one-factor effects were included in the model.

All 99 proposed two-factor effects were included in the model.

For three-factor effects, variable collapsing or dropping was present in the Age × Race × Hispanicity, Race × Hispanicity × Gender, State × Age × Race, and State × Race × Hispanicity interactions. Out of 148 proposed variables, 136 were included in the model.

In the final model, a total of 255 variables were included; see Exhibit D4.2.

Selected Person-Level Poststratification

All 38 proposed one-factor effects were included in the model.

For two-factor effects, variable collapsing or dropping was present in the Race × Hispanicity, percent Owner-Occupied × percent Black or African American, Rent/Housing × percent Black or African American, Rent/Housing × percent Hispanic or Latino, State × Race, State × percent Black or African American, and State × percent Hispanic or Latino interactions. Out of 191 proposed variables, 171 were included in the model.

For three-factor effects, variable collapsing or dropping was present in the Age × Race × Hispanicity, Race × Hispanicity × Gender, State × Age × Race, and State × Race × Hispanicity interactions. Out of 148 proposed variables, 106 were included in the model.

In the final model, a total of 315 variables were included; see Exhibit D4.3.

Respondent Person-Level Nonresponse

All 38 proposed one-factor effects were included in the model.

For two-factor effects, variable collapsing or dropping was present in the percent Owner-Occupied × percent Black or African American, Rent/Housing × percent Black or African American, Rent/Housing × percent Hispanic or Latino, State × percent Black or African American, and State × percent Hispanic or Latino interactions. Out of 191 proposed variables, 172 were included in the model.

Variable collapsing or dropping was present in all three-factor effects except the Age × Race × Gender, Age × Hispanicity × Gender, and State × Age × Gender interactions. Out of 148 proposed variables, 85 were included in the model.

In the final model, a total of 295 variables were included; see Exhibit D4.4.

Respondent Person-Level Poststratification

All 21 proposed one-factor effects were included in the model.

All 109 proposed two-factor effects were included in the model.

For three-factor effects, all levels were present for the Race × Hispanicity × Gender and State × Age × Gender interactions. All the others were affected by variable collapsing or dropping. Out of 177 proposed variables, 113 were included in the model.

In the final model, a total of 243 variables were included; see Exhibit D4.5.

Exhibit D4.1 Covariates for 2012 NSDUH Person Weights (res.sdu.nr), Model Group 4: West North Central

Variables	Levels	Proposed	Final	Comments
One-Factor Effects		**25**	**25**	
Intercept	1	1	1	All levels present.
State	7	6	6	All levels present.
Quarter	4	3	3	All levels present.
Population Density	4	3	3	All levels present.
Group Quarter	3	2	2	All levels present.
% Black or African American	3	2	2	All levels present.
% Hispanic or Latino	3	2	2	All levels present.
% Owner-Occupied	3	2	2	All levels present.
Rent/Housing	5	4	4	All levels present.
Two-Factor Effects		**140**	**109**	
% Owner-Occupied × % Black or African American	3 × 3	4	3	Coll. (3,1) & (3,2); zero.
% Owner-Occupied × % Hispanic or Latino	3 × 3	4	4	All levels present
% Owner-Occupied × Rent/Housing	3 × 5	8	8	All levels present
Rent/Housing × % Black or African American	3 × 5	8	6	Coll. (3,1) & (3,2); zero. Coll. (4,1) & (4,2); sing.
Rent/Housing × % Hispanic or Latino	3 × 5	8	6	Coll. (3,1) & (3,2); zero. Coll. (4,1) & (4,2); sing.
State × Quarter	7 × 4	18	18	All levels present.
State × Population Density	7 × 4	18	14	Coll. (1,1) & (1,2), repeat for States 5,6, and 7; zero.
State × Group Quarter	7 × 3	12	2	Coll. (7,1) & (7,2), (5,1) & (5,2), drop rest; conv.
State × % Black or African American	7 × 3	12	7	Coll. (1,1) & (1,2), do the same for States 3,5,6, and 7; zero.
State × % Hispanic or Latino	7 × 3	12	5	Coll. (3,1) & (3,2), (5,1) & (5,2); sing. Coll. (1,1) & (1,2), drop States 6 and 7; zero.
State × % Owner-Occupied	7 × 3	12	12	All levels present.
State × Rent/Housing	7 × 5	24	24	All levels present.
Three-Factor Effects		**192**	**15**	
State × % Owner-Occupied × % Black or African American	7 × 3 × 3	24	0	Drop all; zero/sing./conv.
State × % Owner-Occupied × % Hispanic or Latino	7 × 3 × 3	24	1	Coll. (2,2,1) & (2,2,2), drop rest; conv.
State × % Owner-Occupied × Rent/Housing	7 × 3 × 5	48	11	Coll. (1,2,1) & (1,2,2), repeat for States 3 and 5, keep (1,2,3), (3,2,3), (5,2,3), (5,2,4), (7,2,*), drop rest; conv.
State × Rent/Housing × % Black or African American	7 × 3 × 5	48	2	Coll. (1,1,1) & (1,1,2) & (1,2,1) & (1,2,2), (3,4,1) & (3,4,2), drop rest; conv.
State × Rent/Housing × % Hispanic or Latino	7 × 3 × 5	48	1	Coll. (1,1,1) & (1,1,2) & (1,2,1) & (1,2,2), drop rest; conv.
Total		**357**	**149**	

Exhibit D4.2 Covariates for 2012 NSDUH Person Weights (res.sdu.ps), Model Group 4: West North Central

Variables	Levels	Proposed	Final	Comments
One-Factor Effects		**20**	**20**	
Intercept	1	1	1	All levels present.
State	7	6	6	All levels present.
Quarter	4	3	3	All levels present.
Age	5	4	4	All levels present.
Race (5 levels)	5	4	4	All levels present.
Gender	2	1	1	All levels present.
Hispanicity	2	1	1	All levels present.
Two-Factor Effects		**99**	**99**	
Age × Race (3 levels)	5 × 3	8	8	All levels present.
Age × Hispanicity	5 × 2	4	4	All levels present.
Age × Gender	5 × 2	4	4	All levels present.
Race (3 levels) × Hispanicity	3 × 2	2	2	All levels present.
Race (3 levels) × Gender	3 × 2	2	2	All levels present.
Hispanicity × Gender	2 × 2	1	1	All levels present.
State × Quarter	7 × 4	18	18	All levels present.
State × Age	7 × 5	24	24	All levels present.
State × Race (5 levels)	7 × 5	24	24	All levels present.
State × Hispanicity	7 × 2	6	6	All levels present.
State × Gender	7 × 2	6	6	All levels present.
Three-Factor Effects		**148**	**136**	
Age × Race (3 levels) × Hispanicity	5 × 3 × 2	8	4	Coll. (2,2,1) & (2,3,1); sing. Coll. (1,2,1) & (1,3,1), repeat for age levels 3 and 4; conv.
Age × Race (3 levels) × Gender	5 × 3 × 2	8	8	All levels present.
Age × Hispanicity × Gender	5 × 2 × 2	4	4	All levels present.
Race (3 levels) × Hispanicity × Gender	3 × 2 × 2	2	1	Coll. (2,2,1) & (3,2,1); conv.
State × Age × Race (3 levels)	7 × 5 × 3	48	47	Coll. (6,1,2) & (6,1,3); conv.
State × Age × Hispanicity	7 × 5 × 2	24	24	All levels present.
State × Age × Gender	7 × 5 × 2	24	24	All levels present.
State × Race (3 levels) × Hispanicity	7 × 3 × 2	12	6	Coll. (1,2,1) & (1,3,1), (6,2,1) & (6,3,1); zero. Do the same for remaining States; conv.
State × Race (3 levels) × Gender	7 × 3 × 2	12	12	All levels present.
State × Hispanicity × Gender	7 × 2 × 2	6	6	All levels present.
Total		**267**	**255**	

Exhibit D4.3 Covariates for 2012 NSDUH Person Weights (sel.per.ps), Model Group 4: West North Central

Variables	Levels	Proposed	Final	Comments
One-Factor Effects		**38**	**38**	
Intercept	1	1	1	All levels present.
State	7	6	6	All levels present.
Quarter	4	3	3	All levels present.
Age	5	4	4	All levels present.
Race (5 levels)	5	4	4	All levels present.
Gender	2	1	1	All levels present.
Hispanicity	2	1	1	All levels present.
Relation to Householder	4	3	3	All levels present.
Population Density	4	3	3	All levels present.
Group Quarter	3	2	2	All levels present.
% Black or African American	3	2	2	All levels present.
% Hispanic or Latino	3	2	2	All levels present.
% Owner-Occupied	3	2	2	All levels present.
Rent/Housing	5	4	4	All levels present.
Two-Factor Effects		**191**	**171**	
Age × Race (3 levels)	5 × 3	8	8	All levels present.
Age × Hispanicity	5 × 2	4	4	All levels present.
Age × Gender	5 × 2	4	4	All levels present.
Race (3 levels) × Hispanicity	3 × 2	2	1	Coll. (2,1) & (3,1); conv.
Race (3 levels) × Gender	3 × 2	2	2	All levels present.
Hispanicity × Gender	2 × 2	1	1	All levels present.
% Owner-Occupied × % Black or African American	3 × 3	4	3	Coll. (3,1) & (3,2); zero.
% Owner-Occupied × % Hispanic or Latino	3 × 3	4	4	All levels present.
% Owner-Occupied × Rent/Housing	3 × 5	8	8	All levels present.
Rent/Housing × % Black or African American	3 × 5	8	6	Coll. (3,1) & (3,2); zero. Coll. (4,1) & (4,2); sing.
Rent/Housing × % Hispanic or Latino	3 × 5	8	6	Coll. (3,1) & (3,2); zero. Coll. (4,1) & (4,2); sing.
State × Quarter	7 × 4	18	18	All levels present.
State × Age	7 × 5	24	24	All levels present.
State × Race (5 levels)	7 × 5	24	23	Coll. (1,3) & (1,4); conv.
State × Hispanicity	7 × 2	6	6	All levels present.
State × Gender	7 × 2	6	6	All levels present.
State × % Black or African American	7 × 3	12	7	Coll. (1,1) & (1,2), repeat for States 3,5, and 6; zero. Coll. (5,1) & (5,2); sing.
State × % Hispanic or Latino	7 × 3	12	4	Drop (6/7,1/2), coll. (1,1) & (1,2); zero. Coll. (3,1) & (3,2), (5,1) & (5,2); sing. Coll. (2,1) & (2,2); conv.
State × % Owner-Occupied	7 × 3	12	12	All levels present.
State × Rent/Housing	7 × 5	24	24	All levels present.
Three-Factor Effects		**148**	**106**	
Age × Race (3 levels) × Hispanicity	5 × 3 × 2	8	4	Coll. (3,2,1) & (3,3,1); zero. Coll. (*,2,1) & (*,3,1); conv.
Age × Race (3 levels) × Gender	5 × 3 × 2	8	8	All levels present.
Age × Hispanicity × Gender	5 × 2 × 2	4	4	All levels present.
Race (3 levels) × Hispanicity × Gender	3 × 2 × 2	2	1	Coll. (2,1,1) & (3,1,1); zero.
State × Age × Race (3 levels)	7 × 5 × 3	48	23	Coll. (7,4,2) & (7,4,3); sing. Repeat for all States and age levels, drop (5,4,2/3); conv.
State × Age × Hispanicity	7 × 5 × 2	24	22	Drop (3,4,1); sing. Drop (7,4,1); conv.
State × Race (3 levels) × Hispanicity	7 × 3 × 2	12	2	Coll. (3,2,1) & (3,3,1), (6,2,1) & (6,3,1); zero. Drop rest; conv.
State × Race (3 levels) × Gender	7 × 3 × 2	12	12	All levels present.
State × Age × Gender	7 × 5 × 2	24	24	All levels present.
State × Hispanicity × Gender	7 × 2 × 2	6	6	All levels present.
Total		**377**	**315**	

Exhibit D4.4 Covariates for 2012 NSDUH Person Weights (res.per.nr), Model Group 4: West North Central

Variables	Levels	Proposed	Final	Comments
One-Factor Effects		**38**	**38**	
Intercept	1	1	1	All levels present.
State	7	6	6	All levels present.
Quarter	4	3	3	All levels present.
Age	5	4	4	All levels present.
Race (5 levels)	5	4	4	All levels present.
Gender	2	1	1	All levels present.
Hispanicity	2	1	1	All levels present.
Relation to Householder	4	3	3	All levels present.
Population Density	4	3	3	All levels present.
Group Quarter	3	2	2	All levels present.
% Black or African American	3	2	2	All levels present.
% Hispanic or Latino	3	2	2	All levels present.
% Owner-Occupied	3	2	2	All levels present.
Rent/Housing	5	4	4	All levels present.
Two-Factor Effects		**191**	**172**	
Age × Race (3 levels)	5 × 3	8	8	All levels present.
Age × Hispanicity	5 × 2	4	4	All levels present.
Age × Gender	5 × 2	4	4	All levels present.
Race (3 levels) × Hispanicity	3 × 2	2	2	All levels present.
Race (3 levels) × Gender	3 × 2	2	2	All levels present.
Hispanicity × Gender	2 × 2	1	1	All levels present.
% Owner-Occupied × % Black or African American	3 × 3	4	3	Coll. (3,1) & (3,2); zero
% Owner-Occupied × % Hispanic or Latino	3 × 3	4	4	All levels present.
% Owner-Occupied × Rent/Housing	3 × 5	8	8	All levels present.
Rent/Housing × % Black or African American	3 × 5	8	6	Coll. (3,1) & (3,2); zero. Coll. (4,1) & (4,2); sing.
Rent/Housing × % Hispanic or Latino	3 × 5	8	6	Coll. (3,1) & (3,2); zero. Coll. (4,1) & (4,2); sing.
State × Quarter	7 × 4	18	18	All levels present.
State × Age	7 × 5	24	24	All levels present.
State × Race (5 levels)	7 × 5	24	24	All levels present.
State × Hispanicity	7 × 2	6	6	All levels present.
State × Gender	7 × 2	6	6	All levels present.
State × % Black or African American	7 × 3	12	7	Coll. (1,1) & (1,2), repeat for States 3,6, and 7; zero. Coll. (5,1) & (5,2); sing.
State × % Hispanic or Latino	7 × 3	12	3	Coll. (1,1) & (1,2); Drop (6/7,1/2); zero. Coll. (3,1) & (3,2); sing. Coll. (2,1) & (2,2), drop (5, 1/2); conv.
State × % Owner-Occupied	7 × 3	12	12	All levels present.
State × Rent/Housing	7 × 5	24	24	All levels present.
Three-Factor Effects		**148**	**85**	
Age × Race (3 levels) × Hispanicity	5 × 3 × 2	8	1	Drop (2/3/4, 2/3, 1), coll. (1,2,1) & (1,3,1); conv.
Age × Race (3 levels) × Gender	5 × 3 × 2	8	8	All levels present.
Age × Hispanicity × Gender	5 × 2 × 2	4	4	All levels present.
Race (3 levels) × Hispanicity × Gender	3 × 2 × 2	2	1	Coll. (2,1,1) & (3,1,1); zero.
State × Age × Race (3 levels)	7 × 5 × 3	48	17	Coll. (1,1,2) & (1,1,3), repeat for all other States and age levels, drop (1/2/5/6/7, 4, 2/3), (5/6,3,2/3); conv.
State × Age × Hispanicity	7 × 5 × 2	24	15	Drop (3,4,1); sing. Drop (3, 1/2/3, 1), (1/5/6/7,4,1), (6,3,1); conv.
State × Age × Gender	7 × 5 × 2	24	24	All levels present.
State × Race (3 levels) × Hispanicity	7 × 3 × 2	12	3	Coll. (5,2,1) & (5,3,1), repeat for States 6 and 7; zero. Drop (1/2/3, 2/3, 1); conv.
State × Race (3 levels) × Gender	7 × 3 × 2	12	8	Coll. (1,2,1) & (1,3,1), repeat for States 3, 5, and 6; conv.
State × Hispanicity × Gender	7 × 2 × 2	6	4	Drop (3,1,1) & (6,1,1); conv.
Total		**377**	**295**	

Exhibit D4.5 Covariates for 2012 NSDUH Person Weights (res.per.ps), Model Group 4: West North Central

Variables	Levels	Proposed	Final	Comments
One-Factor Effects		**21**	**21**	
Intercept	1	1	1	All levels present.
State	7	6	6	All levels present.
Quarter	4	3	3	All levels present.
Age	6	5	5	All levels present.
Race (5 levels)	5	4	4	All levels present.
Gender	2	1	1	All levels present.
Hispanicity	2	1	1	All levels present.
Two-Factor Effects		**109**	**109**	
Age × Race (3 levels)	6 × 3	10	10	All levels present.
Age × Hispanicity	6 × 2	5	5	All levels present.
Age × Gender	6 × 2	5	5	All levels present.
Race (3 levels) × Hispanicity	3 × 2	2	2	All levels present.
Race (3 levels) × Gender	3 × 2	2	2	All levels present.
Hispanicity × Gender	2 × 2	1	1	All levels present.
State × Quarter	7 × 4	18	18	All levels present.
State × Age	7 × 6	30	30	All levels present.
State × Race (5 levels)	7 × 5	24	24	All levels present.
State × Hispanicity	7 × 2	6	6	All levels present.
State × Gender	7 × 2	6	6	All levels present.
Three-Factor Effects		**177**	**113**	
Age × Race (3 levels) × Hispanicity	6 × 3 × 2	10	2	Coll. (1,2,2) & (1,2,3), (2,2,2) & (2,2,3), drop rest; conv.
Age × Race (3 levels) × Gender	6 × 3 × 2	10	7	Coll. (1,4,2) & (1,4,3), drop (1,5,2/3); conv.
Age × Hispanicity × Gender	6 × 2 × 2	5	4	Drop (5,1,1); sing.
Race (3 levels) × Hispanicity × Gender	3 × 2 × 2	2	2	All levels present.
State × Age × Race (3 levels)	7 × 6 × 3	60	31	Coll. (6,3,2) & (6,3,3), (7,5,2) & (7,5,3); zero. Coll. (3,5,2) & (3,5,3), (5,4,2) & (5,4,3), (6,5,2) & (6,5,3), (7,4,2) & (7,4,3); sing. Coll. (1,1,2) & (1,1,3), repeat for States 2, 3, and 5; conv. Coll. (1,2,2) & (1,2,3), repeat for States 2, 3, and 5; conv. Coll. (1,3,2) & (1,3,3), repeat for States 2, 3, 5, and 7; conv. Coll. (2,4,2) & (2,4,3), (3,4,2) & (3,4,3), drop (1,4/5,2/3), (2,5,2/3), (5,5,2/3); conv.
State × Age × Hispanicity	7 × 6 × 2	30	19	Drop (1/3/7, 5, 1); zero. Drop (2/5/6,5,1), (3/7,4,1); sing. Drop (1/2/6,4,1); conv.
State × Age × Gender	7 × 6 × 2	30	30	All levels present.
State × Race (3 levels) × Hispanicity	7 × 3 × 2	12	3	Coll. (2,2,1) & (2,3,1), (5,2,1) & (5,3,1), drop (3/6/7,2/3,1); conv. Coll. (1,2,1) & (1,3,1); conv.
State × Race (3 levels) × Gender	7 × 3 × 2	12	10	Coll. (1,2,1) & (1,3,1), (5,2,1) & (5,3,1); conv.
State × Hispanicity × Gender	7 × 2 × 2	6	5	Drop (6,1,1); conv.
Total		**307**	**243**	

Appendix D5: Model Group 5: South Atlantic

(Delaware, District of Columbia, Florida, Georgia, Maryland, North Carolina, South Carolina, Virginia, and West Virginia)

Table D.5a 2012 NSDUH Person Weight GEM Modeling Summary (Model Group 5: South Atlantic)

Modeling Step[1]	Extreme Weight Proportions			UWE[2]	# XVAR[3]	Bounds[4]	
	% Unweighted	% Weighted	% Outwinsor			Nominal	Realized
res.sdu.nr	4.06	3.61	0.24	1.50780	459	(1.07, 1.74)	(1.08, 1.74)
	2.53	3.03	0.21	1.49510	306	(1.00, 2.30)	(1.00, 2.26)
						(1.00, 2.56)	(1.00, 2.55)
res.sdu.ps	2.53	3.03	0.21	1.49514	337	(0.61, 1.10)	(0.61, 1.10)
	1.67	3.62	0.72	1.56442	333	(0.20, 5.00)	(0.20, 5.00)
						(0.90, 3.43)	(0.90, 3.43)
sel.per.ps	2.68	5.68	1.09	2.79932	467	(0.20, 2.30)	(0.20, 2.30)
	1.34	3.05	0.71	2.87926	440	(0.20, 5.00)	(0.20, 5.00)
						(0.30, 4.18)	(0.30, 4.10)
res.per.nr	1.35	3.06	0.75	2.98016	467	(1.00, 3.00)	(1.00, 3.00)
	1.54	4.26	1.02	3.41176	400	(1.00, 5.00)	(1.00, 5.00)
						(1.00, 5.00)	(1.00, 5.00)
res.per.ps	1.64	4.27	1.04	3.41176	387	(0.20, 1.80)	(0.20, 1.80)
	1.07	3.62	0.88	3.49532	328	(0.30, 5.00)	(0.30, 5.00)
						(0.90, 1.16)	(0.90, 1.16)

[1] For a key to modeling abbreviations, see Chapter 5, Exhibit 5.1.
[2] Unequal weighting effect (UWE) is defined as $1 + [(n - 1)/n]*CV^2$, where CV = coefficient of variation of weights.
[3] Number of proposed covariates (XVAR) on top line and number finalized after modeling.
[4] There are six sets of bounds for each modeling step. Nominal bounds are used in defining maximum/minimum values for the generalized exponential model (GEM) adjustment factors. The realized bound is the actual adjustment produced by the modeling. The set of three bounds listed for each step correspond to the high extreme values, the nonextreme values, and the low extreme values.

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

Table D.5b Distribution of Weight Adjustment Factors and Weight Products for the 2012 NSDUH Person Weight (Model Group 5: South Atlantic)

	sel.sdu.des[1]	*res.sdu.nr*[1]		*res.sdu.ps*[1]		*sel.per.des*[1]		*sel.per.ps*[1]		*res.per.nr*[1]		*res.per.ps*[1]	
	1-7[2]	**8**[3]	**1-8**[3]	**9**[4]	**1-9**[4]	**11**[5]	**1-11**[5]	**12**[5]	**1-12**[5]	**13**[6]	**1-13**[6]	**14**[6]	**1-14**[6]
Minimum	37	0.41	43	0.20	9	1.01	19	0.11	4	0.22	4	0.06	1
1%	38	1.00	47	0.47	55	1.01	73	0.27	55	1.00	59	0.30	49
5%	53	1.04	64	0.81	74	1.01	172	0.63	156	1.00	175	0.50	162
10%	57	1.06	72	0.89	93	1.01	301	0.72	288	1.02	332	0.81	295
25%	295	1.10	327	1.00	323	1.11	870	0.86	814	1.08	886	0.95	853
Median	634	1.15	723	1.09	829	1.52	1,539	0.99	1,537	1.19	1,797	1.02	1,799
75%	916	1.22	1,185	1.22	1,258	6.37	4,902	1.13	4,626	1.35	4,912	1.08	4,809
90%	1,458	1.31	1,643	1.39	1,772	11.35	10,167	1.29	10,643	1.57	13,464	1.20	13,228
95%	1,675	1.38	1,837	1.56	2,113	12.24	13,351	1.45	14,683	1.77	20,543	1.29	20,555
99%	1,733	1.52	2,106	2.21	2,926	14.36	23,414	1.93	22,785	2.84	34,252	1.94	35,521
Maximum	3,566	3.53	4,030	5.00	9,546	21.91	59,251	5.87	83,336	10.45	91,132	5.11	97,222
n	30,681	26,239	26,239	26,236	26,236	13,632	13,632	13,632	13,632	10,883	10,883	10,883	10,883
Max/Mean	5.15	-	4.97	-	10.63	-	16.04	-	22.34	-	19.50	-	20.80

Note 1: Weight component 10 and weight products 1-10 are excluded because weight 10 = 1 for all selected dwelling units.
Note 2: Weight component 15 and weight products 1-15 are excluded because weight 15 = 1 for all respondents.
Note 3: Under the generalized exponential model (GEM), nonresponse adjustment factors (weight components #8 and #13) could be less than 1 due to the built-in control for extreme values. For an explanation, see Chapter 2.

[1] Sel.sdu.des refers to selected screener dwelling unit design weight, and sel.per.des refers to selected person design weight. For a key to other modeling abbreviations, see Chapter 5, Exhibit 5.1.
[2] Based on eligible dwelling units.
[3] Based on screener-complete dwelling units.
[4] Based on screener-complete dwelling units, occupants verified eligible.
[5] Based on selected persons.
[6] Based on questionnaire-complete persons.

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

Model Group 5 Overview

Dwelling Unit Nonresponse

All 27 proposed one-factor effects were included in the model.

For two-factor effects, variable collapsing or dropping was present in the State × Population Density, State × Group Quarter, and State × percent Hispanic or Latino interactions. Out of 176 proposed variables, 157 were included in the model.

Variable collapsing or dropping was present in all three-factor effects. Many factors were excluded due to zero sample sizes or exact linear combinations. Out of 256 proposed variables, 122 were included in the model.

In the final model, a total of 306 variables were included; see Exhibit D5.1.

Dwelling Unit Poststratification

All 22 proposed one-factor effects were included in the model.

For two-factor effects, variable collapsing or dropping was present in the State × Race interaction. Out of 125 proposed variables, 124 were included in the model.

For three-factor effects, variable collapsing was present in the State × Age × Hispanicity and State × Race × Hispanicity interactions. Out of 190 proposed variables, 187 were included in the model.

In the final model, a total of 333 variables were included; see Exhibit D5.2.

Selected Person-Level Poststratification

All 40 proposed one-factor effects were included in the model.

For two-factor effects, variable collapsing and dropping was present in the State × Race and State × percent Hispanic or Latino interactions. Out of 237 proposed variables, 232 were included in the model.

For three-factor effects, variable collapsing or dropping was present in the Age × Race × Hispanicity, State × Age × Race, State × Age × Hispanicity, and State × Race × Hispanicity interactions. Out of 190 proposed variables, 168 were included in the model.

In the final model, a total of 440 variables were included; see Exhibit D5.3.

Respondent Person-Level Nonresponse

All 40 proposed one-factor effects were included in the model.

For two-factor effects, variable collapsing or dropping was present in the State × Race, State × percent Hispanic or Latino, and State × Rent/Housing interactions. Out of 237 proposed variables, 226 were included in the model.

For three-factor effects, all levels were present for the Age × Race ×Gender, Age × Hispanicity × Gender, Race × Hispanicity × Gender, State × Age × Gender, and State × Hispanicity × Gender interactions. Out of 190 proposed variables, 134 were included in the model.

In the final model, a total of 400 variables were included; see Exhibit D5.4.

Respondent Person-Level Poststratification

All 23 proposed one-factor effects were included in the model.

All two-factor effects were present except the State × Race interaction. Out of 137 proposed variables, 129 were included in the model.

For three-factor effects, all levels were present for the Age × Race × Gender, Age × Hispanicity × Gender, State × Age × Gender, State × Race × Gender, and State × Hispanicity × Gender interactions. All the others were affected by variable collapsing or dropping. Out of 227 proposed variables, 176 were included in the model.

In the final model, a total of 328 variables were included; see Exhibit D5.5.

Exhibit D5.1 Covariates for 2012 NSDUH Person Weights (res.sdu.nr), Model Group 5: South Atlantic

Variables	Levels	Proposed	Final	Comments
One-Factor Effects		**27**	**27**	
Intercept	1	1	1	All levels present.
State	9	8	8	All levels present.
Quarter	4	3	3	All levels present.
Population Density	4	3	3	All levels present.
Group Quarter	3	2	2	All levels present.
% Black or African American	3	2	2	All levels present.
% Hispanic or Latino	3	2	2	All levels present.
% Owner-Occupied	3	2	2	All levels present.
Rent/Housing	5	4	4	All levels present.
Two-Factor Effects		**176**	**157**	
% Owner-Occupied × % Black or African American	3 × 3	4	4	All levels present.
% Owner-Occupied × % Hispanic or Latino	3 × 3	4	4	All levels present.
% Owner-Occupied × Rent/Housing	3 × 5	8	8	All levels present.
Rent/Housing × % Black or African American	3 × 5	8	8	All levels present.
Rent/Housing × % Hispanic or Latino	3 × 5	8	8	All levels present.
State × Quarter	9 × 4	24	24	All levels present.
State × Population Density	9 × 4	24	16	Drop (1,1/3), (2,2/3), (4,3); zero. Drop (1,2), (2,1), (8,3); sing.
State × Group Quarter	9 × 3	16	8	Coll. (1,1) & (1,2), then drop; zero/conv. Drop (4,2), (5,2), (7,1), (8,2); zero. Drop (4,1), (8,1); sing.
State × % Black or African American	9 × 3	16	16	All levels present.
State × % Hispanic or Latino	9 × 3	16	13	Drop (4,1), (8,*); zero.
State × % Owner-Occupied	9 × 3	16	16	All levels present.
State × Rent/Housing	9 × 5	32	32	All levels present.
Three-Factor Effects		**256**	**122**	
State × % Owner-Occupied × % Black or African American	9 × 3 × 3	32	19	Drop (1,3,1), (6,3,2), (8,3,1/2), (8,2,1); zero. Drop (5,3,2), (7,3,1/2),(1,3,2), (6,3,1), (8,2,2), (4,3,2); sing. Drop (4,3,1); conv.
State × % Owner-Occupied × % Hispanic or Latino	9 × 3 × 3	32	13	Drop (5,3,1/2), (7,3,1), (1,3,1/2), (1,2,1), (1,2,1), (6,3,1/2), (6,2,1), (8,*,*), (4,2/3,1); zero. Drop (5,2,1), (7,2,1), (2,3,1), (2,2,1); sing.
State × % Owner-Occupied × Rent/Housing	9 × 3 × 5	64	30	Drop (5,3,1), (7,3,1), (2,2,1), (1,3,1/2/3), (1,2,1), (6,3,2/3/4), (8,3,1/3/4),(8,2,3/4), (4,3,3); zero. Drop (5,3,3/4), (5,2,4), (7,3,2/3/4), (7,2,3), (2,3,1), (2,2,2), (1,3,4), (6,3,1), (8,3,2), (8,2,2); sing. Drop (7,2,4), (4,3,1/2), (4,3,4), coll. (4,2,1) & (4,2,2); conv.
State × Rent/Housing × % Black or African American	9 × 3 × 5	64	42	Drop (5,4,1), (7,3,1), (2,1,2), (8,2,1), (8,3,1/2), (8,2,1),(8,4,1/2), (4,1,2); zero. Drop (9,4,1), (5,3,1), (7,4,1), (2,1,1), (2,2,2), (2,4,2), (1,1,2), (1,4,1), (6,4,1), (8,1,1), (8,2,2), (4,4,1); sing.
State × Rent/Housing × % Hispanic or Latino	9 × 3 × 5	64	18	Keep (9,1,2), (9,2,2), (9,3,2), (9,4,1/2), (5,1,1), (5,2,2), (5,3,2),(7,2,2),(7,3,2), (7,4,2), (2,2,2), (2,3,2), (2,4,2), (1,2,2), (1,3,2), (6,2,2), (4,3,2), drop all others; sing./zero.
Total		**459**	**306**	

Exhibit D5.2 Covariates for 2012 NSDUH Person Weights (res.sdu.ps), Model Group 5: South Atlantic

Variables	Levels	Proposed	Final	Comments
One-Factor Effects		**22**	**22**	
Intercept	1	1	1	All levels present.
State	9	8	8	All levels present.
Quarter	4	3	3	All levels present.
Age	5	4	4	All levels present.
Race (5 levels)	5	4	4	All levels present.
Gender	2	1	1	All levels present.
Hispanicity	2	1	1	All levels present.
Two-Factor Effects		**125**	**124**	
Age × Race (3 levels)	5 × 3	8	8	All levels present.
Age × Hispanicity	5 × 2	4	4	All levels present.
Age × Gender	5 × 2	4	4	All levels present.
Race (3 levels) × Hispanicity	3 × 2	2	2	All levels present.
Race (3 levels) × Gender	3 × 2	2	2	All levels present.
Hispanicity × Gender	2 × 2	1	1	All levels present.
State × Quarter	9 × 4	24	24	All levels present.
State × Age	9 × 5	32	32	All levels present.
State × Race (5 levels)	9 × 5	32	31	Coll. (1,3) & (1,4); conv.
State × Hispanicity	9 × 2	8	8	All levels present.
State × Gender	9 × 2	8	8	All levels present.
Three-Factor Effects		**190**	**187**	
Age × Race (3 levels) × Hispanicity	5 × 3 × 2	8	8	All levels present.
Age × Race (3 levels) × Gender	5 × 3 × 2	8	8	All levels present.
Age × Hispanicity × Gender	5 × 2 × 2	4	4	All levels present.
Race (3 levels) × Hispanicity × Gender	3 × 2 × 2	2	2	All levels present.
State × Age × Race (3 levels)	9 × 5 × 3	64	64	All levels present.
State × Age × Hispanicity	9 × 5 × 2	32	31	Coll. (8,3,1) & (8,4,1); conv.
State × Age × Gender	9 × 5 × 2	32	32	All levels present.
State × Race (3 levels) × Hispanicity	9 × 3 × 2	16	14	Coll. (5,3,1) & (5,3,1); (8,2,1) & (8,3,1); conv.
State × Race (3 levels) × Gender	9 × 3 × 2	16	16	All levels present.
State × Hispanicity × Gender	9 × 2 × 2	8	8	All levels present.
Total		**337**	**333**	

Exhibit D5.3 Covariates for 2012 NSDUH Person Weights (sel.per.ps), Model Group 5: South Atlantic

Variables	Levels	Proposed	Final	Comments
One-Factor Effects		**40**	**40**	
Intercept	1	1	1	All levels present.
State	9	8	8	All levels present.
Quarter	4	3	3	All levels present.
Age	5	4	4	All levels present.
Race (5 levels)	5	4	4	All levels present.
Gender	2	1	1	All levels present.
Hispanicity	2	1	1	All levels present.
Relation to Householder	4	3	3	All levels present.
Population Density	4	3	3	All levels present.
Group Quarter	3	2	2	All levels present.
% Black or African American	3	2	2	All levels present.
% Hispanic or Latino	3	2	2	All levels present.
% Owner-Occupied	3	2	2	All levels present.
Rent/Housing	5	4	4	All levels present.
Two-Factor Effects		**237**	**232**	
Age × Race (3 levels)	5 × 3	8	8	All levels present.
Age × Hispanicity	5 × 2	4	4	All levels present.
Age × Gender	5 × 2	4	4	All levels present.
Race (3 levels) × Hispanicity	3 × 2	2	2	All levels present.
Race (3 levels) × Gender	3 × 2	2	2	All levels present.
Hispanicity × Gender	2 × 2	1	1	All levels present.
% Owner-Occupied × % Black or African American	3 × 3	4	4	All levels present.
% Owner-Occupied × % Hispanic or Latino	3 × 3	4	4	All levels present.
% Owner-Occupied × Rent/Housing	3 × 5	8	8	All levels present.
Rent/Housing × % Black or African American	3 × 5	8	8	All levels present.
Rent/Housing × % Hispanic or Latino	3 × 5	8	8	All levels present.
State × Quarter	9 × 4	24	24	All levels present.
State × Age	9 × 5	32	32	All levels present.
State × Race (5 levels)	9 × 5	32	31	Coll. (4,3) & (4,4); conv.
State × Hispanicity	9 × 2	8	8	All levels present.
State × Gender	9 × 2	8	8	All levels present.
State × % Black or African American	9 × 3	16	16	All levels present.
State × % Hispanic or Latino	9 × 3	16	13	Drop (3,1), (8,1/2); zero.
State × % Owner-Occupied	9 × 3	16	16	All levels present.
State × Rent/Housing	9 × 5	32	31	Drop (8,4); sing.
Three-Factor Effects		**190**	**168**	
Age × Race (3 levels) × Hispanicity	5 × 3 × 2	8	6	Coll. (4,2,1) & (4,3,1), repeat for age level 3; conv.
Age × Race (3 levels) × Gender	5 × 3 × 2	8	8	All levels present.
Age × Hispanicity × Gender	5 × 2 × 2	4	4	All levels present.
Race (3 levels) × Hispanicity × Gender	3 × 2 × 2	2	2	All levels present.
State × Age × Race (3 levels)	9 × 5 × 3	64	61	Coll. (8,4,2) & (8,4,3), repeat for age levels 3 and 2; conv.
State × Age × Hispanicity	9 × 5 × 2	32	24	Drop (8,3/4,1); zero. Drop (8,1/2,1), (6,*,1); conv.
State × Age × Gender	9 × 5 × 2	32	32	All levels present.
State × Race (3 levels) × Hispanicity	9 × 3 × 2	16	7	Coll. (8,2,1) & (8,3,1), then drop; zero/conv. Coll. (9,2,1) & (9,3,1), repeat for all other States; conv.
State × Race (3 levels) × Gender	9 × 3 × 2	16	16	All levels present.
State × Hispanicity × Gender	9 × 2 × 2	8	8	All levels present.
Total		**467**	**440**	

Exhibit D5.4 Covariates for 2012 NSDUH Person Weights (res.per.nr), Model Group 5: South Atlantic

Variables	Levels	Proposed	Final	Comments
One-Factor Effects		**40**	**40**	
Intercept	1	1	1	All levels present.
State	9	8	8	All levels present.
Quarter	4	3	3	All levels present.
Age	5	4	4	All levels present.
Race (5 levels)	5	4	4	All levels present.
Gender	2	1	1	All levels present.
Hispanicity	2	1	1	All levels present.
Relation to Householder	4	3	3	All levels present.
Population Density	4	3	3	All levels present.
Group Quarter	3	2	2	All levels present.
% Black or African American	3	2	2	All levels present.
% Hispanic or Latino	3	2	2	All levels present.
% Owner-Occupied	3	2	2	All levels present.
Rent/Housing	5	4	4	All levels present.
Two-Factor Effects		**237**	**226**	
Age × Race (3 levels)	5 × 3	8	8	All levels present.
Age × Hispanicity	5 × 2	4	4	All levels present.
Age × Gender	5 × 2	4	4	All levels present.
Race (3 levels) × Hispanicity	3 × 2	2	2	All levels present.
Race (3 levels) × Gender	3 × 2	2	2	All levels present.
Hispanicity × Gender	2 × 2	1	1	All levels present.
% Owner-Occupied × % Black or African American	3 × 3	4	4	All levels present.
% Owner-Occupied × % Hispanic or Latino	3 × 3	4	4	All levels present.
% Owner-Occupied × Rent/Housing	3 × 5	8	8	All levels present.
Rent/Housing × % Black or African American	3 × 5	8	8	All levels present.
Rent/Housing × % Hispanic or Latino	3 × 5	8	8	All levels present.
State × Quarter	9 × 4	24	24	All levels present.
State × Age	9 × 5	32	32	All levels present.
State × Race (5 levels)	9 × 5	32	25	Coll. (1,3) & (1,4), repeat for all States except FL; conv.
State × Hispanicity	9 × 2	8	8	All levels present.
State × Gender	9 × 2	8	8	All levels present.
State × % Black or African American	9 × 3	16	16	All levels present.
State × % Hispanic or Latino	9 × 3	16	13	Drop (4,1), (8,1/2); zero
State × % Owner-Occupied	9 × 3	16	16	All levels present.
State × Rent/Housing	9 × 5	32	31	Drop (8,4); sing.
Three-Factor Effects		**190**	**134**	
Age × Race (3 levels) × Hispanicity	5 × 3 × 2	8	5	Coll. (2,2,1) & (2,3,1), repeat for age levels 3 and 4; conv.
Age × Race (3 levels) × Gender	5 × 3 × 2	8	8	All levels present.
Age × Hispanicity × Gender	5 × 2 × 2	4	4	All levels present.
Race (3 levels) × Hispanicity × Gender	3 × 2 × 2	2	2	All levels present.
State × Age × Race (3 levels)	9 × 5 × 3	64	48	Coll. (1,3,2) & (1,3,3), (1,4,2) & (1,4,3), repeat for State NC; conv. Coll. (6,1,2) & (6,1,3), repeat for all age levels and for States VA and WV; conv.
State × Age × Hispanicity	9 × 5 × 2	32	16	Drop (5,4,1); sing. Drop (8,2/3/4,1); zero. Drop rest for States NC, SC, VA; conv.
State × Age × Gender	9 × 5 × 2	32	32	All levels present.
State × Race (3 levels) × Hispanicity	9 × 3 × 2	16	2	Drop (8,2,1); zero. Coll. (1,2,1) & (1,3,1), repeat for States MD, NC, SC, and VA, then drop the collapsed variables and (8,1,1); conv.
State × Race (3 levels) × Gender	9 × 3 × 2	16	9	Coll. (1,2,1) & (1,3,1), repeat for all States except FL; conv.
State × Hispanicity × Gender	9 × 2 × 2	8	8	All levels present.
Total		**467**	**400**	

Exhibit D5.5 Covariates for 2012 NSDUH Person Weights (res.per.ps), Model Group 5: South Atlantic

Variables	Levels	Proposed	Final	Comments
One-Factor Effects		**23**	**23**	
Intercept	1	1	1	All levels present.
State	9	8	8	All levels present.
Quarter	4	3	3	All levels present.
Age	6	5	5	All levels present.
Race (5 levels)	5	4	4	All levels present.
Gender	2	1	1	All levels present.
Hispanicity	2	1	1	All levels present.
Two-Factor Effects		**137**	**129**	
Age × Race (3 levels)	6 × 3	10	10	All levels present.
Age × Hispanicity	6 × 2	5	5	All levels present.
Age × Gender	6 × 2	5	5	All levels present.
Race (3 levels) × Hispanicity	3 × 2	2	2	All levels present.
Race (3 levels) × Gender	3 × 2	2	2	All levels present.
Hispanicity × Gender	2 × 2	1	1	All levels present.
State × Quarter	9 × 4	24	24	All levels present.
State × Age	9 × 6	40	40	All levels present.
State × Race (5 levels)	9 × 5	32	24	Coll. (2,3) & (2,4), (4,3) & (4,4), (7,3) & (7,4); conv. Repeat for the rest of the States; conv.
State × Hispanicity	9 × 2	8	8	All levels present.
State × Gender	9 × 2	8	8	All levels present.
Three-Factor Effects		**227**	**176**	
Age × Race (3 levels) × Hispanicity	6 × 3 × 2	10	5	Coll. (1,2,1) & (1,3,1), repeat for all age levels; conv.
Age × Race (3 levels) × Gender	6 × 3 × 2	10	10	All levels present.
Age × Hispanicity × Gender	6 × 2 × 2	5	5	All levels present.
Race (3 levels) × Hispanicity × Gender	3 × 2 × 2	2	1	Coll. (2,1,1) & (3,1,1); conv.
State × Age × Race (3 levels)	9 × 6 × 3	80	63	Coll. (2,5,2) & (2.5.3), (6,5,2) & (6,5,3), (8,5,2) & (8,5,3); sing. Coll. (1,1,2) & (1,1,3), repeat for all age levels for States DE, VA, and WV; conv.
State × Age × Hispanicity	9 × 6 × 2	40	21	Drop (2,5,1), (1,5,1), (5,4,1), (8,2,1); sing; Drop (5,5,1), (8,3/4/5,1); zero. Drop all for States SC, VA, and WV; conv.
State × Age × Gender	9 × 6 × 2	40	40	All levels present.
State × Race (3 levels) × Hispanicity	9 × 3 × 2	16	7	Coll. (1,2,1) & (1,3,1), repeat for all States, drop all for State SC; conv.
State × Race (3 levels) × Gender	9 × 3 × 2	16	16	All levels present.
State × Hispanicity × Gender	9 × 2 × 2	8	8	All levels present.
Total		**387**	**328**	

Appendix D6: Model Group 6: East South Central

(Alabama, Kentucky, Mississippi, and Tennessee)

Table D.6a 2012 NSDUH Person Weight GEM Modeling Summary (Model Group 6: East South Central)

Modeling Step[1]	Extreme Weight Proportions			UWE[2]	# XVAR[3]	Bounds[4]	
	% Unweighted	% Weighted	% Outwinsor			Nominal	Realized
res.sdu.nr	2.58	3.25	0.09	1.09241	204	(1.03, 1.45)	(1.04, 1.45)
	1.20	1.54	0.10	1.09735	121	(1.00, 2.45)	(1.00, 2.44)
						(1.00, 1.20)	(1.00, 1.01)
res.sdu.ps	1.20	1.54	0.10	1.09736	162	(0.53, 1.10)	(0.53, 1.10)
	1.85	3.39	0.51	1.14655	150	(0.20, 4.31)	(0.20, 4.28)
						(0.95, 1.05)	(1.05, 1.05)
sel.per.ps	3.33	6.42	1.42	2.25471	242	(0.20, 1.57)	(0.20, 1.57)
	1.01	1.67	0.32	2.32228	212	(0.20, 4.90)	(0.20, 4.90)
						(0.70, 1.77)	(0.70, 1.64)
res.per.nr	1.15	1.87	0.38	2.37375	242	(1.00, 2.60)	(1.00, 2.60)
	1.18	2.31	0.54	2.56870	187	(1.00, 4.80)	(1.00, 4.79)
						(1.20, 1.70)	(1.70, 1.70)
res.per.ps	1.26	2.70	0.62	2.56870	187	(0.20, 1.20)	(0.20, 1.20)
	1.09	2.79	0.37	2.69088	145	(0.20, 4.06)	(0.20, 4.02)
						(0.95, 1.05)	(0.95, 0.95)

[1] For a key to modeling abbreviations, see Chapter 5, Exhibit 5.1.
[2] Unequal weighting effect (UWE) is defined as $1 + [(n - 1)/n]*CV^2$, where CV = coefficient of variation of weights.
[3] Number of proposed covariates (XVAR) on top line and number finalized after modeling.
[4] There are six sets of bounds for each modeling step. Nominal bounds are used in defining maximum/minimum values for the generalized exponential model (GEM) adjustment factors. The realized bound is the actual adjustment produced by the modeling. The set of three bounds listed for each step correspond to the high extreme values, the nonextreme values, and the low extreme values.

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

Table D.6b Distribution of Weight Adjustment Factors and Weight Products for the 2012 NSDUH Person Weight (Model Group 6: East South Central)

	sel.sdu.des[1]	*res.sdu.nr*[1]		*res.sdu.ps*[1]		*sel.per.des*[1]		*sel.per.ps*[1]		*res.per.nr*[1]		*res.per.ps*[1]	
	1-7[2]	**8**[3]	**1-8**[3]	**9**[4]	**1-9**[4]	**11**[5]	**1-11**[5]	**12**[5]	**1-12**[5]	**13**[6]	**1-13**[6]	**14**[6]	**1-14**[6]
Minimum	128	0.97	255	0.20	97	1.01	103	0.13	21	0.34	21	0.10	5
1%	447	1.00	464	0.36	234	1.01	267	0.23	195	1.00	260	0.21	115
5%	455	1.01	488	0.75	480	1.01	585	0.61	487	1.00	524	0.71	503
10%	504	1.02	528	0.85	555	1.01	708	0.72	640	1.02	720	0.85	699
25%	627	1.05	659	0.96	669	1.11	974	0.87	930	1.07	1,076	0.96	1,080
Median	672	1.08	761	1.06	824	1.43	1,447	1.00	1,495	1.17	1,741	1.01	1,743
75%	859	1.13	970	1.17	1,089	5.67	4,836	1.14	4,822	1.32	5,687	1.05	5,389
90%	1,172	1.15	1,261	1.31	1,337	10.37	8,637	1.34	8,766	1.52	11,136	1.18	10,977
95%	1,208	1.18	1,319	1.45	1,472	11.37	10,724	1.46	11,575	1.74	15,960	1.25	15,579
99%	1,233	1.27	1,415	1.91	1,966	12.99	15,663	2.16	18,208	2.36	24,303	1.77	26,519
Maximum	2,421	2.44	2,381	4.28	3,727	18.93	44,286	4.90	28,573	4.79	45,397	4.02	42,042
n	8,961	8,223	8,223	8,222	8,222	4,534	4,534	4,534	4,534	3,656	3,656	3,656	3,656
Max/Mean	3.15	-	2.85	-	4.15	-	13.35	-	8.41	-	10.78	-	9.98

Note 1: Weight component 10 and weight products 1-10 are excluded because weight 10 = 1 for all selected dwelling units.
Note 2: Weight component 15 and weight products 1-15 are excluded because weight 15 = 1 for all respondents.
Note 3: Under the generalized exponential model (GEM), nonresponse adjustment factors (weight components #8 and #13) could be less than 1 due to the built-in control for extreme values. For an explanation, see Chapter 2.

[1] Sel.sdu.des refers to selected screener dwelling unit design weight, and sel.per.des refers to selected person design weight. For a key to other modeling abbreviations, see Chapter 5, Exhibit 5.1.
[2] Based on eligible dwelling units.
[3] Based on screener-complete dwelling units.
[4] Based on screener-complete dwelling units, occupants verified eligible.
[5] Based on selected persons.
[6] Based on questionnaire-complete persons.

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

Model Group 6 Overview

Dwelling Unit Nonresponse

All 22 proposed one-factor effects were included in the model.

For the two-factor effects, variable collapsing or dropping was present in the percent Owner-Occupied × percent Hispanic or Latino, percent Owner-Occupied × Rent/Housing, Rent/Housing × percent Hispanic or Latino, State × Population Density, State × Group Quarter, State × percent Hispanic or Latino, and State × percent Owner-Occupied interactions. Out of 86 proposed variables, 68 were included in the model.

Variable collapsing or dropping was present in all three-factor effects. Out of 96 proposed variables, 31 were included in the model.

In the final model, a total of 121 variables were included; see Exhibit D6.1.

Dwelling Unit Poststratification

All 17 proposed one-factor effects were included in the model.

All 60 proposed two-factor effects were included in the model.

For the three-factor effects, variable collapsing or dropping was present in the State × Age × Race, State × Age × Hispanicity, State × Race × Hispanicity, and State × Race × Gender interactions. Out of 85 proposed variables, 73 were included in the model.

In the final model, a total of 150 variables were included; see Exhibit D6.2.

Selected Person-Level Poststratification

All 35 proposed one-factor effects were included in the model.

For the two-factor effects, variable collapsing or dropping was present in the percent Owner-Occupied × percent Hispanic or Latino, percent Owner-Occupied × Rent/Housing, Rent/Housing × percent Hispanic or Latino, and State × percent Hispanic or Latino interactions. Out of 122 proposed variables, 112 were included in the model.

For the three-factor effects, all levels were present for the Age × Race × Gender, Age × Hispanicity × Gender, Race × Hispanicity × Gender, State × Age × Gender, State × Race × Gender, and State × Hispanicity × Gender interactions. Variable collapsing or dropping was present in all other interactions. Out of 85 proposed variables, 65 were included in the model.

In the final model, a total of 212 variables were included; see Exhibit D6.3.

Respondent Person-Level Nonresponse

All 35 proposed one-factor effects were included in the model.

For the two-factor effects, variable collapsing or dropping was present in the percent Owner-Occupied × percent Hispanic or Latino, percent Owner-Occupied × Rent/Housing, Rent/Housing × percent Hispanic Latino, State × Race, State × percent Hispanic or Latino, and State × percent Owner-Occupied interactions. Out of 122 proposed variables, 105 were included in the model.

For the three-factor effects, all levels were present for the State × Age × Gender and State × Race × Gender interactions. Variable collapsing or dropping was present in all other interactions. Out of 85 proposed variables, 47 were included in the model.

In the final model, a total of 187 variables were included; see Exhibit D6.4.

Respondent Person-Level Poststratification

All 18 proposed one-factor effects were included in the model.

All 67 proposed two-factor effects were included in the model.

Variable collapsing or dropping was present in all three-factor effects except the Age × Race × Gender, State × Age × Gender, and State × Race × Gender interactions. Out of 102 proposed variables, 60 were included in the model.

In the final model, a total of 145 variables were included; see Exhibit D6.5.

Exhibit D6.1 Covariates for 2012 NSDUH Person Weights (res.sdu.nr), Model Group 6: East South Central

Variables	Levels	Proposed	Final	Comments
One-Factor Effects		**22**	**22**	
Intercept	1	1	1	All levels present.
State	4	3	3	All levels present.
Quarter	4	3	3	All levels present.
Population Density	4	3	3	All levels present.
Group Quarter	3	2	2	All levels present.
% Black or African American	3	2	2	All levels present.
% Hispanic or Latino	3	2	2	All levels present.
% Owner-Occupied	3	2	2	All levels present.
Rent/Housing	5	4	4	All levels present.
Two-Factor Effects		**86**	**68**	
% Owner-Occupied × % Black or African American	3 × 3	4	4	All levels present.
% Owner-Occupied × % Hispanic or Latino	3 × 3	4	3	Drop (3,1); zero.
% Owner-Occupied × Rent/Housing	3 × 5	8	7	Drop (3,2); zero.
Rent/Housing × % Black or African American	3 × 5	8	8	All levels present.
Rent/Housing × % Hispanic or Latino	3 × 5	8	4	Drop (1,1), (4,1); zero. Drop (2/3,1); sing.
State × Quarter	4 × 4	9	9	All levels present.
State × Population Density	4 × 4	9	8	Drop (1,3); zero.
State × Group Quarter	4 × 3	6	0	Drop all; zero/sing.
State × % Black or African American	4 × 3	6	6	All levels present.
State × % Hispanic or Latino	4 × 3	6	2	Drop (1,1), (3,2); sing. Drop (2,1), (3,1); zero.
State × % Owner-Occupied	4 × 3	6	5	Coll. (3,2) & (3,3); conv.
State × Rent/Housing	4 × 5	12	12	All levels present.
Three-Factor Effects		**96**	**31**	
State × % Owner-Occupied × % Black or African American	4 × 3 × 3	12	7	Coll. (3,2,1) & (3,3,1), (3,2,2) & (3,3,2); hier. Drop (1,3,1); zero. Drop (1,3,2), (2,3,2); sing.
State × % Owner-Occupied × % Hispanic or Latino	4 × 3 × 3	12	1	Coll. (3,2,1) & (3,3,1), (3,2,2) & (3,3,2), then drop; hier./zero. Keep (1,3,2), drop all others; zero/sing.
State × % Owner-Occupied × Rent/Housing	4 × 3 × 5	24	9	Coll. (3,2,1) & (3,3,1), (3,2,2) & (3,3,2), (3,2,3) & (3,3,3), (3,2,4) & (3,3,4); hier. Drop (3,*,2); zero. Drop (3,*,3/4); sing. Keep (1,3,3), (1,2,*), (2,2,2/3/4), drop all others; sing./zero.
State × Rent/Housing × % Black or African American	4 × 3 × 5	24	13	Drop (2,3,1), (2,4,1); zero. Drop (1,1,2), (1,4,1), (2,2,1), (3,4,1); sing. Coll. (3,3,1) & (3,3,2), drop (3,1,1/2), (3,2,2), (3,4,2); conv.
State × Rent/Housing × % Hispanic or Latino	4 × 3 × 5	24	1	Keep (2,1,2), drop all others; zero/sing.
Total		**204**	**121**	

Exhibit D6.2 Covariates for 2012 NSDUH Person Weights (res.sdu.ps), Model Group 6: East South Central

Variables	Levels	Proposed	Final	Comments
One-Factor Effects		**17**	**17**	
Intercept	1	1	1	All levels present.
State	4	3	3	All levels present.
Quarter	4	3	3	All levels present.
Age	5	4	4	All levels present.
Race (5 levels)	5	4	4	All levels present.
Gender	2	1	1	All levels present.
Hispanicity	2	1	1	All levels present.
Two-Factor Effects		**60**	**60**	
Age × Race (3 levels)	5 × 3	8	8	All levels present.
Age × Hispanicity	5 × 2	4	4	All levels present.
Age × Gender	5 × 2	4	4	All levels present.
Race (3 levels) × Hispanicity	3 × 2	2	2	All levels present.
Race (3 levels) × Gender	3 × 2	2	2	All levels present.
Hispanicity × Gender	2 × 2	1	1	All levels present.
State × Quarter	4 × 4	9	9	All levels present.
State × Age	4 × 5	12	12	All levels present.
State × Race (5 levels)	4 × 5	12	12	All levels present.
State × Hispanicity	4 × 2	3	3	All levels present.
State × Gender	4 × 2	3	3	All levels present.
Three-Factor Effects		**85**	**73**	
Age × Race (3 levels) × Hispanicity	5 × 3 × 2	8	8	All levels present.
Age × Race (3 levels) × Gender	5 × 3 × 2	8	8	All levels present.
Age × Hispanicity × Gender	5 × 2 × 2	4	4	All levels present.
Race (3 levels) × Hispanicity × Gender	3 × 2 × 2	2	2	All levels present.
State × Age × Race (3 levels)	4 × 5 × 3	24	20	Coll. (3,1,2) & (3,1,3), repeat for all age levels; conv.
State × Age × Hispanicity	4 × 5 × 2	12	11	Drop (3,4,1); conv.
State × Age × Gender	4 × 5 × 2	12	12	All levels present.
State × Race (3 levels) × Hispanicity	4 × 3 × 2	6	0	Drop all; conv.
State × Race (3 levels) × Gender	4 × 3 × 2	6	5	Coll. (3,2,1) & (3,3,1); conv.
State × Hispanicity × Gender	4 × 2 × 2	3	3	All levels present.
Total		**162**	**150**	

Exhibit D6.3 Covariates for 2012 NSDUH Person Weights (sel.per.ps), Model Group 6: East South Central

Variables	Levels	Proposed	Final	Comments
One-Factor Effects		**35**	**35**	
Intercept	1	1	1	All levels present.
State	4	3	3	All levels present.
Quarter	4	3	3	All levels present.
Age	5	4	4	All levels present.
Race (5 levels)	5	4	4	All levels present.
Gender	2	1	1	All levels present.
Hispanicity	2	1	1	All levels present.
Relation to Householder	4	3	3	All levels present.
Population Density	4	3	3	All levels present.
Group Quarter	3	2	2	All levels present.
% Black or African American	3	2	2	All levels present.
% Hispanic or Latino	3	2	2	All levels present.
% Owner-Occupied	3	2	2	All levels present.
Rent/Housing	5	4	4	All levels present.
Two-Factor Effects		**122**	**112**	
Age × Race (3 levels)	5 × 3	8	8	All levels present.
Age × Hispanicity	5 × 2	4	4	All levels present.
Age × Gender	5 × 2	4	4	All levels present.
Race (3 levels) × Hispanicity	3 × 2	2	2	All levels present.
Race (3 levels) × Gender	3 × 2	2	2	All levels present.
Hispanicity × Gender	2 × 2	1	1	All levels present.
% Owner-Occupied × % Black or African American	3 × 3	4	4	All levels present.
% Owner-Occupied × % Hispanic	3 × 3	4	3	Drop (3,1); zero.
% Owner-Occupied × Rent/Housing	3 × 5	8	7	Drop (3,2); zero.
Rent/Housing × % Black or African American	3 × 5	8	8	All levels present.
Rent/Housing × % Hispanic or Latino	3 × 5	8	4	Drop (1,1), (4,1); zero. Drop (2,1), (3,1); sing.
State × Quarter	4 × 4	9	9	All levels present.
State × Age	4 × 5	12	12	All levels present.
State × Race (5 levels)	4 × 5	12	12	All levels present.
State × Hispanicity	4 × 2	3	3	All levels present.
State × Gender	4 × 2	3	3	All levels present.
State × % Black or African American	4 × 3	6	6	All levels present.
State × % Hispanic or Latino	4 × 3	6	2	Drop (2,1), (3,1); zero. Coll. (1,1) & (1,2), drop (3,2); sing.
State × % Owner-Occupied	4 × 3	6	6	All levels present.
State × Rent/Housing	4 × 5	12	12	All levels present.
Three-Factor Effects		**85**	**65**	
Age × Race (3 levels) × Hispanicity	5 × 3 × 2	8	5	Coll. (3,2,1) & (3,3,1); zero. Drop (4,2/3,1); sing./conv.
Age × Race (3 levels) × Gender	5 × 3 × 2	8	8	All levels present.
Age × Hispanicity × Gender	5 × 2 × 2	4	4	All levels present.
Race (3 levels) × Hispanicity × Gender	3 × 2 × 2	2	2	All levels present.
State × Age × Race (3 levels)	4 × 5 × 3	24	14	Coll. (1,1,2) & (1,1,3), repeat for all age groups, for States (1) & (3); conv. Coll. (2,3,2) & (2,3,3), (2,4,2) & (2,4,3); conv.
State × Age × Hispanicity	4 × 5 × 2	12	11	Drop (1,4,1); conv.
State × Age × Gender	4 × 5 × 2	12	12	All levels present.
State × Race (3 levels) × Hispanicity	4 × 3 × 2	6	0	Drop all levels; conv.
State × Race (3 levels) × Gender	4 × 3 × 2	6	6	All levels present.
State × Hispanicity × Gender	4 × 2 × 2	3	3	All levels present.
Total		**242**	**212**	

Exhibit D6.4 Covariates for 2012 NSDUH Person Weights (res.per.nr), Model Group 6: East South Central

Variables	Levels	Proposed	Final	Comments
One-Factor Effects		**35**	**35**	
Intercept	1	1	1	All levels present.
State	4	3	3	All levels present.
Quarter	4	3	3	All levels present.
Age	5	4	4	All levels present.
Race (5 levels)	5	4	4	All levels present.
Gender	2	1	1	All levels present.
Hispanicity	2	1	1	All levels present.
Relation to Householder	4	3	3	All levels present.
Population Density	4	3	3	All levels present.
Group Quarter	3	2	2	All levels present.
% Black or African American	3	2	2	All levels present.
% Hispanic or Latino	3	2	2	All levels present.
% Owner-Occupied	3	2	2	All levels present.
Rent/Housing	5	4	4	All levels present.
Two-Factor Effects		**122**	**105**	
Age × Race (3 levels)	5 × 3	8	8	All levels present.
Age × Hispanicity	5 × 2	4	4	All levels present.
Age × Gender	5 × 2	4	4	All levels present.
Race (3 levels) × Hispanicity	3 × 2	2	2	All levels present.
Race (3 levels) × Gender	3 × 2	2	2	All levels present.
Hispanicity × Gender	2 × 2	1	1	All levels present.
% Owner-Occupied × % Black or African American	3 × 3	4	4	All levels present.
% Owner-Occupied × % Hispanic or Latino	3 × 3	4	3	Drop (3,1); zero.
% Owner-Occupied × Rent/Housing	3 × 5	8	7	Drop (3,2); zero.
Rent/Housing × % Black or African American	3 × 5	8	8	All levels present.
Rent/Housing × % Hispanic or Latino	3 × 5	8	4	Drop (1,1), (4,1); zero. Drop (2,1), (3,1); sing..
State × Quarter	4 × 4	9	9	All levels present.
State × Age	4 × 5	12	12	All levels present.
State × Race (5 levels)	4 × 5	12	8	Coll. (1,3) & (1,4) & (1,5), (2,3) & (2,4), (3,3) & (3,4); conv.
State × Hispanicity	4 × 2	3	3	All levels present.
State × Gender	4 × 2	3	3	All levels present.
State × % Black or African American	4 × 3	6	6	All levels present.
State × % Hispanic or Latino	4 × 3	6	1	Keep (2,2). Drop all others; zero, sing., conv.
State × % Owner-Occupied	4 × 3	6	4	Coll. (1,3) & (1,2), (3,3) & (3,2); conv.
State × Rent/Housing	4 × 5	12	12	All levels present.
Three-Factor Effects		**85**	**47**	
Age × Race (3 levels) × Hispanicity	5 × 3 × 2	8	2	Keep (1,2/3,1), (2,2/3,1). Drop all others; zero/sing./conv.
Age × Race (3 levels) × Gender	5 × 3 × 2	8	4	Coll. (1,2,1) & (1,3,1), repeat for all age levels; conv.
Age × Hispanicity × Gender	5 × 2 × 2	4	3	Drop (4,1,1); conv.
Race (3 levels) × Hispanicity × Gender	3 × 2 × 2	2	0	Drop all; conv.
State × Age × Race (3 levels)	4 × 5 × 3	24	12	Coll. (1,1,2) & (1,1,3), repeat for all age levels and all States; conv.
State × Age × Hispanicity	4 × 5 × 2	12	8	Drop (1,4,1), (2,4,1), (3,3,1), (3,4,1); conv.
State × Age × Gender	4 × 5 × 2	12	12	All levels present.
State × Race (3 levels) × Hispanicity	4 × 3 × 2	6	0	Drop all; conv.
State × Race (3 levels) × Gender	4 × 3 × 2	6	6	All levels present.
State × Hispanicity × Gender	4 × 2 × 2	3	0	Drop all; conv.
Total		**242**	**187**	

Exhibit D6.5 Covariates for 2012 NSDUH Person Weights (res.per.ps), Model Group 6: East South Central

Variables	Levels	Proposed	Final	Comments
One-Factor Effects		**18**	**18**	
Intercept	1	1	1	All levels present.
State	4	3	3	All levels present.
Quarter	4	3	3	All levels present.
Age	6	5	5	All levels present.
Race (5 levels)	5	4	4	All levels present.
Gender	2	1	1	All levels present.
Hispanicity	2	1	1	All levels present.
Two-Factor Effects		**67**	**67**	
Age × Race (3 levels)	6 × 3	10	10	All levels present.
Age × Hispanicity	6 × 2	5	5	All levels present.
Age × Gender	6 × 2	5	5	All levels present.
Race (3 levels) × Hispanicity	3 × 2	2	2	All levels present.
Race (3 levels) × Gender	3 × 2	2	2	All levels present.
Hispanicity × Gender	2 × 2	1	1	All levels present.
State × Quarter	4 × 4	9	9	All levels present.
State × Age	4 × 6	15	15	All levels present.
State × Race (5 levels)	4 × 5	12	12	All levels present.
State × Hispanicity	4 × 2	3	3	All levels present.
State × Gender	4 × 2	3	3	All levels present.
Three-Factor Effects		**102**	**60**	
Age × Race (3 levels) × Hispanicity	6 × 3 × 2	10	3	Keep (1,2/3,1), (2,2/3,1), (3/4,2/3,1). Drop all others; zero/sing./conv.
Age × Race (3 levels) × Gender	6 × 3 × 2	10	10	All levels present.
Age × Hispanicity × Gender	6 × 2 × 2	5	4	Drop (5,1,1); sing.
Race (3 levels) × Hispanicity × Gender	3 × 2 × 2	2	1	Coll. (2,1,1) & (3,1,1); conv.
State × Age × Race (3 levels)	4 × 6 × 3	30	15	Coll. (1,1,2) & (1,1,3), repeat for all States and all age levels; conv.
State × Age × Hispanicity	4 × 6 × 2	15	6	Keep (1,1,1), (1,2,1), repeat for all States, drop all others; zero/sing./conv.
State × Age × Gender	4 × 6 × 2	15	15	All levels present.
State × Race (3 levels) × Hispanicity	4 × 3 × 2	6	0	Drop all; conv.
State × Race (3 levels) × Gender	4 × 3 × 2	6	6	All levels present.
State × Hispanicity × Gender	4 × 2 × 2	3	0	Drop all; conv.
Total		**187**	**145**	

Appendix D7: Model Group 7: West South Central

(Arkansas, Louisiana, Oklahoma, and Texas)

Table D.7a 2012 NSDUH Person Weight GEM Modeling Summary (Model Group 7: West South Central)

Modeling Step[1]	Extreme Weight Proportions			UWE[2]	# XVAR[3]	Bounds[4]	
	% Unweighted	% Weighted	% Outwinsor			Nominal	Realized
res.sdu.nr	1.74	1.88	0.03	1.14549	204	(1.07, 1.20)	(1.07, 1.19)
	1.55	2.32	0.21	1.16879	135	(1.00, 2.90)	(1.00, 2.89)
						(1.10, 1.18)	(1.10, 1.18)
res.sdu.ps	1.55	2.32	0.21	1.16879	162	(0.80, 1.10)	(0.80, 1.10)
	1.19	2.37	0.66	1.20137	160	(0.25, 4.97)	(0.26, 4.96)
						(0.90, 1.23)	(0.90, 1.23)
sel.per.ps	3.54	8.20	2.34	2.19865	242	(0.22, 1.90)	(0.22, 1.90)
	1.89	3.70	0.75	2.14432	236	(0.21, 4.08)	(0.21, 4.07)
						(0.90, 2.59)	(0.90, 2.59)
res.per.nr	2.05	3.97	0.88	2.18841	242	(1.00, 2.49)	(1.00, 2.47)
	1.65	3.34	0.58	2.47148	209	(1.00, 4.76)	(1.00, 4.72)
						(1.30, 5.00)	(1.30, 1.30)
res.per.ps	1.76	3.56	0.61	2.47148	187	(0.20, 1.20)	(0.20, 1.20)
	0.84	1.20	0.17	2.55967	168	(0.20, 3.20)	(0.20, 3.19)
						(0.30, 5.00)	(N/A, N/A)

[1] For a key to modeling abbreviations, see Chapter 5, Exhibit 5.1.
[2] Unequal weighting effect (UWE) is defined as $1 + [(n - 1)/n]*CV^2$, where CV = coefficient of variation of weights.
[3] Number of proposed covariates (XVAR) on top line and number finalized after modeling.
[4] There are six sets of bounds for each modeling step. Nominal bounds are used in defining maximum/minimum values for the generalized exponential model (GEM) adjustment factors. The realized bound is the actual adjustment produced by the modeling. The set of three bounds listed for each step correspond to the high extreme values, the nonextreme values, and the low extreme values.

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

Table D.7b Distribution of Weight Adjustment Factors and Weight Products for the 2012 NSDUH Person Weight (Model Group 7: West South Central)

	sel.sdu.des[1]	*res.sdu.nr*[1]		*res.sdu.ps*[1]		*sel.per.des*[1]		*sel.per.ps*[1]		*res.per.nr*[1]		*res.per.ps*[1]	
	1-7[2]	**8**[3]	**1-8**[3]	**9**[4]	**1-9**[4]	**11**[5]	**1-11**[5]	**12**[5]	**1-12**[5]	**13**[6]	**1-13**[6]	**14**[6]	**1-14**[6]
Minimum	178	0.96	210	0.26	76	1.01	83	0.08	18	0.35	39	0.10	19
1%	383	1.00	392	0.52	340	1.01	401	0.43	311	1.00	381	0.20	226
5%	493	1.03	510	0.78	462	1.01	547	0.66	510	1.02	614	0.20	407
10%	503	1.04	538	0.87	530	1.01	710	0.75	688	1.05	811	0.69	625
25%	580	1.06	641	0.98	701	1.16	1,171	0.88	1,150	1.11	1,331	0.98	1,292
Median	1,016	1.09	1,095	1.07	1,080	1.39	1,758	1.01	1,799	1.21	2,128	1.05	2,214
75%	1,101	1.15	1,223	1.18	1,327	5.32	5,473	1.13	5,493	1.37	6,435	1.14	6,079
90%	1,141	1.21	1,311	1.30	1,509	9.61	8,824	1.28	9,287	1.59	12,239	1.23	12,353
95%	1,166	1.25	1,411	1.41	1,659	10.03	12,761	1.39	12,746	1.77	17,475	1.28	17,185
99%	2,149	1.46	2,386	1.86	2,720	11.64	16,663	1.88	16,718	2.55	25,941	1.69	27,886
Maximum	3,064	2.89	3,862	4.96	6,541	27.54	64,077	5.08	38,094	4.72	58,131	3.19	45,485
n	14,468	13,032	13,032	13,032	13,032	8,113	8,113	8,113	8,113	6,347	6,347	6,347	6,347
Max/Mean	3.46	-	3.93	-	6.14	-	17.33	-	10.26	-	12.25	-	9.58

Note 1: Weight component 10 and weight products 1-10 are excluded because weight 10 = 1 for all selected dwelling units.
Note 2: Weight component 15 and weight products 1-15 are excluded because weight 15 = 1 for all respondents.
Note 3: Under the generalized exponential model (GEM), nonresponse adjustment factors (weight components #8 and #13) could be less than 1 due to the built-in control for extreme values. For an explanation, see Chapter 2.

[1] Sel.sdu.des refers to selected screener dwelling unit design weight, and sel.per.des refers to selected person design weight. For a key to other modeling abbreviations, see Chapter 5, Exhibit 5.1.
[2] Based on eligible dwelling units.
[3] Based on screener-complete dwelling units.
[4] Based on screener-complete dwelling units, occupants verified eligible.
[5] Based on selected persons.
[6] Based on questionnaire-complete persons.

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

Model Group 7 Overview

Dwelling Unit Nonresponse

Out of 22 proposed one-factor effects, 21 were included in the model. Variable collapsing was present in the Group Quarter main effect.

For two-factor effects, variable collapsing and dropping was present in the percent Owner-Occupied × Rent/Housing, Rent/Housing × percent Black or African American, State × Population Density, State × Group Quarter, and State × percent Hispanic or Latino interactions. Out of 86 proposed variables, 78 were included in the model.

Variable collapsing or dropping was present in all three-factor effects. Out of 96 proposed variables, 36 were included in the model.

In the final model, a total of 135 variables were included; see Exhibit D7.1.

Dwelling Unit Poststratification

All 17 proposed one-factor effects were included in the model.

All 60 proposed two-factor effects were included in the model.

For three-factor effects, variable collapsing and dropping were present in the Age × Race × Hispanicity interaction. Out of 85 proposed variables, 83 were included in the model.

In the final model, a total of 160 variables were included; see Exhibit D7.2.

Selected Person-Level Poststratification

All 35 proposed one-factor effects were included in the model.

For two-factor effects, variable collapsing was present in the Rent/Housing × percent Black or African American and State × Race interactions. Out of 122 proposed variables, 118 were included in the model.

For three-factor effects, variable collapsing and dropping were present in the State × Race × Hispanicity interaction. Out of 85 proposed variables, 83 were included in the model.

In the final model, a total of 236 variables were included; see Exhibit D7.3.

Respondent Person-Level Nonresponse

All 35 proposed one-factor effects were included in the model.

For two-factor effects, variable dropping was present in the Rent/Housing × percent Black or African American and State × percent Hispanic or Latino interactions. Out of 122 proposed variables, 120 were included in the model.

Variable collapsing or dropping was present in the Race × Hispanicity × Gender, State × Age × Race, State × Age × Hispanicity, and State × Race × Hispanicity interactions. Out of 85 proposed variables, 54 were included in the model.

In the final model, a total of 209 variables were included; see Exhibit D7.4.

Respondent Person-Level Poststratification

All 18 proposed one-factor effects were included in the model.

For two-factor effects, variable collapsing was present in the State × Race interaction. Out of 67 proposed variables, 64 were included in the model.

For three-factor effects, variable collapsing and dropping were present in Age × Race × Hispanicity, Race × Hispanicity × Gender, State × Age × Race, State × Age × Hispanicity, and State × Race × Hispanicity interactions. Out of 102 proposed variables, 86 were included in the model.

In the final model, a total of 168 variables were included; see Exhibit D7.5.

Exhibit D7.1 Covariates for 2012 NSDUH Person Weights (res.sdu.nr), Model Group 7: West South Central

Variables	Levels	Proposed	Final	Comments
One-Factor Effects		**22**	**21**	
Intercept	1	1	1	All levels present.
State	4	3	3	All levels present.
Quarter	4	3	3	All levels present.
Population Density	4	3	3	All levels present.
Group Quarter	3	2	1	Coll. (1) & (2); conv.
% Black or African American	3	2	2	All levels present.
% Hispanic or Latino	3	2	2	All levels present.
% Owner-Occupied	3	2	2	All levels present.
Rent/Housing	5	4	4	All levels present.
Two-Factor Effects		**86**	**78**	
% Owner-Occupied × % Black or African American	3 × 3	4	4	All levels present.
% Owner-Occupied × % Hispanic or Latino	3 × 3	4	4	All levels present.
% Owner-Occupied × Rent/Housing	3 × 5	8	7	Coll. (3,1) & (3,2); conv.
Rent/Housing × % Black or African American	3 × 5	8	7	Drop (4,1); sing.
Rent/Housing × % Hispanic or Latino	3 × 5	8	8	All levels present.
State × Quarter	4 × 4	9	9	All levels present.
State × Population Density	4 × 4	9	8	Drop (2,3); sing.
State × Group Quarter	4 × 3	6	2	Coll. (4,1) & (4,2), repeat for all States; hier. Drop (3,*); sing.
State × % Black or African American	4 × 3	6	6	All levels present.
State × % Hispanic or Latino	4 × 3	6	5	Drop (2,1); sing.
State × % Owner-Occupied	4 × 3	6	6	All levels present.
State × Rent/Housing	4 × 5	12	12	All levels present.
Three-Factor Effects		**96**	**36**	
State × % Owner-Occupied × % Black or African American	4 × 3 × 3	12	5	Keep (2,2,1/2), (3,2,2), (4,2,1/2), drop all others; zero/sing.
State × % Owner-Occupied × % Hispanic or Latino	4 × 3 × 3	12	3	Keep (2,2,2), (4,2,1/2), drop all others; zero/sing./conv.
State × % Owner-Occupied × Rent/Housing	4 × 3 × 5	24	6	Keep (2,2,1/2/3), (3,2,1/2/3), drop all others; zero/sing./conv.
State × Rent/Housing × % Black or African American	4 × 3 × 5	24	17	Drop (2,4,1), (3.1.1), (3,4,2), (4,4,1); sing. Drop (3,3,1), (3,2,1), (3,4,1); zero.
State × Rent/Housing × % Hispanic or Latino	4 × 3 × 5	24	5	Keep (3,2,2), (3,3,2), (4,2,2), (4,1,2), (4,3,2), drop all others; sing./zero.
Total		**204**	**135**	

Exhibit D7.2 Covariates for 2012 NSDUH Person Weights (res.sdu.ps), Model Group 7: West South Central

Variables	Levels	Proposed	Final	Comments
One-Factor Effects		**17**	**17**	
Intercept	1	1	1	All levels present.
State	4	3	3	All levels present.
Quarter	4	3	3	All levels present.
Age	5	4	4	All levels present.
Race (5 levels)	5	4	4	All levels present.
Gender	2	1	1	All levels present.
Hispanicity	2	1	1	All levels present.
Two-Factor Effects		**60**	**60**	
Age × Race (3 levels)	5 × 3	8	8	All levels present.
Age × Hispanicity	5 × 2	4	4	All levels present.
Age × Gender	5 × 2	4	4	All levels present.
Race (3 levels) × Hispanicity	3 × 2	2	2	All levels present.
Race (3 levels) × Gender	3 × 2	2	2	All levels present.
Hispanicity × Gender	2 × 2	1	1	All levels present.
State × Quarter	4 × 4	9	9	All levels present.
State × Age	4 × 5	12	12	All levels present.
State × Race (5 levels)	4 × 5	12	12	All levels present.
State × Hispanicity	4 × 2	3	3	All levels present.
State × Gender	4 × 2	3	3	All levels present.
Three-Factor Effects		**85**	**83**	
Age × Race (3 levels) × Hispanicity	5 × 3 × 2	8	6	Coll. (3,2,1) & (3,3,1), (4,2,1) & (4,3,1); conv.
Age × Race (3 levels) × Gender	5 × 3 × 2	8	8	All levels present.
Age × Hispanicity × Gender	5 × 2 × 2	4	4	All levels present.
Race (3 levels) × Hispanicity × Gender	3 × 2 × 2	2	2	All levels present.
State × Age × Race (3 levels)	4 × 5 × 3	24	24	All levels present.
State × Age × Hispanicity	4 × 5 × 2	12	12	All levels present.
State × Age × Gender	4 × 5 × 2	12	12	All levels present.
State × Race (3 levels) × Hispanicity	4 × 3 × 2	6	6	All levels present.
State × Race (3 levels) × Gender	4 × 3 × 2	6	6	All levels present.
State × Hispanicity × Gender	4 × 2 × 2	3	3	All levels present.
Total		**162**	**160**	

Exhibit D7.3 Covariates for 2012 NSDUH Person Weights (sel.per.ps), Model Group 7: West South Central

Variables	Levels	Proposed	Final	Comments
One-Factor Effects		**35**	**35**	
Intercept	1	1	1	All levels present.
State	4	3	3	All levels present.
Quarter	4	3	3	All levels present.
Age	5	4	4	All levels present.
Race (5 levels)	5	4	4	All levels present.
Gender	2	1	1	All levels present.
Hispanicity	2	1	1	All levels present.
Relation to Householder	4	3	3	All levels present.
Population Density	4	3	3	All levels present.
Group Quarter	3	2	2	All levels present.
% Black or African American	3	2	2	All levels present.
% Hispanic or Latino	3	2	2	All levels present.
% Owner-Occupied	3	2	2	All levels present.
Rent/Housing	5	4	4	All levels present.
Two-Factor Effects		**122**	**118**	
Age × Race (3 levels)	5 × 3	8	8	All levels present.
Age × Hispanicity	5 × 2	4	4	All levels present.
Age × Gender	5 × 2	4	4	All levels present.
Race (3 levels) × Hispanicity	3 × 2	2	2	All levels present.
Race (3 levels) × Gender	3 × 2	2	2	All levels present.
Hispanicity × Gender	2 × 2	1	1	All levels present.
% Owner-Occupied × % Black or African American	3 × 3	4	4	All levels present.
% Owner-Occupied × % Hispanic or Latino	3 × 3	4	4	All levels present.
% Owner-Occupied × Rent/Housing	3 × 5	8	8	All levels present.
Rent/Housing × % Black or African American	3 × 5	8	7	Drop (4,1); sing.
Rent/Housing × % Hispanic or Latino	3 × 5	8	8	All levels present.
State × Quarter	4 × 4	9	9	All levels present.
State × Age	4 × 5	12	12	All levels present.
State × Race (5 levels)	4 × 5	12	10	Coll. (2,3) & (2,4), (3,3) & (3,4); conv.
State × Hispanicity	4 × 2	3	3	All levels present.
State × Gender	4 × 2	3	3	All levels present.
State × % Black or African American	4 × 3	6	6	All levels present.
State × % Hispanic or Latino	4 × 3	6	5	Coll. (2,1); zero.
State × % Owner-Occupied	4 × 3	6	6	All levels present.
State × Rent/Housing	4 × 5	12	12	All levels present.
Three-Factor Effects		**85**	**83**	
Age × Race (3 levels) × Hispanicity	5 × 3 × 2	8	8	All levels present.
Age × Race (3 levels) × Gender	5 × 3 × 2	8	8	All levels present.
Age × Hispanicity × Gender	5 × 2 × 2	4	4	All levels present.
Race (3 levels) × Hispanicity × Gender	3 × 2 × 2	2	2	All levels present.
State × Age × Race (3 levels)	4 × 5 × 3	24	24	All levels present.
State × Age × Hispanicity	4 × 5 × 2	12	12	All levels present.
State × Age × Gender	4 × 5 × 2	12	12	All levels present.
State × Race (3 levels) × Hispanicity	4 × 3 × 2	6	4	Coll. (2,2,1) & (2,3,1), (3,2,1) & (3,3,1); conv.
State × Race (3 levels) × Gender	4 × 3 × 2	6	6	All levels present.
State × Hispanicity × Gender	4 × 2 × 2	3	3	All levels present.
Total		**242**	**236**	

Exhibit D7.4 Covariates for 2012 NSDUH Person Weights (res.per.nr), Model Group 7: West South Central

Variables	Levels	Proposed	Final	Comments
One-Factor Effects		**35**	**35**	
Intercept	1	1	1	All levels present.
State	4	3	3	All levels present.
Quarter	4	3	3	All levels present.
Age	5	4	4	All levels present.
Race (5 levels)	5	4	4	All levels present.
Gender	2	1	1	All levels present.
Hispanicity	2	1	1	All levels present.
Relation to Householder	4	3	3	All levels present.
Population Density	4	3	3	All levels present.
Group Quarter	3	2	2	All levels present.
% Black or African American	3	2	2	All levels present.
% Hispanic or Latino	3	2	2	All levels present.
% Owner-Occupied	3	2	2	All levels present.
Rent/Housing	5	4	4	All levels present.
Two-Factor Effects		**122**	**120**	
Age × Race (3 levels)	5 × 3	8	8	All levels present.
Age × Hispanicity	5 × 2	4	4	All levels present.
Age × Gender	5 × 2	4	4	All levels present.
Race (3 levels) × Hispanicity	3 × 2	2	2	All levels present.
Race (3 levels) × Gender	3 × 2	2	2	All levels present.
Hispanicity × Gender	2 × 2	1	1	All levels present.
% Owner-Occupied × % Black or African American	3 × 3	4	4	All levels present.
% Owner-Occupied × % Hispanic	3 × 3	4	4	All levels present.
% Owner-Occupied × Rent/Housing	3 × 5	8	8	All levels present.
Rent/Housing × % Black or African American	3 × 5	8	7	Drop (4,1); sing.
Rent/Housing × % Hispanic or Latino	3 × 5	8	8	All levels present.
State × Quarter	4 × 4	9	9	All levels present.
State × Age	4 × 5	12	12	All levels present.
State × Race (5 levels)	4 × 5	12	12	All levels present.
State × Hispanicity	4 × 2	3	3	All levels present.
State × Gender	4 × 2	3	3	All levels present.
State × % Black or African American	4 × 3	6	6	All levels present.
State × % Hispanic or Latino	4 × 3	6	5	Drop (2,1); zero.
State × % Owner-Occupied	4 × 3	6	6	All levels present.
State × Rent/Housing	4 × 5	12	12	All levels present.
Three-Factor Effects		**85**	**54**	
Age × Race (3 levels) × Hispanicity	5 × 3 × 2	8	8	All levels present.
Age × Race (3 levels) × Gender	5 × 3 × 2	8	8	All levels present.
Age × Hispanicity × Gender	5 × 2 × 2	4	4	All levels present.
Race (3 levels) × Hispanicity × Gender	3 × 2 × 2	2	1	Coll. (2,1,1) & (3,1,1); conv.
State × Age × Race (3 levels)	4 × 5 × 3	24	12	Coll. (2,1,2) & (2,1,3), repeat for all age levels; conv. Coll. (3,1,2) & (3,1,3), repeat for all age levels, then drop; conv.
State × Age × Hispanicity	4 × 5 × 2	12	0	Drop (3,4,1); sing. Drop the rest; conv.
State × Age × Gender	4 × 5 × 2	12	12	All levels present.
State × Race (3 levels) × Hispanicity	4 × 3 × 2	6	0	Coll. (2,2,1) & (2,3,1), repeat for all States, then drop; conv.
State × Race (3 levels) × Gender	4 × 3 × 2	6	6	All levels present.
State × Hispanicity × Gender	4 × 2 × 2	3	3	All levels present.
Total		**242**	**209**	

Exhibit D7.5 Covariates for 2012 NSDUH Person Weights (res.per.ps), Model Group 7: West South Central

Variables	Levels	Proposed	Final	Comments
One-Factor Effects		**18**	**18**	
Intercept	1	1	1	All levels present.
State	4	3	3	All levels present.
Quarter	4	3	3	All levels present.
Age	6	5	5	All levels present.
Race (5 levels)	5	4	4	All levels present.
Gender	2	1	1	All levels present.
Hispanicity	2	1	1	All levels present.
Two-Factor Effects		**67**	**64**	
Age × Race (3 levels)	6 × 3	10	10	All levels present.
Age × Hispanicity	6 × 2	5	5	All levels present.
Age × Gender	6 × 2	5	5	All levels present.
Race (3 levels) × Hispanicity	3 × 2	2	2	All levels present.
Race (3 levels) × Gender	3 × 2	2	2	All levels present.
Hispanicity × Gender	2 × 2	1	1	All levels present.
State × Quarter	4 × 4	9	9	All levels present.
State × Age	4 × 6	15	15	All levels present.
State × Race (5 levels)	4 × 5	12	9	Coll. (4,3) & (4,4), repeat for all States; conv.
State × Hispanicity	4 × 2	3	3	All levels present.
State × Gender	4 × 2	3	3	All levels present.
Three-Factor Effects		**102**	**86**	
Age × Race (3 levels) × Hispanicity	6 × 3 × 2	10	3	Coll. (1,1,2) & (1,1,3), repeat for all age levels, then drop (4,*,1), (5,*,1); conv.
Age × Race (3 levels) × Gender	6 × 3 × 2	10	10	All levels present.
Age × Hispanicity × Gender	6 × 2 × 2	5	5	All levels present.
Race (3 levels) × Hispanicity × Gender	3 × 2 × 2	2	1	Coll. (2,1,1) & (3,1,1); conv.
State × Age × Race (3 levels)	4 × 6 × 3	30	29	Coll. (2,5,2) & (2,5,3); sing..
State × Age × Hispanicity	4 × 6 × 2	15	11	Drop (3,5,1); sing. Drop (2,3/4/5,1); conv.
State × Age × Gender	4 × 6 × 2	15	15	All levels present.
State × Race (3 levels) × Hispanicity	4 × 3 × 2	6	3	Coll. (4,2,1) & (4,3,1), repeat for all States; conv.
State × Race (3 levels) × Gender	4 × 3 × 2	6	6	All levels present.
State × Hispanicity × Gender	4 × 2 × 2	3	3	All levels present.
Total		**187**	**168**	

Appendix D8: Model Group 8: Mountain

(Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Utah, and Wyoming)

Table D.8a 2012 NSDUH Person Weight GEM Modeling Summary (Model Group 8: Mountain)

Modeling Step[1]	Extreme Weight Proportions			UWE[2]	# XVAR[3]	Bounds[4]	
	% Unweighted	% Weighted	% Outwinsor			Nominal	Realized
res.sdu.nr	4.48	10.30	2.70	1.76798	408	(1.02, 2.30)	(1.02, 2.30)
	3.68	7.47	1.07	1.75070	196	(1.00, 2.59)	(1.00, 2.59)
						(1.00, 1.70)	(1.01, 1.68)
res.sdu.ps	3.68	7.48	1.07	1.75075	302	(0.29, 1.30)	(0.29, 1.30)
	2.20	3.64	0.76	1.73678	290	(0.20, 5.00)	(0.20, 5.00)
						(0.90, 3.83)	(0.90, 3.83)
sel.per.ps	3.52	7.50	1.66	3.37913	422	(0.20, 3.00)	(0.20, 3.00)
	1.69	3.53	0.79	3.46434	384	(0.20, 4.87)	(0.21, 4.86)
						(0.90, 3.14)	(0.90, 3.14)
res.per.nr	1.84	3.86	0.92	3.47054	422	(1.00, 3.00)	(1.00, 3.00)
	1.51	3.85	0.78	3.81372	355	(1.00, 5.00)	(1.00, 4.99)
						(1.20, 1.37)	(1.20, 1.36)
res.per.ps	1.51	3.67	0.84	3.81372	347	(0.20, 1.80)	(0.20, 1.77)
	0.95	2.35	0.31	4.02892	305	(0.20, 4.88)	(0.20, 4.86)
						(0.90, 1.11)	(0.90, 1.11)

[1] For a key to modeling abbreviations, see Chapter 5, Exhibit 5.1.
[2] Unequal weighting effect (UWE) is defined as $1 + [(n - 1)/n]*CV^2$, where CV = coefficient of variation of weights.
[3] Number of proposed covariates (XVAR) on top line and number finalized after modeling.
[4] There are six sets of bounds for each modeling step. Nominal bounds are used in defining maximum/minimum values for the generalized exponential model (GEM) adjustment factors. The realized bound is the actual adjustment produced by the modeling. The set of three bounds listed for each step correspond to the high extreme values, the nonextreme values, and the low extreme values.

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

Table D.8b Distribution of Weight Adjustment Factors and Weight Products for the 2012 NSDUH Person Weight (Model Group 8: Mountain)

	sel.sdu.des[1]	*res.sdu.nr*[1]		*res.sdu.ps*[1]		*sel.per.des*[1]		*sel.per.ps*[1]		*res.per.nr*[1]		*res.per.ps*[1]	
	1-7[2]	**8**[3]	**1-8**[3]	**9**[4]	**1-9**[4]	**11**[5]	**1-11**[5]	**12**[5]	**1-12**[5]	**13**[6]	**1-13**[6]	**14**[6]	**1-14**[6]
Minimum	30	0.56	73	0.14	20	1.01	29	0.07	8	0.37	19	0.11	12
1%	70	0.93	76	0.44	80	1.01	98	0.31	71	0.95	75	0.21	59
5%	83	1.00	91	0.80	98	1.01	146	0.59	141	1.00	165	0.39	141
10%	91	1.02	98	0.92	111	1.01	189	0.71	189	1.02	225	0.74	207
25%	139	1.05	150	1.06	178	1.17	418	0.86	400	1.08	456	0.96	417
Median	295	1.08	317	1.19	405	1.48	951	0.99	907	1.17	1,052	1.02	1,029
75%	561	1.12	612	1.35	748	5.59	2,132	1.15	2,185	1.32	2,630	1.08	2,533
90%	763	1.18	871	1.62	1,112	9.41	5,395	1.33	5,261	1.55	6,478	1.26	6,298
95%	807	1.25	1,017	1.81	1,356	12.00	7,679	1.47	7,919	1.77	10,203	1.45	10,292
99%	1,440	1.71	1,627	2.78	2,062	13.65	15,911	1.96	16,115	2.37	20,186	1.73	20,727
Maximum	3,062	4.04	3,189	6.33	4,992	22.77	48,558	7.54	52,100	4.99	55,524	4.86	69,374
n	17,185	15,671	15,671	15,670	15,670	9,054	9,054	9,054	9,054	7,282	7,282	7,282	7,282
Max/Mean	7.66	-	7.28	-	9.29	-	23.86	-	25.60	-	21.95	-	27.42

Note 1: Weight component 10 and weight products 1-10 are excluded because weight 10 = 1 for all selected dwelling units.
Note 2: Weight component 15 and weight products 1-15 are excluded because weight 15 = 1 for all respondents.
Note 3: Under the generalized exponential model (GEM), nonresponse adjustment factors (weight components #8 and #13) could be less than 1 due to the built-in control for extreme values. For an explanation, see Chapter 2.

[1] Sel.sdu.des refers to selected screener dwelling unit design weight, and sel.per.des refers to selected person design weight. For a key to other modeling abbreviations, see Chapter 5, Exhibit 5.1.
[2] Based on eligible dwelling units.
[3] Based on screener-complete dwelling units.
[4] Based on screener-complete dwelling units, occupants verified eligible.
[5] Based on selected persons.
[6] Based on questionnaire-complete persons.

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

Model Group 8 Overview

Dwelling Unit Nonresponse

For one-factor effects, the Group Quarter main effect was dropped due to the convergent problem. Out of 26 proposed variables, 24 were included in the model.

For two-factor effects, all levels were present in the percent Owner-Occupied × percent Hispanic or Latino, percent Owner-Occupied × Rent/Housing, Rent/Housing × percent Hispanic or Latino, State × Group Quarter, and State × Rent/Housing interactions. All the others were affected by variable collapsing or dropping. Out of 158 proposed variables, 117 were included in the model.

All three-factor effects were affected by variable collapsing and dropping. Out of 224 proposed variables, 55 were included in the model.

In the final model, a total of 196 variables were included; see Exhibit D8.1.

Dwelling Unit Poststratification

All 21 proposed one-factor effects were included in the model.

All 112 proposed two-factor effects were included in the model.

For three-factor effects, variable collapsing was present in the Age × Race ×Hispanicity, State × Age × Race, State × Race × Hispanicity, and State × Race × Hispanicity interactions. Out of 169 proposed variables, 157 were included in the model.

In the final model, a total of 290 variables were included; see Exhibit D8.2.

Selected Person-Level Poststratification

All 39 proposed one-factor effects were included in the model.

For two-factor effects, variable collapsing or dropping was present in the percent Owner-Occupied × percent Black or African American, Rent/Housing × percent Black or African American, State × percent Black or African American, State × percent Hispanic or Latino, and State × percent Owner-Occupied interactions. Out of 214 proposed variables, 195 were included in the model.

For three-factor effects, variable collapsing was present in the Age × Race × Hispanicity, State × Age × Race, State × Age × Hispanicity, State × Race × Hispanicity, and State × Race × Gender interactions. Out of 169 proposed variables, 150 were included in the model.

In the final model, a total of 384 variables were included; see Exhibit D8.3.

Respondent Person-Level Nonresponse

All 39 proposed one-factor effects were included in the model.

For two-factor effects, variable collapsing or dropping was present in the percent Owner-Occupied × percent Black or African American, percent Owner-Occupied × Rent/Housing, State × Race, State × percent Black or African American, State × percent Hispanic or Latino, and State × percent Owner-Occupied interactions. Out of 214 proposed variables, 192 were included in the model.

For three-factor effects, all levels were present in the Age × Race × Gender, Age × Hispanicity × Gender, Race × Hispanicity × Gender, State × Age × Hispanicity, and State × Age × Gender interactions. All the others were affected by variable collapsing or dropping. Out of 169 proposed variables, 124 were included in the model.

In the final model, a total of 355 variables were included; see Exhibit D8.4.

Respondent Person-Level Poststratification

All 22 proposed one-factor effects were included in the model.

All 123 proposed two-factor effects were included in the model.

Variable collapsing or dropping was present in all three-factor effects except the Age × Hispanicity × Gender, State × Age × Gender, State × Race × Gender, and State × Hispanicity × Gender interactions. Out of 202 proposed variables, 160 were included in the model.

In the final model, a total of 305 variables were included; see Exhibit D8.5.

Exhibit D8.1 Covariates for 2012 NSDUH Person Weights (res.sdu.nr), Model Group 8: Mountain

Variables	Levels	Proposed	Final	Comments
One-Factor Effects		**26**	**24**	
Intercept	1	1	1	All levels present.
State	8	7	7	All levels present.
Quarter	4	3	3	All levels present.
Population Density	4	3	3	All levels present.
Group Quarter	3	2	0	Drop all; conv.
% Black or African American	3	2	2	All levels present.
% Hispanic or Latino	3	2	2	All levels present.
% Owner-Occupied	3	2	2	All levels present.
Rent/Housing	5	4	4	All levels present.
Two-Factor Effects		**158**	**117**	
% Owner-Occupied × % Black or African American	3 × 3	4	2	Drop (3,1); sing. Drop (2,1); zero.
% Owner-Occupied × % Hispanic or Latino	3 × 3	4	4	All levels present.
% Owner-Occupied × Rent/Housing	3 × 5	8	8	All levels present.
Rent/Housing × % Black or African American	3 × 5	8	4	Drop (1,1), (1,2) & (1,3); zero. Drop (1,4); sing.
Rent/Housing × % Hispanic or Latino	3 × 5	8	8	All levels present.
State × Quarter	8 × 4	21	21	All levels present.
State × Population Density	8 × 4	21	15	Drop (2,1), (3,1), (5,1), (6,1), (7,1) & (7,3); zero.
State × Group Quarter	8 × 3	14	0	Drop (*,*); hier.
State × % Black or African American	8 × 3	14	3	Keep (1,2), (4,2), (5,2); Drop remainder; sing./zero.
State × % Hispanic or Latino	8 × 3	14	12	Drop (3,1), (7,1); zero.
State × % Owner-Occupied	8 × 3	14	12	Drop (2,2) & (2,3), (3,2) & (3,3); conv.
State × Rent/Housing	8 × 5	28	28	All levels present.
Three-Factor Effects		**224**	**55**	
State × % Owner-Occupied × % Black or African American	8 × 3 × 3	28	3	Keep (1,2,2), (4,2,2), (7,2,2). Drop remainder; zero, sing.
State × % Owner-Occupied × % Hispanic or Latino	8 × 3 × 3	28	10	Keep (1,2,*), (2,2+3,2), (4,2,*), (4,3,1), (5,2,1), (6,*,2), (7,2,2). Coll. (2,2,2) &(2,3,2); hier. Drop remainder; zero/sing./conv.
State × % Owner-Occupied × Rent/Housing	8 × 3 × 5	56	20	Keep (1,3,4), (1,2,3), (1,2,4), (4,2,2), (4,*,3), (4,2,4), (5,3,2), (5,2,*), (6,2,2), (6,2,3), (6,2,4), (7,2,1), (7,2,2), (7,2,3); conv. Coll. (2,2,1) & (2,3,1), (3,2,1) & (3,3,1); hier. Drop remainder; zero/sing./conv.
State × Rent/Housing × % Black or African American	8 × 3 × 5	56	2	Keep (1,3,2), (1,4,2). Drop remainder; zero/sing.
State × Rent/Housing × % Hispanic or Latino	8 × 3 × 5	56	20	Keep (1,1,1), (1,2,1), (1,3,1), (1,3,2), (1,4,2), (2,1,2), (2,2,2), (4,1,2), (4,2,1), (4,3,1), (4,4,2), (5,1,1), (5,1,2), (5,2,1), (6,1,2), (6,2,2), (6,3,2), (6,4,2) & (7,1,2), (7,2,2). Drop remainder; zero/sing./conv.
Total		**408**	**196**	

Exhibit D8.2 Covariates for 2012 NSDUH Person Weights (res.sdu.ps), Model Group 8: Mountain

Variables	Levels	Proposed	Final	Comment
One-Factor Effects		**21**	**21**	
Intercept	1	1	1	All levels present.
State	8	7	7	All levels present.
Quarter	4	3	3	All levels present.
Age	5	4	4	All levels present.
Race (5 levels)	5	4	4	All levels present.
Gender	2	1	1	All levels present.
Hispanicity	2	1	1	All levels present.
Two-Factor Effects		**112**	**112**	
Age × Race (3 levels)	5 × 3	8	8	All levels present.
Age × Hispanicity	5 × 2	4	4	All levels present.
Age × Gender	5 × 2	4	4	All levels present.
Race (3 levels) × Hispanicity	3 × 2	2	2	All levels present.
Race (3 levels) × Gender	3 × 2	2	2	All levels present.
Hispanicity × Gender	2 × 2	1	1	All levels present.
State × Quarter	8 × 4	21	21	All levels present.
State × Age	8 × 5	28	28	All levels present.
State × Race (5 levels)	8 × 5	28	28	All levels present.
State × Hispanicity	8 × 2	7	7	All levels present.
State × Gender	8 × 2	7	7	All levels present.
Three-Factor Effects		**169**	**157**	
Age × Race (3 levels) × Hispanicity	5 × 3 × 2	8	4	Coll. (2,2,1) & (2,3,1), repeat for all age levels; conv.
Age × Race (3 levels) × Gender	5 × 3 × 2	8	8	All levels present.
Age × Hispanicity × Gender	5 × 2 × 2	4	4	All levels present.
Race (3 levels) × Hispanicity × Gender	3 × 2 × 2	2	2	All levels present.
State × Age × Race (3 levels)	8 × 5 × 3	56	51	Coll. (3,1,2) & (3,1,3); zero. Coll. (3,2,2) & (3,2,3), (7,1,2) & (7,1,3), (7,2,2) & (7,2,3), (7,3,2) & (7,3,3); conv.
State × Age × Hispanicity	8 × 5 × 2	28	28	All levels present.
State × Age × Gender	8 × 5 × 2	28	28	All levels present.
State × Race (3 levels) × Hispanicity	8 × 3 × 2	14	11	Coll. (6,2,1) & (6,3,1); conv. Coll. (2,2,1) & (2,3,1), (3,2,1) & (3,3,1); zero.
State × Race (3 levels) × Gender	8 × 3 × 2	14	14	All levels present.
State × Hispanicity × Gender	8 × 2 × 2	7	7	All levels present.
Total		**302**	**290**	

Exhibit D8.3 Covariates for 2012 NSDUH Person Weights (sel.per.ps), Model Group 8: Mountain

Variables	Levels	Proposed	Final	Comments
One-Factor Effects		**39**	**39**	
Intercept	1	1	1	All levels present.
State	8	7	7	All levels present.
Quarter	4	3	3	All levels present.
Age	5	4	4	All levels present.
Race (5 levels)	5	4	4	All levels present.
Gender	2	1	1	All levels present.
Hispanicity	2	1	1	All levels present.
Relation to Householder	4	3	3	All levels present.
Population Density	4	3	3	All levels present.
Group Quarter	3	2	2	All levels present.
% Black or African American	3	2	2	All levels present.
% Hispanic or Latino	3	2	2	All levels present.
% Owner-Occupied	3	2	2	All levels present.
Rent/Housing	5	4	4	All levels present.
Two-Factor Effects		**214**	**195**	
Age × Race (3 levels)	5 × 3	8	8	All levels present.
Age × Hispanicity	5 × 2	4	4	All levels present.
Age × Gender	5 × 2	4	4	All levels present.
Race (3 levels) × Hispanicity	3 × 2	2	2	All levels present.
Race (3 levels) × Gender	3 × 2	2	2	All levels present.
Hispanicity × Gender	2 × 2	1	1	All levels present.
% Owner-Occupied × % Black or African American	3 × 3	4	2	Drop (3,1); sing. Drop (2,1); zero.
% Owner-Occupied × % Hispanic	3 × 3	4	4	All levels present.
% Owner-Occupied × Rent/Housing	3 × 5	8	8	All levels present.
Rent/Housing × % Black or African American	3 × 5	8	4	Drop (1,1),(2,1),(3,1); zero. Drop (4,1); sing..
Rent/Housing × % Hispanic or Latino	3 × 5	8	8	All levels present.
State × Quarter	8 × 4	21	21	All levels present.
State × Age	8 × 5	28	28	All levels present.
State × Race (5 levels)	8 × 5	28	28	All levels present.
State × Hispanicity	8 × 2	7	7	All levels present.
State × Gender	8 × 2	7	7	All levels present.
State × % Black or African American	8 × 3	14	4	Drop (1,1), (2,*), (3,*), (5,1), (6,1), (7,*); zero. Drop (4,1); sing.
State × % Hispanic or Latino	8 × 3	14	12	Drop (3,1), (7,1); zero.
State × % Owner-Occupied	8 × 3	14	13	Drop (3,3); zero.
State × Rent/Housing	8 × 5	28	28	All levels present.
Three-Factor Effects		**169**	**150**	
Age × Race (3 levels) × Hispanicity	5 × 3 × 2	8	7	Coll. (4,2,1), (4,3,1); sing.
Age × Race (3 levels) × Gender	5 × 3 × 2	8	8	All levels present.
Age × Hispanicity × Gender	5 × 2 × 2	4	4	All levels present.
Race (3 levels) × Hispanicity × Gender	3 × 2 × 2	2	2	All levels present.
State × Age × Race (3 levels)	8 × 5 × 3	56	46	Coll. (2,3,2) & (2,3,3), (3,1,2) & (3,1,3); zero. Coll. (6,4,2) & (6,4,3); sing. Coll. (2,1,2) & (2,1,3), (2,2,2) & (2,2,3), (2,4,2) & (2,4,3), (3,2,2) & (3,2,3), (5,3,2) & (5,3,3), (7,3,2) & (7,3,3) (7,4,2) & (7,4,3); conv.
State × Age × Hispanicity	8 × 5 × 2	28	27	Drop (3,4,1); conv.
State × Age × Gender	8 × 5 × 2	28	28	All levels present.
State × Race (3 levels) × Hispanicity	8 × 3 × 2	14	9	Coll. (2,2,1) & (2,3,1), (3,2,1) & (3,3,1); zero. Coll. (6,2,1) & (6,3,1); sing. Coll. (5,2,1) & (5,3,1), (7,2,1) & (7,3,1); conv.
State × Race (3 levels) × Gender	8 × 3 × 2	14	12	Coll. (3,2,1) & (3,3,1), (5,2,1) & (5,3,1); conv.
State × Hispanicity × Gender	8 × 2 × 2	7	7	All levels present.
Total		**422**	**384**	

Exhibit D8.4 Covariates for 2012 NSDUH Person Weights (res.per.nr), Model Group 8: Mountain

Variables	Levels	Proposed	Final	Comments
One-Factor Effects		**39**	**39**	
Intercept	1	1	1	All levels present.
State	8	7	7	All levels present.
Quarter	4	3	3	All levels present.
Age	5	4	4	All levels present.
Race (5 levels)	5	4	4	All levels present.
Gender	2	1	1	All levels present.
Hispanicity	2	1	1	All levels present.
Relation to Householder	4	3	3	All levels present.
Population Density	4	3	3	All levels present.
Group Quarter	3	2	2	All levels present.
% Black or African American	3	2	2	All levels present.
% Hispanic or Latino	3	2	2	All levels present.
% Owner-Occupied	3	2	2	All levels present.
Rent/Housing	5	4	4	All levels present.
Two-Factor Effects		**214**	**192**	
Age × Race (3 levels)	5 × 3	8	8	All levels present.
Age × Hispanicity	5 × 2	4	4	All levels present.
Age × Gender	5 × 2	4	4	All levels present.
Race (3 levels) × Hispanicity	3 × 2	2	2	All levels present.
Race (3 levels) × Gender	3 × 2	2	2	All levels present.
Hispanicity × Gender	2 × 2	1	1	All levels present.
% Owner-Occupied × % Black or African American	3 × 3	4	2	Drop (2,1); sing. Drop (3,1); sing.
% Owner-Occupied × % Hispanic or Latino	3 × 3	4	4	All levels present.
% Owner-Occupied × Rent/Housing	3 × 5	8	4	Drop (4,1); sing. Drop (1,1), (1,2) & (1,3); zero.
Rent/Housing × % Black or African American	3 × 5	8	8	All levels present.
Rent/Housing × % Hispanic or Latino	3 × 5	8	8	All levels present.
State × Quarter	8 × 4	21	21	All levels present.
State × Age	8 × 5	28	28	All levels present.
State × Race (5 levels)	8 × 5	28	27	Coll. (3,2) & (3,5); conv.
State × Hispanicity	8 × 2	7	7	All levels present.
State × Gender	8 × 2	7	7	All levels present.
State × % Black or African American	8 × 3	14	3	Drop (1,1), (2,*), (3,*), (5,1), (6,1) & (7,*); zero. Drop (4,1); sing. Drop (6,2); conv.
State × % Hispanic or Latino	8 × 3	14	12	Drop (3,1) & (7,1); zero.
State × % Owner-Occupied	8 × 3	14	12	Coll. (1,2) & (1,3); conv. Drop (3,3); zero.
State × Rent/Housing	8 × 5	28	28	All levels present.
Three-Factor Effects		**169**	**124**	
Age × Race (3 levels) × Hispanicity	5 × 3 × 2	8	7	Drop (4,2,1); sing.
Age × Race (3 levels) × Gender	5 × 3 × 2	8	8	All levels present.
Age × Hispanicity × Gender	5 × 2 × 2	4	4	All levels present.
Race (3 levels) × Hispanicity × Gender	3 × 2 × 2	2	2	All levels present.
State × Age × Race (3 levels)	8 × 5 × 3	56	22	Coll. (1,1,2), (1,1,3), (1,2,2) & (1,2,3), (1,3,2) & (1,3,3), (1,4,2) & (1,4,3). (2,1,2), (2,1,3), (2,2,2) & (2,2,3), (4,1,2), (4,1,3), (4,2,2) & (4,2,3), (5,1,2) & (5,1,3), (5,2,2) & (5,2,3), (5,3,2) & (5,3,3), (5,4,2) & (5,4,3), (6,1,2), (6,1,3), (6,2,2) & (6,2,3), (6,4,2) & (6,3,3), (7,1,2) & (7,1,3), (7,2,2) & (7,2,3), (7,3,2) & (7,3,3), (7,4,2) & (7,4,3); conv. Coll. (3,2,2) & (3,2,3), (3,3,2) & (3,3,3), (3,4,2) & (3,4,3); hier. Drop (2,3,2), (3,1,2); zero. Drop (2,4,2), (6,4,2); sing. Drop (2,4,3), (4,3,*), (4,4,*), (6,4,*); conv.
State × Age × Hispanicity	8 × 5 × 2	28	28	All levels present.
State × Age × Gender	8 × 5 × 2	28	28	All levels present.
State × Race (3 levels) × Hispanicity	8 × 3 × 2	14	6	Drop (1,*,1), (5,*,1); conv. Drop (2,2,1); zero. Coll. (3,2,1) & (3,3,1); hier. Coll. (4,2,1) & (4,3,1); conv. Drop (6,2,1); sing.
State × Race (3 levels) × Gender	8 × 3 × 2	14	12	Coll. (1,2,1) & (1,3,1); conv. Coll. (3,2,1) & (3,3,1); hier.
State × Hispanicity × Gender	8 × 2 × 2	7	7	All levels present.
Total		**422**	**355**	

Exhibit D8.5 Covariates for 2012 NSDUH Person Weights (res.per.ps), Model Group 8: Mountain

Variables	Levels	Proposed	Final	Comments
One-Factor Effects		**22**	**22**	
Intercept	1	1	1	All levels present.
State	8	7	7	All levels present.
Quarter	4	3	3	All levels present.
Age	6	5	5	All levels present.
Race (5 levels)	5	4	4	All levels present.
Gender	2	1	1	All levels present.
Hispanicity	2	1	1	All levels present.
Two-Factor Effects		**123**	**123**	
Age × Race (3 levels)	6 × 3	10	10	All levels present.
Age × Hispanicity	6 × 2	5	5	All levels present.
Age × Gender	6 × 2	5	5	All levels present.
Race (3 levels) × Hispanicity	3 × 2	2	2	All levels present.
Race (3 levels) × Gender	3 × 2	2	2	All levels present.
Hispanicity × Gender	2 × 2	1	1	All levels present.
State × Quarter	8 × 4	21	21	All levels present.
State × Age	8 × 6	35	35	All levels present.
State × Race (5 levels)	8 × 5	28	28	All levels present.
State × Hispanicity	8 × 2	7	7	All levels present.
State × Gender	8 × 2	7	7	All levels present.
Three-Factor Effects		**202**	**160**	
Age × Race (3 levels) × Hispanicity	6 × 3 × 2	10	8	Coll. (4,2,1) & (4,3,1); sing. Coll. (5,2,1) & (5,3,1); zero.
Age × Race (3 levels) × Gender	6 × 3 × 2	10	9	Coll. (5,2,1) & (5,3,1); conv.
Age × Hispanicity × Gender	6 × 2 × 2	5	5	All levels present.
Race (3 levels) × Hispanicity × Gender	3 × 2 × 2	2	1	Coll. (1,2,1) & (1,3,1); zero.
State × Age × Race (3 levels)	8 × 6 × 3	70	37	Col (1,5,2) & (1,5,3), (2,4,2) & (2,4,3), (3,2,2) & (3,2,3), (6,4,2) & (6,4,3), (7,4,2) & (7,4,3); sing. Col (2,3,2) & (2,3,3), (2,5,2) & (2,5,3), (3,3,2) & (3,3,3), (3,4,2) & (3,4,3), (3,5,2) & (3,5,3), (5,5,2) & (5,5,3), (6,3,2) & (6,3,3), (6,5,2) & (6,5,3), (7,3,2) & (7,3,3), (7,5,2) & (7,5,3); zero. Drop (2,5,*); conv. Coll. (1,1,1) & (1,1,2), (1,2,1) & (1,2,2), (1,3,1) & (1,3,2), (1,4,1) & (1,4,2), (2,1,1) & (2,1,2), (2,2,1) & (2,2,2), (4,1,2) & (4,1,3), (4,2,2) & (4,2,3), (4,3,2) & (4,3,3), (4,4,2) & (4,4,3), (4,5,2) & (4,5,3), (5,1,2) & (5,1,3), (5,2,2) & (5,2,3), (5,3,2) & (5,3,3), (5,4,2) & (5,4,3), (6,1,2) & (6,1,3), (6,2,2) & (6,2,3); conv.
State × Age × Hispanicity	8 × 6 × 2	35	32	Drop (2,5,1), (3,5,1) & (6,5,1); sing.
State × Age × Gender	8 × 6 × 2	35	35	All levels present.
State × Race (3 levels) × Hispanicity	8 × 3 × 2	14	12	Coll. (2,2,1) & (2,3,1); zero. Coll. (6,2,1) & (6,3,1); sing.
State × Race (3 levels) × Gender	8 × 3 × 2	14	14	All levels present.
State × Hispanicity × Gender	8 × 2 × 2	7	7	All levels present.
Total		**347**	**305**	

Appendix D9: Model Group 9: Pacific

(Alaska, California, Hawaii, Oregon, and Washington)

Table D.9a 2012 NSDUH Person Weight GEM Modeling Summary (Model Group 9: Pacific)

Modeling Step[1]	Extreme Weight Proportions			UWE[2]	# XVAR[3]	Bounds[4]	
	% Unweighted	% Weighted	% Outwinsor			Nominal	Realized
res.sdu.nr	1.43	0.56	0.10	1.33194	255	(1.09, 1.40)	(1.09, 1.40)
	1.92	2.25	0.11	1.35979	137	(1.00, 3.00)	(1.00, 3.00)
						(1.05, 1.21)	(1.05, 1.20)
res.sdu.ps	1.92	2.25	0.11	1.35973	197	(0.59, 1.37)	(0.59, 1.37)
	2.31	5.32	1.81	1.48571	193	(0.29, 4.50)	(0.30, 4.50)
						(0.79, 2.07)	(0.79, 2.07)
sel.per.ps	3.70	8.17	2.51	2.71765	287	(0.49, 2.95)	(0.49, 2.95)
	1.97	4.31	1.38	2.76633	262	(0.20, 4.67)	(0.20, 4.67)
						(0.75, 1.32)	(0.75, 1.31)
res.per.nr	2.17	5.09	1.60	2.78828	287	(1.00, 2.90)	(1.00, 2.90)
	1.77	5.40	1.25	3.28420	247	(1.00, 3.60)	(1.00, 3.60)
						(1.40, 1.50)	(1.40, 1.50)
res.per.ps	1.87	5.74	1.52	3.28420	227	(0.20, 1.10)	(0.20, 1.10)
	0.72	2.76	0.57	3.40305	199	(0.20, 4.80)	(0.20, 4.80)
						(0.97, 1.03)	(1.01, 1.01)

[1] For a key to modeling abbreviations, see Chapter 5, Exhibit 5.1.
[2] Unequal weighting effect (UWE) is defined as $1 + [(n - 1)/n]*CV^2$, where CV = coefficient of variation of weights.
[3] Number of proposed covariates (XVAR) on top line and number finalized after modeling.
[4] There are six sets of bounds for each modeling step. Nominal bounds are used in defining maximum/minimum values for the generalized exponential model (GEM) adjustment factors. The realized bound is the actual adjustment produced by the modeling. The set of three bounds listed for each step correspond to the high extreme values, the nonextreme values, and the low extreme values.

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

Table D.9b Distribution of Weight Adjustment Factors and Weight Products for the 2012 NSDUH Person Weight (Model Group 9: Pacific)

	sel.sdu.des[1]	*res.sdu.nr*[1]		*res.sdu.ps*[1]		*sel.per.des*[1]		*sel.per.ps*[1]		*res.per.nr*[1]		*res.per.ps*[1]	
	1-7[2]	**8**[3]	**1-8**[3]	**9**[4]	**1-9**[4]	**11**[5]	**1-11**[5]	**12**[5]	**1-12**[5]	**13**[6]	**1-13**[6]	**14**[6]	**1-14**[6]
Minimum	101	0.84	103	0.30	39	1.01	66	0.20	28	0.54	33	0.07	13
1%	106	1.02	116	0.57	114	1.01	132	0.39	109	0.98	124	0.20	103
5%	109	1.05	128	0.76	140	1.01	185	0.63	181	1.03	220	0.21	207
10%	127	1.07	142	0.87	157	1.01	278	0.73	276	1.07	337	0.65	313
25%	214	1.10	280	0.99	299	1.18	1,012	0.86	974	1.14	1,160	0.94	946
Median	1,213	1.15	1,296	1.09	1,316	1.45	2,119	0.98	2,122	1.26	2,598	1.02	2,638
75%	1,375	1.24	1,607	1.18	1,801	5.68	6,214	1.11	5,402	1.43	6,258	1.17	5,886
90%	1,448	1.30	1,792	1.35	2,087	10.33	11,874	1.26	11,805	1.64	15,760	1.37	16,471
95%	1,472	1.32	1,858	1.52	2,300	11.43	18,245	1.42	17,233	1.83	22,628	1.39	23,274
99%	1,511	1.60	2,095	2.37	3,138	13.47	24,331	1.73	26,599	2.33	41,919	1.89	40,236
Maximum	2,999	3.00	3,494	4.50	8,444	23.88	75,644	4.67	82,766	3.60	112,786	4.80	133,926
n	17,500	14,830	14,830	14,829	14,829	9,523	9,523	9,523	9,523	7,226	7,226	7,226	7,226
Max/Mean	3.28	-	3.24	-	6.98	-	16.65	-	18.69	-	19.33	-	22.95

Note 1: Weight component 10 and weight products 1-10 are excluded because weight 10 = 1 for all selected dwelling units.
Note 2: Weight component 15 and weight products 1-15 are excluded because weight 15 = 1 for all respondents.
Note 3: Under the generalized exponential model (GEM), nonresponse adjustment factors (weight components #8 and #13) could be less than 1 due to the built-in control for extreme values. For an explanation, see Chapter 2.

[1] Sel.sdu.des refers to selected screener dwelling unit design weight, and sel.per.des refers to selected person design weight. For a key to other modeling abbreviations, see Chapter 5, Exhibit 5.1.
[2] Based on eligible dwelling units.
[3] Based on screener-complete dwelling units.
[4] Based on screener-complete dwelling units, occupants verified eligible.
[5] Based on selected persons.
[6] Based on questionnaire-complete persons.

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

Model Group 9 Overview

Dwelling Unit Nonresponse

All 23 proposed one-factor effects were included in the model.

For two-factor effects, variable collapsing or dropping was present in the Rent/Housing × percent Black or African American, State × Population Density, State × Group Quarter, State × percent Black or African American, State × percent Hispanic or Latino, State × percent Owner-Occupied, and State × Rent/Housing interactions. Out of 104 proposed variables, 76 were included in the model.

Variable collapsing or dropping was present in all three-factor effects. Out of 128 proposed variables, 38 were included in the model.

In the final model, a total of 137 variables were included; see Exhibit D9.1.

Dwelling Unit Poststratification

All 18 proposed one-factor effects were included in the model.

All 73 proposed two-factor effects were included in the model.

For the three-factor effects, variable collapsing or dropping was present in the Age × Race × Hispanicity and Race × Hispanicity × Gender interactions. Out of 106 proposed variables, 102 were included in the model.

In the final model, a total of 193 variables were included; see Exhibit D9.2.

Selected Person-Level Poststratification

All 36 proposed one-factor effects were included in the model.

For two-factor effects, variable collapsing or dropping was present in the Rent/Housing × percent Black or African American, State × percent Black or African American, State × percent Hispanic or Latino, and State × Rent/Housing interactions. Out of 145 proposed variables, 135 were included in the model.

For three-factor effects, variable collapsing or dropping was present in the Age × Race × Hispanicity, Race × Hispanicity × Gender, State × Age × Race, State × Age × Hispanicity, and State × Race × Hispanicity interactions. Out of 106 proposed variables, 91 were included in the model.

In the final model, a total of 262 variables were included; see Exhibit D9.3.

Respondent Person-Level Nonresponse

All 36 proposed one-factor effects were included in the model.

For two-factor effects, variable collapsing or dropping was present in the Race × Hispanicity, Rent/Housing × percent Black or African American, State × percent Black or African American, State × percent Hispanic or Latino, and State × Rent/Housing interactions. Out of 145 proposed variables, 134 were included in the model.

For three-factor effects, all levels were present for the Age × Race × Gender, Age × Hispanicity × Gender, State × Age × Race, State × Age × Gender, and State × Hispanicity × Gender interactions. All the others were affected by variable collapsing or dropping. Out of 106 proposed variables, 77 were included in the model.

In the final model, a total of 247 variables were included; see Exhibit D9.4.

Respondent Person-Level Poststratification

All 19 proposed one-factor effects were included in the model.

All 81 proposed two-factor effects were included in the model.

For three-factor effects, all levels were present for the Age × Race × Hispanicity, State × Age × Gender, State × Age × Hispanicity, State × Race × Gender, and State × Hispanicity × Gender interactions. All the others were affected by variable collapsing or dropping. Out of 127 proposed variables, 99 were included in the model.

In the final model, a total of 199 variables were included; see Exhibit D9.5.

Exhibit D9.1 Covariates for 2012 NSDUH Person Weights (res.sdu.nr), Model Group 9: Pacific

Variables	Levels	Proposed	Final	Comments
One-Factor Effects		**23**	**23**	
Intercept	1	1	1	All levels present.
State	5	4	4	All levels present.
Quarter	4	3	3	All levels present.
Population Density	4	3	3	All levels present.
Group Quarter	3	2	2	All levels present.
% Black or African American	3	2	2	All levels present.
% Hispanic or Latino	3	2	2	All levels present.
% Owner-Occupied	3	2	2	All levels present.
Rent/Housing	5	4	4	All levels present.
Two-Factor Effects		**104**	**76**	
% Owner-Occupied × % Black or African American	3 × 3	4	4	All levels present.
% Owner-Occupied × % Hispanic or Latino	3 × 3	4	4	All levels present.
% Owner-Occupied × Rent/Housing	3 × 5	8	8	All levels present.
Rent/Housing × % Black or African American	3 × 5	8	6	Drop (1,1); zero. Coll. (4,1) & (4,2); conv.
Rent/Housing × % Hispanic or Latino	3 × 5	8	8	All levels present.
State × Quarter	5 × 4	12	12	All levels present.
State × Population Density	5 × 4	12	7	Drop (1,1), (2,1), (2,3), (5,3); zero. Drop (2,2); sing.
State × Group Quarter	5 × 3	8	0	Drop (2,2), (3,1), (3,2); zero. Drop (2,1); sing. Drop (1,1), (1,2), (5,1), (5,2); conv.
State × % Black or African American	5 × 3	8	2	Keep (3,2). Coll. (5,1) & (5,2); sing. Drop all others; zero, conv.
State × % Hispanic or Latino	5 × 3	8	4	Drop (1,1), (2,1), (3,1); zero. Drop (1,2); conv.
State × % Owner-Occupied	5 × 3	8	7	Coll. (1,3) & (1,2); conv.
State × Rent/Housing	5 × 5	16	14	Drop (3,3), (3,4); sing.
Three-Factor Effects		**128**	**38**	
State × % Owner-Occupied × % Black or African American	5 × 3 × 3	16	2	Coll. (5,3,1) & (5,3,2), (5,2,1) & (5,2,2); hier. Drop all others; hier./zero.
State × % Owner-Occupied × % Hispanic	5 × 3 × 3	16	6	Keep (2,3,2), (2,2,2), (3,3,2), (3,2,2), (5,3,2), (5,2,2). Drop all others; hier./sing.
State × % Owner-Occupied × Rent/Housing	5 × 3 × 5	32	18	Coll. (1,3,1) & (1,2,1); hier. Coll. (2,3,4) & (2,2,4); sing. Keep (2,3,1), (2,3,2), (2,3,3), (2,2,1), (2,2,2), (2,2,3), (3,2,1), (3,2,2), and (5,*,*), drop all others; hier./zero/sing./conv.
State × Rent/Housing × % Black or African American	5 × 3 × 5	32	3	Keep (1,2,2), (5,2,2). Coll. (5,1,1) & (5,1,2); hier. Drop all others; hier./zero/sing./conv.
State × Rent/Housing × % Hispanic or Latino	5 × 3 × 5	32	9	Keep (1,2,2), (2,1,2), (2,2,2), (3,1,2), (3,2,2), (5,1,2), (5,2,2), (5,3,2), (5,4,2), drop all others; hier./zero/sing.
Total		**255**	**137**	

Exhibit D9.2 Covariates for 2012 NSDUH Person Weights (res.sdu.ps), Model Group 9: Pacific

Variables	Levels	Proposed	Final	Comments
One-Factor Effects		**18**	**18**	
Intercept	1	1	1	All levels present.
State	5	4	4	All levels present.
Quarter	4	3	3	All levels present.
Age	5	4	4	All levels present.
Race (5 levels)	5	4	4	All levels present.
Gender	2	1	1	All levels present.
Hispanicity	2	1	1	All levels present.
Two-Factor Effects		**73**	**73**	
Age × Race (3 levels)	5 × 3	8	8	All levels present.
Age × Hispanicity	5 × 2	4	4	All levels present.
Age × Gender	5 × 2	4	4	All levels present.
Race (3 levels) × Hispanicity	3 × 2	2	2	All levels present.
Race (3 levels) × Gender	3 × 2	2	2	All levels present.
Hispanicity × Gender	2 × 2	1	1	All levels present.
State × Quarter	5 × 4	12	12	All levels present.
State × Age	5 × 5	16	16	All levels present.
State × Race (5 levels)	5 × 5	16	16	All levels present.
State × Hispanicity	5 × 2	4	4	All levels present.
State × Gender	5 × 2	4	4	All levels present.
Three-Factor-Effects		**106**	**102**	
Age × Race (3 levels) × Hispanicity	5 × 3 × 2	8	5	Coll. (1,2,1) & (1,3,1), (2,2,1) & (2,3,1), (3,2,1) & (3,3,1); conv.
Age × Race (3 levels) × Gender	5 × 3 × 2	8	8	All levels present.
Age × Hispanicity × Gender	5 × 2 × 2	4	4	All levels present.
Race (3 levels) × Hispanicity × Gender	3 × 2 × 2	2	1	Coll. (2,1,1) & (3,1,1); conv.
State × Age × Race (3 levels)	5 × 5 × 3	32	32	All levels present.
State × Age × Hispanicity	5 × 5 × 2	16	16	All levels present.
State × Age × Gender	5 × 5 × 2	16	16	All levels present.
State × Race (3 levels) × Hispanicity	5 × 3 × 2	8	8	All levels present.
State × Race (3 levels) × Gender	5 × 3 × 2	8	8	All levels present.
State × Hispanicity × Gender	5 × 2 × 2	4	4	All levels present.
Total		**197**	**193**	

Exhibit D9.3 Covariates for 2012 NSDUH Person Weights (sel.per.ps), Model Group 9: Pacific

Variables	Levels	Proposed	Final	Comments
One-Factor Effects		**36**	**36**	
Intercept	1	1	1	All levels present.
State	5	4	4	All levels present.
Quarter	4	3	3	All levels present.
Age	5	4	4	All levels present.
Race (5 levels)	5	4	4	All levels present.
Gender	2	1	1	All levels present.
Hispanicity	2	1	1	All levels present.
Relation to Householder	4	3	3	All levels present.
Population Density	4	3	3	All levels present.
Group Quarter	3	2	2	All levels present.
% Black or African American	3	2	2	All levels present.
% Hispanic or Latino	3	2	2	All levels present.
% Owner-Occupied	3	2	2	All levels present.
Rent/Housing	5	4	4	All levels present.
Two-Factor Effects		**145**	**135**	
Age × Race (3 levels)	5 × 3	8	8	All levels present.
Age × Hispanicity	5 × 2	4	4	All levels present.
Age × Gender	5 × 2	4	4	All levels present.
Race (3 levels) × Hispanicity	3 × 2	2	2	All levels present.
Race (3 levels) × Gender	3 × 2	2	2	All levels present.
Hispanicity × Gender	2 × 2	1	1	All levels present.
% Owner-Occupied × % Black or African American	3 × 3	4	4	All levels present.
% Owner-Occupied × % Hispanic or Latino	3 × 3	4	4	All levels present.
% Owner-Occupied × Rent/Housing	3 × 5	8	8	All levels present.
Rent/Housing × % Black or African American	3 × 5	8	6	Drop (1,1); zero. Drop (4,1); sing.
Rent/Housing × % Hispanic or Latino	3 × 5	8	8	All levels present.
State × Quarter	5 × 4	12	12	All levels present.
State × Age	5 × 5	16	16	All levels present.
State × Race (5 levels)	5 × 5	16	16	All levels present.
State × Hispanicity	5 × 2	4	4	All levels present.
State × Gender	5 × 2	4	4	All levels present.
State × % Black or African American	5 × 3	8	4	Drop (1,1), (2,1), (3,1); zero. Coll. (5,1) & (5,2); conv.
State × % Hispanic or Latino	5 × 3	8	5	Drop (1,1), (2,1), (3,1); zero.
State × % Owner-Occupied	5 × 3	8	8	All levels present.
State × Rent/Housing	5 × 5	16	15	Drop (3,4); sing.
Three-Factor Effects		**106**	**91**	
Age × Race (3 levels) × Hispanicity	5 × 3 × 2	8	5	Coll. (3,2/3,1) & (4,2/3,1); conv.
Age × Race (3 levels) × Gender	5 × 3 × 2	8	8	All levels present.
Age × Hispanicity × Gender	5 × 2 × 2	4	4	All levels present.
Race (3 levels) × Hispanicity × Gender	3 × 2 × 2	2	1	Coll. (2,1,1) & (3,1,1); conv.
State × Age × Race (3 levels)	5 × 5 × 3	32	31	Coll. (2,4,2) & (2,4,3); sing.
State × Age × Hispanicity	5 × 5 × 2	16	14	Drop (1,4,1), (2,4,1); conv.
State × Age × Gender	5 × 5 × 2	16	16	All levels present.
State × Race (3 levels) × Hispanicity	5 × 3 × 2	8	0	Drop all levels; conv.
State × Race (3 levels) × Gender	5 × 3 × 2	8	8	All levels present.
State × Hispanicity × Gender	5 × 2 × 2	4	4	All levels present.
Total		**287**	**262**	

Exhibit D9.4 Covariates for 2012 NSDUH Person Weights (res.per.nr), Model Group 9: Pacific

Variables	Levels	Proposed	Final	Comments
One-Factor Effects		**36**	**36**	
Intercept	1	1	1	All levels present.
State	5	4	4	All levels present.
Quarter	4	3	3	All levels present.
Age	5	4	4	All levels present.
Race (5 levels)	5	4	4	All levels present.
Gender	2	1	1	All levels present.
Hispanicity	2	1	1	All levels present.
Relation to Householder	4	3	3	All levels present.
Population Density	4	3	3	All levels present.
Group Quarter	3	2	2	All levels present.
% Black or African American	3	2	2	All levels present.
% Hispanic or Latino	3	2	2	All levels present.
% Owner-Occupied	3	2	2	All levels present.
Rent/Housing	5	4	4	All levels present.
Two-Factor Effects		**145**	**134**	
Age × Race (3 levels)	5 × 3	8	8	All levels present.
Age × Hispanicity	5 × 2	4	4	All levels present.
Age × Gender	5 × 2	4	4	All levels present.
Race (3 levels) × Hispanicity	3 × 2	2	1	Coll. (2,1) & (3,1); conv.
Race (3 levels) × Gender	3 × 2	2	2	All levels present.
Hispanicity × Gender	2 × 2	1	1	All levels present.
% Owner-Occupied × % Black or African American	3 × 3	4	4	All levels present.
% Owner-Occupied × % Hispanic or Latino	3 × 3	4	4	All levels present.
% Owner-Occupied × Rent/Housing	3 × 5	8	8	All levels present.
Rent/Housing × % Black or African American	3 × 5	8	6	Drop (1,1); zero. Drop (4,1); sing.
Rent/Housing × % Hispanic or Latino	3 × 5	8	8	All levels present.
State × Quarter	5 × 4	12	12	All levels present.
State × Age	5 × 5	16	16	All levels present.
State × Race (5 levels)	5 × 5	16	16	All levels present.
State × Hispanicity	5 × 2	4	4	All levels present.
State × Gender	5 × 2	4	4	All levels present.
State × % Black or African American	5 × 3	8	4	Drop (1,1), (2,1), (3,1); zero. Drop (5,1); sing.
State × % Hispanic or Latino	5 × 3	8	5	Drop (1,1), (2,1), (3,1); zero.
State × % Owner-Occupied	5 × 3	8	8	All levels present.
State × Rent/Housing	5 × 5	16	15	Drop (3,4); sing.
Three-Factor Effects		**106**	**77**	
Age × Race (3 levels) × Hispanicity	5 × 3 × 2	8	4	Coll. (1,2,1) & (1,3,1), repeat for all age levels; hier.
Age × Race (3 levels) × Gender	5 × 3 × 2	8	8	All levels present.
Age × Hispanicity × Gender	5 × 2 × 2	4	4	All levels present.
Race (3 levels) × Hispanicity × Gender	3 × 2 × 2	2	0	Coll. (1,2,1) & (1,3,1); hier. Drop (1,2/3,1); conv.
State × Age × Race (3 levels)	5 × 5 × 3	32	16	Coll. (1,1,2) & (1,1,3), repeat for all States and all age levels; conv.
State × Age × Hispanicity	5 × 5 × 2	16	16	All levels present.
State × Age × Gender	5 × 5 × 2	16	16	All levels present.
State × Race (3 levels) × Hispanicity	5 × 3 × 2	8	4	Coll. (1,2,1) & (1,3,1), repeat for all States; hier.
State × Race (3 levels) × Gender	5 × 3 × 2	8	5	Coll. (2,2,1) & (2,3,1), (3,2,1) & (3,3,1), (5,2,1) & (5,3,1); conv.
State × Hispanicity × Gender	5 × 2 × 2	4	4	All levels present.
Total		**287**	**247**	

Exhibit D9.5 Covariates for 2012 NSDUH Person Weights (res.per.ps), Model Group 9: Pacific

Variables	Levels	Proposed	Final	Comments
One-Factor Effects		**19**	**19**	
Intercept	1	1	1	All levels present.
State	5	4	4	All levels present.
Quarter	4	3	3	All levels present.
Age	6	5	5	All levels present.
Race (5 levels)	5	4	4	All levels present.
Gender	2	1	1	All levels present.
Hispanicity	2	1	1	All levels present.
Two-Factor Effects		**81**	**81**	
Age × Race (3 levels)	6 × 3	10	10	All levels present.
Age × Hispanicity	6 × 2	5	5	All levels present.
Age × Gender	6 × 2	5	5	All levels present.
Race (3 levels) × Hispanicity	3 × 2	2	2	All levels present.
Race (3 levels) × Gender	3 × 2	2	2	All levels present.
Hispanicity × Gender	2 × 2	1	1	All levels present.
State × Quarter	5 × 4	12	12	All levels present.
State × Age	5 × 6	20	20	All levels present.
State × Race (5 levels)	5 × 5	16	16	All levels present.
State × Hispanicity	5 × 2	4	4	All levels present.
State × Gender	5 × 2	4	4	All levels present.
Three-Factor Effects		**127**	**99**	
Age × Race (3 levels) × Hispanicity	6 × 3 × 2	10	8	Coll. (5,2,1) & (5,3,1); sing. Coll. (3,2,1) & (3,3,1); conv.
Age × Race (3 levels) × Gender	6 × 3 × 2	10	10	All levels present.
Age × Hispanicity × Gender	6 × 2 × 2	5	5	All levels present.
Race (3 levels) × Hispanicity × Gender	3 × 2 × 2	2	2	All levels present.
State × Age × Race (3 levels)	5 × 6 × 3	40	20	Coll. (1,1,2) & (1,1,3), repeat for all age levels and all States; zero/sing./conv.
State × Age × Hispanicity	5 × 6 × 2	20	18	Drop (2,5,1), (3,5,1); conv.
State × Age × Gender	5 × 6 × 2	20	20	All levels present.
State × Race (3 levels) × Hispanicity	5 × 3 × 2	8	4	Coll. (1,2,1) & (1,3,1), repeat for all States; conv.
State × Race (3 levels) × Gender	5 × 3 × 2	8	8	All levels present.
State × Hispanicity × Gender	5 × 2 × 2	4	4	All levels present.
Total		**227**	**199**	

Appendix E: Evaluation of Calibration Weights: Response Rates

Table E.1 2012 NSDUH Weighted Response Rates: United States, District of Columbia, and the 50 States

Domain	Dwelling Unit (DU)					Person Level		Interview Response Rate	
	Selected DUs	Eligible DUs	Completed DUs	Eligibility Rate	Screening Rate	Selected Persons	Respondents	Weight 1-11[1]	Weight 1-12[2]
United States	214,274	178,586	153,873	83.43%	86.07%	87,656	68,309	73.04%	72.92%
Alabama	3,012	2,372	2,141	78.65%	90.30%	1,145	901	74.57%	74.85%
Alaska	2,424	1,869	1,642	76.83%	87.82%	1,076	829	73.34%	74.46%
Arizona	2,771	2,143	1,928	76.44%	90.16%	1,139	922	77.11%	77.23%
Arkansas	2,776	2,292	2,090	82.70%	90.92%	1,212	913	69.77%	69.87%
California	9,489	8,314	6,852	86.08%	82.37%	4,779	3,608	70.20%	70.18%
Colorado	3,071	2,579	2,201	83.17%	85.23%	1,188	927	74.95%	75.03%
Connecticut	2,855	2,535	2,107	88.73%	82.76%	1,261	964	72.36%	72.51%
Delaware	2,847	2,292	2,008	78.08%	87.57%	1,110	893	79.90%	79.33%
District of Columbia	5,055	4,104	3,327	80.88%	80.90%	1,125	962	80.64%	81.16%
Florida	12,768	10,055	8,516	75.81%	84.67%	4,579	3,544	70.57%	70.28%
Georgia	2,365	2,042	1,796	86.31%	87.94%	1,144	885	73.07%	72.71%
Hawaii	3,212	2,761	2,239	85.80%	80.80%	1,285	938	68.98%	69.33%
Idaho	2,300	1,939	1,821	84.78%	93.92%	1,136	921	78.38%	77.54%
Illinois	11,385	9,964	7,678	87.57%	77.04%	4,871	3,672	70.95%	70.80%
Indiana	2,491	2,110	1,921	84.55%	91.01%	1,171	911	72.95%	72.34%
Iowa	2,529	2,199	2,022	86.56%	91.72%	1,137	900	74.74%	75.39%
Kansas	2,598	2,198	1,977	84.94%	89.98%	1,109	912	77.88%	77.14%
Kentucky	2,852	2,407	2,202	84.44%	91.46%	1,184	927	73.49%	73.71%
Louisiana	2,741	2,143	1,977	77.93%	92.28%	1,100	901	77.61%	77.43%
Maine	3,866	2,858	2,585	73.00%	90.56%	1,134	938	79.20%	79.85%
Maryland	2,680	2,308	1,802	86.18%	78.13%	1,074	874	75.90%	75.80%
Massachusetts	3,064	2,653	2,208	85.67%	83.22%	1,253	955	71.52%	72.93%
Michigan	11,441	9,207	7,826	79.39%	85.05%	4,606	3,655	75.75%	75.88%
Minnesota	2,483	2,160	1,975	85.99%	91.57%	1,092	902	81.16%	80.80%
Mississippi	2,553	2,087	1,951	81.96%	93.50%	1,100	901	78.58%	77.90%

(continued)

Table E.1 2012 NSDUH Weighted Response Rates: United States, District of Columbia, and the 50 States (continued)

Domain	Dwelling Unit (DU)					Person Level		Interview Response Rate	
	Selected DUs	Eligible DUs	Completed DUs	Eligibility Rate	Screening Rate	Selected Persons	Respondents	Weight 1-11[1]	Weight 1-12[2]
Missouri	2,879	2,409	2,188	83.62%	90.88%	1,149	915	74.36%	73.05%
Montana	3,295	2,610	2,415	78.09%	92.62%	1,109	876	77.46%	78.41%
Nebraska	2,556	2,175	2,018	85.07%	92.74%	1,170	940	73.14%	73.87%
Nevada	2,354	1,879	1,721	79.87%	91.75%	1,134	903	75.62%	75.72%
New Hampshire	2,990	2,507	2,191	83.88%	87.40%	1,259	950	73.08%	73.72%
New Jersey	2,622	2,227	1,935	84.91%	86.87%	1,155	898	73.64%	73.08%
New Mexico	2,771	2,052	1,889	73.39%	92.22%	1,101	879	74.17%	74.34%
New York	14,547	12,547	9,115	85.42%	71.89%	5,267	3,680	64.38%	63.25%
North Carolina	2,848	2,246	1,990	76.21%	88.48%	1,117	917	75.46%	75.47%
North Dakota	3,374	2,633	2,461	77.65%	93.42%	1,156	895	73.47%	72.75%
Ohio	11,722	10,122	9,023	86.35%	89.14%	4,827	3,687	72.73%	72.72%
Oklahoma	2,960	2,382	2,173	79.51%	91.22%	1,189	908	72.38%	71.15%
Oregon	2,547	2,250	2,019	88.49%	89.57%	1,165	923	76.48%	77.60%
Pennsylvania	11,907	10,256	8,453	85.02%	82.09%	4,705	3,580	70.67%	70.47%
Rhode Island	2,620	2,190	1,957	83.68%	89.37%	1,131	923	77.76%	76.59%
South Carolina	3,306	2,666	2,374	80.44%	88.97%	1,171	938	75.13%	74.56%
South Dakota	2,636	2,163	2,031	81.98%	93.92%	1,113	878	76.12%	76.24%
Tennessee	2,532	2,095	1,929	83.01%	91.91%	1,105	927	81.06%	80.99%
Texas	9,048	7,651	6,792	84.75%	88.52%	4,612	3,625	73.36%	73.52%
Utah	1,793	1,558	1,474	86.99%	94.67%	1,099	926	83.26%	83.60%
Vermont	3,292	2,637	2,317	78.85%	87.81%	1,136	885	73.81%	73.76%
Virginia	2,576	2,293	2,027	88.97%	88.47%	1,095	894	76.50%	76.10%
Washington	2,700	2,306	2,078	85.67%	90.10%	1,218	928	71.82%	71.37%
West Virginia	3,222	2,675	2,399	82.94%	89.39%	1,217	976	74.07%	74.74%
Wisconsin	2,440	2,041	1,890	83.27%	92.37%	1,098	875	75.55%	76.01%
Wyoming	3,109	2,425	2,222	77.59%	91.72%	1,148	928	77.48%	77.61%

[1] Includes DU-level and person-level design weights, DU nonresponse adjustment, and DU poststratification adjustment.

[2] Includes a selected person poststratification weight.

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

Appendix F: Evaluation of Calibration Weights: Dwelling Unit–Level Percentages of Extreme Weights and Outwinsors

Table F.1 2012 NSDUH Dwelling Unit–Level Percentages of Extreme Weights and Outwinsors: United States, District of Columbia, and the 50 States

Domain	*n*	Before nr[1] (WT1*...*WT7)			After nr[1] & Before ps[2] (WT1*...*WT8)			After ps[2] (WT1*...*WT9)		
		% Unweighted	% Weighted[3]	% Outwinsor[4]	% Unweighted	% Weighted[3]	% Outwinsor[4]	% Unweighted	% Weighted[3]	% Outwinsor[4]
United States	153,873	3.51%	3.38%	0.44%	2.74%	3.32%	0.42%	1.80%	3.63%	1.02%
Alabama	2,141	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.98%	2.09%	0.56%
Alaska	1,642	0.37%	0.71%	0.19%	1.77%	2.54%	0.21%	2.07%	4.10%	0.76%
Arizona	1,928	10.27%	12.71%	1.78%	4.88%	5.69%	0.41%	1.04%	2.50%	0.52%
Arkansas	2,090	2.97%	2.32%	0.18%	0.00%	0.00%	0.00%	0.77%	1.69%	0.41%
California	6,852	0.20%	0.36%	0.07%	2.45%	2.81%	0.28%	2.32%	5.49%	2.08%
Colorado	2,201	9.86%	20.08%	8.00%	7.95%	16.36%	3.07%	1.54%	3.36%	0.64%
Connecticut	2,107	0.00%	0.00%	0.00%	2.85%	6.20%	0.84%	1.33%	4.06%	1.40%
Delaware	2,008	1.29%	2.14%	0.54%	1.20%	1.45%	0.13%	1.34%	3.77%	1.25%
District of Columbia	3,327	11.78%	10.24%	1.12%	2.34%	4.16%	1.40%	1.53%	3.17%	0.44%
Florida	8,516	4.78%	6.35%	0.98%	4.78%	5.39%	0.47%	1.30%	2.37%	0.50%
Georgia	1,796	0.39%	0.73%	0.09%	0.56%	1.01%	0.26%	1.50%	3.29%	0.81%
Hawaii	2,239	8.58%	12.01%	2.06%	2.90%	2.86%	0.19%	1.92%	4.60%	0.89%
Idaho	1,821	0.22%	0.02%	0.04%	0.00%	0.00%	0.00%	1.81%	3.72%	1.09%
Illinois	7,678	0.46%	0.39%	0.05%	4.69%	6.73%	1.14%	0.85%	1.60%	0.44%
Indiana	1,921	0.21%	0.05%	0.00%	0.21%	0.74%	0.46%	2.50%	4.19%	0.98%
Iowa	2,022	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.04%	2.34%	0.49%
Kansas	1,977	16.49%	19.45%	1.76%	1.21%	1.73%	0.27%	3.74%	6.95%	2.13%
Kentucky	2,202	6.63%	8.69%	0.19%	4.45%	5.86%	0.40%	0.77%	1.30%	0.18%
Louisiana	1,977	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.76%	1.70%	0.34%
Maine	2,585	12.03%	13.71%	0.93%	9.17%	10.51%	0.92%	4.64%	3.74%	1.22%
Maryland	1,802	7.82%	7.90%	0.20%	3.66%	3.98%	0.35%	2.39%	3.97%	0.81%
Massachusetts	2,208	4.03%	4.39%	0.30%	4.08%	5.57%	1.03%	5.12%	7.03%	2.30%
Michigan	7,826	0.88%	1.13%	0.12%	0.00%	0.00%	0.00%	0.41%	0.86%	0.20%
Minnesota	1,975	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.81%	1.89%	0.38%
Mississippi	1,951	0.26%	0.28%	0.01%	0.05%	0.02%	0.00%	1.74%	1.59%	0.38%

(continued)

Table F.1 2012 NSDUH Dwelling Unit–Level Percentages of Extreme Weights and Outwinsors: United States, District of Columbia, and the 50 States (continued)

Domain	*n*	Before nr[1] (WT1*...*WT7)			After nr[1] & Before ps[2] (WT1*...*WT8)			After ps[2] (WT1*...*WT9)		
		% Unweighted	% Weighted[3]	% Outwinsor[4]	% Unweighted	% Weighted[3]	% Outwinsor[4]	% Unweighted	% Weighted[3]	% Outwinsor[4]
Missouri	2,188	0.00%	0.00%	0.00%	2.19%	2.43%	0.23%	1.74%	3.55%	0.70%
Montana	2,415	1.41%	2.69%	1.05%	2.61%	3.49%	0.30%	2.32%	3.70%	0.71%
Nebraska	2,018	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.76%	8.48%	2.01%
Nevada	1,721	3.20%	3.11%	0.12%	2.79%	2.63%	0.31%	2.61%	6.68%	1.60%
New Hampshire	2,191	0.50%	0.98%	0.33%	1.19%	1.44%	0.12%	5.34%	6.03%	1.57%
New Jersey	1,935	0.00%	0.00%	0.00%	0.36%	1.24%	0.44%	1.19%	3.17%	0.80%
New Mexico	1,889	10.27%	12.12%	1.19%	8.79%	10.48%	0.90%	2.54%	4.56%	1.30%
New York	9,115	5.83%	6.15%	0.79%	1.97%	3.62%	0.80%	2.02%	5.99%	2.42%
North Carolina	1,990	4.17%	4.42%	0.58%	1.31%	2.11%	0.09%	2.56%	5.89%	1.40%
North Dakota	2,461	4.35%	5.13%	0.17%	1.67%	2.08%	0.07%	2.76%	5.71%	1.36%
Ohio	9,023	11.93%	13.98%	0.74%	9.09%	10.57%	0.64%	1.01%	1.39%	0.26%
Oklahoma	2,173	1.84%	2.05%	0.23%	0.64%	1.43%	0.52%	1.24%	2.77%	0.39%
Oregon	2,019	0.00%	0.00%	0.00%	1.14%	1.62%	0.03%	3.22%	5.49%	1.47%
Pennsylvania	8,453	0.44%	0.76%	0.04%	1.41%	3.02%	0.78%	0.62%	1.67%	0.45%
Rhode Island	1,957	0.00%	0.00%	0.00%	1.43%	1.73%	0.23%	1.48%	4.95%	2.08%
South Carolina	2,374	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.53%	3.65%	0.54%
South Dakota	2,031	0.00%	0.00%	0.00%	0.84%	1.59%	0.15%	1.77%	3.66%	0.90%
Tennessee	1,929	3.16%	2.80%	0.53%	0.00%	0.00%	0.00%	4.20%	6.63%	0.91%
Texas	6,792	1.84%	2.14%	0.14%	2.77%	3.18%	0.26%	1.43%	2.52%	0.90%
Utah	1,474	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.58%	3.17%	0.44%
Vermont	2,317	14.98%	21.18%	2.49%	11.48%	16.42%	2.06%	1.17%	2.64%	0.60%
Virginia	2,027	0.25%	0.10%	0.07%	2.66%	3.05%	0.30%	2.96%	4.61%	0.84%
Washington	2,078	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.07%	4.62%	1.18%
West Virginia	2,399	0.17%	0.05%	0.01%	0.00%	0.00%	0.00%	0.50%	1.32%	0.20%
Wisconsin	1,890	1.96%	1.74%	0.29%	3.23%	3.58%	0.21%	2.43%	3.44%	0.57%
Wyoming	2,222	0.00%	0.00%	0.00%	1.40%	1.41%	0.18%	3.24%	3.53%	0.93%

[1] nr = nonresponse adjustment.

[2] ps = poststratification adjustment.

[3] Weighted extreme value percentage = $100*\sum_k w_{ek}/\sum_k w_k$, where w_{ek} denotes the weight for extreme weights and w_k denotes the weight for both extreme weights and nonextreme weights.

[4] Outwinsor weight percentage = $100*\sum_k(w_{ek} - b_k)/\sum_k w_k$, where b_k denotes the cutoff point for defining the extreme weight.

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

Appendix G: Evaluation of Calibration Weights: Person-Level Percentages of Extreme Weights and Outwinsors

Table G.1 2012 NSDUH Selected Person-Level Percentages of Extreme Weights and Outwinsors: United States, District of Columbia, and the 50 States

Domain	*n*	Before sel.per.ps[1] (WT1*...*WT11)			After sel.per.ps[1] (WT1*...*WT12)		
		% Unweighted	% Weighted[2]	% Outwinsor[3]	% Unweighted	% Weighted[2]	% Outwinsor[3]
United States	87,656	3.41%	7.03%	1.86%	1.97%	4.37%	1.06%
Alabama	1,145	2.01%	4.27%	0.92%	1.57%	2.04%	0.38%
Alaska	1,076	5.30%	11.49%	2.72%	2.60%	5.21%	1.75%
Arizona	1,139	3.86%	11.35%	2.57%	2.81%	4.31%	0.53%
Arkansas	1,212	3.55%	4.31%	1.35%	2.39%	7.10%	1.98%
California	4,779	3.41%	8.20%	2.62%	1.76%	3.99%	1.31%
Colorado	1,188	1.94%	3.89%	0.72%	1.77%	4.71%	1.24%
Connecticut	1,261	2.54%	7.54%	2.58%	2.62%	8.13%	2.00%
Delaware	1,110	3.42%	6.74%	1.71%	1.26%	3.42%	1.19%
District of Co	1,125	3.02%	3.46%	0.44%	1.16%	2.27%	0.51%
Florida	4,579	3.04%	6.25%	1.13%	1.16%	1.79%	0.61%
Georgia	1,144	3.76%	7.27%	1.58%	2.10%	4.00%	0.95%
Hawaii	1,285	3.89%	8.70%	1.94%	2.02%	5.20%	1.63%
Idaho	1,136	4.31%	7.91%	2.16%	2.46%	4.98%	1.61%
Illinois	4,871	2.83%	4.85%	1.01%	2.03%	4.49%	0.81%
Indiana	1,171	2.99%	7.27%	2.03%	1.79%	4.11%	0.74%
Iowa	1,137	2.73%	4.91%	1.76%	2.55%	5.20%	1.44%
Kansas	1,109	4.33%	7.92%	2.30%	1.98%	4.08%	0.87%
Kentucky	1,184	3.80%	6.14%	1.25%	1.86%	1.80%	0.39%
Louisiana	1,100	2.09%	2.79%	0.60%	1.91%	5.11%	0.69%
Maine	1,134	6.17%	6.70%	2.18%	2.38%	3.09%	0.65%
Maryland	1,074	2.14%	3.60%	0.63%	2.05%	4.06%	1.02%
Massachusetts	1,253	3.35%	7.21%	2.01%	2.63%	7.76%	2.21%
Michigan	4,606	2.08%	3.04%	0.66%	1.22%	2.32%	0.47%
Minnesota	1,092	2.29%	5.15%	1.09%	2.20%	5.39%	1.44%
Mississippi	1,100	4.09%	4.56%	0.78%	0.82%	1.95%	0.66%

(continued)

Table G.1 2012 NSDUH Selected Person-Level Percentages of Extreme Weights and Outwinsors: United States, District of Columbia, and the 50 States (continued)

Domain	*n*	Before sel.per.ps[1] (WT1*...*WT11)			After sel.per.ps[1] (WT1*...*WT12)		
		% Unweighted	% Weighted[2]	% Outwinsor[3]	% Unweighted	% Weighted[2]	% Outwinsor[3]
Missouri	1,149	2.79%	5.43%	1.29%	3.31%	8.78%	2.44%
Montana	1,109	3.34%	4.74%	0.97%	1.89%	3.30%	0.99%
Nebraska	1,170	2.31%	5.14%	1.59%	2.56%	8.16%	2.90%
Nevada	1,134	4.23%	8.60%	2.39%	2.65%	4.71%	1.09%
New Hampshire	1,259	3.26%	4.55%	1.09%	1.27%	2.10%	0.61%
New Jersey	1,155	1.82%	2.91%	0.56%	1.73%	3.21%	0.67%
New Mexico	1,101	3.54%	7.39%	1.53%	1.18%	2.53%	0.66%
New York	5,267	3.78%	10.31%	3.74%	3.15%	9.03%	2.52%
North Carolina	1,117	2.69%	4.95%	1.03%	1.79%	5.22%	0.98%
North Dakota	1,156	3.72%	7.54%	1.49%	1.38%	2.53%	0.75%
Ohio	4,827	4.10%	5.65%	0.97%	1.70%	2.54%	0.31%
Oklahoma	1,189	2.35%	4.29%	0.75%	1.85%	2.31%	0.33%
Oregon	1,165	4.98%	10.15%	3.09%	2.23%	5.12%	1.83%
Pennsylvania	4,705	3.02%	6.97%	1.52%	1.68%	4.05%	0.52%
Rhode Island	1,131	2.48%	6.72%	3.28%	2.21%	5.57%	1.62%
South Carolina	1,171	3.42%	6.09%	0.98%	0.94%	1.88%	0.63%
South Dakota	1,113	3.77%	9.30%	2.06%	2.25%	3.85%	0.63%
Tennessee	1,105	4.71%	9.81%	2.79%	1.36%	2.57%	0.44%
Texas	4,612	5.18%	11.19%	3.36%	2.91%	4.71%	1.02%
Utah	1,099	4.28%	7.66%	1.48%	0.82%	1.73%	0.32%
Vermont	1,136	6.25%	11.64%	2.89%	3.17%	7.27%	1.12%
Virginia	1,095	3.20%	7.44%	1.27%	1.46%	3.73%	0.53%
Washington	1,218	3.69%	7.74%	2.25%	2.71%	6.25%	1.59%
West Virginia	1,217	1.15%	1.46%	0.34%	0.90%	1.55%	0.57%
Wisconsin	1,098	3.10%	5.99%	1.66%	2.28%	3.71%	0.62%
Wyoming	1,148	3.40%	4.75%	1.62%	1.92%	4.40%	1.30%

[1] Before sel.per.ps (WT1*...*WT11) and after sel.per.ps (WT1*...*WT12) used demographic variables from screener data for all selected persons; ps = poststratification adjustment.

[2] Weighted extreme value percentage = $100*\sum_k w_{ek}/\sum_k w_k$, where w_{ek} denotes the weight for extreme weights and w_k denotes the weight for both extreme weights and nonextreme weights.

[3] Outwinsor weight percentage = $100*\sum_k(w_{ek} - b_k)/\sum_k w_k$, where b_k denotes the cutoff point for defining the extreme weight.

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

Table G.2 2012 NSDUH Respondent Person-Level Percentages of Extreme Weights and Outwinsors: United States, District of Columbia, and the 50 States

Domain	*n*	Before res.per.nr[1] (WT1*…*WT12)			After res.per.nr[1] (WT1*…*WT13)			Before res.per.ps[2] (WT1*…*WT13)			After res.per.ps[2] (WT1*…*WT14)		
		% Unweighted	% Weighted[3]	% Outwinsor[4]	% Unweighted	% Weighted[3]	% Outwinsor[4]	% Unweighted	% Weighted[3]	% Outwinsor[4]	% Unweighted	% Weighted[3]	% Outwinsor[4]
United States	68,309	2.02%	4.54%	1.15%	1.71%	4.90%	1.06%	1.76%	4.98%	1.15%	1.04%	3.24%	0.66%
Alabama	901	1.89%	2.61%	0.46%	1.44%	2.17%	0.37%	1.44%	2.17%	0.34%	1.66%	2.65%	0.44%
Alaska	829	2.41%	5.49%	2.16%	2.77%	5.65%	1.21%	2.65%	5.78%	1.41%	1.81%	3.51%	0.28%
Arizona	922	2.60%	4.09%	0.49%	1.95%	2.42%	0.28%	1.74%	2.35%	0.32%	1.08%	1.74%	0.23%
Arkansas	913	2.41%	4.91%	1.17%	3.50%	7.88%	1.49%	3.50%	7.88%	1.48%	1.53%	5.46%	0.90%
California	3,608	1.94%	4.86%	1.56%	1.61%	5.91%	1.33%	1.77%	6.29%	1.67%	0.53%	3.24%	0.72%
Colorado	927	2.05%	4.75%	1.44%	1.83%	5.02%	0.91%	1.62%	4.14%	1.10%	1.19%	2.27%	0.31%
Connecticut	964	2.59%	8.80%	2.07%	1.66%	7.72%	2.16%	1.56%	7.59%	2.12%	1.35%	4.06%	0.54%
Delaware	893	1.23%	3.40%	1.01%	1.12%	3.79%	0.62%	1.23%	3.87%	0.66%	0.78%	4.13%	0.53%
District of Co	962	1.14%	2.58%	0.57%	0.73%	2.05%	0.22%	0.83%	2.19%	0.25%	1.35%	3.86%	0.55%
Florida	3,544	1.24%	2.05%	0.70%	1.35%	3.74%	0.64%	1.50%	4.00%	0.68%	0.23%	0.31%	0.02%
Georgia	885	2.03%	3.30%	0.94%	3.16%	6.50%	2.27%	2.94%	6.30%	2.17%	2.49%	6.91%	1.68%
Hawaii	938	2.13%	5.67%	1.81%	1.71%	6.65%	1.06%	1.71%	6.65%	1.26%	0.32%	0.37%	0.03%
Idaho	921	2.93%	6.09%	1.87%	2.61%	6.20%	1.90%	2.61%	5.55%	1.83%	2.50%	5.65%	1.15%
Illinois	3,672	1.91%	4.19%	0.75%	0.98%	3.66%	0.68%	1.12%	3.90%	0.76%	0.25%	1.07%	0.33%
Indiana	911	1.76%	3.87%	0.86%	1.21%	2.57%	0.15%	1.10%	2.46%	0.15%	1.32%	2.75%	0.99%
Iowa	900	2.67%	5.10%	1.68%	2.67%	6.09%	1.05%	2.56%	5.73%	1.08%	1.67%	6.44%	2.10%
Kansas	912	1.97%	4.46%	1.03%	1.75%	6.97%	1.45%	1.64%	6.52%	1.41%	2.19%	8.23%	2.66%
Kentucky	927	1.73%	1.73%	0.33%	1.40%	1.60%	0.21%	1.73%	2.74%	0.46%	1.40%	3.72%	0.38%
Louisiana	901	1.44%	3.13%	0.61%	1.89%	4.23%	0.76%	1.89%	4.23%	0.81%	0.22%	0.16%	0.01%
Maine	938	2.03%	2.41%	0.53%	1.28%	1.52%	0.36%	1.17%	1.32%	0.25%	1.17%	4.22%	1.22%
Maryland	874	1.83%	4.02%	1.28%	1.83%	5.23%	0.93%	1.72%	5.10%	1.05%	2.06%	4.88%	1.24%
Massachusetts	955	3.98%	11.81%	2.76%	2.62%	7.96%	1.98%	2.41%	7.15%	1.94%	0.63%	2.08%	0.35%
Michigan	3,655	1.12%	1.95%	0.51%	1.09%	3.33%	0.50%	1.09%	3.05%	0.52%	0.30%	1.19%	0.20%
Minnesota	902	1.66%	4.13%	1.02%	1.77%	6.50%	1.74%	1.66%	6.27%	1.58%	1.66%	6.99%	1.48%
Mississippi	901	1.00%	1.99%	0.75%	1.66%	4.05%	1.39%	1.78%	4.51%	1.43%	0.78%	3.65%	0.37%

(continued)

Table G.2 2012 NSDUH Respondent Person-Level Percentages of Extreme Weights and Outwinsors: United States, District of Columbia, and the 50 States (continued)

Domain	*n*	Before res.per.nr[1] (WT1*…*WT12)			After res.per.nr[1] (WT1*…*WT13)			Before res.per.ps[2] (WT1*…*WT13)			After res.per.ps[2] (WT1*…*WT14)		
		% Unweighted	% Weighted[3]	% Outwinsor[4]	% Unweighted	% Weighted[3]	% Outwinsor[4]	% Unweighted	% Weighted[3]	% Outwinsor[4]	% Unweighted	% Weighted[3]	% Outwinsor[4]
Missouri	915	3.28%	10.36%	2.93%	3.17%	9.07%	2.27%	3.61%	9.44%	2.32%	1.53%	5.20%	1.51%
Montana	876	1.71%	3.48%	1.23%	1.48%	3.68%	0.66%	1.37%	3.32%	0.61%	0.91%	1.37%	0.55%
Nebraska	940	2.77%	9.31%	3.55%	2.23%	7.52%	1.90%	2.34%	7.77%	2.13%	1.91%	4.74%	1.47%
Nevada	903	2.88%	5.71%	1.40%	2.88%	6.79%	1.19%	2.88%	6.79%	1.17%	1.00%	2.79%	0.37%
New Hampshire	950	1.58%	2.31%	0.67%	2.11%	3.64%	0.80%	2.42%	4.52%	1.15%	2.42%	4.06%	0.85%
New Jersey	898	1.89%	3.42%	0.72%	1.34%	2.79%	0.63%	1.22%	2.67%	0.61%	1.78%	5.19%	0.68%
New Mexico	879	1.14%	3.08%	0.80%	1.02%	3.01%	1.07%	1.25%	3.38%	1.20%	0.80%	3.40%	0.38%
New York	3,680	3.29%	9.06%	2.76%	3.72%	12.57%	2.80%	3.83%	12.87%	3.23%	1.44%	7.09%	1.21%
North Carolina	917	1.74%	3.48%	0.46%	0.76%	3.07%	0.88%	0.76%	3.07%	0.89%	0.98%	3.06%	1.01%
North Dakota	895	1.79%	3.47%	1.04%	1.23%	3.23%	0.63%	1.23%	3.23%	0.62%	0.67%	2.79%	0.57%
Ohio	3,687	1.82%	2.72%	0.36%	0.98%	2.43%	0.20%	0.95%	2.36%	0.19%	0.52%	0.54%	0.05%
Oklahoma	908	1.65%	2.00%	0.40%	1.10%	1.94%	0.32%	1.21%	2.09%	0.33%	0.88%	3.05%	0.74%
Oregon	923	2.06%	5.17%	2.10%	2.28%	6.79%	1.77%	2.38%	6.88%	1.82%	1.63%	4.25%	0.51%
Pennsylvania	3,580	1.59%	3.89%	0.50%	0.89%	2.95%	0.33%	0.95%	3.10%	0.34%	0.67%	2.39%	0.35%
Rhode Island	923	2.49%	6.54%	1.96%	1.63%	5.87%	1.52%	1.63%	5.87%	1.53%	0.76%	1.03%	0.16%
South Carolina	938	0.96%	2.29%	0.84%	0.75%	1.66%	0.56%	0.75%	1.66%	0.59%	0.11%	0.47%	0.12%
South Dakota	878	2.51%	4.18%	0.54%	1.71%	4.07%	0.94%	1.82%	4.50%	0.96%	1.48%	3.74%	0.80%
Tennessee	927	0.86%	2.11%	0.33%	1.29%	2.88%	0.67%	1.40%	3.13%	0.73%	1.51%	2.69%	0.38%
Texas	3,625	3.09%	5.29%	1.20%	2.04%	3.62%	0.67%	2.21%	3.92%	0.73%	1.16%	1.43%	0.22%
Utah	926	0.86%	1.61%	0.33%	0.65%	3.50%	0.87%	0.65%	3.49%	0.87%	0.86%	2.44%	0.33%
Vermont	885	3.39%	7.40%	1.35%	4.07%	7.25%	1.66%	3.95%	7.36%	1.80%	1.69%	2.60%	0.86%
Virginia	894	2.13%	5.58%	0.98%	1.57%	6.50%	1.42%	1.57%	6.01%	1.35%	2.57%	10.17%	2.44%
Washington	928	2.91%	6.69%	1.57%	1.72%	2.81%	0.73%	1.83%	3.25%	0.80%	1.40%	1.52%	0.15%
West Virginia	976	1.02%	1.48%	0.61%	1.33%	2.79%	0.63%	1.43%	2.44%	0.85%	1.13%	1.69%	0.32%
Wisconsin	875	2.29%	3.96%	0.67%	1.37%	3.08%	0.82%	1.37%	3.08%	0.77%	1.60%	4.20%	0.92%
Wyoming	928	1.94%	4.63%	1.50%	1.40%	3.00%	0.59%	1.62%	3.67%	0.80%	0.65%	1.59%	0.28%

[1] Before res.per.nr (WT1*...*WT12) and after res.per.nr (WT1*...*WT13) used demographic variables from screener data for all respondents; nr = nonresponse adjustment.

[2] Before res.per.ps (WT1*...*WT13) and after res.per.ps (WT1*...*WT14) used demographic variables from questionnaire data for all respondents; ps = poststratification adjustment.

[3] Weighted outlier percentage = $100*\sum_k w_{ok}/\sum_k w_k$, where w_{ok} denotes the weight for outliers and w_k denotes the weight for both outliers and nonoutliers.

[4] Outwinsor weight percentage = $100*\sum_k(w_{ek} - b_k)/\sum_k w_k$, where b_k denotes the cutoff point for defining the extreme weight.

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

Appendix H: Evaluation of Calibration Weights: Slippage Rates

Table H.1 2012 NSDUH Slippage Rates: UNITED STATES

Domain		*n*	Initial Total (I)[1]	Final Total (F)[2]	Census Total (C)	(I-C)/C%	(F-C)/C%
Total		68,309	260,057,325	260,057,325	260,057,325	0.00	0.00
Quarter	**Quarter 1**	16,241	64,783,210	64,783,210	64,783,210	0.00	0.00
	Quarter 2	18,090	64,934,336	64,934,336	64,934,336	0.00	0.00
	Quarter 3	17,836	65,092,650	65,092,650	65,092,650	0.00	0.00
	Quarter 4	16,142	65,247,130	65,247,130	65,247,130	0.00	0.00
Age Group	**12-17**	22,473	24,978,268	24,933,051	24,933,051	0.18	0.00
	18-25	22,529	34,362,630	34,589,953	34,589,953	-0.66	0.00
	26-34	6,484	36,900,291	36,911,543	36,911,543	-0.03	0.00
	35-49	9,076	61,346,701	61,035,041	61,035,041	0.51	0.00
	50-64	4,762	62,584,251	60,724,221	60,724,221	3.06	0.00
	65+	2,985	39,885,185	41,863,516	41,863,516	-4.73	0.00
Race	**White**	50,568	195,721,173	205,426,089	205,426,089	-4.72	0.00
	Black or African American	9,021	33,217,417	32,495,008	32,495,008	2.22	0.00
	Other	8,720	31,118,735	22,136,228	22,136,228	40.58	0.00
Hispanicity	**Hispanic or Latino**	11,483	40,865,453	40,299,676	40,299,676	1.40	0.00
	Non-Hispanic or Latino	56,826	219,191,873	219,757,649	219,757,649	-0.26	0.00
Gender	**Male**	32,861	125,856,460	125,892,900	125,892,900	-0.03	0.00
	Female	35,448	134,200,866	134,164,425	134,164,425	0.03	0.00

[1] WT1*...*WT13 (before person poststratification).
[2] WT1*...*WT14 (after person poststratification).

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

Table H.2 2012 NSDUH Slippage Rates: ALABAMA

Domain		*n*	Initial Total (I)[1]	Final Total (F)[2]	Census Total (C)	(I-C)/C%	(F-C)/C%
Total		901	4,005,432	4,005,432	4,005,432	0.00	0.00
Quarter	**Quarter 1**	206	999,184	999,184	999,184	0.00	0.00
	Quarter 2	224	1,000,517	1,000,517	1,000,517	0.00	0.00
	Quarter 3	272	1,002,072	1,002,072	1,002,072	0.00	0.00
	Quarter 4	199	1,003,659	1,003,659	1,003,659	0.00	0.00
Age Group	**12-17**	279	386,242	384,244	384,244	0.52	0.00
	18-25	308	529,857	536,932	536,932	-1.32	0.00
	26-34	84	524,551	538,091	538,091	-2.52	0.00
	35-49	125	925,187	912,523	912,523	1.39	0.00
	50-64	61	909,177	954,182	954,182	-4.72	0.00
	65+	44	730,419	679,461	679,461	7.50	-0.00
Race	**White**	539	2,809,348	2,853,932	2,853,932	-1.56	0.00
	Black or African American	322	1,006,480	1,024,994	1,024,994	-1.81	0.00
	Other	40	189,604	126,507	126,507	49.88	0.00
Hispanicity	**Hispanic or Latino**	29	124,050	137,969	137,969	-10.09	0.00
	Non-Hispanic or Latino	872	3,881,383	3,867,464	3,867,464	0.36	0.00
Gender	**Male**	425	1,906,473	1,907,564	1,907,564	-0.06	-0.00
	Female	476	2,098,959	2,097,868	2,097,868	0.05	0.00

[1] WT1*...*WT13 (before person poststratification).
[2] WT1*...*WT14 (after person poststratification).

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

Table H.3 2012 NSDUH Slippage Rates: ALASKA

Domain		*n*	Initial Total (I)[1]	Final Total (F)[2]	Census Total (C)	(I-C)/C%	(F-C)/C%
Total		829	577,147	577,147	577,147	-0.00	-0.00
Quarter	**Quarter 1**	239	143,696	143,696	143,696	0.00	0.00
	Quarter 2	210	144,125	144,125	144,125	0.00	0.00
	Quarter 3	230	144,508	144,508	144,508	-0.00	0.00
	Quarter 4	150	144,819	144,819	144,819	0.00	0.00
Age Group	**12-17**	233	60,451	60,308	60,308	0.24	-0.00
	18-25	287	83,454	81,619	81,619	2.25	0.00
	26-34	95	86,667	89,969	89,969	-3.67	0.00
	35-49	130	135,363	136,165	136,165	-0.59	-0.00
	50-64	54	138,649	147,819	147,819	-6.20	0.00
	65+	30	72,563	61,269	61,269	18.43	0.00
Race	**White**	557	402,786	402,098	402,098	0.17	-0.00
	Black or African American	24	18,331	19,007	19,007	-3.56	0.00
	Other	248	156,030	156,042	156,042	-0.01	0.00
Hispanicity	**Hispanic or Latino**	63	33,866	32,109	32,109	5.47	-0.00
	Non-Hispanic or Latino	766	543,281	545,038	545,038	-0.32	0.00
Gender	**Male**	401	288,168	293,291	293,292	-1.75	-0.00
	Female	428	288,978	283,855	283,855	1.80	0.00

[1] WT1*...*WT13 (before person poststratification).
[2] WT1*...*WT14 (after person poststratification).

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

Table H.4 2012 NSDUH Slippage Rates: ARIZONA

Domain		*n*	Initial Total (I)[1]	Final Total (F)[2]	Census Total (C)	(I-C)/C%	(F-C)/C%
Total		922	5,362,657	5,362,657	5,362,657	0.00	0.00
Quarter	**Quarter 1**	276	1,332,896	1,332,896	1,332,896	-0.00	0.00
	Quarter 2	184	1,338,264	1,338,264	1,338,264	0.00	0.00
	Quarter 3	228	1,343,420	1,343,420	1,343,420	0.00	0.00
	Quarter 4	234	1,348,077	1,348,077	1,348,077	-0.00	0.00
Age Group	**12-17**	313	541,550	539,163	539,163	0.44	0.00
	18-25	292	723,118	713,584	713,584	1.34	0.00
	26-34	99	741,139	759,644	759,644	-2.44	0.00
	35-49	124	1,203,994	1,209,340	1,209,340	-0.44	0.00
	50-64	63	1,487,519	1,182,994	1,182,994	25.74	0.00
	65+	31	665,337	957,934	957,934	-30.54	0.00
Race	**White**	707	4,333,865	4,585,263	4,585,263	-5.48	0.00
	Black or African American	54	230,315	226,910	226,910	1.50	0.00
	Other	161	798,477	550,484	550,484	45.05	0.00
Hispanicity	**Hispanic or Latino**	378	1,459,037	1,463,787	1,463,787	-0.32	0.00
	Non-Hispanic or Latino	544	3,903,621	3,898,871	3,898,871	0.12	0.00
Gender	**Male**	444	2,617,812	2,617,137	2,617,137	0.03	0.00
	Female	478	2,744,845	2,745,520	2,745,520	-0.02	0.00

[1] WT1*...*WT13 (before person poststratification).
[2] WT1*...*WT14 (after person poststratification).

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

Table H.5 2012 NSDUH Slippage Rates: ARKANSAS

Domain		*n*	Initial Total (I)[1]	Final Total (F)[2]	Census Total (C)	(I-C)/C%	(F-C)/C%
Total		913	2,422,926	2,422,926	2,422,926	0.00	0.00
Quarter	**Quarter 1**	199	604,436	604,436	604,436	0.00	0.00
	Quarter 2	282	605,156	605,156	605,156	0.00	-0.00
	Quarter 3	200	606,124	606,124	606,124	0.00	-0.00
	Quarter 4	232	607,210	607,210	607,210	0.00	0.00
Age Group	**12-17**	312	236,048	236,048	236,048	0.00	-0.00
	18-25	304	310,698	317,735	317,735	-2.21	-0.00
	26-34	87	341,525	334,488	334,488	2.10	0.00
	35-49	103	539,208	545,591	545,591	-1.17	0.00
	50-64	58	543,503	562,157	562,157	-3.32	0.00
	65+	49	451,944	426,908	426,908	5.86	0.00
Race	**White**	719	1,912,686	1,972,067	1,972,067	-3.01	0.00
	Black or African American	136	349,460	355,467	355,467	-1.69	0.00
	Other	58	160,780	95,392	95,392	68.55	-0.00
Hispanicity	**Hispanic or Latino**	80	152,363	140,612	140,612	8.36	0.00
	Non-Hispanic or Latino	833	2,270,564	2,282,314	2,282,314	-0.51	-0.00
Gender	**Male**	409	1,169,794	1,169,794	1,169,794	0.00	0.00
	Female	504	1,253,132	1,253,132	1,253,132	0.00	-0.00

[1] WT1*...*WT13 (before person poststratification).
[2] WT1*...*WT14 (after person poststratification).

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

Table H.6 2012 NSDUH Slippage Rates: CALIFORNIA

Domain		*n*	Initial Total (I)[1]	Final Total (F)[2]	Census Total (C)	(I-C)/C%	(F-C)/C%
Total		3,608	31,424,054	31,424,054	31,424,054	0.00	0.00
Quarter	**Quarter 1**	946	7,823,059	7,823,059	7,823,059	-0.00	0.00
	Quarter 2	904	7,845,198	7,845,198	7,845,198	0.00	0.00
	Quarter 3	950	7,867,268	7,867,268	7,867,268	-0.00	0.00
	Quarter 4	808	7,888,528	7,888,529	7,888,529	-0.00	0.00
Age Group	**12-17**	1,164	3,166,343	3,139,169	3,139,169	0.87	0.00
	18-25	1,187	4,407,880	4,452,711	4,452,711	-1.01	0.00
	26-34	415	4,892,630	4,802,643	4,802,643	1.87	0.00
	35-49	486	7,761,047	7,649,117	7,649,117	1.46	0.00
	50-64	219	6,830,212	6,873,706	6,873,706	-0.63	0.00
	65+	137	4,365,943	4,506,708	4,506,708	-3.12	0.00
Race	**White**	2,300	20,549,639	23,254,991	23,254,991	-11.63	0.00
	Black or African American	257	2,100,386	2,006,847	2,006,847	4.66	-0.00
	Other	1,051	8,774,029	6,162,216	6,162,216	42.38	0.00
Hispanicity	**Hispanic or Latino**	1,645	11,096,233	11,177,945	11,177,945	-0.73	0.00
	Non-Hispanic or Latino	1,963	20,327,821	20,246,109	20,246,109	0.40	0.00
Gender	**Male**	1,735	15,396,931	15,394,395	15,394,395	0.02	0.00
	Female	1,873	16,027,124	16,029,659	16,029,659	-0.02	0.00

[1] WT1*...*WT13 (before person poststratification).
[2] WT1*...*WT14 (after person poststratification).

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

Table H.7 2012 NSDUH Slippage Rates: COLORADO

Domain		*n*	Initial Total (I)[1]	Final Total (F)[2]	Census Total (C)	(I-C)/C%	(F-C)/C%
Total		927	4,260,412	4,260,412	4,260,412	0.00	0.00
Quarter	**Quarter 1**	212	1,058,623	1,058,623	1,058,623	0.00	0.00
	Quarter 2	229	1,063,136	1,063,136	1,063,136	0.00	0.00
	Quarter 3	239	1,067,413	1,067,413	1,067,413	0.00	0.00
	Quarter 4	247	1,071,240	1,071,240	1,071,240	0.00	0.00
Age Group	**12-17**	318	397,001	399,087	399,087	-0.52	0.00
	18-25	301	573,180	560,123	560,123	2.33	0.00
	26-34	83	649,195	660,166	660,166	-1.66	0.00
	35-49	111	1,033,849	1,033,849	1,033,849	-0.00	0.00
	50-64	71	1,013,685	1,010,341	1,010,341	0.33	0.00
	65+	43	593,502	596,846	596,846	-0.56	0.00
Race	**White**	738	3,575,613	3,797,172	3,797,172	-5.83	0.00
	Black or African American	43	164,145	170,118	170,118	-3.51	-0.00
	Other	146	520,653	293,122	293,122	77.62	0.00
Hispanicity	**Hispanic or Latino**	250	820,361	803,430	803,430	2.11	0.00
	Non-Hispanic or Latino	677	3,440,050	3,456,982	3,456,982	-0.49	0.00
Gender	**Male**	447	2,103,568	2,103,702	2,103,702	-0.01	0.00
	Female	480	2,156,843	2,156,709	2,156,709	0.01	0.00

[1] WT1*...*WT13 (before person poststratification).
[2] WT1*...*WT14 (after person poststratification).

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

Table H.8 2012 NSDUH Slippage Rates: CONNECTICUT

Domain		*n*	Initial Total (I)[1]	Final Total (F)[2]	Census Total (C)	(I-C)/C%	(F-C)/C%
Total		964	3,034,241	3,034,241	3,034,241	0.00	0.00
Quarter	**Quarter 1**	251	757,038	757,038	757,038	0.00	0.00
	Quarter 2	201	757,909	757,909	757,909	0.00	0.00
	Quarter 3	248	759,030	759,030	759,030	0.00	0.00
	Quarter 4	264	760,264	760,264	760,264	0.00	0.00
Age Group	**12-17**	289	290,827	289,862	289,862	0.33	0.00
	18-25	330	362,809	373,279	373,279	-2.80	0.00
	26-34	92	390,669	381,164	381,164	2.49	0.00
	35-49	134	727,746	727,746	727,746	0.00	0.00
	50-64	82	886,581	751,019	751,019	18.05	0.00
	65+	37	375,609	511,171	511,171	-26.52	-0.00
Race	**White**	710	2,416,965	2,525,821	2,525,821	-4.31	-0.00
	Black or African American	138	352,646	319,367	319,367	10.42	0.00
	Other	116	264,630	189,053	189,053	39.98	0.00
Hispanicity	**Hispanic or Latino**	175	336,699	390,632	390,632	-13.81	0.00
	Non-Hispanic or Latino	789	2,697,541	2,643,609	2,643,609	2.04	0.00
Gender	**Male**	471	1,466,348	1,460,698	1,460,698	0.39	0.00
	Female	493	1,567,893	1,573,543	1,573,543	-0.36	0.00

[1] WT1*...*WT13 (before person poststratification).
[2] WT1*...*WT14 (after person poststratification).

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

Table H.9 2012 NSDUH Slippage Rates: DELAWARE

Domain		*n*	Initial Total (I)[1]	Final Total (F)[2]	Census Total (C)	(I-C)/C%	(F-C)/C%
Total		893	765,733	765,733	765,733	0.00	0.00
Quarter	**Quarter 1**	236	190,655	190,655	190,655	0.00	0.00
	Quarter 2	208	191,195	191,195	191,195	-0.00	0.00
	Quarter 3	269	191,712	191,712	191,712	-0.00	0.00
	Quarter 4	180	192,170	192,170	192,170	0.00	0.00
Age Group	**12-17**	306	69,481	68,973	68,973	0.74	0.00
	18-25	244	100,984	102,090	102,090	-1.08	0.00
	26-34	83	103,452	101,033	101,033	2.39	0.00
	35-49	136	169,005	173,393	173,393	-2.53	0.00
	50-64	76	202,506	183,801	183,801	10.18	0.00
	65+	48	120,304	136,443	136,443	-11.83	0.00
Race	**White**	592	549,846	560,218	560,218	-1.85	0.00
	Black or African American	201	157,264	160,461	160,461	-1.99	0.00
	Other	100	58,622	45,054	45,054	30.12	0.00
Hispanicity	**Hispanic or Latino**	133	63,130	57,416	57,416	9.95	0.00
	Non-Hispanic or Latino	760	702,603	708,317	708,317	-0.81	0.00
Gender	**Male**	429	364,315	363,950	363,950	0.10	0.00
	Female	464	401,418	401,783	401,783	-0.09	0.00

[1] WT1*...*WT13 (before person poststratification).
[2] WT1*...*WT14 (after person poststratification).

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

Table H.10 2012 NSDUH Slippage Rates: DISTRICT OF COLUMBIA

Domain		*n*	Initial Total (I)[1]	Final Total (F)[2]	Census Total (C)	(I-C)/C%	(F-C)/C%
Total		962	544,627	544,627	544,627	0.00	0.00
Quarter	**Quarter 1**	256	135,282	135,282	135,282	0.00	0.00
	Quarter 2	204	135,824	135,824	135,824	0.00	-0.00
	Quarter 3	242	136,430	136,430	136,430	0.00	0.00
	Quarter 4	260	137,091	137,091	137,091	0.00	0.00
Age Group	**12-17**	329	31,338	31,338	31,338	0.00	0.00
	18-25	341	95,383	95,556	95,556	-0.18	0.00
	26-34	100	124,893	122,971	122,971	1.56	0.00
	35-49	105	117,759	121,246	121,246	-2.88	-0.00
	50-64	52	107,379	104,024	104,024	3.23	0.00
	65+	35	67,875	69,493	69,493	-2.33	0.00
Race	**White**	343	222,189	242,433	242,433	-8.35	-0.00
	Black or African American	507	264,730	264,519	264,519	0.08	-0.00
	Other	112	57,708	37,675	37,675	53.17	0.00
Hispanicity	**Hispanic or Latino**	110	50,163	50,571	50,571	-0.81	0.00
	Non-Hispanic or Latino	852	494,465	494,057	494,057	0.08	0.00
Gender	**Male**	408	251,798	252,737	252,737	-0.37	0.00
	Female	554	292,829	291,890	291,890	0.32	0.00

[1] WT1*...*WT13 (before person poststratification).
[2] WT1*...*WT14 (after person poststratification).

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

Table H.11 2012 NSDUH Slippage Rates: FLORIDA

Domain		*n*	Initial Total (I)[1]	Final Total (F)[2]	Census Total (C)	(I-C)/C%	(F-C)/C%
Total		3,544	16,382,543	16,382,543	16,382,543	0.00	0.00
Quarter	**Quarter 1**	836	4,074,256	4,074,256	4,074,256	0.00	0.00
	Quarter 2	992	4,088,179	4,088,179	4,088,179	0.00	0.00
	Quarter 3	901	4,102,828	4,102,828	4,102,828	0.00	0.00
	Quarter 4	815	4,117,279	4,117,279	4,117,279	0.00	0.00
Age Group	**12-17**	1,195	1,388,809	1,383,312	1,383,312	0.40	0.00
	18-25	1,211	1,970,708	1,970,724	1,970,724	-0.00	0.00
	26-34	279	2,071,810	2,080,130	2,080,130	-0.40	0.00
	35-49	444	3,703,806	3,680,312	3,680,312	0.64	0.00
	50-64	255	4,279,182	3,823,676	3,823,676	11.91	0.00
	65+	160	2,968,228	3,444,389	3,444,389	-13.82	0.00
Race	**White**	2,427	12,427,353	13,089,877	13,089,877	-5.06	0.00
	Black or African American	750	2,681,193	2,517,863	2,517,863	6.49	0.00
	Other	367	1,273,997	774,803	774,803	64.43	0.00
Hispanicity	**Hispanic or Latino**	1,088	3,761,435	3,686,282	3,686,282	2.04	0.00
	Non-Hispanic or Latino	2,456	12,621,107	12,696,261	12,696,261	-0.59	0.00
Gender	**Male**	1,725	7,864,363	7,869,345	7,869,345	-0.06	0.00
	Female	1,819	8,518,180	8,513,198	8,513,198	0.06	0.00

[1] WT1*...*WT13 (before person poststratification).
[2] WT1*...*WT14 (after person poststratification).

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

Table H.12 2012 NSDUH Slippage Rates: GEORGIA

Domain		*n*	Initial Total (I)[1]	Final Total (F)[2]	Census Total (C)	(I-C)/C%	(F-C)/C%
Total		885	8,040,955	8,040,955	8,040,955	-0.00	-0.00
Quarter	**Quarter 1**	190	2,000,123	2,000,123	2,000,123	0.00	0.00
	Quarter 2	261	2,007,469	2,007,469	2,007,469	-0.00	0.00
	Quarter 3	241	2,013,944	2,013,944	2,013,944	0.00	0.00
	Quarter 4	193	2,019,418	2,019,418	2,019,418	-0.00	-0.00
Age Group	**12-17**	284	819,197	828,383	828,383	-1.11	0.00
	18-25	281	1,090,125	1,096,583	1,096,583	-0.59	0.00
	26-34	102	1,197,151	1,173,161	1,173,161	2.04	0.00
	35-49	115	2,031,171	2,029,627	2,029,627	0.08	0.00
	50-64	68	2,009,902	1,805,476	1,805,476	11.32	-0.00
	65+	35	893,409	1,107,725	1,107,725	-19.35	0.00
Race	**White**	519	5,070,473	5,161,502	5,161,502	-1.76	-0.00
	Black or African American	306	2,375,921	2,427,523	2,427,523	-2.13	0.00
	Other	60	594,562	451,930	451,930	31.56	0.00
Hispanicity	**Hispanic or Latino**	76	671,135	645,424	645,424	3.98	-0.00
	Non-Hispanic or Latino	809	7,369,820	7,395,530	7,395,530	-0.35	0.00
Gender	**Male**	410	3,830,159	3,830,159	3,830,159	-0.00	0.00
	Female	475	4,210,796	4,210,796	4,210,796	-0.00	-0.00

[1] WT1*...*WT13 (before person poststratification).
[2] WT1*...*WT14 (after person poststratification).

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

Table H.13 2012 NSDUH Slippage Rates: HAWAII

Domain		*n*	Initial Total (I)[1]	Final Total (F)[2]	Census Total (C)	(I-C)/C%	(F-C)/C%
Total		938	1,130,820	1,130,820	1,130,820	-0.00	0.00
Quarter	**Quarter 1**	163	281,692	281,692	281,692	-0.00	-0.00
	Quarter 2	273	282,365	282,365	282,365	0.00	0.00
	Quarter 3	268	283,046	283,046	283,046	-0.00	0.00
	Quarter 4	234	283,719	283,719	283,719	0.00	0.00
Age Group	**12-17**	283	96,580	96,933	96,933	-0.36	0.00
	18-25	299	140,308	140,267	140,267	0.03	-0.00
	26-34	106	157,536	159,898	159,898	-1.48	-0.00
	35-49	124	251,531	252,207	252,207	-0.27	0.00
	50-64	75	295,019	274,763	274,763	7.37	0.00
	65+	51	189,846	206,753	206,753	-8.18	-0.00
Race	**White**	202	256,177	292,399	292,399	-12.39	0.00
	Black or African American	16	17,755	16,815	16,815	5.59	0.00
	Other	720	856,889	821,607	821,607	4.29	0.00
Hispanicity	**Hispanic or Latino**	144	119,287	90,966	90,966	31.13	0.00
	Non-Hispanic or Latino	794	1,011,533	1,039,854	1,039,854	-2.72	0.00
Gender	**Male**	424	548,412	551,486	551,486	-0.56	0.00
	Female	514	582,408	579,334	579,334	0.53	0.00

[1] WT1*...*WT13 (before person poststratification).
[2] WT1*...*WT14 (after person poststratification).

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

Table H.14 2012 NSDUH Slippage Rates: IDAHO

Domain		*n*	Initial Total (I)[1]	Final Total (F)[2]	Census Total (C)	(I-C)/C%	(F-C)/C%
Total		921	1,288,271	1,288,271	1,288,271	-0.00	0.00
Quarter	**Quarter 1**	206	320,747	320,747	320,747	-0.00	0.00
	Quarter 2	242	321,662	321,663	321,663	-0.00	0.00
	Quarter 3	252	322,543	322,543	322,543	0.00	0.00
	Quarter 4	221	323,318	323,318	323,318	0.00	0.00
Age Group	**12-17**	346	139,966	139,664	139,664	0.22	0.00
	18-25	258	170,906	173,325	173,325	-1.40	0.00
	26-34	79	188,628	185,025	185,025	1.95	0.00
	35-49	133	281,654	286,017	286,017	-1.53	0.00
	50-64	70	323,116	296,048	296,048	9.14	0.00
	65+	35	184,000	208,192	208,192	-11.62	0.00
Race	**White**	856	1,211,072	1,216,003	1,216,003	-0.41	0.00
	Black or African American	7	9,536	8,479	8,479	12.48	0.00
	Other	58	67,663	63,789	63,789	6.07	0.00
Hispanicity	**Hispanic or Latino**	134	134,045	131,036	131,036	2.30	0.00
	Non-Hispanic or Latino	787	1,154,226	1,157,234	1,157,234	-0.26	0.00
Gender	**Male**	447	626,893	636,632	636,632	-1.53	0.00
	Female	474	661,378	651,639	651,639	1.49	0.00

[1] WT1*...*WT13 (before person poststratification).
[2] WT1*...*WT14 (after person poststratification).

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

Table H.15 2012 NSDUH Slippage Rates: ILLINOIS

Domain		*n*	Initial Total (I)[1]	Final Total (F)[2]	Census Total (C)	(I-C)/C%	(F-C)/C%
Total		3,672	10,680,769	10,680,769	10,680,769	0.00	0.00
Quarter	**Quarter 1**	830	2,666,262	2,666,262	2,666,262	0.00	0.00
	Quarter 2	1,050	2,668,545	2,668,545	2,668,545	0.00	0.00
	Quarter 3	954	2,671,399	2,671,399	2,671,399	0.00	0.00
	Quarter 4	838	2,674,563	2,674,563	2,674,563	0.00	0.00
Age Group	**12-17**	1,236	1,057,318	1,051,880	1,051,880	0.52	0.00
	18-25	1,175	1,389,069	1,393,334	1,393,334	-0.31	0.00
	26-34	371	1,587,204	1,581,865	1,581,865	0.34	0.00
	35-49	499	2,556,368	2,546,492	2,546,492	0.39	0.00
	50-64	246	2,597,636	2,472,856	2,472,856	5.05	0.00
	65+	145	1,493,174	1,634,341	1,634,341	-8.64	0.00
Race	**White**	2,607	8,204,855	8,427,752	8,427,752	-2.64	-0.00
	Black or African American	595	1,512,457	1,510,702	1,510,702	0.12	0.00
	Other	470	963,457	742,315	742,315	29.79	0.00
Hispanicity	**Hispanic or Latino**	740	1,599,360	1,580,860	1,580,860	1.17	0.00
	Non-Hispanic or Latino	2,932	9,081,409	9,099,909	9,099,909	-0.20	0.00
Gender	**Male**	1,703	5,137,404	5,173,757	5,173,757	-0.70	0.00
	Female	1,969	5,543,365	5,507,012	5,507,012	0.66	0.00

[1] WT1*...*WT13 (before person poststratification).
[2] WT1*...*WT14 (after person poststratification).

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

Table H.16 2012 NSDUH Slippage Rates: INDIANA

Domain		*n*	Initial Total (I)[1]	Final Total (F)[2]	Census Total (C)	(I-C)/C%	(F-C)/C%
Total		911	5,391,372	5,391,372	5,391,372	0.00	0.00
Quarter	**Quarter 1**	219	1,344,832	1,344,832	1,344,832	-0.00	0.00
	Quarter 2	242	1,346,665	1,346,665	1,346,665	0.00	0.00
	Quarter 3	242	1,348,828	1,348,828	1,348,828	0.00	0.00
	Quarter 4	208	1,351,048	1,351,048	1,351,048	0.00	0.00
Age Group	**12-17**	269	538,211	540,535	540,535	-0.43	0.00
	18-25	329	732,677	731,531	731,531	0.16	0.00
	26-34	88	722,901	736,380	736,380	-1.83	0.00
	35-49	113	1,265,162	1,250,505	1,250,505	1.17	0.00
	50-64	59	1,153,559	1,278,242	1,278,242	-9.75	0.00
	65+	53	978,862	854,179	854,179	14.60	0.00
Race	**White**	716	4,551,281	4,730,440	4,730,440	-3.79	0.00
	Black or African American	141	501,982	472,553	472,553	6.23	0.00
	Other	54	338,109	188,380	188,380	79.48	0.00
Hispanicity	**Hispanic or Latino**	54	289,829	293,430	293,430	-1.23	0.00
	Non-Hispanic or Latino	857	5,101,543	5,097,943	5,097,943	0.07	0.00
Gender	**Male**	425	2,619,075	2,619,075	2,619,075	-0.00	0.00
	Female	486	2,772,297	2,772,297	2,772,297	0.00	0.00

[1] WT1*...*WT13 (before person poststratification).
[2] WT1*...*WT14 (after person poststratification).

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

Table H.17 2012 NSDUH Slippage Rates: IOWA

Domain		*n*	Initial Total (I)[1]	Final Total (F)[2]	Census Total (C)	(I-C)/C%	(F-C)/C%
Total		900	2,550,660	2,550,660	2,550,660	-0.00	0.00
Quarter	**Quarter 1**	204	636,274	636,274	636,274	-0.00	0.00
	Quarter 2	246	637,022	637,022	637,022	0.00	0.00
	Quarter 3	248	638,078	638,078	638,078	0.00	0.00
	Quarter 4	202	639,286	639,286	639,286	0.00	0.00
Age Group	**12-17**	314	241,376	241,376	241,376	0.00	0.00
	18-25	282	341,260	347,524	347,524	-1.80	0.00
	26-34	86	372,570	347,794	347,794	7.12	0.00
	35-49	127	540,581	553,408	553,408	-2.32	0.00
	50-64	52	603,902	613,358	613,358	-1.54	0.00
	65+	39	450,972	447,200	447,200	0.84	-0.00
Race	**White**	806	2,360,329	2,389,950	2,389,950	-1.24	0.00
	Black or African American	32	83,687	70,591	70,591	18.55	0.00
	Other	62	106,644	90,119	90,119	18.34	0.00
Hispanicity	**Hispanic or Latino**	52	123,315	114,331	114,331	7.86	0.00
	Non-Hispanic or Latino	848	2,427,345	2,436,329	2,436,329	-0.37	0.00
Gender	**Male**	419	1,255,910	1,255,910	1,255,910	-0.00	0.00
	Female	481	1,294,750	1,294,750	1,294,750	0.00	0.00

[1] WT1*...*WT13 (before person poststratification).
[2] WT1*...*WT14 (after person poststratification).

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

Table H.18 2012 NSDUH Slippage Rates: KANSAS

Domain		*n*	Initial Total (I)[1]	Final Total (F)[2]	Census Total (C)	(I-C)/C%	(F-C)/C%
Total		912	2,336,047	2,336,047	2,336,047	0.00	0.00
Quarter	**Quarter 1**	253	582,418	582,418	582,418	-0.00	0.00
	Quarter 2	211	583,336	583,336	583,336	0.00	0.00
	Quarter 3	245	584,511	584,511	584,511	-0.00	-0.00
	Quarter 4	203	585,782	585,782	585,782	0.00	0.00
Age Group	**12-17**	341	235,155	236,447	236,447	-0.55	0.00
	18-25	264	320,921	322,233	322,233	-0.41	0.00
	26-34	83	337,567	335,039	335,039	0.75	0.00
	35-49	119	515,109	515,034	515,034	0.01	0.00
	50-64	63	571,406	550,930	550,930	3.72	0.00
	65+	42	355,890	376,365	376,365	-5.44	0.00
Race	**White**	768	2,005,386	2,066,667	2,066,667	-2.97	0.00
	Black or African American	54	114,455	132,674	132,674	-13.73	0.00
	Other	90	216,206	136,707	136,707	58.15	0.00
Hispanicity	**Hispanic or Latino**	109	225,691	222,044	222,044	1.64	0.00
	Non-Hispanic or Latino	803	2,110,356	2,114,003	2,114,003	-0.17	-0.00
Gender	**Male**	443	1,132,651	1,142,332	1,142,332	-0.85	0.00
	Female	469	1,203,396	1,193,715	1,193,716	0.81	-0.00

[1] WT1*...*WT13 (before person poststratification).
[2] WT1*...*WT14 (after person poststratification).

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

Table H.19 2012 NSDUH Slippage Rates: KENTUCKY

Domain		*n*	Initial Total (I)[1]	Final Total (F)[2]	Census Total (C)	(I-C)/C%	(F-C)/C%
Total		927	3,607,428	3,607,428	3,607,428	0.00	-0.00
Quarter	**Quarter 1**	203	900,330	900,330	900,330	0.00	0.00
	Quarter 2	267	901,238	901,238	901,238	0.00	0.00
	Quarter 3	215	902,360	902,360	902,360	0.00	0.00
	Quarter 4	242	903,500	903,500	903,500	0.00	-0.00
Age Group	**12-17**	319	343,247	339,442	339,442	1.12	-0.00
	18-25	297	453,476	461,440	461,441	-1.73	-0.00
	26-34	90	527,834	488,287	488,287	8.10	0.00
	35-49	118	852,711	849,738	849,738	0.35	0.00
	50-64	65	945,037	876,308	876,308	7.84	0.00
	65+	38	485,123	592,212	592,213	-18.08	-0.00
Race	**White**	773	3,205,547	3,239,757	3,239,757	-1.06	-0.00
	Black or African American	103	271,780	269,066	269,066	1.01	0.00
	Other	51	130,101	98,605	98,605	31.94	0.00
Hispanicity	**Hispanic or Latino**	41	104,264	96,594	96,594	7.94	0.00
	Non-Hispanic or Latino	886	3,503,164	3,510,834	3,510,834	-0.22	-0.00
Gender	**Male**	454	1,745,937	1,742,383	1,742,383	0.20	-0.00
	Female	473	1,861,490	1,865,044	1,865,044	-0.19	-0.00

[1] WT1*...*WT13 (before person poststratification).
[2] WT1*...*WT14 (after person poststratification).

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

Table H.20 2012 NSDUH Slippage Rates: LOUISIANA

Domain		*n*	Initial Total (I)[1]	Final Total (F)[2]	Census Total (C)	(I-C)/C%	(F-C)/C%
Total		901	3,745,460	3,745,460	3,745,460	0.00	0.00
Quarter	**Quarter 1**	200	933,816	933,816	933,816	0.00	0.00
	Quarter 2	253	935,395	935,395	935,395	-0.00	0.00
	Quarter 3	243	937,199	937,199	937,199	0.00	0.00
	Quarter 4	205	939,051	939,051	939,051	0.00	0.00
Age Group	**12-17**	292	367,661	367,661	367,661	0.00	-0.00
	18-25	299	516,355	523,034	523,034	-1.28	0.00
	26-34	86	565,130	558,452	558,452	1.20	0.00
	35-49	117	822,039	837,015	837,015	-1.79	0.00
	50-64	72	981,927	884,266	884,266	11.04	0.00
	65+	35	492,349	575,033	575,033	-14.38	0.00
Race	**White**	532	2,312,694	2,456,732	2,456,732	-5.86	0.00
	Black or African American	303	1,159,687	1,153,099	1,153,099	0.57	0.00
	Other	66	273,080	135,630	135,630	101.34	0.00
Hispanicity	**Hispanic or Latino**	50	230,599	160,281	160,281	43.87	0.00
	Non-Hispanic or Latino	851	3,514,861	3,585,179	3,585,179	-1.96	0.00
Gender	**Male**	399	1,785,505	1,785,505	1,785,505	0.00	0.00
	Female	502	1,959,955	1,959,955	1,959,955	0.00	0.00

[1] WT1*...*WT13 (before person poststratification).
[2] WT1*...*WT14 (after person poststratification).

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

Table H.21 2012 NSDUH Slippage Rates: MAINE

Domain		*n*	Initial Total (I)[1]	Final Total (F)[2]	Census Total (C)	(I-C)/C%	(F-C)/C%
Total		938	1,145,565	1,145,565	1,145,565	-0.00	0.00
Quarter	**Quarter 1**	237	286,125	286,125	286,125	-0.00	0.00
	Quarter 2	228	286,317	286,317	286,317	0.00	0.00
	Quarter 3	253	286,508	286,508	286,508	-0.00	0.00
	Quarter 4	220	286,615	286,615	286,615	0.00	0.00
Age Group	**12-17**	307	96,759	95,666	95,666	1.14	0.00
	18-25	320	125,098	129,416	129,416	-3.34	0.00
	26-34	81	136,192	131,286	131,286	3.74	0.00
	35-49	112	257,425	259,106	259,106	-0.65	0.00
	50-64	65	287,923	310,862	310,862	-7.38	0.00
	65+	53	242,169	219,230	219,230	10.46	0.00
Race	**White**	861	1,092,309	1,099,016	1,099,016	-0.61	0.00
	Black or African American	21	18,564	25,248	12,610	47.21	100.21
	Other	56	34,693	21,302	33,939	2.22	-37.24
Hispanicity	**Hispanic or Latino**	28	16,957	13,687	13,687	23.89	0.00
	Non-Hispanic or Latino	910	1,128,609	1,131,878	1,131,878	-0.29	0.00
Gender	**Male**	456	560,379	555,720	555,720	0.84	0.00
	Female	482	585,186	589,846	589,846	-0.79	0.00

[1] WT1*...*WT13 (before person poststratification).
[2] WT1*...*WT14 (after person poststratification).

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

Table H.22 2012 NSDUH Slippage Rates: MARYLAND

Domain		*n*	Initial Total (I)[1]	Final Total (F)[2]	Census Total (C)	(I-C)/C%	(F-C)/C%
Total		874	4,905,827	4,905,827	4,905,827	-0.00	0.00
Quarter	**Quarter 1**	228	1,222,175	1,222,175	1,222,175	0.00	0.00
	Quarter 2	220	1,225,004	1,225,004	1,225,004	-0.00	0.00
	Quarter 3	217	1,227,919	1,227,919	1,227,919	-0.00	0.00
	Quarter 4	209	1,230,729	1,230,729	1,230,729	0.00	0.00
Age Group	**12-17**	281	456,705	458,368	458,368	-0.36	0.00
	18-25	295	605,664	631,975	631,975	-4.16	0.00
	26-34	82	733,808	698,875	698,875	5.00	0.00
	35-49	123	1,160,444	1,196,316	1,196,316	-3.00	0.00
	50-64	53	1,159,101	1,180,907	1,180,907	-1.85	0.00
	65+	40	790,105	739,386	739,386	6.86	0.00
Race	**White**	517	2,860,779	3,047,799	3,047,799	-6.14	0.00
	Black or African American	246	1,424,232	1,435,721	1,435,721	-0.80	0.00
	Other	111	620,816	422,307	422,307	47.01	0.00
Hispanicity	**Hispanic or Latino**	65	393,167	390,124	390,124	0.78	0.00
	Non-Hispanic or Latino	809	4,512,660	4,515,703	4,515,703	-0.07	0.00
Gender	**Male**	415	2,331,715	2,331,715	2,331,715	-0.00	0.00
	Female	459	2,574,111	2,574,111	2,574,111	-0.00	0.00

[1] WT1*...*WT13 (before person poststratification).
[2] WT1*...*WT14 (after person poststratification).

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

Table H.23 2012 NSDUH Slippage Rates: MASSACHUSETTS

Domain		*n*	Initial Total (I)[1]	Final Total (F)[2]	Census Total (C)	(I-C)/C%	(F-C)/C%
Total		955	5,661,530	5,661,530	5,661,530	-0.00	0.00
Quarter	**Quarter 1**	192	1,410,999	1,410,999	1,410,999	-0.00	0.00
	Quarter 2	211	1,413,753	1,413,753	1,413,753	0.00	0.00
	Quarter 3	248	1,416,840	1,416,840	1,416,840	0.00	0.00
	Quarter 4	304	1,419,938	1,419,938	1,419,938	0.00	-0.00
Age Group	**12-17**	310	495,413	493,395	493,395	0.41	0.00
	18-25	307	758,927	772,360	772,360	-1.74	-0.00
	26-34	93	791,512	786,066	786,066	0.69	-0.00
	35-49	135	1,312,441	1,339,344	1,339,344	-2.01	0.00
	50-64	70	1,519,568	1,350,049	1,350,049	12.56	0.00
	65+	40	783,671	920,318	920,318	-14.85	-0.00
Race	**White**	771	4,669,770	4,792,328	4,792,328	-2.56	0.00
	Black or African American	80	437,706	409,776	422,413	3.62	-2.99
	Other	104	554,054	459,427	446,790	24.01	2.83
Hispanicity	**Hispanic or Latino**	151	553,293	517,569	517,569	6.90	0.00
	Non-Hispanic or Latino	804	5,108,236	5,143,961	5,143,961	-0.69	-0.00
Gender	**Male**	477	2,714,719	2,713,214	2,713,214	0.06	-0.00
	Female	478	2,946,811	2,948,316	2,948,316	-0.05	0.00

[1] WT1*...*WT13 (before person poststratification).
[2] WT1*...*WT14 (after person poststratification).

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

Table H.24 2012 NSDUH Slippage Rates: MICHIGAN

Domain		*n*	Initial Total (I)[1]	Final Total (F)[2]	Census Total (C)	(I-C)/C%	(F-C)/C%
Total		3,655	8,319,227	8,319,227	8,319,227	0.00	0.00
Quarter	**Quarter 1**	850	2,076,801	2,076,801	2,076,801	0.00	0.00
	Quarter 2	1,101	2,078,568	2,078,568	2,078,568	0.00	-0.00
	Quarter 3	955	2,080,800	2,080,800	2,080,800	0.00	0.00
	Quarter 4	749	2,083,057	2,083,057	2,083,057	0.00	0.00
Age Group	**12-17**	1,175	808,270	809,401	809,401	-0.14	0.00
	18-25	1,230	1,109,543	1,101,787	1,101,787	0.70	0.00
	26-34	319	1,020,053	1,040,667	1,040,667	-1.98	0.00
	35-49	488	1,877,606	1,895,536	1,895,536	-0.95	0.00
	50-64	276	2,203,039	2,065,859	2,065,859	6.64	-0.00
	65+	167	1,300,716	1,405,976	1,405,976	-7.49	-0.00
Race	**White**	2,825	6,672,978	6,775,719	6,775,719	-1.52	-0.00
	Black or African American	556	1,142,446	1,132,805	1,132,805	0.85	-0.00
	Other	274	503,802	410,703	410,703	22.67	0.00
Hispanicity	**Hispanic or Latino**	230	319,193	332,530	332,530	-4.01	0.00
	Non-Hispanic or Latino	3,425	8,000,033	7,986,697	7,986,697	0.17	0.00
Gender	**Male**	1,849	4,028,991	4,029,940	4,029,940	-0.02	0.00
	Female	1,806	4,290,236	4,289,287	4,289,287	0.02	-0.00

[1] WT1*...*WT13 (before person poststratification).
[2] WT1*...*WT14 (after person poststratification).

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

Table H.25 2012 NSDUH Slippage Rates: MINNESOTA

Domain		*n*	Initial Total (I)[1]	Final Total (F)[2]	Census Total (C)	(I-C)/C%	(F-C)/C%
Total		902	4,470,678	4,470,679	4,470,679	-0.00	0.00
Quarter	**Quarter 1**	263	1,114,212	1,114,212	1,114,212	0.00	0.00
	Quarter 2	210	1,116,468	1,116,468	1,116,468	0.00	0.00
	Quarter 3	202	1,118,861	1,118,861	1,118,861	-0.00	0.00
	Quarter 4	227	1,121,138	1,121,138	1,121,138	0.00	0.00
Age Group	**12-17**	325	425,742	424,357	424,357	0.33	0.00
	18-25	263	553,684	571,203	571,203	-3.07	0.00
	26-34	106	670,384	658,358	658,358	1.83	0.00
	35-49	122	1,035,858	1,035,209	1,035,209	0.06	0.00
	50-64	45	911,798	1,081,348	1,081,348	-15.68	0.00
	65+	41	873,213	700,204	700,204	24.71	-0.00
Race	**White**	747	3,928,755	3,942,889	3,942,889	-0.36	0.00
	Black or African American	52	234,645	218,218	218,218	7.53	-0.00
	Other	103	307,279	309,572	309,572	-0.74	0.00
Hispanicity	**Hispanic or Latino**	69	194,638	185,215	185,215	5.09	0.00
	Non-Hispanic or Latino	833	4,276,040	4,285,464	4,285,464	-0.22	0.00
Gender	**Male**	456	2,205,477	2,205,477	2,205,477	0.00	0.00
	Female	446	2,265,202	2,265,202	2,265,202	-0.00	0.00

[1] WT1*...*WT13 (before person poststratification).
[2] WT1*...*WT14 (after person poststratification).

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

Table H.26 2012 NSDUH Slippage Rates: MISSISSIPPI

Domain		*n*	Initial Total (I)[1]	Final Total (F)[2]	Census Total (C)	(I-C)/C%	(F-C)/C%
Total		901	2,419,811	2,419,811	2,419,811	0.00	-0.00
Quarter	**Quarter 1**	227	603,821	603,821	603,821	0.00	-0.00
	Quarter 2	204	604,547	604,547	604,547	0.00	0.00
	Quarter 3	274	605,332	605,332	605,332	0.00	-0.00
	Quarter 4	196	606,111	606,111	606,111	0.00	-0.00
Age Group	**12-17**	310	245,489	248,208	248,208	-1.10	-0.00
	18-25	297	335,636	336,270	336,270	-0.19	0.00
	26-34	78	352,700	333,320	333,320	5.81	0.00
	35-49	115	515,908	547,591	547,591	-5.79	0.00
	50-64	68	640,242	564,294	564,294	13.46	0.00
	65+	33	329,836	390,127	390,127	-15.45	-0.00
Race	**White**	450	1,466,616	1,493,746	1,493,746	-1.82	-0.00
	Black or African American	397	860,236	869,000	869,000	-1.01	0.00
	Other	54	92,959	57,064	57,065	62.90	-0.00
Hispanicity	**Hispanic or Latino**	35	65,411	59,333	59,333	10.24	0.00
	Non-Hispanic or Latino	866	2,354,400	2,360,478	2,360,478	-0.26	-0.00
Gender	**Male**	408	1,140,730	1,143,501	1,143,501	-0.24	0.00
	Female	493	1,279,081	1,276,310	1,276,310	0.22	-0.00

[1] WT1*...*WT13 (before person poststratification).
[2] WT1*...*WT14 (after person poststratification).

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

Table H.27 2012 NSDUH Slippage Rates: MISSOURI

Domain		*n*	Initial Total (I)[1]	Final Total (F)[2]	Census Total (C)	(I-C)/C%	(F-C)/C%
Total		915	4,985,565	4,985,565	4,985,565	-0.00	0.00
Quarter	**Quarter 1**	190	1,244,091	1,244,091	1,244,091	-0.00	0.00
	Quarter 2	286	1,245,468	1,245,468	1,245,468	0.00	0.00
	Quarter 3	227	1,247,132	1,247,132	1,247,132	0.00	0.00
	Quarter 4	212	1,248,874	1,248,874	1,248,874	0.00	0.00
Age Group	**12-17**	313	480,051	474,059	474,059	1.26	0.00
	18-25	286	643,657	654,819	654,819	-1.70	0.00
	26-34	99	688,579	692,752	692,752	-0.60	0.00
	35-49	114	1,117,774	1,117,411	1,117,411	0.03	0.00
	50-64	67	1,361,391	1,199,689	1,199,689	13.48	0.00
	65+	36	694,113	846,836	846,836	-18.03	-0.00
Race	**White**	755	4,166,191	4,238,678	4,238,678	-1.71	0.00
	Black or African American	100	579,156	550,971	550,971	5.12	0.00
	Other	60	240,219	195,916	195,916	22.61	0.00
Hispanicity	**Hispanic or Latino**	38	150,798	161,457	161,457	-6.60	0.00
	Non-Hispanic or Latino	877	4,834,767	4,824,108	4,824,108	0.22	0.00
Gender	**Male**	437	2,422,297	2,405,500	2,405,500	0.70	0.00
	Female	478	2,563,268	2,580,065	2,580,065	-0.65	0.00

[1] WT1*...*WT13 (before person poststratification).
[2] WT1*...*WT14 (after person poststratification).

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

Table H.28 2012 NSDUH Slippage Rates: MONTANA

Domain		*n*	Initial Total (I)[1]	Final Total (F)[2]	Census Total (C)	(I-C)/C%	(F-C)/C%
Total		876	842,009	842,009	842,009	0.00	0.00
Quarter	**Quarter 1**	267	209,828	209,828	209,828	0.00	0.00
	Quarter 2	181	210,273	210,274	210,274	-0.00	0.00
	Quarter 3	200	210,739	210,739	210,739	-0.00	0.00
	Quarter 4	228	211,169	211,169	211,169	-0.00	0.00
Age Group	**12-17**	313	73,150	73,775	73,775	-0.85	0.00
	18-25	280	107,786	107,843	107,843	-0.05	0.00
	26-34	78	108,340	110,864	110,864	-2.28	0.00
	35-49	110	175,600	173,862	173,862	1.00	0.00
	50-64	62	248,252	222,066	222,066	11.79	0.00
	65+	33	128,881	153,600	153,600	-16.09	0.00
Race	**White**	774	771,013	766,472	766,472	0.59	0.00
	Black or African American	5	2,451	4,214	4,214	-41.83	-0.00
	Other	97	68,545	71,323	71,323	-3.90	0.00
Hispanicity	**Hispanic or Latino**	39	26,810	23,076	23,076	16.18	0.00
	Non-Hispanic or Latino	837	815,199	818,933	818,933	-0.46	0.00
Gender	**Male**	449	419,133	419,133	419,133	0.00	0.00
	Female	427	422,876	422,876	422,876	0.00	0.00

[1] WT1*...*WT13 (before person poststratification).
[2] WT1*...*WT14 (after person poststratification).

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

Table H.29 2012 NSDUH Slippage Rates: NEBRASKA

Domain		*n*	Initial Total (I)[1]	Final Total (F)[2]	Census Total (C)	(I-C)/C%	(F-C)/C%
Total		940	1,511,302	1,511,302	1,511,302	0.00	0.00
Quarter	**Quarter 1**	227	376,592	376,592	376,592	-0.00	0.00
	Quarter 2	225	377,349	377,349	377,349	-0.00	0.00
	Quarter 3	252	378,224	378,224	378,224	-0.00	0.00
	Quarter 4	236	379,137	379,137	379,137	0.00	0.00
Age Group	**12-17**	277	146,413	147,378	147,378	-0.66	0.00
	18-25	365	209,677	205,771	205,771	1.90	0.00
	26-34	88	219,377	222,316	222,316	-1.32	0.00
	35-49	114	332,700	334,018	334,018	-0.39	0.00
	50-64	61	402,902	356,051	356,051	13.16	0.00
	65+	35	200,233	245,767	245,767	-18.53	0.00
Race	**White**	841	1,351,635	1,376,864	1,376,864	-1.83	0.00
	Black or African American	32	67,187	65,811	65,811	2.09	0.00
	Other	67	92,480	68,628	68,628	34.76	0.00
Hispanicity	**Hispanic or Latino**	106	126,869	124,861	124,861	1.61	0.00
	Non-Hispanic or Latino	834	1,384,433	1,386,441	1,386,441	-0.14	0.00
Gender	**Male**	472	743,166	743,167	743,167	-0.00	0.00
	Female	468	768,136	768,136	768,136	0.00	0.00

[1] WT1*...*WT13 (before person poststratification).
[2] WT1*...*WT14 (after person poststratification).

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

Table H.30 2012 NSDUH Slippage Rates: NEVADA

Domain		*n*	Initial Total (I)[1]	Final Total (F)[2]	Census Total (C)	(I-C)/C%	(F-C)/C%
Total		903	2,278,656	2,278,656	2,278,656	0.00	0.00
Quarter	**Quarter 1**	233	566,215	566,215	566,215	-0.00	0.00
	Quarter 2	219	568,619	568,619	568,619	0.00	0.00
	Quarter 3	249	570,896	570,896	570,896	0.00	0.00
	Quarter 4	202	572,927	572,927	572,927	-0.00	0.00
Age Group	**12-17**	293	223,823	220,899	220,899	1.32	0.00
	18-25	281	277,256	284,532	284,532	-2.56	0.00
	26-34	124	345,967	343,051	343,051	0.85	0.00
	35-49	113	551,462	559,210	559,210	-1.39	0.00
	50-64	52	487,196	515,202	515,202	-5.44	0.00
	65+	40	392,952	355,762	355,762	10.45	0.00
Race	**White**	627	1,637,063	1,777,070	1,777,070	-7.88	0.00
	Black or African American	78	193,269	192,970	192,970	0.16	0.00
	Other	198	448,324	308,617	308,617	45.27	0.00
Hispanicity	**Hispanic or Latino**	366	576,836	564,568	564,568	2.17	0.00
	Non-Hispanic or Latino	537	1,701,820	1,714,089	1,714,089	-0.72	0.00
Gender	**Male**	433	1,135,354	1,134,734	1,134,734	0.05	0.00
	Female	470	1,143,302	1,143,923	1,143,923	-0.05	0.00

[1] WT1*...*WT13 (before person poststratification).
[2] WT1*...*WT14 (after person poststratification).

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

Table H.31 2012 NSDUH Slippage Rates: NEW HAMPSHIRE

Domain		*n*	Initial Total (I)[1]	Final Total (F)[2]	Census Total (C)	(I-C)/C%	(F-C)/C%
Total		950	1,133,661	1,133,661	1,133,661	-0.00	0.00
Quarter	**Quarter 1**	211	282,814	282,814	282,814	-0.00	0.00
	Quarter 2	229	283,257	283,257	283,257	0.00	0.00
	Quarter 3	264	283,655	283,655	283,655	-0.00	0.00
	Quarter 4	246	283,935	283,935	283,935	0.00	0.00
Age Group	**12-17**	304	101,749	102,103	102,103	-0.35	0.00
	18-25	323	142,236	139,482	139,482	1.97	0.00
	26-34	62	124,708	131,890	131,890	-5.45	-0.00
	35-49	141	277,735	270,957	270,957	2.50	0.00
	50-64	82	328,265	302,808	302,808	8.41	0.00
	65+	38	158,968	186,422	186,422	-14.73	0.00
Race	**White**	876	1,063,444	1,077,004	1,077,004	-1.26	0.00
	Black or African American	14	12,943	14,536	14,536	-10.96	0.00
	Other	60	57,274	42,122	42,122	35.97	0.00
Hispanicity	**Hispanic or Latino**	54	31,477	29,943	29,943	5.12	0.00
	Non-Hispanic or Latino	896	1,102,185	1,103,718	1,103,718	-0.14	0.00
Gender	**Male**	469	556,164	556,164	556,164	0.00	0.00
	Female	481	577,498	577,498	577,498	-0.00	0.00

[1] WT1*...*WT13 (before person poststratification).
[2] WT1*...*WT14 (after person poststratification).

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

Table H.32 2012 NSDUH Slippage Rates: NEW JERSEY

Domain		*n*	Initial Total (I)[1]	Final Total (F)[2]	Census Total (C)	(I-C)/C%	(F-C)/C%
Total		898	7,440,994	7,440,994	7,440,994	0.00	0.00
Quarter	**Quarter 1**	157	1,855,931	1,855,931	1,855,931	0.00	0.00
	Quarter 2	315	1,858,445	1,858,445	1,858,445	-0.00	0.00
	Quarter 3	220	1,861,594	1,861,594	1,861,594	0.00	0.00
	Quarter 4	206	1,865,024	1,865,024	1,865,024	-0.00	0.00
Age Group	**12-17**	291	712,730	708,659	708,659	0.57	0.00
	18-25	287	871,835	881,583	881,583	-1.11	0.00
	26-34	84	980,064	1,004,265	1,004,265	-2.41	0.00
	35-49	137	1,884,319	1,854,441	1,854,441	1.61	0.00
	50-64	51	1,553,322	1,779,911	1,779,911	-12.73	0.00
	65+	48	1,438,724	1,212,136	1,212,136	18.69	0.00
Race	**White**	534	4,975,343	5,569,957	5,569,957	-10.68	0.00
	Black or African American	177	1,174,144	1,043,236	1,043,236	12.55	0.00
	Other	187	1,291,507	827,802	827,802	56.02	0.00
Hispanicity	**Hispanic or Latino**	221	1,390,786	1,296,529	1,296,529	7.27	0.00
	Non-Hispanic or Latino	677	6,050,208	6,144,466	6,144,466	-1.53	0.00
Gender	**Male**	442	3,579,835	3,579,260	3,579,260	0.02	0.00
	Female	456	3,861,159	3,861,734	3,861,734	-0.01	0.00

[1] WT1*...*WT13 (before person poststratification).
[2] WT1*...*WT14 (after person poststratification).

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

Table H.33 2012 NSDUH Slippage Rates: NEW MEXICO

Domain		*n*	Initial Total (I)[1]	Final Total (F)[2]	Census Total (C)	(I-C)/C%	(F-C)/C%
Total		879	1,702,667	1,702,667	1,702,667	-0.00	0.00
Quarter	**Quarter 1**	213	424,965	424,965	424,965	0.00	0.00
	Quarter 2	240	425,418	425,419	425,419	-0.00	0.00
	Quarter 3	216	425,917	425,917	425,917	0.00	0.00
	Quarter 4	210	426,367	426,367	426,367	-0.00	0.00
Age Group	**12-17**	289	168,547	168,839	168,839	-0.17	0.00
	18-25	303	231,620	226,708	226,708	2.17	0.00
	26-34	79	224,497	237,352	237,352	-5.42	0.00
	35-49	112	365,656	368,268	368,268	-0.71	0.00
	50-64	61	459,537	411,923	411,923	11.56	0.00
	65+	35	252,809	289,577	289,577	-12.70	0.00
Race	**White**	687	1,426,380	1,434,076	1,434,076	-0.54	0.00
	Black or African American	17	39,764	38,542	38,542	3.17	0.00
	Other	175	236,523	230,049	230,049	2.81	0.00
Hispanicity	**Hispanic or Latino**	466	772,919	762,809	762,809	1.33	0.00
	Non-Hispanic or Latino	413	929,748	939,858	939,858	-1.08	0.00
Gender	**Male**	412	827,048	827,048	827,048	-0.00	0.00
	Female	467	875,619	875,620	875,620	-0.00	0.00

[1] WT1*...*WT13 (before person poststratification).
[2] WT1*...*WT14 (after person poststratification).

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

Table H.34 2012 NSDUH Slippage Rates: NEW YORK

Domain		*n*	Initial Total (I)[1]	Final Total (F)[2]	Census Total (C)	(I-C)/C%	(F-C)/C%
Total		3,680	16,532,006	16,532,006	16,532,006	-0.00	-0.00
Quarter	**Quarter 1**	903	4,124,895	4,124,896	4,124,896	-0.00	0.00
	Quarter 2	982	4,129,394	4,129,394	4,129,394	-0.00	0.00
	Quarter 3	881	4,135,432	4,135,432	4,135,432	-0.00	-0.00
	Quarter 4	914	4,142,284	4,142,284	4,142,284	-0.00	0.00
Age Group	**12-17**	1,193	1,468,023	1,466,519	1,466,519	0.10	-0.00
	18-25	1,253	2,252,607	2,246,785	2,246,785	0.26	-0.00
	26-34	338	2,386,731	2,430,252	2,430,252	-1.79	0.00
	35-49	509	4,042,348	3,898,670	3,898,670	3.69	-0.00
	50-64	234	3,822,619	3,826,575	3,826,575	-0.10	-0.00
	65+	153	2,559,678	2,663,205	2,663,205	-3.89	0.00
Race	**White**	2,446	10,939,101	11,919,999	11,919,999	-8.23	-0.00
	Black or African American	624	2,836,979	2,784,179	2,784,180	1.90	-0.00
	Other	610	2,755,927	1,827,827	1,827,827	50.78	-0.00
Hispanicity	**Hispanic or Latino**	823	2,895,937	2,843,870	2,843,870	1.83	-0.00
	Non-Hispanic or Latino	2,857	13,636,069	13,688,136	13,688,136	-0.38	-0.00
Gender	**Male**	1,766	7,897,578	7,901,430	7,901,430	-0.05	0.00
	Female	1,914	8,634,428	8,630,576	8,630,576	0.04	-0.00

[1] WT1*...*WT13 (before person poststratification).
[2] WT1*...*WT14 (after person poststratification).

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

Table H.35 2012 NSDUH Slippage Rates: NORTH CAROLINA

Domain		*n*	Initial Total (I)[1]	Final Total (F)[2]	Census Total (C)	(I-C)/C%	(F-C)/C%
Total		917	8,007,328	8,007,328	8,007,328	0.00	0.00
Quarter	**Quarter 1**	190	1,992,670	1,992,670	1,992,670	-0.00	0.00
	Quarter 2	269	1,998,901	1,998,901	1,998,901	0.00	0.00
	Quarter 3	243	2,005,037	2,005,037	2,005,037	0.00	0.00
	Quarter 4	215	2,010,721	2,010,721	2,010,721	-0.00	0.00
Age Group	**12-17**	298	760,601	760,601	760,601	0.00	0.00
	18-25	334	1,023,840	1,033,454	1,033,454	-0.93	0.00
	26-34	65	1,076,555	1,086,873	1,086,873	-0.95	0.00
	35-49	126	1,947,225	1,948,167	1,948,167	-0.05	0.00
	50-64	46	1,549,677	1,871,994	1,871,994	-17.22	0.00
	65+	48	1,649,429	1,306,240	1,306,240	26.27	0.00
Race	**White**	605	5,725,330	5,862,050	5,862,050	-2.33	0.00
	Black or African American	214	1,744,682	1,710,790	1,710,791	1.98	-0.00
	Other	98	537,316	434,487	434,487	23.67	0.00
Hispanicity	**Hispanic or Latino**	84	561,780	592,610	592,610	-5.20	0.00
	Non-Hispanic or Latino	833	7,445,548	7,414,718	7,414,718	0.42	0.00
Gender	**Male**	438	3,806,696	3,804,112	3,804,112	0.07	0.00
	Female	479	4,200,632	4,203,216	4,203,216	-0.06	0.00

[1] WT1*...*WT13 (before person poststratification).
[2] WT1*...*WT14 (after person poststratification).

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

Table H.36 2012 NSDUH Slippage Rates: NORTH DAKOTA

Domain		*n*	Initial Total (I)[1]	Final Total (F)[2]	Census Total (C)	(I-C)/C%	(F-C)/C%
Total		895	577,526	577,526	577,526	-0.00	-0.00
Quarter	**Quarter 1**	202	143,198	143,198	143,198	-0.00	0.00
	Quarter 2	230	143,924	143,924	143,924	-0.00	0.00
	Quarter 3	273	144,752	144,752	144,752	0.00	-0.00
	Quarter 4	190	145,652	145,652	145,652	0.00	0.00
Age Group	**12-17**	307	48,628	48,911	48,912	-0.58	-0.00
	18-25	269	92,648	93,645	93,645	-1.06	0.00
	26-34	91	86,172	84,751	84,751	1.68	0.00
	35-49	116	116,190	117,448	117,448	-1.07	-0.00
	50-64	70	150,996	137,722	137,722	9.64	0.00
	65+	42	82,891	95,049	95,049	-12.79	0.00
Race	**White**	784	528,755	528,175	528,175	0.11	-0.00
	Black or African American	18	7,191	7,191	7,191	-0.00	0.00
	Other	93	41,580	42,160	42,160	-1.38	0.00
Hispanicity	**Hispanic or Latino**	30	11,919	12,285	12,285	-2.98	-0.00
	Non-Hispanic or Latino	865	565,607	565,241	565,241	0.06	0.00
Gender	**Male**	452	291,063	291,063	291,063	-0.00	-0.00
	Female	443	286,463	286,463	286,463	0.00	0.00

[1] WT1*...*WT13 (before person poststratification).
[2] WT1*...*WT14 (after person poststratification).

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

Table H.37 2012 NSDUH Slippage Rates: OHIO

Domain		*n*	Initial Total (I)[1]	Final Total (F)[2]	Census Total (C)	(I-C)/C%	(F-C)/C%
Total		3,687	9,638,652	9,638,652	9,638,652	0.00	0.00
Quarter	**Quarter 1**	822	2,406,762	2,406,762	2,406,762	-0.00	0.00
	Quarter 2	937	2,408,346	2,408,346	2,408,346	0.00	0.00
	Quarter 3	994	2,410,585	2,410,585	2,410,585	0.00	0.00
	Quarter 4	934	2,412,958	2,412,958	2,412,958	-0.00	0.00
Age Group	**12-17**	1,291	922,961	926,791	926,791	-0.41	0.00
	18-25	1,138	1,219,903	1,232,694	1,232,694	-1.04	0.00
	26-34	332	1,287,601	1,261,992	1,261,992	2.03	0.00
	35-49	486	2,184,399	2,193,386	2,193,386	-0.41	0.00
	50-64	269	2,490,936	2,386,064	2,386,064	4.40	0.00
	65+	171	1,532,852	1,637,724	1,637,724	-6.40	-0.00
Race	**White**	2,938	8,039,924	8,167,761	8,167,761	-1.57	0.00
	Black or African American	499	1,137,855	1,128,931	1,128,931	0.79	0.00
	Other	250	460,873	341,960	341,960	34.77	0.00
Hispanicity	**Hispanic or Latino**	164	282,356	271,903	271,903	3.84	0.00
	Non-Hispanic or Latino	3,523	9,356,296	9,366,749	9,366,749	-0.11	0.00
Gender	**Male**	1,773	4,652,147	4,650,007	4,650,007	0.05	0.00
	Female	1,914	4,986,505	4,988,645	4,988,645	-0.04	0.00

[1] WT1*...*WT13 (before person poststratification).
[2] WT1*...*WT14 (after person poststratification).

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

Table H.38 2012 NSDUH Slippage Rates: OKLAHOMA

Domain		*n*	Initial Total (I)[1]	Final Total (F)[2]	Census Total (C)	(I-C)/C%	(F-C)/C%
Total		908	3,099,247	3,099,247	3,099,247	0.00	-0.00
Quarter	**Quarter 1**	218	771,867	771,867	771,867	0.00	-0.00
	Quarter 2	266	773,765	773,765	773,765	0.00	-0.00
	Quarter 3	225	775,780	775,780	775,780	0.00	0.00
	Quarter 4	199	777,835	777,835	777,835	-0.00	0.00
Age Group	**12-17**	301	304,249	305,458	305,458	-0.40	-0.00
	18-25	296	425,949	424,952	424,952	0.23	-0.00
	26-34	98	423,443	448,396	448,396	-5.56	0.00
	35-49	102	706,838	683,977	683,977	3.34	0.00
	50-64	78	880,387	719,615	719,615	22.34	0.00
	65+	33	358,381	516,849	516,849	-30.66	0.00
Race	**White**	630	2,344,690	2,400,995	2,400,995	-2.35	0.00
	Black or African American	67	225,531	220,347	220,347	2.35	-0.00
	Other	211	529,026	477,906	477,906	10.70	0.00
Hispanicity	**Hispanic or Latino**	133	281,088	247,100	247,101	13.75	-0.00
	Non-Hispanic or Latino	775	2,818,159	2,852,147	2,852,147	-1.19	0.00
Gender	**Male**	427	1,504,592	1,504,592	1,504,592	0.00	-0.00
	Female	481	1,594,655	1,594,655	1,594,655	0.00	-0.00

[1] WT1*...*WT13 (before person poststratification).
[2] WT1*...*WT14 (after person poststratification).

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

Table H.39 2012 NSDUH Slippage Rates: OREGON

Domain		*n*	Initial Total (I)[1]	Final Total (F)[2]	Census Total (C)	(I-C)/C%	(F-C)/C%
Total		923	3,293,097	3,293,097	3,293,097	-0.00	0.00
Quarter	**Quarter 1**	227	820,199	820,199	820,199	-0.00	-0.00
	Quarter 2	209	822,306	822,306	822,306	-0.00	0.00
	Quarter 3	251	824,382	824,382	824,382	-0.00	0.00
	Quarter 4	236	826,210	826,210	826,210	0.00	0.00
Age Group	**12-17**	270	294,453	292,395	292,395	0.70	-0.00
	18-25	314	404,332	409,756	409,756	-1.32	0.00
	26-34	80	467,857	474,426	474,426	-1.38	-0.00
	35-49	132	748,652	744,523	744,523	0.55	0.00
	50-64	80	834,706	800,891	800,891	4.22	0.00
	65+	47	543,097	571,107	571,107	-4.90	0.00
Race	**White**	768	2,819,380	2,938,699	2,938,699	-4.06	-0.00
	Black or African American	29	66,146	60,572	60,572	9.20	-0.00
	Other	126	407,572	293,826	293,826	38.71	0.00
Hispanicity	**Hispanic or Latino**	140	344,975	341,769	341,769	0.94	0.00
	Non-Hispanic or Latino	783	2,948,122	2,951,328	2,951,328	-0.11	0.00
Gender	**Male**	430	1,597,893	1,612,236	1,612,236	-0.89	0.00
	Female	493	1,695,204	1,680,861	1,680,861	0.85	0.00

[1] WT1*...*WT13 (before person poststratification).
[2] WT1*...*WT14 (after person poststratification).

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

Table H.40 2012 NSDUH Slippage Rates: PENNSYLVANIA

Domain		*n*	Initial Total (I)[1]	Final Total (F)[2]	Census Total (C)	(I-C)/C%	(F-C)/C%
Total		3,580	10,790,033	10,790,033	10,790,033	0.00	0.00
Quarter	**Quarter 1**	773	2,693,509	2,693,509	2,693,509	0.00	0.00
	Quarter 2	1,059	2,695,530	2,695,530	2,695,530	0.00	0.00
	Quarter 3	1,013	2,698,687	2,698,687	2,698,687	0.00	0.00
	Quarter 4	735	2,702,308	2,702,308	2,702,308	-0.00	0.00
Age Group	**12-17**	1,166	956,763	958,552	958,552	-0.19	0.00
	18-25	1,203	1,387,856	1,404,841	1,404,841	-1.21	0.00
	26-34	296	1,374,492	1,377,020	1,377,020	-0.18	0.00
	35-49	466	2,425,111	2,412,498	2,412,498	0.52	0.00
	50-64	273	2,809,570	2,670,080	2,670,080	5.22	0.00
	65+	176	1,836,242	1,967,043	1,967,043	-6.65	-0.00
Race	**White**	2,865	8,984,408	9,158,533	9,158,533	-1.90	-0.00
	Black or African American	423	1,123,749	1,137,744	1,137,744	-1.23	-0.00
	Other	292	681,876	493,756	493,756	38.10	0.00
Hispanicity	**Hispanic or Latino**	322	632,984	573,713	573,713	10.33	0.00
	Non-Hispanic or Latino	3,258	10,157,049	10,216,320	10,216,320	-0.58	0.00
Gender	**Male**	1,699	5,207,979	5,194,845	5,194,845	0.25	0.00
	Female	1,881	5,582,054	5,595,188	5,595,188	-0.23	0.00

[1] WT1*...*WT13 (before person poststratification).
[2] WT1*...*WT14 (after person poststratification).

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

Table H.41 2012 NSDUH Slippage Rates: RHODE ISLAND

Domain		*n*	Initial Total (I)[1]	Final Total (F)[2]	Census Total (C)	(I-C)/C%	(F-C)/C%
Total		923	895,345	895,345	895,345	0.00	0.00
Quarter	**Quarter 1**	250	223,586	223,586	223,586	0.00	0.00
	Quarter 2	190	223,711	223,711	223,711	0.00	0.00
	Quarter 3	287	223,910	223,910	223,910	0.00	0.00
	Quarter 4	196	224,138	224,138	224,138	0.00	0.00
Age Group	**12-17**	279	79,046	77,245	77,245	2.33	0.00
	18-25	323	130,321	132,691	132,691	-1.79	0.00
	26-34	86	119,688	114,691	114,691	4.36	0.00
	35-49	126	197,598	202,372	202,372	-2.36	0.00
	50-64	71	236,382	216,834	216,834	9.02	0.00
	65+	38	132,310	151,511	151,511	-12.67	-0.00
Race	**White**	719	743,983	780,516	780,516	-4.68	0.00
	Black or African American	65	62,697	60,504	60,504	3.62	-0.00
	Other	139	88,664	54,325	54,325	63.21	0.00
Hispanicity	**Hispanic or Latino**	152	114,157	105,310	105,310	8.40	0.00
	Non-Hispanic or Latino	771	781,188	790,035	790,035	-1.12	0.00
Gender	**Male**	442	427,594	427,594	427,594	0.00	0.00
	Female	481	467,752	467,752	467,752	0.00	0.00

[1] WT1*...*WT13 (before person poststratification).
[2] WT1*...*WT14 (after person poststratification).

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

Table H.42 2012 NSDUH Slippage Rates: SOUTH CAROLINA

Domain		*n*	Initial Total (I)[1]	Final Total (F)[2]	Census Total (C)	(I-C)/C%	(F-C)/C%
Total		938	3,900,041	3,900,041	3,900,041	0.00	0.00
Quarter	**Quarter 1**	210	970,470	970,470	970,470	0.00	0.00
	Quarter 2	239	973,808	973,808	973,808	0.00	0.00
	Quarter 3	242	976,619	976,619	976,619	0.00	0.00
	Quarter 4	247	979,144	979,144	979,144	0.00	0.00
Age Group	**12-17**	317	358,471	358,471	358,471	0.00	0.00
	18-25	291	510,740	515,765	515,765	-0.97	0.00
	26-34	89	517,042	520,199	520,199	-0.61	0.00
	35-49	147	900,107	891,926	891,926	0.92	0.00
	50-64	64	1,093,432	936,210	936,210	16.79	0.00
	65+	30	520,249	677,471	677,471	-23.21	-0.00
Race	**White**	543	2,658,359	2,727,078	2,727,078	-2.52	0.00
	Black or African American	332	1,047,509	1,049,920	1,049,920	-0.23	0.00
	Other	63	194,173	123,043	123,043	57.81	0.00
Hispanicity	**Hispanic or Latino**	65	196,970	177,230	177,230	11.14	0.00
	Non-Hispanic or Latino	873	3,703,071	3,722,811	3,722,811	-0.53	0.00
Gender	**Male**	447	1,851,304	1,851,304	1,851,304	0.00	0.00
	Female	491	2,048,737	2,048,737	2,048,737	0.00	0.00

[1] WT1*...*WT13 (before person poststratification).
[2] WT1*...*WT14 (after person poststratification).

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

Table H.43 2012 NSDUH Slippage Rates: SOUTH DAKOTA

Domain		*n*	Initial Total (I)[1]	Final Total (F)[2]	Census Total (C)	(I-C)/C%	(F-C)/C%
Total		878	676,283	676,283	676,283	0.00	0.00
Quarter	**Quarter 1**	181	168,181	168,181	168,181	0.00	0.00
	Quarter 2	271	168,753	168,753	168,753	0.00	0.00
	Quarter 3	202	169,372	169,372	169,372	0.00	-0.00
	Quarter 4	224	169,978	169,978	169,978	0.00	0.00
Age Group	**12-17**	266	64,784	64,543	64,543	0.37	0.00
	18-25	297	90,967	91,525	91,525	-0.61	-0.00
	26-34	81	94,548	95,625	95,625	-1.13	0.00
	35-49	105	144,751	143,357	143,357	0.97	0.00
	50-64	77	164,483	165,211	165,211	-0.44	-0.00
	65+	52	116,751	116,023	116,023	0.63	0.00
Race	**White**	747	597,800	596,645	596,645	0.19	0.00
	Black or African American	13	9,881	10,200	10,200	-3.13	0.00
	Other	118	68,602	69,439	69,439	-1.20	0.00
Hispanicity	**Hispanic or Latino**	23	11,086	17,985	17,985	-38.36	0.00
	Non-Hispanic or Latino	855	665,197	658,298	658,298	1.05	-0.00
Gender	**Male**	425	336,855	335,247	335,247	0.48	0.00
	Female	453	339,428	341,036	341,036	-0.47	0.00

[1] WT1*...*WT13 (before person poststratification).
[2] WT1*...*WT14 (after person poststratification).

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

Table H.44 2012 NSDUH Slippage Rates: TENNESSEE

Domain		*n*	Initial Total (I)[1]	Final Total (F)[2]	Census Total (C)	(I-C)/C%	(F-C)/C%
Total		927	5,363,074	5,363,074	5,363,074	0.00	-0.00
Quarter	**Quarter 1**	209	1,335,505	1,335,505	1,335,505	0.00	-0.00
	Quarter 2	264	1,338,969	1,338,969	1,338,969	0.00	-0.00
	Quarter 3	231	1,342,571	1,342,571	1,342,571	0.00	-0.00
	Quarter 4	223	1,346,029	1,346,029	1,346,029	-0.00	-0.00
Age Group	**12-17**	261	504,426	505,108	505,108	-0.14	-0.00
	18-25	348	689,362	688,253	688,253	0.16	0.00
	26-34	80	723,401	736,176	736,176	-1.74	0.00
	35-49	130	1,291,763	1,267,313	1,267,313	1.93	-0.00
	50-64	69	1,416,591	1,276,804	1,276,804	10.95	-0.00
	65+	39	737,531	889,419	889,419	-17.08	-0.00
Race	**White**	675	4,298,431	4,319,445	4,319,446	-0.49	-0.00
	Black or African American	199	859,193	868,421	868,421	-1.06	0.00
	Other	53	205,449	175,207	175,207	17.26	0.00
Hispanicity	**Hispanic or Latino**	49	220,724	220,076	220,076	0.29	0.00
	Non-Hispanic or Latino	878	5,142,350	5,142,998	5,142,998	-0.01	-0.00
Gender	**Male**	439	2,571,530	2,571,530	2,571,530	0.00	0.00
	Female	488	2,791,544	2,791,544	2,791,544	0.00	-0.00

[1] WT1*...*WT13 (before person poststratification).
[2] WT1*...*WT14 (after person poststratification).

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

Table H.45 2012 NSDUH Slippage Rates: TEXAS

Domain		*n*	Initial Total (I)[1]	Final Total (F)[2]	Census Total (C)	(I-C)/C%	(F-C)/C%
Total		3,625	20,852,844	20,852,844	20,852,844	-0.00	0.00
Quarter	**Quarter 1**	894	5,177,708	5,177,708	5,177,708	0.00	0.00
	Quarter 2	942	5,201,200	5,201,200	5,201,200	-0.00	0.00
	Quarter 3	876	5,225,110	5,225,110	5,225,110	0.00	0.00
	Quarter 4	913	5,248,826	5,248,826	5,248,826	-0.00	0.00
Age Group	**12-17**	1,244	2,284,342	2,279,511	2,279,511	0.21	0.00
	18-25	1,177	2,942,126	2,943,283	2,943,283	-0.04	0.00
	26-34	343	3,190,481	3,263,612	3,263,612	-2.24	0.00
	35-49	517	5,196,974	5,124,549	5,124,549	1.41	0.00
	50-64	198	4,196,966	4,486,014	4,486,014	-6.44	0.00
	65+	146	3,041,955	2,755,876	2,755,876	10.38	0.00
Race	**White**	2,649	15,601,222	16,945,306	16,945,306	-7.93	0.00
	Black or African American	465	2,628,668	2,483,873	2,483,873	5.83	0.00
	Other	511	2,622,953	1,423,665	1,423,665	84.24	0.00
Hispanicity	**Hispanic or Latino**	1,660	7,609,601	7,481,864	7,481,864	1.71	0.00
	Non-Hispanic or Latino	1,965	13,243,243	13,370,980	13,370,980	-0.96	0.00
Gender	**Male**	1,777	10,164,233	10,157,252	10,157,252	0.07	0.00
	Female	1,848	10,688,611	10,695,592	10,695,592	-0.07	0.00

[1] WT1*...*WT13 (before person poststratification).
[2] WT1*...*WT14 (after person poststratification).

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

Table H.46 2012 NSDUH Slippage Rates: UTAH

Domain		*n*	Initial Total (I)[1]	Final Total (F)[2]	Census Total (C)	(I-C)/C%	(F-C)/C%
Total		926	2,214,352	2,214,352	2,214,352	0.00	0.00
Quarter	**Quarter 1**	206	549,792	549,792	549,792	0.00	0.00
	Quarter 2	239	552,364	552,365	552,365	-0.00	0.00
	Quarter 3	226	554,900	554,900	554,900	0.00	0.00
	Quarter 4	255	557,295	557,295	557,295	0.00	0.00
Age Group	**12-17**	286	271,013	272,004	272,004	-0.36	0.00
	18-25	307	361,279	363,798	363,798	-0.69	0.00
	26-34	123	396,299	396,762	396,762	-0.12	0.00
	35-49	106	504,316	500,343	500,343	0.79	0.00
	50-64	67	439,409	414,570	414,570	5.99	-0.00
	65+	37	242,036	266,874	266,874	-9.31	0.00
Race	**White**	852	2,036,071	2,045,611	2,045,611	-0.47	0.00
	Black or African American	9	20,853	25,879	25,879	-19.42	0.00
	Other	65	157,428	142,862	142,862	10.20	0.00
Hispanicity	**Hispanic or Latino**	185	277,215	269,478	269,478	2.87	0.00
	Non-Hispanic or Latino	741	1,937,136	1,944,874	1,944,874	-0.40	-0.00
Gender	**Male**	444	1,095,875	1,101,009	1,101,009	-0.47	0.00
	Female	482	1,118,476	1,113,342	1,113,342	0.46	0.00

[1] WT1*...*WT13 (before person poststratification).
[2] WT1*...*WT14 (after person poststratification).

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

Table H.47 2012 NSDUH Slippage Rates: VERMONT

Domain		*n*	Initial Total (I)[1]	Final Total (F)[2]	Census Total (C)	(I-C)/C%	(F-C)/C%
Total		885	541,583	541,583	541,583	-0.00	0.00
Quarter	**Quarter 1**	202	135,315	135,315	135,315	0.00	0.00
	Quarter 2	261	135,379	135,379	135,379	-0.00	0.00
	Quarter 3	259	135,433	135,433	135,433	-0.00	0.00
	Quarter 4	163	135,456	135,456	135,456	0.00	0.00
Age Group	**12-17**	282	45,027	45,420	45,420	-0.87	0.00
	18-25	320	75,154	73,055	73,055	2.87	0.00
	26-34	63	61,423	63,130	63,130	-2.70	0.00
	35-49	110	121,539	119,148	119,148	2.01	0.00
	50-64	72	157,946	145,719	145,719	8.39	0.00
	65+	38	80,494	95,111	95,111	-15.37	0.00
Race	**White**	837	513,765	519,131	519,131	-1.03	0.00
	Black or African American	8	5,496	5,267	5,267	4.36	0.00
	Other	40	22,322	17,185	17,185	29.89	0.00
Hispanicity	**Hispanic or Latino**	22	7,282	8,148	8,148	-10.63	0.00
	Non-Hispanic or Latino	863	534,300	533,434	533,434	0.16	0.00
Gender	**Male**	439	265,224	265,224	265,224	-0.00	0.00
	Female	446	276,359	276,359	276,359	-0.00	0.00

[1] WT1*...*WT13 (before person poststratification).
[2] WT1*...*WT14 (after person poststratification).

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

Table H.48 2012 NSDUH Slippage Rates: VIRGINIA

Domain		*n*	Initial Total (I)[1]	Final Total (F)[2]	Census Total (C)	(I-C)/C%	(F-C)/C%
Total		894	6,735,698	6,735,698	6,735,698	0.00	0.00
Quarter	**Quarter 1**	220	1,676,594	1,676,594	1,676,594	0.00	0.00
	Quarter 2	252	1,681,743	1,681,743	1,681,743	0.00	0.00
	Quarter 3	205	1,686,584	1,686,584	1,686,584	0.00	0.00
	Quarter 4	217	1,690,778	1,690,778	1,690,778	0.00	0.00
Age Group	**12-17**	323	623,960	619,042	619,042	0.79	0.00
	18-25	264	869,496	891,542	891,542	-2.47	0.00
	26-34	99	972,615	966,143	966,143	0.67	0.00
	35-49	102	1,599,104	1,626,937	1,626,937	-1.71	0.00
	50-64	66	1,727,822	1,597,459	1,597,459	8.16	-0.00
	65+	40	942,702	1,034,575	1,034,575	-8.88	0.00
Race	**White**	633	4,700,130	4,883,476	4,883,476	-3.75	0.00
	Black or African American	144	1,333,500	1,272,186	1,272,186	4.82	0.00
	Other	117	702,068	580,036	580,036	21.04	0.00
Hispanicity	**Hispanic or Latino**	77	535,154	513,221	513,221	4.27	0.00
	Non-Hispanic or Latino	817	6,200,544	6,222,477	6,222,477	-0.35	-0.00
Gender	**Male**	422	3,228,718	3,228,718	3,228,718	0.00	0.00
	Female	472	3,506,980	3,506,980	3,506,980	0.00	0.00

[1] WT1*...*WT13 (before person poststratification).
[2] WT1*...*WT14 (after person poststratification).

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

Table H.49 2012 NSDUH Slippage Rates: WASHINGTON

Domain		*n*	Initial Total (I)[1]	Final Total (F)[2]	Census Total (C)	(I-C)/C%	(F-C)/C%
Total		928	5,736,136	5,736,136	5,736,136	-0.00	0.00
Quarter	**Quarter 1**	268	1,427,477	1,427,477	1,427,477	-0.00	0.00
	Quarter 2	169	1,432,111	1,432,111	1,432,111	0.00	-0.00
	Quarter 3	263	1,436,429	1,436,429	1,436,430	-0.00	-0.00
	Quarter 4	228	1,440,118	1,440,118	1,440,118	-0.00	0.00
Age Group	**12-17**	300	527,766	528,812	528,812	-0.20	-0.00
	18-25	307	730,498	737,911	737,911	-1.00	0.00
	26-34	87	836,406	850,975	850,975	-1.71	0.00
	35-49	137	1,377,341	1,354,312	1,354,312	1.70	-0.00
	50-64	66	1,543,331	1,375,368	1,375,368	12.21	-0.00
	65+	31	720,795	888,758	888,758	-18.90	0.00
Race	**White**	724	4,590,573	4,747,515	4,747,515	-3.31	0.00
	Black or African American	33	205,207	206,654	206,654	-0.70	-0.00
	Other	171	940,356	781,967	781,967	20.26	0.00
Hispanicity	**Hispanic or Latino**	126	578,060	575,723	575,723	0.41	0.00
	Non-Hispanic or Latino	802	5,158,076	5,160,413	5,160,413	-0.05	0.00
Gender	**Male**	476	2,822,981	2,822,981	2,822,981	-0.00	-0.00
	Female	452	2,913,155	2,913,155	2,913,155	-0.00	0.00

[1] WT1*...*WT13 (before person poststratification).
[2] WT1*...*WT14 (after person poststratification).

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

Table H.50 2012 NSDUH Slippage Rates: WEST VIRGINIA

Domain		*n*	Initial Total (I)[1]	Final Total (F)[2]	Census Total (C)	(I-C)/C%	(F-C)/C%
Total		976	1,574,171	1,574,171	1,574,171	0.00	0.00
Quarter	**Quarter 1**	194	393,313	393,313	393,313	0.00	0.00
	Quarter 2	315	393,418	393,418	393,418	0.00	-0.00
	Quarter 3	188	393,617	393,617	393,617	0.00	0.00
	Quarter 4	279	393,823	393,823	393,823	0.00	0.00
Age Group	**12-17**	313	130,371	131,131	131,131	-0.58	-0.00
	18-25	354	195,294	189,192	189,192	3.23	0.00
	26-34	66	188,884	192,823	192,823	-2.04	0.00
	35-49	113	345,810	350,672	350,672	-1.39	0.00
	50-64	73	410,829	406,985	406,985	0.94	0.00
	65+	57	302,984	303,368	303,368	-0.13	0.00
Race	**White**	890	1,478,055	1,490,548	1,490,549	-0.84	-0.00
	Black or African American	41	49,290	50,778	50,778	-2.93	0.00
	Other	45	46,826	32,845	32,845	42.57	0.00
Hispanicity	**Hispanic or Latino**	20	19,773	17,974	17,974	10.01	0.00
	Non-Hispanic or Latino	956	1,554,398	1,556,197	1,556,197	-0.12	0.00
Gender	**Male**	495	767,075	767,075	767,075	0.00	0.00
	Female	481	807,096	807,096	807,096	0.00	0.00

[1] WT1*...*WT13 (before person poststratification).
[2] WT1*...*WT14 (after person poststratification).

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

Table H.51 2012 NSDUH Slippage Rates: WISCONSIN

Domain		*n*	Initial Total (I)[1]	Final Total (F)[2]	Census Total (C)	(I-C)/C%	(F-C)/C%
Total		875	4,786,617	4,786,617	4,786,617	0.00	0.00
Quarter	**Quarter 1**	223	1,194,235	1,194,235	1,194,235	0.00	0.00
	Quarter 2	241	1,195,733	1,195,733	1,195,733	0.00	0.00
	Quarter 3	256	1,197,476	1,197,476	1,197,476	0.00	0.00
	Quarter 4	155	1,199,173	1,199,173	1,199,173	0.00	0.00
Age Group	**12-17**	273	448,603	450,470	450,470	-0.41	0.00
	18-25	322	610,171	615,758	615,758	-0.91	0.00
	26-34	88	647,906	649,743	649,743	-0.28	0.00
	35-49	106	1,093,187	1,092,759	1,092,759	0.04	0.00
	50-64	48	1,097,475	1,181,693	1,181,693	-7.13	0.00
	65+	38	889,275	796,194	796,194	11.69	0.00
Race	**White**	747	4,225,631	4,293,447	4,293,447	-1.58	0.00
	Black or African American	61	285,513	276,619	276,619	3.22	0.00
	Other	67	275,473	216,550	216,550	27.21	0.00
Hispanicity	**Hispanic or Latino**	85	228,221	251,411	251,411	-9.22	0.00
	Non-Hispanic or Latino	790	4,558,396	4,535,205	4,535,205	0.51	0.00
Gender	**Male**	443	2,351,239	2,352,263	2,352,263	-0.04	0.00
	Female	432	2,435,378	2,434,353	2,434,353	0.04	0.00

[1] WT1*...*WT13 (before person poststratification).
[2] WT1*...*WT14 (after person poststratification).

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

Table H.52 2012 NSDUH Slippage Rates: WYOMING

Domain		*n*	Initial Total (I)[1]	Final Total (F)[2]	Census Total (C)	(I-C)/C%	(F-C)/C%
Total		928	474,248	474,248	474,248	0.00	0.00
Quarter	**Quarter 1**	229	117,747	117,747	117,747	0.00	0.00
	Quarter 2	203	118,296	118,296	118,296	0.00	0.00
	Quarter 3	257	118,844	118,844	118,844	0.00	0.00
	Quarter 4	239	119,361	119,361	119,361	0.00	0.00
Age Group	**12-17**	293	43,140	43,140	43,140	-0.00	0.00
	18-25	286	64,302	63,681	63,681	0.97	0.00
	26-34	98	69,515	70,690	70,690	-1.66	0.00
	35-49	141	105,231	102,096	102,096	3.07	0.00
	50-64	67	118,263	121,484	121,484	-2.65	0.00
	65+	43	73,797	73,158	73,158	0.87	0.00
Race	**White**	840	435,189	444,468	444,468	-2.09	0.00
	Black or African American	13	8,525	6,855	6,855	24.35	0.00
	Other	75	30,535	22,924	22,924	33.20	0.00
Hispanicity	**Hispanic or Latino**	104	42,156	40,588	40,588	3.86	0.00
	Non-Hispanic or Latino	824	432,092	433,660	433,660	-0.36	0.00
Gender	**Male**	434	239,359	239,994	239,994	-0.26	0.00
	Female	494	234,889	234,254	234,254	0.27	0.00

[1] WT1*...*WT13 (before person poststratification).
[2] WT1*...*WT14 (after person poststratification).

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

Appendix I: Evaluation of Calibration Weights: Weight Summary Statistics

Table I.1 2012 NSDUH Dwelling Unit–Level Weight Summary Statistics: United States, District of Columbia, and the 50 States

Domain	*n*	Before res.du.nr (WT1*...*WT7)[1]						After res.du.nr & Before res.du.ps (WT1*...*WT8)[1]						After res.du.ps (WT1*...*WT9)[1]					
		Min	Q1[2]	Med	Q3[2]	Max	UWE[3]	Min	Q1[2]	Med	Q3[2]	Max	UWE[3]	Min	Q1[2]	Med	Q3[2]	Max	UWE[3]
United States	153,873	30	366	517	829	3,566	1.44	40	401	602	955	6,317	1.45	9	417	644	1,043	9,546	1.54
Alaska	1,642	101	107	118	124	230	1.01	103	120	131	141	274	1.02	39	137	151	175	506	1.06
Alabama	2,141	286	634	652	846	886	1.02	551	708	748	940	1,100	1.02	213	761	891	1,036	2,893	1.07
Arkansas	2,090	186	389	511	541	777	1.03	210	464	555	601	871	1.04	76	489	552	639	2,351	1.07
Arizona	1,928	689	723	763	799	2,813	1.20	721	787	859	987	3,189	1.21	192	945	1,168	1,402	4,992	1.20
California	6,852	610	1,267	1,333	1,442	2,999	1.01	956	1,498	1,638	1,780	3,494	1.02	455	1,608	1,817	2,035	8,444	1.10
Colorado	2,201	546	567	641	795	3,062	1.32	548	639	724	939	2,467	1.19	143	730	861	1,032	3,235	1.12
Connecticut	2,107	383	444	451	579	642	1.02	471	507	535	695	2,128	1.07	113	535	595	808	5,276	1.16
District of Columbia	3,327	37	52	54	57	183	1.05	43	59	67	70	176	1.07	9	68	79	94	281	1.09
Delaware	2,008	72	126	130	143	250	1.01	81	142	149	167	231	1.01	33	143	168	194	891	1.13
Florida	8,516	181	547	636	650	2,119	1.05	371	691	734	781	1,528	1.04	319	757	859	961	3,567	1.06
Georgia	1,796	1,372	1,421	1,476	1,701	2,919	1.01	1,405	1,604	1,742	1,929	4,030	1.02	310	1,635	1,912	2,218	9,424	1.09
Hawaii	2,239	120	128	136	155	232	1.05	133	152	170	210	385	1.07	49	157	181	230	1,330	1.14
Iowa	2,022	456	476	675	704	1,674	1.05	466	521	704	780	1,824	1.06	184	523	581	704	2,421	1.08
Idaho	1,821	30	236	246	294	474	1.03	120	251	275	312	497	1.03	97	281	312	342	1,653	1.07
Illinois	7,678	50	405	418	455	630	1.01	192	495	545	607	1,874	1.05	269	532	604	682	3,166	1.05
Indiana	1,921	287	955	1,131	1,229	1,347	1.01	486	1,071	1,237	1,328	5,490	1.03	343	1,161	1,317	1,451	6,654	1.07
Kansas	1,977	93	443	460	472	602	1.02	136	485	511	560	953	1.02	179	500	545	597	2,194	1.07
Kentucky	2,202	633	656	678	758	1,006	1.03	633	704	777	867	1,296	1.03	228	698	775	880	2,071	1.04
Louisiana	1,977	562	607	656	839	899	1.03	600	669	713	904	1,104	1.03	239	768	890	1,016	3,677	1.05
Massachusetts	2,208	760	788	881	892	1,456	1.01	813	925	1,059	1,106	2,213	1.02	180	1,028	1,155	1,247	5,531	1.11
Maryland	1,802	309	855	892	921	981	1.00	890	1,078	1,108	1,190	1,613	1.01	280	1,085	1,180	1,352	4,429	1.06
Maine	2,585	166	172	176	202	237	1.01	173	187	195	210	470	1.02	37	197	217	235	923	1.06
Michigan	7,826	40	312	382	418	1,017	1.03	40	383	459	512	805	1.03	42	425	489	557	2,192	1.04
Minnesota	1,975	782	806	845	1,098	2,389	1.10	817	877	988	1,198	2,673	1.11	360	881	1,054	1,246	4,679	1.11
Missouri	2,188	855	888	906	1,042	1,237	1.01	908	970	1,038	1,142	1,377	1.01	268	928	1,052	1,167	5,701	1.06

(continued)

Table I.1 2012 NSDUH Dwelling Unit–Level Weight Summary Statistics: United States, District of Columbia, and the 50 States (continued)

Domain	*n*	Before res.du.nr (WT1*...*WT7)[1]						After res.du.nr & Before res.du.ps (WT1*...*WT8)[1]						After res.du.ps (WT1*...*WT9)[1]					
		Min	Q1[2]	Med	Q3[2]	Max	UWE[3]	Min	Q1[2]	Med	Q3[2]	Max	UWE[3]	Min	Q1[2]	Med	Q3[2]	Max	UWE[3]
Mississippi	1,951	128	459	506	518	665	1.01	255	501	536	583	764	1.01	97	518	595	678	2,006	1.07
Montana	2,415	127	129	137	139	332	1.02	130	140	144	150	225	1.01	49	156	167	184	582	1.03
North Carolina	1,990	1,333	1,495	1,631	1,681	3,566	1.01	1,336	1,626	1,748	1,896	3,816	1.02	346	1,509	1,799	2,151	9,546	1.14
North Dakota	2,461	77	80	86	100	142	1.01	78	85	92	103	121	1.01	33	100	114	128	417	1.08
Nebraska	2,018	272	282	293	317	333	1.00	277	304	317	337	410	1.01	91	322	344	380	1,927	1.08
New Hampshire	2,191	178	184	190	198	390	1.01	180	209	217	227	413	1.01	38	217	232	255	1,118	1.06
New Jersey	1,935	1,042	1,117	1,148	1,498	1,857	1.03	1,089	1,264	1,398	1,699	6,317	1.06	570	1,343	1,635	1,961	7,096	1.11
New Mexico	1,889	74	255	275	286	424	1.03	245	286	296	329	479	1.02	65	350	398	459	1,644	1.09
Nevada	1,721	153	257	354	391	469	1.04	153	344	394	429	837	1.04	155	438	543	669	2,466	1.18
New York	9,115	48	494	556	581	1,629	1.02	252	636	720	868	2,305	1.08	259	641	732	893	7,959	1.22
Ohio	9,023	34	403	415	431	525	1.01	193	450	464	494	879	1.01	166	471	497	546	1,777	1.03
Oklahoma	2,173	178	504	560	593	884	1.02	374	544	617	704	1,639	1.03	174	580	689	805	2,585	1.09
Oregon	2,019	583	611	639	695	778	1.01	618	655	723	799	1,047	1.02	211	690	757	836	2,877	1.07
Pennsylvania	8,453	135	395	440	523	799	1.02	149	480	555	606	1,790	1.06	240	483	580	666	4,776	1.09
Rhode Island	1,957	127	137	161	193	200	1.02	143	161	186	213	448	1.03	41	177	206	242	1,027	1.15
South Carolina	2,374	539	576	624	647	759	1.01	560	637	683	722	1,185	1.01	185	683	752	837	1,942	1.05
South Dakota	2,031	93	114	134	159	170	1.02	95	116	147	171	281	1.04	40	142	163	180	537	1.06
Tennessee	1,929	581	851	1,157	1,194	2,421	1.02	835	963	1,235	1,316	2,381	1.03	246	1,155	1,294	1,415	3,727	1.06
Texas	6,792	467	1,061	1,099	1,133	3,064	1.05	859	1,165	1,214	1,290	3,862	1.06	343	1,185	1,312	1,455	6,541	1.09
Utah	1,474	403	426	444	497	574	1.01	417	451	481	535	617	1.01	85	536	598	672	1,831	1.07
Virginia	2,027	561	1,271	1,329	1,370	1,432	1.00	993	1,427	1,504	1,552	2,338	1.01	326	1,354	1,485	1,646	4,387	1.05
Vermont	2,317	66	79	87	89	134	1.04	70	91	98	106	320	1.05	18	91	103	128	553	1.13
Washington	2,078	595	957	1,009	1,175	1,404	1.02	659	1,066	1,162	1,365	1,644	1.03	640	1,112	1,256	1,428	5,924	1.08
Wisconsin	1,890	805	837	935	1,079	1,175	1.02	816	882	1,031	1,152	1,631	1.03	293	1,046	1,146	1,308	3,693	1.06
West Virginia	2,399	84	223	295	318	372	1.03	156	249	325	379	504	1.04	35	259	319	391	1,129	1.09
Wyoming	2,222	69	72	88	92	116	1.01	73	84	95	99	186	1.01	20	94	104	115	347	1.05

[1] WT1*…*WT7 are design-based weight components; nr = nonresponse adjustment; ps = poststratification adjustment.

[2] Q1 and Q3 refer to the first and third quartile of the weight distribution.

[3] Unequal weighting effect (UWE) is defined as $1 + [(n - 1)/n]*CV^2$, where CV = coefficient of variation of weights.

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

Table I.2 2012 NSDUH Selected Person-Level Weight Summary Statistics: United States, District of Columbia, and the 50 States

Domain	*n*	Before sel.per.ps (WT1*...*WT11)[1]						After sel.per.ps (WT1*...*WT12)[1]					
		Min	Q1[2]	Med	Q3[2]	Max	UWE[3]	Min	Q1[2]	Med	Q3[2]	Max	UWE[3]
United States	87,656	19	677	1,334	3,483	75,644	2.89	4	650	1,330	3,466	83,336	2.94
Alaska	1,076	66	176	259	764	3,894	2.02	28	181	281	711	3,455	2.09
Alabama	1,145	236	1,076	1,474	5,189	19,613	1.93	282	1,053	1,544	5,234	20,719	2.10
Arkansas	1,212	83	569	793	3,037	19,370	2.14	18	539	842	3,098	21,749	2.38
Arizona	1,139	302	1,307	2,111	6,364	48,558	2.38	172	1,284	2,147	5,725	38,233	2.54
California	4,779	519	2,108	3,006	9,534	75,644	2.07	437	2,109	3,134	9,303	82,766	2.09
Colorado	1,188	154	1,018	1,508	5,573	34,687	2.23	84	954	1,540	5,529	52,100	2.31
Connecticut	1,261	114	674	1,015	3,544	30,404	2.35	30	658	1,059	3,367	22,163	2.40
District of Columbia	1,125	19	101	239	812	3,518	2.32	4	103	215	728	3,470	2.38
Delaware	1,110	43	178	342	1,125	5,563	2.07	17	189	351	1,018	4,745	2.10
Florida	4,579	334	964	1,330	5,487	34,154	2.17	67	956	1,360	5,631	30,510	2.23
Georgia	1,144	444	2,305	3,337	10,689	59,251	1.96	312	2,323	3,312	10,810	41,529	1.88
Hawaii	1,285	69	243	445	1,335	8,573	2.08	39	233	447	1,181	6,563	2.15
Iowa	1,137	223	629	942	2,998	21,037	2.22	98	597	906	2,938	19,002	2.49
Idaho	1,136	98	343	470	1,479	4,938	1.87	35	335	506	1,555	7,455	2.20
Illinois	4,871	310	666	923	3,275	17,157	2.00	170	651	981	3,228	16,070	2.07
Indiana	1,171	380	1,457	2,076	7,400	68,551	2.14	107	1,478	2,095	7,073	33,793	1.97
Kansas	1,109	195	610	935	2,933	15,257	2.04	58	610	1,008	2,934	15,527	2.19
Kentucky	1,184	244	924	1,172	4,824	22,032	2.09	149	876	1,223	4,866	16,931	2.08
Louisiana	1,100	357	1,138	1,544	4,948	17,111	1.96	154	1,056	1,632	4,886	23,499	2.10
Massachusetts	1,253	210	1,239	1,874	6,738	38,702	2.17	85	1,293	2,004	6,588	47,604	2.28
Maryland	1,074	305	1,323	1,796	6,838	31,262	2.00	284	1,248	1,938	6,760	37,356	2.25
Maine	1,134	39	261	334	1,397	7,926	2.39	8	254	354	1,520	6,742	2.41
Michigan	4,606	55	548	749	2,667	10,908	2.06	47	549	791	2,615	26,027	2.15
Minnesota	1,092	379	1,136	1,718	5,017	32,719	2.33	96	1,082	1,788	4,588	29,298	2.67
Missouri	1,149	398	1,279	1,832	6,435	40,189	2.01	114	1,292	1,935	6,582	31,554	2.08

(continued)

Table I.2 2012 NSDUH Selected Person-Level Weight Summary Statistics: United States, District of Columbia, and the 50 States (continued)

Domain	*n*	Before sel.per.ps (WT1*...*WT11)[1]						After sel.per.ps (WT1*...*WT12)[1]					
		Min	Q1[2]	Med	Q3[2]	Max	UWE[3]	Min	Q1[2]	Med	Q3[2]	Max	UWE[3]
Mississippi	1,100	103	687	995	3,098	12,749	2.03	21	620	999	3,113	14,651	2.26
Montana	1,109	57	196	286	1,064	3,846	2.11	49	193	298	971	5,628	2.66
North Carolina	1,117	429	1,958	3,006	10,385	56,513	2.25	132	1,802	3,055	9,969	83,336	2.41
North Dakota	1,156	40	148	282	686	2,858	1.96	27	134	286	698	3,783	1.98
Nebraska	1,170	169	391	524	2,041	11,810	2.07	37	387	575	1,874	11,061	2.25
New Hampshire	1,259	62	257	325	1,382	4,709	2.13	23	256	342	1,437	6,487	2.20
New Jersey	1,155	576	1,740	2,803	9,005	47,406	2.18	450	1,668	2,817	9,376	56,420	2.37
New Mexico	1,101	68	474	662	2,066	10,620	2.18	64	477	693	2,066	12,003	2.38
Nevada	1,134	168	528	898	2,771	30,652	2.34	123	518	911	2,563	16,963	2.37
New York	5,267	308	897	1,315	4,467	47,814	2.30	234	856	1,363	4,385	38,090	2.35
Ohio	4,827	192	601	789	3,013	15,894	2.01	81	599	826	3,092	12,273	2.02
Oklahoma	1,189	204	779	1,162	4,150	17,967	2.01	134	739	1,150	3,992	14,076	2.09
Oregon	1,165	290	828	1,154	4,578	23,037	2.11	116	803	1,222	3,972	24,548	2.25
Pennsylvania	4,705	247	635	989	3,502	19,968	2.11	124	622	1,018	3,436	15,262	2.10
Rhode Island	1,131	53	247	356	1,210	7,822	2.12	13	228	372	1,116	9,729	2.26
South Carolina	1,171	226	989	1,477	4,972	21,268	1.97	77	952	1,576	4,352	18,966	2.17
South Dakota	1,113	50	191	270	890	4,623	2.03	25	188	272	996	3,249	1.89
Tennessee	1,105	264	1,410	1,882	7,758	44,286	2.14	61	1,387	2,069	7,425	28,573	2.19
Texas	4,612	416	1,476	1,980	6,458	64,077	2.05	394	1,462	2,049	6,641	38,094	1.96
Utah	1,099	105	792	1,079	2,817	12,752	1.84	29	755	1,119	3,151	11,370	1.81
Virginia	1,095	372	1,712	2,801	8,687	43,656	2.04	128	1,707	2,799	9,297	37,275	2.07
Vermont	1,136	19	131	180	693	4,525	2.38	9	123	193	681	3,359	2.31
Washington	1,218	746	1,369	1,924	7,051	61,037	2.31	350	1,293	2,018	6,617	44,736	2.29
Wisconsin	1,098	298	1,186	1,665	6,336	31,882	2.36	344	1,171	1,660	5,839	32,089	2.44
West Virginia	1,217	62	341	472	1,856	7,129	2.36	35	350	486	2,250	9,236	2.21
Wyoming	1,148	29	131	183	602	3,455	2.01	8	133	200	542	2,475	2.07

[1] WT1*...*WT11 and WT1*...*WT12 used demographic variables from screener data; ps = poststratification adjustment.

[2] Q1 and Q3 refer to the first and third quartile of the weight distribution.

[3] Unequal weighting effect (UWE) is defined as $1 + [(n - 1)/n]*CV^2$, where CV = coefficient of variation of weights.

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

Table I.3 2012 NSDUH Respondent Person-Level Weight Summary Statistics: United States, District of Columbia, and the 50 States

Domain	*n*	Before res.per.nr (WT1*...*WT12)[1]						After res.per.nr (WT1*...*WT13)[1]						Before res.per.ps (WT1*...*WT13)[2]						Final Weight After res.per.ps (WT1*...*WT14)[2]					
		Min	Q1[3]	Med	Q3[3]	Max	UWE[4]	Min	Q1[3]	Med	Q3[3]	Max	UWE[4]	Min	Q1[3]	Med	Q3[3]	Max	UWE[4]	Min	Q1[3]	Med	Q3[3]	Max	UWE[4]
United States	68,309	4	623	1,263	3,147	66,615	3.00	4	757	1,556	4,107	112,786	3.44	4	757	1,556	4,107	112,786	3.44	1	726	1,549	4,069	133,926	3.55
Alaska	829	28	181	262	688	3,455	2.18	33	219	346	892	7,281	2.30	33	219	346	892	7,281	2.30	13	220	357	888	5,841	2.33
Alabama	901	333	1,037	1,479	4,909	20,719	2.14	333	1,275	1,865	6,277	31,521	2.34	333	1,275	1,865	6,277	31,521	2.34	71	1,295	1,873	6,084	38,506	2.52
Arkansas	913	39	523	792	2,683	17,515	2.33	39	647	1,038	3,669	21,376	2.59	39	647	1,038	3,669	21,376	2.59	19	646	1,072	3,514	30,876	2.74
Arizona	922	172	1,260	2,039	5,458	38,233	2.51	176	1,466	2,584	6,796	55,524	2.79	176	1,466	2,584	6,796	55,524	2.79	62	1,427	2,491	6,624	69,374	2.96
California	3,608	500	2,053	2,934	8,747	66,615	2.12	657	2,545	3,819	11,883	112,786	2.50	657	2,545	3,819	11,883	112,786	2.50	251	2,545	4,018	11,437	133,926	2.61
Colorado	927	84	944	1,488	5,273	52,100	2.37	88	1,147	1,887	6,714	55,395	2.47	88	1,147	1,887	6,714	55,395	2.47	30	1,166	1,859	6,449	44,336	2.57
Connecticut	964	30	642	1,024	3,082	22,163	2.45	30	825	1,275	4,230	38,798	2.74	30	825	1,275	4,230	38,798	2.74	7	783	1,344	4,040	28,699	2.74
District of Columbia	962	4	97	201	654	3,470	2.46	4	110	228	797	4,426	2.59	4	110	228	797	4,426	2.59	1	108	231	793	5,289	2.71
Delaware	893	17	190	355	986	4,745	2.10	17	238	426	1,234	6,524	2.20	17	238	426	1,234	6,524	2.20	12	234	433	1,242	8,502	2.30
Florida	3,544	67	940	1,295	5,130	30,510	2.31	87	1,092	1,623	6,586	48,148	2.74	87	1,092	1,623	6,586	48,148	2.74	46	1,095	1,675	6,257	44,131	2.83
Georgia	885	312	2,245	3,155	10,346	41,529	1.91	312	2,712	3,962	13,030	91,132	2.27	312	2,712	3,962	13,030	91,132	2.27	143	2,713	4,029	13,143	97,222	2.26
Hawaii	938	49	226	415	1,081	6,563	2.27	60	284	542	1,545	9,210	2.46	60	284	542	1,545	9,210	2.46	25	278	556	1,503	10,176	2.55
Iowa	900	98	581	877	2,756	18,917	2.56	126	678	1,113	3,744	26,336	2.73	126	678	1,113	3,744	26,336	2.73	56	677	1,108	3,762	52,057	3.09
Idaho	921	35	330	488	1,485	7,455	2.25	36	373	596	1,828	11,138	2.46	36	373	596	1,828	11,138	2.46	24	382	610	1,824	10,969	2.48
Illinois	3,672	170	638	948	3,035	14,206	2.11	170	793	1,236	4,115	31,833	2.41	170	793	1,236	4,115	31,833	2.41	73	809	1,258	4,100	43,209	2.45
Indiana	911	107	1,441	1,997	6,383	33,793	2.02	114	1,762	2,517	8,149	41,439	2.26	114	1,762	2,517	8,149	41,439	2.26	37	1,725	2,483	8,299	51,485	2.40
Kansas	912	58	592	964	2,669	15,527	2.24	58	664	1,138	3,259	22,705	2.53	58	664	1,138	3,259	22,705	2.53	36	656	1,142	3,148	47,503	2.87
Kentucky	927	189	867	1,203	4,524	16,931	2.14	197	1,046	1,526	5,829	25,543	2.41	197	1,046	1,526	5,829	25,543	2.41	59	1,055	1,574	5,308	33,713	2.57
Louisiana	901	154	1,037	1,546	4,345	21,330	2.13	219	1,174	1,799	5,451	29,154	2.36	219	1,174	1,799	5,451	29,154	2.36	47	1,212	1,840	5,309	29,752	2.35
Massachusetts	955	85	1,243	1,839	6,356	38,627	2.29	131	1,499	2,477	7,793	65,152	2.55	131	1,499	2,477	7,793	65,152	2.55	122	1,583	2,578	7,946	46,935	2.46
Maryland	874	284	1,228	1,807	6,125	37,356	2.34	285	1,456	2,185	7,320	57,505	2.68	285	1,456	2,185	7,320	57,505	2.68	145	1,421	2,301	7,165	52,380	2.75
Maine	938	8	252	351	1,442	5,093	2.45	8	295	414	1,803	8,390	2.58	8	295	414	1,803	8,390	2.58	4	288	419	1,825	19,351	2.82
Michigan	3,655	47	542	778	2,504	26,027	2.18	49	653	952	3,162	31,584	2.36	49	653	952	3,162	31,584	2.36	46	649	968	3,236	27,645	2.32
Minnesota	902	96	1,069	1,712	4,395	29,298	2.75	96	1,185	2,028	5,812	63,117	2.80	96	1,185	2,028	5,812	63,117	2.80	21	1,177	2,057	5,752	55,395	2.91
Missouri	915	114	1,260	1,818	5,759	31,554	2.15	188	1,424	2,129	7,161	50,247	2.54	188	1,424	2,129	7,161	50,247	2.54	38	1,448	2,212	7,104	45,627	2.59

(continued)

Table I.3 2012 NSDUH Respondent Person-Level Weight Summary Statistics: United States, District of Columbia, and the 50 States (continued)

Domain	*n*	Before res.per.nr (WT1*...*WT12)[1]						After res.per.nr (WT1*...*WT13)[1]						Before res.per.ps (WT1*...*WT13)[2]						Final Weight After res.per.ps (WT1*...*WT14)[2]					
		Min	Q1[3]	Med	Q3[3]	Max	UWE[4]	Min	Q1[3]	Med	Q3[3]	Max	UWE[4]	Min	Q1[3]	Med	Q3[3]	Max	UWE[4]	Min	Q1[3]	Med	Q3[3]	Max	UWE[4]
Mississippi	901	21	616	971	2,859	14,651	2.29	21	724	1,117	3,583	20,017	2.60	21	724	1,117	3,583	20,017	2.60	5	737	1,184	3,361	31,890	2.76
Montana	876	68	189	287	947	5,628	2.75	72	234	364	1,289	9,217	2.65	72	234	364	1,289	9,217	2.65	21	239	370	1,301	7,089	2.65
North Carolina	917	132	1,774	2,845	8,865	49,012	2.45	210	2,134	3,342	11,433	82,293	2.72	210	2,134	3,342	11,433	82,293	2.72	170	2,056	3,355	11,182	86,606	2.84
North Dakota	895	27	126	258	647	3,783	2.05	33	151	319	869	5,345	2.32	33	151	319	869	5,345	2.32	7	150	311	857	6,490	2.38
Nebraska	940	37	380	543	1,683	11,061	2.37	39	427	635	2,227	14,370	2.68	39	427	635	2,227	14,370	2.68	8	419	652	2,289	25,155	2.72
New Hampshire	950	23	257	339	1,424	4,362	2.19	23	310	469	1,803	11,212	2.36	23	310	469	1,803	11,212	2.36	5	310	456	1,763	9,974	2.41
New Jersey	898	471	1,615	2,751	7,989	56,420	2.46	471	1,779	3,492	9,737	81,887	2.84	471	1,779	3,492	9,737	81,887	2.84	68	1,857	3,447	10,053	111,268	3.07
New Mexico	879	64	466	653	1,896	12,003	2.43	67	534	791	2,401	18,212	2.80	67	534	791	2,401	18,212	2.80	55	523	789	2,412	23,173	2.92
Nevada	903	123	500	867	2,377	16,963	2.45	126	597	1,069	2,846	26,443	2.73	126	597	1,069	2,846	26,443	2.73	30	553	1,073	2,792	32,722	3.17
New York	3,680	234	822	1,269	3,911	38,090	2.38	293	1,066	1,772	5,586	78,212	2.95	293	1,066	1,772	5,586	78,212	2.95	43	1,078	1,820	5,423	74,343	2.98
Ohio	3,687	88	590	802	3,000	10,538	2.05	128	731	1,053	3,944	17,838	2.24	128	731	1,053	3,944	17,838	2.24	77	745	1,079	3,962	16,099	2.26
Oklahoma	908	134	722	1,109	3,641	14,076	2.13	137	873	1,498	4,364	29,022	2.47	137	873	1,498	4,364	29,022	2.47	28	833	1,455	4,386	33,292	2.67
Oregon	923	116	779	1,205	3,904	24,548	2.29	116	917	1,480	4,816	42,723	2.42	116	917	1,480	4,816	42,723	2.42	72	919	1,565	4,861	35,124	2.43
Pennsylvania	3,580	124	606	954	3,084	14,714	2.19	141	758	1,224	4,315	24,788	2.43	141	758	1,224	4,315	24,788	2.43	23	771	1,220	4,256	29,514	2.46
Rhode Island	923	13	225	352	976	9,729	2.35	13	254	448	1,189	15,298	2.74	13	254	448	1,189	15,298	2.74	7	250	432	1,193	10,540	2.88
South Carolina	938	77	928	1,477	4,082	18,966	2.24	105	1,074	1,836	5,315	29,433	2.56	105	1,074	1,836	5,315	29,433	2.56	51	1,084	1,842	5,231	29,988	2.67
South Dakota	878	25	192	271	942	3,249	1.94	46	220	327	1,254	6,486	2.11	46	220	327	1,254	6,486	2.11	11	211	332	1,205	6,152	2.20
Tennessee	927	61	1,364	2,020	7,327	24,944	2.21	61	1,541	2,429	8,301	45,397	2.39	61	1,541	2,429	8,301	45,397	2.39	29	1,507	2,390	8,301	42,042	2.44
Texas	3,625	394	1,439	1,969	6,278	38,094	2.01	397	1,713	2,465	8,296	58,131	2.28	397	1,713	2,465	8,296	58,131	2.28	96	1,807	2,566	8,259	45,485	2.36
Utah	926	29	759	1,131	3,086	11,370	1.82	29	871	1,346	3,470	22,842	1.94	29	871	1,346	3,470	22,842	1.94	24	872	1,321	3,519	14,300	1.91
Virginia	894	128	1,650	2,651	8,253	37,275	2.15	142	1,952	3,028	10,622	84,610	2.44	142	1,952	3,028	10,622	84,610	2.44	43	1,886	3,021	10,440	75,208	2.46
Vermont	885	9	121	179	626	3,359	2.36	9	141	218	838	4,627	2.57	9	141	218	838	4,627	2.57	3	146	223	817	4,473	2.60
Washington	928	350	1,274	1,899	6,268	35,511	2.30	353	1,589	2,484	8,395	52,570	2.57	353	1,589	2,484	8,395	52,570	2.57	172	1,593	2,576	8,451	51,231	2.54
Wisconsin	875	371	1,164	1,598	5,558	28,513	2.49	388	1,419	2,057	7,182	47,292	2.75	388	1,419	2,057	7,182	47,292	2.75	111	1,404	2,060	7,082	71,502	2.84
West Virginia	976	36	339	484	1,901	9,236	2.31	36	394	562	2,583	11,468	2.49	36	394	562	2,583	11,468	2.49	17	404	564	2,614	11,686	2.51
Wyoming	928	17	128	194	517	2,475	2.12	19	151	242	667	4,381	2.26	19	151	242	667	4,381	2.26	12	152	241	661	3,568	2.34

[1] WT1*...*WT12 and WT1*...*WT13 used demographic variables from screener data; nr = nonresponse adjustment.

[2] WT1*...*WT13 and WT1*...*WT14 used demographic variables from questionnaire data; ps = poststratification adjustment.

[3] Q1 and Q3 refer to the first and third quartile of the weight distribution.

[4] Unequal weighting effect (UWE) is defined as $1 + [(n - 1)/n]*CV^2$, where CV = coefficient of variation of weights.

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