

# 2004 NATIONAL SURVEY ON DRUG USE AND HEALTH

## Person-Level Sampling Weight Calibration

Prepared for the 2004 Methodological Resource Book

Contract No. 283-03-9028  
RTI Project No. 0208726.174.003  
Deliverable No. 26

Authors:

Patrick Chen  
Lanting Dai  
Harper Gordek  
Eric Grau  
Weihua Shi  
Matthew Westlake

Project Director: Thomas G. Virag

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# Preface

This report contains a brief review of the sampling weight calibration methodology used for the 2004 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 its application to the survey data. The constrained exponential modeling method used in the surveys prior to 1999 (referred to in this report as the generalized exponential model [GEM]) was modified in order to provide more flexibility in dealing with the extreme weights internally and for setting bounds directly on the weight adjustment factors so they can become suitable for nonresponse and poststratification adjustments. The highlights of the new 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.
- Another poststratification step was added at the respondent-household level in the first phase of the screening interview. This step 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 2004 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, Lanting Dai, Harper Gordek, Eric Grau, Weihua Shi, and Matthew Westlake.

This report consists of several chapters describing the implementation and evaluation of GEM and of appendices comprised 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), Office of Applied Studies (OAS), by RTI International,<sup>1</sup> North Carolina, under Contract No. 283-03-9028. The authors are grateful to Art Hughes of SAMHSA for his useful comments and suggestions.

Ralph Folsom, Senior Advisor  
Research Triangle Park, NC

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<sup>1</sup>RTI International is a trade name of Research Triangle Institute.

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## List of Terms and Abbreviations

**DU** Dwelling unit.

**ev** Extreme weight adjustment. See Section 4.1 for more detail.

**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.

**nr** Nonresponse adjustment.

**Outwinsor** Signifies the percentages of weights trimmed after extreme weight adjustment via winsorization.

**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.

**sandwich SE** Sandwich standard error. See Section 6.5 for more detail.

**SE** Standard error.

**SES** Socioeconomic status indicator. See Exhibit 3.1 for more detail.

**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.

**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 design for the National Survey on Drug Use and Health (NSDUH) changed in 1999 from a single national survey (with California and Arizona supplements) to a statewide survey that includes 50 States and the District of Columbia. Henceforth in this report, this design is referred to as the 51-State design. The target population includes civilian, noninstitutionalized persons aged 12 or older. The main reason for the change was to produce more efficient, direct State-level estimates, which could be further improved by using small area estimation (SAE) techniques. To meet the required precision at the State level, the total sample size was increased from 25,500 in 1998 to a planned size of 67,500 beginning in 1999. This large sample size would allow the Substance Abuse and Mental Health Services Administration (SAMHSA) to continue to report substance use estimates for demographic subgroups at the national level with adequate precision and without the need to oversample specially targeted demographic subgroups, as had been required in the past.

For the 2004 survey, 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. For the 2004 NSDUH, which followed the 2004 design plan, the total realized sample size was 67,760 persons (corresponding to 47,651 responding dwelling units [DUs] selected at the second phase out of 130,122 DUs screened at the first phase), with a low of 858 for Kansas to a high of 934 for Colorado among small States, and a low of 3,575 for Illinois to a high of 3,725 for California among large States.

In the 2004 NSDUH design, States served as the primary strata, and field interviewer (FI) regions within each State served as the secondary strata. In the small States, 12 FI regions were created, while 48 were formed in the large States. Segments within FI regions formed first-stage sample units, which were drawn with probabilities proportional to composite size measures using Chromy's algorithm (Chromy, 1981; Williams & Chromy, 1980). DUs within segments formed the second-stage units that were drawn according to a random systematic scheme with an equal probability selection method (EPSEM) goal. Within each FI region, segments were formed to contain a minimum of 175 DUs. From each FI region, two segments were drawn per quarter for a total of eight segments per year. On average, about 30 DUs were selected per segment with an objective of 10 completed person-level interviews. This average of three selected DUs per completed person interview reflected various levels of attrition, such as DU eligibility, DU-level nonresponse, and person-level nonresponse.

The 2004 NSDUH design was a multistage design with deep stratification, which could be viewed as a two-phase design with the second-phase units of persons nested within the first-phase DUs. After the DU was selected, first-phase information (e.g., eligibility, age, race/ethnicity, and gender) was collected for each member of the DU, then age was used to define deep stratification for the second-phase sample of persons within eligible DUs. At this phase, either zero, one, or two persons were selected within each DU using an adaptation of Brewer's sampling scheme. The 51-State sample used a computer-assisted interviewing (CAI) methodology.

As in previous years of the survey,<sup>2</sup> the sample weighting of the 2004 NSDUH posed challenges because of the sheer magnitude of the number of State-specific predictors for use in 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. Bureau of the Census 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.

As with each survey after 1999, an important feature of the 2004 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 gave 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.

For the 2004 NSDUH, a split-sample scheme was implemented for adults (aged 18 or older). The adults in sample A were administered the adult mental health module but not the adult depression module. Adults in sample B were administered only six core questions from the adult mental health module, as well as the first-time added adult depression module. To reflect the split-sample design, two extra sets of person-level analysis weights were developed for estimating serious psychological distress (SPD) and depression, which are discussed in Chapter 7.

As in previous NSDUHs, a modification of the earlier methodology of scaled constrained exponential modeling (Folsom & Witt, 1994) was used in order to meet the new demands on weighting mentioned above (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:

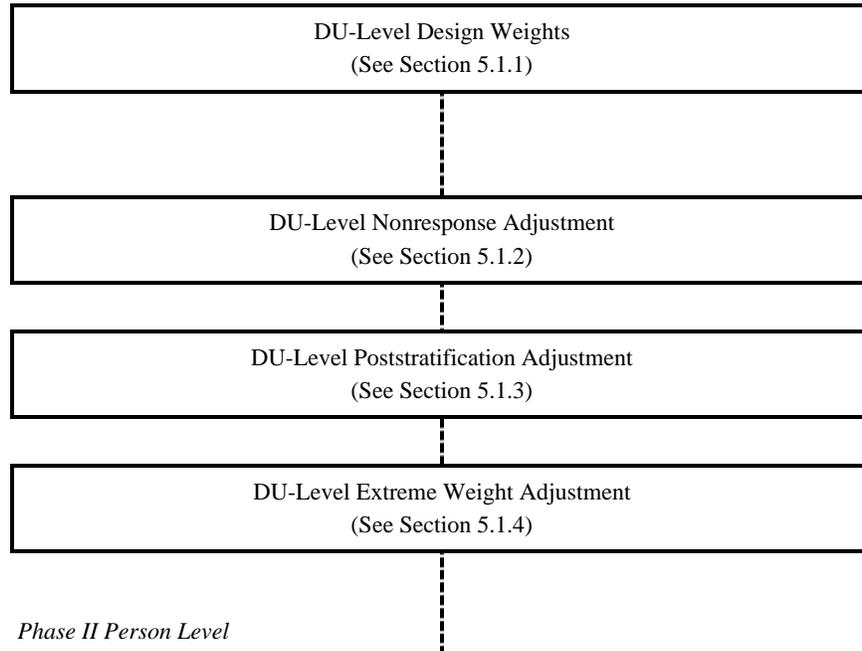
- Like constrained exponential modeling, GEM can utilize a large number of predictor variables, such as those obtained from the first-phase screener sample for the 50 States plus the District of Columbia, and some of their interactions.

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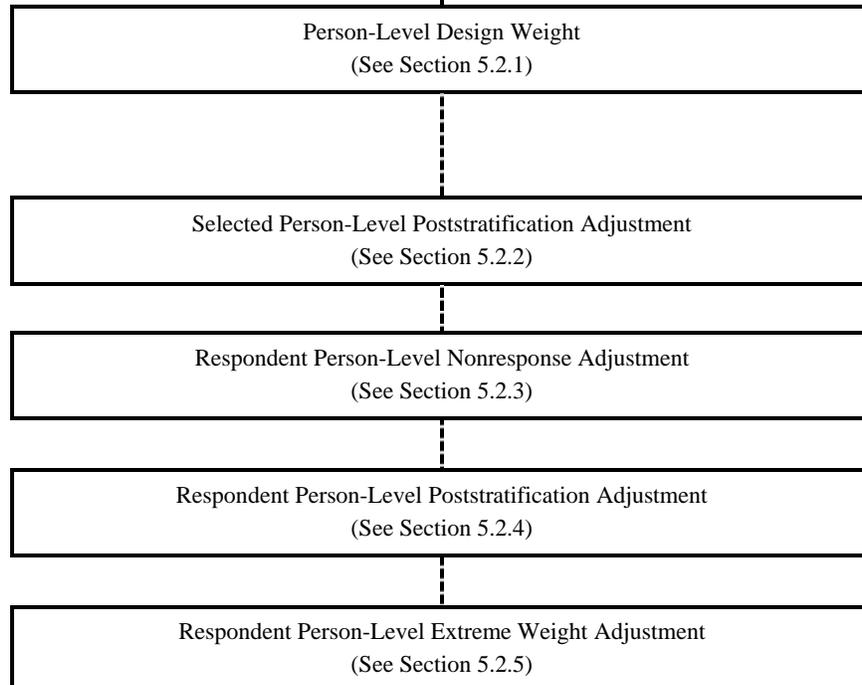
<sup>2</sup> The survey was known as the National Household Surveys on Drug Abuse (NHSDA) prior to 2002.

## Exhibit 1.1 Sampling Weight Calibration Steps

### *Phase I Dwelling Unit Level*



### *Phase II Person Level*



- 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 above 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 is provided of how GEM provides a unified approach to all three procedures of extreme weight adjustment and adjustments for nonresponse and poststratification. In Chapter 3, potential predictor variables for use with extreme weight, nonresponse, and poststratification 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 2004 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 some 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.

## 2. Generalized Exponential Model for Weight Calibration

In survey practice, design weights are typically adjusted in three steps via the following methods: (1) winsorization for extreme weights, (2) weighting class adjustments for nonresponse, and (3) raking-ratio adjustments for poststratification. If weights are not treated for extreme weight adjustment, the resulting estimates, although unbiased, will tend to have low precision. The bias introduced by winsorization is alleviated to some extent through poststratification. The nonresponse 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 possible due to correlation between the study and control, usually demographic, variables).

There are limitations in the existing methods of weight adjustment for extreme weight, nonresponse, and poststratification. 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. 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.

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 extreme weight, nonresponse, and poststratification, and it has the valuable features mentioned above. 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 poststratification and nonresponse adjustments. 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 unequal weighting effect, indicating a possible loss in precision. A more precise measure of loss (or gain) in precision could be obtained by looking at the Taylor-linearized variance, computed via the sandwich formula (which accounts for the variability in the GEM parameter estimates) for variance of selected study variables. This was implemented by Vaish, Gordek, and Singh (2000), and the results are presented in Chapter 6.

### **3. Predictor Variables in GEM for the 2004 NSDUH**

For the 2004 National Survey on Drug Use and Health (NSDUH), the initial set of predictor variables was identical to the set used for the 2003 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 in Segment, Percentage Black 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 above, 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 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 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, there is no such problem 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.

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 2004 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;

### Exhibit 3.1 Definition of Levels for Variables

<b>Age (years)</b> 1: 12-17, 2: 18-25, 3: 26-34, 4: 35-49, 5: 50+ <sup>1,4</sup>
<b>Gender</b> 1: Male, 2: Female <sup>1</sup>
<b>Group Quarters Indicator</b> 1: College Dorm, 2: Other Group Quarter, 3: Non-Group Quarter <sup>1</sup>
<b>Hispanicity</b> 1: Hispanic, 2: Non-Hispanic <sup>1</sup>
<b>Percent of Owner-Occupied Dwelling Units in Segment (% Owner)</b> 1: 50% - 100%, <sup>1</sup> 2: 10% - 50%, 3: <10%
<b>Percent of Segments That Are Black (% Black)</b> 1: 50% - 100%, 2: 10% - 50%, 3: <10% <sup>1</sup>
<b>Percent of Segments That Are Hispanic (% Hispanic)</b> 1: 50% - 100%, 2: 10% - 50%, 3: <10% <sup>1</sup>
<b>Population Density</b> 1: MSA 1,000,000 or more, 2: MSA less than 1,000,000, 3: Non-MSA urban, 4: Non-MSA rural <sup>1</sup>
<b>Quarter</b> 1: Quarter 1, 2: Quarter 2, 3: Quarter 3, 4: Quarter 4 <sup>1</sup>
<b>Race (3 level)</b> 1: White, <sup>1</sup> 2: Black, 3: Other
<b>Race (5 level)</b> 1: White, <sup>1</sup> 2: Black, 3: American Indian/Alaska Native, 4: Asian, 5: Two or More Races
<b>Relation to Householder</b> 1: Householder or Spouse, <sup>1</sup> 2: Child, 3: Other Relative, 4: Non-Relative
<b>Segment-Combined Median Rent and Housing Value (Rent/Housing)<sup>2</sup></b> 1: First Quintile, 2: Second Quintile, 3: Third Quintile, 4: Fourth Quintile, 5: Fifth Quintile <sup>1</sup>
<b>States<sup>3</sup></b> Model Group 1: 1: Connecticut, 2: Maine, 3: New Hampshire, 4: Rhode Island, 5: Vermont, 6: Massachusetts <sup>1</sup> Model Group 2: 1: New Jersey, <sup>1</sup> 2: New York, 3: Pennsylvania Model Group 3: 1: Illinois, 2: Indiana, <sup>1</sup> 3: Michigan, 4: Wisconsin, 5: Ohio Model Group 4: 1: Iowa, 2: Kansas, 3: Minnesota, 4: Missouri, <sup>1</sup> 5: Nebraska, 6: South Dakota, 7: North Dakota Model Group 5: 1: Delaware, 2: District of Columbia, 3: Georgia, <sup>1</sup> 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 <sup>1</sup> Model Group 7: 1: Arkansas, <sup>1</sup> 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 <sup>1</sup> Model Group 9: 1: Alaska, 2: Hawaii, 3: Oregon, 4: Washington, <sup>1</sup> 5: California

MSA = metropolitan statistical area.

<sup>1</sup>The reference level for this variable. This is the level against which effects of other factor levels are measured.

<sup>2</sup>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.

<sup>3</sup>The States assigned to a particular model are based on census divisions.

<sup>4</sup>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, Office of Applied Studies, National Survey on Drug Use and Health, 2004.

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 above 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, in order to get direct State-level estimates 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 2004 NSDUH data, as for the previous NSDUH 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 2004 NSDUH, as in the 2000 through 2003 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 extreme weight adjustment, nonresponse adjustment, and poststratification (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

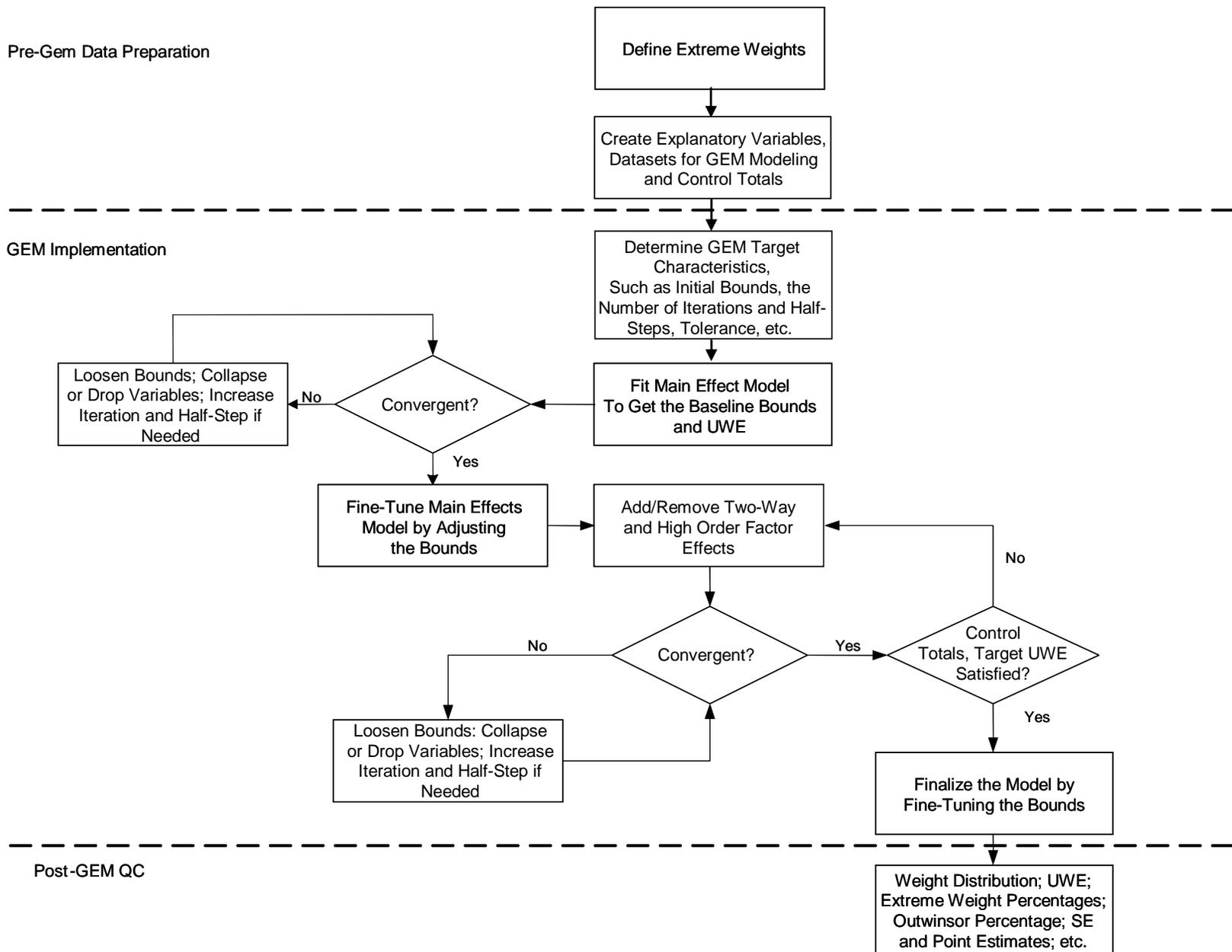
An important aspect of GEM is the built-in provision of extreme weight adjustment. Sampling weights for the survey generally were classified as extreme (high or low) if they fell outside the commonly used interval defined by the median  $\pm 3 \times$  interquartile range (IQR) for some prespecified domains; these domains were usually defined by design strata, taking into account deep stratification. For example, the dwelling unit (DU)-level weight for the 2004 National Survey on Drug Use and Health (NSDUH) used the field interviewer (FI) region as the domain. The person-level weight adjustments used a hierarchy of four domains: (1) FI region  $\times$  Age group, (2) State  $\times$  Age group, (3) FI 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 FI region  $\times$  Age group domain corresponded to a deep stratum, it could be unsuitable for defining extreme weights because of insufficient sample sizes. So, collapsing FI regions within a State gave rise to such domains as State  $\times$  Age group. Even at this level, sample sizes could be insufficient, so FI 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, in order to better prevent the adjusted weights from crossing the standard boundary, in addition to 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 as well.

### 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 the minimum of  $(b_{k(u)}/w_k)$  and one for high extreme weights, and the maximum of  $(b_{k(l)}/w_k)$  and one 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, 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.) Nonextreme weights had a value of 1 for  $m_k$ . 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 of GEM.

### Exhibit 4.1 Generalized Exponential Model Steps



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

GEM allows inputs of three different upper and lower 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,  $C$ s were set to 1 so the adjusted weights would not be too far away from the original design weights. Here,  $L$ s were chosen to be less than 1 and  $U$ s 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  $L$ ,  $C$ , and  $U$  parameters.

### 4.3 Definition of Control Totals

GEM modeling for extreme weight adjustment, nonresponse adjustment, and poststratification 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 2004 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. Additionally, 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 U and L 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 U and L 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 Ls and Us 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 2004 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 Us and Ls 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). To check for overfitting after the final weight adjustment, point estimates for the main drug use variables and standard errors (SEs) were computed using a sandwich variance formula (see Section 6.5) and were compared with estimates and SEs for the baseline (or main effects) 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 2004 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., checks for linear dependence of columns of realized values of the predictors) were performed for the baseline model; additionally, 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. In order 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 above. 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 4 times, each with the realized bounds from the previous iteration. The final bounds for nonextreme weights were desired to be around (0.3, 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 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 center  $C_s$  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  $C$  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 due to 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. Below 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 in the sense of the order. For example, the combined rental/house quintile had five levels (i.e., 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup>, 4<sup>th</sup>, and 5<sup>th</sup> quintile) with the 5<sup>th</sup> quintile set for the reference. If the 4<sup>th</sup> quintile needed to be collapsed, it would be collapsed with either the 3<sup>rd</sup> or 5<sup>th</sup> 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 in order 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 State separately in the model was not a problem. For the State-specific interactions, collapsing was done within State first, collapsing with other adjacent States only if needed. For the eight States with large sample sizes (CA, FL, IL, MI, NY, OH, PA, TX), 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, American Indian/Alaska Native, Asian, and two or more races) while in non-State-specific two- and three-factor effects, Race had three levels (white, black, and other). If maintaining all five levels was difficult in the main effects or State  $\times$  Race interactions, the following guidelines were followed: (1) collapse American Indian/Alaska Native and Asian if either of them caused a convergence problem; (2) collapse black with two or more races if black caused a convergence problem; (3) collapse two or more races with American Indian/Alaska Native or Asian, whichever had a smaller sample size, if two or more races caused a convergence problem; and (4) collapse American Indian/Alaska Native, Asian, and two or more races, or collapse all nonwhite Race groups if necessary. In the State  $\times$  Race interactions, collapsing Race should be 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 2004 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 three 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 three stages of selection were as follows: within Phase I, (1) the selection of subareas or segments within State field interviewer (FI) regions (these subareas are comprised of U.S. census blocks); (2) the selection of DUs within these subareas; and within Phase II, (3) 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 2004 NSDUH sample design report (Bowman, Chromy, Hunter, & Martin, 2005).

As part of the postsurvey data-processing activities, analysis weights were calculated for the 2004 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 undercoverage (via poststratification for the last).

The final Phase I DU-level and Phase II person-level sample weights for the 2004 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 nine 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 2004 NSDUH sample are the product of all 14 weight components, as illustrated in Exhibit 5.1.

In the 2004 NSDUH, as in the 2000 through 2003 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

**Exhibit 5.1 Summary of 2004 NSDUH Sample Weight Components**

*Phase I Dwelling Unit Level*

<b>Design Weight Components</b>	
#1	Inverse Probability of Selecting Segment
#2	Quarter Segment Weight Adjustment
#3	Subsegmentation Inflation Adjustment
#4	Inverse Probability of Selecting Dwelling Unit
#5	Subsampling of Added Dwelling Unit Adjustment
#6	Dwelling Unit Percent Release Adjustment

<b>Weight Adjustment Components</b>	
#7	Dwelling Unit Nonresponse Adjustment ( <i>res.sdu.nr</i> )*
#8	Dwelling Unit Poststratification Adjustment ( <i>res.sdu.ps</i> )*
#9	Dwelling Unit Extreme Weight Adjustment ( <i>res.sdu.ev</i> )*

*Phase II Person Level*

<b>Design Weight Components</b>	
#10	Inverse Probability of Selecting a Person Within a Dwelling Unit

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

\* 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 Divisions/Model Groups**

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

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

<b>Model Group</b>	<b>Eligible DU</b>	<b>Completed DU</b>	<b>Eligible Persons</b>	<b>Selected Persons</b>	<b>Completed Persons</b>
1	11,919	10,897	22,884	6,576	5,409
2	19,535	16,853	35,224	10,098	8,114
3	26,667	24,070	50,843	15,541	12,666
4	12,815	12,067	24,480	7,379	6,223
5	24,280	21,946	45,748	13,013	10,853
6	7,268	6,841	13,900	4,275	3,623
7	12,134	11,470	24,137	7,532	6,331
8	14,097	13,318	27,646	8,568	7,223
9	13,897	12,668	28,841	8,991	7,318
Total	142,612	130,130	273,703	81,973	67,760

DU = dwelling unit.

Source: SAMHSA, Office of Applied Studies, National Survey on Drug Use and Health, 2004.

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). It so happened that the extreme weight adjustment step was necessary neither at the DU level nor at the person level for 2004 NSDUH.

## **5.1 Phase I Household-Level Weight Components**

### **5.1.1 Weight Components #1 to #6: Selection of a Dwelling Unit**

The first six 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 geographic segment within each State FI region, (2) a quarter segment weight adjustment, (3) a subsegmentation inflation factor, (4) the probability of selecting a DU from within each counted and listed sampled segment, (5) the probability of inclusion of added DUs, and (6) DU percent release adjustment.

Segments were selected with probabilities representing a full year's sample; therefore, Weight Component #2 was set to 1 in the 12-month analysis, and to 2 for 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 1990 U.S. census data adjusted for 1995 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. Weight Component #3 (i.e., subsegmentation inflation factor) is an adjustment that accounts for this selection process.

As noted in the 2004 and earlier sample design reports, a lengthy process of determining the optimal DU sample was used during the design of the survey. Weight Component #4 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.

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 2003. Because the listing was done a short time before the 2004 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 rule). Starting from the 2000 survey, the rule was modified such that the half-open interval 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 6, 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 #5 accounts for any subsampling that occurred due to 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 #6 is the adjustment for the percentage of the DU sample released to FIs in these quarters.

For more detailed information on Weight Components #1 and #3 through #6, refer to the 2004 NSDUH sample design report (Bowman, 2005).

### **5.1.2 Weight Component #7: 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 #6) were adjusted using a multiplicative adjustment factor derived from modeling response propensity via GEM.

### **5.1.3 Weight Component #8: 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 poststratification and nonresponse. 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  $\times$  gender) were used instead.

Additionally, 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 origin, gender, and two or more races) were missing. Missing data for race and Hispanic origin were imputed using the newly developed predictive mean neighborhood (PMN) methodology (see Appendix C). The probability of observing race (white, black, American Indian/Alaska Native, Asian) was

modeled using PROC MULTLOG in SUDAAN®, and the probability of observing Hispanic 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**

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

#### 5.1.4 Weight Component #9: Dwelling Unit–Level Extreme Weight Adjustment

The product of Weight Components #1 through #8 was checked to see if the extreme weight adjustment step was needed. Using the FI region as the domain for the extreme weight definition, weights were defined as extreme if they were outside the range defined by the median  $\pm 3 \times$  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 #9 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 #9 described above. 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 nine weight components became the first nine 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 and poststratification adjustment for each respective model group can be found in Appendix D.

## **5.2 Phase II Person-Level Weight Components**

### **5.2.1 Weight Component #10: 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 2004 study; this also was done for the probabilities of selecting DUs (i.e., Weight Component #4). Note that, similar to the previous surveys, all possible pairs of eligible rostered persons were given some nonzero probability of selection in order 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 2004. 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 #10 represents the inverse of this probability of selection.

### **5.2.2 Weight Component #11: 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 #12) 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 demographics of members of the selected DUs. See Appendix D for details on the final models.

### **5.2.3 Weight Component #12: 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 source of the data, 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 #13: 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 2004 based on the 2000 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 in order to (1) control the resulting unequal weighting effect 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 #14: Respondent Person-Level Extreme Weight Adjustment**

The weights for the product of Weight Components #1 through #13 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 #9, unweighted, weighted, and winsorized extreme weight percentages were acceptably low, so it was decided that the extreme weight adjustment was not required at this stage either. (See results in Appendix G.) Therefore, Weight Component #14 was set to 1 for each responding person.



## 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 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 2004 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, at the national level, indicates an overall eligibility rate of 84.24 percent as compared with 84.16 percent for 2003. This similarity in overall rates held in nearly all States, with a few notable exceptions: the eligibility rate dropped from 77.40 to 71.13 percent for Vermont and increased from 77.52 to 85.78 percent for Delaware. The screening rate at the national level was also similar for the 2 years (90.92 percent for 2004 vs. 90.72 percent for 2003). The national interview response rate was 76.88 percent, a decrease of 0.52 percent compared with 77.40 percent for 2003, with the biggest decrease in Iowa (6.66 percent) and the biggest increase in Hawaii (5.47 percent). 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	Minimum	Median	Maximum
<i>DU Level</i>			
Eligibility Rate	71.13% (Vermont)	83.42% (Texas)	88.80% (Washington)
Screener Response Rate	82.28% (New York)	93.92% (Colorado)	95.71% (Mississippi)
<i>Person Level</i>			
Interview Response Rate	72.69% (New Jersey)	78.46% (Nevada)	85.02% (Tennessee)

### 6.2 Percentage of Extreme Weight and Outwinsor Weights

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 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 2004 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 field interviewer (FI) region;
- DU poststratification: by FI region;
- selected person-level poststratification: by FI region and age group,<sup>3</sup> State and age group, FI region, State;
- person-level nonresponse: by FI region and age group, State and age group, FI region, State; and
- person-level poststratification: by FI region and age group, State and age group, FI region, State.

### 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 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.21 for Maine, which indicates a sample size of 14 for Hispanics; an Initial Total, also known as the design-based weight, of 8,267; a Census Total of 9,452; and an initial slippage rate of -12.54 percent. The ratio of the Census Total to the Initial Total gives the

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<sup>3</sup> Age group categories are 12 to 17, 18 to 25, 26 to 34, 35 to 49, and 50 or older.

value of the weight adjustment, 1.14. Similar to this example, but in the opposite direction, is Table H.17 for Iowa. The Race domain for "black" contains a sample size of 24 and an initial slippage rate of 21.12 percent. The Initial Total of 60,433 and the Census Total of 50,312 indicates an adjustment of 0.83 would be required.

## **6.4 Weight Adjustment Summary Statistics**

Tables I.1 to I.52 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 "standard" SE (a ratio-adjusted estimator denoted by SE1) computed under the DESCRIPT procedure in SUDAAN<sup>®</sup> 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 to 17, 18 to 25, 26 to 34, and 35 or older), for the eight States with large sample sizes.

As noted above, to check for overfitting, the variances of the baseline and final models were compared. In Tables 6.2 to 6.7, there are a few cases where the SE2 from the final model is

slightly larger than the SE2 from the baseline model, indicating possible overfitting. However, in most cases, the variance estimates for the two models (baseline and final) are generally similar to each other (for both SE1 and SE2) or SE2 from final model is smaller than the SE2 from the baseline model. Note that the smaller variance estimates for the final model would indicate that the complex model for the poststratification adjustment resulted in better variance reduction (due to correlation between study and predictor variables) and bias reduction (due to 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.

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**Table 6.2 Point Estimates, Ratio-Adjusted Standard Errors (SE1), and Sandwich Standard Errors (SE2) for Baseline and Final Models—Drug Estimates (Total United States and Eight Large States): Lifetime Licit Drug Estimates, Cigarettes and Alcohol: 2004 NSDUH**

Variables		Total U.S.		California		Florida		Illinois		Michigan	
		Baseline	Final	Baseline	Final	Baseline	Final	Baseline	Final	Baseline	Final
<b>Cigarettes Lifetime</b>											
Total	Point Estimates	67.54	67.29	60.44	60.09	66.12	66.40	67.99	67.76	72.43	72.67
	SE1	0.32	0.34	1.22	1.34	1.37	1.45	1.09	1.17	1.14	1.13
	SE2	0.30	0.31	1.10	1.17	1.34	1.25	1.07	1.14	1.13	1.04
12-17	Point Estimates	29.18	29.16	26.64	26.66	27.59	27.66	25.30	25.47	29.99	30.45
	SE1	0.41	0.42	1.61	1.64	1.48	1.48	1.64	1.64	1.23	1.27
	SE2	0.41	0.41	1.59	1.62	1.50	1.56	1.65	1.66	1.24	1.27
18-25	Point Estimates	68.85	68.66	61.09	60.62	67.02	66.94	74.20	73.86	72.54	72.52
	SE1	0.48	0.48	1.77	1.76	1.49	1.50	1.46	1.47	2.39	2.38
	SE2	0.47	0.45	1.75	1.75	1.50	1.29	1.47	1.45	2.39	2.45
26-34	Point Estimates	70.95	70.63	57.85	56.01	70.88	70.35	71.25	71.54	78.88	79.01
	SE1	0.75	0.77	2.98	3.11	2.37	2.39	2.85	2.97	2.01	1.95
	SE2	0.74	0.69	2.94	2.71	2.36	1.84	2.85	2.89	2.00	1.95
35+	Point Estimates	72.97	72.70	67.45	67.41	70.48	71.19	73.33	72.82	78.35	78.66
	SE1	0.46	0.50	1.85	2.02	1.75	1.91	1.64	1.67	1.54	1.55
	SE2	0.45	0.46	1.74	1.84	1.73	1.70	1.62	1.70	1.55	1.57
<b>Alcohol Lifetime</b>											
Total	Point Estimates	82.63	82.43	79.44	79.09	82.86	83.22	84.21	84.26	85.98	86.22
	SE1	0.27	0.29	1.05	1.16	1.11	1.08	0.83	0.85	0.69	0.67
	SE2	0.25	0.24	0.95	0.90	1.07	0.90	0.82	0.84	0.70	0.68
12-17	Point Estimates	41.98	41.97	41.95	41.58	43.22	43.25	42.34	42.25	41.53	42.11
	SE1	0.41	0.42	1.46	1.42	1.72	1.67	1.37	1.31	1.62	1.64
	SE2	0.41	0.41	1.42	1.39	1.71	1.60	1.37	1.35	1.62	1.69
18-25	Point Estimates	86.26	86.15	82.71	82.42	85.36	85.33	89.06	89.52	89.63	89.55
	SE1	0.36	0.37	1.33	1.40	1.13	1.16	1.06	1.09	1.06	1.07
	SE2	0.36	0.35	1.32	1.32	1.14	1.07	1.04	1.00	1.07	1.04
26-34	Point Estimates	90.37	90.11	83.51	82.26	90.33	89.88	90.22	90.45	94.02	93.67
	SE1	0.48	0.51	1.86	2.02	1.58	1.66	1.78	1.77	0.91	0.92
	SE2	0.47	0.45	1.84	1.74	1.61	1.54	1.78	1.70	0.91	0.86
35+	Point Estimates	86.94	86.69	84.77	84.58	86.59	87.39	89.03	88.84	91.13	91.54
	SE1	0.39	0.43	1.54	1.72	1.57	1.51	1.21	1.22	1.13	1.09
	SE2	0.37	0.34	1.41	1.35	1.54	1.32	1.21	1.28	1.13	1.09

(continued)

**Table 6.2 Point Estimates, Ratio-Adjusted Standard Errors (SE1), and Sandwich Standard Errors (SE2) for Baseline and Final Models—Drug Estimates (Total United States and Eight Large States): Lifetime Licit Drug Estimates, Cigarettes and Alcohol: 2004 NSDUH (continued)**

Variables		New York		Ohio		Pennsylvania		Texas	
		Baseline	Final	Baseline	Final	Baseline	Final	Baseline	Final
<b>Cigarettes Lifetime</b>									
Total	Point Estimates	62.82	62.93	70.47	70.32	71.33	71.23	63.75	63.53
	SE1	1.36	1.37	1.24	1.22	1.04	1.08	1.13	1.18
	SE2	1.28	1.29	1.23	1.15	1.05	1.06	0.99	0.96
12-17	Point Estimates	28.45	28.04	33.10	33.00	30.43	30.24	26.63	26.84
	SE1	1.43	1.41	1.64	1.58	1.40	1.37	1.31	1.33
	SE2	1.44	1.41	1.64	1.62	1.40	1.36	1.31	1.29
18-25	Point Estimates	67.68	68.35	72.10	72.14	74.25	74.26	63.40	63.55
	SE1	1.45	1.49	1.76	1.79	1.46	1.52	2.26	2.31
	SE2	1.43	1.45	1.75	1.78	1.48	1.52	2.23	2.19
26-34	Point Estimates	65.53	64.71	76.65	76.99	78.75	79.10	70.75	70.07
	SE1	3.11	3.40	2.46	2.44	2.20	2.21	2.52	2.59
	SE2	3.03	3.15	2.47	2.42	2.19	2.05	2.40	2.36
35+	Point Estimates	66.65	66.92	74.87	74.65	75.70	75.44	69.27	69.00
	SE1	1.79	1.82	1.71	1.68	1.42	1.48	1.59	1.67
	SE2	1.75	1.74	1.70	1.66	1.45	1.42	1.51	1.45
<b>Alcohol Lifetime</b>									
Total	Point Estimates	82.05	81.82	85.17	84.93	85.96	85.78	78.39	78.04
	SE1	1.14	1.21	0.92	0.96	0.63	0.67	1.10	1.14
	SE2	1.09	1.14	0.91	0.93	0.64	0.61	0.96	0.88
12-17	Point Estimates	43.82	43.21	43.52	43.49	41.28	41.20	38.75	38.69
	SE1	1.62	1.80	1.53	1.51	1.57	1.52	1.37	1.40
	SE2	1.64	1.89	1.54	1.61	1.58	1.44	1.39	1.41
18-25	Point Estimates	87.82	87.82	87.87	87.88	88.92	89.16	82.45	82.54
	SE1	0.98	1.09	1.58	1.57	0.79	0.88	1.53	1.54
	SE2	0.98	1.02	1.58	1.60	0.80	0.90	1.52	1.49
26-34	Point Estimates	89.62	88.71	95.37	95.58	95.84	95.72	86.33	86.06
	SE1	2.00	2.27	1.47	1.45	1.18	1.22	1.88	1.90
	SE2	2.01	2.26	1.47	1.38	1.17	1.21	1.73	1.72
35+	Point Estimates	85.19	85.10	89.16	88.83	90.45	90.07	83.01	82.48
	SE1	1.60	1.71	1.30	1.36	0.89	0.97	1.59	1.68
	SE2	1.55	1.52	1.29	1.31	0.92	0.88	1.51	1.33

**Table 6.3 Point Estimates, Ratio-Adjusted Standard Errors (SE1), and Sandwich Standard Errors (SE2) for Baseline and Final Models—Drug Estimates (Total United States and Eight Large States): Lifetime Illicit Drug Estimates, Marijuana and Cocaine: 2004 NSDUH**

Variables	Total U.S.		California		Florida		Illinois		Michigan		
	Baseline	Final	Baseline	Final	Baseline	Final	Baseline	Final	Baseline	Final	
<b>Marijuana Lifetime</b>											
Total	Point Estimates	40.42	40.26	39.50	39.22	37.37	38.23	40.65	41.02	44.08	44.27
	SE1	0.37	0.38	1.33	1.34	1.31	1.27	1.29	1.28	1.45	1.48
	SE2	0.31	0.29	1.12	1.10	1.22	1.02	1.23	0.99	1.40	1.16
12-17	Point Estimates	18.97	18.96	20.79	20.73	18.99	19.07	18.14	17.90	19.12	19.56
	SE1	0.33	0.34	1.15	1.18	1.06	1.07	1.25	1.25	1.23	1.25
	SE2	0.33	0.34	1.12	1.16	1.07	1.08	1.24	1.26	1.24	1.28
18-25	Point Estimates	53.16	52.77	48.65	47.40	53.62	53.91	54.82	55.23	57.88	57.89
	SE1	0.53	0.54	2.01	2.05	2.10	2.03	1.81	1.86	2.34	2.39
	SE2	0.52	0.52	2.00	1.85	2.17	1.92	1.81	1.84	2.34	2.36
26-34	Point Estimates	50.81	50.55	42.72	41.05	51.49	50.58	46.92	47.50	60.29	60.29
	SE1	0.79	0.81	3.13	3.09	2.89	2.99	3.25	3.33	3.22	3.32
	SE2	0.78	0.73	3.11	2.51	2.95	2.91	3.26	3.37	3.19	2.75
35+	Point Estimates	38.85	38.73	40.13	40.34	34.48	35.83	39.90	40.24	41.86	42.12
	SE1	0.54	0.55	1.80	1.80	1.87	1.84	1.87	1.94	1.81	1.84
	SE2	0.44	0.41	1.55	1.54	1.71	1.36	1.82	1.58	1.74	1.49
<b>Cocaine Lifetime</b>											
Total	Point Estimates	14.28	14.21	17.56	17.61	14.35	14.79	13.45	13.83	13.05	13.12
	SE1	0.26	0.26	1.09	1.11	0.78	0.80	0.98	1.08	0.89	0.90
	SE2	0.24	0.24	1.05	1.06	0.79	0.83	0.98	0.97	0.88	0.83
12-17	Point Estimates	2.42	2.42	3.46	3.55	2.80	2.79	1.45	1.46	1.69	1.67
	SE1	0.13	0.13	0.50	0.52	0.59	0.59	0.36	0.36	0.40	0.40
	SE2	0.13	0.13	0.51	0.53	0.59	0.60	0.36	0.37	0.40	0.40
18-25	Point Estimates	15.31	15.19	16.14	15.83	15.50	15.59	12.71	12.94	14.33	14.46
	SE1	0.33	0.34	1.30	1.31	1.14	1.14	1.27	1.31	1.09	1.13
	SE2	0.34	0.33	1.28	1.25	1.13	1.08	1.26	1.26	1.10	1.19
26-34	Point Estimates	16.27	16.27	14.27	14.11	17.94	17.65	15.49	16.43	16.92	16.66
	SE1	0.60	0.61	2.14	2.09	2.36	2.31	2.11	2.34	2.19	2.12
	SE2	0.59	0.58	2.14	1.93	2.38	2.29	2.10	2.03	2.19	2.15
35+	Point Estimates	15.61	15.51	21.47	21.64	15.10	15.85	15.23	15.53	13.90	14.04
	SE1	0.37	0.37	1.55	1.59	1.02	1.03	1.36	1.51	1.13	1.16
	SE2	0.34	0.33	1.49	1.52	1.01	1.06	1.36	1.42	1.10	1.00

(continued)

**Table 6.3 Point Estimates, Ratio-Adjusted Standard Errors (SE1), and Sandwich Standard Errors (SE2) for Baseline and Final Models—Drug Estimates (Total United States and Eight Large States): Lifetime Illicit Drug Estimates, Marijuana and Cocaine: 2004 NSDUH (continued)**

Variables		New York		Ohio		Pennsylvania		Texas	
		Baseline	Final	Baseline	Final	Baseline	Final	Baseline	Final
<b>Marijuana Lifetime</b>									
Total	Point Estimates	40.54	40.23	39.65	39.96	39.10	38.80	35.23	34.81
	SE1	1.47	1.52	1.20	1.21	1.42	1.41	1.59	1.59
	SE2	1.41	1.31	1.15	1.02	1.42	1.11	1.51	1.40
12-17	Point Estimates	18.69	17.97	18.45	18.40	18.95	18.93	14.94	14.92
	SE1	1.10	1.06	1.12	1.15	1.20	1.19	1.00	1.02
	SE2	1.10	1.05	1.12	1.19	1.20	1.16	1.01	1.01
18-25	Point Estimates	55.43	55.37	55.60	55.61	56.39	56.28	43.21	43.45
	SE1	1.94	2.20	1.91	1.94	1.84	1.88	2.09	2.12
	SE2	1.92	2.16	1.91	1.86	1.86	1.84	2.10	2.04
26-34	Point Estimates	52.81	51.85	54.24	54.56	59.21	58.96	40.30	39.62
	SE1	3.23	3.35	2.90	2.84	2.05	2.05	2.37	2.41
	SE2	3.20	3.20	2.88	2.70	2.07	2.00	2.24	2.11
35+	Point Estimates	38.16	37.94	36.51	37.05	34.92	34.59	35.81	35.22
	SE1	2.05	2.11	1.59	1.61	1.89	1.88	2.43	2.41
	SE2	1.96	1.72	1.50	1.31	1.91	1.51	2.25	2.08
<b>Cocaine Lifetime</b>									
Total	Point Estimates	14.91	14.82	10.83	11.08	13.73	13.63	12.61	12.40
	SE1	1.00	1.02	0.68	0.70	1.00	0.97	0.99	0.99
	SE2	0.96	0.90	0.67	0.65	1.01	0.89	0.95	0.92
12-17	Point Estimates	2.03	2.05	1.18	1.17	1.53	1.55	3.41	3.38
	SE1	0.45	0.49	0.38	0.38	0.28	0.29	0.55	0.56
	SE2	0.46	0.47	0.38	0.38	0.28	0.29	0.54	0.54
18-25	Point Estimates	14.13	14.38	13.62	13.64	16.40	16.31	14.19	14.15
	SE1	1.67	1.80	1.24	1.22	1.05	1.02	1.22	1.24
	SE2	1.63	1.74	1.24	1.23	1.06	0.95	1.21	1.17
26-34	Point Estimates	15.99	15.76	13.14	13.17	17.56	17.93	16.29	15.88
	SE1	2.84	2.95	1.74	1.73	1.65	1.60	2.03	2.03
	SE2	2.83	2.83	1.74	1.65	1.65	1.53	2.03	1.90
35+	Point Estimates	16.85	16.71	11.31	11.72	14.37	14.14	13.00	12.78
	SE1	1.36	1.36	1.05	1.08	1.42	1.39	1.59	1.58
	SE2	1.33	1.23	1.00	0.94	1.44	1.27	1.49	1.42

**Table 6.4 Point Estimates, Ratio-Adjusted Standard Errors (SE1), and Sandwich Standard Errors (SE2) for Baseline and Final Models—Drug Estimates (Total United States and Eight Large States): Past Year Licit Drug Estimates, Cigarettes and Alcohol: 2004 NSDUH**

Variables		Total U.S.		California		Florida		Illinois		Michigan	
		Baseline	Final	Baseline	Final	Baseline	Final	Baseline	Final	Baseline	Final
<b>Cigarettes Past Year</b>											
Total	Point Estimates	29.14	29.04	20.90	20.51	28.27	28.58	30.89	31.10	31.44	31.69
	SE1	0.33	0.33	0.96	0.97	1.51	1.55	1.22	1.30	1.36	1.33
	SE2	0.31	0.30	0.89	0.83	1.44	1.32	1.18	1.15	1.33	1.14
12-17	Point Estimates	18.41	18.33	16.75	16.65	16.76	16.68	15.41	15.61	18.62	19.18
	SE1	0.35	0.35	1.16	1.20	1.28	1.25	1.19	1.19	1.07	1.11
	SE2	0.34	0.34	1.14	1.17	1.27	1.29	1.19	1.21	1.07	1.10
18-25	Point Estimates	47.55	47.38	38.05	37.69	44.03	44.02	55.51	55.33	50.98	51.23
	SE1	0.50	0.51	1.48	1.51	1.88	1.91	1.59	1.63	2.34	2.36
	SE2	0.49	0.49	1.48	1.53	1.86	1.82	1.60	1.59	2.34	2.40
26-34	Point Estimates	38.00	38.01	22.67	22.14	39.07	38.77	36.56	37.28	43.86	44.12
	SE1	0.82	0.83	2.68	2.57	2.70	2.68	3.24	3.41	2.87	2.81
	SE2	0.81	0.78	2.65	2.38	2.73	2.44	3.23	3.19	2.87	2.79
35+	Point Estimates	24.87	24.77	17.28	16.82	25.11	25.57	26.73	26.82	26.72	26.94
	SE1	0.45	0.46	1.28	1.33	1.85	1.96	1.70	1.72	1.81	1.76
	SE2	0.43	0.42	1.20	1.16	1.78	1.70	1.68	1.66	1.78	1.62
<b>Alcohol Past Year</b>											
Total	Point Estimates	65.34	65.15	63.46	63.28	64.31	64.59	70.39	70.39	67.86	68.05
	SE1	0.36	0.37	1.16	1.19	1.52	1.49	1.47	1.47	1.19	1.15
	SE2	0.34	0.33	1.05	1.01	1.49	1.27	1.44	1.48	1.19	1.11
12-17	Point Estimates	33.86	33.83	33.82	33.70	36.56	36.64	35.03	34.95	34.69	35.04
	SE1	0.39	0.40	1.25	1.26	1.65	1.61	1.58	1.51	1.55	1.54
	SE2	0.40	0.40	1.23	1.27	1.64	1.54	1.58	1.54	1.54	1.57
18-25	Point Estimates	78.20	77.98	72.36	71.59	76.92	76.85	82.56	83.04	83.69	83.70
	SE1	0.43	0.44	1.42	1.56	1.51	1.52	1.10	1.14	1.25	1.26
	SE2	0.42	0.41	1.41	1.41	1.51	1.35	1.13	1.08	1.26	1.26
26-34	Point Estimates	77.11	76.82	71.83	70.12	74.92	74.41	80.39	80.55	78.72	78.07
	SE1	0.69	0.70	2.35	2.51	2.80	2.85	2.32	2.30	1.92	1.94
	SE2	0.68	0.63	2.37	2.23	2.80	2.48	2.32	2.13	1.93	1.93
35+	Point Estimates	65.13	64.94	64.84	65.12	64.02	64.58	71.43	71.16	67.83	68.23
	SE1	0.55	0.57	1.80	1.82	2.14	2.13	2.38	2.43	1.90	1.84
	SE2	0.52	0.49	1.64	1.56	2.11	1.84	2.36	2.44	1.88	1.71

(continued)

**Table 6.4 Point Estimates, Ratio-Adjusted Standard Errors (SE1), and Sandwich Standard Errors (SE2) for Baseline and Final Models—Drug Estimates (Total United States and Eight Large States): Past Year Licit Drug Estimates, Cigarettes and Alcohol: 2004 NSDUH (continued)**

Variables		New York		Ohio		Pennsylvania		Texas	
		Baseline	Final	Baseline	Final	Baseline	Final	Baseline	Final
<b>Cigarettes Past Year</b>									
Total	Point Estimates	28.75	28.78	32.34	32.48	31.56	31.43	30.22	30.15
	SE1	1.23	1.22	1.18	1.16	1.30	1.30	1.00	1.01
	SE2	1.24	1.19	1.17	1.12	1.32	1.19	0.99	1.02
12-17	Point Estimates	18.90	18.13	20.79	20.49	20.53	20.37	16.97	17.27
	SE1	1.29	1.30	1.21	1.19	1.41	1.39	1.34	1.33
	SE2	1.28	1.29	1.21	1.22	1.41	1.35	1.34	1.23
18-25	Point Estimates	46.39	47.14	51.36	51.41	53.36	53.69	42.67	42.89
	SE1	2.12	2.24	2.08	2.07	1.59	1.60	2.04	2.06
	SE2	2.12	2.21	2.08	2.04	1.59	1.51	1.98	1.88
26-34	Point Estimates	40.22	40.00	44.73	44.81	43.60	44.07	38.36	38.26
	SE1	3.07	3.25	2.99	2.97	3.04	3.09	2.80	2.85
	SE2	3.04	3.22	2.99	2.86	3.05	2.92	2.75	2.65
35+	Point Estimates	24.10	24.11	27.45	27.80	26.60	26.37	27.36	27.18
	SE1	1.75	1.76	1.48	1.51	1.85	1.80	1.21	1.21
	SE2	1.77	1.75	1.47	1.55	1.89	1.75	1.24	1.29
<b>Alcohol Past Year</b>									
Total	Point Estimates	69.11	68.70	66.18	66.28	70.84	70.67	62.02	61.74
	SE1	1.45	1.53	1.24	1.26	1.37	1.37	1.51	1.53
	SE2	1.47	1.53	1.21	1.13	1.40	1.39	1.49	1.44
12-17	Point Estimates	36.93	36.36	35.17	35.11	33.84	33.80	31.41	31.33
	SE1	1.64	1.79	1.55	1.59	1.46	1.46	1.59	1.62
	SE2	1.66	1.86	1.55	1.68	1.47	1.38	1.60	1.57
18-25	Point Estimates	81.06	80.84	79.82	79.63	82.30	82.64	73.42	73.62
	SE1	1.35	1.47	1.87	1.88	1.29	1.34	1.60	1.61
	SE2	1.38	1.36	1.87	1.89	1.31	1.29	1.59	1.56
26-34	Point Estimates	81.78	80.40	82.37	82.09	88.82	88.47	71.97	71.72
	SE1	2.33	2.59	2.32	2.35	1.84	1.93	2.54	2.55
	SE2	2.35	2.60	2.32	2.21	1.85	1.90	2.49	2.40
35+	Point Estimates	68.88	68.60	64.77	65.18	70.88	70.60	62.39	61.97
	SE1	2.04	2.14	1.91	1.95	2.01	2.00	2.56	2.59
	SE2	2.04	2.01	1.86	1.74	2.04	2.04	2.56	2.39

**Table 6.5 Point Estimates, Ratio-Adjusted Standard Errors (SE1), and Sandwich Standard Errors (SE2) for Baseline and Final Models—Drug Estimates (Total United States and Eight Large States): Past Year Illicit Drug Estimates, Marijuana and Cocaine: 2004 NSDUH**

Variables		Total U.S.		California		Florida		Illinois		Michigan	
		Baseline	Final	Baseline	Final	Baseline	Final	Baseline	Final	Baseline	Final
<b>Marijuana Past Year</b>											
Total	Point Estimates	10.66	10.60	12.12	11.90	9.41	9.61	10.50	10.49	12.17	12.27
	SE1	0.18	0.19	0.77	0.77	0.63	0.66	0.72	0.69	0.69	0.68
	SE2	0.17	0.17	0.73	0.71	0.62	0.60	0.70	0.64	0.68	0.62
12-17	Point Estimates	14.47	14.47	15.56	15.54	14.47	14.53	13.96	13.64	15.31	15.66
	SE1	0.30	0.31	1.03	1.05	0.99	0.99	1.00	0.96	0.99	1.01
	SE2	0.30	0.30	1.03	1.04	1.00	0.99	0.99	0.96	1.00	1.03
18-25	Point Estimates	28.12	27.83	26.78	25.92	28.42	28.60	28.14	28.19	31.77	31.85
	SE1	0.46	0.48	1.72	1.75	2.05	2.05	1.84	1.87	1.71	1.74
	SE2	0.46	0.45	1.69	1.62	2.06	1.94	1.84	1.81	1.71	1.75
26-34	Point Estimates	14.03	13.95	12.29	11.72	14.16	13.59	14.03	14.12	16.55	16.92
	SE1	0.56	0.56	2.06	1.99	2.03	2.05	1.90	2.20	2.20	2.24
	SE2	0.56	0.54	2.05	1.71	2.06	2.03	1.88	2.29	2.20	2.22
35+	Point Estimates	5.43	5.40	8.06	8.01	4.50	4.74	5.08	5.07	6.44	6.45
	SE1	0.22	0.22	0.98	0.99	0.75	0.78	0.78	0.71	0.71	0.71
	SE2	0.22	0.22	0.98	1.02	0.75	0.77	0.77	0.67	0.70	0.68
<b>Cocaine Past Year</b>											
Total	Point Estimates	2.37	2.36	2.48	2.51	2.64	2.71	2.82	2.85	2.51	2.49
	SE1	0.08	0.09	0.32	0.32	0.37	0.38	0.44	0.44	0.33	0.33
	SE2	0.08	0.08	0.31	0.30	0.37	0.36	0.43	0.39	0.33	0.32
12-17	Point Estimates	1.62	1.63	1.93	1.95	1.94	1.94	1.01	1.02	1.25	1.26
	SE1	0.11	0.11	0.44	0.45	0.47	0.47	0.25	0.25	0.37	0.37
	SE2	0.11	0.11	0.44	0.46	0.47	0.47	0.25	0.25	0.37	0.37
18-25	Point Estimates	6.69	6.64	6.45	6.30	8.00	8.06	5.69	5.85	6.87	6.88
	SE1	0.24	0.25	0.91	0.90	0.95	0.95	0.78	0.83	0.71	0.72
	SE2	0.24	0.24	0.91	0.92	0.95	0.92	0.78	0.82	0.72	0.78
26-34	Point Estimates	3.98	3.94	4.42	4.39	5.47	5.31	5.01	5.65	2.73	2.58
	SE1	0.30	0.30	1.13	1.09	1.35	1.34	1.09	1.34	0.79	0.76
	SE2	0.30	0.29	1.11	1.04	1.35	1.25	1.09	1.34	0.79	0.74
35+	Point Estimates	1.18	1.18	1.15	1.23	1.28	1.36	1.95	1.79	1.74	1.75
	SE1	0.09	0.10	0.34	0.37	0.32	0.35	0.56	0.48	0.41	0.42
	SE2	0.09	0.09	0.34	0.35	0.33	0.33	0.55	0.46	0.41	0.40

(continued)

**Table 6.5 Point Estimates, Ratio-Adjusted Standard Errors (SE1), and Sandwich Standard Errors (SE2) for Baseline and Final Models—Drug Estimates (Total United States and Eight Large States): Past Year Illicit Drug Estimates, Marijuana and Cocaine: 2004 NSDUH (continued)**

Variables		New York		Ohio		Pennsylvania		Texas	
		Baseline	Final	Baseline	Final	Baseline	Final	Baseline	Final
<b>Marijuana Past Year</b>									
Total	Point Estimates	12.45	12.35	9.99	10.03	10.57	10.54	8.65	8.63
	SE1	0.73	0.79	0.59	0.60	0.71	0.70	0.60	0.61
	SE2	0.71	0.71	0.59	0.59	0.69	0.63	0.57	0.55
12-17	Point Estimates	15.37	14.64	14.00	13.94	14.60	14.66	11.20	11.34
	SE1	1.03	1.04	1.19	1.23	0.93	0.94	0.96	0.98
	SE2	1.04	1.04	1.19	1.25	0.92	0.92	0.96	0.95
18-25	Point Estimates	35.09	35.07	27.29	27.30	31.97	32.04	21.86	22.00
	SE1	1.88	2.17	1.79	1.81	1.65	1.66	1.77	1.80
	SE2	1.87	2.08	1.79	1.77	1.68	1.68	1.78	1.80
26-34	Point Estimates	20.90	20.98	11.98	12.03	17.39	17.56	10.73	10.45
	SE1	2.99	3.25	1.89	1.86	2.02	2.03	1.65	1.60
	SE2	2.97	3.25	1.89	1.84	2.03	1.95	1.62	1.54
35+	Point Estimates	5.47	5.32	5.23	5.31	4.34	4.36	4.16	4.16
	SE1	0.59	0.62	0.79	0.79	0.82	0.81	0.80	0.79
	SE2	0.61	0.61	0.78	0.74	0.82	0.82	0.78	0.75
<b>Cocaine Past Year</b>									
Total	Point Estimates	2.46	2.45	1.96	1.94	2.70	2.65	2.39	2.36
	SE1	0.37	0.38	0.32	0.31	0.35	0.35	0.30	0.30
	SE2	0.37	0.37	0.32	0.30	0.36	0.34	0.29	0.29
12-17	Point Estimates	1.41	1.33	0.77	0.76	1.39	1.41	2.83	2.82
	SE1	0.36	0.34	0.33	0.33	0.28	0.29	0.48	0.49
	SE2	0.37	0.34	0.33	0.33	0.28	0.29	0.48	0.48
18-25	Point Estimates	7.48	7.82	5.54	5.49	7.90	7.95	5.72	5.74
	SE1	1.29	1.43	0.93	0.92	0.75	0.75	0.83	0.84
	SE2	1.26	1.39	0.93	0.91	0.75	0.75	0.84	0.83
26-34	Point Estimates	3.90	3.60	2.42	2.42	5.04	5.22	3.74	3.50
	SE1	1.31	1.20	0.89	0.89	1.42	1.49	0.97	0.94
	SE2	1.30	1.14	0.89	0.88	1.42	1.34	0.95	0.93
35+	Point Estimates	1.28	1.26	1.29	1.29	1.41	1.32	1.07	1.08
	SE1	0.40	0.39	0.38	0.37	0.39	0.35	0.34	0.35
	SE2	0.40	0.40	0.38	0.36	0.40	0.35	0.33	0.33

**Table 6.6 Point Estimates, Ratio-Adjusted Standard Errors (SE1), and Sandwich Standard Errors (SE2) for Baseline and Final Models—Drug Estimates (Total United States and Eight Large States): Past Month Licit Drug Estimates, Cigarettes and Alcohol: 2004 NSDUH**

Variables		Total U.S.		California		Florida		Illinois		Michigan	
		Baseline	Final	Baseline	Final	Baseline	Final	Baseline	Final	Baseline	Final
<b>Cigarettes Past Month</b>											
Total	Point Estimates	24.95	24.89	16.46	16.00	24.08	24.51	27.17	27.45	27.55	27.73
	SE1	0.32	0.32	1.00	0.98	1.38	1.40	1.16	1.23	1.29	1.26
	SE2	0.31	0.29	0.94	0.87	1.32	1.22	1.13	1.11	1.27	1.08
12-17	Point Estimates	11.91	11.85	10.64	10.41	9.63	9.54	9.18	9.34	12.56	12.74
	SE1	0.30	0.30	0.99	1.01	1.06	1.04	0.88	0.90	0.97	0.99
	SE2	0.29	0.29	0.99	0.98	1.06	1.07	0.88	0.91	0.98	1.00
18-25	Point Estimates	39.60	39.44	29.11	28.73	36.52	36.65	47.04	47.07	45.13	45.25
	SE1	0.48	0.49	1.37	1.37	1.74	1.76	1.62	1.72	2.58	2.61
	SE2	0.47	0.47	1.38	1.37	1.70	1.69	1.63	1.68	2.58	2.64
26-34	Point Estimates	32.44	32.43	17.39	16.69	32.64	32.48	34.13	34.78	38.00	38.15
	SE1	0.79	0.80	2.68	2.53	2.78	2.79	3.23	3.38	2.76	2.71
	SE2	0.78	0.74	2.66	2.34	2.81	2.75	3.22	3.16	2.75	2.64
35+	Point Estimates	22.22	22.17	14.42	13.93	22.35	22.99	24.18	24.37	24.06	24.29
	SE1	0.44	0.44	1.34	1.36	1.80	1.87	1.60	1.63	1.68	1.66
	SE2	0.42	0.40	1.25	1.20	1.73	1.63	1.58	1.57	1.65	1.47
<b>Alcohol Past Month</b>											
Total	Point Estimates	50.45	50.29	49.86	49.65	49.71	49.73	54.45	54.62	51.88	52.08
	SE1	0.40	0.40	1.37	1.36	1.55	1.56	1.27	1.31	1.31	1.29
	SE2	0.37	0.35	1.19	1.12	1.54	1.37	1.24	1.29	1.31	1.27
12-17	Point Estimates	17.54	17.58	18.68	18.80	17.64	17.60	16.88	16.58	17.07	17.26
	SE1	0.31	0.32	1.11	1.16	1.29	1.30	1.21	1.21	1.03	1.07
	SE2	0.31	0.32	1.09	1.20	1.29	1.27	1.22	1.24	1.03	1.08
18-25	Point Estimates	60.67	60.46	54.16	53.46	58.43	58.58	64.74	65.47	64.59	64.64
	SE1	0.50	0.51	1.56	1.67	2.31	2.28	1.84	1.88	1.57	1.59
	SE2	0.49	0.46	1.54	1.54	2.31	2.05	1.86	1.76	1.56	1.58
26-34	Point Estimates	60.80	60.60	58.15	56.96	61.37	60.61	62.10	62.50	63.51	63.04
	SE1	0.79	0.79	2.47	2.50	3.02	3.09	2.67	2.76	2.48	2.45
	SE2	0.77	0.73	2.47	2.22	3.01	2.81	2.65	2.61	2.49	2.40
35+	Point Estimates	51.38	51.22	52.60	52.66	50.51	50.72	56.89	56.83	52.62	53.03
	SE1	0.60	0.61	2.20	2.19	2.14	2.17	2.07	2.16	2.14	2.11
	SE2	0.57	0.53	2.06	1.96	2.15	1.95	2.05	2.16	2.11	1.95

(continued)

**Table 6.6 Point Estimates, Ratio-Adjusted Standard Errors (SE1), and Sandwich Standard Errors (SE2) for Baseline and Final Models—Drug Estimates (Total United States and Eight Large States): Past Month Licit Drug Estimates, Cigarettes and Alcohol: 2004 NSDUH (continued)**

Variables		New York		Ohio		Pennsylvania		Texas	
		Baseline	Final	Baseline	Final	Baseline	Final	Baseline	Final
<b>Cigarettes Past Month</b>									
Total	Point Estimates	24.34	24.47	28.30	28.43	26.81	26.72	25.63	25.58
	SE1	1.15	1.17	1.11	1.10	1.04	1.05	1.05	1.07
	SE2	1.18	1.18	1.10	1.06	1.07	0.99	1.04	1.08
12-17	Point Estimates	10.69	10.41	14.29	14.08	13.38	13.28	9.33	9.48
	SE1	1.10	1.06	0.99	0.97	1.22	1.18	0.97	0.97
	SE2	1.08	1.03	0.99	0.98	1.22	1.16	0.97	0.91
18-25	Point Estimates	39.14	39.48	43.54	43.48	45.35	45.41	34.46	34.71
	SE1	2.02	2.17	2.12	2.11	1.62	1.62	1.92	1.91
	SE2	2.02	2.16	2.13	2.11	1.63	1.47	1.88	1.73
26-34	Point Estimates	32.57	33.34	38.50	38.65	36.31	36.97	31.20	30.97
	SE1	2.57	2.81	2.63	2.63	2.83	2.91	2.09	2.15
	SE2	2.54	2.85	2.63	2.54	2.86	2.80	2.08	2.01
35+	Point Estimates	21.61	21.56	25.11	25.41	23.36	23.17	25.05	24.95
	SE1	1.65	1.66	1.48	1.51	1.61	1.59	1.28	1.31
	SE2	1.68	1.69	1.47	1.51	1.65	1.55	1.31	1.38
<b>Alcohol Past Month</b>									
Total	Point Estimates	54.81	54.53	50.43	50.16	53.73	53.68	47.99	47.91
	SE1	1.50	1.55	1.48	1.51	1.43	1.43	1.43	1.47
	SE2	1.46	1.46	1.45	1.43	1.46	1.51	1.36	1.31
12-17	Point Estimates	18.43	18.49	16.59	16.49	16.84	16.90	15.28	15.30
	SE1	1.12	1.30	1.16	1.14	1.14	1.18	1.16	1.17
	SE2	1.10	1.24	1.16	1.18	1.15	1.17	1.16	1.12
18-25	Point Estimates	64.51	64.40	63.62	63.48	66.02	66.05	55.19	55.34
	SE1	1.82	1.97	2.08	2.06	1.66	1.69	1.72	1.72
	SE2	1.80	1.81	2.08	2.03	1.68	1.61	1.74	1.66
26-34	Point Estimates	65.45	64.47	63.22	62.76	72.39	71.88	57.75	57.39
	SE1	3.11	3.24	2.90	2.91	1.99	2.06	2.90	2.89
	SE2	3.09	3.32	2.90	2.87	1.98	2.08	2.85	2.78
35+	Point Estimates	56.17	55.90	50.35	50.16	53.45	53.45	49.91	49.84
	SE1	2.04	2.13	2.10	2.16	2.07	2.07	2.26	2.30
	SE2	2.00	1.95	2.07	2.05	2.11	2.24	2.18	1.98

**Table 6.7 Point Estimates, Ratio-Adjusted Standard Errors (SE1), and Sandwich Standard Errors (SE2) for Baseline and Final Models—Drug Estimates (Total United States and Eight Large States): Past Month Illicit Drug Estimates, Marijuana and Cocaine: 2004 NSDUH**

Variables		Total U.S.		California		Florida		Illinois		Michigan	
		Baseline	Final	Baseline	Final	Baseline	Final	Baseline	Final	Baseline	Final
<b>Marijuana Past Month</b>											
Total	Point Estimates	6.11	6.06	7.60	7.43	5.59	5.75	5.84	5.91	7.36	7.46
	SE1	0.15	0.15	0.72	0.73	0.45	0.46	0.59	0.63	0.52	0.52
	SE2	0.14	0.14	0.68	0.64	0.44	0.44	0.58	0.57	0.52	0.51
12-17	Point Estimates	7.59	7.56	9.65	9.62	6.81	6.78	5.10	4.68	7.89	7.99
	SE1	0.22	0.22	0.77	0.80	0.67	0.68	0.62	0.52	0.64	0.66
	SE2	0.22	0.22	0.78	0.80	0.67	0.69	0.61	0.54	0.65	0.69
18-25	Point Estimates	16.32	16.11	15.29	14.45	17.84	18.04	16.81	17.14	20.40	20.40
	SE1	0.37	0.37	1.43	1.37	1.60	1.63	1.71	1.75	1.51	1.52
	SE2	0.36	0.35	1.42	1.34	1.58	1.56	1.71	1.70	1.51	1.57
26-34	Point Estimates	8.31	8.28	8.90	8.54	9.14	9.13	8.81	9.12	8.49	9.10
	SE1	0.46	0.46	1.73	1.68	1.89	1.87	1.80	1.98	1.81	1.94
	SE2	0.46	0.45	1.71	1.54	1.91	1.82	1.81	2.00	1.81	1.84
35+	Point Estimates	3.11	3.09	5.10	5.09	2.63	2.75	2.79	2.81	4.21	4.24
	SE1	0.16	0.16	0.84	0.88	0.48	0.50	0.60	0.62	0.68	0.68
	SE2	0.16	0.16	0.82	0.85	0.47	0.50	0.60	0.59	0.68	0.67
<b>Cocaine Past Month</b>											
Total	Point Estimates	0.84	0.84	0.57	0.57	0.90	0.94	1.13	1.22	0.84	0.84
	SE1	0.05	0.05	0.13	0.13	0.17	0.19	0.36	0.39	0.18	0.18
	SE2	0.05	0.05	0.12	0.12	0.17	0.17	0.35	0.35	0.18	0.18
12-17	Point Estimates	0.49	0.50	0.51	0.49	0.51	0.52	0.13	0.13	0.38	0.38
	SE1	0.06	0.06	0.22	0.23	0.22	0.23	0.10	0.10	0.18	0.18
	SE2	0.06	0.06	0.22	0.24	0.22	0.23	0.10	0.10	0.18	0.18
18-25	Point Estimates	2.19	2.14	1.44	1.34	2.40	2.40	1.38	1.33	2.06	2.06
	SE1	0.14	0.13	0.37	0.36	0.45	0.45	0.29	0.29	0.40	0.40
	SE2	0.14	0.13	0.37	0.36	0.44	0.44	0.29	0.29	0.40	0.40
26-34	Point Estimates	1.32	1.36	0.62	0.62	1.51	1.41	3.24	3.98	0.39	0.40
	SE1	0.17	0.18	0.33	0.32	0.45	0.51	1.16	1.48	0.30	0.30
	SE2	0.17	0.17	0.33	0.31	0.47	0.52	1.15	1.39	0.30	0.29
35+	Point Estimates	0.49	0.49	0.38	0.40	0.58	0.64	0.71	0.69	0.76	0.76
	SE1	0.06	0.06	0.19	0.20	0.22	0.25	0.37	0.34	0.25	0.25
	SE2	0.06	0.06	0.19	0.20	0.22	0.24	0.37	0.33	0.25	0.25

(continued)

**Table 6.7 Point Estimates, Ratio-Adjusted Standard Errors (SE1), and Sandwich Standard Errors (SE2) for Baseline and Final Models—Drug Estimates (Total United States and Eight Large States): Past Month Illicit Drug Estimates, Marijuana and Cocaine: 2004 NSDUH (continued)**

Variables		New York		Ohio		Pennsylvania		Texas	
		Baseline	Final	Baseline	Final	Baseline	Final	Baseline	Final
<b>Marijuana Past Month</b>									
Total	Point Estimates	7.72	7.59	5.99	6.05	6.18	6.21	4.58	4.57
	SE1	0.54	0.59	0.49	0.51	0.55	0.56	0.40	0.40
	SE2	0.53	0.56	0.49	0.51	0.54	0.51	0.40	0.38
12-17	Point Estimates	8.88	8.67	7.71	7.77	7.24	7.32	4.61	4.69
	SE1	1.04	1.06	0.87	0.88	0.74	0.75	0.61	0.62
	SE2	1.04	1.05	0.87	0.90	0.73	0.73	0.61	0.62
18-25	Point Estimates	21.91	21.64	16.22	16.33	18.84	18.96	12.53	12.70
	SE1	1.49	1.74	1.58	1.60	1.54	1.55	1.20	1.22
	SE2	1.48	1.60	1.58	1.56	1.56	1.56	1.20	1.20
26-34	Point Estimates	12.01	11.97	8.33	8.32	8.97	9.30	6.62	6.36
	SE1	2.28	2.47	1.63	1.61	1.54	1.59	1.34	1.28
	SE2	2.28	2.56	1.63	1.55	1.54	1.53	1.35	1.31
35+	Point Estimates	3.68	3.52	3.02	3.11	2.94	2.96	1.95	1.96
	SE1	0.43	0.45	0.61	0.64	0.66	0.65	0.45	0.45
	SE2	0.44	0.45	0.61	0.63	0.66	0.65	0.45	0.46
<b>Cocaine Past Month</b>									
Total	Point Estimates	0.78	0.82	0.91	0.89	1.25	1.21	0.78	0.80
	SE1	0.20	0.20	0.26	0.25	0.20	0.21	0.18	0.18
	SE2	0.19	0.20	0.26	0.24	0.21	0.21	0.17	0.17
12-17	Point Estimates	0.44	0.41	0.23	0.23	0.48	0.47	0.74	0.74
	SE1	0.24	0.22	0.12	0.12	0.19	0.19	0.28	0.28
	SE2	0.24	0.23	0.12	0.12	0.19	0.19	0.28	0.27
18-25	Point Estimates	2.57	2.72	2.31	2.30	2.72	2.75	1.84	1.87
	SE1	0.57	0.68	0.59	0.59	0.42	0.43	0.54	0.55
	SE2	0.57	0.67	0.59	0.59	0.42	0.43	0.54	0.55
26-34	Point Estimates	0.57	0.72	1.33	1.36	2.70	2.91	1.77	1.80
	SE1	0.40	0.53	0.69	0.69	1.00	1.12	0.71	0.73
	SE2	0.40	0.54	0.69	0.71	1.00	1.04	0.71	0.74
35+	Point Estimates	0.53	0.51	0.63	0.61	0.80	0.70	0.23	0.25
	SE1	0.24	0.24	0.31	0.29	0.32	0.27	0.16	0.18
	SE2	0.24	0.24	0.31	0.28	0.33	0.28	0.16	0.18

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# 7. Weight Calibration for Serious Psychological Distress (SPD) Modules

Serious psychological distress (SPD) is defined as having at some time during the past year a diagnosable mental, behavioral, or emotional disorder that meets the criteria specified in the *Diagnostic and Statistical Manual of Mental Disorders*, 4<sup>th</sup> edition (DSM-IV) (American Psychiatric Association [APA], 1994) and results in functional impairment that substantially interferes with or limits one or more major life activities. SPD was measured in 2003 National Survey on Drug Use and Health (NSDUH) using a module of approximately 90 questions. However data from only six items (known as the K6 items) were used to estimate past year SPD. Due to the increased interest in the assessment of depression among Federal policymakers, a new module on adult depression was added to the 2004 questionnaire. The 2004 NSDUH used a split sample for adults aged 18 or older as follows: adults in sample A (ADLTSAMP=1) were administered the adult mental health module but not the adult depression module. Adults in sample B (ADLTSAMP=2) were administered only six core questions from the adult mental health module as well as the adult depression module. Thus in 2004, two additional person-level analysis weights were created to reflect the split-sample design and for specific types of person-level analyses. These weights are called SPD weight (SPDWGHT) and the depression weight (DEPWT).

## 7.1 Serious Psychological Distress (SPD) Weight

After the first question in the adult mental health service utilization module was answered, the adult sample then was randomly split into sample A and sample B. The goal was to achieve a 50 percent to 50 percent overall split rate. However, the rates varied in different quarters. In the first quarter of 2004, 20 percent of the adult sample received the complete SPD module and 80 percent received the reduced SPD module and the new depression module. In the following 3 quarters, 60 percent of the adult sample received the complete SPD module, and 40 percent received the reduced SPD module and the new depression module. A poststratification for both sample A and sample B using the generalized exponential model (GEM) was performed so that the weights for both subsamples were controlled to the census population estimates for the civilian, noninstitutionalized population aged 18 or older. Due to the fact that the split-sample indicator (ADLTSAMP) was created during the interviewing process, the split-sample information was unavailable for all selected persons. Therefore, a separate nonresponse adjustment for sample A and sample B cannot be done. The SPD weight was developed as follows:

- Split adult sample into sample A and sample B after the person-level nonresponse adjustment was completed (Weight Component #12). Sample A had 22,628 respondents, and sample B had 22,825 respondents.
- Calculate the split-sample factor (reciprocal of quarterly split rate), and apply the factor to the weight after the nonresponse adjustment.

- Perform a separate poststratification adjustment for sample A and sample B.

The SPD weight was set to 0 for youths aged 12 to 17 and for six adults not assigned to either portion of the split sample. The SPD weight can be used for generating SPD estimates using sample A data or using sample B data. However, if SPD estimates are generated using both sample A and sample B combined data, then the 2004 NSDUH person-level analysis weight should be used. The SPD weight also can be used for producing adult depression estimates for sample B.

Like the person-level weight calibration, SPD weight calibration also was performed separately on nine model groups corresponding to the nine census divisions. The predictor variables used in GEM are presented in Exhibit 7.1. Table 7.1 provides a summary of the distribution of weight adjustment factors and SPD weights for sample A and sample B. Tables 7.2 and 7.3 are summaries of the proposed and final covariates included in each of the nine model groups for sample A and sample B.

## **7.2 Depression Weight**

The SPD weight for sample B can be used for producing adult depression estimates. However, analysts might be interested in estimates of depression for youths and adults combined. The depression weight (DEPWT) was created to allow estimates for both youth and adult depression data to be generated during one analysis. This is accomplished by (a) combining into one variable from the final person-level analysis weight for youths aged 12 to 17 and the split-sample SPD weight for adults aged 18 or older in sample B, and (b) assigning a weight of 0 for adults not in sample B.

**Exhibit 7.1 Covariates for 2004 NSDUH Serious Psychological Distress Weight  
(Poststratification)**

<b>Variables</b>	<b>Levels</b>	<b>Proposed</b>
<b>One-Factor Effects</b>		
Intercept	1	1
State	Model Specific	
Quarter	4	3
Age	6	5
Race (5 levels)	5	4
Gender	2	1
Hispanicity	2	1
<b>Two-Factor Effects</b>		
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
Hisp × 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	

**Table 7.1 Distribution of Weight Adjustment Factors and Products for 2004 NSDUH Person-Level Serious Psychological Disorder (SPD) Module**

	Sample A				Sample B			
	<i>res.per.nr</i>		<i>res.spd.ps<sup>1</sup></i>		<i>res.per.nr</i>		<i>res.spd.ps<sup>1</sup></i>	
	<i>1-12<sup>2</sup></i>	<i>1-12<sup>3</sup></i>	<i>13</i>	<i>1-13</i>	<i>1-12<sup>2</sup></i>	<i>1-12<sup>3</sup></i>	<i>13</i>	<i>1-13</i>
Minimum	7	12	0.11	3	8	15	0.10	4
1%	131	227	0.20	130	128	211	0.20	142
5%	278	496	0.33	404	283	496	0.46	391
10%	503	917	0.67	752	493	904	0.69	736
25%	1,032	1,820	0.85	1,720	1,012	1,878	0.86	1,688
Median	2,275	4,361	0.99	4,106	2,210	4,318	0.99	4,216
75%	6,231	11,699	1.14	11,276	6,190	11,856	1.13	11,455
90%	11,852	22,894	1.32	23,213	11,841	24,170	1.30	24,592
95%	16,339	33,006	1.54	34,446	16,384	34,274	1.46	35,377
99%	30,012	67,016	2.28	74,377	28,863	63,275	2.01	64,897
Maximum	147,626	406,589	5.00	363,015	116,664	291,660	5.00	278,243
Weighted Total	107,556,664	215,140,626	22,752	215,300,425	107,663,031	215,387,639	22,807	215,300,425
<i>n</i>	22,628	22,628	22,628	22,628	22,825	22,825	22,825	22,825
Max/Mean	31.06	42.76	-	38.15	24.73	30.91	-	29.50

<sup>1</sup> The poststratification step is performed separately for sample A and sample B.

<sup>2</sup> This is the weight after the person-level nonresponse adjustment.

<sup>3</sup> A split-sample factor (the reciprocal of the quarterly sample split proportions) was applied to the weights after the person-level nonresponse adjustment.

**Table 7.2 Covariates for 2004 NSDUH Person-Level Serious Psychological Disorder (SPD) Weights for Nine Model Groups: Sample A**

	Model 1 <sup>1</sup>		Model 2 <sup>1</sup>		Model 3 <sup>1</sup>		Model 4 <sup>1</sup>		Model 5 <sup>1</sup>		Model 6 <sup>1</sup>		Model 7 <sup>1</sup>		Model 8 <sup>1</sup>		Model 9 <sup>1</sup>	
	P <sup>2</sup>	F <sup>3</sup>																
<b>One-Factor Effects</b>	<b>19</b>	<b>19</b>	<b>16</b>	<b>16</b>	<b>18</b>	<b>18</b>	<b>20</b>	<b>20</b>	<b>22</b>	<b>22</b>	<b>17</b>	<b>17</b>	<b>17</b>	<b>17</b>	<b>21</b>	<b>21</b>	<b>18</b>	<b>18</b>
Intercept	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
State	5	5	2	2	4	4	6	6	8	8	3	3	3	3	7	7	4	4
Quarter	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Age	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Race (5 levels)	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Gender	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Hispanicity	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
<b>Two-Factor Effects</b>	<b>86</b>	<b>79</b>	<b>47</b>	<b>44</b>	<b>73</b>	<b>67</b>	<b>99</b>	<b>88</b>	<b>125</b>	<b>119</b>	<b>60</b>	<b>45</b>	<b>60</b>	<b>60</b>	<b>112</b>	<b>108</b>	<b>73</b>	<b>70</b>
Age × Race (3 levels)	8	8	8	8	8	8	8	7	8	8	8	7	8	8	8	8	8	8
Age × Hispanicity	4	4	4	4	4	4	4	3	4	4	4	0	4	4	4	4	4	4
Age × Gender	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Race (3 levels) × Hispanicity	2	1	2	1	2	1	2	1	2	1	2	0	2	2	2	2	2	1
Race (3 levels) × Gender	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Hispanicity × Gender	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
State × Quarter	15	15	6	6	12	12	18	18	24	24	9	9	9	9	21	21	12	12
State × Age	20	20	8	8	16	16	24	24	32	32	12	12	12	12	28	28	16	16
State × Race (5 levels)	20	15	8	6	16	12	24	16	32	28	12	7	12	12	28	24	16	14
State × Hispanicity	5	4	2	2	4	3	6	6	8	7	3	0	3	3	7	7	4	4
State × Gender	5	5	2	2	4	4	6	6	8	8	3	3	3	3	7	7	4	4
<b>Total</b>	<b>105</b>	<b>98</b>	<b>63</b>	<b>60</b>	<b>91</b>	<b>85</b>	<b>119</b>	<b>108</b>	<b>147</b>	<b>141</b>	<b>77</b>	<b>62</b>	<b>77</b>	<b>77</b>	<b>133</b>	<b>129</b>	<b>91</b>	<b>88</b>

<sup>1</sup> Model 1: New England; Model 2: Middle Atlantic; Model 3: East North Central; Model 4: West North Central; Model 5: South Atlantic; Model 6: East South Central; Model 7: West South Central; Model 8: Mountain; Model 9: Pacific.

<sup>2</sup> "P" indicates "Proposed number of variables."

<sup>3</sup> "F" indicates "Final number of variables."

**Table 7.3 Covariates for 2004 NSDUH Person-Level Serious Psychological Disorder (SPD) Weights for Nine Model Groups: Sample B**

	Model 1 <sup>1</sup>		Model 2 <sup>1</sup>		Model 3 <sup>1</sup>		Model 4 <sup>1</sup>		Model 5 <sup>1</sup>		Model 6 <sup>1</sup>		Model 7 <sup>1</sup>		Model 8 <sup>1</sup>		Model 9 <sup>1</sup>	
	P <sup>2</sup>	F <sup>3</sup>																
<b>One-Factor Effects</b>	<b>19</b>	<b>19</b>	<b>16</b>	<b>16</b>	<b>18</b>	<b>18</b>	<b>20</b>	<b>20</b>	<b>22</b>	<b>22</b>	<b>17</b>	<b>17</b>	<b>17</b>	<b>17</b>	<b>21</b>	<b>21</b>	<b>18</b>	<b>18</b>
Intercept	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
State	5	5	2	2	4	4	6	6	8	8	3	3	3	3	7	7	4	4
Quarter	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Age	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Race (5 levels)	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Gender	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Hispanicity	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
<b>Two-Factor Effects</b>	<b>86</b>	<b>77</b>	<b>47</b>	<b>46</b>	<b>73</b>	<b>67</b>	<b>99</b>	<b>79</b>	<b>125</b>	<b>115</b>	<b>60</b>	<b>46</b>	<b>60</b>	<b>59</b>	<b>112</b>	<b>108</b>	<b>73</b>	<b>67</b>
Age × Race (3 levels)	8	6	8	8	8	8	8	4	8	8	8	6	8	8	8	8	8	8
Age × Hispanicity	4	4	4	4	4	4	4	2	4	4	4	3	4	4	4	4	4	4
Age × Gender	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Race (3 levels) × Hispanicity	2	1	2	2	2	0	2	1	2	2	2	1	2	1	2	2	2	0
Race (3 levels) × Gender	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Hispanicity × Gender	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
State × Quarter	15	15	6	6	12	12	18	18	24	24	9	9	9	9	21	21	12	12
State × Age	20	20	8	8	16	16	24	24	32	32	12	12	12	12	28	28	16	16
State × Race (5 levels)	20	14	8	7	16	12	24	12	32	23	12	5	12	12	28	24	16	12
State × Hispanicity	5	5	2	2	4	4	6	5	8	7	3	0	3	3	7	7	4	4
State × Gender	5	5	2	2	4	4	6	6	8	8	3	3	3	3	7	7	4	4
<b>Total</b>	<b>105</b>	<b>96</b>	<b>63</b>	<b>62</b>	<b>91</b>	<b>85</b>	<b>119</b>	<b>99</b>	<b>147</b>	<b>137</b>	<b>77</b>	<b>63</b>	<b>77</b>	<b>76</b>	<b>133</b>	<b>129</b>	<b>91</b>	<b>85</b>

<sup>1</sup> Model 1: New England; Model 2: Middle Atlantic; Model 3: East North Central; Model 4: West North Central; Model 5: South Atlantic; Model 6: East South Central; Model 7: West South Central; Model 8: Mountain; Model 9: Pacific.

<sup>2</sup> "P" indicates "Proposed number of variables."

<sup>3</sup> "F" indicates "Final number of variables."

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## **Appendix A: Technical Details about the Generalized Exponential Model**



# Appendix A: Technical Details about the Generalized Exponential Model (GEM)

## 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  $k^{\text{th}}$  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

$$\Delta(w, d) = \sum_{k \in s} \frac{d_k}{A_k} \left\{ (a_k - \ell_k) \log \frac{a_k - \ell_k}{c_k - \ell_k} + (u_k - a_k) \log \frac{u_k - a_k}{u_k - c_k} \right\}, \quad (\text{A1.1})$$

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

$$\sum_{k \in s} x_k d_k a_k = T_x. \quad (\text{A1.2})$$

The solution of the above minimization problem, if it exists, is given by a GEM with model parameters  $\lambda$ , that is,

$$a_k(\lambda) = \frac{\ell_k (u_k - c_k) + u_k (c_k - \ell_k) \exp\{A_k x'_k \lambda\}}{(u_k - c_k) + (c_k - \ell_k) \exp\{A_k x'_k \lambda\}}. \quad (\text{A1.3})$$

Note that the number of parameters in GEM should be  $\leq n$ , where  $n$  is the size of the sample  $s$ . This is also the dimension of vectors  $d$  and  $w$ . It follows from Equation A1.3 that

$$\ell_k < a_k < u_k, \quad k = 1, \dots, n. \quad (\text{A1.4})$$

The usual raking-ratio method (see, e.g., Singh & Mohl, 1996) of weight adjustment is a special case of GEM, such that for  $\ell_k = 0$ ,  $u_k = \infty$ ,  $c_k = 1$ ,  $k = 1, \dots, n$ , we have

$$\Delta(w, d) = \sum_{k \in s} d_k a_k \log a_k - \sum_{k \in s} d_k (a_k - 1), \quad (\text{A1.5})$$

and

$$a_k(\lambda) = \exp(x'_k \lambda).$$

The logit method of Deville and Särndal (1992) is also a special case of GEM, setting  $\ell_k = \ell$ ,  $u_k = u$ , and  $c_k = 1$  for all  $k$ .

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

By choosing the user-specified parameters  $\ell_k$ ,  $c_k$ , and  $u_k$  appropriately, the unified GEM formula (A1.3) can be justified for all three types of adjustment. Denote the winsorized weights by  $\{b_k\}$  where  $b_k = d_k$  if  $d_k$  is not an extreme weight, and  $d_k = \text{med}\{d_k\} \pm 3 * \text{IQR}$ , if  $d_k$  is an extreme weight (where IQR is the interquartile range, and the 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:  $s^*$ , the nonextreme weight subsample; and  $s^{**}$ , the extreme weight subsample. For nonextreme weights, the following are set:  $\ell_2 = 1, c_2 = \rho^{-1}, u_2 = u > \rho^{-1}$ , where  $\rho$  is the overall response propensity; and for extreme weights with high weights, they are  $\ell_k = \ell m_k, c_k = \rho^{-1} m_k, u_k = u_1 m_k$ , where  $m_k = b_k/d_k$ , and  $1 \leq \ell_1 < \rho^{-1} = c_1 < u_1$ , 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  $1 \leq \ell_3 < \rho^{-1} = c_3 < u_3$ .

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

Notice that GEM allows for 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 1 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  $v^{\text{th}}$  iteration

$$\Gamma_{\phi v} = \text{diag}(d_k \phi_k^{(v)}), \phi_k^{(0)} = 1,$$

where

$$\phi_k^{(v)} = \left[ (u_k - a_k^{(v)}) (a_k^{(v)} - l_k) \right] / \left[ (u_k - c_k) (c_k - l_k) \right];$$

then, for Newton-Raphson iteration  $v$ , the value of the  $p$ -vector  $\lambda$  is adjusted as

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

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

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

#### **A.4 Scaled Constrained Exponential Model**

In previous surveys, constrained exponential models were used for poststratification, and scaled constrained exponential models were used for nonresponse adjustments. The term "constrained exponential model" refers to the logit model of Deville and Särndal (1992), in which lower and upper bounds do not vary with  $k$  (i.e.,  $\ell_k = \ell$ ,  $u_k = u$ , and  $c_k = c = 1$  such that  $\ell < 1 < u$ .) Thus, it is a special case of GEM. For the nonresponse adjustment, Folsom and Witt (1994) modified the constrained exponential models' estimating equations by a scaling factor ( $\rho^{-1}$ , the inverse of the overall response propensity) such that  $1 < \rho^{-1}a_k < \rho^{-1}u$ . This implies that choosing  $\ell$  in constrained exponential models as  $\rho$  ensures that the scaled adjustment factor for nonresponse is at least 1.



## **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). 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, based on the unadjusted 2000 census.

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 2004, 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).



## **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 2004 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 origin, and race) was missing. Therefore, some form of imputation was required for cases with missing data.<sup>1</sup> 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 dataset 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 2004 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

---

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

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

(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 2004 NSDUH weighting process to impute "race" and "Hispanic origin" for the screener demographic information, as well as the questionnaire data (Singh, Grau, & Folsom, 2002). Due to the lack of 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 non-model-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<sup>®</sup>, 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 Grau et al. (2005).

## **Appendix D: Generalized Exponential Model (GEM) Summary**



## **Appendix D: Generalized Exponential Model (GEM) 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 2004 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 unequal weighting effect 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 utilized 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 with regard to final covariates 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.

### **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

**Table D Distribution of Weight Adjustment Factors and Weight Products for the 2004 NSDUH Person Weight (United States)**

	<i>sel.sdu.des</i> <sup>1</sup>		<i>res.sdu.nr</i> <sup>1</sup>		<i>res.sdu.ps</i> <sup>1</sup>		<i>sel.per.des</i> <sup>1</sup>		<i>sel.per.ps</i> <sup>1</sup>		<i>res.per.nr</i> <sup>1</sup>		<i>res.per.ps</i> <sup>1</sup>	
	1-6 <sup>2</sup>	7 <sup>3</sup>	1-7 <sup>3</sup>	8 <sup>4</sup>	1-8 <sup>4</sup>	10 <sup>5</sup>	1-10 <sup>5</sup>	11 <sup>5</sup>	1-11 <sup>5</sup>	12 <sup>6</sup>	1-12 <sup>6</sup>	13 <sup>6</sup>	1-13 <sup>6</sup>	
Minimum	32	0.43	66	0.15	22	1.01	24	0.08	6	0.33	6	0.05	1	
1%	82	1.00	101	0.44	94	1.01	107	0.35	88	1.00	94	0.20	58	
5%	125	1.02	132	0.79	136	1.01	205	0.66	196	1.00	215	0.44	179	
10%	186	1.03	197	0.90	203	1.01	349	0.76	335	1.02	360	0.84	311	
25%	470	1.05	499	1.00	487	1.11	730	0.89	713	1.08	787	0.97	753	
Median	623	1.07	684	1.09	743	1.32	1,352	1.00	1,346	1.16	1,488	1.01	1,477	
75%	966	1.12	1,048	1.19	1,134	5.13	3,567	1.10	3,537	1.28	3,912	1.07	3,885	
90%	1,314	1.19	1,428	1.32	1,637	9.50	7,734	1.24	7,636	1.44	9,487	1.18	9,375	
95%	1,566	1.25	1,725	1.45	1,968	11.06	10,682	1.39	10,745	1.59	13,771	1.34	14,024	
99%	1,821	1.42	2,114	1.93	2,559	13.42	19,386	1.95	19,304	2.21	26,163	2.12	26,288	
Maximum	4,091	14.26	3,904	5.00	9,086	29.90	63,714	13.28	68,037	19.92	147,626	6.29	150,335	
<i>n</i>	142,612	130,13	130,130	130,122	130,122	81,973	81,973	81,973	81,973	67,760	67,760	67,760	67,760	
Max/Mean	5.79	-	5.04	-	10.59	-	21.63	-	23.19	-	41.59	-	42.35	

Note 1: Weight 14 = 1 for all respondents.

Note 2: Under the generalized exponential model (GEM), nonresponse adjustment factors (weight components #7 and #12) could be less than 1 due to the built-in control for extreme weights. For an explanation, see Chapter 2.

<sup>1</sup> sel.sdu.des refers to selected screener dwelling unit design weight and sel.per.des to selected person design weight. For a key to other modeling abbreviations, see Chapter 5, Exhibit 5.1.

<sup>2</sup> Based on eligible dwelling units.

<sup>3</sup> Based on screener-complete dwelling units.

<sup>4</sup> Based on screener-complete dwelling units, occupants verified eligible.

<sup>5</sup> Based on selected persons.

<sup>6</sup> Based on questionnaire-complete persons.

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 Definitions of Levels for Variables

### Age (years)

1: 12-17, 2: 18-25, 3: 26-34, 4: 35-49, 5: 50+<sup>1,4</sup>

### Gender

1: Male, 2: Female<sup>1</sup>

### Group Quarters Indicator

1: College Dorm, 2: Other Group Quarter, 3: Non-Group Quarter<sup>1</sup>

### Hispanicity

1: Hispanic, 2: Non-Hispanic<sup>1</sup>

### Percentage of Owner-Occupied Dwelling Units in Segment (% Owner)

1: 50% - 100%,<sup>1</sup> 2: 10% - >50%, 3: 0 - >10%

### Percentage of Segments That Are Black (% Black)

1: 50% - 100%, 2: 10% - >50%, 3: 0 - >10%<sup>1</sup>

### Percentage of Segments That Are Hispanic (% Hispanic)

1: 50% - 100%, 2: 10% - >50%, 3: 0 - >10%<sup>1</sup>

### Population Density

1: MSA 1,000,000 or more, 2: MSA less than 1,000,000, 3: Non-MSA urban, 4: Non-MSA rural<sup>1</sup>

### Quarter

1: Quarter 1, 2: Quarter 2, 3: Quarter 3, 4: Quarter 4<sup>1</sup>

### Race (3 levels)

1: White,<sup>1</sup> 2: Black, 3: Other

### Race (5 levels)

1: White,<sup>1</sup> 2: Black, 3: American Indian/Alaska Native, 4: Asian, 5: Two or More Races

### Relation to Householder

1: Householder or Spouse,<sup>1</sup> 2: Child, 3: Other Relative, 4: Non-Relative

### Segment-Combined Median Rent and Housing Value (Rent/Housing)<sup>2</sup>

1: First Quintile, 2: Second Quintile, 3: Third Quintile, 4: Fourth Quintile, 5: Fifth Quintile<sup>1</sup>

### States<sup>3</sup>

Model Group 1: 1: Connecticut, 2: Maine, 3: New Hampshire, 4: Rhode Island, 5: Vermont,  
6: Massachusetts<sup>1</sup>

Model Group 2: 1: New Jersey,<sup>1</sup> 2: New York, 3: Pennsylvania

Model Group 3: 1: Illinois, 2: Indiana,<sup>1</sup> 3: Michigan, 4: Wisconsin, 5: Ohio

Model Group 4: 1: Iowa, 2: Kansas, 3: Minnesota, 4: Missouri,<sup>1</sup> 5: Nebraska, 6: South Dakota,  
7: North Dakota

Model Group 5: 1: Delaware, 2: District of Columbia, 3: Georgia,<sup>1</sup> 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<sup>1</sup>

Model Group 7: 1: Arkansas,<sup>1</sup> 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<sup>1</sup>

Model Group 9: 1: Alaska, 2: Hawaii, 3: Oregon, 4: Washington,<sup>1</sup> 5: California

MSA = metropolitan statistical area.

<sup>1</sup>The reference level for this variable. This is the level against which effects of other factor levels are measured.

<sup>2</sup>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.

<sup>3</sup>The States or district assigned to a particular model are based on census divisions.

<sup>4</sup>50+ was further broken down into 50-64 and 65+ for Person-Level Poststratification Adjustment and Person-Level Extreme Weight Adjustment.

Source: SAMHSA, Office of Applied Studies, National Survey on Drug Use and Health, 2004.

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

Note: The following are given as 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 due to 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  $\times$  Race" and "Age  $\times$  Race  $\times$  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 1999 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  $\times$  Age  $\times$  Race (3 levels), for Model Group 9, for the Person-Level Nonresponse Adjustment.

Three-Factor Effects	Comments
State $\times$ Age $\times$ Race (3 levels)	Drop (3,4,2); sing. Coll. (1,4,2) & (1,4,3). Drop (3,*,*). Coll. (4,1,2) & (4,1,3). Do the same for each level of age in that State.

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,<sup>1</sup> 5: California

- **Age (years)**

1: 12-17, 2: 18-25, 3: 26-34, 4: 35-49, 5: 50+<sup>1</sup>

- **Race (3 levels)**

1: White,<sup>1</sup> 2: Black, 3: Other

Note that the superscript number indicates the reference level of the variable for a particular stage of modeling. For the example case, the model stage is "Person Nonresponse Adjustment."

3. Construct the cross-classification table.

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

Race (5 Level)	White	Black	Asian	American Indian/Alaska Native	Two or More Races
----------------	-------	-------	-------	-------------------------------	-------------------

 Indicates the reference-level set.

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

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

 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	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+			
CA * 12-17			
18-25			
26-34			
35-49			
50+			
WA * 12-17			
18-25			
26-34			
35-49			
50+			

 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  $\times$  Race (3 levels)  $\times$  Age; that is, look at the one-factor and two-factor effects for State, Race (5 levels), and Age, and their accompanying information:

<b>One-Factor Effects</b>	<b>Comments</b>
State	All levels present.
Race (5 levels)	All levels present.
Age	All levels present.

<b>Two-Factor Effects</b>	<b>Comments</b>
State $\times$ Age	All levels present.
State $\times$ Race (5 levels)	Coll. (1,3) & (1,4). Do the same for all other States except (2). Coll. (2,2), (2,3), & (2,4).

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

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

 Indicates the reference-level set.

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

<b>Three-Factor Effects</b>	<b>Comments</b>
State $\times$ Age $\times$ Race (3 levels)	Coll. (2,1,2) & (2,1,3); hier. Repeat for all levels of age in State (2); hier. Drop (3,4,2); sing. Coll. (1,4,2) & (1,4,3). Drop (3,*,*). Coll. (4,1,2) & (4,1,3). Do the same for each level of age in that State.

The reason for the note "Hier" in the three-factor effects is that collapsing was done on the two-factor interaction term State  $\times$  Race (5 levels). Because collapsing was done on this term, all three-factor crosses involving State  $\times$  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	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+			
CA * 12-17			
18-25			
26-34			
35-49			
50+			
WA * 12-17			
18-25			
26-34			
35-49			
50+			

 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 2004 NSDUH Person Weights (res.sdu.nr)**

<b>Variables</b>	<b>Levels</b>	<b>Proposed</b>
<b>One-Factor Effects</b>		
Intercept	1	1
State	Model Specific	
Quarter	4	3
Population density	4	3
Group quarter	3	2
%Black	3	2
%Hispanic	3	2
%Owner-occupied	3	2
Rent/housing value	5	4
<b>Two-Factor Effects</b>		
%Owner-occupied × %Black	3 × 3	4
%Owner-occupied × %Hispanic	3 × 3	4
%Owner-occupied × Rent/housing	3 × 5	8
Rent/housing × %Black	3 × 5	8
Rent/housing × %Hispanic	3 × 5	8
State × Quarter	Model Specific	
State × Population density	Model Specific	
State × Group quarter	Model Specific	
State × %Black	Model Specific	
State × %Hispanic	Model Specific	
State × %Owner-occupied	Model Specific	
State × Rent/housing	Model Specific	
<b>Three-Factor Effects</b>		
State × %Owner-occupied × %Black	Model Specific	
State × %Owner-occupied × %Hispanic	Model Specific	
State × %Owner-occupied × Rent/housing	Model Specific	
State × Rent/house × %Black	Model Specific	
State × Rent/house × %Hispanic	Model Specific	

**Exhibit D.3 Covariates for 2004 NSDUH Person Weights (res.sdu.ps)**

<b>Variables</b>	<b>Levels</b>	<b>Proposed</b>
<b>One-Factor Effects</b>		
Intercept	1	1
State	Model Specific	
Quarter	4	3
Age	5	4
Race (5 levels)	5	4
Gender	2	1
Hispanicity	2	1
<b>Two-Factor Effects</b>		
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
Hispan × 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	
<b>Three-Factor Effects</b>		
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 2004 NSDUH Person Weights (sel.per.ps and res.per.nr)**

<b>Variables</b>	<b>Levels</b>	<b>Proposed</b>
<b>One-Factor Effects</b>		
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	3	2
%Hispanic	3	2
%Owner-occupied	3	2
Rent/house value	5	4
<b>Two-Factor Effects</b>		
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	3 × 3	4
%Owner-occupied × %Hispanicity	3 × 3	4
%Owner-occupied × Rent/housing	3 × 5	8
Rent/housing × %Black	3 × 5	8
Rent/housing × %Hispanic	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	Model Specific	
State × %Hispanic	Model Specific	
State × %Owner-occupied	Model Specific	
State × Rent/housing	Model Specific	
<b>Three-Factor Effects</b>		
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 2004 NSDUH Person Weights (res.per.ps and res.per.ev)**

<b>Variables</b>	<b>Levels</b>	<b>Proposed</b>
<b>One-Factor Effects</b>		
Intercept	1	1
State	Model Specific	
Quarter	4	3
Age	6	5
Race (5 levels)	5	4
Gender	2	1
Hispanicity	2	1
<b>Two-Factor Effects</b>		
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
Hispan × 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	
<b>Three-Factor Effects</b>		
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 level) × 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, New Hampshire, Rhode Island, Vermont, Massachusetts)



**Table D.1a 2004 NSDUH Person Weight GEM Modeling Summary (Model Group 1: New England)**

Modeling Step <sup>1</sup>	Extreme Weight Proportions			UWE <sup>2</sup>	# XVAR <sup>3</sup>	Bounds <sup>4</sup>	
	Unweighted	Weighted	Outwisor			Nominal	Realized
<i>res.sdu.nr</i>	3.69%	3.48%	0.18%	1.79192	306	(1.04, 1.55)	(1.05, 1.54)
	1.00%	2.36%	0.19%	1.82325	109	(1.00, 2.30)	(1.00, 2.07)
						(1.03, 1.67)	(1.04, 1.07)
<i>res.sdu.ps</i>	1.00%	2.36%	0.19%	1.82317	232	(0.30, 1.15)	(0.30, 1.15)
	2.55%	3.66%	0.90%	1.96851	206	(0.20, 5.00)	(0.20, 5.00)
						(0.99, 1.57)	(0.99, 1.57)
<i>sel.per.ps</i>	3.41%	6.16%	1.71%	4.02011	332	(0.30, 3.00)	(0.30, 3.00)
	1.81%	4.96%	1.39%	4.24094	246	(0.20, 4.78)	(0.20, 4.70)
						(0.60, 4.90)	(0.60, 4.90)
<i>res.per.nr</i>	1.76%	5.21%	1.45%	4.47780	332	(1.00, 3.00)	(1.00, 3.00)
	1.59%	4.18%	0.90%	4.73584	198	(1.00, 5.00)	(1.00, 5.00)
						(1.00, 5.00)	(1.00, 5.00)
<i>res.per.ps</i>	1.53%	4.07%	0.94%	4.73584	267	(0.20, 1.50)	(0.20, 1.50)
	0.87%	2.22%	0.45%	4.86923	199	(0.20, 5.00)	(0.20, 5.00)
						(0.99, 1.10)	(0.99, 1.10)

<sup>1</sup> For a key to modeling abbreviations, see Chapter 5, Exhibit 5.1.

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

<sup>3</sup> Number of proposed covariates on top line, and number finalized after modeling.

<sup>4</sup> There are six sets of bounds for each modeling step. Nominal bounds are used in defining maximum/minimum values for the 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 weight, the nonextreme weight, and the low-extreme weight.

**Table D.1b Distribution of Weight Adjustment Factors and Weight Products for the 2004 NSDUH Person Weight (Model Group 1: New England)**

	<i>sel.sdu.des</i> <sup>1</sup>	<i>res.sdu.nr</i> <sup>1</sup>		<i>res.sdu.ps</i> <sup>1</sup>		<i>sel.per.des</i> <sup>1</sup>		<i>sel.per.ps</i> <sup>1</sup>		<i>res.per.nr</i> <sup>1</sup>		<i>res.per.ps</i> <sup>1</sup>	
	1-6 <sup>2</sup>	7 <sup>3</sup>	1-7 <sup>3</sup>	8 <sup>4</sup>	1-8 <sup>4</sup>	10 <sup>5</sup>	1-10 <sup>5</sup>	11 <sup>5</sup>	1-11 <sup>5</sup>	12 <sup>6</sup>	1-12 <sup>6</sup>	13 <sup>6</sup>	1-13 <sup>6</sup>
Minimum	89	0.66	101	0.20	26	1.01	28	0.14	8	0.34	8	0.08	2
1%	103	1.00	108	0.21	53	1.01	52	0.25	32	0.96	28	0.20	18
5%	121	1.03	128	0.68	113	1.01	123	0.54	117	1.00	126	0.47	114
10%	127	1.05	135	0.88	133	1.01	167	0.69	168	1.01	185	0.88	176
25%	197	1.06	212	1.00	227	1.06	307	0.88	305	1.07	337	0.98	341
Median	230	1.09	250	1.09	291	1.20	785	1.01	728	1.15	810	1.02	795
75%	526	1.13	575	1.19	607	5.55	1,807	1.13	1,800	1.27	2,074	1.06	2,087
90%	1,085	1.15	1,217	1.33	1,302	9.37	4,321	1.31	4,553	1.46	5,381	1.18	5,203
95%	1,207	1.18	1,361	1.50	1,582	12.03	7,601	1.57	7,579	1.71	9,491	1.44	9,616
99%	1,591	1.24	1,761	2.18	2,128	14.65	16,419	2.67	16,534	3.30	22,766	2.69	22,365
Maximum	1,847	2.07	3,116	5.00	7,018	24.19	35,074	6.08	40,398	19.47	53,933	5.00	68,042
<i>n</i>	11,919	10,897	10,897	10,896	10,896	6,576	6,576	6,576	6,576	5,409	5,409	5,409	5,409
Max/Mean	4.38	-	6.75	-	13.77	-	19.39	-	22.24	-	24.42	-	30.81

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Note 1: Weight component 9 and weight product 1-9 are excluded because weight 9 = 1 for all selected dwelling units.

Note 2: Under GEM, nonresponse adjustment factors (weight component #7 and #12) could be less than 1 due to the built-in control for extreme weights. For an explanation, see Chapter 2.

<sup>1</sup> sel.sdu.des refers to selected screener dwelling unit design weight and sel.per.des to selected person design weight. For a key to other modeling abbreviations, see Chapter 5, Exhibit 5.1.

<sup>2</sup> Based on eligible dwelling units.

<sup>3</sup> Based on screener-complete dwelling units.

<sup>4</sup> Based on screener-complete dwelling units, occupants verified eligible.

<sup>5</sup> Based on selected persons.

<sup>6</sup> Based on questionnaire-complete persons.

# Model Group 1 Overview

## Dwelling Unit Nonresponse

All 24 proposed one-factor effects were included in the model.

All the two-factor effects had some degree of variable collapsing or dropping except the percent Owner-occupied  $\times$  percent Black, percent Owner-occupied  $\times$  Rent/housing and State  $\times$  Quarter interactions. Out of 122 proposed variables, 77 were included.

Variable collapsing or dropping was present in all three-factor effects. Out of 160 proposed variables, 8 were included.

In the final model, a total of 109 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 and dropping were present in Age  $\times$  Race  $\times$  Hispanicity, Race  $\times$  Hispanicity  $\times$  Gender, and State  $\times$  Age  $\times$  Race, State  $\times$  Age  $\times$  Hispanicity, and State  $\times$  Race  $\times$  Hispanicity due to a convergence problem. All other interactions were kept in the model with the proposed levels. Out of 127 proposed variables, 101 were included.

In the final model, a total of 206 variables were included; see Exhibit D1.2.

## Selected Person-Level Poststratification

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

For two-factor effects, variable collapsing or dropping was present in the Race  $\times$  Hispanicity, percent Owner-occupied  $\times$  percent Hispanic, Rent/housing  $\times$  percent Black, Rent/housing  $\times$  percent Hispanic, State  $\times$  Race, State  $\times$  percent Black, State  $\times$  percent Hispanic, State  $\times$  percent Owner-occupied, and State  $\times$  Rent/housing interactions. Out of 168 proposed variables, 125 were included.

For three-factor effects, variable collapsing or dropping was present in all interactions except the Age  $\times$  Race  $\times$  Gender, Age  $\times$  Hispanicity  $\times$  Gender, and State  $\times$  Age  $\times$  Gender interactions. Out of 127 proposed variables, 84 were included.

In the final model, a total of 246 variables were included; see Exhibit D1.3.

## **Respondent Person-Level Nonresponse**

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

For two-factor effects, variable collapsing or dropping was present in the Race  $\times$  Hispanicity, percent Owner-occupied  $\times$  Rent/housing, Rent/housing  $\times$  percent Black  $\times$  percent Hispanicity, State  $\times$  Race, State  $\times$  percent Black, State  $\times$  percent Hispanicity, State  $\times$  percent Owner-occupied, and State  $\times$  Rent/housing. Out of 168 proposed variables, 123 were included.

For three-factor effects, all interactions except State  $\times$  Age  $\times$  Gender were affected by variable collapsing or dropping. Out of 127 proposed variables, 38 were included.

In the final model, a total of 198 variables were included; see Exhibit D1.4.

## **Respondent Person-Level Poststratification**

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

For two-factor effects, variable collapsing was present in the Age  $\times$  Race and State  $\times$  Race. Out of 95 proposed variables, 90 were included.

For three-factor effects, variable collapsing or dropping was present in all interactions except State  $\times$  Hispanicity  $\times$  Gender and State  $\times$  Age  $\times$  Gender. Out of 152 proposed variables, 89 were included.

In the final model, a total of 199 variables were included; see Exhibit D1.5.

**Exhibit D1.1 Covariates for 2004 NSDUH Person Weights (res.sdu.nr),  
Model Group 1: New England**

Variables	Level	Proposed	Final	Comments
<b>One-Factor Effects</b>		<b>24</b>	<b>24</b>	
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 quarters	3	2	2	All levels present.
%Black	3	2	2	All levels present.
%Hispanic	3	2	2	All levels present.
%Owner-occupied	3	2	2	All levels present.
Rent/housing value	5	4	4	All levels present.
<b>Two-Factor Effects</b>		<b>122</b>	<b>77</b>	
%Owner-occupied × %Black	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	8	All levels present.
Rent/housing × %Black	3*5	8	4	Drop (1, 1/2), (2, 1/2); zero.
Rent/housing × %Hispanic	3*5	8	4	Drop (1, 1/2), (2, 1/2); zero.
State × Quarters	6*4	15	15	All levels present.
State × Population density	6*4	15	10	Drop (2/3/4/5,1); zero. Drop (5,3); sing.
State × Group quarter	6*3	10	8	Drop (2,1); zero. Coll. (5,1) & (5,2); conv.
State × %Black	6*3	10	3	Drop (2/3/4/5,1), (2/3/5,2); zero.
State × %Hispanic	6*3	10	5	Drop (2,1/2), (3,1), (5,1/2); zero.
State × %Owner-occupied	6*3	10	8	Drop (4,3); zero. Drop (5, 3); sing.
State × Rent/housing	6*5	20	5	Drop (1,1/2/3), (2,3/4), (3,1), (4,1/2), (5,3/4); zero. Drop (2,2), (3,4), (4,4), (5,1/2); sing.
<b>Three-Factor Effects</b>		<b>160</b>	<b>8</b>	
State × %Owner-occupied × %Black	6*3*3	20	1	Keep (1,2,2), drop others; zero/sing.
State × %Owner-occupied × %Hispanic	6*3*3	20	3	Keep (1,2,1/2) (4,2,2), drop others; zero/sing.
State × %Owner-occupied × Rent/housing	6*3*5	40	3	Keep (1,2,4), (2,2,1), (4,2,3), drop others; zero/sing.
State × Rent/housing × %Black	6*3*5	40	0	Drop all; zero/sing.
State × Rent/housing × %Hispanic	6*3*5	40	1	Keep (4,3,2), drop others; zero/sing.
<b>Total</b>		<b>306</b>	<b>109</b>	

**Exhibit D1.2 Covariates for 2004 NSDUH Person Weights (res.sdu.ps),  
Model Group 1: New England**

Variables	Level	Proposed	Final	Comments
<b>One-Factor Effects</b>		<b>19</b>	<b>19</b>	
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.
<b>Two-Factor Effects</b>		<b>86</b>	<b>86</b>	
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.
<b>Three-Factor Effects</b>		<b>127</b>	<b>101</b>	
Age × Race (3 levels) × Hispanicity	5*3*2	8	2	Coll. (1,2,1) & (1,3,1), repeat for all age levels; conv. 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	0	Drop all; conv.
State × Age × Race (3 levels)	6*5*3	40	37	Coll. (2,1,2) & (2,1,3), (2,4,2) & (2,4,3), (5,4,2) & (5,4,3); conv.
State × Age × Hispanicity	6*5*2	20	15	Coll. (2,1,1) & (2,2,1) & (2,3,1), (4,1,1) & (4,2,1), (5,1,1) & (5,2,1); conv. Drop (2,4,1); conv.
State × Age × Gender	6*5*2	20	20	All levels present.
State × Race (3 levels) × Hispanicity	6*3*2	10	0	Drop all; 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.
<b>Total</b>		<b>232</b>	<b>206</b>	

**Exhibit D1.3 Covariates for 2004 NSDUH Person Weights (sel.per.ps),  
Model Group 1: New England**

Variables	Levels	Proposed	Final	Comments
<b>One-Factor Effects</b>		<b>37</b>	<b>37</b>	
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 quarters	3	2	2	All levels present.
%Black	3	2	2	All levels present.
%Hispanic	3	2	2	All levels present.
%Owner-occupied	3	2	2	All levels present.
Rent/housing value	5	4	4	All levels present.
<b>Two-Factor Effects</b>		<b>168</b>	<b>125</b>	
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	3*3	4	3	Coll. (3,1) & (3,2); conv.
%Owner-occupied × %Hispanic	3*3	4	3	Drop (3,1); zero.
%Owner-occupied × Rent/housing	3*5	8	8	All levels present.
Rent/housing × %Black	3*5	8	4	Drop (1/2,*); zero.
Rent/housing × %Hispanic	3*5	8	4	Drop (1/2,*); zero.
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. (1,3) & (1,4); zero. Coll. (5,2) & (5,5); conv.
State × Hispanicity	6*2	5	5	All levels present.
State × Gender	6*2	5	5	All levels present.
State × %Black	6*3	10	3	Drop (2/3/4/5,1), (2/3/5,2); zero.
State × %Hispanic	6*3	10	5	Drop (2/5,1/2), (3,1); zero.
State × %Owner-occupied	6*3	10	7	Coll. (1,2) & (1,3); sing. Drop (5,3); sing. Drop (4,3); zero.
State × Rent/housing	6*5	20	5	Drop (1,1/2/3), (2,3/4), (3/4,1), (4,2), (5,3/4); zero. Drop (2,2), (3/4,4), (5,1/2); sing.
<b>Three-Factor Effects</b>		<b>127</b>	<b>84</b>	
Age × Race (3 levels) × Hispanicity	5*3*2	8	0	Coll. (1,2,1) & (1,3,1), repeat for all age levels; hier. Drop (1,2/3,1), (2,2/3,1), (3,2/3,1); conv. Drop (4,2/3,1); 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	0	Coll. (2,1,1) & (3,1,1); hier. Drop (2/3,1); conv.
State × Age × Race (3 levels)	6*5*3	40	27	Coll. (5,1,2) & (5,1,3), repeat for all age groups at this state; hier. Coll. (2,4,2) & (2,4,3), (3,3,2) & (3,3,3); zero. Coll. (2,3,2) & (2,3,3), (4,4,2) & (4,4,3); sing. Coll. (1,4,2) & (1,4,3), (3,1,2) & (3,1,3), (3,4,2) & (3,4,3), (4,3,2) & (4,3,3); conv. Drop (2,4,2/3); conv.
State × Age × Hispanicity	6*5*2	20	13	Drop (2/3/5,4,1), (5,3,1); sing. Drop (1,4,1), (4,4,1); conv. Coll. (2,1,1) & (2,2,1); conv.
State × Age × Gender	6*5*2	20	20	All levels present.
State × Race (3 levels) × Hispanicity	6*3*2	10	2	Coll. (1,2,1) & (1,3,1), repeat for all states; hier. Drop (1/4/5,2/3,1); conv.
State × Race (3 levels) × Gender	6*3*2	10	6	Coll. (5,2,1) & (5,3,1); hier. Coll. (2,2,1) & (2,3,1), (3,2,1) & (3,3,1), (4,2,1) & (4,3,1); conv.
State × Hispanicity × Gender	6*2*2	5	4	Drop (5,1,1); conv.
<b>Total</b>		<b>332</b>	<b>246</b>	

**Exhibit D1.4 Covariates for 2004 NSDUH Person Weights (res.per.nr),  
Model Group 1: New England**

Variables	Levels	Proposed	Final	Comments
<b>One-Factor Effects</b>		<b>37</b>	<b>37</b>	
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 quarters	3	2	2	All levels present.
%Black	3	2	2	All levels present.
%Hispanic	3	2	2	All levels present.
%Owner-occupied	3	2	2	All levels present.
Rent/housing value	5	4	4	All levels present.
<b>Two-Factor Effects</b>		<b>168</b>	<b>123</b>	
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	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	8	All levels present.
Rent/housing × %Black	3*5	8	4	Drop (1/2,1/2); zero.
Rent/housing × %Hispanic	3*5	8	4	Drop (1/2,1/2); zero.
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	15	Coll. (1,3) & (1,4) & (1,5), repeat for state=3; conv. Coll. (2,3) & (2,4); conv.
State × Hispanicity	6*2	5	5	All levels present.
State × Gender	6*2	5	5	All levels present.
State × %Black	6*3	10	3	Drop all except (1,1/2), (4,2); zero.
State × %Hispanic	6*3	10	5	Drop all except (1/4,1/2), (3,2); zero.
State × %Owner-occupied	6*3	10	7	Drop (4,3); zero. Drop (5,3); sing. Coll. (1,2) & (1,3); sing.
State × Rent/housing	6*5	20	5	Drop (1,1/2/3), (2,3/4), (3,1), (4,1/2), (5,3/4); zero. Drop (2,2), (3/4,4), (5,1/2); sing.
<b>Three-Factor-Effects</b>		<b>127</b>	<b>38</b>	
Age × Race (3 levels) × Hispanicity	5*3*2	8	2	Coll. (1,2,1) & (1,3,1), repeat for all age levels; hier. Drop (4,2/3,1); sing. Drop (3,2/3,1); conv.
Age × Race (3 levels) × Gender	5*3*2	8	3	Coll. (2,2,1) & (2,3,1), repeat for age levels 3 and 4; conv. Drop (3/4,2/3,1); conv.
Age × Hispanicity × Gender	5*2*2	4	2	Coll. (1,1,1) & (2,1,1), (3,1,1) & (4,1,1); conv.
Race (3 levels) × Hispanicity × Gender	3*2*2	2	0	Coll. (2,1,1) & (3,1,1); hier. Drop (2/3,1,1); conv.
State × Age × Race (3 levels)	6*5*3	40	2	Coll. (1,*,2) & (1,*,3), repeat for all states; conv./sing./zero. Drop all except (1,1,2/3), (3,1,2/3); conv.
State × Age × Hispanicity	6*5*2	20	9	Coll. (2,1,1) & (2,2,1), (3,1,1) & (3,2,1), (4,1,1) & (4,2,1), (4,3,1) & (4,4,1), (5,1,1) & (5,2,1); conv. Drop (2/3/5,4,1); sing. Drop (1,4,1), (3,3,1), (5,3,1); conv.
State × Age × Gender	5*5*2	20	20	All levels present.
State × Race (3 levels) × Hispanicity	5*3*2	10	0	Coll. (1,2,1) & (1,3,1), repeat for all states; hier. Drop all; conv.
State × Race (3 levels) × Gender	5*3*2	10	0	Coll. (5,2,1) & (5,3,1); sing. Coll. (1,2,1) & (1,3,1), repeat for state=2,3,4; conv. Drop all; conv.
State × Hispanicity × Gender	5*2*2	5	0	Drop all; conv.
<b>Total</b>		<b>332</b>	<b>198</b>	

**Exhibit D1.5 Covariates for 2004 NSDUH Person Weights (res.per.ps),  
Model Group 1: New England**

Variables	Levels	Proposed	Final	Comments
<b>One-Factor Effects</b>		<b>20</b>	<b>20</b>	
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.
<b>Two-Factor Effects</b>		<b>95</b>	<b>90</b>	
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	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.
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	16	Coll. (2,3) & (2,4), (3,3) & (3,5), (5,3) & (5,4), (5,2) & (5,5); conv.
State × Hispanicity	6*2	5	5	All levels present.
State × Gender	6*2	5	5	All levels present.
<b>Three-Factor Effects</b>		<b>152</b>	<b>89</b>	
Age × Race (3 levels) × Hispanicity	6*3*2	10	3	Coll. (1,2,1) & (1,3,1), repeat for all age levels; hier. Drop (4/5,2/3,1); conv.
Age × Race (3 levels) × Gender	6*3*2	10	8	Coll. (5,2,1) & (5,3,1); conv. Drop (5,2/3,1); conv.
Age × Hispanicity × Gender	6*2*2	5	3	Drop (4/5,1,1); conv.
Race (3 levels) × Hispanicity × Gender	3*2*2	2	1	Coll. (2,1,1) & (3,1,1); hier.
State × Age × Race (3 levels)	6*5*3	50	24	Coll. (5,1,2) &- (5,1,3), repeat for all age levels; hier. Coll. (1,4,2) & (1,4,3), (1,5,2) & (1,5,3), (4,2,2) & (4,2,3), (4,3,2) & (4,3,3), (4,4,2) & (4,4,3); conv. Coll. (2,4,2) & (2,4,3), (3,3,2) & (3,3,3), (3,5,2) & (3,5,3); zero. Coll. (2,3,2) & (2,3,3), (3,4,2) & (3,4,3); sing. Drop (2,3,2/3), (2/3,4,2/3), (4,4,2/3), (3,5,2/3); conv. Drop (2,5,2), (2,5,3), (4,5,2), (5,5,2/3); zero. Drop (4,5,3), (5,4,2/3); sing.
State × Age × Hispanicity	6*6*2	25	14	Coll. (1,4,1) & (1,5,1); zero. Drop (2/3/5,5,1), (2,3,1), (5,3,1); zero. Drop (2/3/5,4,1), (4,5,1); sing. Drop (1,4/5,1); conv.
State × Age × Gender	6*6*2	25	25	All levels present.
State × Race (3 levels) × Hispanicity	6*3*2	10	2	Coll. (1,2,1) & (1,3,1) repeat for all states; hier. Drop (1/2/3,2/3,1); conv.
State × Race (3 levels) × Gender	6*3*2	10	4	Coll. (5,2) & (5,3); hier. Coll. (2,2,1) & (2,3,1), repeat for state=3,4; conv. Drop (3/5,2/3,1); conv.
State × Hispanicity × Gender	6*2*2	5	5	All levels present.
<b>Total</b>		<b>267</b>	<b>199</b>	



**Appendix D2: Model Group 2: Middle Atlantic**  
(New Jersey, New York, Pennsylvania)



**Table D.2a 2004 NSDUH Person Weight GEM Modeling Summary (Model Group 2: Middle Atlantic)**

Modeling Step <sup>1</sup>	Extreme Weight Proportions			UWE <sup>2</sup>	# XVAR <sup>3</sup>	Bounds <sup>4</sup>	
	Unweighted	Weighted	Outwinsor			Nominal	Realized
<i>res.sdu.nr</i>	2.30%	2.08%	0.01%	1.13117	153	(1.05, 1.40)	(1.05, 1.40)
	1.26%	1.69%	0.21%	1.16303	85	(1.00, 2.75)	(1.00, 2.75)
						(1.15, 1.20)	(1.15, 1.20)
<i>res.sdu.ps</i>	1.26%	1.69%	0.21%	1.16304	127	(0.76, 1.01)	(0.76, 1.01)
	1.45%	2.93%	0.69%	1.20051	119	(0.41, 4.61)	(0.43, 4.49)
						(0.99, 1.64)	(0.99, 1.64)
<i>sel.per.ps</i>	3.30%	5.90%	1.58%	2.50220	196	(0.30, 1.30)	(0.30, 1.30)
	1.56%	3.62%	0.59%	2.43281	187	(0.29, 3.34)	(0.29, 3.33)
						(0.99, 1.16)	(0.99, 1.16)
<i>res.per.nr</i>	1.63%	3.99%	0.65%	2.48481	196	(1.00, 2.80)	(1.00, 2.80)
	1.53%	3.97%	0.82%	2.89993	186	(1.00, 3.68)	(1.00, 3.68)
						(1.10, 1.46)	(1.10, 1.45)
<i>res.per.ps</i>	1.59%	3.99%	0.87%	2.89993	147	(0.12, 1.05)	(0.12, 1.05)
	1.45%	3.64%	0.75%	3.15956	140	(0.10, 3.00)	(0.10, 3.00)
						(0.99, 1.01)	(0.99, 1.01)

<sup>1</sup> For a key to modeling abbreviations, see Chapter 5, Exhibit 5.1.

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

<sup>3</sup> Number of proposed covariates on top line, and number finalized after modeling.

<sup>4</sup> There are six sets of bounds for each modeling step. Nominal bounds are used in defining maximum/minimum values for the 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 weights, the nonextreme weights, and the low-extreme weights.

**Table D.2b Distribution of Weight Adjustment Factors and Weight Products for the 2004 NSDUH Person Weight (Model Group 2: Middle Atlantic)**

	<i>sel.sdu.des</i> <sup>1</sup>	<i>res.sdu.nr</i> <sup>1</sup>		<i>res.sdu.ps</i> <sup>1</sup>		<i>sel.per.des</i> <sup>1</sup>		<i>sel.per.ps</i> <sup>1</sup>		<i>res.per.nr</i> <sup>1</sup>		<i>res.per.ps</i> <sup>1</sup>	
	1-6 <sup>2</sup>	7 <sup>3</sup>	1-7 <sup>3</sup>	8 <sup>4</sup>	1-8 <sup>4</sup>	10 <sup>5</sup>	1-10 <sup>5</sup>	11 <sup>5</sup>	1-11 <sup>5</sup>	12 <sup>6</sup>	1-12 <sup>6</sup>	13 <sup>6</sup>	1-13 <sup>6</sup>
Minimum	59	0.73	470	0.43	264	1.01	298	0.08	194	0.33	194	0.05	19
1%	494	1.00	509	0.68	511	1.01	530	0.50	459	1.00	449	0.10	94
5%	500	1.03	527	0.87	546	1.01	650	0.72	637	1.02	694	0.10	386
10%	511	1.03	551	0.93	585	1.01	719	0.81	715	1.06	796	0.76	695
25%	552	1.06	611	1.01	659	1.12	897	0.91	914	1.11	1,036	0.95	973
Median	693	1.12	798	1.05	837	1.24	1,420	1.00	1,440	1.20	1,646	1.01	1,658
75%	800	1.22	996	1.14	1,068	5.68	4,604	1.09	4,696	1.31	5,516	1.08	5,379
90%	1,040	1.32	1,237	1.23	1,335	10.72	8,192	1.18	7,832	1.44	10,391	1.22	10,439
95%	1,454	1.44	1,521	1.34	1,726	12.26	10,971	1.26	10,994	1.59	14,461	1.54	15,071
99%	1,828	1.71	2,257	1.85	2,437	13.65	19,023	1.60	18,018	2.10	26,066	2.73	26,979
Maximum	3,080	14.26	3,699	4.49	9,086	21.55	57,460	3.33	59,044	3.68	86,992	5.94	92,457
<i>n</i>	19,535	16,853	16,853	16,852	16,852	10,098	10,098	10,098	10,098	8,114	8,114	8,114	8,114
Max/Mean	4.13	-	4.28	-	9.75	-	16.86	-	17.77	-	21.04	-	22.36

Note 1: Weight component 9 and weight product 1-9 are excluded because weight 9 = 1 for all selected dwelling units.

Note 2: Under GEM, nonresponse adjustment factors (weight component #7 and #12) could be less than 1 due to the built-in control for extreme weights. For an explanation, see Chapter 2.

<sup>1</sup> sel.sdu.des refers to selected screener dwelling unit design weight and sel.per.des to selected person design weight. For a key to other modeling abbreviations, see Chapter 5, Exhibit 5.1.

<sup>2</sup> Based on eligible dwelling units.

<sup>3</sup> Based on screener-complete dwelling units.

<sup>4</sup> Based on screener-complete dwelling units, occupants verified eligible.

<sup>5</sup> Based on selected persons.

<sup>6</sup> Based on questionnaire-complete persons.

## **Model Group 2 Overview**

### **Dwelling Unit Nonresponse**

For one-factor effects, the levels of Group Quarters were collapsed due to a convergence problem. Out of 21 proposed one-factor effects, 20 were included in the model.

For two-factor effects, variable collapsing or dropping was present in all two-factor effects except the percent Owner-occupied  $\times$  percent Black, percent Owner-occupied  $\times$  percent Hispanic, percent Owner-occupied  $\times$  Rent/housing, Rent/housing  $\times$  percent Black, State  $\times$  Quarter and State  $\times$  percent Black interactions. Out of 68 proposed variables, 52 were included in the model.

Variable collapsing or dropping was present in all three-factor effects. Out of 64 proposed variables, 13 were included in the model.

In the final model, a total of 85 variables were included; see Exhibit D2.1.

### **Dwelling Unit Poststratification**

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

For two-factor effects, variable collapsing was present in Age  $\times$  Hispanic. Out of 47 proposed two-factor effects, 46 were included in the model.

According to hierarchical rule, variable collapsing was present in three-factor effects of Age  $\times$  Race  $\times$  Hispanicity, Race  $\times$  Hispanicity  $\times$  Gender, and State  $\times$  Race  $\times$  Hispanicity. Out of 64 three-factor effects, 57 were kept in the model.

In the final model, a total of 119 variable 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 dropping was present in Rent/housing  $\times$  percent Hispanic, State  $\times$  percent Hispanic, State  $\times$  percent Owner-occupied, and State  $\times$  Rent/housing interactions. Out of 99 proposed variables, 90 were included in the model.

For three-factor effects, variable collapsing or dropping was present in the interactions of State  $\times$  Race  $\times$  Hispanicity. Out of 64 proposed variables, 63 were included in the model.

In the final model, a total of 187 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 dropping was present in the percent Owner-occupied  $\times$  Rent/housing, Rent/housing  $\times$  percent Black, State  $\times$  percent Hispanicity, and State  $\times$  Rent/housing interactions. Out of 99 proposed variables, 90 were included in the model.

For three-factor effects, variable collapsing was present in the State  $\times$  Age  $\times$  Race interactions. Out of 64 proposed variables, 62 were included in the model.

In the final model, a total of 186 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 dropping was present in the State  $\times$  Race interaction. Out of 53 proposed variables, 51 were included in the model.

All three-factor effects except Age  $\times$  Race  $\times$  Gender, Race  $\times$  Hispanicity  $\times$  Gender, State  $\times$  Age  $\times$  Gender, State  $\times$  Race  $\times$  Hispanicity, State  $\times$  Race  $\times$  Gender, and State  $\times$  Hispanicity  $\times$  Gender were collapsed or dropped due to convergence or singularity problems. Out of 77 proposed variables, 73 were included in the model.

In the final model, a total of 140 variables were included; see Exhibit D2.5.

**Exhibit D2.1 Covariates for 2004 NSDUH Person Weights (res.sdu.nr),  
Model Group 2: Middle Atlantic**

Variables	Levels	Proposed	Final	Comments
<b>One-Factor Effects</b>		<b>21</b>	<b>20</b>	
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 quarters	3	2	1	Coll. (1) & (2); conv.
%Black	3	2	2	All levels present.
%Hispanic	3	2	2	All levels present.
%Owner-occupied	3	2	2	All levels present.
Rent/housing value	5	4	4	All levels present.
<b>Two-Factor Effects</b>		<b>68</b>	<b>52</b>	
%Owner-occupied × %Black	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	3*5	8	8	All levels present.
Rent/housing × %Hispanic	3*5	8	7	Drop (2,1); zero.
State × Quarter	3*4	6	6	All levels present.
State × Population density	3*4	6	4	Drop (2,2), (2,3); sing.
State × Group quarters	3*3	4	1	Coll. (2,1) & (2,2), (3,1) & (3,2); hier. Drop (2,1/2); sing.
State × %Black	3*3	4	4	All levels present.
State × %Hispanic	3*3	4	2	Drop (3,1); sing. Coll. (2,1) & (2,2); conv.
State × %Owner-occupied	3*3	4	2	Drop (3,3); sing. Coll. (2,2) & (2,3); conv.
State × Rent/housing	3*5	8	2	Keep (2,3) & (2,4), drop others; sing./zero.
<b>Three-Factor Effects</b>		<b>64</b>	<b>13</b>	
State × %Owner-occupied × %Black	3*3*3	8	7	Drop (3,3,1); zero.
State × %Owner-occupied × %Hispanic	3*3*3	8	4	Keep (3,2,2) & (2,3,1) & (2,2,1/2), drop others; sing./zero.
State × %Owner-occupied × Rent/housing	3*3*5	16	0	Drop all; sing./zero.
State × Rent/housing × %Black	3*3*5	16	1	Keep (2,3,1), drop others; sing./zero.
State × Rent/housing × %Hispanic	3*3*5	16	1	Keep (2,3,2), drop others; sing./zero.
<b>Total</b>		<b>153</b>	<b>85</b>	

**Exhibit D2.2 Covariates for 2004 NSDUH Person Weights (res.sdu.ps),  
Model Group 2: Middle Atlantic**

Variables	Levels	Proposed	Final	Comments
<b>One-Factor Effects</b>		<b>16</b>	<b>16</b>	
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.
<b>Two-Factor Effects</b>		<b>47</b>	<b>46</b>	
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.
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.
<b>Three-Factor Effects</b>		<b>64</b>	<b>57</b>	
Age × Race (3 levels) × Hispanicity	5*3*2	8	4	Coll. (1,2,1) & (2,3,1); hier.; repeated for each age group.
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); hier.
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); hier.; repeated for state=3.
State × Race (3 levels) × Gender	3*3*2	4	4	All levels present.
State × Hispanicity × Gender	3*2*2	2	2	All levels present.
<b>Total</b>		<b>127</b>	<b>119</b>	

**Exhibit D2.3 Covariates for 2004 NSDUH Person Weights (sel.per.ps),  
Model Group 2: Middle Atlantic**

Variables	Levels	Proposed	Final	Comments
<b>One-Factor Effects</b>		<b>34</b>	<b>34</b>	
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 quarters	3	2	2	All levels present.
%Black	3	2	2	All levels present.
%Hispanic	3	2	2	All levels present.
%Owner-occupied	3	2	2	All levels present.
Rent/housing value	5	4	4	All levels present.
<b>Two-Factor Effects</b>		<b>99</b>	<b>90</b>	
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	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	3*5	8	8	All levels present.
Rent/housing × %Hispanic	3*5	8	7	Drop (2,1); zero.
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	3*3	4	4	All levels present.
State × %Hispanic	3*3	4	3	Drop (3,1); sing.
State × %Owner-occupied	3*3	4	3	Drop (3,3); sing.
State × Rent/housing	3*5	8	2	Drop (3,1/2/3); sing. Drop (2,1/2), (3,4); zero.
<b>Three-Factor Effects</b>		<b>64</b>	<b>63</b>	
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	3	Coll. (2,2,1) & (2,3,1); 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.
<b>Total</b>		<b>197</b>	<b>187</b>	

**Exhibit D2.4 Covariates for 2004 NSDUH Person Weights (res.per.nr),  
Model Group 2: Middle Atlantic**

Variables	Levels	Proposed	Final	Comments
<b>One-Factor Effects</b>		<b>34</b>	<b>34</b>	
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	3	2	2	All levels present.
%Hispanic	3	2	2	All levels present.
%Owner-occupied	3	2	2	All levels present.
Rent/housing value	5	4	4	All levels present.
<b>Two-Factor Effects</b>		<b>99</b>	<b>90</b>	
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	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	3*5	8	8	All levels present.
Rent/housing × %Hispanic	3*5	8	7	Drop (2,1); zero.
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	3*3	4	4	All levels present.
State × %Hispanic	3*3	4	3	Drop (3,1); sing.
State × %Owner-occupied	3*3	4	4	All levels present.
State × Rent/housing	3*5	8	1	Drop (3,1/2/3), (2,3); sing. Drop (3,4), (2,1/2); zero.
<b>Three-Factor Effects</b>		<b>64</b>	<b>62</b>	
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	14	Coll. (2,1,2) & (2,1,3), (3,4,2) & (3,4,3); conv.
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.
<b>Total</b>		<b>197</b>	<b>186</b>	

**Exhibit D2.5 Covariates for 2004 NSDUH Weights (res.per.ps),  
Model Group 2: Middle Atlantic**

Variables	Levels	Proposed	Final	Comments
<b>One-Factor Effects</b>		<b>17</b>	<b>17</b>	
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.
<b>Two-Factor Effects</b>		<b>53</b>	<b>51</b>	
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	6	Coll. (2,3) & (2,4), (3,3) & (3,4); conv.
State × Hispanicity	3*2	2	2	All levels present.
State × Gender	3*2	2	2	All levels present.
<b>Three-Factor Effects</b>		<b>77</b>	<b>73</b>	
Age × Race (3 levels) × Hispanicity	6*3*2	10	8	Coll. (4,2,1) & (4,3,1), (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	4	Drop (5,1,1); conv.
Race (3 levels) × Hispanicity × Gender	3*2*2	2	2	All levels present.
State × Age × Race(3 levels)	3*6*3	20	19	Coll. (3,5,2) & (3,5,3); sing.
State × Age × Hispanicity	3*6*2	10	9	Drop (3,5,1); sing.
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.
<b>Total</b>		<b>147</b>	<b>140</b>	



**Appendix D3: Model Group 3: East North Central**  
(Illinois, Indiana, Michigan, Wisconsin, Ohio)



**Table D.3a 2004 NSDUH Person Weight GEM Modeling Summary (Model Group 3: East North Central)**

Modeling Step <sup>1</sup>	Extreme Weight Proportions			UWE <sup>2</sup>	# XVAR <sup>3</sup>	Bounds <sup>4</sup>	
	Unweighted	Weighted	Outwinsor			Nominal	Realized
<i>res.sdu.nr</i>	3.28%	2.75%	0.06%	1.10995	255	(1.04, 1.29)	(1.05, 1.27)
	2.59%	2.65%	0.06%	1.10034	169	(1.00, 1.93)	(1.00, 1.75)
						(1.00, 1.16)	(1.00, 1.15)
<i>res.sdu.ps</i>	2.59%	2.65%	0.06%	1.10033	197	(0.44, 2.14)	(0.46, 2.11)
	1.26%	1.64%	0.21%	1.15540	197	(0.20, 4.00)	(0.20, 3.98)
						(0.73, 2.53)	(0.74, 2.53)
<i>sel.per.ps</i>	3.77%	4.82%	0.97%	2.30389	287	(0.20, 2.76)	(0.20, 2.74)
	1.42%	2.52%	0.41%	2.28366	268	(0.20, 4.22)	(0.20, 4.16)
						(0.38, 3.05)	(0.39, 3.01)
<i>res.per.nr</i>	1.41%	2.45%	0.40%	2.34451	287	(1.00, 3.00)	(1.00, 3.00)
	1.26%	3.14%	0.55%	2.56886	245	(1.00, 4.01)	(1.00, 3.98)
						(1.00, 4.60)	(1.00, 4.58)
<i>res.per.ps</i>	1.33%	3.22%	0.60%	2.56886	227	(0.20, 3.00)	(0.20, 3.00)
	1.32%	4.15%	0.74%	2.66502	190	(0.20, 3.96)	(0.20, 3.95)
						(0.30, 3.17)	(0.30, 3.13)

<sup>1</sup> For a key to modeling abbreviations, see Chapter 5, Exhibit 5.1.

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

<sup>3</sup> Number of proposed covariates on top line, and number finalized after modeling.

<sup>4</sup> There are six sets of bounds for each modeling step. Nominal bounds are used in defining maximum/minimum weights for the 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 weights, the nonextreme weights, and the low-extreme weights.

**Table D.3b Distribution of Weight Adjustment Factors and Weight Products for the 2004 NSDUH Person Weight (Model Group 3: East North Central)**

	<i>sel.sdu.des</i> <sup>1</sup>	<i>res.sdu.nr</i> <sup>1</sup>		<i>res.sdu.ps</i> <sup>1</sup>		<i>sel.per.des</i> <sup>1</sup>		<i>sel.per.ps</i> <sup>1</sup>		<i>res.per.nr</i> <sup>1</sup>		<i>res.per.ps</i> <sup>1</sup>	
	1-6 <sup>2</sup>	7 <sup>3</sup>	1-7 <sup>3</sup>	8 <sup>4</sup>	1-8 <sup>4</sup>	10 <sup>5</sup>	1-10 <sup>5</sup>	11 <sup>5</sup>	1-11 <sup>5</sup>	12 <sup>6</sup>	1-12 <sup>6</sup>	13 <sup>6</sup>	1-13 <sup>6</sup>
Minimum	114	0.51	271	0.20	88	1.01	128	0.10	39	0.45	42	0.06	9
1%	364	1.00	385	0.59	348	1.01	385	0.54	343	1.00	361	0.21	172
5%	372	1.03	408	0.87	448	1.01	531	0.77	510	1.04	571	0.75	530
10%	466	1.04	502	0.94	501	1.01	582	0.85	572	1.07	645	0.93	636
25%	484	1.06	548	1.03	576	1.12	706	0.94	709	1.12	800	0.99	802
Median	552	1.08	591	1.10	651	1.27	1,043	1.00	1,070	1.18	1,189	1.01	1,202
75%	621	1.14	706	1.17	786	5.15	3,363	1.07	3,393	1.30	4,082	1.04	4,067
90%	1,010	1.21	1,086	1.26	1,182	10.05	6,655	1.17	6,407	1.43	8,348	1.09	8,112
95%	1,077	1.26	1,152	1.36	1,378	10.90	7,801	1.26	7,899	1.52	10,648	1.26	10,726
99%	1,158	1.41	1,242	1.61	1,728	12.41	14,177	1.57	13,637	1.87	17,901	1.70	17,930
Maximum	1,190	3.26	1,660	3.98	4,023	24.95	31,671	4.16	32,925	12.64	42,726	4.24	50,875
<i>n</i>	26,667	24,070	24,070	24,069	24,069	15,541	15,541	15,541	15,541	12,666	12,666	12,666	12,666
Max/Mean	1.97	-	2.48	-	5.43	-	12.93	-	13.49	-	14.26	-	16.99

Note 1: Weight component 9 and weight product 1-9 are excluded because weight 9 = 1 for all selected dwelling units.

Note 2: Under GEM, nonresponse adjustment factors (weight component #7 and #12) could be less than 1 due to the built-in control for extreme weights. For an explanation, see Chapter 2.

<sup>1</sup> sel.sdu.des refers to selected screener dwelling unit design weight and sel.per.des to selected person design weight. For a key to other modeling abbreviations, see Chapter 5, Exhibit 5.1.

<sup>2</sup> Based on eligible dwelling units.

<sup>3</sup> Based on screener-complete dwelling units.

<sup>4</sup> Based on screener-complete dwelling units, occupants verified eligible.

<sup>5</sup> Based on selected persons.

<sup>6</sup> Based on questionnaire-complete persons.

## **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 Rent/housing  $\times$  percent Hispanic, State  $\times$  percent Hispanic, and State  $\times$  Rent/housing interactions. Out of 104 proposed variables, 96 were included in the model.

Variable collapsing or dropping was present in all three-factor effects. Out of 128 proposed variables, 50 were included in the model.

In the final model, a total of 169 variables were included; see Exhibit D3.1.

### **Dwelling Unit Poststratification**

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

All 73 two-factor effects were kept in the model.

All 106 three-factor effects were kept 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 Rent/housing  $\times$  Percent Hispanic, State  $\times$  Percent Hispanic, State  $\times$  Race, and State  $\times$  Rent/housing interactions. Out of 145 proposed variables, 136 were included in the model.

For three-factor effects, variable collapsing or dropping was present in the Age  $\times$  Race  $\times$  Hispanicity, and State  $\times$  Race  $\times$  Hispanicity interactions. Out of 128 proposed variables, 96 were included in the model.

In the final model, a total of 268 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 or dropping was present in the Percent Owner occupied  $\times$  Percent Black, State  $\times$  Race, State  $\times$  percent Hispanic and State  $\times$  Rent/housing interactions. Out of 145 proposed variables, 133 were included in the model.

For three-factor effects, all levels were present for the Age  $\times$  Race  $\times$  Gender, Age  $\times$  Hispanicity  $\times$  Gender, Race  $\times$  Hispanicity  $\times$  Gender, State  $\times$  Age  $\times$  Hispanicity, State  $\times$  Age  $\times$  Gender, and State  $\times$  Hispanicity  $\times$  Gender interactions. All the others were affected by variable collapsing or dropping. Out of 84 proposed variables, 76 were included in the model.

In the final model, a total of 245 variables were included; see Exhibit D3.4.

### **Respondent Person-Level Poststratification**

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

For two-factor effects, collapsing was present in Race  $\times$  Hispanicity and State  $\times$  Race. Out of 81 proposed variables, 78 were included in the model.

For three-factor effects, variable collapsing or dropping was present in the Age  $\times$  Race  $\times$  Hispanicity, Race  $\times$  Hispanicity  $\times$  Gender, State  $\times$  Age  $\times$  Race, State  $\times$  Age  $\times$  Hispanicity, State  $\times$  Race  $\times$  Hispanicity, and State  $\times$  Race  $\times$  Gender interactions. Out of 127 proposed variables, 93 were included in the model.

In the final model, a total of 190 variables were included; see Exhibit D3.5.

**Exhibit D3.1 Covariates for 2004 NSDUH Person Weights (res.sdu.nr),  
Model Group 3: East North Central**

Variables	Levels	Proposed	Final	Comments
<b>One-Factor Effects</b>		<b>23</b>	<b>23</b>	
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 quarters	3	2	2	All levels present.
%Black	3	2	2	All levels present.
%Hispanic	3	2	2	All levels present.
%Owner-occupied	3	2	2	All levels present.
Rent/housing value	5	4	4	All levels present.
<b>Two-Factor Effects</b>		<b>104</b>	<b>96</b>	
%Owner-occupied × %Black	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	3*5	8	8	All levels present.
Rent/housing × %Hispanic	3*5	8	7	Coll (3,1) & (3,2); zero.
State × Quarter	5*4	12	12	All levels present.
State × Population density	5*4	12	12	All levels present.
State × Group quarters	5*3	8	8	All levels present.
State × %Black	5*3	8	8	All levels present.
State × %Hispanic	5*3	8	6	Coll (4, 1) & (4,2), (5,1) & (5,2); zero.
State × %Owner-occupied	5*3	8	8	All levels present.
State × Rent/housing	5*5	16	11	Drop (3/4/5, 4), (4,3); ref zero. Drop (1,4); sing.
<b>Three-Factor Effects</b>		<b>128</b>	<b>50</b>	
State × %Owner-occupied × %Black	5*3*3	16	11	Coll (3,3,1) & (3,3,2); sing Drop (4,2,*); sing. Drop (4,3,*); zero.
State × %Owner-occupied × %Hispanic	5*3*3	16	6	Coll (1,2,1/2), (1,3,1/2), (3,2,1/2); sing. Coll (3,3,1/2); zero. Coll (5,2,1/2), (5,3,1/2); hier. Drop (4,2/3,1/2) sing, ref zero.
State × %Owner-occupied × Rent/housing	5*3*5	32	12	Drop (*,* 4), (4,* 3); hier. Drop (1,3,1); sing. Drop (1,3,2/3), (4,3,1/2), (4,2,1); zero. Drop (5,2/3,3), (3,3,3), (4,2,2); sing.
State × Rent/housing × %Black	5*3*5	32	15	Drop (*,4,*), (4,3,*) hier. Drop (1,1,1) (4,1,1/2); zero. Coll (3,1,1) & (3,1,2), (3,3,1) & (3,3,2) sing; Drop (4,2,1/2); sing.
State × Rent/housing × %Hispanic	5*3*5	32	6	Drop (*,4,*), (4,3,*); hier. Coll (1,1,1) & (1,1,2), (1,2,1) & (1,2,2); sing. Coll (5,1,1) & (5,1,2), (5,3,1) & (5,3,2); hier. Coll (3,1,1/2), (3,2,1/2); Drop (1,3,1) (3,3,1/2), (4,1,1/2); zero. Drop (1,3,2), (5,2,1/2), (4,2,1/2); sing.
<b>Total</b>		<b>255</b>	<b>169</b>	

**Exhibit D3.2 Covariates for 2004 NSDUH Person Weights (res.sdu.ps),  
Model Group 3: East North Central**

<b>Variables</b>	<b>Levels</b>	<b>Proposed</b>	<b>Final</b>	<b>Comments</b>
<b>One-Factor Effects</b>		<b>18</b>	<b>18</b>	
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.
<b>Two-Factor Effects</b>		<b>73</b>	<b>73</b>	
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.
<b>Three-Factor Effects</b>		<b>106</b>	<b>106</b>	
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.
<b>Total</b>		<b>197</b>	<b>197</b>	

**Exhibit D3.3 Covariates for 2004 NSDUH Person Weights (sel.per.ps),  
Model Group 3: East North Central**

Variables	Levels	Proposed	Final	Comments
<b>One-Factor Effects</b>		<b>36</b>	<b>36</b>	
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 quarters	3	2	2	All levels present.
%Black	3	2	2	All levels present.
%Hispanic	3	2	2	All levels present.
%Owner-occupied	3	2	2	All levels present.
Rent/housing value	5	4	4	All levels present.
<b>Two-Factor Effects</b>		<b>145</b>	<b>136</b>	
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	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	3*5	8	8	All levels present.
Rent/housing × %Hispanic	3*5	8	7	Coll (3,1) & (3,2); zero.
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	15	Coll (4,3) & (4,4); sing.
State × Hispanicity	5*2	4	4	All levels present.
State × Gender	5*2	4	4	All levels present.
State × %Black	5*3	8	8	All levels present.
State × %Hispanic	5*3	8	6	Coll. (4,1) & (4,2), (5,1) & (5,2); zero.
State × %Owner-occupied	5*3	8	8	All levels present.
State × Rent/housing	5*5	16	11	Drop (*,4), (4,3); sing.
<b>Three-Factor Effects</b>		<b>128</b>	<b>96</b>	
Age × Race (3 levels) × Hispanicity	5*3*2	8	4	Coll (4,2,1) & (4,3,1); sing. Coll (1,2,1) & (1,3,1), repeat for remaining 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)	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	2	Coll (1,2,1) & (1,3,1), (3,2,1) & (3,3,1); conv. Drop (4,2,1), (4,3,1), (5,2,1), (5,3,1).
State × Race (3 levels) × Gender	5*3*2	8	8	All levels present.
State × Hispanicity × Gender	5*2*2	4	4	All levels present.
<b>Total</b>		<b>287</b>	<b>268</b>	

**Exhibit D3.4 Covariates for 2004 NSDUH Person Weights (res.per.nr),  
Model Group 3: East North Central**

Variables	Levels	Proposed	Final	Comments
<b>One-Factor Effects</b>		<b>36</b>	<b>36</b>	
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 quarters	3	2	2	All levels present.
%Black	3	2	2	All levels present.
%Hispanic	3	2	2	All levels present.
%Owner-occupied	3	2	2	All levels present.
Rent/housing value	5	4	4	All levels present.
<b>Two-Factor Effects</b>		<b>145</b>	<b>133</b>	
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	3*3	4	4	All levels present.
%Owner-occupied × %Hispanic	3*3	4	3	Coll (3,1) & (3,2); zero.
%Owner-occupied × Rent/housing	3*5	8	8	All levels present.
Rent/housing × %Black	3*5	8	8	All levels present.
Rent/housing × %Hispanic	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	13	Coll (4,3) & (4,4) & (4,5); conv. Coll (1,3) & (1,4); conv.
State × Hispanicity	5*2	4	4	All levels present.
State × Gender	5*2	4	4	All levels present.
State × %Black	5*3	8	8	All levels present.
State × %Hispanic	5*3	8	5	Coll. (4,1) & (4,2), (5,1) & (5,2); zero Coll (3,1) & (3,2); conv.
State × %Owner-occupied	5*3	8	8	All levels present.
State × Rent/housing	5*5	16	11	Drop (*,4), (4,3); ref zero.
<b>Three-Factor Effects</b>		<b>84</b>	<b>76</b>	
Age × Race (3 levels) × Hispanicity	5*3*2	8	4	Drop (4,2,1) & (4,3,1); Coll (1,2,1) & (1,3,1), (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	2	All levels present.
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	2	Drop (3,*,*), (4,*,*); Coll (1,2,1) & (1,3,1), (5,2,1) & (5,3,1); conv.
State × Race (3 levels) × Gender	5*3*2	8	4	Coll. (4,2,1) & (4,3,1); Do same for all states; conv.
State × Hispanicity × Gender	5*2*2	4	4	All levels present.
<b>Total</b>		<b>287</b>	<b>245</b>	

**Exhibit D3.5 Covariates for 2004 NSDUH Person Weights (res.per.ps),  
Model Group 3: East North Central**

Variables	Levels	Proposed	Final	Comments
<b>One-Factor Effects</b>		<b>19</b>	<b>19</b>	
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.
<b>Two-Factor Effects</b>		<b>81</b>	<b>78</b>	
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	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.
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	14	Coll. (1,3) & (1,4), (5,3) & (5,4); conv.
State × Hispanicity	5*2	4	4	All levels present.
State × Gender	5*2	4	4	All levels present.
<b>Three-Factor Effects</b>		<b>127</b>	<b>93</b>	
Age × Race (3 levels) × Hispanicity	6*3*2	10	1	Coll. (1,2,1) & (1,3,1)& (2,2,1) & (2,3,1), Drop rest; 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	0	Drop all; conv.
State × Age × Race (3 levels)	5*6*3	40	31	Coll (3,5,2) & (3,5,3), (4,4,2) & (4,4,3), (4,5,2) & (4,5,3), (5,5,2) & (5,5,3); sing. Coll (1,1,2) & (1,1,3), do same for all ages; conv.
State × Age × Hispanicity	5*6*2	20	15	Drop (1,5,1), (1,4,1), (4,4,1), (4,5,1), (5,5,1); conv.
State × Age × Gender	5*6*2	20	20	All levels present.
State × Race (3 levels) × Hispanicity	5*3*2	8	0	Drop all; 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.
<b>Total</b>		<b>227</b>	<b>190</b>	



**Appendix D4: Model Group 4: West North Central**  
(Iowa, Kansas, Minnesota, Missouri, Nebraska, South Dakota, North Dakota)



**Table D.4a 2004 NSDUH Person Weight GEM Modeling Summary (Model Group 4: West North Central)**

Modeling Step <sup>1</sup>	Extreme Weight Proportions			UWE <sup>2</sup>	# XVAR <sup>3</sup>	Bounds <sup>4</sup>	
	Unweighted	Weighted	Outwinsor			Nominal	Realized
<i>res.sdu.nr</i>	5.56%	6.34%	0.73%	1.45080	357	(1.02, 1.49)	(1.02, 1.48)
	4.91%	6.25%	0.48%	1.46112	149	(1.00, 1.72)	(1.00, 1.71)
						(1.03, 1.21)	(1.03, 1.20)
<i>res.sdu.ps</i>	4.92%	6.25%	0.48%	1.46105	267	(0.20, 2.03)	(0.20, 1.98)
	2.21%	2.82%	0.46%	1.52580	252	(0.20, 5.00)	(0.20, 5.00)
						(0.37, 1.31)	(0.38, 1.29)
<i>sel.per.ps</i>	3.78%	5.64%	0.95%	3.00102	377	(0.20, 2.60)	(0.20, 2.60)
	2.11%	4.47%	0.94%	3.08685	292	(0.20, 5.00)	(0.20, 5.00)
						(0.50, 5.00)	(0.50, 5.00)
<i>res.per.nr</i>	2.25%	4.55%	1.04%	3.17209	377	(1.00, 3.00)	(1.00, 3.00)
	1.82%	4.53%	1.09%	3.37287	259	(1.00, 5.00)	(1.00, 5.00)
						(1.00, 2.60)	(1.00, 2.60)
<i>res.per.ps</i>	1.72%	4.40%	1.08%	3.37287	307	(0.20, 2.55)	(0.20, 2.55)
	1.80%	3.74%	1.12%	3.46258	221	(0.20, 5.00)	(0.20, 5.00)
						(0.75, 1.01)	(0.75, 0.80)

<sup>1</sup> For a key to modeling abbreviations, see Chapter 5, Exhibit 5.1.

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

<sup>3</sup> Number of proposed covariates on top line, and number finalized after modeling.

<sup>4</sup> There are six sets of bounds for each modeling step. Nominal bounds are used in defining maximum/minimum values for the 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 weights, the nonextreme weights, and the low-extreme weights.

**Table D.4b Distribution of Weight Adjustment Factors and Weight Products for the 2004 NSDUH Person Weight (Model Group 4: West North Central)**

	<i>sel.sdu.des</i> <sup>1</sup>		<i>res.sdu.nr</i> <sup>1</sup>		<i>res.sdu.ps</i> <sup>1</sup>		<i>sel.per.des</i> <sup>1</sup>		<i>sel.per.ps</i> <sup>1</sup>		<i>res.per.nr</i> <sup>1</sup>		<i>res.per.ps</i> <sup>1</sup>	
	1-6 <sup>2</sup>	7 <sup>3</sup>	1-7 <sup>3</sup>	8 <sup>4</sup>	1-8 <sup>4</sup>	10 <sup>5</sup>	1-10 <sup>5</sup>	11 <sup>5</sup>	1-11 <sup>5</sup>	12 <sup>6</sup>	1-12 <sup>6</sup>	13 <sup>6</sup>	1-13 <sup>6</sup>	
Minimum	91	0.75	115	0.15	24	1.01	28	0.10	6	0.51	6	0.07	1	
1%	114	0.97	120	0.40	101	1.01	101	0.22	60	0.92	65	0.20	41	
5%	116	1.01	123	0.73	123	1.01	165	0.55	154	1.00	164	0.60	146	
10%	126	1.03	132	0.87	137	1.01	202	0.70	193	1.01	208	0.84	193	
25%	188	1.04	195	0.98	205	1.10	487	0.85	433	1.06	457	0.95	438	
Median	497	1.06	523	1.07	554	1.41	1,074	0.97	1,029	1.14	1,165	1.01	1,167	
75%	974	1.07	1,025	1.17	996	5.05	2,288	1.12	2,262	1.25	2,583	1.07	2,601	
90%	1,105	1.11	1,196	1.28	1,361	9.25	6,341	1.29	6,137	1.40	7,401	1.14	7,154	
95%	1,166	1.13	1,280	1.39	1,462	12.04	7,959	1.50	8,539	1.57	10,595	1.34	10,649	
99%	1,338	1.24	1,418	1.93	1,757	14.27	16,285	2.46	16,446	2.69	19,873	2.16	21,367	
Maximum	1,384	1.71	2,015	5.00	4,011	23.75	35,943	13.28	29,737	5.00	45,160	5.00	38,651	
<i>n</i>	12,815	12,067	12,067	12,064	12,064	7,379	7,379	7,379	7,379	6,223	6,223	6,223	6,223	
Max/Mean	2.45	-	3.36	-	6.20	-	16.09	-	13.48	-	17.27	-	14.78	

Note 1: Weight component 9 and weight product 1-9 are excluded because weight 9 = 1 for all selected dwelling units.

Note 2: Under GEM, nonresponse adjustment factors (weight component #7 and #12) could be less than 1 due to the built-in control for extreme weights. For an explanation, see Chapter 2.

<sup>1</sup> sel.sdu.des refers to selected screener dwelling unit design weight and sel.per.des to selected person design weight. For a key to other modeling abbreviations, see Chapter 5, Exhibit 5.1.

<sup>2</sup> Based on eligible dwelling units.

<sup>3</sup> Based on screener-complete dwelling units.

<sup>4</sup> Based on screener-complete dwelling units, occupants verified eligible.

<sup>5</sup> Based on selected persons.

<sup>6</sup> Based on questionnaire-complete persons.

## **Model Group 4 Overview**

### **Dwelling Unit Nonresponse**

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

Variable collapsing or dropping was present in all two-factor effects except the percent Owner-occupied  $\times$  Rent/housing, State  $\times$  Quarter, and State  $\times$  Owner-occupied. Out of 140 proposed variables, 101 were included in the model.

Variable collapsing or dropping was present in all three-factor effects. Out of 192 proposed variables, 23 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 State  $\times$  Age  $\times$  Race, State  $\times$  Age  $\times$  Hispanicity, State  $\times$  Race  $\times$  Hispanicity, and State  $\times$  Race  $\times$  Gender interactions. Out of 148 proposed variables, 133 were included in the model.

In the final model, a total of 252 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 dropping was present in the percent Owner-occupied  $\times$  percent Black, Owner-occupied  $\times$  percent Hispanic, Rent/housing  $\times$  percent Black, Rent/housing  $\times$  percent Hispanic, State  $\times$  Race, State  $\times$  percent Black, State  $\times$  percent Hispanic, and State  $\times$  Rent/housing interactions. Out of 191 proposed variables, 159 were included in the model.

Variable collapsing or dropping was present in all three-factor effects except the Age  $\times$  Race  $\times$  Gender, Age  $\times$  Hispanicity  $\times$  Gender, and State  $\times$  Age  $\times$  Gender. Out of 148 proposed variables, 95 were included in the model.

In the final model, a total of 292 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  $\times$  percent Black, Owner-occupied  $\times$  percent Hispanic, Rent/housing  $\times$  percent Black, Rent/housing  $\times$  percent Hispanic, State  $\times$  Race, State  $\times$  percent Black, State  $\times$  percent Hispanic, and State  $\times$  Rent/housing interactions. Out of 191 proposed variables, 150 were included in the model.

Variable collapsing or dropping was present in all three-factor effects except the Age  $\times$  Hispanicity  $\times$  Gender and State  $\times$  Age  $\times$  Gender interactions. Out of 148 proposed variables, 71 were included in the model.

In the final model, a total of 259 variables were included; see Exhibit D4.4.

## **Respondent Person-Level Poststratification**

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

For two-factor effects, variable collapsing or dropping was present in the State  $\times$  Race interaction. Out of 109 proposed variables, 108 were included in the model.

For three-factor effects, all levels were present for the Age  $\times$  Hispanicity  $\times$  Gender and State  $\times$  Age  $\times$  Gender interactions. All the others were affected by variable collapsing or dropping. Out of 177 proposed variables, 92 were included in the model.

In the final model, a total of 221 variables were included; see Exhibit D4.5.

**Exhibit D4.1 Covariates for 2004 NSDUH Person Weights (res.sdu.nr),  
Model Group 4: West North Central**

Variables	Levels	Proposed	Final	Comments
<b>One-Factor Effects</b>		<b>25</b>	<b>25</b>	
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	3	2	2	All levels present.
%Hispanic	3	2	2	All levels present.
%Owner-occupied	3	2	2	All levels present.
Rent/housing value	5	4	4	All levels present.
<b>Two-Factor Effects</b>		<b>140</b>	<b>101</b>	
%Owner-occupied × %Black	3*3	4	3	Drop (3,1); zero.
%Owner-occupied × %Hispanic	3*3	4	2	Drop (2/3,1); zero.
%Owner-occupied × Rent/housing	3*5	8	8	All levels present.
Rent/housing × %Black	3*5	8	7	Drop (1,1); zero.
Rent/housing × %Hispanic	3*5	8	3	Drop (2/3/4,1); zero. Coll (1,1) & (1,2); sing. Drop (2,2); conv.
State × Quarter	7*4	18	18	All levels present.
State × Population density	7*4	18	14	Drop (1/5/6/7,1); zero.
State × Group quarters	7*3	12	9	Coll (1,1) & (1,2), (5,1) & (5,2), (6,1) & (6,2); zero.
State × %Black	7*3	12	7	Drop (1/6/7,1) (6,2); zero. Coll (5,1) & (5,2); zero.
State × %Hispanic	7*3	12	4	Drop (1/3/5/6/7,1), (6,2); zero. Coll (1,2) & (3,2); sing. Coll (2, 1/2); zero.
State × %Owner-occupied	7*3	12	12	All levels present.
State × Rent/housing	7*5	24	14	Drop (1/6,4), (6,3), (3,*); zero. Drop (1,3), (6,2), (5,4); ref zero.
<b>Three-Factor Effects</b>		<b>192</b>	<b>23</b>	
State × %Owner-occupied × %Black	7*3*3	24	5	Drop (1/6/7,*1), (6,*2), (2/3,3,1); hier zero. Coll (1,2,2) & (1,3,2); conv. Coll (2,2,1) & (2,2,2), (3,2,1) & (3,2,2); zero. Drop (7,3,2); zero. Drop (7,2,2); sing. Drop (5,2/3,1/2); sing.
State × %Owner-occupied × %Hispanic	7*3*3	24	1	Drop (1/3/5/6/7,*1), (2,3,1), (6,*2); hier zero. Coll (2,2,1) & (2,2,2); hier. Drop (1/2/3,3,2), (7,2,2); zero. Drop (5/7,3,2), (3/5,2,2); sing. Drop (1,2,2); conv.
State × %Owner-occupied × Rent/housing	7*3*5	48	8	Drop (1/6,*4), (6,*3), (3,**); hier zero. Drop (1,*3), (5,*4), (6,*2); hier ref zero. Drop (7,3,2), (7,2,4), (5,2/3,1); zero. Drop (2,3,4), (2,2,4), (5,2/3,3), (7,3,4), (7,2,2), (6,2/3,1); sing. Coll (2,2,1) & (2,3,1), (2,2,2) & (2,3,2), (2,2,3) & (2,3,3), (7,2,1) & (7,3,1), (7,2,3) & (7,3,3); sing. Coll (1,2,1) & (1,3,1); zero. Coll (1,2,2) & (1,3,2), (5,2,2) & (5,3,2), Drop (5,2/3,3); conv.
State × Rent/housing × %Black	7*3*5	48	5	Drop (3,**), (1/5,4,*), (6/7,*1), (1,1/2,1); hier zero. Drop (1/5,3,*), (6,2,*); hier ref zero. Coll (2,4,1) & (2,4,2); sing. Drop (7,3,2), (5,2,1/2); sing; Drop (2,1/2,1/2), (7,1/2/4,2), (5,1,1/2); zero.
State × Rent/housing × %Hispanic	7*3*5	48	4	Drop (3,**), (1/5,4,*), (6/7,*1), (5,1/2,1), (6,*2); hier zero. Drop (1,3,*), (5,3,1); hier ref zero. Drop (2,2,1/2), (1,2,1), (7,3,2), (5,1/2,2); sing. Coll (1,1,1) & (1,1,2), (2,1,1) & (2,2,2), (2,3,1) & (2,3,2); hier. Drop (1,2,2); hier conv. Drop (2,4,1/2), (7,1/2/4,2) zero.
<b>Total</b>		<b>357</b>	<b>149</b>	

**Exhibit D4.2 Covariates for 2004 NSDUH Person Weights (res.sdu.ps),  
Model Group 4: West North Central**

Variables	Levels	Proposed	Final	Comments
<b>One-Factor Effects</b>		<b>20</b>	<b>20</b>	
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.
<b>Two-Factor Effects</b>		<b>99</b>	<b>99</b>	
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.
<b>Three-Factor Effects</b>		<b>148</b>	<b>133</b>	
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)	7*5*3	48	40	Coll (6,4,2) & (6,4,3) zero; Coll (6,1,2) & (6,1,3), Do same for all ages, Do same for st=7. conv.
State × Age × Hispanicity	7*5*2	24	23	Drop (6,4,1) conv.
State × Age × Gender	7*5*2	24	24	All levels present.
State × Race (3 levels) × Hispanicity	7*3*2	12	7	Coll (1,2,1) & (1,3,1), (7,2,1) & (7,3,1) zero; Coll (2,2,1) & (2,3,1), (3,2,1) & (3,3,1), (6,2,1) & (6,3,1); 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.
<b>Total</b>		<b>267</b>	<b>252</b>	

**Exhibit D4.3 Covariates for 2004 NSDUH Person Weights (sel.per.ps),  
Model Group 4: West North Central**

Variables	Levels	Proposed	Final	Comments
<b>One-Factor Effects</b>		<b>38</b>	<b>38</b>	
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 quarters	3	2	2	All levels present.
%Black	3	2	2	All levels present.
%Hispanic	3	2	2	All levels present.
%Owner-occupied	3	2	2	All levels present.
Rent/housing value	5	4	4	All levels present.
<b>Two-Factor Effects</b>		<b>191</b>	<b>159</b>	
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	3*3	4	3	Coll. (3,1) & (3,2); zero.
%Owner-occupied × %Hispanic	3*3	4	2	Coll. (3,1) & (3,2), (2,1) & (2,2); zero.
%Owner-occupied × Rent/housing	3*5	8	8	All levels present.
Rent/housing × %Black	3*5	8	7	Coll. (1,1) & (1,2); zero.
Rent/housing × %Hispanic	3*5	8	4	Coll. (1,1) & (1,2); sing, repeat for all Rent/housing levels; zero.
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	7*3	12	7	Coll. (1,1) & (1,2), (7,1) & (7,2); zero. Coll. (5,1) & (5,2); sing. Drop (6,1) & (6,2); zero.
State × %Hispanic	7*3	12	4	Coll. (2,1) & (2,2), sing. Coll. (1,1) & (1,2), (7,1) & (7,2), (5,1) & (5,2); zero Drop (6,1) & (6,2); zero. Drop (3,1) & (3,2); sing.
State × %Owner-occupied	7*3	12	12	All levels present.
State × Rent/housing	7*5	24	14	Drop (3,*), (1,4), (6,3), (6,4); zero. Drop (1,3), (5,4), (6,2); ref zero.
<b>Three-Factor Effects</b>		<b>148</b>	<b>95</b>	
Age × Race (3 levels) × Hispanicity	5*3*2	8	2	Coll. (3,2,1) & (3,3,1); sing. Coll. (1,2,1) & (1,3,1) with age 2, conv. Drop (4,*,*), 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	1	Coll. (2,1,1) & (3,1,1); conv.
State × Age × Race (3 levels)	7*5*3	48	28	Coll. (1,4,2) & (1,4,3), (6,2,2) & (6,2,3), (6,3,2) & (6,3,3); sing; Coll. (7,3,2) & (7,3,3), (7,4,2) & (7,4,3), (6,4,2) & (6,4,3); zero. Coll. (2,1,2) & (2,1,3), do same for st=1,3,6,7, do same for all ages; conv.
State × Age × Hispanicity	7*5*2	24	12	Drop (1,4,1), repeat for state=5,7; sing. Drop (3,4,1); zero. Drop (1,* ,1) (3,* ,1), (6,3,1), (6,4,1); conv.
State × Race (3 levels) × Hispanicity	7*5*2	24	0	Drop all; conv.
State × Race (3 levels) × Gender	7*3*2	12	10	Coll. (1,2,1) & (1,3,1), (6,2,1) & (6,3,1); conv.
State × Age × Gender	7*5*2	24	24	All levels present.
State × Hispanicity × Gender	7*2*2	6	6	All levels present.
<b>Total</b>		<b>377</b>	<b>292</b>	

**Exhibit D4.4 Covariates for 2004 NSDUH Person Weights (res.per.nr),  
Model Group 4: West North Central**

Variables	Levels	Proposed	Final	Comments
<b>One-Factor Effects</b>		<b>38</b>	<b>38</b>	
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 quarters	3	2	2	All levels present.
%Black	3	2	2	All levels present.
%Hispanic	3	2	2	All levels present.
%Owner-occupied	3	2	2	All levels present.
Rent/housing value	5	4	4	All levels present.
<b>Two-Factor Effects</b>		<b>191</b>	<b>150</b>	
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	3*3	4	3	Coll. (3,1) & (3,2); zero.
%Owner-occupied × %Hispanic	3*3	4	2	Coll. (2,1) & (2,2), (3,1) & (3,2); zero.
%Owner-occupied × Rent/housing	3*5	8	8	All levels present.
Rent/housing × %Black	3*5	8	7	Coll. (1,1) & (1,2); zero.
Rent/housing × %Hispanic	3*5	8	4	Coll. (1,1) & (1,2); sing. Do same for CV=2,3,4; zero.
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	15	Coll. (1,2) & (1,3) & (1,4) & (1,5), Coll (5,3) & (5,4) & (5,5), (7,3) & (7,4) & (7,5); conv. Coll. (3,3) & (3,5), Coll (2,3) & (2,4); conv.
State × Hispanicity	7*2	6	6	All levels present.
State × Gender	7*2	6	6	All levels present.
State × %Black	7*3	12	7	Drop (6,*); Coll. (1,1) & (1,2), (7,1) & (7,2); zero. Coll (5,1) & (5,2); sing.
State × %Hispanic	7*3	12	3	Coll (1,1) & (1,2), Do same for st=5,7; Drop (6,*); zero. Drop (3,*); sing; Drop (2,1) & (2,2); conv.
State × %Owner-occupied	7*3	12	12	All levels present.
State × Rent/housing	7*5	24	14	Drop (3,*), (1,3), (1,4), (5,4), (6,2), (6,3), (6,4); zero, sing.
<b>Three-Factor Effects</b>		<b>148</b>	<b>71</b>	
Age × Race (3 levels) × Hispanicity	5*3*2	8	5	Drop (4,*,*); Coll (3,2,1) & (3,3,1); sing.
Age × Race (3 levels) × Gender	5*3*2	8	6	Coll. (4,2,1) & (4,3,1), (3,2,1) & (3,3,1); conv.
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)	7*5*3	48	6	Drop (1,4,2/3) sing; Coll (2,1,2) & (2,1,3), (2,2,2) & (2,2,3), (2,3,2) & (2,3,3,); do the same for st=5; Drop rest; conv.
State × Age × Hispanicity	7*5*2	24	11	Keep (*,1,1) for all st; Keep (*,2,1) for all st, except (6,2,1); Drop rest; conv.
State × Age × Gender	7*5*2	24	24	All levels present.
State × Race (3 levels) × Hispanicity	7*3*2	12	2	Coll (1,2,1) & (1,3,1), (7,2,1) & (7,3,1); Drop rest; conv.
State × Race (3 levels) × Gender	7*3*2	12	6	Coll. (7,2,1) & (7,3,1); zero. Coll (3,2,1) & (3,3,1); conv. Drop (1,*), (6,*), (1); conv.
State × Hispanicity × Gender	7*2*2	6	6	All levels present.
<b>Total</b>		<b>377</b>	<b>259</b>	

**Exhibit D4.5 Covariates for 2004 NSDUH Person Weights (res.per.ps),  
Model Group 4: West North Central**

Variables	Levels	Proposed	Final	Comments
<b>One-Factor Effects</b>		<b>21</b>	<b>21</b>	
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.
<b>Two-Factor Effects</b>		<b>109</b>	<b>108</b>	
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	23	Coll. (3,3) & (3,4); conv.
State × Hispanicity	7*2	6	6	All levels present.
State × Gender	7*2	6	6	All levels present.
<b>Three-Factor Effects</b>		<b>177</b>	<b>92</b>	
Age × Race (3 levels) × Hispanicity	6*3*2	10	1	Coll (1,2,1) & (1,3,1); Drop rest; conv.
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	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)	7*6*3	60	22	Coll (5,4,2) & (5,4,3), (6,3,2) & (6,3,3); sing. Coll. (7,3,2) & (7,3,3); zero. Coll. (1,1,2) & (1,1,3), repeat for all st except 5, repeat for all ages conv. Drop (1,5,2/3); zero. Drop (1,4,2/3) (7,4,2/3) (7,5,2/3) (5,5,2/3) (6,5,2/3); sing. Drop (2,5,2/3) (3,4/5, 2/3) (1,3,2/3) (6,4,2/3) conv.
State × Age × Hispanicity	7*6*2	30	11	Drop (1,5,1) (3,4,1) (3,5,1) (5,5,1) (6,4,1); zero. Drop (1,4,1), (2,5,1) (3,3,1) (7,5,1) (5,4,1) (6,3,1) (6,5,1); sing. Drop (1,3,1) (6,1,1) (6,2,1) (2,3,1) (2,4,1) (7,3,1) (7,4,1); conv.
State × Age × Gender	7*6*2	30	30	All levels present.
State × Race (3 levels) × Hispanicity	7*3*2	12	0	Drop all; conv.
State × Race (3 levels) × Gender	7*3*2	12	8	Coll. (1,2,1) & (1,3,1), (6,2,1) & (6,3,1), (5,2,1) & (5,3,1), conv. Coll. (7,2,1) & (7,3,1); sing.
State × Hispanicity × Gender	7*2*2	6	6	All levels present.
<b>Total</b>		<b>307</b>	<b>221</b>	



**Appendix D5: Model Group 5: South Atlantic**  
(Delaware, District of Columbia, Georgia, Maryland, North Carolina, South  
Carolina, Virginia, West Virginia, Florida)



Table D.5a 2004 NSDUH Person Weight GEM Modeling Summary (Model Group 5: South Atlantic)

Modeling Step <sup>1</sup>	Extreme Weight Proportions			UWE <sup>2</sup>	# XVAR <sup>3</sup>	Bounds <sup>4</sup>	
	Unweighted	Weighted	Outwisor			Nominal	Realized
<i>res.sdu.nr</i>	3.58%	4.19%	0.21%	1.44987	459	(1.02, 1.21)	(1.02, 1.20)
	1.81%	2.66%	0.21%	1.44472	222	(1.00, 2.12)	(1.00, 2.11)
						(1.00, 1.19)	(1.00, 1.18)
<i>res.sdu.ps</i>	1.81%	2.66%	0.21%	1.44470	337	(0.20, 2.25)	(0.20, 2.18)
	1.03%	1.96%	0.32%	1.50514	333	(0.20, 4.64)	(0.20, 4.62)
						(0.83, 1.94)	(0.85, 1.92)
<i>sel.per.ps</i>	2.44%	4.36%	0.75%	2.75178	467	(0.20, 2.80)	(0.20, 2.78)
	1.16%	2.40%	0.57%	3.04596	414	(0.20, 5.00)	(0.20, 5.00)
						(0.30, 3.50)	(0.30, 3.28)
<i>res.per.nr</i>	1.07%	2.24%	0.47%	3.12429	467	(1.00, 3.00)	(1.00, 3.00)
	0.88%	3.00%	0.88%	3.48072	342	(1.00, 5.00)	(1.00, 5.00)
						(1.00, 5.00)	(1.00, 1.06)
<i>res.per.ps</i>	0.94%	3.09%	0.96%	3.48072	387	(0.20, 2.57)	(0.20, 2.53)
	0.89%	4.00%	0.74%	3.71319	314	(0.20, 4.51)	(0.20, 4.50)
						(0.30, 3.64)	(0.30, 3.54)

<sup>1</sup> For a key to modeling abbreviations, see Chapter 5, Exhibit 5.1.

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

<sup>3</sup> Number of proposed covariates on top line, and number finalized after modeling.

<sup>4</sup> There are six sets of bounds for each modeling step. Nominal bounds are used in defining maximum/minimum values for the 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 weights, the nonextreme weights, and the low-extreme weights.

**Table D.5b Distribution of Weight Adjustment Factors and Weight Products for the 2004 NSDUH Person Weight (Model Group 5: South Atlantic)**

	<i>sel.sdu.des</i> <sup>1</sup>		<i>res.sdu.nr</i> <sup>1</sup>		<i>res.sdu.ps</i> <sup>1</sup>		<i>sel.per.des</i> <sup>1</sup>		<i>sel.per.ps</i> <sup>1</sup>		<i>res.per.nr</i> <sup>1</sup>		<i>res.per.ps</i> <sup>1</sup>	
	1-6 <sup>2</sup>	7 <sup>3</sup>	1-7 <sup>3</sup>	8 <sup>4</sup>	1-8 <sup>4</sup>	10 <sup>5</sup>	1-10 <sup>5</sup>	11 <sup>5</sup>	1-11 <sup>5</sup>	12 <sup>6</sup>	1-12 <sup>6</sup>	13 <sup>6</sup>	1-13 <sup>6</sup>	
Minimum	54	0.43	66	0.19	23	1.01	32	0.10	6	0.51	6	0.08	2	
1%	74	0.99	85	0.46	72	1.01	76	0.32	70	1.00	78	0.20	50	
5%	81	1.02	97	0.76	109	1.01	163	0.65	155	1.00	169	0.53	157	
10%	112	1.04	130	0.87	141	1.01	269	0.74	257	1.00	291	0.85	265	
25%	327	1.06	348	0.99	378	1.09	828	0.87	785	1.05	841	0.96	833	
Median	702	1.09	785	1.08	867	1.35	1,519	0.98	1,553	1.14	1,700	1.02	1,737	
75%	1,062	1.15	1,211	1.21	1,290	5.67	4,513	1.11	4,148	1.27	4,536	1.08	4,532	
90%	1,643	1.20	1,793	1.32	1,972	9.91	9,673	1.29	9,363	1.45	11,446	1.19	11,264	
95%	1,759	1.24	1,998	1.43	2,272	11.73	12,286	1.44	12,733	1.58	16,588	1.33	16,560	
99%	2,033	1.35	2,263	1.80	2,863	13.88	22,021	2.03	25,033	2.15	31,798	2.06	30,583	
Maximum	3,969	2.41	3,904	4.62	7,007	24.99	43,166	7.38	51,346	5.00	116,664	4.74	150,335	
<i>n</i>	24,280	21,946	21,946	21,945	21,945	13,013	13,013	13,013	13,013	10,853	10,853	10,853	10,853	
Max/Mean	4.99	-	4.44	-	7.25	-	12.56	-	14.79	-	28.02	-	36.10	

Note 1: Weight component 9 and weight product 1-9 are excluded because weight 9 = 1 for all selected dwelling units.

Note 2: Under GEM, nonresponse adjustment factors (weight component #7 and #12) could be less than 1 due to the built-in control for extreme weights. For an explanation, see Chapter 2.

<sup>1</sup> sel.sdu.des refers to selected screener dwelling unit design weight and sel.per.des to selected person design weight. For a key to other modeling abbreviations, see Chapter 5, Exhibit 5.1.

<sup>2</sup> Based on eligible dwelling units.

<sup>3</sup> Based on screener-complete dwelling units.

<sup>4</sup> Based on screener-complete dwelling units, occupants verified eligible.

<sup>5</sup> Based on selected persons.

<sup>6</sup> Based on questionnaire-complete persons.

## **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 Rent/housing  $\times$  percent Hispanic, and all State interactions except for State  $\times$  Quarter and State  $\times$  percent Owner-occupied. Out of 176 proposed variables, 138 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, 57 were included in the model.

In the final model, a total of 222 variables were included; see Exhibit D5.1.

### **Dwelling Unit Poststratification**

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

All 125 two-factor effects were included in the model.

For three-factor effects, variable collapsing or dropping was present in the State  $\times$  Age  $\times$  Hispanicity and State  $\times$  Race  $\times$  Hispanicity interactions. Out of 190 proposed variables, 186 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 dropping was present in the percent Rent/housing  $\times$  percent Hispanic, State  $\times$  Race, State  $\times$  percent Black, State  $\times$  percent Hispanic, and State  $\times$  Rent/housing interactions. Out of 237 proposed variables, 208 were included in the model.

For three-factor effects, variable collapsing or dropping was present in all but Age  $\times$  Race  $\times$  Gender, Age  $\times$  Hispanicity  $\times$  Gender, Race  $\times$  Hispanicity  $\times$  Gender, and State  $\times$  Age  $\times$  Gender. Out of 190 proposed variables, 166 were included in the model.

In the final model, a total of 414 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 Rent/housing  $\times$  percent Hispanic, State  $\times$  Race, State  $\times$  percent Black, State  $\times$  percent Hispanic, and State  $\times$  Rent/housing interactions. Out of 237 proposed variables, 209 were included in the model.

Variable collapsing or dropping was present in all three-factor effects except the Age  $\times$  Race  $\times$  Gender interaction. Out of 190 proposed variables, 93 were included in the model.

In the final model, a total of 342 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 are present except the Race  $\times$  Hispanicity, and State  $\times$  Race interactions. Out of 137 proposed variables, 134 were included in the model.

For three-factor effects, all levels are present for the Age  $\times$  Hispanicity  $\times$  Gender and Age  $\times$  Race  $\times$  Gender, State  $\times$  Age  $\times$  Gender, and State  $\times$  Race  $\times$  Gender interactions. All the others were affected by variable collapsing or dropping. Out of 227 proposed variables, 157 were included in the model.

In the final model, a total of 314 variables were included; see Exhibit D5.5.

**Exhibit D5.1 Covariates for 2004 NSDUH Person Weights (res.sdu.nr),  
Model Group 5: South Atlantic**

Variables	Levels	Proposed	Final	Comments
<b>One-Factor Effects</b>		<b>27</b>	<b>27</b>	
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 quarters	3	2	2	All levels present.
%Black	3	2	2	All levels present.
%Hispanic	3	2	2	All levels present.
%Owner-occupied	3	2	2	All levels present.
Rent/housing value	5	4	4	All levels present.
<b>Two-Factor Effects</b>		<b>176</b>	<b>138</b>	
%Owner-occupied × %Black	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	3*5	8	8	All levels present.
Rent/housing × %Hispanic	3*5	8	6	Drop (1,*); zero.
State × Quarter	9*4	24	24	All levels present.
State × Population density	9*4	24	19	Drop (1,1), (2,2), (2,3), (8,1); zero. Drop (2,1); sing.
State × Group quarters	9*3	16	10	Drop (4,*), (5,2),(6,*); zero. Drop (8,1); sing.
State × %Black	9*3	16	15	Drop (8,1); zero.
State × %Hispanic	9*3	16	10	Drop (5,1), (6,1) & (8,*); zero. Drop (2,1) & (7,1); sing.
State × %Owner-occupied	9*3	16	16	All levels present.
State × Rent/housing	9*5	32	14	Drop (1,1), (2,1), (2,2), (2,3), (4,2), (5,3), (6,3), (6,4), (7,1), (7,2), (8,3), (8,4); zero. Drop (5,4), (6,2), (7,3), (7,4), (8,2), (9,4); sing.
<b>Three-Factor Effects</b>		<b>256</b>	<b>57</b>	
State × %Owner-occupied × %Black	9*3*3	32	23	Coll. (6,2,1) & (6,3,1); conv. Drop (1,3,1), (5,3,1) & (8,* ,1); zero. Drop (4,3,2), (5,3,2) & (7,3,1); sing. Drop (6,3,2); conv.
State × %Owner-occupied × %Hispanic	9*3*3	32	9	Coll. (5,2,2) & (5,3,2); conv. Keep (2,* ,2), (4,* ,2), (7,* ,2) & (9,* ,2). Drop remainder; zero/sing.
State × %Owner-occupied × Rent/housing	9*3*5	64	10	Coll. (5,2,1) & (5,3,1); conv. Keep (1,2,3/4), (2,3,4), (6,2,1), (9,1,3), (9,* ,2), (9,* ,3). Drop remainder; zero/sing.
State × Rent/housing × %Black	9*3*5	64	12	Keep (1,2,2), (1,3,2), (4,4,*), (5,1,*), (6,1,*), (9,1,2), (9,2,2) & (9,3,*). Drop remainder; zero/sing.
State × Rent/housing × %Hispanic	9*3*5	64	3	Keep (2,4,2), (9,* ,2). Drop remainder; zero/sing.
<b>Total</b>		<b>459</b>	<b>222</b>	

**Exhibit D5.2 Covariates for 2004 NSDUH Person Weights (res.sdu.ps),  
Model Group 5: South Atlantic**

Variables	Levels	Proposed	Final	Comments
<b>One-Factor Effects</b>		<b>22</b>	<b>22</b>	
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.
<b>Two-Factor Effects</b>		<b>125</b>	<b>125</b>	
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	32	All levels present.
State × Hispanicity	9*2	8	8	All levels present.
State × Gender	9*2	8	8	All levels present.
<b>Three-Factor Effects</b>		<b>190</b>	<b>186</b>	
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	30	Drop (8,4,1); conv. Drop (8,3,1); zero.
State × Age × Gender	9*5*2	32	32	All levels present.
State × Race (3 levels) × Hispanicity	9*3*2	16	14	Drop (8,* ,1); zero.
State × Race (3 levels) × Gender	9*3*2	16	16	All levels present.
State × Hispanicity × Gender	9*2*2	8	8	All levels present.
<b>Total</b>		<b>337</b>	<b>333</b>	

**Exhibit D5.3 Covariates for 2004 NSDUH Person Weights (sel.per.ps),  
Model Group 5: South Atlantic**

Variables	Levels	Proposed	Final	Comments
<b>One-Factor Effects</b>		<b>40</b>	<b>40</b>	
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 quarters	3	2	2	All levels present.
%Black	3	2	2	All levels present.
%Hispanic	3	2	2	All levels present.
%Owner-occupied	3	2	2	All levels present.
Rent/housing value	5	4	4	All levels present.
<b>Two-Factor Effects</b>		<b>237</b>	<b>208</b>	
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	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	3*5	8	8	All levels present.
Rent/housing × %Hispanic	3*5	8	6	Drop (1,1), (2,1); zero.
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	30	Coll. (1,3) & (1,4), (8,3) & (8,4); conv.
State × Hispanicity	9*2	8	8	All levels present.
State × Gender	9*2	8	8	All levels present.
State × %Black	9*3	16	15	Drop (8,1); zero.
State × %Hispanic	9*3	16	10	Drop (1,1) & (7,1); sing. Drop (5,1), (6,1), & (8,*); zero.
State × %Owner-occupied	9*3	16	16	All levels present.
State × Rent/housing	9*5	32	14	Drop (1,1), (2,1), (2,2), (2,3), (4,2), (5,3), (6,3), (6,4), (7,1), (7,2), (8,3), (8,4); zero. Drop (5,4), (6,2), (7,3), (7,4), (8,2) & (9,4); sing.
<b>Three-Factor Effects</b>		<b>190</b>	<b>166</b>	
Age × Race (3 levels) × Hispanicity	5*3*2	8	3	Coll. (1,2,1) & (1,3,1); conv. Repeat for Age levels (2) & (3). Drop (4,*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)	9*5*3	64	63	Drop (6,4,3); sing.
State × Age × Hispanicity	9*5*2	32	26	Drop (5,4,1), (6,4,1), (8,4,1); sing. Drop (8,3,1); zero. Coll. (7,1,1) & (8,1,1), (7,2,1) & (8,2,1), conv.
State × Age × Gender	9*5*2	32	32	All levels present.
State × Race (3 levels) × Hispanicity	9*3*2	16	6	Coll. (1,2,1) & (1,3,1) conv.; Repeat for States (2) & (4); conv. Coll. (5,*1),(6,*1),(7,*1) & (8,*1); conv/zero.
State × Race (3 levels) × Gender	9*3*2	16	15	Coll. (8,2,1) & (8,3,1); conv.
State × Hispanicity × Gender	9*2*2	8	7	Coll. (7,1,1) & (8,1,1); conv.
<b>Total</b>		<b>467</b>	<b>414</b>	

**Exhibit D5.4 Covariates for 2004 NSDUH Person Weights (res.per.nr),  
Model Group 5: South Atlantic**

Variables	Levels	Proposed	Final	Comments
<b>One-Factor Effects</b>		<b>40</b>	<b>40</b>	
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 quarters	3	2	2	All levels present.
%Black	3	2	2	All levels present.
%Hispanic	3	2	2	All levels present.
%Owner-occupied	3	2	2	All levels present.
Rent/housing value	5	4	4	All levels present.
<b>Two-Factor Effects</b>		<b>237</b>	<b>209</b>	
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	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	3*5	8	8	All levels present.
Rent/housing × %Hispanic	3*5	8	6	Drop (1,1), (2,1); zero.
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	9*3	16	15	Drop (8,1); zero.
State × %Hispanic	9*3	16	10	Drop (1,1), (7,1); sing. Drop (5,1), (6,1) & (8,*); zero.
State × %Owner-occupied	9*3	16	16	All levels present.
State × Rent/housing	9*5	32	14	Drop (5,4), (6,2), (7,3), (7,4), (8,2) & (9,4); sing. Drop (1,1), (2,1), (2,2), (2,3), (4,2), (5,3), (6,3), (6,4), (7,1), (7,2), (8,3), (8,4); zero.
<b>Three-Factor Effects</b>		<b>190</b>	<b>93</b>	
Age × Race (3 levels) × Hispanicity	5*3*2	8	0	Drop (4,*1); sing. Drop remainder; conv.
Age × Race (3 levels) × Gender	5*3*2	8	8	All levels present.
Age × Hispanicity × Gender	5*2*2	4	3	Coll. (1,1,1) & (2,1,1); conv.
Race (3 levels) × Hispanicity × Gender	3*2*2	2	0	Drop all; conv.
State × Age × Race (3 levels)	9*5*3	64	28	Coll (1,1,2) & (1,1,3); conv. Repeat for all levels of Age. Repeat for States (2) & (4). Coll. (5,1,*) & (6,1,*); conv. Repeat for all levels of Age. Coll. (7,1,*) & (8,1,*); conv. Repeat for all levels of Age.
State × Age × Hispanicity	9*5*2	32	3	Keep (9,3,1) & (9,4,1). Coll. (9,1,1) & (9,2,1); conv. Drop (8,3,1); zero. Drop (5,4,1), (6,4,1), (8,4,1); sing. Drop remainder; conv.
State × Age × Gender	9*5*2	32	31	Coll. (6,1,1) & (6,2,1); conv.
State × Race (3 levels) × Hispanicity	9*3*2	16	2	Keep (9,*1). Drop (7,2,1), (8,*1); zero. Drop remainder; conv.
State × Race (3 levels) × Gender	9*3*2	16	14	Coll. (2,*1) & (3,*1); conv. Coll. (5,2,1) & (5,3,1); conv. Repeat for State (6).
State × Hispanicity × Gender	9*2*2	8	4	Coll. (1,1,1), (2,1,1) & (4,1,1), (5,1,1) & (6,1,1), (7,1,1) & (8,1,1); conv.
<b>Total</b>		<b>467</b>	<b>342</b>	

**Exhibit D5.5 Covariates for 2004 NSDUH Person Weights (res.per.ps),  
Model Group 5: South Atlantic**

Variables	Levels	Proposed	Final	Comments
<b>One-Factor Effects</b>		<b>23</b>	<b>23</b>	
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.
<b>Two-Factor Effects</b>		<b>137</b>	<b>134</b>	
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	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.
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	30	Coll (2,3) & (2,4), repeat for State (6); conv.
State × Hispanicity	9*2	8	8	All levels present.
State × Gender	9*2	8	8	All levels present.
<b>Three-Factor Effects</b>		<b>227</b>	<b>157</b>	
Age × Race (3 levels) × Hispanicity	6*3*2	10	4	Coll (1,2,1) & (1,3,1); Repeat for Age levels (2), (3) & (4); hier. Drop (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); hier.
State × Age × Race (3 levels)	9*6*3	80	47	Coll (2,1,2) & (2,1,3); Repeat for all levels of Age. Repeat for States (4), (6) & (9); conv. Coll (7,1,2) & (7,1,3); conv. Repeat for Ages (2) & (3), repeat for State (8); conv/zero. Coll (7,4,* ) & (8,4,* ); conv/zero. Repeat for Age level (5); conv. Drop (6,5,* ); conv.
State × Age × Hispanicity	9*6*2	40	21	Coll. (2,1,1), (4,1,1), (7,1,1) & (8,1,1); conv/zero/sing. Repeat for all levels of Age. Drop (2,5,1), (4,5,1) & (8,5,1); conv. Drop (5,5,1), (6,4,1) & (7,5,1); sing. Drop (6,5,1); zero.
State × Age × Gender	9*6*2	40	40	All levels present.
State × Race (3 levels) × Hispanicity	9*3*2	16	6	Coll (5,2,1) & (5,3,1); hier. Repeat for States (6), (7), (8) & (9). Coll (1,* ,1), (2,* ,1) & (4,* ,1); conv.
State × Race (3 levels) × Gender	9*3*2	16	16	All levels present.
State × Hispanicity × Gender	9*2*2	8	7	Coll (7,1,1) & (8,1,1); conv.
<b>Total</b>		<b>387</b>	<b>314</b>	



**Appendix D6: Model Group 6: East South Central**  
(Alabama, Kentucky, Mississippi, Tennessee)



**Table D.6a 2004 NSDUH Person Weight GEM Modeling Summary (Model Group 6: East South Central)**

Modeling Step <sup>1</sup>	Extreme Weight Proportions			UWE <sup>2</sup>	# XVAR <sup>3</sup>	Bounds <sup>4</sup>	
	Unweighted	Weighted	Outwinsor			Nominal	Realized
<i>res.sdu.nr</i>	0.61%	0.81%	0.20%	1.06543	204	(1.00, 1.19)	(1.04, 1.18)
	0.13%	0.11%	0.00%	1.06480	93	(1.00, 1.25)	(1.00, 1.24)
<i>res.sdu.ps</i>	0.13%	0.11%	0.00%	1.06480	162	(0.95, 1.61)	(0.96, 1.61)
	2.18%	3.87%	0.81%	1.12731	152	(0.20, 4.73)	(0.20, 4.70)
						(0.30, 1.57)	(0.30, 1.48)
<i>sel.per.ps</i>	3.32%	6.02%	1.71%	2.22917	242	(0.20, 2.69)	(0.20, 2.64)
	1.82%	3.07%	0.54%	2.26378	168	(0.20, 5.00)	(0.20, 5.00)
<i>res.per.nr</i>						(0.30, 4.54)	(0.30, 4.47)
	1.96%	3.01%	0.46%	2.33766	242	(1.00, 2.10)	(1.00, 2.06)
	1.60%	3.49%	0.56%	2.59037	145	(1.00, 5.00)	(1.00, 5.00)
<i>res.per.ps</i>						(1.00, 1.91)	(1.00, 1.86)
	1.63%	3.55%	0.67%	2.59037	187	(0.20, 3.00)	(0.20, 3.00)
	1.24%	2.26%	0.59%	2.65923	125	(0.20, 4.41)	(0.20, 4.32)
					(0.30, 2.14)	(0.30, 2.05)	

<sup>1</sup> For a key to modeling abbreviations, see Chapter 5, Exhibit 5.1.

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

<sup>3</sup> Number of proposed covariates on top line, and number finalized after modeling.

<sup>4</sup> There are six sets of bounds for each modeling step. Nominal bounds are used in defining maximum/minimum values for the 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 weights, the nonextreme weights, and the low-extreme weights.

**Table D.6b Distribution of Weight Adjustment Factors and Weight Products for the 2004 NSDUH Person Weight (Model Group 6: East South Central)**

	<i>sel.sdu.des</i> <sup>1</sup>	<i>res.sdu.nr</i> <sup>1</sup>		<i>res.sdu.ps</i> <sup>1</sup>		<i>sel.per.des</i> <sup>1</sup>		<i>sel.per.ps</i> <sup>1</sup>		<i>res.per.nr</i> <sup>1</sup>		<i>res.per.ps</i> <sup>1</sup>	
	1-6 <sup>2</sup>	7 <sup>3</sup>	1-7 <sup>3</sup>	8 <sup>4</sup>	1-8 <sup>4</sup>	10 <sup>5</sup>	1-10 <sup>5</sup>	11 <sup>5</sup>	1-11 <sup>5</sup>	12 <sup>6</sup>	1-12 <sup>6</sup>	13 <sup>6</sup>	1-13 <sup>6</sup>
Minimum	251	0.56	268	0.20	129	1.01	135	0.09	51	0.43	52	0.10	11
1%	502	1.00	525	0.44	398	1.01	385	0.22	195	0.94	308	0.23	188
5%	520	1.01	547	0.79	573	1.01	614	0.62	534	1.01	567	0.83	557
10%	596	1.03	626	0.90	657	1.01	731	0.73	671	1.01	708	0.92	702
25%	671	1.04	713	1.00	781	1.07	995	0.84	996	1.05	1,095	0.97	1,082
Median	840	1.06	886	1.08	952	1.29	1,548	0.96	1,557	1.11	1,689	1.00	1,695
75%	1,002	1.07	1,079	1.21	1,221	4.93	5,046	1.13	4,719	1.22	5,165	1.04	5,227
90%	1,122	1.12	1,223	1.39	1,437	9.62	8,367	1.32	8,554	1.45	10,490	1.08	10,189
95%	1,250	1.14	1,319	1.53	1,612	10.65	11,765	1.46	11,358	1.69	14,420	1.16	14,412
99%	1,277	1.23	1,443	1.99	2,064	14.27	16,499	2.12	16,753	2.67	23,395	1.92	25,396
Maximum	3,797	1.24	2,110	4.70	5,629	19.88	48,800	10.97	37,674	19.92	47,694	4.32	46,059
<i>n</i>	7,268	6,841	6,841	6,841	6,841	4,275	4,275	4,275	4,275	3,623	3,623	3,623	3,623
Max/Mean	4.40	-	2.30	-	5.51	-	14.16	-	11.19	-	12.01	-	11.59

Note 1: Weight component 9 and weight product 1-9 are excluded because weight 9 = 1 for all selected dwelling units.

Note 2: Under GEM, nonresponse adjustment factors (weight component #7 and #12) could be less than 1 due to the built-in control for extreme weights. For an explanation, see Chapter 2.

<sup>1</sup> sel.sdu.des refers to selected screener dwelling unit design weight and sel.per.des to selected person design weight. For a key to other modeling abbreviations, see Chapter 5, Exhibit 5.1.

<sup>2</sup> Based on eligible dwelling units.

<sup>3</sup> Based on screener-complete dwelling units.

<sup>4</sup> Based on screener-complete dwelling units, occupants verified eligible.

<sup>5</sup> Based on selected persons.

<sup>6</sup> Based on questionnaire-complete persons.

## **Model Group 6 Overview**

### **Dwelling Unit Nonresponse**

For one-factor effects, the level of 50 to 100 percent of segments that are Hispanic was dropped due to the zero sample size. Out of 22 proposed one-factor effects, 21 were included in the model.

Variable collapsing or dropping was present in all two-factor effects except the percent Owner-occupied  $\times$  percent Black, percent Owner-occupied  $\times$  Rent/housing, Rent/housing  $\times$  percent Black, State  $\times$  Quarter, and State  $\times$  percent Black interactions. Out of 86 proposed variables, 58 were included in the model.

Variable collapsing or dropping was present in all three-factor effects. Out of 96 proposed variables, 14 were included in the model.

In the final model, a total of 93 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 three-factor effects, variable collapsing or dropping was present in the Age  $\times$  Race  $\times$  Hispanicity, Race  $\times$  Hispanicity  $\times$  Gender, and State  $\times$  Race  $\times$  Hispanicity interactions. Out of 85 proposed variables, 75 were included in the model.

In the final model, a total of 152 variables were included; see Exhibit D6.2.

### **Selected Person-Level Poststratification**

For one-factor effects, the level of 50 to 100 percent of segments that are Hispanic was dropped due to the zero sample size. Out of 35 proposed one-factor effects, 34 were included in the model.

For two-factor effects, variable collapsing or dropping was present in the percent Owner-occupied  $\times$  percent Hispanic, State  $\times$  Race, State  $\times$  percent Hispanic, State  $\times$  percent Owner-occupied, and State  $\times$  Rent/housing interactions. Out of 122 proposed variables, 98 were included in the model.

For three-factor effects, all levels were present for the Age  $\times$  Race  $\times$  Gender and State  $\times$  Age  $\times$  Gender interactions. All the others were affected by variable collapsing or dropping. Out of 85 proposed variables, 36 were included in the model.

In the final model, a total of 168 variables were included; see Exhibit D6.3.

## **Respondent Person-Level Nonresponse**

For one-factor effects, the level of 50 to 100 percent of segments that are Hispanic was dropped due to the zero sample size. Out of 35 proposed one-factor effects, 34 were included in the model.

For two-factor effects, variable collapsing or dropping was present in the Age  $\times$  Race, Race  $\times$  Hispanicity, percent Owner-occupied  $\times$  percent Hispanic, percent Owner-occupied  $\times$  Rent/housing, Rent/housing  $\times$  percent Hispanic, State  $\times$  Race, State  $\times$  Hispanicity, State  $\times$  percent Hispanic, State  $\times$  percent Owner-occupied, and State  $\times$  Rent/housing interactions. Out of 122 proposed variables, 82 were included in the model.

Variable collapsing or dropping was present in all three-factor effects except the State  $\times$  Age  $\times$  Gender interaction. Out of 85 proposed variables, 31 were included in the model.

In the final model, a total of 145 variables were included; see Exhibit D6.4.

## **Respondent Person-Level Poststratification**

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

For two-factor effects, variable collapsing or dropping was present in the Age  $\times$  Race, Age  $\times$  Hispanicity, Race  $\times$  Hispanicity, and State  $\times$  Race interactions. Out of 67 proposed variables, 60 were included in the model.

Variable collapsing or dropping was present in all three-factor effects except the State  $\times$  Age  $\times$  Gender interaction. Out of 102 proposed variables, 47 were included in the model.

In the final model, a total of 122 variables were included; see Exhibit D6.5.

**Exhibit D6.1 Covariates for 2004 NSDUH Person Weights (res.sdu.nr),  
Model Group 6: East South Central**

Variables	Levels	Proposed	Final	Comments
<b>One-Factor Effects</b>		<b>22</b>	<b>21</b>	
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 quarters	3	2	2	All levels present.
%Black	3	2	2	All levels present.
%Hispanic	3	2	1	Drop (1); zero.
%Owner-occupied	3	2	2	All levels present.
Rent/housing value	5	4	4	All levels present.
<b>Two-Factor Effects</b>		<b>86</b>	<b>58</b>	
%Owner-occupied × %Black	3*3	4	4	All levels present.
%Owner-occupied × %Hispanic	3*3	4	2	Drop (2/3,1); zero.
%Owner-occupied × Rent/housing	3*5	8	8	All levels present.
Rent/housing × %Black	3*5	8	8	All levels present.
Rent/housing × %Hispanic	3*5	8	1	Keep (2,2), drop others; zero/sing.
State × Quarter	4*4	9	9	All levels present.
State × Population density	4*4	9	6	Drop (1/3,1); zero. Drop (2,1); sing.
State × Group quarters	4*3	6	2	Keep (1,1/2), drop others; zero/sing.
State × %Black	4*3	6	6	All levels present
State × %Hispanic	4*3	6	0	Drop all; zero, sing.
State × %Owner-occupied	4*3	6	3	Drop (*,2); sing.
State × Rent/housing	4*5	12	9	Drop (3,1/3/4); zero/sing.
<b>Three-Factor Effects</b>		<b>96</b>	<b>14</b>	
State × %Owner-occupied × %Black	4*3*3	12	4	Keep (1,1,1/2), Keep (2,1,2); Keep (3,1,1), drop others; zero/sing.
State × %Owner-occupied × %Hispanic	4*3*3	12	0	Drop all; zero, sing.
State × %Owner-occupied × Rent/housing	4*3*5	24	3	Keep (1,1,1/2), Keep (2,1,3) drop others; zero/sing.
State × Rent/housing × %Black	4*3*5	24	7	Keep (1,1/2/3,1/2); Keep (1,4,1) drop others; zero/sing.
State × Rent/housing × %Hispanic	4*3*5	24	0	Drop all; zero/sing.
<b>Total</b>		<b>204</b>	<b>93</b>	

**Exhibit D6.2 Covariates for 2004 NSDUH Person Weights(res.sdu.ps),  
Model Group 6: East South Central**

Variables	Levels	Proposed	Final	Comments
<b>One-Factor Effects</b>		<b>17</b>	<b>17</b>	
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.
<b>Two-Factor Effects</b>		<b>60</b>	<b>60</b>	
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.
<b>Three-Factor Effects</b>		<b>85</b>	<b>75</b>	
Age × Race (3 levels) × Hispanicity	5*3*2	8	3	Coll. (1,2,1) & (1,3,1); (2,2,1) & (2,3,1); (3,2,1) & (3,3,1), conv.; drop (4,2,1), conv.; drop (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	1	Coll. (2,1,1) & (3,1,1); (2,1,1), sing.
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	2	Coll. (1,2,1) & (1,3,1); (3,2,1) & (3,3,1) conv.; Drop (2,2,1) & (2,3,1); 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.
<b>Total</b>		<b>162</b>	<b>152</b>	

**Exhibit D6.3 Covariates for 2004 NSDUH Person Weights (sel.per.ps),  
Model Group 6: East South Central**

Variables	Levels	Proposed	Final	Comments
<b>One-Factor Effects</b>		<b>35</b>	<b>34</b>	
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 quarters	3	2	2	All levels present.
%Black	3	2	2	All levels present.
%Hispanic	3	2	1	Drop (1); zero.
%Owner-occupied	3	2	2	All levels present.
Rent/housing value	5	4	4	All levels present.
<b>Two-Factor Effects</b>		<b>122</b>	<b>98</b>	
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	3*3	4	4	All levels present.
%Owner-occupied × %Hispanic	3*3	4	1	Drop (*,1), (2,2); zero/hier.
%Owner-occupied × Rent/housing	3*5	8	8	All levels present.
Rent/housing × %Black	3*5	8	8	All levels present.
Rent/housing × %Hispanic	3*5	8	0	Drop all; zero/hier.
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	11	Coll (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	4*3	6	6	All levels present.
State × %Hispanic	4*3	6	0	Drop all; zero/hier.
State × %Owner-occupied	4*3	6	3	Drop (*,3); sing.
State × Rent/housing	4*5	12	9	Drop (3,3) & (3,4); zero/sing.; Coll. (3,1) & (3,2); zero/sing.
<b>Three-Factor Effects</b>		<b>85</b>	<b>36</b>	
Age × Race (3 levels) × Hispanicity	5*3*2	8	0	Drop all; zero/sing./conv.
Age × Race (3 levels) × Gender	5*3*2	8	8	All levels present.
Age × Hispanicity × Gender	5*2*2	4	0	Drop all; zero/conv.
Race (3 levels) × Hispanicity × Gender	3*2*2	2	0	Drop all. Conv.
State × Age × Race (3 levels)	4*5*3	24	11	Coll. (1,1,2) & (1,1,3); conv.; do the same for state=3 and age=2,3,4; Coll. (2,1,2) & (2,1,3); conv; Coll. (2,2,2) & (2,2,3); conv.; Coll. (2,3,2), (2,3,3), (2,4,2), & (2,4,3); conv.
State × Age × Hispanicity	4*5*2	12	0	Drop all; sing./conv.
State × Age × Gender	4*5*2	12	12	All levels present.
State × Race (3 levels) × Hispanicity	4*3*2	6	0	Drop all; zero/conv.
State × Race (3 levels) × Gender	4*3*2	6	3	Coll (1,2,1) & (1,3,1); do the same for state=2,3; conv.
State × Hispanicity × Gender	4*2*2	3	2	Drop (3,1,1); conv.
<b>Total</b>		<b>242</b>	<b>168</b>	

**Exhibit D6.4 Covariates for 2004 NSDUH Person Weights (res.per.nr),  
Model Group 6: East South Central**

Variables	Levels	Proposed	Final	Comments
<b>One-Factor Effects</b>		<b>35</b>	<b>32</b>	
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 quarters	3	2	0	Drop all; conv.
%Black	3	2	2	All levels present.
%Hispanic	3	2	1	Drop (1); zero.
%Owner-occupied	3	2	2	All levels present.
Rent/housing value	5	4	4	All levels present.
<b>Two-Factor Effects</b>		<b>122</b>	<b>82</b>	
Age × Race (3 levels)	5*3	8	7	Coll. (4,2) & (4,3); conv.
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	3*3	4	4	All levels present.
%Owner-occupied × %Hispanic	3*3	4	1	Drop (*,1), (2,2); zero.
%Owner-occupied × Rent/housing	3*5	8	5	Coll. (3,1), (3,2), & (3,3); conv.; Drop (3,4); conv.
Rent/housing × %Black	3*5	8	8	All levels present.
Rent/housing × %Hispanic	3*5	8	0	Drop all; zero/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	3	Coll. (1,2), (1,3), (1,4), & (1,5), conv.; (2,2), (2,3), (2,4), & (2,5), conv.; (3,2), (3,3), (3,4), & (3,5); conv.
State × Hispanicity	4*2	3	0	Drop all; conv.
State × Gender	4*2	3	3	All levels present.
State × %Black	4*3	6	6	All levels present.
State × %Hispanic	4*3	6	0	Drop all; zero/sing.
State × %Owner-occupied	4*3	6	3	Coll. (1,2) & (1,3), conv.; (2,2) & (2,3), conv.; (3,2) & (3,3), (3,2) sing.
State × Rent/housing	4*5	12	9	Drop (3,4); zero. Drop (3,3); sing. Coll. (3,1) & (3,2), (3,1) sing.
<b>Three-Factor Effects</b>		<b>85</b>	<b>31</b>	
Age × Race (3 levels) × Hispanicity	5*3*2	8	0	Drop all; sing./hier.
Age × Race (3 levels) × Gender	5*3*2	8	4	Coll. (1,2,1) & (1,3,1); (2,2,1) & (2,3,1), (3,2,1) & (3,3,1); conv.; Coll. (4,2,1) & (4,3,1); hier.
Age × Hispanicity × Gender	5*2*2	4	0	Drop (1,1,1), (2,1,1), & (3,1,1); conv. Drop (4,1,1); sing.
Race (3 levels) × Hispanicity × Gender	3*2*2	2	0	Drop all; sing.
State × Age × Race (3 levels)	4*5*3	24	12	Coll. (1,1,2) & (1,1,3); hier.; Repeat for all levels of State and age; hier.
State × Age × Hispanicity	4*5*2	12	0	Drop (3,4,1), sing.; Drop remainder, hier.;
State × Age × Gender	4*5*2	12	12	All levels present.
State × Race (3 levels) × Hispanicity	4*3*2	6	0	Drop (3,2,1); zero. Drop remainder; hier.
State × Race (3 levels) × Gender	4*3*2	6	3	Coll. (1,2,1) & (1,3,1); hier.; Repeat for all levels of State; hier.
State × Hispanicity × Gender	4*2*2	3	0	Drop all.; hier.
<b>Total</b>		<b>242</b>	<b>145</b>	

**Exhibit D6.5 Covariates for 2004 NSDUH Person Weights (res.per.ps),  
Model Group 6: East South Central**

Variables	Levels	Proposed	Final	Comments
<b>One-Factor Effects</b>		<b>18</b>	<b>18</b>	
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.
<b>Two-Factor Effects</b>		<b>67</b>	<b>60</b>	
Age × Race (3 levels)	6*3	10	9	Coll. (5,2) & (5,3) sing.
Age × Hispanicity	6*2	5	4	Drop (5,1); conv.
Age × Gender	6*2	5	5	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.
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	11	Coll. (3,3) & (3,4); conv.
State × Hispanicity	4*2	3	0	Drop all; conv.
State × Gender	4*2	3	3	All levels present.
<b>Three-Factor Effects</b>		<b>102</b>	<b>47</b>	
Age × Race (3 levels) × Hispanicity	6*3*2	10	0	Drop all; hier/conv.
Age × Race (3 levels) × Gender	6*3*2	10	9	Coll. (5,2,1) & (5,3,1); hier.
Age × Hispanicity × Gender	6*2*2	5	3	Drop (4,1,1), conv.; drop (5,1,1), hier.
Race (3 levels) × Hispanicity × Gender	3*2*2	2	1	Coll. (2,1,1) & (3,1,1); hier.
State × Age × Race (3 levels)	4*6*3	30	15	Coll. (1,1,2) & (1,1,3); Repeat for all levels of state and age; conv. (hier. for age group 5)
State × Age × Hispanicity	4*6*2	15	0	Drop all; hier.
State × Age × Gender	4*6*2	15	15	All levels present.
State × Race (3 levels) × Hispanicity	4*3*2	6	0	Drop all; hier.
State × Race (3 levels) × Gender	4*3*2	6	4	Coll. (1,2,1) & (1,3,1); (3,2,1) & (3,3,1), conv.
State × Hispanicity × Gender	4*2*2	3	0	Drop all; hier.
<b>Total</b>		<b>187</b>	<b>122</b>	



**Appendix D7: Model Group 7: West South Central**  
(Arkansas, Louisiana, Oklahoma, Texas)



**Table D.7a 2004 NSDUH Person Weight GEM Modeling Summary (Model Group 7: West South Central)**

Modeling Step <sup>1</sup>	Extreme Weight Proportions			UWE <sup>2</sup>	# XVAR <sup>3</sup>	Bounds <sup>4</sup>	
	Unweighted	Weighted	Outwisor			Nominal	Realized
<i>res.sdu.nr</i>	1.26%	0.80%	0.01%	1.10050	204	(1.02, 1.06)	(1.02, 1.06)
	1.28%	1.20%	0.06%	1.10222	111	(1.00, 3.50)	(1.00, 2.54)
						(1.04, 1.06)	(1.04, 1.04)
<i>res.sdu.ps</i>	1.28%	1.20%	0.06%	1.10222	162	(0.54, 1.10)	(0.54, 1.10)
	2.17%	2.50%	0.46%	1.14359	156	(0.20, 5.00)	(0.20, 5.00)
						(0.90, 1.23)	(0.90, 1.23)
<i>sel.per.ps</i>	2.99%	4.55%	0.94%	2.09366	242	(0.20, 3.00)	(0.26, 2.84)
	1.30%	2.60%	0.46%	2.11305	206	(0.20, 3.29)	(0.21, 3.01)
						(0.38, 2.57)	(0.38, 2.34)
<i>res.per.nr</i>	1.33%	2.81%	0.49%	2.15802	242	(1.00, 3.00)	(1.00, 3.00)
	1.12%	1.98%	0.37%	2.38327	206	(1.00, 4.83)	(1.00, 4.82)
						(1.00, 1.31)	(1.00, 1.08)
<i>res.per.ps</i>	1.14%	1.96%	0.41%	2.38327	187	(0.24, 2.00)	(0.24, 2.00)
	0.82%	1.43%	0.26%	2.43296	141	(0.20, 3.43)	(0.20, 3.43)

<sup>1</sup> For a key to modeling abbreviations, see Chapter 5, Exhibit 5.1.

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

<sup>3</sup> Number of proposed covariates on top line, and number finalized after modeling.

<sup>4</sup> There are six sets of bounds for each modeling step. Nominal bounds are used in defining maximum/minimum values for the 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 weights, the nonextreme weights, and the low-extreme weights.

**Table D.7b Distribution of Weight Adjustment Factors and Weight Products for the 2004 NSDUH Person Weight (Model Group 7: West South Central)**

	<i>sel.sdu.des</i> <sup>1</sup>	<i>res.sdu.nr</i> <sup>1</sup>		<i>res.sdu.ps</i> <sup>1</sup>		<i>sel.per.des</i> <sup>1</sup>		<i>sel.per.ps</i> <sup>1</sup>		<i>res.per.nr</i> <sup>1</sup>		<i>res.per.ps</i> <sup>1</sup>	
	1-6 <sup>2</sup>	7 <sup>3</sup>	1-7 <sup>3</sup>	8 <sup>4</sup>	1-8 <sup>4</sup>	10 <sup>5</sup>	1-10 <sup>5</sup>	11 <sup>5</sup>	1-11 <sup>5</sup>	12 <sup>6</sup>	1-12 <sup>6</sup>	13 <sup>6</sup>	1-13 <sup>6</sup>
Minimum	356	0.97	372	0.20	102	1.01	104	0.17	32	0.58	33	0.10	7
1%	474	1.00	495	0.33	236	1.01	261	0.48	236	1.00	228	0.20	112
5%	484	1.02	510	0.76	500	1.01	614	0.70	540	1.01	585	0.51	457
10%	496	1.03	528	0.90	571	1.01	778	0.79	745	1.02	818	0.91	734
25%	679	1.04	723	1.00	784	1.18	1,183	0.91	1,157	1.06	1,255	0.98	1,243
Median	961	1.05	1,014	1.10	1,076	1.38	1,719	0.99	1,735	1.14	1,946	1.03	1,990
75%	1,078	1.07	1,176	1.20	1,295	5.09	5,239	1.10	5,127	1.26	5,768	1.07	5,646
90%	1,408	1.09	1,442	1.34	1,609	9.05	8,827	1.24	8,926	1.41	11,061	1.12	11,121
95%	1,442	1.11	1,525	1.48	1,788	9.77	11,123	1.38	11,333	1.53	14,865	1.16	14,956
99%	1,472	1.19	1,617	2.02	2,077	11.64	16,489	2.05	16,694	1.89	23,067	1.52	23,845
Maximum	1,562	2.54	2,263	5.00	6,466	28.87	33,720	5.14	30,457	4.82	36,055	3.43	34,612
<i>n</i>	12,134	11,470	11,470	11,470	11,470	7,532	7,532	7,532	7,532	6,331	6,331	6,331	6,331
Max/Mean	1.70	-	2.32	-	6.00	-	9.68	-	8.64	-	8.60	-	8.25

Note 1: Weight component 9 and weight product 1-9 are excluded because weight 9 = 1 for all selected dwelling units.

Note 2: Under GEM, nonresponse adjustment factors (weight component #7 and #12) could be less than 1 due to the built-in control for extreme weights. For an explanation, see Chapter 2.

<sup>1</sup> sel.sdu.des refers to selected screener dwelling unit design weight and sel.per.des to selected person design weight. For a key to other modeling abbreviations, see Chapter 5, Exhibit 5.1.

<sup>2</sup> Based on eligible dwelling units.

<sup>3</sup> Based on screener-complete dwelling units.

<sup>4</sup> Based on screener-complete dwelling units, occupants verified eligible.

<sup>5</sup> Based on selected persons.

<sup>6</sup> Based on questionnaire-complete persons.

## **Model Group 7 Overview**

### **Dwelling Unit Nonresponse**

For one-factor effects, College dorm had to be collapsed with Other group quarters due to convergence problems. Out of 22 proposed one-factor effects, 21 were included in the model.

For two-factor effects, variable collapsing and dropping was present in the State  $\times$  Population density, State  $\times$  Group quarters, State  $\times$  percent Hispanic, and State  $\times$  Rent/housing. Out of 86 proposed variables, 69 were included in the model.

Variable collapsing or dropping was present in all three-factor effects. Out of 96 proposed variables, 21 were included in the model.

In the final model, a total of 111 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 was present in the Age  $\times$  Race  $\times$  Hispanicity and State  $\times$  Race  $\times$  Hispanicity interactions. Out of 85 proposed variables, 79 were included in the model.

In the final model, a total of 156 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 dropping was present in State  $\times$  percent Hispanic and State  $\times$  Rent/housing interactions. Out of 122 proposed variables, 112 were included in the model.

For three-factor effects, all levels are present for the Age  $\times$  Race  $\times$  Gender, Age  $\times$  Hispanicity  $\times$  Gender, State  $\times$  Age  $\times$  Gender, State  $\times$  Race  $\times$  Gender, and State  $\times$  Hispanicity  $\times$  Gender interactions. All the others were affected by variable collapsing or dropping. Out of 85 proposed variables, 59 were included in the model.

In the final model, a total of 206 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 collapsing or dropping was present in the State  $\times$  percent Hispanic and State  $\times$  Rent/housing interactions. Out of 122 proposed variables, 112 were included in the model.

For three-factor effects, variable collapsing or dropping was present in the Age  $\times$  Race  $\times$  Hispanicity, State  $\times$  Age  $\times$  Race, State  $\times$  Age  $\times$  Hispanicity, and State  $\times$  Race  $\times$  Hispanicity interactions. All the others were affected by variable collapsing or dropping. Out of 85 proposed variables, 59 were included in the model.

In the final model, a total of 206 variables were included; see Exhibit D7.4.

### **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.

For three-factor effects, all levels were present for the Age  $\times$  Race  $\times$  Gender, Age  $\times$  Hispanicity  $\times$  Gender, State  $\times$  Age  $\times$  Gender, State  $\times$  Race  $\times$  Gender, and State  $\times$  Hispanicity  $\times$  Gender interactions. All the others were affected by variable collapsing or dropping. Out of 102 proposed variables, 56 were included in the model.

In the final model, a total of 141 variables were included; see Exhibit D7.5.

**Exhibit D7.1 Covariates for 2004 NSDUH Person Weights (res.sdu.nr),  
Model Group 7: West South Central**

<b>Variables</b>	<b>Levels</b>	<b>Proposed</b>	<b>Final</b>	<b>Comments</b>
<b>One-Factor Effects</b>		<b>22</b>	<b>21</b>	
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 quarters	3	2	1	Coll. (1) & (2); conv.
%Black	3	2	2	All levels present.
%Hispanic	3	2	2	All levels present.
%Owner-occupied	3	2	2	All levels present.
Rent/housing value	5	4	4	All levels present
<b>Two-Factor Effects</b>		<b>86</b>	<b>69</b>	
%Owner-occupied × %Black	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	3*5	8	8	All levels present.
Rent/housing × %Hispanic	3*5	8	8	All levels present.
State × Quarter	4*4	9	9	All levels present.
State × Population density	4*4	9	7	Drop (2,1); sing. Drop (3,1); zero.
State × Group quarter	4*3	6	1	Coll. (1/2/3,1) & (1/2/3,2); hier. Drop (2,1/2), (3,1/2); conv.
State × %Black	4*3	6	6	All levels present.
State × %Hispanic	4*3	6	3	Drop (2,1), (3,1); zero. Drop (4,1); sing.
State × %Owner-occupied	4*3	6	6	All levels present.
State × Rent/housing	4*5	12	5	Drop (3,2), (2,2/3/4), (4,4); sing. Drop (3,3/4); zero.
<b>Three-Factor Effects</b>		<b>96</b>	<b>21</b>	
State × %Owner-occupied × %Black	4*3*3	12	8	Keep (4,3,1/2), (4,2,1/2), (2,2,1/2), (3,2,1/2), drop all others; zero/sing.
State × %Owner-occupied × %Hispanic	4*3*3	12	2	Keep (4,2/3,2), drop all others; zero/sing.
State × %Owner-occupied × Rent/housing	4*3*5	24	3	Coll. (2,2,1) & (2,3,1), repeat for all states and %Rent/housing levels; hier. Drop some factors later; conv.
State × Rent/housing × %Black	4*3*5	24	6	Keep (2,1,1/2), (3,1,2), (4,2,2), (4,3,1/2); sing.
State × Rent/housing × %Hispanic	4*3*5	24	2	Keep (4,1/2,2); sing.
<b>Total</b>		<b>204</b>	<b>111</b>	

**Exhibit D7.2 Covariates for 2004 NSDUH Person Weights (res.sdu.ps),  
Model Group 7: West South Central**

<b>Variables</b>	<b>Levels</b>	<b>Proposed</b>	<b>Final</b>	<b>Comments</b>
<b>One-Factor Effects</b>		<b>17</b>	<b>17</b>	
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.
<b>Two-Factor Effects</b>		<b>60</b>	<b>60</b>	
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.
<b>Three-Factor Effects</b>		<b>85</b>	<b>79</b>	
Age × Race (3 levels) × Hispanicity	5*3*2	8	4	Coll. (4,2,1) & (4,3,1); zero. Coll. (1,2,1) & (1,3,1), repeat for age level 2 and 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)	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. (3,2,1) & (3,3,1); sing. Coll. (2,2,1) & (2,3,1); 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.
<b>Total</b>		<b>162</b>	<b>156</b>	

**Exhibit D7.3 Covariates for 2004 NSDUH Person Weights (sel.per.ps),  
Model Group 7: West South Central**

<b>Variables</b>	<b>Levels</b>	<b>Proposed</b>	<b>Final</b>	<b>Comments</b>
<b>One-Factor Effects</b>		<b>35</b>	<b>35</b>	
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 quarters	3	2	1	All levels present.
%Black	3	2	2	All levels present.
%Hispanic	3	2	2	All levels present.
%Owner-occupied	3	2	2	All levels present.
Rent/housing value	5	4	4	All levels present.
<b>Two-Factor Effects</b>		<b>122</b>	<b>112</b>	
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	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	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	3*5	8	8	All levels present.
Rent/housing × %Hispanic	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	4*3	6	6	All levels present.
State × %Hispanic	4*3	6	4	Drop (2,1); zero. Drop (4,1); sing.
State × %Owner-occupied	4*3	6	6	All levels present.
State × Rent/housing	4*5	12	6	Drop (3,3/4); zero. Drop (2,2/3/4), (3,2); sing.
<b>Three-Factor Effects</b>		<b>85</b>	<b>59</b>	
Age × Race (3 levels) × Hispanicity	5*3*2	8	3	Coll. (3,2,1) & (3,3,1); sing. Drop (4,2,1); zero. Coll. (2,2,1) & (2,3,1), (1,2,1) & (1,3,1); conv. Coll. (3/4,3,1) & (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	1	Coll. (2,1,1) & (3,1,1); conv.
State × Age × Race (3 levels)	4*5*3	24	16	Coll. (2,1,2) & (2,1,3), repeat for all age levels, repeat for state=ok; conv.
State × Age × Hispanicity	4*5*2	12	5	Coll. all age levels for state=la, drop all for state=ok; conv/sing.
State × Age × Gender	4*5*2	12	12	All levels present.
State × Race (3 levels) × Hispanicity	4*3*2	6	1	Coll. (3,2,1) & (3,3,1), drop all others; sing/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..
<b>Total</b>		<b>242</b>	<b>206</b>	

**Exhibit D7.4 Covariates for 2004 NSDUH Person Weights (res.per.nr),  
Model Group 7: West South Central**

<b>Variables</b>	<b>Levels</b>	<b>Proposed</b>	<b>Final</b>	<b>Comments</b>
<b>One-Factor Effects</b>		<b>35</b>	<b>35</b>	
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 quarters	3	2	2	All levels present.
%Black	3	2	2	All levels present.
%Hispanic	3	2	2	All levels present.
%Owner-occupied	3	2	2	All levels present.
Rent/housing value	5	4	4	All levels present.
<b>Two-Factor Effects</b>		<b>122</b>	<b>112</b>	
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	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	3*5	8	8	All levels present.
Rent/housing × %Hispanic	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	4*3	6	6	All levels present.
State × %Hispanic	4*3	6	3	Drop (2/3,1); zero. Drop (4,1); sing.
State × %Owner-occupied	4*3	6	6	All levels present.
State × Rent/housing	4*5	12	5	Drop (3,3/4); zero. Drop (2,2/3/4), (4,4), (3,2); sing.
<b>Three-Factor Effects</b>		<b>85</b>	<b>59</b>	
Age × Race (3 levels) × Hispanicity	5*3*2	8	6	Coll. (3,2,1) & (3,3,1), (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)	4*5*3	24	12	Coll. r23 & r33 for all age levels and all states; conv/sing.
State × Age × Hispanicity	4*5*2	12	6	Drop (2,*,1), (3,3,1), (3,4,1); conv/sing .
State × Age × Gender	4*5*2	12	12	All levels present.
State × Race (3 levels) × Hispanicity	4*3*2	6	0	Drop all.
State × Race (3 levels) × Gender	4*3*2	6	6	All levels present.
State × Hispanicity × Gender	4*2*2	3	3	All levels present.
<b>Total</b>		<b>242</b>	<b>206</b>	

**Exhibit D7.5 Covariates for 2004 NSDUH Person Weights (res.per.ps),  
Model Group 7: West South Central**

<b>Variables</b>	<b>Levels</b>	<b>Proposed</b>	<b>Final</b>	<b>Comments</b>
<b>One-Factor Effects</b>		<b>18</b>	<b>18</b>	
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.
<b>Two-Factor Effects</b>		<b>67</b>	<b>67</b>	
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.
<b>Three-Factor Effects</b>		<b>102</b>	<b>56</b>	
Age × Race (3 levels) × Hispanicity	6*3*2	10	0	Drop all; zero/sing./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	0	Drop all; conv.
State × Age × Race (3 levels)	4*6*3	30	12	Coll. (3,1/2/3/4,2) & (3,1/2/3/4,3), repeat for state=tx and la; drop all others; conv.
State × Age × Hispanicity	4*6*2	15	5	Drop all for state=la and ok; 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	3	All levels present.
<b>Total</b>		<b>187</b>	<b>141</b>	



**Appendix D8: Model Group 8: Mountain**  
(Colorado, Idaho, Montana, Nevada, New Mexico, Utah, Wyoming, Arizona)



**Table D.8a 2004 NSDUH Person Weight GEM Modeling Summary (Model Group 8: Mountain)**

Modeling Step <sup>1</sup>	Extreme Weight Proportions			UWE <sup>2</sup>	# XVAR <sup>3</sup>	Bounds <sup>4</sup>	
	Unweighted	Weighted	Outwisor			Nominal	Realized
<i>res.sdu.nr</i>	0.02%	0.00%	0.00%	1.48846	408	(1.01, 1.07)	(1.01, 1.01)
	0.11%	0.10%	0.00%	1.49579	163	(1.00, 1.54)	(1.00, 1.53)
						(1.00, 1.13)	(1.00, 1.12)
<i>res.sdu.ps</i>	0.11%	0.10%	0.00%	1.49579	302	(0.83, 1.10)	(0.83, 1.10)
	2.82%	5.51%	1.11%	1.64585	272	(0.20, 5.00)	(0.20, 5.00)
						(0.90, 1.09)	(1.05, 1.09)
<i>sel.per.ps</i>	2.64%	6.44%	1.73%	3.25087	422	(0.20, 3.00)	(0.28, 2.99)
	1.70%	4.70%	0.99%	3.19592	336	(0.20, 5.00)	(0.20, 4.97)
						(0.30, 1.86)	(0.30, 1.82)
<i>res.per.nr</i>	1.98%	4.23%	0.85%	3.24827	422	(1.00, 3.00)	(1.00, 3.00)
	1.22%	4.44%	0.93%	3.60911	278	(1.00, 5.00)	(1.00, 5.00)
						(1.00, 1.40)	(1.00, 1.37)
<i>res.per.ps</i>	1.27%	4.54%	1.01%	3.60911	347	(0.20, 3.00)	(0.20, 2.99)
	0.91%	2.80%	0.58%	3.74341	267	(0.20, 5.00)	(0.20, 4.74)
						(0.30, 5.00)	(0.30, 1.40)

<sup>1</sup> For a key to modeling abbreviations, see Chapter 5, Exhibit 5.1.

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

<sup>3</sup> Number of proposed covariates on top line, and number finalized after modeling.

<sup>4</sup> There are six sets of bounds for each modeling step. Nominal bounds are used in defining maximum/minimum values for the 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 weights, the nonextreme weights, and the low-extreme weights.

**Table D.8b Distribution of Weight Adjustment Factors and Weight Products for the 2004 NSDUH Person Weight (Model Group 8: Mountain)**

	<i>sel.sdu.des</i> <sup>1</sup>		<i>res.sdu.nr</i> <sup>1</sup>		<i>res.sdu.ps</i> <sup>1</sup>		<i>sel.per.des</i> <sup>1</sup>		<i>sel.per.ps</i> <sup>1</sup>		<i>res.per.nr</i> <sup>1</sup>		<i>res.per.ps</i> <sup>1</sup>	
	1-6 <sup>2</sup>	7 <sup>3</sup>	1-7 <sup>3</sup>	8 <sup>4</sup>	1-8 <sup>4</sup>	10 <sup>5</sup>	1-10 <sup>5</sup>	11 <sup>5</sup>	1-11 <sup>5</sup>	12 <sup>6</sup>	1-12 <sup>6</sup>	13 <sup>6</sup>	1-13 <sup>6</sup>	
Minimum	32	0.99	94	0.20	22	1.01	24	0.17	8	0.46	8	0.13	2	
1%	98	1.00	104	0.36	100	1.01	104	0.24	56	0.89	64	0.20	40	
5%	105	1.01	112	0.70	116	1.01	156	0.61	137	1.00	149	0.37	134	
10%	109	1.02	117	0.85	129	1.01	210	0.74	203	1.00	223	0.82	200	
25%	187	1.04	199	1.00	226	1.10	414	0.87	399	1.05	433	0.97	402	
Median	348	1.06	364	1.13	412	1.39	916	0.99	885	1.13	946	1.02	939	
75%	713	1.08	751	1.29	817	4.97	1,899	1.13	1,954	1.25	2,164	1.06	2,138	
90%	883	1.09	958	1.47	1,164	8.22	4,739	1.32	4,891	1.42	5,716	1.23	5,567	
95%	1,072	1.11	1,139	1.68	1,394	10.90	6,774	1.47	7,371	1.58	9,483	1.31	9,581	
99%	1,330	1.16	1,419	2.40	2,000	12.84	14,752	1.86	13,256	2.22	18,125	1.89	18,217	
Maximum	1,512	2.92	1,626	5.00	5,924	29.30	42,253	4.97	40,977	5.00	37,787	6.29	57,043	
<i>n</i>	14,097	13,318	13,318	13,318	13,318	8,568	8,568	8,568	8,568	7,223	7,223	7,223	7,223	
Max/Mean	3.32	-	3.37	-	10.56	-	22.75	-	21.96	-	17.07	-	25.77	

Note 1: Weight component 9 and weight product 1-9 are excluded because weight 9 = 1 for all selected dwelling units.

Note 2: Under GEM, nonresponse adjustment factors (weight component #7 and #12) could be less than 1 due to the built-in control for extreme weights. For an explanation, see Chapter 2.

<sup>1</sup> *sel.sdu.des* refers to selected screener dwelling unit design weight and *sel.per.des* to selected person design weight. For a key to other modeling abbreviations, see Chapter 5, Exhibit 5.1.

<sup>2</sup> Based on eligible dwelling units.

<sup>3</sup> Based on screener-complete dwelling units.

<sup>4</sup> Based on screener-complete dwelling units, occupants verified eligible.

<sup>5</sup> Based on selected persons.

<sup>6</sup> Based on questionnaire-complete persons.

## **Model Group 8 Overview**

### **Dwelling Unit Nonresponse**

For one-factor effects, the level of 50 to 100 percent of segments that are black was dropped due to zero sample size. Out of 26 proposed one-factor effects, 25 were included in the model.

For two-factor effects, all levels were present in the percent Owner-occupied  $\times$  percent Hispanic, Owner-occupied  $\times$  Rent/housing, Rent/housing  $\times$  percent Hispanic, State  $\times$  Quarter and State  $\times$  Housing characteristic interactions. All the others were affected by variable collapsing or dropping. Out of 158 proposed variables, 105 were included in the model.

All three-factor effects were affected by variable collapsing and dropping. Out of 224 proposed variables, 27 were included in the model.

In the final model, a total of 163 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  $\times$  Race  $\times$  Hispanicity, State  $\times$  Age  $\times$  Race, State  $\times$  Race  $\times$  Hispanicity, and State  $\times$  Race  $\times$  Gender interactions. Out of 169 proposed variables, 139 were included in the model.

In the final model, a total of 272 variables were included; see Exhibit D8.2.

### **Selected Person-Level Poststratification**

For one-factor effects, the level of 50 to 100 percent of segments that are black was dropped due to zero sample size. Out of 39 proposed one-factor effects, 38 were included in the model.

For two-factor effects, variable collapsing or dropping was present in the percent Owner-occupied  $\times$  percent Black, Rent/housing  $\times$  percent Black, State  $\times$  Race, State  $\times$  percent Black, State  $\times$  Hispanicity, State  $\times$  percent Owner-occupied, and State  $\times$  Rent/housing interactions. Out of 214 proposed variables, 172 were included in the model.

For three-factor effects, all levels are present in the Age  $\times$  Hispanicity  $\times$  Gender, State  $\times$  Age  $\times$  Gender, and State  $\times$  Hispanicity  $\times$  Gender interactions. All the others were affected by variable collapsing or dropping. Out of 169 proposed variables, 126 were included in the model.

In the final model, a total of 336 variables were included; see Exhibit D8.3.

## **Respondent Person-Level Nonresponse**

For one-factor effects, the level of 50 to 100 percent of segments that are black was dropped due to zero sample size. Out of 39 proposed one-factor effects, 38 were included in the model.

For two-factor effects, variable collapsing or dropping was present in the percent Owner-occupied  $\times$  percent Black, Rent/housing  $\times$  percent Black, State  $\times$  Race, State  $\times$  percent Black, State  $\times$  percent Hispanic, State  $\times$  percent Owner-occupied, and State  $\times$  Rent/housing interactions. Out of 214 proposed variables, 169 were included in the model.

For three-factor effects, all levels are present in the Age  $\times$  Hispanicity  $\times$  Gender, State  $\times$  Age  $\times$  Gender, and State  $\times$  Hispanicity  $\times$  Gender interactions. All the others were affected by variable collapsing or dropping. Out of 169 proposed variables, 91 were included in the model.

In the final model, a total of 278 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  $\times$  Hispanicity  $\times$  Gender, State  $\times$  Age  $\times$  Gender, and State  $\times$  Hispanicity  $\times$  Gender interactions. Out of 202 proposed variables, 122 were included in the model.

In the final model, a total of 267 variables were included; see Exhibit D8.5.

**Exhibit D8.1 Covariates for 2004 NSDUH Person Weights (res.sdu.nr),  
Model Group 8: Mountain**

Variables	Levels	Proposed	Final	Comments
<b>One-Factor Effects</b>		<b>26</b>	<b>25</b>	
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 quarters	3	2	1	All levels present.
%Black	3	2	2	Drop (1); zero.
%Hispanic	3	2	2	All levels present.
%Owner-occupied	3	2	2	All levels present.
Rent/housing value	5	4	4	All levels present.
<b>Two-Factor Effects</b>		<b>158</b>	<b>105</b>	
%Owner-occupied × %Black	3*3	4	2	Drop (3,1), (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	3*5	8	3	Drop (1,1), (1,2), (2,1), (3,1), (4,1); zero.
Rent/housing × %Hispanic	3*5	8	8	All levels present
State × Quarter	8*4	21	21	All levels present.
State × Population density	8*4	21	16	Drop (2/3/4/5/7,1); zero.
State × Group quarters	8*3	14	10	Drop (2,2), (4,1/2), (6,1); zero.
State × %Black	8*3	14	3	Drop(*,1); zero. Drop (2/3/7,2); zero. Drop (2,2); conv.
State × %Hispanic	8*3	14	11	Drop (3,1), (6,1), (7,1); zero.
State × %Owner-occupied	8*3	14	11	Drop (2/3/7,3); sing.
State × Rent/housing	8*5	28	14	Drop(1/4/5,1), (3/4/5,2), (4,3),(3,3/4), (6/7,4); zero. Drop (3,1), (7,3), (6,3); sing.
<b>Three-Factor Effects</b>		<b>224</b>	<b>27</b>	
State × %Owner-occupied × %Black	8*3*3	28	0	Drop all; zero/sing.
State × %Owner-occupied × %Hispanic	8*3*3	28	8	Keep (2,2,1/2), (2/4/6/7,2,2), (5,2,1/2) drop all others; zero/sing.
State × %Owner-occupied × Rent/housing	8*3*5	56	7	Keep (1,2,4), (2,2,1/2), (5,2,3/4), (6,2,1/2), drop all others; zero/sing.
State × Rent/housing × %Black	8*3*5	56	0	Drop all.
State × Rent/housing × %Hispanic	8*3*5	56	12	Keep (1,3,1), (1,4,1/2), (2,1,2)(5,3,1/2), (5,4,1/2), (6,1/2,2), (7,1/2,2), drop all others; zero/sing.
<b>Total</b>		<b>440</b>	<b>163</b>	

**Exhibit D8.2 Covariates for 2004 NSDUH Person Weights (res.sdu.ps),  
Model Group 8: Mountain**

<b>Variables</b>	<b>Levels</b>	<b>Proposed</b>	<b>Final</b>	<b>Comments</b>
<b>One-Factor Effects</b>		<b>21</b>	<b>21</b>	
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.
<b>Two-Factor Effects</b>		<b>112</b>	<b>112</b>	
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.
<b>Three-Factor Effects</b>		<b>169</b>	<b>139</b>	
Age × Race (3 levels) × Hispanicity	5*3*2	8	4	Coll. (1/2/3/4,2,1) & (1/2/3/4,3,1); 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)	8*5*3	56	39	Coll. (2,1,2) & (2,1,3), (6,1,2) & (6,1,3), (7,1,2) & (7,1,3); zero. Coll. race 2 and 3 for age=2-4 and state=io,wy, for age=1-4 and state=mt,ut; 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	7	Coll. (2/6,2,1) & (2/6,3,1); zero. Coll. (1/3/4/5/7, 2,1) & (1/3/4/5/7,3,1); conv.
State × Race (3 levels) × Gender	8*3*2	14	12	Coll. (3,2,1) & (3,3,1); sing. Coll. (7,2,3) & (7,3,3); conv.
State × Hispanicity × Gender	8*2*2	7	7	All levels present.
<b>Total</b>		<b>302</b>	<b>272</b>	

**Exhibit D8.3 Covariates for 2004 NSDUH Person Weights (sel.per.ps),  
Model Group 8: Mountain**

Variables	Levels	Proposed	Final	Comments
<b>One-Factor Effects</b>		<b>39</b>	<b>38</b>	
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 quarters	3	2	2	All levels present.
%Black	3	2	1	Drop (1); zero.
%Hispanic	3	2	2	All levels present.
%Owner-occupied	3	2	2	All levels present.
Rent/housing value	5	4	4	All levels present.
<b>Two-Factor Effects</b>		<b>214</b>	<b>172</b>	
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	3*3	4	2	Drop (3,1), (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	3*5	8	3	Drop (*,1), (1,2); zero.
Rent/housing × %Hispanic	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. (2,2) & (2,5); conv.
State × Hispanicity	8*2	7	7	All levels present.
State × Gender	8*2	7	7	All levels present.
State × %Black	8*3	14	4	Drop (*,1), (3/6/7,2); zero.
State × %Hispanic	8*3	14	11	Drop (3/6/7,1); zero.
State × %Owner-occupied	8*3	14	10	Drop (2/3,3), coll. (6,2) & (6,3), (7,2) & (7,3); sing;
State × Rent/housing	8*5	28	11	Drop (3,1), (6,3), (7,3); conv. Drop (3,1), (6,3), (7,3); sing. Coll. (2,1) & (2,2), (6,1) & (6,2), (7,1) & (7,2); conv.
<b>Three-Factor Effects</b>		<b>169</b>	<b>126</b>	
Age × Race (3 levels) × Hispanicity	5*3*2	8	4	Coll. (1,2,1) & (1,3,1), repeat for all age levels; conv.
Age × Race (3 levels) × Gender	5*3*2	8	7	Coll. (4,2,1) & (4,3,1); conv.
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)	8*5*3	56	34	Drop (2,1,2), (7,1,2); zero. Coll (2,2,2) & (2,2,3), repeat for age=3,4; conv. Coll (3,1,2) & (3,1,3), repeat for all age levels and for state =4,6; conv. Drop (7,1,2), (7,*3); conv. Coll. (7,2,2) & (7,2,3); conv.
State × Age × Hispanicity	8*5*2	28	20	Coll. state mt & wy & io for all age levels; conv.
State × Age × Gender	8*5*2	28	28	All levels present.
State × Race (3 levels) × Hispanicity	8*3*2	14	10	Drop (6,2,1); zero. Drop (3,2,1), (3,3,1); conv.
State × Race (3 levels) × Gender	8*3*2	14	11	Coll. (2,2,1) & (2,3,1); conv. Coll (3,2,1) & (3,3,1), (7,2,1) & (7,3,1); sing. Coll. (2,2,1) & (2,3,1); zero/hier.
State × Hispanicity × Gender	8*2*2	7	7	All levels present.
<b>Total</b>		<b>422</b>	<b>336</b>	

**Exhibit D8.4 Covariates for 2004 NSDUH Person Weights (res.per.nr),  
Model Group 8: Mountain**

Variables	Levels	Proposed	Final	Comments
<b>One-Factor Effects</b>		<b>39</b>	<b>38</b>	
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 quarters	3	2	2	All levels present.
%Black	3	2	1	Drop (1); zero.
%Hispanic	3	2	2	All levels present.
%Owner-occupied	3	2	2	All levels present.
Rent/housing value	5	4	4	All levels present.
<b>Two-Factor Effects</b>		<b>214</b>	<b>169</b>	
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	3*3	4	2	Drop (3,1), (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	3*5	8	3	Drop (*,1), (1,2); zero.
Rent/housing × %Hispanic	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	21	Coll. (2,2) & (2,5), repeat for state=3,6,7, coll. (5,2) & (5,3) & (5,4) & (5,5); conv.
State × Hispanicity	8*2	7	7	All levels present.
State × Gender	8*2	7	7	All levels present.
State × %Black	8*3	14	4	Drop (*,1), (3/6,2); zero. Drop (7,2); sing.
State × %Hispanic	8*3	14	11	Drop (3/6/7,1); zero.
State × %Owner-occupied	8*3	14	10	Drop (2/7,3); zero. Drop (3/6,3); sing.
State × Rent/housing	8*5	28	14	Drop (1,1), (3,2/3/4), (4,1/2) (5,1/2/3), (64), (7,4); zero. Drop (3/6/7,1); sing.
<b>Three-Factor Effects</b>		<b>169</b>	<b>91</b>	
Age × Race (3 levels) × Hispanicity	5*3*2	8	0	Drop all; sing/conv.
Age × Race (3 levels) × Gender	5*3*2	8	2	Coll. (1,2,1) & (1,3,1), (2,2,1) & (2,3,1), drop all others; conv.
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)	8*5*3	56	0	Drop all; sing/conv.
State × Age × Hispanicity	8*5*2	28	20	Coll. (2,1,1) & (3,1,1) & (7,1,1), repeat for all age levels; conv.
State × Age × Gender	8*5*2	28	28	All levels present.
State × Race (3 levels) × Hispanicity	8*3*2	14	0	Drop all; conv.
State × Race (3 levels) × Gender	8*3*2	14	9	Coll. (2/3/5/6/7,2,1) & (2/3/5/6/7,3,1); conv.
State × Hispanicity × Gender	8*2*2	7	7	All levels present.
<b>Total</b>		<b>422</b>	<b>278</b>	

**Exhibit D8.5 Covariates for 2004 NSDUH Person Weights (res.per.ps),  
Model Group 8: Mountain**

<b>Variables</b>	<b>Levels</b>	<b>Proposed</b>	<b>Final</b>	<b>Comments</b>
<b>One-Factor Effects</b>		<b>22</b>	<b>22</b>	
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.
<b>Two-Factor Effects</b>		<b>123</b>	<b>123</b>	
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.
<b>Three-Factor Effects</b>		<b>202</b>	<b>122</b>	
Age × Race (3 levels) × Hispanicity	6*3*2	10	0	Drop all; sing, conv.
Age × Race (3 levels) × Gender	6*3*2	10	8	Coll. (4,2,1) & (4,3,1), (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. (2,1,1) & (3,1,1); conv.
State × Age × Race (3 levels)	8*6*3	70	20	Coll. (1,1,2) & (1,1,3), repeat for age level=1,2,3,4 and for state=2,3,4,5. Drop all others; sing./zero/conv.
State × Age × Hispanicity	8*6*2	35	33	Drop (3/7,5,1); sing.
State × Age × Gender	8*6*2	35	35	All levels present.
State × Race (3 levels) × Hispanicity	8*3*2	14	3	Coll. (1,2,1) & (1,3,1), repeat for state=4,7, drop all others; sing./zero, conv.
State × Race (3 levels) × Gender	8*3*2	14	10	Coll. (2,2,1) & (2,3,1), repeat for all states=3,6,7; sing/conv.
State × Hispanicity × Gender	8*2*2	7	7	All levels present.
<b>Total</b>		<b>347</b>	<b>267</b>	



**Appendix D9: Model Group 9: Pacific**  
(Alaska, Hawaii, Oregon, Washington, California)



**Table D.9a 2004 NSDUH Person Weight GEM Modeling Summary (Model Group 9: Pacific)**

Modeling Step <sup>1</sup>	Extreme Weight Proportions			UWE <sup>2</sup>	# XVAR <sup>3</sup>	Bounds <sup>4</sup>	
	Unweighted	Weighted	Outwisor			Nominal	Realized
<i>res.sdu.nr</i>	1.07%	0.56%	0.03%	1.30509	255	(1.04, 1.20)	(1.05, 1.19)
	1.11%	0.93%	0.03%	1.32522	113	(1.00, 1.38)	(1.00, 1.37)
						(1.01, 1.15)	(1.01, 1.15)
<i>res.sdu.ps</i>	1.11%	0.93%	0.03%	1.32525	197	(0.91, 1.92)	(0.92, 1.92)
	1.03%	1.95%	0.31%	1.38723	190	(0.24, 4.04)	(0.24, 3.97)
						(0.31, 1.59)	(0.31, 1.55)
<i>sel.per.ps</i>	2.37%	4.15%	0.84%	2.72086	287	(0.29, 2.20)	(0.29, 2.13)
	0.95%	1.95%	0.40%	2.72922	256	(0.30, 4.00)	(0.30, 3.94)
						(0.58, 1.32)	(0.59, 1.30)
<i>res.per.nr</i>	1.05%	2.13%	0.35%	2.73968	287	(1.00, 2.95)	(1.00, 2.95)
	1.46%	4.48%	0.78%	3.42150	211	(1.00, 3.92)	(1.00, 3.88)
<i>res.per.ps</i>	1.64%	5.26%	1.01%	3.42150	227	(0.20, 1.53)	(0.20, 1.51)
	1.00%	3.32%	0.67%	3.65514	157	(0.20, 4.96)	(0.20, 4.96)
						(0.99, 1.07)	(1.07, 1.07)

<sup>1</sup> For a key to modeling abbreviations, see Chapter 5, Exhibit 5.1.

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

<sup>3</sup> Number of proposed covariates on top line, and number finalized after modeling.

<sup>4</sup> There are six sets of bounds for each modeling step. Nominal bounds are used in defining maximum/minimum values for the 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 weights, the nonextreme weights, and the low-extreme weights.

**Table D.9b Distribution of Weight Adjustment Factors and Weight Products for the 2004 NSDUH Person Weight (Model Group 9: Pacific)**

	<i>sel.sdu.des</i> <sup>1</sup>	<i>res.sdu.nr</i> <sup>1</sup>		<i>res.sdu.ps</i> <sup>1</sup>		<i>sel.per.des</i> <sup>1</sup>		<i>sel.per.ps</i> <sup>1</sup>		<i>res.per.nr</i> <sup>1</sup>		<i>res.per.ps</i> <sup>1</sup>	
	1-6 <sup>2</sup>	7 <sup>3</sup>	1-7 <sup>3</sup>	8 <sup>4</sup>	1-8 <sup>4</sup>	10 <sup>5</sup>	1-10 <sup>5</sup>	11 <sup>5</sup>	1-11 <sup>5</sup>	12 <sup>6</sup>	1-12 <sup>6</sup>	13 <sup>6</sup>	1-13 <sup>6</sup>
Minimum	84	0.60	103	0.24	44	1.01	49	0.21	36	0.51	37	0.08	11
1%	103	1.00	107	0.54	94	1.01	102	0.50	92	1.00	104	0.20	34
5%	150	1.02	160	0.80	148	1.01	181	0.68	170	1.01	190	0.20	138
10%	164	1.02	178	0.89	188	1.01	266	0.77	263	1.04	289	0.22	257
25%	576	1.05	612	1.00	627	1.12	984	0.89	974	1.08	1,052	0.93	786
Median	1,301	1.08	1,379	1.11	1,491	1.28	2,078	1.00	2,121	1.16	2,334	1.04	2,316
75%	1,559	1.13	1,709	1.21	1,938	4.88	5,334	1.10	5,064	1.30	5,223	1.16	5,142
90%	1,666	1.21	1,930	1.35	2,282	7.48	10,988	1.22	11,357	1.51	14,089	1.37	14,888
95%	1,691	1.24	2,043	1.47	2,502	10.53	17,270	1.37	16,420	1.68	21,771	1.53	21,968
99%	1,732	1.32	2,210	1.90	3,151	12.01	26,337	1.76	26,500	2.24	39,357	2.04	39,955
Maximum	4,091	8.85	2,442	3.97	7,095	29.90	63,714	3.94	68,037	3.88	147,626	4.96	115,279
<i>n</i>	13,897	12,668	12,668	12,667	12,667	8,991	8,991	8,991	8,991	7,318	7,318	7,318	7,318
Max/Mean	3.87	-	2.11	-	5.37	-	14.69	-	15.82	-	27.93	-	21.81

Note 1: Weight component 9 and weight product 1-9 are excluded because weight 9 = 1 for all selected dwelling units.

Note 2: Under GEM, nonresponse adjustment factors (weight component #7 and #12) could be less than 1 due to the built-in control for extreme weights. For an explanation, see Chapter 2.

<sup>1</sup> sel.sdu.des refers to selected screener dwelling unit design weight and sel.per.des to selected person design weight. For a key to other modeling abbreviations, see Chapter 5, Exhibit 5.1.

<sup>2</sup> Based on eligible dwelling units.

<sup>3</sup> Based on screener-complete dwelling units.

<sup>4</sup> Based on screener-complete dwelling units, occupants verified eligible.

<sup>5</sup> Based on selected persons.

<sup>6</sup> Based on questionnaire-complete persons.

# 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  $\times$  percent Black, State  $\times$  Population density, State  $\times$  Group quarter, state  $\times$  percent Black, State  $\times$  percent Hispanic, and State  $\times$  Rent/housing interactions. Out of 104 proposed variables, 83 were included in the model.

Variable collapsing or dropping was present in all three-factor effects. Out of 128 proposed variables, 7 were included in the model.

In the final model, a total of 113 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 three-factor effects, all the variables were kept in the model except Age  $\times$  Race  $\times$  Hispanicity, Race  $\times$  Hispanicity  $\times$  Gender, and State  $\times$  Age  $\times$  Race interactions. Out of 106 proposed variables, 99 were included in the model.

In the final model, a total of 190 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  $\times$  percent Black, State  $\times$  percent Black, State  $\times$  percent Hispanic, and State  $\times$  Rent/housing interactions. Out of 145 proposed variables, 127 were included in the model.

For three-factor effects, all levels are present for the Age  $\times$  Race  $\times$  Gender, Age  $\times$  Hispanicity  $\times$  Gender, State  $\times$  Age  $\times$  Gender, and State  $\times$  Hispanicity  $\times$  Gender interactions. All the others were affected by variable collapsing or dropping. Out of 106 proposed variables, 93 were included in the model.

In the final model, a total of 256 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 percent Rent/housing  $\times$  percent Black, State  $\times$  Race, State  $\times$  percent Black, State  $\times$  percent Hispanic, and State  $\times$  Rent/housing interactions. Out of 145 proposed variables, 124 were included in the model.

For three-factor effects, all levels were present for the Age  $\times$  Hispanicity  $\times$  Gender, State  $\times$  Age  $\times$  Gender, and State  $\times$  Hispanicity  $\times$  Gender interactions. All the others were affected by variable collapsing or dropping. Out of 106 proposed variables, 51 were included in the model.

In the final model, a total of 211 variables were included; see Exhibit D9.4.

## **Respondent Person-Level Poststratification**

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

For two-factor effects, variable collapsing or dropping was present in the Race  $\times$  Hispanicity and State  $\times$  Race interactions. Out of 81 proposed variables, 76 were included in the model.

For three-factor effects, all levels were present for Age  $\times$  Hispanicity  $\times$  Gender, State  $\times$  Age  $\times$  Gender, State  $\times$  Race  $\times$  Gender, and State  $\times$  Hispanicity  $\times$  Gender interactions. All the others were affected by variable collapsing or dropping. Out of 127 proposed variables, 62 were included in the model.

In the final model, a total of 157 variables were included; see Exhibit D9.5.

**Exhibit D9.1 Covariates for 2004 NSDUH Person Weights (res.sdu.nr),  
Model Group 9: Pacific**

Variables	Levels	Proposed	Final	Comments
<b>One-Factor Effects</b>		<b>23</b>	<b>23</b>	
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 quarters	3	2	2	All levels present.
%Black	3	2	2	All levels present.
%Hispanic	3	2	2	All levels present.
%Owner-occupied	3	2	2	All levels present.
Rent/housing value	5	4	4	All levels present.
<b>Two-Factor Effects</b>		<b>104</b>	<b>83</b>	
%Owner-occupied × %Black	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	3*5	8	7	Drop (1,1); zero.
Rent/housing × %Hispanic	3*5	8	8	All levels present.
State × Quarter	5*4	12	12	All levels present.
State × Population density	5*4	12	10	Drop (1,1), (2,1); zero
State × Group quarters	5*3	8	7	Drop (3,2); zero.
State × %Black	5*3	8	4	Drop (1,1), (2,1), (3,1); zero. Drop (5,1); sing.
State × %Hispanic	5*3	8	5	Drop (1,1), (2,1); zero. Drop (5,1); sing.
State × %Owner-occupied	5*3	8	8	All levels present.
State × Rent/housing	5*5	16	6	Drop (1,4), (3,2), (3,3), (3,4), (5,1), (5,2); zero. Drop (1,3), (3,1), (5,3), (5,4); sing.
<b>Three-Factor Effects</b>		<b>128</b>	<b>7</b>	
State × %Owner-occupied × %Black	5*3*3	16	0	Drop all. Zero/sing./conv.
State × %Owner-occupied × %Hispanic	5*3*3	16	3	Keep (1,2,2), (5,2,2), (5,3,2), drop others; hier/zero/sing./conv.
State × %Owner-occupied × Rent/housing	5*3*5	32	1	Keep (5,3,3), drop others; hier/zero/sing./conv.
State × Rent/housing × %Black	5*3*5	32	1	Keep (5,2,2), drop others; hier/zero/sing./conv.
State × Rent/housing × %Hispanic	5*3*5	32	2	Keep (5,2,2), (5,3,2), drop others; hier/zero/sing./conv.
<b>Total</b>		<b>255</b>	<b>113</b>	

**Exhibit D9.2 Covariates for 2004 NSDUH Person Weights (res.sdu.ps),  
Model Group 9: Pacific**

Variables	Levels	Proposed	Final	Comments
<b>One-Factor Effects</b>		<b>18</b>	<b>18</b>	
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.
<b>Two-Factor Effects</b>		<b>73</b>	<b>73</b>	
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.
<b>Three-Factor-Effects</b>		<b>106</b>	<b>99</b>	
Age × Race (3 levels) × Hispanicity	5*3*2	8	4	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. (3,1,1) & (2,1,1) conv.
State × Age × Race (3 levels)	5*5*3	32	30	Coll. (2,1,2) & (2,1,3), (2,2,2) & (2,2,3) 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	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.
<b>Total</b>		<b>197</b>	<b>190</b>	

**Exhibit D9.3 Covariates for 2004 NSDUH Person Weights (sel.per.ps),  
Model Group 9: Pacific**

Variables	Levels	Proposed	Final	Comments
<b>One-Factor Effects</b>		<b>36</b>	<b>36</b>	
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 quarters	3	2	2	All levels present.
%Black	3	2	2	All levels present.
%Hispanic	3	2	2	All levels present.
%Owner-occupied	3	2	2	All levels present.
Rent/housing value	5	4	4	All levels present.
<b>Two-Factor Effects</b>		<b>145</b>	<b>127</b>	
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	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	3*5	8	6	Drop (1,1) zero. Coll. (2,1) & (2,2) conv.
Rent/housing × %Hispanic	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	5*3	8	5	Drop (1,1), (2,1), (3,1) zero.
State × %Hispanic	5*3	8	5	Drop (1,1), (2,1) zero; Drop (5,1) sing.
State × %Owner-occupied	5*3	8	8	All levels present.
State × Rent/housing	5*5	16	6	Drop (1,4), (3,2), (3,3), (3,4), (5,1); zero; Drop (1,3), (2,2), (2,3), (2,4), (3,1); sing.
<b>Three-Factor Effects</b>		<b>106</b>	<b>93</b>	
Age × Race (3 levels) × Hispanicity	5*3*2	8	4	Coll. (4,2,1) & (4,3,1) sing; 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	28	Coll. (2,4,2) & (2,4,3); sing. Coll. (2,1,2) & (2,1,3), (2,2,2) & (2,2,3), (2,3,2) & (2,3,3) conv.
State × Age × Hispanicity	5*5*2	16	15	Drop (3,4,1) conv.
State × Age × Gender	5*5*2	16	16	All levels present.
State × Race (3 levels) × Hispanicity	5*3*2	8	6	Coll. (3,2,1) & (3,3,1) zero; Coll. (2,2,1) & (2,3,1) conv.
State × Race (3 levels) × Gender	5*3*2	8	7	Coll. (2,2,1) & (2,3,1) conv.
State × Hispanicity × Gender	5*2*2	4	4	All levels present.
<b>Total</b>		<b>287</b>	<b>256</b>	

**Exhibit D9.4 Covariates for 2004 NSDUH Person Weights(res.per.nr),  
Model Group 9: Pacific**

Variables	Levels	Proposed	Final	Comments
<b>One-Factor Effects</b>		<b>36</b>	<b>36</b>	
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 quarters	3	2	2	All levels present.
%Black	3	2	2	All levels present.
%Hispanic	3	2	2	All levels present.
%Owner-occupied	3	2	2	All levels present.
Rent/housing value	5	4	4	All levels present.
<b>Two-Factor Effects</b>		<b>145</b>	<b>124</b>	
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	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	3*5	8	7	Drop (1,1) zero
Rent/housing × %Hispanic	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	13	Coll. (1,2) & (1,5), (2,2) & (2,5), (3,2) & (3,5) conv.
State × Hispanicity	5*2	4	4	All levels present.
State × Gender	5*2	4	4	All levels present.
State × %Black	5*3	8	4	Drop (1,1), (2,1), (3,1); zero; Drop (5,1); sing.
State × %Hispanic	5*3	8	5	Drop (1,1), (2,1); zero; Drop (5,1) sing.
State × %Owner-occupied	5*3	8	8	All levels present.
State × Rent/housing	5*5	16	6	Drop (2,4), (3,2), (3,3), (3,4), (5,1); zero; Drop (1,2), (1,3), (1,4), (2,3), (3,1); sing.
<b>Three-Factor Effects</b>		<b>106</b>	<b>51</b>	
Age × Race (3 levels) × Hispanicity	5*3*2	8	2	Drop (4,2,1) & (4,3,1), (3,2,1) & (3,3,1) conv. coll. (1,2,1) & (1,3,1), (2,2,1) & (2,3,1), conv.
Age × Race (3 levels) × Gender	5*3*2	8	4	Coll. (*,2,1) & (*,3,1) conv.
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	16	Coll. (1,*,2) & (1,*,3), same for state=2,3 hier; coll. (5,*,2) & (5,*,3) conv.;
State × Age × Hispanicity	5*5*2	16	0	None.
State × Age × Gender	5*5*2	16	16	All levels present.
State × Race (3 levels) × Hispanicity	5*3*2	8	0	None.
State × Race (3 levels) × Gender	5*3*2	8	4	Coll. (*,2,1) & (*,3,1) hier/conv.
State × Hispanicity × Gender	5*2*2	4	4	All levels present.
<b>Total</b>		<b>287</b>	<b>211</b>	

**Exhibit D9.5 Covariates for 2004 NSDUH Person Weights (res.per.ps),  
Model Group 9: Pacific**

Variables	Levels	Proposed	Final	Comments
<b>One-Factor Effects</b>		<b>19</b>	<b>19</b>	
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.
<b>Two-Factor Effects</b>		<b>81</b>	<b>76</b>	
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	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.
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	12	Coll. (5,3) & (5,4) same for all states, conv.
State × Hispanicity	5*2	4	4	All levels present.
State × Gender	5*2	4	4	All levels present.
<b>Three-Factor Effects</b>		<b>127</b>	<b>62</b>	
Age × Race (3 levels) × Hispanicity	6*3*2	10	0	Drop all; hier/conv.
Age × Race (3 levels) × Gender	6*3*2	10	5	Coll. (5,2,1) & (5,3,1); same for all age grps conv.
Age × Hispanicity × Gender	6*2*2	5	5	All levels present.
Race (3 levels) × Hispanicity × Gender	3*2*2	2	0	Drop all; conv.
State × Age × Race (3 levels)	5*6*3	40	20	Coll. (1,1,2) & (1,1,3) for all state and age;conv
State × Age × Hispanicity	5*6*2	20	0	Drop all; conv.
State × Age × Gender	5*6*2	20	20	All levels present.
State × Race (3 levels) × Hispanicity	5*3*2	8	0	Drop all.
State × Race (3 levels) × Gender	5*3*2	8	8	All levels present.
State × Hispanicity × Gender	5*2*2	4	4	All levels present.
<b>Total</b>		<b>227</b>	<b>157</b>	



## **Appendix E: Evaluation of Calibration Weights: Response Rates**



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**Table E 2004 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 1-10 <sup>1</sup>	Weight 1-11 <sup>2</sup>
United States	169,514	142,612	130,130	84.24%	90.92%	81,973	67,760	76.98%	76.88%
Alabama	1,991	1,611	1,477	81.00%	91.72%	1,055	880	74.34%	74.90%
Alaska	1,902	1,525	1,399	79.25%	91.61%	1,078	894	79.39%	80.59%
Arizona	2,226	1,858	1,750	82.74%	94.21%	1,119	903	78.01%	77.67%
Arkansas	2,369	1,933	1,833	81.64%	94.83%	1,062	900	79.93%	79.42%
California	7,911	6,957	6,192	86.68%	88.60%	4,631	3,725	72.92%	72.93%
Colorado	2,207	1,822	1,712	82.81%	93.92%	1,135	934	77.88%	77.51%
Connecticut	2,493	2,209	2,013	88.51%	90.99%	1,098	897	75.85%	74.80%
Delaware	2,253	1,954	1,794	85.78%	91.90%	1,144	932	77.72%	77.72%
District of Columbia	3,155	2,606	2,242	82.37%	86.24%	1,041	903	82.52%	82.96%
Florida	10,456	8,488	7,581	80.09%	88.99%	4,526	3,662	73.84%	74.09%
Georgia	2,141	1,752	1,597	81.86%	91.32%	1,054	890	80.36%	80.60%
Hawaii	1,959	1,715	1,575	86.87%	91.94%	1,088	903	77.49%	77.85%
Idaho	2,015	1,704	1,607	84.65%	94.31%	1,051	902	82.44%	81.99%
Illinois	8,457	7,458	6,342	88.19%	85.01%	4,444	3,575	75.13%	75.07%
Indiana	2,176	1,833	1,742	84.25%	95.05%	1,085	891	77.72%	77.71%
Iowa	1,990	1,745	1,641	87.75%	94.14%	1,039	890	81.11%	79.87%
Kansas	2,294	1,953	1,841	85.34%	94.22%	993	828	78.61%	78.46%
Kentucky	2,372	2,059	1,949	86.73%	94.67%	1,144	933	73.31%	75.02%
Louisiana	2,106	1,713	1,614	81.38%	94.17%	1,082	933	80.93%	81.19%
Maine	2,731	2,168	2,025	79.32%	93.40%	1,064	896	81.50%	81.43%
Maryland	2,122	1,855	1,617	87.46%	86.77%	1,039	901	81.12%	77.96%
Massachusetts	2,218	1,895	1,686	83.36%	89.13%	1,087	877	76.98%	77.24%
Michigan	9,530	7,969	7,155	83.40%	89.78%	4,490	3,670	75.61%	75.41%
Minnesota	2,001	1,714	1,578	84.97%	91.98%	1,066	907	83.72%	83.78%
Mississippi	1,931	1,549	1,482	80.27%	95.71%	1,053	914	80.62%	79.48%

<sup>1</sup> Includes DU-level and person-level design weights, DU nonresponse adjustment, and DU poststratification.

<sup>2</sup> Includes a selected person poststratification weight.

(continued)

**Table E 2004 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 1-10 <sup>1</sup>	Weight 1-11 <sup>2</sup>
Missouri	2,190	1,872	1,764	85.73%	94.23%	1,104	897	77.98%	77.19%
Montana	2,511	1,990	1,874	79.07%	94.18%	1,080	907	79.54%	79.05%
Nebraska	2,044	1,729	1,629	84.84%	94.21%	1,072	897	80.77%	79.75%
Nevada	1,903	1,641	1,552	85.83%	93.71%	1,053	888	78.13%	78.46%
New Hampshire	2,348	1,908	1,765	81.27%	92.38%	1,114	904	76.38%	77.30%
New Jersey	2,764	2,359	2,033	83.98%	85.50%	1,153	886	71.89%	72.69%
New Mexico	2,190	1,799	1,719	82.24%	95.54%	1,072	922	80.96%	81.13%
New York	10,475	8,940	7,372	85.35%	82.28%	4,585	3,638	73.72%	73.43%
North Carolina	2,185	1,733	1,635	79.21%	94.33%	1,029	869	79.40%	79.10%
North Dakota	2,576	2,128	2,020	82.69%	94.95%	1,071	911	81.23%	80.99%
Ohio	8,599	7,463	7,026	86.75%	94.14%	4,404	3,613	76.88%	77.23%
Oklahoma	2,382	1,889	1,769	79.12%	93.71%	1,054	867	76.16%	75.43%
Oregon	2,234	1,931	1,825	86.51%	94.50%	1,108	910	76.33%	76.00%
Pennsylvania	9,599	8,236	7,448	85.64%	90.44%	4,360	3,590	77.08%	77.02%
Rhode Island	2,030	1,785	1,588	87.76%	89.11%	1,126	911	76.35%	75.11%
South Carolina	2,392	1,946	1,844	81.60%	94.73%	1,042	885	81.73%	82.30%
South Dakota	2,024	1,674	1,594	82.44%	95.24%	1,034	893	82.09%	81.82%
Tennessee	2,387	2,049	1,933	85.26%	94.37%	1,023	896	85.37%	85.02%
Texas	7,923	6,599	6,254	83.42%	94.72%	4,334	3,631	79.21%	79.05%
Utah	1,718	1,464	1,389	84.31%	94.70%	1,040	910	83.78%	83.21%
Vermont	2,689	1,954	1,820	71.13%	93.02%	1,087	924	81.79%	81.79%
Virginia	2,060	1,773	1,587	85.49%	89.40%	1,080	902	79.93%	79.99%
Washington	1,998	1,769	1,677	88.80%	94.81%	1,086	886	76.00%	74.80%
West Virginia	2,721	2,173	2,049	80.09%	94.31%	1,058	909	79.14%	78.52%
Wisconsin	2,338	1,944	1,805	83.05%	92.86%	1,118	917	77.95%	77.82%
Wyoming	2,228	1,819	1,715	81.65%	94.28%	1,018	857	81.53%	82.07%

<sup>1</sup> Includes DU-level and person-level design weights, DU nonresponse adjustment, and DU poststratification<sup>2</sup> Includes a selected person poststratification weight.

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



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**Table F 2004 NSDUH Dwelling Unit–Level Percentages of Extreme Weights and Outwinors: United States, District of Columbia, and the 50 States**

Domain	n	Before nr <sup>1</sup> (Weight1*…*Weight6)			After nr & Before ps <sup>2</sup> (Weight1*…*Weight7)			After ps (Weight1*…*Weight8)		
		Unweighted	Weighted <sup>3</sup>	Outwinor <sup>4</sup>	Unweighted	Weighted <sup>3</sup>	Outwinor <sup>4</sup>	Unweighted	Weighted <sup>3</sup>	Outwinor <sup>4</sup>
United States	130,130	2.58%	2.39%	0.25%	1.34%	1.70%	0.17%	1.71%	2.58%	0.57%
Alabama	1,477	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.35%	2.41%	0.65%
Alaska	1,399	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.29%	0.78%	0.17%
Arizona	1,750	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	6.46%	11.63%	2.47%
Arkansas	1,833	7.15%	7.51%	0.10%	1.69%	1.90%	0.06%	6.60%	6.45%	2.43%
California	6,192	0.31%	0.31%	0.18%	0.23%	0.26%	0.01%	0.82%	1.74%	0.32%
Colorado	1,712	0.00%	0.00%	0.00%	0.06%	0.11%	0.02%	1.58%	2.67%	0.47%
Connecticut	2,013	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.74%	5.12%	1.79%
Delaware	1,794	0.00%	0.00%	0.00%	0.50%	1.17%	0.35%	0.28%	0.87%	0.28%
District of Columbia	2,242	0.22%	0.66%	0.34%	0.00%	0.00%	0.00%	0.40%	0.99%	0.20%
Florida	7,581	8.26%	8.71%	0.98%	1.39%	2.19%	0.31%	0.94%	1.62%	0.24%
Georgia	1,597	5.70%	5.96%	0.17%	2.50%	4.19%	0.57%	1.31%	1.67%	0.22%
Hawaii	1,575	3.56%	2.49%	0.09%	0.00%	0.00%	0.00%	0.25%	0.57%	0.05%
Idaho	1,607	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.36%	3.75%	0.89%
Illinois	6,342	0.82%	0.73%	0.04%	0.57%	0.45%	0.04%	0.68%	1.03%	0.27%
Indiana	1,742	0.00%	0.00%	0.00%	2.07%	2.27%	0.10%	1.61%	2.22%	0.61%
Iowa	1,641	3.53%	2.92%	0.37%	0.61%	0.85%	0.06%	2.80%	3.18%	0.83%
Kansas	1,841	18.09%	23.29%	2.54%	15.05%	19.50%	2.27%	2.72%	4.30%	0.84%
Kentucky	1,949	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.95%	5.26%	1.30%
Louisiana	1,614	0.87%	1.09%	0.03%	2.79%	3.66%	0.29%	1.61%	1.90%	0.51%
Maine	2,025	0.30%	0.67%	0.23%	0.15%	0.25%	0.04%	6.07%	3.31%	1.43%
Maryland	1,617	0.37%	1.09%	0.69%	5.26%	6.65%	0.82%	0.62%	1.01%	0.12%
Massachusetts	1,686	2.79%	3.72%	0.14%	2.19%	3.04%	0.39%	1.60%	3.49%	0.75%
Michigan	7,155	5.44%	4.80%	0.79%	1.27%	1.23%	0.06%	1.64%	2.07%	0.34%
Minnesota	1,578	1.84%	2.22%	0.07%	0.95%	0.80%	0.01%	1.01%	2.06%	0.47%
Mississippi	1,482	2.56%	3.49%	0.47%	0.61%	0.72%	0.02%	1.42%	3.85%	1.00%

<sup>1</sup> nr = nonresponse adjustment.

<sup>2</sup> ps = poststratification adjustment.

<sup>3</sup> 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.

<sup>4</sup> Outwinor 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.

(continued)

**Table F 2004 NSDUH Dwelling Unit–Level Percentages of Extreme Weights and Outwinors: United States, District of Columbia, and the 50 States (continued)**

Domain	n	Before nr <sup>1</sup> (Weight1*...*Weight6)			After nr & Before ps <sup>2</sup> (Weight1*...*Weight7)			After ps (Weight1*...*Weight8)		
		Unweighted	Weighted <sup>3</sup>	Outwinor <sup>4</sup>	Unweighted	Weighted <sup>3</sup>	Outwinor <sup>4</sup>	Unweighted	Weighted <sup>3</sup>	Outwinor <sup>4</sup>
Missouri	1,764	0.00%	0.00%	0.00%	0.91%	1.09%	0.02%	1.59%	1.40%	0.32%
Montana	1,874	0.00%	0.00%	0.00%	0.11%	0.11%	0.00%	1.87%	3.29%	0.64%
Nebraska	1,629	14.67%	21.81%	4.34%	9.64%	13.69%	1.84%	2.64%	5.19%	1.05%
Nevada	1,552	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.84%	2.29%	0.43%
New Hampshire	1,765	2.95%	3.01%	0.32%	0.57%	0.65%	0.02%	2.72%	3.40%	0.78%
New Jersey	2,033	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.93%	2.66%	0.60%
New Mexico	1,719	0.00%	0.00%	0.00%	0.41%	0.56%	0.03%	3.14%	5.13%	1.15%
New York	7,372	2.44%	2.33%	0.11%	1.23%	1.61%	0.13%	1.72%	3.42%	0.92%
North Carolina	1,635	0.18%	0.13%	0.00%	0.00%	0.00%	0.00%	1.59%	2.87%	0.49%
North Dakota	2,020	0.59%	1.10%	0.31%	1.24%	1.68%	0.15%	1.93%	2.22%	0.62%
Ohio	7,026	4.92%	5.54%	0.26%	5.10%	5.58%	0.16%	1.21%	1.11%	0.13%
Oklahoma	1,769	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.37%	4.20%	0.87%
Oregon	1,825	3.12%	2.99%	0.06%	3.18%	3.08%	0.11%	2.14%	2.49%	0.31%
Pennsylvania	7,448	2.78%	3.06%	0.18%	0.59%	1.38%	0.44%	1.25%	2.05%	0.34%
Rhode Island	1,588	13.66%	17.38%	1.23%	1.20%	1.90%	0.26%	1.39%	4.13%	1.57%
South Carolina	1,844	0.00%	0.00%	0.00%	0.38%	0.68%	0.07%	1.25%	2.47%	0.50%
South Dakota	1,594	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.45%	3.94%	1.61%
Tennessee	1,933	0.21%	0.73%	0.36%	0.21%	0.53%	0.15%	2.22%	4.32%	0.91%
Texas	6,254	0.00%	0.00%	0.00%	0.14%	0.19%	0.01%	1.10%	1.78%	0.42%
Utah	1,389	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.29%	0.87%	0.21%
Vermont	1,820	4.40%	4.53%	0.53%	0.38%	0.50%	0.01%	1.37%	2.04%	0.44%
Virginia	1,587	1.83%	2.93%	0.20%	3.97%	5.42%	0.55%	0.95%	2.29%	0.59%
Washington	1,677	0.18%	0.01%	0.01%	0.00%	0.00%	0.00%	0.95%	2.23%	0.47%
West Virginia	2,049	1.22%	1.40%	0.06%	0.00%	0.00%	0.00%	3.03%	4.76%	1.11%
Wisconsin	1,805	0.17%	0.07%	0.07%	1.50%	2.10%	0.10%	1.05%	2.03%	0.29%
Wyoming	1,715	0.17%	0.05%	0.08%	0.00%	0.00%	0.00%	5.25%	7.18%	2.60%

<sup>1</sup> nr = nonresponse adjustment.

<sup>2</sup> ps = poststratification adjustment.

<sup>3</sup> 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.

<sup>4</sup> Outwinor 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.



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



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**Table G.1 2004 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 <sup>1</sup> (Weight1*...*Weight10)			After sel.per.ps <sup>1</sup> (Weight1*...*Weight11)		
		Unweighted	Weighted <sup>2</sup>	Outwinsor <sup>3</sup>	Unweighted	Weighted <sup>2</sup>	Outwinsor <sup>3</sup>
United States	81,973	3.12%	5.10%	1.18%	1.53%	3.15%	0.64%
Alabama	1,055	2.46%	4.28%	0.95%	0.76%	1.77%	0.22%
Alaska	1,078	1.21%	2.81%	0.25%	0.65%	1.81%	0.30%
Arizona	1,119	3.40%	8.27%	2.14%	2.23%	6.90%	1.41%
Arkansas	1,062	7.82%	11.70%	3.59%	1.98%	2.98%	0.95%
California	4,631	2.31%	4.14%	0.94%	0.97%	1.84%	0.29%
Colorado	1,135	0.88%	2.11%	0.27%	1.23%	3.28%	0.92%
Connecticut	1,098	3.01%	7.76%	2.27%	2.46%	5.97%	1.43%
Delaware	1,144	1.22%	2.00%	0.46%	1.40%	3.07%	0.46%
District of Columbia	1,041	0.48%	0.86%	0.19%	0.67%	2.71%	1.02%
Florida	4,526	1.83%	3.30%	0.53%	1.26%	2.55%	0.56%
Georgia	1,054	2.47%	2.70%	0.52%	2.09%	3.71%	0.57%
Hawaii	1,088	1.56%	2.83%	0.41%	0.83%	2.12%	0.44%
Idaho	1,051	2.85%	4.61%	1.21%	0.86%	1.75%	0.14%
Illinois	4,444	3.04%	4.97%	1.05%	1.60%	3.31%	0.57%
Indiana	1,085	2.49%	4.83%	0.89%	0.92%	2.51%	0.44%
Iowa	1,039	5.29%	5.37%	0.93%	2.31%	6.02%	1.89%
Kansas	993	2.72%	5.91%	1.29%	2.22%	5.25%	0.90%
Kentucky	1,144	5.68%	8.57%	2.38%	0.87%	1.97%	0.51%
Louisiana	1,082	2.87%	6.65%	1.09%	1.29%	3.91%	0.46%
Maine	1,064	7.14%	5.79%	1.74%	1.50%	1.40%	0.24%
Maryland	1,039	2.60%	4.58%	0.94%	1.25%	2.18%	0.55%
Massachusetts	1,087	3.59%	5.20%	1.26%	2.39%	5.14%	1.60%
Michigan	4,490	4.28%	4.94%	1.08%	2.36%	3.68%	0.46%
Minnesota	1,066	3.47%	6.31%	1.12%	2.44%	6.51%	1.57%
Mississippi	1,053	1.71%	5.74%	2.11%	1.61%	2.80%	0.24%

<sup>1</sup> Before sel.per.ps (Weight1\*...\*Weight10) and after sel.per.ps (Weight1\*...\*Weight11) used demographic variables from screener data for all selected persons.

(continued)

<sup>2</sup> 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.

<sup>3</sup> 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.

**Table G.1 2004 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 <sup>1</sup> (Weight1*...*Weight10)			After sel.per.ps <sup>1</sup> (Weight1*...*Weight11)		
		Unweighted	Weighted <sup>2</sup>	Outwinsor <sup>3</sup>	Unweighted	Weighted <sup>2</sup>	Outwinsor <sup>3</sup>
Missouri	1,104	3.17%	4.38%	0.89%	2.08%	2.96%	0.63%
Montana	1,080	2.50%	4.35%	1.26%	0.93%	0.99%	0.11%
Nebraska	1,072	2.43%	3.63%	0.64%	1.59%	5.57%	1.50%
Nevada	1,053	3.61%	15.63%	4.81%	3.51%	9.81%	2.07%
New Hampshire	1,114	4.31%	10.92%	3.66%	1.97%	2.11%	0.70%
New Jersey	1,153	2.52%	7.26%	1.22%	1.56%	4.25%	0.86%
New Mexico	1,072	2.15%	5.90%	1.65%	1.12%	2.78%	0.42%
New York	4,585	3.25%	6.08%	1.82%	1.96%	4.46%	0.72%
North Carolina	1,029	1.94%	2.90%	0.70%	0.97%	2.47%	0.44%
North Dakota	1,071	3.64%	5.53%	1.40%	2.43%	5.49%	1.88%
Ohio	4,404	5.18%	5.92%	1.32%	0.79%	1.16%	0.16%
Oklahoma	1,054	2.85%	7.91%	1.48%	0.76%	2.15%	0.41%
Oregon	1,108	3.61%	4.31%	0.92%	1.35%	1.38%	0.39%
Pennsylvania	4,360	4.40%	6.04%	1.42%	1.88%	3.25%	0.47%
Rhode Island	1,126	1.87%	4.30%	1.72%	2.13%	5.85%	2.12%
South Carolina	1,042	2.78%	4.48%	0.86%	1.06%	2.52%	0.66%
South Dakota	1,034	6.09%	10.75%	4.31%	3.58%	5.01%	0.80%
Tennessee	1,023	3.62%	6.90%	1.99%	2.35%	5.45%	1.22%
Texas	4,334	1.36%	2.72%	0.61%	0.92%	2.07%	0.38%
Utah	1,040	1.06%	2.77%	0.71%	0.48%	0.77%	0.16%
Vermont	1,087	2.12%	3.28%	0.63%	2.02%	4.10%	0.73%
Virginia	1,080	3.06%	7.87%	1.51%	0.74%	3.20%	0.77%
Washington	1,086	1.93%	3.41%	0.67%	0.83%	2.63%	0.96%
West Virginia	1,058	5.48%	8.24%	2.43%	1.51%	2.75%	1.08%
Wisconsin	1,118	2.24%	3.83%	0.66%	1.61%	2.26%	0.70%
Wyoming	1,018	4.03%	6.65%	1.80%	1.47%	4.14%	1.74%

<sup>1</sup> Before sel.per.ps (Weight1\*...\*Weight10) and after sel.per.ps (Weight1\*...\*Weight11) used demographic variables from screener data for all selected persons.

<sup>2</sup> 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.

<sup>3</sup> 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.

**Table G.2 2004 NSDUH Respondent Person-Level Percentages of Extreme Weights and Outwinors: United States, District of Columbia, and the 50 States**

Domain	n	Before res.per.nr <sup>1</sup> (Weight1*...*Weight11)			After res.per.nr <sup>1</sup> (Weight1*...*Weight12)			Before res.per.ps <sup>2</sup> (Weight1*...*Weight12)			After res.per.ps <sup>2</sup> (Weight1*...*Weight13)		
		Unwtd	Wtd <sup>3</sup>	Outwinor <sup>4</sup>	Unwtd	Wtd <sup>3</sup>	Outwinor <sup>4</sup>	Unwtd	Wtd <sup>3</sup>	Outwinor <sup>4</sup>	Unwtd	Wtd <sup>3</sup>	Outwinor <sup>4</sup>
United States	67,760	1.51%	3.13%	0.60%	1.35%	3.61%	0.79%	1.41%	3.73%	0.88%	1.16%	3.28%	0.67%
Alabama	880	0.80%	1.93%	0.25%	0.45%	0.73%	0.03%	0.57%	1.05%	0.23%	0.45%	1.09%	0.32%
Alaska	894	0.45%	1.13%	0.27%	0.78%	2.34%	0.17%	0.78%	2.34%	0.15%	3.47%	12.01%	3.57%
Arizona	903	1.55%	3.78%	0.59%	2.66%	6.40%	1.22%	2.66%	5.32%	1.51%	1.44%	2.56%	0.30%
Arkansas	900	1.67%	2.33%	0.67%	3.11%	3.87%	1.35%	3.22%	4.05%	1.45%	2.44%	3.08%	1.09%
California	3,725	1.02%	2.05%	0.30%	1.83%	5.29%	0.87%	1.88%	5.83%	1.16%	0.32%	3.51%	0.56%
Colorado	934	1.39%	3.53%	1.00%	1.50%	4.96%	1.14%	1.39%	4.83%	1.11%	1.07%	3.03%	1.10%
Connecticut	897	1.78%	5.23%	1.02%	1.00%	2.52%	0.95%	1.11%	2.29%	0.97%	0.45%	1.68%	0.18%
Delaware	932	1.18%	2.52%	0.58%	0.54%	1.72%	0.20%	0.75%	1.92%	0.21%	0.43%	0.80%	0.10%
District of Columbia	903	0.55%	2.73%	1.24%	0.33%	2.33%	0.94%	0.33%	2.33%	0.90%	1.11%	7.80%	2.24%
Florida	3,662	1.39%	2.91%	0.62%	0.82%	2.21%	0.50%	0.98%	2.52%	0.61%	0.33%	0.70%	0.10%
Georgia	890	2.02%	3.29%	0.51%	1.91%	2.43%	0.62%	2.02%	2.53%	0.64%	1.46%	1.67%	0.42%
Hawaii	903	1.00%	2.72%	0.55%	0.00%	0.00%	0.00%	0.22%	0.86%	0.18%	0.55%	3.88%	0.82%
Idaho	902	1.11%	1.51%	0.12%	0.11%	0.12%	0.00%	0.11%	0.17%	0.06%	0.33%	1.21%	0.17%
Illinois	3,575	1.54%	3.17%	0.50%	1.71%	4.73%	0.79%	1.73%	4.79%	0.90%	1.71%	5.46%	1.26%
Indiana	891	0.67%	2.40%	0.54%	0.56%	1.77%	0.53%	0.56%	1.77%	0.53%	0.90%	3.67%	1.02%
Iowa	890	1.80%	3.34%	0.69%	2.36%	5.51%	2.25%	2.25%	5.14%	2.26%	2.13%	4.64%	1.46%
Kansas	828	2.29%	5.06%	0.99%	1.45%	5.12%	0.80%	1.45%	5.12%	0.81%	0.48%	1.73%	0.40%
Kentucky	933	0.86%	1.98%	0.45%	1.71%	4.49%	0.62%	1.71%	3.86%	0.73%	0.96%	3.11%	1.00%
Louisiana	933	1.07%	3.68%	0.38%	0.86%	4.54%	0.46%	0.86%	3.92%	0.45%	0.21%	0.21%	0.02%
Maine	896	1.56%	1.53%	0.25%	1.00%	1.65%	0.45%	1.00%	1.65%	0.46%	0.45%	1.02%	0.27%
Maryland	901	0.89%	1.80%	0.47%	1.78%	13.88%	4.96%	2.00%	14.94%	5.48%	2.22%	8.71%	3.24%
Massachusetts	877	2.39%	6.03%	1.98%	1.94%	5.42%	1.28%	1.94%	5.42%	1.32%	1.14%	3.26%	0.58%
Michigan	3,670	2.21%	3.15%	0.34%	1.63%	3.27%	0.42%	1.63%	3.26%	0.42%	1.77%	3.61%	0.42%
Minnesota	907	2.32%	6.27%	1.67%	2.76%	6.58%	2.34%	2.76%	6.58%	2.34%	3.20%	6.22%	1.82%
Mississippi	914	1.42%	3.06%	0.34%	1.20%	3.97%	0.39%	1.53%	4.94%	0.78%	0.98%	1.77%	0.36%

<sup>1</sup> Before res.per.nr (Weight1\*...\*Weight11) and after res.per.nr (Weight1\*...\*Weight12) used demographic variables from screener data for all respondents.

(continued)

<sup>2</sup> Before res.per.ps (Weight1\*...\*Weight12) and after res.per.ps (Weight1\*...\*Weight13) used demographic variables from questionnaire data for all respondents.

<sup>3</sup> 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.

<sup>4</sup> Outwinor weight percentage =  $100 * \sum_k (w_{ok} - b_k) / \sum_k w_k$ , where  $b_k$  denotes the cutoff point for defining the extreme weight.

**Table G.2 2004 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 <sup>1</sup> (Weight1*...*Weight11)			After res.per.nr <sup>1</sup> (Weight1*...*Weight12)			Before res.per.ps <sup>2</sup> (Weight1*...*Weight12)			After res.per.ps <sup>2</sup> (Weight1*...*Weight13)		
		Unwtd	Wtd <sup>3</sup>	Outwinsor <sup>4</sup>	Unwtd	Wtd <sup>3</sup>	Outwinsor <sup>4</sup>	Unwtd	Wtd <sup>3</sup>	Outwinsor <sup>4</sup>	Unwtd	Wtd <sup>3</sup>	Outwinsor <sup>4</sup>
Missouri	897	2.01%	3.52%	0.70%	0.56%	1.93%	0.53%	0.67%	2.17%	0.70%	0.56%	1.13%	0.17%
Montana	907	1.10%	1.25%	0.14%	0.99%	2.44%	0.16%	1.10%	2.64%	0.34%	0.66%	0.87%	0.14%
Nebraska	897	1.56%	6.90%	1.53%	1.23%	6.11%	1.54%	1.23%	6.11%	1.53%	1.78%	5.11%	1.08%
Nevada	888	3.38%	10.06%	2.29%	1.46%	3.35%	0.71%	1.01%	2.88%	0.69%	1.69%	3.72%	0.75%
New Hampshire	904	1.66%	2.09%	0.69%	1.33%	4.18%	0.71%	1.44%	4.30%	0.73%	1.11%	3.08%	0.78%
New Jersey	886	2.26%	6.14%	1.02%	2.82%	5.12%	0.91%	2.93%	5.24%	0.90%	1.69%	2.96%	0.56%
New Mexico	922	1.19%	2.88%	0.43%	0.87%	4.28%	0.93%	0.98%	4.96%	1.10%	0.87%	4.72%	1.06%
New York	3,638	2.17%	4.56%	0.80%	1.48%	3.98%	1.04%	1.51%	3.91%	1.16%	1.79%	4.11%	0.78%
North Carolina	869	1.04%	2.69%	0.51%	0.58%	0.96%	0.30%	0.81%	1.21%	0.33%	1.04%	6.84%	0.88%
North Dakota	911	2.41%	5.04%	1.60%	1.87%	5.14%	1.27%	1.98%	5.28%	1.27%	0.44%	1.71%	0.78%
Ohio	3,613	0.83%	1.16%	0.20%	1.19%	2.01%	0.24%	1.30%	2.20%	0.31%	0.97%	1.95%	0.31%
Oklahoma	867	0.81%	2.23%	0.47%	0.81%	3.10%	0.35%	0.92%	3.24%	0.35%	1.04%	2.28%	0.37%
Oregon	910	1.65%	1.76%	0.50%	0.44%	1.13%	0.16%	0.44%	1.26%	0.30%	0.55%	2.52%	0.80%
Pennsylvania	3,590	1.75%	2.96%	0.46%	1.98%	3.70%	0.67%	1.98%	3.54%	0.64%	1.14%	2.03%	0.39%
Rhode Island	911	2.09%	5.27%	1.59%	2.52%	5.39%	1.85%	2.74%	6.08%	1.94%	2.41%	4.79%	1.11%
South Carolina	885	1.02%	2.14%	0.42%	1.24%	2.49%	0.67%	1.02%	1.79%	0.56%	1.13%	4.55%	0.98%
South Dakota	893	3.70%	5.38%	0.91%	2.35%	4.96%	1.32%	2.35%	4.96%	1.31%	2.02%	5.02%	2.13%
Tennessee	896	2.12%	4.37%	0.78%	2.01%	4.02%	0.93%	2.01%	4.02%	0.90%	1.12%	2.28%	0.23%
Texas	3,631	1.05%	2.47%	0.46%	0.66%	1.47%	0.23%	0.72%	1.68%	0.29%	0.36%	0.89%	0.13%
Utah	910	0.44%	0.74%	0.17%	0.11%	0.22%	0.13%	0.11%	0.22%	0.13%	0.11%	0.14%	0.04%
Vermont	924	1.62%	3.82%	0.70%	1.62%	2.57%	0.63%	1.84%	2.45%	0.66%	0.87%	1.23%	0.15%
Virginia	902	0.55%	2.37%	0.21%	0.33%	0.83%	0.21%	0.33%	0.83%	0.25%	1.44%	6.46%	1.08%
Washington	886	1.02%	2.82%	0.43%	1.69%	3.36%	0.66%	1.81%	3.52%	0.68%	2.03%	6.00%	1.25%
West Virginia	909	1.43%	2.41%	0.72%	1.10%	1.25%	0.39%	1.10%	1.25%	0.39%	2.20%	2.03%	0.87%
Wisconsin	917	1.74%	2.17%	0.57%	1.53%	3.55%	1.08%	1.64%	3.61%	1.09%	2.62%	9.41%	1.40%
Wyoming	857	1.63%	4.92%	2.01%	0.82%	1.22%	0.44%	0.93%	1.34%	0.42%	0.70%	2.65%	1.22%

<sup>1</sup> Before res.per.nr (Weight1\*...\*Weight11) and after res.per.nr (Weight1\*...\*Weight12) used demographic variables from screener data for all respondents.  
<sup>2</sup> Before res.per.ps (Weight1\*...\*Weight12) and after res.per.ps (Weight1\*...\*Weight13) used demographic variables from questionnaire data for all respondents.  
<sup>3</sup> 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.  
<sup>4</sup> Outwinsor weight percentage =  $100 * \sum_k (w_{ok} - b_k) / \sum_k w_k$ , where  $b_k$  denotes the cutoff point for defining the extreme weight.



## **Appendix H: Evaluation of Calibration Weights: Slippage Rates**



**Table H.1 2004 NSDUH Slippage Rates: UNITED STATES**

Domain		<i>n</i>	Initial Total (I) <sup>1</sup>	Final Total (F) <sup>2</sup>	Census Total (C)	(I-C)/C %	(F-C)/C %
<b>Total</b>		67,760	240,514,815	240,514,815	240,514,815	0.00	0.00
<i>Quarter</i>	<b>Quarter 1</b>	16,940	59,862,016	59,862,016	59,862,016	0.00	0.00
	<b>Quarter 2</b>	18,562	60,031,598	60,031,598	60,031,598	0.00	0.00
	<b>Quarter 3</b>	16,527	60,218,546	60,218,546	60,218,546	0.00	-0.00
	<b>Quarter 4</b>	15,731	60,402,654	60,402,654	60,402,654	0.00	0.00
<i>Age Group</i>	<b>12-17</b>	22,301	25,267,379	25,214,390	25,214,390	0.21	0.00
	<b>18-25</b>	22,829	31,987,554	32,193,946	32,193,946	-0.64	0.00
	<b>26-34</b>	6,574	34,939,809	34,974,783	34,974,783	-0.10	0.00
	<b>35-49</b>	9,951	65,489,467	65,127,619	65,127,619	0.56	0.00
	<b>50-64</b>	3,712	51,153,527	48,325,066	48,325,066	5.85	0.00
	<b>65+</b>	2,393	31,677,079	34,679,010	34,679,010	-8.66	-0.00
<i>Race</i>	<b>White</b>	51,878	188,354,471	195,788,106	195,788,107	-3.80	-0.00
	<b>Black</b>	8,667	28,974,394	28,810,810	28,810,810	0.57	0.00
	<b>Other</b>	7,215	23,185,950	15,915,898	15,915,898	45.68	0.00
<i>Hispanicity</i>	<b>Hispanic</b>	9,388	31,492,280	31,029,520	31,029,520	1.49	-0.00
	<b>Non-Hispanic</b>	58,372	209,022,535	209,485,294	209,485,294	-0.22	0.00
<i>Gender</i>	<b>Male</b>	32,696	116,460,455	116,482,567	116,482,567	-0.02	-0.00
	<b>Female</b>	35,064	124,054,360	124,032,247	124,032,247	0.02	0.00

MSA = metropolitan statistical area.

<sup>1</sup> Weight1\*...\*Weight12 (before person poststratification).<sup>2</sup> Weight1\*...\*Weight13 (after person poststratification).

Source: SAMHSA, Office of Applied Studies, National Survey on Drug Use and Health.

**Table H.2 2004 NSDUH Slippage Rates: ALABAMA**

Domain		<i>n</i>	Initial Total (I) <sup>1</sup>	Final Total (F) <sup>2</sup>	Census Total (C)	(I-C)/C%	(F-C)/C%
<b>Total</b>		880	3,740,924	3,740,924	3,740,924	0.00	-0.00
<i>Quarter</i>	<b>Quarter 1</b>	258	932,410	932,410	932,410	0.00	0.00
	<b>Quarter 2</b>	204	934,387	934,387	934,387	0.00	-0.00
	<b>Quarter 3</b>	202	936,288	936,288	936,288	-0.00	0.00
	<b>Quarter 4</b>	216	937,838	937,838	937,838	0.00	0.00
<i>Age Group</i>	<b>12-17</b>	299	378,187	380,438	380,438	-0.59	0.00
	<b>18-25</b>	276	523,343	506,024	506,024	3.42	0.00
	<b>26-34</b>	93	503,586	524,078	524,078	-3.91	0.00
	<b>35-49</b>	138	980,492	975,069	975,069	0.56	-0.00
	<b>50-64</b>	42	782,619	782,301	782,301	0.04	0.00
	<b>65+</b>	32	572,697	573,014	573,014	-0.06	0.00
<i>Race</i>	<b>White</b>	545	2,700,895	2,723,922	2,723,922	-0.85	0.00
	<b>Black</b>	312	928,790	936,748	936,748	-0.85	0.00
	<b>Other</b>	23	111,239	80,254	80,254	38.61	-0.00
<i>Hispanicity</i>	<b>Hispanic</b>	29	102,834	98,666	72,410	42.02	36.26
	<b>Non-Hispanic</b>	851	3,638,090	3,642,257	3,668,514	-0.83	-0.72
<i>Gender</i>	<b>Male</b>	426	1,777,151	1,781,201	1,781,201	-0.23	-0.00
	<b>Female</b>	454	1,963,773	1,959,723	1,959,723	0.21	0.00

MSA = metropolitan statistical area.

<sup>1</sup> Weight1\*...\*Weight12 (before person poststratification).<sup>2</sup> Weight1\*...\*Weight13 (after person poststratification).

Source: SAMHSA, Office of Applied Studies, National Survey on Drug Use and Health.

**Table H.3 2004 NSDUH Slippage Rates: ALASKA**

Domain		<i>n</i>	Initial Total (I) <sup>1</sup>	Final Total (F) <sup>2</sup>	Census Total (C)	(I-C)/C %	(F-C)/C %
<b>Total</b>		894	511,059	511,059	511,059	0.00	0.00
<i>Quarter</i>	<b>Quarter 1</b>	303	127,000	127,000	127,000	0.00	0.00
	<b>Quarter 2</b>	210	127,402	127,402	127,402	0.00	0.00
	<b>Quarter 3</b>	158	127,963	127,963	127,963	-0.00	0.00
	<b>Quarter 4</b>	223	128,694	128,694	128,694	0.00	0.00
<i>Age Group</i>	<b>12-17</b>	303	68,871	68,234	68,234	0.93	0.00
	<b>18-25</b>	305	70,806	71,635	71,635	-1.16	0.00
	<b>26-34</b>	78	67,730	66,656	66,656	1.61	0.00
	<b>35-49</b>	143	152,900	152,289	152,289	0.40	0.00
	<b>50-64</b>	52	124,594	111,101	111,101	12.14	0.00
	<b>65+</b>	13	26,159	41,144	41,144	-36.42	0.00
<i>Race</i>	<b>White</b>	613	378,156	373,071	373,071	1.36	0.00
	<b>Black</b>	13	8,319	14,948	14,948	-44.35	0.00
	<b>Other</b>	268	124,585	123,040	123,040	1.26	0.00
<i>Hispanicity</i>	<b>Hispanic</b>	46	22,135	21,504	21,504	2.93	0.00
	<b>Non-Hispanic</b>	848	488,924	489,555	489,555	-0.13	0.00
<i>Gender</i>	<b>Male</b>	450	256,232	256,232	256,232	0.00	0.00
	<b>Female</b>	444	254,827	254,827	254,827	0.00	0.00

MSA = metropolitan statistical area.

<sup>1</sup> Weight1\*...\*Weight12 (before person poststratification).<sup>2</sup> Weight1\*...\*Weight13 (after person poststratification).

Source: SAMHSA, Office of Applied Studies, National Survey on Drug Use and Health.

**Table H.4 2004 NSDUH Slippage Rates: ARIZONA**

Domain		<i>n</i>	Initial Total (I) <sup>1</sup>	Final Total (F) <sup>2</sup>	Census Total (C)	(I-C)/C%	(F-C)/C%
<b>Total</b>		903	4,616,821	4,616,821	4,616,821	-0.00	0.00
<i>Quarter</i>	<b>Quarter 1</b>	243	1,141,170	1,141,170	1,141,170	0.00	0.00
	<b>Quarter 2</b>	264	1,149,880	1,149,880	1,149,880	0.00	0.00
	<b>Quarter 3</b>	141	1,158,656	1,158,656	1,158,656	0.00	0.00
	<b>Quarter 4</b>	255	1,167,115	1,167,115	1,167,115	-0.00	0.00
<i>Age Group</i>	<b>12-17</b>	308	509,452	504,134	504,134	1.05	0.00
	<b>18-25</b>	278	642,717	632,441	632,441	1.62	0.00
	<b>26-34</b>	96	714,434	724,592	724,592	-1.40	0.00
	<b>35-49</b>	126	1,172,258	1,158,672	1,158,672	1.17	0.00
	<b>50-64</b>	51	856,425	877,465	877,465	-2.40	0.00
	<b>65+</b>	44	721,534	719,519	719,519	0.28	0.00
<i>Race</i>	<b>White</b>	739	3,953,314	4,086,221	4,086,221	-3.25	-0.00
	<b>Black</b>	29	136,351	151,834	151,834	-10.20	0.00
	<b>Other</b>	135	527,156	378,766	378,766	39.18	0.00
<i>Hispanicity</i>	<b>Hispanic</b>	266	1,165,637	1,159,207	1,159,207	0.55	0.00
	<b>Non-Hispanic</b>	637	3,451,185	3,457,614	3,457,614	-0.19	0.00
<i>Gender</i>	<b>Male</b>	431	2,273,012	2,275,382	2,275,382	-0.10	0.00
	<b>Female</b>	472	2,343,809	2,341,440	2,341,440	0.10	0.00

MSA = metropolitan statistical area.

<sup>1</sup> Weight1\*...\*Weight12 (before person poststratification).<sup>2</sup> Weight1\*...\*Weight13 (after person poststratification).

Source: SAMHSA, Office of Applied Studies, National Survey on Drug Use and Health.

**Table H.5 2004 NSDUH Slippage Rates: ARKANSAS**

Domain		<i>n</i>	Initial Total (I) <sup>1</sup>	Final Total (F) <sup>2</sup>	Census Total (C)	(I-C)/C %	(F-C)/C %
<b>Total</b>		900	2,259,150	2,259,150	2,259,150	0.00	-0.00
<i>Quarter</i>	<b>Quarter 1</b>	215	562,476	562,476	562,476	0.00	-0.00
	<b>Quarter 2</b>	235	564,090	564,090	564,090	0.00	-0.00
	<b>Quarter 3</b>	228	565,628	565,628	565,628	0.00	0.00
	<b>Quarter 4</b>	222	566,956	566,956	566,956	0.00	0.00
<i>Age Group</i>	<b>12-17</b>	301	232,639	232,624	232,624	0.01	-0.00
	<b>18-25</b>	310	310,878	309,270	309,270	0.52	0.00
	<b>26-34</b>	91	304,254	313,759	313,759	-3.03	-0.00
	<b>35-49</b>	115	572,987	572,379	572,379	0.11	0.00
	<b>50-64</b>	42	419,259	469,808	469,808	-10.76	0.00
	<b>65+</b>	41	419,133	361,311	361,311	16.00	-0.00
<i>Race</i>	<b>White</b>	674	1,779,665	1,866,658	1,866,658	-4.66	-0.00
	<b>Black</b>	165	333,833	330,312	330,312	1.07	-0.00
	<b>Other</b>	61	145,652	62,180	62,180	134.24	0.00
<i>Hispanicity</i>	<b>Hispanic</b>	34	85,904	86,877	86,877	-1.12	-0.00
	<b>Non-Hispanic</b>	866	2,173,246	2,172,273	2,172,273	0.04	0.00
<i>Gender</i>	<b>Male</b>	422	1,093,377	1,091,283	1,091,283	0.19	-0.00
	<b>Female</b>	478	1,165,773	1,167,867	1,167,867	-0.18	0.00

MSA = metropolitan statistical area.

<sup>1</sup> Weight1\*...\*Weight12 (before person poststratification).<sup>2</sup> Weight1\*...\*Weight13 (after person poststratification).

Source: SAMHSA, Office of Applied Studies, National Survey on Drug Use and Health.

**Table H.6 2004 NSDUH Slippage Rates: CALIFORNIA**

Domain		<i>n</i>	Initial Total (I) <sup>1</sup>	Final Total (F) <sup>2</sup>	Census Total (C)	(I-C)/C%	(F-C)/C%
<b>Total</b>		3,725	29,016,735	29,016,735	29,016,735	0.00	0.00
<i>Quarter</i>	<b>Quarter 1</b>	859	7,215,334	7,215,334	7,215,334	0.00	0.00
	<b>Quarter 2</b>	1,085	7,239,235	7,239,235	7,239,235	0.00	0.00
	<b>Quarter 3</b>	817	7,266,671	7,266,671	7,266,671	0.00	0.00
	<b>Quarter 4</b>	964	7,295,495	7,295,495	7,295,495	0.00	0.00
<i>Age Group</i>	<b>12-17</b>	1,258	3,283,609	3,256,862	3,256,862	0.82	0.00
	<b>18-25</b>	1,220	3,866,969	3,971,071	3,971,071	-2.62	0.00
	<b>26-34</b>	404	4,647,422	4,621,110	4,621,110	0.57	0.00
	<b>35-49</b>	565	8,181,781	8,006,793	8,006,793	2.19	0.00
	<b>50-64</b>	176	5,637,374	5,452,462	5,452,462	3.39	0.00
	<b>65+</b>	102	3,399,581	3,708,437	3,708,437	-8.33	0.00
<i>Race</i>	<b>White</b>	2,532	19,815,677	22,423,153	22,423,153	-11.63	0.00
	<b>Black</b>	300	1,941,565	1,874,197	1,874,197	3.59	-0.00
	<b>Other</b>	893	7,259,493	4,719,385	4,719,385	53.82	0.00
<i>Hispanicity</i>	<b>Hispanic</b>	1,586	9,587,461	9,262,445	9,262,445	3.51	0.00
	<b>Non-Hispanic</b>	2,139	19,429,274	19,754,290	19,754,290	-1.65	0.00
<i>Gender</i>	<b>Male</b>	1,827	14,251,421	14,260,124	14,260,124	-0.06	0.00
	<b>Female</b>	1,898	14,765,315	14,756,611	14,756,611	0.06	0.00

MSA = metropolitan statistical area.

<sup>1</sup> Weight1\*...\*Weight12 (before person poststratification).<sup>2</sup> Weight1\*...\*Weight13 (after person poststratification).

Source: SAMHSA, Office of Applied Studies, National Survey on Drug Use and Health.

**Table H.7 2004 NSDUH Slippage Rates: COLORADO**

Domain		<i>n</i>	Initial Total (I) <sup>1</sup>	Final Total (F) <sup>2</sup>	Census Total (C)	(I-C)/C %	(F-C)/C %
<b>Total</b>		934	3,735,710	3,735,710	3,735,710	0.00	0.00
<i>Quarter</i>	<b>Quarter 1</b>	197	929,486	929,486	929,486	0.00	0.00
	<b>Quarter 2</b>	251	932,164	932,164	932,164	0.00	0.00
	<b>Quarter 3</b>	269	935,333	935,333	935,333	0.00	0.00
	<b>Quarter 4</b>	217	938,728	938,728	938,728	-0.00	0.00
<i>Age Group</i>	<b>12-17</b>	306	388,018	392,567	392,567	-1.16	0.00
	<b>18-25</b>	357	500,708	502,509	502,509	-0.36	0.00
	<b>26-34</b>	89	622,579	629,341	629,341	-1.07	0.00
	<b>35-49</b>	108	1,062,024	1,045,407	1,045,407	1.59	0.00
	<b>50-64</b>	49	820,285	731,776	731,776	12.10	0.00
	<b>65+</b>	25	342,097	434,111	434,111	-21.20	0.00
<i>Race</i>	<b>White</b>	767	3,282,224	3,401,653	3,401,653	-3.51	0.00
	<b>Black</b>	53	131,678	139,111	139,111	-5.34	0.00
	<b>Other</b>	114	321,808	194,946	194,946	65.08	0.00
<i>Hispanicity</i>	<b>Hispanic</b>	260	635,481	645,171	645,171	-1.50	0.00
	<b>Non-Hispanic</b>	674	3,100,229	3,090,539	3,090,539	0.31	0.00
<i>Gender</i>	<b>Male</b>	468	1,858,406	1,858,406	1,858,406	0.00	0.00
	<b>Female</b>	466	1,877,304	1,877,304	1,877,304	0.00	0.00

MSA = metropolitan statistical area.

<sup>1</sup> Weight1\*...\*Weight12 (before person poststratification).<sup>2</sup> Weight1\*...\*Weight13 (after person poststratification).

Source: SAMHSA, Office of Applied Studies, National Survey on Drug Use and Health.

**Table H.8 2004 NSDUH Slippage Rates: CONNECTICUT**

Domain		<i>n</i>	Initial Total (I) <sup>1</sup>	Final Total (F) <sup>2</sup>	Census Total (C)	(I-C)/C%	(F-C)/C%
<b>Total</b>		897	2,901,872	2,901,872	2,901,872	0.00	0.00
<i>Quarter</i>	<b>Quarter 1</b>	171	723,581	723,581	723,581	0.00	0.00
	<b>Quarter 2</b>	249	724,675	724,675	724,675	0.00	0.00
	<b>Quarter 3</b>	260	726,086	726,086	726,086	0.00	0.00
	<b>Quarter 4</b>	217	727,530	727,530	727,530	0.00	0.00
<i>Age Group</i>	<b>12-17</b>	312	300,362	297,475	297,475	0.97	0.00
	<b>18-25</b>	286	345,688	340,627	340,627	1.49	0.00
	<b>26-34</b>	87	360,661	360,739	360,739	-0.02	0.00
	<b>35-49</b>	132	826,988	842,502	842,502	-1.84	0.00
	<b>50-64</b>	45	547,871	616,038	616,038	-11.07	0.00
	<b>65+</b>	35	520,303	444,491	444,491	17.06	0.00
<i>Race</i>	<b>White</b>	684	2,418,284	2,503,386	2,503,386	-3.40	0.00
	<b>Black</b>	121	290,581	269,128	269,128	7.97	0.00
	<b>Other</b>	92	193,007	129,358	129,358	49.20	0.00
<i>Hispanicity</i>	<b>Hispanic</b>	141	316,412	280,164	280,164	12.94	0.00
	<b>Non-Hispanic</b>	756	2,585,460	2,621,708	2,621,708	-1.38	0.00
<i>Gender</i>	<b>Male</b>	436	1,389,216	1,389,978	1,389,978	-0.05	0.00
	<b>Female</b>	461	1,512,656	1,511,894	1,511,894	0.05	0.00

MSA = metropolitan statistical area.

<sup>1</sup> Weight1\*...\*Weight12 (before person poststratification).<sup>2</sup> Weight1\*...\*Weight13 (after person poststratification).

Source: SAMHSA, Office of Applied Studies, National Survey on Drug Use and Health.

**Table H.9 2004 NSDUH Slippage Rates: DELAWARE**

Domain		<i>n</i>	Initial Total (I) <sup>1</sup>	Final Total (F) <sup>2</sup>	Census Total (C)	(I-C)/C %	(F-C)/C %
<b>Total</b>		932	688,666	688,666	688,666	0.00	0.00
<i>Quarter</i>	<b>Quarter 1</b>	220	170,989	170,989	170,989	0.00	0.00
	<b>Quarter 2</b>	273	171,782	171,782	171,782	0.00	0.00
	<b>Quarter 3</b>	233	172,574	172,574	172,574	0.00	0.00
	<b>Quarter 4</b>	206	173,322	173,322	173,322	0.00	0.00
<i>Age Group</i>	<b>12-17</b>	296	67,735	67,017	67,017	1.07	-0.00
	<b>18-25</b>	330	92,986	91,920	91,920	1.16	-0.00
	<b>26-34</b>	98	87,977	95,204	95,204	-7.59	-0.00
	<b>35-49</b>	124	193,793	188,350	188,350	2.89	-0.00
	<b>50-64</b>	50	150,006	141,635	141,635	5.91	-0.00
	<b>65+</b>	34	96,169	104,540	104,540	-8.01	0.00
<i>Race</i>	<b>White</b>	648	521,645	529,106	529,106	-1.41	0.00
	<b>Black</b>	212	127,858	132,053	132,053	-3.18	-0.00
	<b>Other</b>	72	39,163	27,508	27,508	42.37	-0.00
<i>Hispanicity</i>	<b>Hispanic</b>	96	34,530	35,217	35,217	-1.95	0.00
	<b>Non-Hispanic</b>	836	654,136	653,449	653,449	0.11	-0.00
<i>Gender</i>	<b>Male</b>	457	329,490	329,490	329,490	0.00	-0.00
	<b>Female</b>	475	359,177	359,177	359,177	0.00	0.00

MSA = metropolitan statistical area.

<sup>1</sup> Weight1\*...\*Weight12 (before person poststratification).<sup>2</sup> Weight1\*...\*Weight13 (after person poststratification).

Source: SAMHSA, Office of Applied Studies, National Survey on Drug Use and Health.

**Table H.10 2004 NSDUH Slippage Rates: DISTRICT OF COLUMBIA**

Domain		<i>n</i>	Initial Total (I) <sup>1</sup>	Final Total (F) <sup>2</sup>	Census Total (C)	(I-C)/C%	(F-C)/C%
<b>Total</b>		903	466,433	466,433	466,433	0.00	-0.00
<i>Quarter</i>	<b>Quarter 1</b>	248	117,002	117,002	117,002	0.00	0.00
	<b>Quarter 2</b>	261	116,742	116,742	116,742	0.00	0.00
	<b>Quarter 3</b>	178	116,489	116,489	116,489	0.00	-0.00
	<b>Quarter 4</b>	216	116,199	116,199	116,199	-0.00	0.00
<i>Age Group</i>	<b>12-17</b>	291	33,936	33,936	33,936	0.00	0.00
	<b>18-25</b>	319	65,850	67,513	67,513	-2.46	0.00
	<b>26-34</b>	80	92,058	94,161	94,161	-2.23	0.00
	<b>35-49</b>	135	117,953	116,971	116,971	0.84	0.00
	<b>50-64</b>	45	83,845	90,393	90,393	-7.24	-0.00
	<b>65+</b>	33	72,790	63,460	63,460	14.70	0.00
<i>Race</i>	<b>White</b>	272	166,630	183,154	183,154	-9.02	0.00
	<b>Black</b>	531	265,273	259,726	259,726	2.14	-0.00
	<b>Other</b>	100	34,530	23,553	23,553	46.61	0.00
<i>Hispanicity</i>	<b>Hispanic</b>	95	42,480	38,491	38,492	10.36	-0.00
	<b>Non-Hispanic</b>	808	423,952	427,941	427,941	-0.93	0.00
<i>Gender</i>	<b>Male</b>	425	215,398	215,235	215,235	0.08	0.00
	<b>Female</b>	478	251,034	251,198	251,198	-0.07	-0.00

MSA = metropolitan statistical area.

<sup>1</sup> Weight1\*...\*Weight12 (before person poststratification).<sup>2</sup> Weight1\*...\*Weight13 (after person poststratification).

Source: SAMHSA, Office of Applied Studies, National Survey on Drug Use and Health.

**Table H.11 2004 NSDUH Slippage Rates: FLORIDA**

Domain		<i>n</i>	Initial Total (I) <sup>1</sup>	Final Total (F) <sup>2</sup>	Census Total (C)	(I-C)/C %	(F-C)/C %
<b>Total</b>		3,662	14,478,447	14,478,448	14,478,448	-0.00	0.00
<i>Quarter</i>	<b>Quarter 1</b>	943	3,586,108	3,586,108	3,586,108	-0.00	0.00
	<b>Quarter 2</b>	990	3,607,158	3,607,158	3,607,158	0.00	0.00
	<b>Quarter 3</b>	887	3,630,551	3,630,551	3,630,551	-0.00	0.00
	<b>Quarter 4</b>	842	3,654,630	3,654,631	3,654,631	-0.00	0.00
<i>Age Group</i>	<b>12-17</b>	1,248	1,393,037	1,392,381	1,392,381	0.05	0.00
	<b>18-25</b>	1,180	1,687,296	1,690,586	1,690,586	-0.19	0.00
	<b>26-34</b>	297	1,870,895	1,868,768	1,868,768	0.11	0.00
	<b>35-49</b>	558	3,759,548	3,715,864	3,715,864	1.18	0.00
	<b>50-64</b>	203	3,119,682	2,964,920	2,964,920	5.22	0.00
	<b>65+</b>	176	2,647,990	2,845,928	2,845,928	-6.96	-0.00
<i>Race</i>	<b>White</b>	2,718	11,564,423	11,916,384	11,916,384	-2.95	0.00
	<b>Black</b>	671	2,089,098	2,054,583	2,054,583	1.68	0.00
	<b>Other</b>	273	824,926	507,481	507,481	62.55	0.00
<i>Hispanicity</i>	<b>Hispanic</b>	967	2,586,962	2,671,667	2,671,667	-3.17	0.00
	<b>Non-Hispanic</b>	2,695	11,891,486	11,806,780	11,806,780	0.72	0.00
<i>Gender</i>	<b>Male</b>	1,821	6,966,244	6,967,339	6,967,339	-0.02	0.00
	<b>Female</b>	1,841	7,512,204	7,511,109	7,511,109	0.01	0.00

MSA = metropolitan statistical area.

<sup>1</sup> Weight1\*...\*Weight12 (before person poststratification).<sup>2</sup> Weight1\*...\*Weight13 (after person poststratification).

Source: SAMHSA, Office of Applied Studies, National Survey on Drug Use and Health.

**Table H.12 2004 NSDUH Slippage Rates: GEORGIA**

Domain		<i>n</i>	Initial Total (I) <sup>1</sup>	Final Total (F) <sup>2</sup>	Census Total (C)	(I-C)/C%	(F-C)/C%
<b>Total</b>		890	7,063,198	7,063,198	7,063,198	0.00	0.00
<i>Quarter</i>	<b>Quarter 1</b>	189	1,753,932	1,753,932	1,753,932	0.00	0.00
	<b>Quarter 2</b>	281	1,761,818	1,761,818	1,761,818	0.00	0.00
	<b>Quarter 3</b>	256	1,769,837	1,769,837	1,769,837	-0.00	0.00
	<b>Quarter 4</b>	164	1,777,611	1,777,611	1,777,611	0.00	0.00
<i>Age Group</i>	<b>12-17</b>	281	771,501	770,391	770,391	0.14	0.00
	<b>18-25</b>	313	946,761	974,428	974,428	-2.84	0.00
	<b>26-34</b>	104	1,249,788	1,181,173	1,181,173	5.81	0.00
	<b>35-49</b>	115	1,873,802	1,981,119	1,981,119	-5.42	0.00
	<b>50-64</b>	56	1,690,697	1,344,615	1,344,615	25.74	0.00
	<b>65+</b>	21	530,649	811,472	811,472	-34.61	0.00
<i>Race</i>	<b>White</b>	566	4,639,251	4,790,592	4,790,592	-3.16	0.00
	<b>Black</b>	273	1,996,060	2,000,847	2,000,847	-0.24	-0.00
	<b>Other</b>	51	427,887	271,760	271,760	57.45	0.00
<i>Hispanicity</i>	<b>Hispanic</b>	92	476,541	436,416	436,416	9.19	0.00
	<b>Non-Hispanic</b>	798	6,586,657	6,626,783	6,626,783	-0.61	0.00
<i>Gender</i>	<b>Male</b>	449	3,412,320	3,409,115	3,409,115	0.09	0.00
	<b>Female</b>	441	3,650,878	3,654,084	3,654,084	-0.09	0.00

MSA = metropolitan statistical area.

<sup>1</sup> Weight1\*...\*Weight12 (before person poststratification).<sup>2</sup> Weight1\*...\*Weight13 (after person poststratification).

Source: SAMHSA, Office of Applied Studies, National Survey on Drug Use and Health.

**Table H.13 2004 NSDUH Slippage Rates: HAWAII**

Domain		<i>n</i>	Initial Total (I) <sup>1</sup>	Final Total (F) <sup>2</sup>	Census Total (C)	(I-C)/C %	(F-C)/C %
<b>Total</b>		903	1,014,184	1,014,184	1,014,184	0.00	0.00
<i>Quarter</i>	<b>Quarter 1</b>	215	251,870	251,870	251,870	0.00	0.00
	<b>Quarter 2</b>	298	252,609	252,609	252,609	0.00	0.00
	<b>Quarter 3</b>	201	253,943	253,943	253,943	0.00	0.00
	<b>Quarter 4</b>	189	255,761	255,761	255,761	0.00	0.00
<i>Age Group</i>	<b>12-17</b>	290	99,971	100,117	100,117	-0.15	0.00
	<b>18-25</b>	302	119,445	121,874	121,874	-1.99	0.00
	<b>26-34</b>	96	132,179	131,163	131,163	0.77	0.00
	<b>35-49</b>	138	270,582	263,471	263,471	2.70	0.00
	<b>50-64</b>	53	269,194	228,708	228,708	17.70	0.00
	<b>65+</b>	24	122,813	168,850	168,850	-27.27	0.00
<i>Race</i>	<b>White</b>	190	240,480	263,034	263,034	-8.57	0.00
	<b>Black</b>	16	15,057	14,517	14,517	3.72	-0.00
	<b>Other</b>	697	758,647	736,634	736,634	2.99	0.00
<i>Hispanicity</i>	<b>Hispanic</b>	142	100,935	66,022	66,022	52.88	0.00
	<b>Non-Hispanic</b>	761	913,249	948,162	948,162	-3.68	0.00
<i>Gender</i>	<b>Male</b>	425	486,777	486,777	486,777	0.00	0.00
	<b>Female</b>	478	527,407	527,407	527,407	0.00	0.00

MSA = metropolitan statistical area.

<sup>1</sup> Weight1\*...\*Weight12 (before person poststratification).<sup>2</sup> Weight1\*...\*Weight13 (after person poststratification).

Source: SAMHSA, Office of Applied Studies, National Survey on Drug Use and Health.

**Table H.14 2004 NSDUH Slippage Rates: IDAHO**

Domain		<i>n</i>	Initial Total (I) <sup>1</sup>	Final Total (F) <sup>2</sup>	Census Total (C)	(I-C)/C%	(F-C)/C%
<b>Total</b>		902	1,125,089	1,125,089	1,125,089	0.00	0.00
<i>Quarter</i>	<b>Quarter 1</b>	255	278,970	278,970	278,970	0.00	0.00
	<b>Quarter 2</b>	208	280,540	280,540	280,540	0.00	0.00
	<b>Quarter 3</b>	240	282,073	282,073	282,073	0.00	0.00
	<b>Quarter 4</b>	199	283,506	283,506	283,506	0.00	0.00
<i>Age Group</i>	<b>12-17</b>	278	127,144	127,641	127,641	-0.39	0.00
	<b>18-25</b>	315	169,788	170,720	170,720	-0.55	0.00
	<b>26-34</b>	91	160,387	159,428	159,428	0.60	0.00
	<b>35-49</b>	131	287,432	286,963	286,963	0.16	0.00
	<b>50-64</b>	56	244,629	227,064	227,064	7.74	0.00
	<b>65+</b>	31	135,710	153,274	153,274	-11.46	0.00
<i>Race</i>	<b>White</b>	846	1,067,898	1,078,805	1,078,805	-1.01	0.00
	<b>Black</b>	2	2,437	5,072	5,072	-51.94	-0.00
	<b>Other</b>	54	54,754	41,213	41,213	32.85	0.00
<i>Hispanicity</i>	<b>Hispanic</b>	107	89,072	88,262	88,262	0.92	0.00
	<b>Non-Hispanic</b>	795	1,036,017	1,036,827	1,036,827	-0.08	0.00
<i>Gender</i>	<b>Male</b>	410	556,245	556,245	556,245	0.00	0.00
	<b>Female</b>	492	568,845	568,845	568,845	0.00	0.00

MSA = metropolitan statistical area.

<sup>1</sup> Weight1\*...\*Weight12 (before person poststratification).<sup>2</sup> Weight1\*...\*Weight13 (after person poststratification).

Source: SAMHSA, Office of Applied Studies, National Survey on Drug Use and Health.

**Table H.15 2004 NSDUH Slippage Rates: ILLINOIS**

Domain		<i>n</i>	Initial Total (I) <sup>1</sup>	Final Total (F) <sup>2</sup>	Census Total (C)	(I-C)/C %	(F-C)/C %
<b>Total</b>		3,575	10,387,581	10,387,581	10,387,581	-0.00	-0.00
<i>Quarter</i>	<b>Quarter 1</b>	928	2,590,304	2,590,304	2,590,304	-0.00	0.00
	<b>Quarter 2</b>	973	2,594,309	2,594,309	2,594,309	0.00	0.00
	<b>Quarter 3</b>	834	2,599,110	2,599,110	2,599,110	-0.00	-0.00
	<b>Quarter 4</b>	840	2,603,857	2,603,857	2,603,857	0.00	-0.00
<i>Age Group</i>	<b>12-17</b>	1,167	1,098,044	1,096,436	1,096,436	0.15	0.00
	<b>18-25</b>	1,205	1,399,928	1,405,081	1,405,081	-0.37	0.00
	<b>26-34</b>	330	1,575,179	1,593,619	1,593,619	-1.16	0.00
	<b>35-49</b>	547	2,878,195	2,824,986	2,824,986	1.88	0.00
	<b>50-64</b>	196	2,104,115	2,029,691	2,029,691	3.67	-0.00
	<b>65+</b>	130	1,332,120	1,437,767	1,437,767	-7.35	-0.00
<i>Race</i>	<b>White</b>	2,693	7,939,587	8,367,461	8,367,461	-5.11	-0.00
	<b>Black</b>	536	1,471,273	1,471,965	1,471,965	-0.05	0.00
	<b>Other</b>	346	976,720	548,155	548,155	78.18	0.00
<i>Hispanicity</i>	<b>Hispanic</b>	555	1,331,468	1,322,492	1,322,492	0.68	-0.00
	<b>Non-Hispanic</b>	3,020	9,056,112	9,065,089	9,065,089	-0.10	0.00
<i>Gender</i>	<b>Male</b>	1,714	5,044,201	5,039,015	5,039,015	0.10	-0.00
	<b>Female</b>	1,861	5,343,379	5,348,566	5,348,566	-0.10	0.00

MSA = metropolitan statistical area.

<sup>1</sup> Weight1\*...\*Weight12 (before person poststratification).<sup>2</sup> Weight1\*...\*Weight13 (after person poststratification).

Source: SAMHSA, Office of Applied Studies, National Survey on Drug Use and Health.

**Table H.16 2004 NSDUH Slippage Rates: INDIANA**

Domain		<i>n</i>	Initial Total (I) <sup>1</sup>	Final Total (F) <sup>2</sup>	Census Total (C)	(I-C)/C%	(F-C)/C%
<b>Total</b>		891	5,098,367	5,098,367	5,098,367	0.00	0.00
<i>Quarter</i>	<b>Quarter 1</b>	206	1,270,779	1,270,779	1,270,779	0.00	0.00
	<b>Quarter 2</b>	262	1,273,170	1,273,170	1,273,170	0.00	-0.00
	<b>Quarter 3</b>	228	1,275,897	1,275,897	1,275,897	-0.00	-0.00
	<b>Quarter 4</b>	195	1,278,522	1,278,522	1,278,522	0.00	0.00
<i>Age Group</i>	<b>12-17</b>	284	547,819	547,819	547,820	-0.00	-0.00
	<b>18-25</b>	315	697,870	712,431	712,431	-2.04	-0.00
	<b>26-34</b>	73	739,503	724,942	724,942	2.01	-0.00
	<b>35-49</b>	129	1,353,187	1,362,520	1,362,520	-0.69	0.00
	<b>50-64</b>	56	1,128,393	1,024,524	1,024,524	10.14	-0.00
	<b>65+</b>	34	631,595	726,130	726,130	-13.02	0.00
<i>Race</i>	<b>White</b>	781	4,553,786	4,566,340	4,566,340	-0.27	-0.00
	<b>Black</b>	79	419,810	415,330	415,330	1.08	0.00
	<b>Other</b>	31	124,770	116,697	116,697	6.92	0.00
<i>Hispanicity</i>	<b>Hispanic</b>	53	155,605	198,433	198,433	-21.58	-0.00
	<b>Non-Hispanic</b>	838	4,942,762	4,899,934	4,899,934	0.87	0.00
<i>Gender</i>	<b>Male</b>	430	2,482,379	2,482,379	2,482,379	0.00	-0.00
	<b>Female</b>	461	2,615,988	2,615,988	2,615,988	0.00	0.00

MSA = metropolitan statistical area.

<sup>1</sup> Weight1\*...\*Weight12 (before person poststratification).<sup>2</sup> Weight1\*...\*Weight13 (after person poststratification).

Source: SAMHSA, Office of Applied Studies, National Survey on Drug Use and Health.

**Table H.17 2004 NSDUH Slippage Rates: IOWA**

Domain		<i>n</i>	Initial Total (I) <sup>1</sup>	Final Total (F) <sup>2</sup>	Census Total (C)	(I-C)/C %	(F-C)/C %
<b>Total</b>		890	2,468,073	2,468,073	2,468,073	0.00	-0.00
<i>Quarter</i>	<b>Quarter 1</b>	266	615,494	615,494	615,494	0.00	0.00
	<b>Quarter 2</b>	209	616,644	616,644	616,644	0.00	-0.00
	<b>Quarter 3</b>	209	617,661	617,661	617,661	0.00	0.00
	<b>Quarter 4</b>	206	618,274	618,274	618,274	0.00	0.00
<i>Age Group</i>	<b>12-17</b>	317	240,159	241,677	241,677	-0.63	0.00
	<b>18-25</b>	279	348,938	354,834	354,834	-1.66	0.00
	<b>26-34</b>	79	320,800	321,846	321,846	-0.33	-0.00
	<b>35-49</b>	131	648,520	640,059	640,060	1.32	-0.00
	<b>50-64</b>	49	527,457	506,866	506,866	4.06	-0.00
	<b>65+</b>	35	382,200	402,791	402,791	-5.11	-0.00
<i>Race</i>	<b>White</b>	845	2,345,965	2,358,984	2,358,984	-0.55	0.00
	<b>Black</b>	24	60,433	50,312	50,312	20.12	-0.00
	<b>Other</b>	21	61,675	58,778	58,778	4.93	0.00
<i>Hispanicity</i>	<b>Hispanic</b>	37	69,803	75,904	75,904	-8.04	0.00
	<b>Non-Hispanic</b>	853	2,398,271	2,392,169	2,392,170	0.26	-0.00
<i>Gender</i>	<b>Male</b>	393	1,207,148	1,207,148	1,207,148	0.00	-0.00
	<b>Female</b>	497	1,260,925	1,260,925	1,260,925	0.00	0.00

MSA = metropolitan statistical area.

<sup>1</sup> Weight1\*...\*Weight12 (before person poststratification).<sup>2</sup> Weight1\*...\*Weight13 (after person poststratification).

Source: SAMHSA, Office of Applied Studies, National Survey on Drug Use and Health.

**Table H.18 2004 NSDUH Slippage Rates: KANSAS**

Domain		<i>n</i>	Initial Total (I) <sup>1</sup>	Final Total (F) <sup>2</sup>	Census Total (C)	(I-C)/C%	(F-C)/C%
<b>Total</b>		828	2,226,734	2,226,734	2,226,734	0.00	-0.00
<i>Quarter</i>	<b>Quarter 1</b>	208	555,466	555,466	555,466	0.00	-0.00
	<b>Quarter 2</b>	241	556,305	556,304	556,305	0.00	-0.00
	<b>Quarter 3</b>	181	557,152	557,152	557,152	0.00	0.00
	<b>Quarter 4</b>	198	557,812	557,812	557,812	0.00	0.00
<i>Age Group</i>	<b>12-17</b>	278	234,176	235,602	235,602	-0.61	-0.00
	<b>18-25</b>	278	326,898	326,635	326,635	0.08	-0.00
	<b>26-34</b>	77	303,279	308,493	308,493	-1.69	0.00
	<b>35-49</b>	121	591,080	584,703	584,703	1.09	0.00
	<b>50-64</b>	45	483,008	441,301	441,301	9.45	0.00
	<b>65+</b>	29	288,292	330,000	330,000	-12.64	-0.00
<i>Race</i>	<b>White</b>	693	1,969,255	2,010,264	2,010,264	-2.04	0.00
	<b>Black</b>	63	124,386	119,578	119,578	4.02	-0.00
	<b>Other</b>	72	133,093	96,893	96,893	37.36	-0.00
<i>Hispanicity</i>	<b>Hispanic</b>	84	160,190	159,778	159,778	0.26	0.00
	<b>Non-Hispanic</b>	744	2,066,545	2,066,956	2,066,956	-0.02	-0.00
<i>Gender</i>	<b>Male</b>	389	1,089,390	1,089,390	1,089,390	0.00	0.00
	<b>Female</b>	439	1,137,344	1,137,344	1,137,344	0.00	-0.00

MSA = metropolitan statistical area.

<sup>1</sup> Weight1\*...\*Weight12 (before person poststratification).<sup>2</sup> Weight1\*...\*Weight13 (after person poststratification).

Source: SAMHSA, Office of Applied Studies, National Survey on Drug Use and Health.

**Table H.19 2004 NSDUH Slippage Rates: KENTUCKY**

Domain		<i>n</i>	Initial Total (I) <sup>1</sup>	Final Total (F) <sup>2</sup>	Census Total (C)	(I-C)/C %	(F-C)/C %
<b>Total</b>		933	3,421,489	3,421,489	3,421,489	0.00	0.00
<i>Quarter</i>	<b>Quarter 1</b>	238	852,573	852,573	852,573	0.00	0.00
	<b>Quarter 2</b>	238	854,529	854,529	854,529	0.00	0.00
	<b>Quarter 3</b>	204	856,419	856,419	856,419	0.00	0.00
	<b>Quarter 4</b>	253	857,968	857,968	857,968	0.00	0.00
<i>Age Group</i>	<b>12-17</b>	299	339,166	336,208	336,208	0.88	0.00
	<b>18-25</b>	323	458,971	454,337	454,337	1.02	0.00
	<b>26-34</b>	70	470,698	494,011	494,011	-4.72	-0.00
	<b>35-49</b>	151	933,740	923,191	923,191	1.14	0.00
	<b>50-64</b>	63	833,427	721,305	721,305	15.54	0.00
	<b>65+</b>	27	385,487	492,437	492,437	-21.72	0.00
<i>Race</i>	<b>White</b>	833	3,108,332	3,121,588	3,121,588	-0.42	0.00
	<b>Black</b>	75	230,141	236,402	236,402	-2.65	-0.00
	<b>Other</b>	25	83,015	63,499	63,499	30.74	0.00
<i>Hispanicity</i>	<b>Hispanic</b>	26	66,201	80,438	56,613	16.94	42.08
	<b>Non-Hispanic</b>	907	3,355,288	3,341,051	3,364,876	-0.28	-0.71
<i>Gender</i>	<b>Male</b>	472	1,651,301	1,651,301	1,651,301	0.00	0.00
	<b>Female</b>	461	1,770,188	1,770,188	1,770,188	0.00	0.00

MSA = metropolitan statistical area.

<sup>1</sup> Weight1\*...\*Weight12 (before person poststratification).<sup>2</sup> Weight1\*...\*Weight13 (after person poststratification).

Source: SAMHSA, Office of Applied Studies, National Survey on Drug Use and Health.

**Table H.20 2004 NSDUH Slippage Rates: LOUISIANA**

Domain		<i>n</i>	Initial Total (I) <sup>1</sup>	Final Total (F) <sup>2</sup>	Census Total (C)	(I-C)/C%	(F-C)/C%
<b>Total</b>		933	3,646,863	3,646,863	3,646,863	0.00	0.00
<i>Quarter</i>	<b>Quarter 1</b>	209	909,407	909,407	909,407	0.00	0.00
	<b>Quarter 2</b>	225	911,041	911,041	911,041	0.00	0.00
	<b>Quarter 3</b>	221	912,595	912,595	912,595	-0.00	0.00
	<b>Quarter 4</b>	278	913,819	913,819	913,819	0.00	0.00
<i>Age Group</i>	<b>12-17</b>	288	402,381	401,563	401,563	0.20	0.00
	<b>18-25</b>	340	537,648	546,374	546,374	-1.60	0.00
	<b>26-34</b>	95	517,587	509,679	509,679	1.55	0.00
	<b>35-49</b>	116	950,405	955,510	955,510	-0.53	0.00
	<b>50-64</b>	55	753,689	735,051	735,051	2.54	0.00
	<b>65+</b>	39	485,152	498,686	498,686	-2.71	0.00
<i>Race</i>	<b>White</b>	581	2,427,428	2,416,000	2,416,000	0.47	0.00
	<b>Black</b>	314	1,118,759	1,131,590	1,131,590	-1.13	0.00
	<b>Other</b>	38	100,675	99,272	99,272	1.41	0.00
<i>Hispanicity</i>	<b>Hispanic</b>	28	106,961	98,524	98,524	8.56	0.00
	<b>Non-Hispanic</b>	905	3,539,902	3,548,339	3,548,339	-0.24	0.00
<i>Gender</i>	<b>Male</b>	436	1,727,846	1,728,685	1,728,685	-0.05	0.00
	<b>Female</b>	497	1,919,017	1,918,177	1,918,177	0.04	0.00

MSA = metropolitan statistical area.

<sup>1</sup> Weight1\*...\*Weight12 (before person poststratification).<sup>2</sup> Weight1\*...\*Weight13 (after person poststratification).

Source: SAMHSA, Office of Applied Studies, National Survey on Drug Use and Health.

**Table H.21 2004 NSDUH Slippage Rates: MAINE**

Domain		<i>n</i>	Initial Total (I) <sup>1</sup>	Final Total (F) <sup>2</sup>	Census Total (C)	(I-C)/C %	(F-C)/C %
<b>Total</b>		896	1,127,062	1,127,062	1,127,062	0.00	0.00
<i>Quarter</i>	<b>Quarter 1</b>	214	280,764	280,764	280,764	0.00	-0.00
	<b>Quarter 2</b>	267	281,440	281,440	281,440	0.00	0.00
	<b>Quarter 3</b>	223	282,129	282,129	282,129	0.00	0.00
	<b>Quarter 4</b>	192	282,730	282,730	282,730	0.00	-0.00
<i>Age Group</i>	<b>12-17</b>	291	110,175	109,324	109,324	0.78	0.00
	<b>18-25</b>	309	134,549	136,314	136,314	-1.29	0.00
	<b>26-34</b>	82	127,769	128,586	128,586	-0.64	0.00
	<b>35-49</b>	141	316,122	314,392	314,392	0.55	0.00
	<b>50-64</b>	48	307,560	257,380	257,380	19.50	0.00
	<b>65+</b>	25	130,885	181,066	181,066	-27.71	-0.00
<i>Race</i>	<b>White</b>	817	1,087,722	1,096,669	1,096,669	-0.82	0.00
	<b>Black</b>	9	4,655	6,787	6,787	-31.41	0.00
	<b>Other</b>	70	34,685	23,606	23,606	46.94	0.00
<i>Hispanicity</i>	<b>Hispanic</b>	14	8,267	9,452	9,452	-12.54	-0.00
	<b>Non-Hispanic</b>	882	1,118,795	1,117,610	1,117,610	0.11	0.00
<i>Gender</i>	<b>Male</b>	451	544,721	544,721	544,721	0.00	-0.00
	<b>Female</b>	445	582,341	582,341	582,341	0.00	0.00

MSA = metropolitan statistical area.

<sup>1</sup> Weight1\*...\*Weight12 (before person poststratification).<sup>2</sup> Weight1\*...\*Weight13 (after person poststratification).

Source: SAMHSA, Office of Applied Studies, National Survey on Drug Use and Health.

**Table H.22 2004 NSDUH Slippage Rates: MARYLAND**

Domain		<i>n</i>	Initial Total (I) <sup>1</sup>	Final Total (F) <sup>2</sup>	Census Total (C)	(I-C)/C%	(F-C)/C%
<b>Total</b>		901	4,557,984	4,557,984	4,557,984	0.00	0.00
<i>Quarter</i>	<b>Quarter 1</b>	220	1,134,930	1,134,930	1,134,930	0.00	0.00
	<b>Quarter 2</b>	220	1,137,511	1,137,511	1,137,511	0.00	0.00
	<b>Quarter 3</b>	260	1,140,860	1,140,860	1,140,860	0.00	0.00
	<b>Quarter 4</b>	201	1,144,683	1,144,683	1,144,683	0.00	0.00
<i>Age Group</i>	<b>12-17</b>	308	487,164	490,535	490,535	-0.69	0.00
	<b>18-25</b>	299	569,351	564,517	564,517	0.86	0.00
	<b>26-34</b>	96	615,667	622,299	622,299	-1.07	0.00
	<b>35-49</b>	146	1,363,541	1,315,705	1,315,705	3.64	0.00
	<b>50-64</b>	33	1,061,547	954,860	954,860	11.17	-0.00
	<b>65+</b>	19	460,715	610,068	610,068	-24.48	0.00
<i>Race</i>	<b>White</b>	528	2,911,941	2,996,380	2,996,380	-2.82	-0.00
	<b>Black</b>	284	1,383,866	1,275,972	1,275,972	8.46	0.00
	<b>Other</b>	89	262,177	285,632	285,632	-8.21	0.00
<i>Hispanicity</i>	<b>Hispanic</b>	69	221,797	228,426	228,426	-2.90	0.00
	<b>Non-Hispanic</b>	832	4,336,187	4,329,558	4,329,558	0.15	0.00
<i>Gender</i>	<b>Male</b>	445	2,159,301	2,159,301	2,159,301	0.00	0.00
	<b>Female</b>	456	2,398,684	2,398,684	2,398,684	0.00	0.00

MSA = metropolitan statistical area.

<sup>1</sup> Weight1\*...\*Weight12 (before person poststratification).<sup>2</sup> Weight1\*...\*Weight13 (after person poststratification).

Source: SAMHSA, Office of Applied Studies, National Survey on Drug Use and Health.

**Table H.23 2004 NSDUH Slippage Rates: MASSACHUSETTS**

Domain		<i>n</i>	Initial Total (I) <sup>1</sup>	Final Total (F) <sup>2</sup>	Census Total (C)	(I-C)/C %	(F-C)/C %
<b>Total</b>		877	5,380,703	5,380,703	5,380,703	0.00	0.00
<i>Quarter</i>	<b>Quarter 1</b>	246	1,344,611	1,344,611	1,344,611	0.00	0.00
	<b>Quarter 2</b>	285	1,344,800	1,344,800	1,344,800	0.00	0.00
	<b>Quarter 3</b>	168	1,345,409	1,345,409	1,345,409	0.00	0.00
	<b>Quarter 4</b>	178	1,345,883	1,345,883	1,345,883	0.00	0.00
<i>Age Group</i>	<b>12-17</b>	280	509,384	511,108	511,108	-0.34	0.00
	<b>18-25</b>	301	669,383	678,194	678,194	-1.30	0.00
	<b>26-34</b>	85	780,562	784,944	784,944	-0.56	0.00
	<b>35-49</b>	136	1,525,680	1,521,244	1,521,244	0.29	0.00
	<b>50-64</b>	46	1,124,448	1,083,546	1,083,546	3.77	0.00
	<b>65+</b>	29	771,246	801,667	801,667	-3.79	0.00
<i>Race</i>	<b>White</b>	737	4,649,671	4,723,344	4,723,344	-1.56	0.00
	<b>Black</b>	63	327,858	339,218	336,504	-2.57	0.81
	<b>Other</b>	77	403,174	318,140	320,854	25.66	-0.85
<i>Hispanicity</i>	<b>Hispanic</b>	98	437,179	371,687	371,687	17.62	0.00
	<b>Non-Hispanic</b>	779	4,943,523	5,009,015	5,009,015	-1.31	0.00
<i>Gender</i>	<b>Male</b>	407	2,581,332	2,579,519	2,579,519	0.07	0.00
	<b>Female</b>	470	2,799,371	2,801,183	2,801,183	-0.06	0.00

MSA = metropolitan statistical area.

<sup>1</sup> Weight1\*...\*Weight12 (before person poststratification).<sup>2</sup> Weight1\*...\*Weight13 (after person poststratification).

Source: SAMHSA, Office of Applied Studies, National Survey on Drug Use and Health.

**Table H.24 2004 NSDUH Slippage Rates: MICHIGAN**

Domain		<i>n</i>	Initial Total (I) <sup>1</sup>	Final Total (F) <sup>2</sup>	Census Total (C)	(I-C)/C%	(F-C)/C%
<b>Total</b>		3,670	8,364,197	8,364,197	8,364,197	-0.00	0.00
<i>Quarter</i>	<b>Quarter 1</b>	809	2,086,653	2,086,653	2,086,653	0.00	0.00
	<b>Quarter 2</b>	1,019	2,089,360	2,089,360	2,089,360	-0.00	0.00
	<b>Quarter 3</b>	890	2,092,583	2,092,583	2,092,583	-0.00	0.00
	<b>Quarter 4</b>	952	2,095,601	2,095,601	2,095,601	0.00	0.00
<i>Age Group</i>	<b>12-17</b>	1,270	904,749	906,283	906,283	-0.17	0.00
	<b>18-25</b>	1,260	1,107,663	1,113,043	1,113,043	-0.48	0.00
	<b>26-34</b>	346	1,160,916	1,149,069	1,149,069	1.03	0.00
	<b>35-49</b>	493	2,271,972	2,281,566	2,281,566	-0.42	0.00
	<b>50-64</b>	186	1,812,758	1,715,031	1,715,031	5.70	0.00
	<b>65+</b>	115	1,106,139	1,199,205	1,199,205	-7.76	-0.00
<i>Race</i>	<b>White</b>	2,970	6,835,219	6,916,329	6,916,329	-1.17	0.00
	<b>Black</b>	493	1,117,133	1,122,410	1,122,410	-0.47	0.00
	<b>Other</b>	207	411,845	325,458	325,458	26.54	0.00
<i>Hispanicity</i>	<b>Hispanic</b>	170	283,026	278,455	278,455	1.64	0.00
	<b>Non-Hispanic</b>	3,500	8,081,171	8,085,742	8,085,742	-0.06	-0.00
<i>Gender</i>	<b>Male</b>	1,781	4,054,543	4,054,543	4,054,543	-0.00	0.00
	<b>Female</b>	1,889	4,309,654	4,309,654	4,309,654	-0.00	0.00

MSA = metropolitan statistical area.

<sup>1</sup> Weight1\*...\*Weight12 (before person poststratification).<sup>2</sup> Weight1\*...\*Weight13 (after person poststratification).

Source: SAMHSA, Office of Applied Studies, National Survey on Drug Use and Health.

**Table H.25 2004 NSDUH Slippage Rates: MINNESOTA**

Domain		<i>n</i>	Initial Total (I) <sup>1</sup>	Final Total (F) <sup>2</sup>	Census Total (C)	(I-C)/C %	(F-C)/C %
<b>Total</b>		907	4,237,627	4,237,627	4,237,627	0.00	0.00
<i>Quarter</i>	<b>Quarter 1</b>	225	1,055,545	1,055,545	1,055,545	0.00	0.00
	<b>Quarter 2</b>	207	1,058,108	1,058,108	1,058,108	0.00	0.00
	<b>Quarter 3</b>	260	1,060,771	1,060,771	1,060,771	0.00	0.00
	<b>Quarter 4</b>	215	1,063,203	1,063,203	1,063,203	0.00	0.00
<i>Age Group</i>	<b>12-17</b>	302	435,768	440,475	440,475	-1.07	0.00
	<b>18-25</b>	282	598,197	594,051	594,051	0.70	0.00
	<b>26-34</b>	89	592,131	601,955	601,955	-1.63	0.00
	<b>35-49</b>	149	1,198,940	1,188,554	1,188,554	0.87	0.00
	<b>50-64</b>	56	928,696	835,739	835,739	11.12	0.00
	<b>65+</b>	29	483,896	576,853	576,853	-16.11	0.00
<i>Race</i>	<b>White</b>	799	3,831,534	3,858,689	3,858,689	-0.70	0.00
	<b>Black</b>	39	159,595	155,444	155,444	2.67	-0.00
	<b>Other</b>	69	246,497	223,493	223,493	10.29	0.00
<i>Hispanicity</i>	<b>Hispanic</b>	42	97,741	129,313	129,313	-24.41	0.00
	<b>Non-Hispanic</b>	865	4,139,885	4,108,314	4,108,314	0.77	0.00
<i>Gender</i>	<b>Male</b>	468	2,087,623	2,088,439	2,088,439	-0.04	0.00
	<b>Female</b>	439	2,150,004	2,149,188	2,149,188	0.04	0.00

MSA = metropolitan statistical area.

<sup>1</sup> Weight1\*...\*Weight12 (before person poststratification).<sup>2</sup> Weight1\*...\*Weight13 (after person poststratification).

Source: SAMHSA, Office of Applied Studies, National Survey on Drug Use and Health.

**Table H.26 2004 NSDUH Slippage Rates: MISSISSIPPI**

Domain		<i>n</i>	Initial Total (I) <sup>1</sup>	Final Total (F) <sup>2</sup>	Census Total (C)	(I-C)/C%	(F-C)/C%
<b>Total</b>		914	2,341,802	2,341,802	2,341,802	0.00	0.00
<i>Quarter</i>	<b>Quarter 1</b>	227	583,442	583,442	583,442	0.00	0.00
	<b>Quarter 2</b>	287	584,871	584,871	584,871	0.00	0.00
	<b>Quarter 3</b>	247	586,200	586,200	586,200	-0.00	0.00
	<b>Quarter 4</b>	153	587,289	587,289	587,289	0.00	0.00
<i>Age Group</i>	<b>12-17</b>	276	255,886	255,992	255,992	-0.04	0.00
	<b>18-25</b>	365	359,865	350,329	350,329	2.72	0.00
	<b>26-34</b>	82	327,221	332,806	332,806	-1.68	0.00
	<b>35-49</b>	122	594,363	601,256	601,256	-1.15	0.00
	<b>50-64</b>	44	508,112	467,299	467,299	8.73	0.00
	<b>65+</b>	25	296,355	334,120	334,120	-11.30	0.00
<i>Race</i>	<b>White</b>	477	1,475,258	1,483,538	1,483,538	-0.56	0.00
	<b>Black</b>	419	825,551	818,066	818,066	0.91	0.00
	<b>Other</b>	18	40,993	40,198	40,198	1.98	0.00
<i>Hispanicity</i>	<b>Hispanic</b>	21	43,048	70,195	36,405	18.25	92.82
	<b>Non-Hispanic</b>	893	2,298,754	2,271,607	2,305,397	-0.29	-1.47
<i>Gender</i>	<b>Male</b>	408	1,104,836	1,109,312	1,109,312	-0.40	0.00
	<b>Female</b>	506	1,236,965	1,232,490	1,232,490	0.36	0.00

MSA = metropolitan statistical area.

<sup>1</sup> Weight1\*...\*Weight12 (before person poststratification).<sup>2</sup> Weight1\*...\*Weight13 (after person poststratification).

Source: SAMHSA, Office of Applied Studies, National Survey on Drug Use and Health.

**Table H.27 2004 NSDUH Slippage Rates: MISSOURI**

Domain		<i>n</i>	Initial Total (I) <sup>1</sup>	Final Total (F) <sup>2</sup>	Census Total (C)	(I-C)/C %	(F-C)/C %
<b>Total</b>		897	4,751,346	4,751,346	4,751,346	0.00	-0.00
<i>Quarter</i>	<b>Quarter 1</b>	257	1,183,979	1,183,979	1,183,979	0.00	-0.00
	<b>Quarter 2</b>	226	1,186,599	1,186,599	1,186,599	0.00	0.00
	<b>Quarter 3</b>	201	1,189,249	1,189,249	1,189,249	0.00	0.00
	<b>Quarter 4</b>	213	1,191,519	1,191,519	1,191,519	0.00	0.00
<i>Age Group</i>	<b>12-17</b>	294	496,543	488,189	488,189	1.71	-0.00
	<b>18-25</b>	295	651,881	650,694	650,694	0.18	0.00
	<b>26-34</b>	84	641,093	655,135	655,135	-2.14	0.00
	<b>35-49</b>	146	1,269,057	1,264,556	1,264,556	0.36	0.00
	<b>50-64</b>	50	1,043,375	972,275	972,275	7.31	0.00
	<b>65+</b>	28	649,397	720,497	720,497	-9.87	-0.00
<i>Race</i>	<b>White</b>	718	4,127,249	4,109,197	4,109,197	0.44	0.00
	<b>Black</b>	144	500,456	506,851	506,851	-1.26	0.00
	<b>Other</b>	35	123,641	135,298	135,298	-8.62	-0.00
<i>Hispanicity</i>	<b>Hispanic</b>	21	106,463	110,403	110,403	-3.57	0.00
	<b>Non-Hispanic</b>	876	4,644,883	4,640,943	4,640,943	0.08	-0.00
<i>Gender</i>	<b>Male</b>	415	2,277,300	2,287,258	2,287,258	-0.44	0.00
	<b>Female</b>	482	2,474,046	2,464,088	2,464,088	0.40	-0.00

MSA = metropolitan statistical area.

<sup>1</sup> Weight1\*...\*Weight12 (before person poststratification).<sup>2</sup> Weight1\*...\*Weight13 (after person poststratification).

Source: SAMHSA, Office of Applied Studies, National Survey on Drug Use and Health.

**Table H.28 2004 NSDUH Slippage Rates: MONTANA**

Domain		<i>n</i>	Initial Total (I) <sup>1</sup>	Final Total (F) <sup>2</sup>	Census Total (C)	(I-C)/C%	(F-C)/C%
<b>Total</b>		907	781,536	781,536	781,536	0.00	0.00
<i>Quarter</i>	<b>Quarter 1</b>	233	194,415	194,415	194,415	0.00	0.00
	<b>Quarter 2</b>	209	195,119	195,119	195,119	0.00	0.00
	<b>Quarter 3</b>	245	195,748	195,748	195,748	-0.00	0.00
	<b>Quarter 4</b>	220	196,255	196,255	196,255	0.00	0.00
<i>Age Group</i>	<b>12-17</b>	277	78,581	78,581	78,581	0.00	0.00
	<b>18-25</b>	320	108,390	108,216	108,216	0.16	0.00
	<b>26-34</b>	98	92,711	92,322	92,322	0.42	0.00
	<b>35-49</b>	135	197,413	202,682	202,682	-2.60	0.00
	<b>50-64</b>	46	181,330	179,699	179,699	0.91	0.00
	<b>65+</b>	31	123,110	120,036	120,036	2.56	0.00
<i>Race</i>	<b>White</b>	801	722,032	720,131	720,131	0.26	0.00
	<b>Black</b>	2	640	2,052	2,052	-68.83	0.00
	<b>Other</b>	104	58,865	59,353	59,353	-0.82	0.00
<i>Hispanicity</i>	<b>Hispanic</b>	33	17,542	16,329	16,329	7.42	0.00
	<b>Non-Hispanic</b>	874	763,994	765,207	765,207	-0.16	0.00
<i>Gender</i>	<b>Male</b>	432	385,903	385,903	385,903	0.00	0.00
	<b>Female</b>	475	395,633	395,633	395,633	0.00	0.00

MSA = metropolitan statistical area.

<sup>1</sup> Weight1\*...\*Weight12 (before person poststratification).<sup>2</sup> Weight1\*...\*Weight13 (after person poststratification).

Source: SAMHSA, Office of Applied Studies, National Survey on Drug Use and Health.

**Table H.29 2004 NSDUH Slippage Rates: NEBRASKA**

Domain		<i>n</i>	Initial Total (I) <sup>1</sup>	Final Total (F) <sup>2</sup>	Census Total (C)	(I-C)/C %	(F-C)/C %
<b>Total</b>		897	1,430,465	1,430,465	1,430,465	0.00	-0.00
<i>Quarter</i>	<b>Quarter 1</b>	201	356,622	356,622	356,622	0.00	0.00
	<b>Quarter 2</b>	274	357,278	357,278	357,278	0.00	0.00
	<b>Quarter 3</b>	243	357,978	357,978	357,978	0.00	0.00
	<b>Quarter 4</b>	179	358,587	358,587	358,587	0.00	-0.00
<i>Age Group</i>	<b>12-17</b>	235	148,767	149,210	149,210	-0.30	0.00
	<b>18-25</b>	340	207,803	210,327	210,327	-1.20	-0.00
	<b>26-34</b>	102	207,891	200,041	200,041	3.92	0.00
	<b>35-49</b>	138	373,394	370,852	370,852	0.69	0.00
	<b>50-64</b>	51	298,153	283,956	283,956	5.00	0.00
	<b>65+</b>	31	194,456	216,079	216,079	-10.01	0.00
<i>Race</i>	<b>White</b>	804	1,323,076	1,329,462	1,329,462	-0.48	0.00
	<b>Black</b>	52	55,788	55,016	55,016	1.40	-0.00
	<b>Other</b>	41	51,601	45,987	45,987	12.21	-0.00
<i>Hispanicity</i>	<b>Hispanic</b>	55	85,946	84,984	84,984	1.13	0.00
	<b>Non-Hispanic</b>	842	1,344,519	1,345,481	1,345,481	-0.07	-0.00
<i>Gender</i>	<b>Male</b>	428	699,948	700,425	700,425	-0.07	0.00
	<b>Female</b>	469	730,517	730,039	730,039	0.07	-0.00

MSA = metropolitan statistical area.

<sup>1</sup> Weight1\*...\*Weight12 (before person poststratification).<sup>2</sup> Weight1\*...\*Weight13 (after person poststratification).

Source: SAMHSA, Office of Applied Studies, National Survey on Drug Use and Health.

**Table H.30 2004 NSDUH Slippage Rates: NEVADA**

Domain		<i>n</i>	Initial Total (I) <sup>1</sup>	Final Total (F) <sup>2</sup>	Census Total (C)	(I-C)/C%	(F-C)/C%
<b>Total</b>		888	1,898,843	1,898,843	1,898,843	0.00	0.00
<i>Quarter</i>	<b>Quarter 1</b>	275	467,008	467,008	467,008	0.00	0.00
	<b>Quarter 2</b>	193	472,037	472,037	472,037	0.00	0.00
	<b>Quarter 3</b>	209	477,260	477,260	477,260	0.00	0.00
	<b>Quarter 4</b>	211	482,539	482,539	482,539	0.00	0.00
<i>Age Group</i>	<b>12-17</b>	282	198,450	197,330	197,330	0.57	0.00
	<b>18-25</b>	295	227,367	234,194	234,194	-2.91	0.00
	<b>26-34</b>	100	320,815	315,257	315,257	1.76	0.00
	<b>35-49</b>	138	510,829	510,679	510,679	0.03	0.00
	<b>50-64</b>	42	373,403	383,629	383,629	-2.67	0.00
	<b>65+</b>	31	267,979	257,753	257,753	3.97	0.00
<i>Race</i>	<b>White</b>	684	1,520,935	1,581,596	1,581,596	-3.84	0.00
	<b>Black</b>	57	138,558	134,763	134,763	2.82	0.00
	<b>Other</b>	147	239,349	182,484	182,484	31.16	0.00
<i>Hispanicity</i>	<b>Hispanic</b>	265	385,546	388,691	388,691	-0.81	0.00
	<b>Non-Hispanic</b>	623	1,513,296	1,510,152	1,510,152	0.21	0.00
<i>Gender</i>	<b>Male</b>	424	955,872	956,613	956,613	-0.08	0.00
	<b>Female</b>	464	942,970	942,230	942,230	0.08	0.00

MSA = metropolitan statistical area.

<sup>1</sup> Weight1\*...\*Weight12 (before person poststratification).<sup>2</sup> Weight1\*...\*Weight13 (after person poststratification).

Source: SAMHSA, Office of Applied Studies, National Survey on Drug Use and Health.

**Table H.31 2004 NSDUH Slippage Rates: NEW HAMPSHIRE**

Domain		<i>n</i>	Initial Total (I) <sup>1</sup>	Final Total (F) <sup>2</sup>	Census Total (C)	(I-C)/C %	(F-C)/C %
<b>Total</b>		904	1,095,589	1,095,589	1,095,589	0.00	0.00
<i>Quarter</i>	<b>Quarter 1</b>	190	272,628	272,628	272,628	0.00	0.00
	<b>Quarter 2</b>	218	273,385	273,385	273,385	0.00	0.00
	<b>Quarter 3</b>	251	274,296	274,296	274,296	0.00	0.00
	<b>Quarter 4</b>	245	275,280	275,280	275,280	0.00	0.00
<i>Age Group</i>	<b>12-17</b>	294	115,987	115,175	115,175	0.70	0.00
	<b>18-25</b>	279	133,691	136,081	136,081	-1.76	0.00
	<b>26-34</b>	82	134,066	132,488	132,488	1.19	0.00
	<b>35-49</b>	142	323,641	326,834	326,834	-0.98	0.00
	<b>50-64</b>	67	243,535	237,540	237,540	2.52	0.00
	<b>65+</b>	40	144,670	147,472	147,472	-1.90	-0.00
<i>Race</i>	<b>White</b>	858	1,053,482	1,056,647	1,056,647	-0.30	0.00
	<b>Black</b>	11	8,095	9,503	9,503	-14.81	0.00
	<b>Other</b>	35	34,013	29,440	29,440	15.53	0.00
<i>Hispanicity</i>	<b>Hispanic</b>	31	21,481	20,565	20,565	4.46	0.00
	<b>Non-Hispanic</b>	873	1,074,108	1,075,024	1,075,024	-0.09	0.00
<i>Gender</i>	<b>Male</b>	427	539,444	536,631	536,631	0.52	0.00
	<b>Female</b>	477	556,146	558,958	558,958	-0.50	0.00

MSA = metropolitan statistical area.

<sup>1</sup> Weight1\*...\*Weight12 (before person poststratification).<sup>2</sup> Weight1\*...\*Weight13 (after person poststratification).

Source: SAMHSA, Office of Applied Studies, National Survey on Drug Use and Health.

**Table H.32 2004 NSDUH Slippage Rates: NEW JERSEY**

Domain		<i>n</i>	Initial Total (I) <sup>1</sup>	Final Total (F) <sup>2</sup>	Census Total (C)	(I-C)/C%	(F-C)/C%
<b>Total</b>		886	7,172,774	7,172,774	7,172,774	0.00	0.00
<i>Quarter</i>	<b>Quarter 1</b>	170	1,787,869	1,787,869	1,787,869	0.00	0.00
	<b>Quarter 2</b>	267	1,790,797	1,790,797	1,790,797	0.00	0.00
	<b>Quarter 3</b>	309	1,794,822	1,794,822	1,794,822	0.00	0.00
	<b>Quarter 4</b>	140	1,799,287	1,799,287	1,799,287	0.00	0.00
<i>Age Group</i>	<b>12-17</b>	265	741,001	741,001	741,001	0.00	0.00
	<b>18-25</b>	294	822,879	825,494	825,494	-0.32	0.00
	<b>26-34</b>	99	981,908	978,617	978,617	0.34	0.00
	<b>35-49</b>	155	2,104,461	2,085,658	2,085,658	0.90	0.00
	<b>50-64</b>	40	1,409,838	1,464,921	1,464,921	-3.76	0.00
	<b>65+</b>	33	1,112,687	1,077,083	1,077,083	3.31	0.00
<i>Race</i>	<b>White</b>	615	5,300,454	5,598,191	5,598,191	-5.32	-0.00
	<b>Black</b>	131	909,613	973,178	973,178	-6.53	0.00
	<b>Other</b>	140	962,707	601,405	601,405	60.08	0.00
<i>Hispanicity</i>	<b>Hispanic</b>	157	1,012,940	1,012,466	1,012,466	0.05	0.00
	<b>Non-Hispanic</b>	729	6,159,834	6,160,308	6,160,308	-0.01	0.00
<i>Gender</i>	<b>Male</b>	441	3,444,019	3,444,019	3,444,019	-0.00	0.00
	<b>Female</b>	445	3,728,755	3,728,755	3,728,755	0.00	0.00

MSA = metropolitan statistical area.

<sup>1</sup> Weight1\*...\*Weight12 (before person poststratification).<sup>2</sup> Weight1\*...\*Weight13 (after person poststratification).

Source: SAMHSA, Office of Applied Studies, National Survey on Drug Use and Health.

**Table H.33 2004 NSDUH Slippage Rates: NEW MEXICO**

Domain		<i>n</i>	Initial Total (I) <sup>1</sup>	Final Total (F) <sup>2</sup>	Census Total (C)	(I-C)/C %	(F-C)/C %
<b>Total</b>		922	1,552,672	1,552,672	1,552,672	0.00	0.00
<i>Quarter</i>	<b>Quarter 1</b>	202	385,502	385,502	385,502	0.00	0.00
	<b>Quarter 2</b>	260	387,182	387,182	387,182	0.00	0.00
	<b>Quarter 3</b>	238	389,036	389,036	389,036	0.00	-0.00
	<b>Quarter 4</b>	222	390,953	390,953	390,953	0.00	0.00
<i>Age Group</i>	<b>12-17</b>	315	173,671	173,977	173,978	-0.18	-0.00
	<b>18-25</b>	291	220,725	222,316	222,316	-0.72	-0.00
	<b>26-34</b>	98	201,705	203,402	203,402	-0.83	0.00
	<b>35-49</b>	131	417,469	400,441	400,441	4.25	0.00
	<b>50-64</b>	51	298,407	329,395	329,395	-9.41	0.00
	<b>65+</b>	36	240,695	223,142	223,142	7.87	0.00
<i>Race</i>	<b>White</b>	702	1,278,931	1,330,590	1,330,590	-3.88	0.00
	<b>Black</b>	18	36,930	33,066	33,066	11.68	-0.00
	<b>Other</b>	202	236,812	189,016	189,016	25.29	0.00
<i>Hispanicity</i>	<b>Hispanic</b>	463	653,757	645,640	645,640	1.26	-0.00
	<b>Non-Hispanic</b>	459	898,915	907,032	907,032	-0.89	0.00
<i>Gender</i>	<b>Male</b>	446	746,277	750,062	750,062	-0.50	0.00
	<b>Female</b>	476	806,395	802,610	802,610	0.47	0.00

MSA = metropolitan statistical area.

<sup>1</sup> Weight1\*...\*Weight12 (before person poststratification).<sup>2</sup> Weight1\*...\*Weight13 (after person poststratification).

Source: SAMHSA, Office of Applied Studies, National Survey on Drug Use and Health.

**Table H.34 2004 NSDUH Slippage Rates: NEW YORK**

Domain		<i>n</i>	Initial Total (I) <sup>1</sup>	Final Total (F) <sup>2</sup>	Census Total (C)	(I-C)/C%	(F-C)/C%
<b>Total</b>		3,638	15,978,304	15,978,304	15,978,304	0.00	0.00
<i>Quarter</i>	<b>Quarter 1</b>	868	3,991,533	3,991,534	3,991,534	-0.00	0.00
	<b>Quarter 2</b>	1,074	3,992,568	3,992,568	3,992,568	-0.00	0.00
	<b>Quarter 3</b>	792	3,995,454	3,995,454	3,995,454	0.00	0.00
	<b>Quarter 4</b>	904	3,998,749	3,998,749	3,998,749	0.00	0.00
<i>Age Group</i>	<b>12-17</b>	1,143	1,584,054	1,583,424	1,583,424	0.04	0.00
	<b>18-25</b>	1,260	2,050,212	2,048,409	2,048,409	0.09	0.00
	<b>26-34</b>	330	2,293,562	2,330,753	2,330,753	-1.60	0.00
	<b>35-49</b>	570	4,479,316	4,394,944	4,394,944	1.92	0.00
	<b>50-64</b>	194	3,191,001	3,242,951	3,242,951	-1.60	0.00
	<b>65+</b>	141	2,380,159	2,377,824	2,377,824	0.10	0.00
<i>Race</i>	<b>White</b>	2,326	10,731,952	11,972,606	11,972,606	-10.36	-0.00
	<b>Black</b>	682	2,750,017	2,648,596	2,648,596	3.83	0.00
	<b>Other</b>	630	2,496,335	1,357,102	1,357,102	83.95	0.00
<i>Hispanicity</i>	<b>Hispanic</b>	686	2,474,086	2,414,995	2,414,995	2.45	0.00
	<b>Non-Hispanic</b>	2,952	13,504,218	13,563,309	13,563,309	-0.44	0.00
<i>Gender</i>	<b>Male</b>	1,743	7,601,954	7,616,013	7,616,013	-0.18	0.00
	<b>Female</b>	1,895	8,376,350	8,362,291	8,362,291	0.17	0.00

MSA = metropolitan statistical area.

<sup>1</sup> Weight1\*...\*Weight12 (before person poststratification).<sup>2</sup> Weight1\*...\*Weight13 (after person poststratification).

Source: SAMHSA, Office of Applied Studies, National Survey on Drug Use and Health.

**Table H.35 2004 NSDUH Slippage Rates: NORTH CAROLINA**

Domain		<i>n</i>	Initial Total (I) <sup>1</sup>	Final Total (F) <sup>2</sup>	Census Total (C)	(I-C)/C %	(F-C)/C %
<b>Total</b>		869	6,927,805	6,927,805	6,927,805	0.00	0.00
<i>Quarter</i>	<b>Quarter 1</b>	244	1,721,794	1,721,794	1,721,794	0.00	0.00
	<b>Quarter 2</b>	232	1,728,479	1,728,479	1,728,479	0.00	0.00
	<b>Quarter 3</b>	203	1,735,434	1,735,434	1,735,434	0.00	0.00
	<b>Quarter 4</b>	190	1,742,098	1,742,098	1,742,098	0.00	0.00
<i>Age Group</i>	<b>12-17</b>	311	726,640	710,225	710,225	2.31	0.00
	<b>18-25</b>	277	876,677	893,651	893,651	-1.90	0.00
	<b>26-34</b>	98	1,055,170	1,068,333	1,068,333	-1.23	0.00
	<b>35-49</b>	111	1,845,772	1,868,143	1,868,143	-1.20	0.00
	<b>50-64</b>	53	1,794,020	1,402,539	1,402,539	27.91	0.00
	<b>65+</b>	19	629,526	984,914	984,914	-36.08	0.00
<i>Race</i>	<b>White</b>	558	5,038,780	5,225,298	5,225,298	-3.57	-0.00
	<b>Black</b>	234	1,453,197	1,444,090	1,444,090	0.63	0.00
	<b>Other</b>	77	435,828	258,416	258,416	68.65	0.00
<i>Hispanicity</i>	<b>Hispanic</b>	77	379,166	368,930	368,930	2.77	0.00
	<b>Non-Hispanic</b>	792	6,548,639	6,558,875	6,558,875	-0.16	0.00
<i>Gender</i>	<b>Male</b>	419	3,334,356	3,330,245	3,330,245	0.12	0.00
	<b>Female</b>	450	3,593,449	3,597,560	3,597,560	-0.11	0.00

MSA = metropolitan statistical area.

<sup>1</sup> Weight1\*...\*Weight12 (before person poststratification).<sup>2</sup> Weight1\*...\*Weight13 (after person poststratification).

Source: SAMHSA, Office of Applied Studies, National Survey on Drug Use and Health.

**Table H.36 2004 NSDUH Slippage Rates: NORTH DAKOTA**

Domain		<i>n</i>	Initial Total (I) <sup>1</sup>	Final Total (F) <sup>2</sup>	Census Total (C)	(I-C)/C%	(F-C)/C%
<b>Total</b>		911	530,030	530,030	530,030	0.00	0.00
<i>Quarter</i>	<b>Quarter 1</b>	232	132,234	132,234	132,234	0.00	0.00
	<b>Quarter 2</b>	245	132,451	132,451	132,451	0.00	0.00
	<b>Quarter 3</b>	216	132,626	132,626	132,626	0.00	0.00
	<b>Quarter 4</b>	218	132,719	132,719	132,719	0.00	0.00
<i>Age Group</i>	<b>12-17</b>	313	51,041	51,236	51,236	-0.38	0.00
	<b>18-25</b>	316	83,896	83,256	83,256	0.77	0.00
	<b>26-34</b>	70	66,598	67,414	67,414	-1.21	0.00
	<b>35-49</b>	120	133,813	133,441	133,441	0.28	0.00
	<b>50-64</b>	40	87,917	108,544	108,544	-19.00	0.00
	<b>65+</b>	52	106,766	86,139	86,139	23.95	-0.00
<i>Race</i>	<b>White</b>	827	495,418	496,010	496,010	-0.12	0.00
	<b>Black</b>	4	2,386	2,386	2,386	-0.00	0.00
	<b>Other</b>	80	32,226	31,634	31,634	1.87	0.00
<i>Hispanicity</i>	<b>Hispanic</b>	26	10,435	6,840	6,840	52.55	0.00
	<b>Non-Hispanic</b>	885	519,595	523,190	523,190	-0.69	0.00
<i>Gender</i>	<b>Male</b>	474	261,786	261,495	261,495	0.11	0.00
	<b>Female</b>	437	268,244	268,535	268,535	-0.11	0.00

MSA = metropolitan statistical area.

<sup>1</sup> Weight1\*...\*Weight12 (before person poststratification).<sup>2</sup> Weight1\*...\*Weight13 (after person poststratification).

Source: SAMHSA, Office of Applied Studies, National Survey on Drug Use and Health.

**Table H.37 2004 NSDUH Slippage Rates: OHIO**

Domain		<i>n</i>	Initial Total (I) <sup>1</sup>	Final Total (F) <sup>2</sup>	Census Total (C)	(I-C)/C %	(F-C)/C %
<b>Total</b>		3,613	9,489,788	9,489,788	9,489,788	0.00	0.00
<i>Quarter</i>	<b>Quarter 1</b>	1,006	2,368,493	2,368,493	2,368,493	0.00	0.00
	<b>Quarter 2</b>	891	2,371,035	2,371,035	2,371,035	0.00	0.00
	<b>Quarter 3</b>	790	2,373,945	2,373,945	2,373,945	0.00	0.00
	<b>Quarter 4</b>	926	2,376,316	2,376,316	2,376,316	0.00	0.00
<i>Age Group</i>	<b>12-17</b>	1,242	982,426	982,106	982,106	0.03	0.00
	<b>18-25</b>	1,177	1,253,564	1,258,053	1,258,053	-0.36	0.00
	<b>26-34</b>	333	1,314,357	1,288,440	1,288,440	2.01	0.00
	<b>35-49</b>	524	2,531,208	2,556,865	2,556,865	-1.00	0.00
	<b>50-64</b>	209	2,088,583	1,965,436	1,965,436	6.27	0.00
	<b>65+</b>	128	1,319,649	1,438,888	1,438,888	-8.29	0.00
<i>Race</i>	<b>White</b>	2,979	8,185,453	8,199,854	8,199,854	-0.18	0.00
	<b>Black</b>	458	1,033,225	1,046,531	1,046,531	-1.27	0.00
	<b>Other</b>	176	271,110	243,403	243,403	11.38	0.00
<i>Hispanicity</i>	<b>Hispanic</b>	108	187,159	190,147	190,147	-1.57	0.00
	<b>Non-Hispanic</b>	3,505	9,302,629	9,299,641	9,299,641	0.03	0.00
<i>Gender</i>	<b>Male</b>	1,693	4,565,657	4,565,900	4,565,900	-0.01	0.00
	<b>Female</b>	1,920	4,924,131	4,923,888	4,923,888	0.00	0.00

MSA = metropolitan statistical area.

<sup>1</sup> Weight1\*...\*Weight12 (before person poststratification).<sup>2</sup> Weight1\*...\*Weight13 (after person poststratification).

Source: SAMHSA, Office of Applied Studies, National Survey on Drug Use and Health.

**Table H.38 2004 NSDUH Slippage Rates: OKLAHOMA**

Domain		<i>n</i>	Initial Total (I) <sup>1</sup>	Final Total (F) <sup>2</sup>	Census Total (C)	(I-C)/C%	(F-C)/C%
<b>Total</b>		867	2,867,524	2,867,524	2,867,524	0.00	0.00
<i>Quarter</i>	<b>Quarter 1</b>	208	715,010	715,010	715,010	0.00	0.00
	<b>Quarter 2</b>	275	716,311	716,311	716,311	0.00	0.00
	<b>Quarter 3</b>	236	717,596	717,596	717,596	0.00	0.00
	<b>Quarter 4</b>	148	718,606	718,606	718,606	0.00	0.00
<i>Age Group</i>	<b>12-17</b>	288	293,667	293,667	293,667	0.00	0.00
	<b>18-25</b>	322	413,439	417,990	417,990	-1.09	0.00
	<b>26-34</b>	71	394,918	399,376	399,376	-1.12	0.00
	<b>35-49</b>	107	736,701	727,693	727,693	1.24	0.00
	<b>50-64</b>	46	580,809	590,006	590,006	-1.56	0.00
	<b>65+</b>	33	447,989	438,793	438,793	2.10	-0.00
<i>Race</i>	<b>White</b>	608	2,195,014	2,293,297	2,293,297	-4.29	0.00
	<b>Black</b>	71	184,261	201,631	201,631	-8.61	0.00
	<b>Other</b>	188	488,249	372,595	372,595	31.04	0.00
<i>Hispanicity</i>	<b>Hispanic</b>	80	165,856	160,854	160,854	3.11	0.00
	<b>Non-Hispanic</b>	787	2,701,668	2,706,669	2,706,669	-0.18	0.00
<i>Gender</i>	<b>Male</b>	439	1,387,382	1,387,382	1,387,382	0.00	0.00
	<b>Female</b>	428	1,480,142	1,480,142	1,480,142	0.00	0.00

MSA = metropolitan statistical area.

<sup>1</sup> Weight1\*...\*Weight12 (before person poststratification).<sup>2</sup> Weight1\*...\*Weight13 (after person poststratification).

Source: SAMHSA, Office of Applied Studies, National Survey on Drug Use and Health.

**Table H.39 2004 NSDUH Slippage Rates: OREGON**

Domain		<i>n</i>	Initial Total (I) <sup>1</sup>	Final Total (F) <sup>2</sup>	Census Total (C)	(I-C)/C %	(F-C)/C %
<b>Total</b>		910	3,001,872	3,001,872	3,001,872	0.00	0.00
<i>Quarter</i>	<b>Quarter 1</b>	210	747,672	747,672	747,672	0.00	0.00
	<b>Quarter 2</b>	242	749,555	749,555	749,555	0.00	0.00
	<b>Quarter 3</b>	241	751,474	751,474	751,474	0.00	0.00
	<b>Quarter 4</b>	217	753,171	753,171	753,171	0.00	0.00
<i>Age Group</i>	<b>12-17</b>	311	297,975	297,975	297,975	0.00	0.00
	<b>18-25</b>	310	400,557	394,016	394,016	1.66	0.00
	<b>26-34</b>	79	449,967	448,321	448,321	0.37	0.00
	<b>35-49</b>	133	759,406	773,990	773,990	-1.88	0.00
	<b>50-64</b>	52	770,375	641,204	641,204	20.15	0.00
	<b>65+</b>	25	323,592	446,367	446,367	-27.51	0.00
<i>Race</i>	<b>White</b>	773	2,689,774	2,745,341	2,745,341	-2.02	0.00
	<b>Black</b>	19	50,552	49,309	49,309	2.52	0.00
	<b>Other</b>	118	261,547	207,222	207,222	26.22	0.00
<i>Hispanicity</i>	<b>Hispanic</b>	104	249,897	246,920	246,920	1.21	0.00
	<b>Non-Hispanic</b>	806	2,751,975	2,754,952	2,754,952	-0.11	0.00
<i>Gender</i>	<b>Male</b>	463	1,482,975	1,476,284	1,476,284	0.45	0.00
	<b>Female</b>	447	1,518,898	1,525,588	1,525,588	-0.44	0.00

MSA = metropolitan statistical area.

<sup>1</sup> Weight1\*...\*Weight12 (before person poststratification).<sup>2</sup> Weight1\*...\*Weight13 (after person poststratification).

Source: SAMHSA, Office of Applied Studies, National Survey on Drug Use and Health.

**Table H.40 2004 NSDUH Slippage Rates: PENNSYLVANIA**

Domain		<i>n</i>	Initial Total (I) <sup>1</sup>	Final Total (F) <sup>2</sup>	Census Total (C)	(I-C)/C%	(F-C)/C%
<b>Total</b>		3,590	10,399,693	10,399,693	10,399,693	0.00	0.00
<i>Quarter</i>	<b>Quarter 1</b>	901	2,595,288	2,595,288	2,595,288	0.00	0.00
	<b>Quarter 2</b>	1,005	2,597,879	2,597,879	2,597,879	0.00	0.00
	<b>Quarter 3</b>	807	2,601,526	2,601,526	2,601,526	-0.00	0.00
	<b>Quarter 4</b>	877	2,605,000	2,605,000	2,605,000	0.00	0.00
<i>Age Group</i>	<b>12-17</b>	1,174	1,036,244	1,037,595	1,037,595	-0.13	0.00
	<b>18-25</b>	1,190	1,316,396	1,321,982	1,321,982	-0.42	0.00
	<b>26-34</b>	348	1,284,380	1,285,612	1,285,612	-0.10	0.00
	<b>35-49</b>	494	2,745,827	2,775,877	2,775,877	-1.08	0.00
	<b>50-64</b>	217	2,340,559	2,191,656	2,191,656	6.79	0.00
	<b>65+</b>	167	1,676,287	1,786,972	1,786,972	-6.19	0.00
<i>Race</i>	<b>White</b>	3,006	8,984,651	9,082,301	9,082,302	-1.08	-0.00
	<b>Black</b>	419	1,012,773	1,001,275	1,001,275	1.15	-0.00
	<b>Other</b>	165	402,269	316,116	316,116	27.25	0.00
<i>Hispanicity</i>	<b>Hispanic</b>	167	345,198	352,603	352,603	-2.10	0.00
	<b>Non-Hispanic</b>	3,423	10,054,495	10,047,090	10,047,090	0.07	0.00
<i>Gender</i>	<b>Male</b>	1,729	4,962,773	4,978,406	4,978,406	-0.31	0.00
	<b>Female</b>	1,861	5,436,920	5,421,287	5,421,287	0.29	0.00

MSA = metropolitan statistical area.

<sup>1</sup> Weight1\*...\*Weight12 (before person poststratification).<sup>2</sup> Weight1\*...\*Weight13 (after person poststratification).

Source: SAMHSA, Office of Applied Studies, National Survey on Drug Use and Health.

**Table H.41 2004 NSDUH Slippage Rates: RHODE ISLAND**

Domain		<i>n</i>	Initial Total (I) <sup>1</sup>	Final Total (F) <sup>2</sup>	Census Total (C)	(I-C)/C %	(F-C)/C %
<b>Total</b>		911	907,154	907,154	907,154	0.00	0.00
<i>Quarter</i>	<b>Quarter 1</b>	235	226,468	226,468	226,468	0.00	0.00
	<b>Quarter 2</b>	232	226,687	226,687	226,687	0.00	0.00
	<b>Quarter 3</b>	274	226,919	226,919	226,919	0.00	0.00
	<b>Quarter 4</b>	170	227,080	227,080	227,080	-0.00	0.00
<i>Age Group</i>	<b>12-17</b>	284	87,133	87,882	87,882	-0.85	0.00
	<b>18-25</b>	321	128,620	127,105	127,105	1.19	0.00
	<b>26-34</b>	101	117,766	119,867	119,867	-1.75	0.00
	<b>35-49</b>	124	247,408	248,670	248,670	-0.51	0.00
	<b>50-64</b>	48	189,637	182,573	182,573	3.87	0.00
	<b>65+</b>	33	136,590	141,057	141,057	-3.17	0.00
<i>Race</i>	<b>White</b>	747	792,896	816,584	816,584	-2.90	0.00
	<b>Black</b>	52	56,371	50,467	50,467	11.70	0.00
	<b>Other</b>	112	57,887	40,103	40,103	44.35	0.00
<i>Hispanicity</i>	<b>Hispanic</b>	143	87,326	83,218	83,218	4.94	0.00
	<b>Non-Hispanic</b>	768	819,828	823,936	823,936	-0.50	0.00
<i>Gender</i>	<b>Male</b>	434	432,425	432,425	432,425	0.00	0.00
	<b>Female</b>	477	474,729	474,729	474,729	0.00	0.00

MSA = metropolitan statistical area.

<sup>1</sup> Weight1\*...\*Weight12 (before person poststratification).<sup>2</sup> Weight1\*...\*Weight13 (after person poststratification).

Source: SAMHSA, Office of Applied Studies, National Survey on Drug Use and Health.

**Table H.42 2004 NSDUH Slippage Rates: SOUTH CAROLINA**

Domain		<i>n</i>	Initial Total (I) <sup>1</sup>	Final Total (F) <sup>2</sup>	Census Total (C)	(I-C)/C%	(F-C)/C%
<b>Total</b>		885	3,437,860	3,437,860	3,437,860	0.00	0.00
<i>Quarter</i>	<b>Quarter 1</b>	207	854,998	854,998	854,998	0.00	0.00
	<b>Quarter 2</b>	275	857,982	857,982	857,982	0.00	0.00
	<b>Quarter 3</b>	220	861,016	861,016	861,016	0.00	0.00
	<b>Quarter 4</b>	183	863,865	863,865	863,865	0.00	0.00
<i>Age Group</i>	<b>12-17</b>	305	355,334	357,948	357,948	-0.73	0.00
	<b>18-25</b>	257	455,272	463,134	463,134	-1.70	0.00
	<b>26-34</b>	102	504,435	484,739	484,739	4.06	0.00
	<b>35-49</b>	138	883,988	899,750	899,750	-1.75	0.00
	<b>50-64</b>	49	700,771	731,492	731,492	-4.20	0.00
	<b>65+</b>	34	538,061	500,799	500,799	7.44	0.00
<i>Race</i>	<b>White</b>	551	2,415,178	2,399,713	2,399,713	0.64	0.00
	<b>Black</b>	299	953,276	966,047	966,047	-1.32	0.00
	<b>Other</b>	35	69,405	72,100	72,100	-3.74	0.00
<i>Hispanicity</i>	<b>Hispanic</b>	29	108,715	96,755	96,755	12.36	0.00
	<b>Non-Hispanic</b>	856	3,329,145	3,341,105	3,341,105	-0.36	0.00
<i>Gender</i>	<b>Male</b>	416	1,628,114	1,633,782	1,633,782	-0.35	0.00
	<b>Female</b>	469	1,809,746	1,804,078	1,804,078	0.31	0.00

MSA = metropolitan statistical area.

<sup>1</sup> Weight1\*...\*Weight12 (before person poststratification).<sup>2</sup> Weight1\*...\*Weight13 (after person poststratification).

Source: SAMHSA, Office of Applied Studies, National Survey on Drug Use and Health.

**Table H.43 2004 NSDUH Slippage Rates: SOUTH DAKOTA**

Domain		<i>n</i>	Initial Total (I) <sup>1</sup>	Final Total (F) <sup>2</sup>	Census Total (C)	(I-C)/C %	(F-C)/C %
<b>Total</b>		893	630,156	630,156	630,156	0.00	-0.00
<i>Quarter</i>	<b>Quarter 1</b>	245	156,876	156,876	156,876	0.00	-0.00
	<b>Quarter 2</b>	223	157,308	157,308	157,308	0.00	-0.00
	<b>Quarter 3</b>	220	157,766	157,766	157,766	0.00	-0.00
	<b>Quarter 4</b>	205	158,206	158,206	158,206	0.00	-0.00
<i>Age Group</i>	<b>12-17</b>	256	67,040	67,385	67,385	-0.51	-0.00
	<b>18-25</b>	344	93,768	94,181	94,182	-0.44	-0.00
	<b>26-34</b>	77	80,071	79,312	79,312	0.96	0.00
	<b>35-49</b>	130	161,396	161,396	161,396	0.00	0.00
	<b>50-64</b>	48	124,638	125,930	125,930	-1.03	0.00
	<b>65+</b>	38	103,243	101,951	101,951	1.27	-0.00
<i>Race</i>	<b>White</b>	787	564,549	570,514	570,514	-1.05	-0.00
	<b>Black</b>	6	3,816	3,816	3,816	0.00	0.00
	<b>Other</b>	100	61,791	55,826	55,826	10.68	0.00
<i>Hispanicity</i>	<b>Hispanic</b>	15	8,497	10,557	10,557	-19.51	-0.00
	<b>Non-Hispanic</b>	878	621,659	619,600	619,600	0.33	0.00
<i>Gender</i>	<b>Male</b>	419	305,296	309,156	309,156	-1.25	-0.00
	<b>Female</b>	474	324,861	321,000	321,000	1.20	-0.00

MSA = metropolitan statistical area.

<sup>1</sup> Weight1\*...\*Weight12 (before person poststratification).<sup>2</sup> Weight1\*...\*Weight13 (after person poststratification).

Source: SAMHSA, Office of Applied Studies, National Survey on Drug Use and Health.

**Table H.44 2004 NSDUH Slippage Rates: TENNESSEE**

Domain		<i>n</i>	Initial Total (I) <sup>1</sup>	Final Total (F) <sup>2</sup>	Census Total (C)	(I-C)/C%	(F-C)/C%
<b>Total</b>		896	4,888,070	4,888,070	4,888,070	0.00	0.00
<i>Quarter</i>	<b>Quarter 1</b>	195	1,216,712	1,216,712	1,216,712	0.00	0.00
	<b>Quarter 2</b>	245	1,220,304	1,220,304	1,220,304	0.00	0.00
	<b>Quarter 3</b>	255	1,223,901	1,223,901	1,223,901	0.00	0.00
	<b>Quarter 4</b>	201	1,227,154	1,227,154	1,227,154	0.00	0.00
<i>Age Group</i>	<b>12-17</b>	273	476,738	476,738	476,738	0.00	0.00
	<b>18-25</b>	298	647,145	640,352	640,352	1.06	0.00
	<b>26-34</b>	103	722,876	725,666	725,666	-0.38	0.00
	<b>35-49</b>	123	1,310,726	1,314,729	1,314,729	-0.30	0.00
	<b>50-64</b>	54	924,016	1,027,191	1,027,191	-10.04	0.00
	<b>65+</b>	45	806,569	703,395	703,395	14.67	0.00
<i>Race</i>	<b>White</b>	689	3,951,768	4,010,215	4,010,215	-1.46	0.00
	<b>Black</b>	178	758,647	766,464	766,464	-1.02	0.00
	<b>Other</b>	29	177,655	111,391	111,391	59.49	0.00
<i>Hispanicity</i>	<b>Hispanic</b>	18	80,355	40,640	124,510	-35.46	-67.36
	<b>Non-Hispanic</b>	878	4,807,715	4,847,430	4,763,559	0.93	1.76
<i>Gender</i>	<b>Male</b>	433	2,367,418	2,352,723	2,352,723	0.62	0.00
	<b>Female</b>	463	2,520,652	2,535,347	2,535,347	-0.58	0.00

MSA = metropolitan statistical area.

<sup>1</sup> Weight1\*...\*Weight12 (before person poststratification).<sup>2</sup> Weight1\*...\*Weight13 (after person poststratification).

Source: SAMHSA, Office of Applied Studies, National Survey on Drug Use and Health.

**Table H.45 2004 NSDUH Slippage Rates: TEXAS**

Domain		<i>n</i>	Initial Total (I) <sup>1</sup>	Final Total (F) <sup>2</sup>	Census Total (C)	(I-C)/C %	(F-C)/C %
<b>Total</b>		3,631	17,783,855	17,783,855	17,783,855	0.00	0.00
<i>Quarter</i>	<b>Quarter 1</b>	877	4,413,632	4,413,632	4,413,632	0.00	0.00
	<b>Quarter 2</b>	1,083	4,434,745	4,434,745	4,434,745	0.00	0.00
	<b>Quarter 3</b>	972	4,456,859	4,456,859	4,456,859	0.00	0.00
	<b>Quarter 4</b>	699	4,478,620	4,478,620	4,478,620	0.00	0.00
<i>Age Group</i>	<b>12-17</b>	1,204	2,044,760	2,044,166	2,044,166	0.03	0.00
	<b>18-25</b>	1,221	2,588,806	2,607,359	2,607,359	-0.71	0.00
	<b>26-34</b>	366	2,892,352	2,893,146	2,893,146	-0.03	0.00
	<b>35-49</b>	547	4,889,835	4,826,845	4,826,845	1.30	0.00
	<b>50-64</b>	194	3,559,474	3,297,515	3,297,515	7.94	0.00
	<b>65+</b>	99	1,808,628	2,114,825	2,114,825	-14.48	0.00
<i>Race</i>	<b>White</b>	2,862	14,458,848	14,907,198	14,907,198	-3.01	0.00
	<b>Black</b>	416	1,950,952	1,985,049	1,985,049	-1.72	0.00
	<b>Other</b>	353	1,374,055	891,607	891,607	54.11	0.00
<i>Hispanicity</i>	<b>Hispanic</b>	1,430	5,753,206	5,775,396	5,775,396	-0.38	0.00
	<b>Non-Hispanic</b>	2,201	12,030,649	12,008,459	12,008,459	0.18	0.00
<i>Gender</i>	<b>Male</b>	1,779	8,695,756	8,681,554	8,681,554	0.16	0.00
	<b>Female</b>	1,852	9,088,098	9,102,301	9,102,301	-0.16	0.00

MSA = metropolitan statistical area.

<sup>1</sup> Weight1\*...\*Weight12 (before person poststratification).<sup>2</sup> Weight1\*...\*Weight13 (after person poststratification).

Source: SAMHSA, Office of Applied Studies, National Survey on Drug Use and Health.

**Table H.46 2004 NSDUH Slippage Rates: UTAH**

Domain		<i>n</i>	Initial Total (I) <sup>1</sup>	Final Total (F) <sup>2</sup>	Census Total (C)	(I-C)/C%	(F-C)/C%
<b>Total</b>		910	1,851,896	1,851,896	1,851,896	0.00	0.00
<i>Quarter</i>	<b>Quarter 1</b>	202	459,947	459,947	459,947	0.00	0.00
	<b>Quarter 2</b>	303	462,059	462,059	462,059	0.00	0.00
	<b>Quarter 3</b>	220	464,056	464,056	464,056	0.00	0.00
	<b>Quarter 4</b>	185	465,834	465,834	465,834	0.00	0.00
<i>Age Group</i>	<b>12-17</b>	324	227,860	227,860	227,860	0.00	0.00
	<b>18-25</b>	298	349,890	354,811	354,811	-1.39	0.00
	<b>26-34</b>	107	351,520	345,107	345,107	1.86	0.00
	<b>35-49</b>	111	428,406	429,899	429,899	-0.35	0.00
	<b>50-64</b>	53	371,656	292,882	292,882	26.90	0.00
	<b>65+</b>	17	122,563	201,338	201,338	-39.13	0.00
<i>Race</i>	<b>White</b>	802	1,679,111	1,743,758	1,743,758	-3.71	0.00
	<b>Black</b>	10	28,910	16,123	16,123	79.31	0.00
	<b>Other</b>	98	143,875	92,015	92,015	56.36	0.00
<i>Hispanicity</i>	<b>Hispanic</b>	112	187,977	179,736	179,736	4.59	0.00
	<b>Non-Hispanic</b>	798	1,663,919	1,672,160	1,672,160	-0.49	0.00
<i>Gender</i>	<b>Male</b>	457	917,579	918,261	918,261	-0.07	0.00
	<b>Female</b>	453	934,317	933,635	933,635	0.07	0.00

MSA = metropolitan statistical area.

<sup>1</sup> Weight1\*...\*Weight12 (before person poststratification).<sup>2</sup> Weight1\*...\*Weight13 (after person poststratification).

Source: SAMHSA, Office of Applied Studies, National Survey on Drug Use and Health.

**Table H.47 2004 NSDUH Slippage Rates: VERMONT**

Domain		<i>n</i>	Initial Total (I) <sup>1</sup>	Final Total (F) <sup>2</sup>	Census Total (C)	(I-C)/C %	(F-C)/C %
<b>Total</b>		924	534,195	534,195	534,195	0.00	0.00
<i>Quarter</i>	<b>Quarter 1</b>	195	133,205	133,205	133,205	0.00	0.00
	<b>Quarter 2</b>	234	133,438	133,438	133,438	0.00	0.00
	<b>Quarter 3</b>	244	133,676	133,676	133,676	0.00	0.00
	<b>Quarter 4</b>	251	133,875	133,875	133,875	0.00	0.00
<i>Age Group</i>	<b>12-17</b>	318	53,165	53,165	53,165	0.00	0.00
	<b>18-25</b>	292	69,236	70,039	70,039	-1.15	0.00
	<b>26-34</b>	85	61,134	61,324	61,324	-0.31	0.00
	<b>35-49</b>	147	147,956	148,689	148,689	-0.49	-0.00
	<b>50-64</b>	49	120,059	124,116	124,116	-3.27	0.00
	<b>65+</b>	33	82,645	76,862	76,863	7.52	-0.00
<i>Race</i>	<b>White</b>	875	517,603	518,705	518,705	-0.21	0.00
	<b>Black</b>	2	108	274	2,989	-96.38	-90.83
	<b>Other</b>	47	16,484	15,216	12,501	31.85	21.71
<i>Hispanicity</i>	<b>Hispanic</b>	15	6,821	5,362	5,362	27.22	0.00
	<b>Non-Hispanic</b>	909	527,373	528,833	528,833	-0.28	0.00
<i>Gender</i>	<b>Male</b>	448	262,216	261,373	261,373	0.32	0.00
	<b>Female</b>	476	271,979	272,822	272,822	-0.31	0.00

MSA = metropolitan statistical area.

<sup>1</sup> Weight1\*...\*Weight12 (before person poststratification).<sup>2</sup> Weight1\*...\*Weight13 (after person poststratification).

Source: SAMHSA, Office of Applied Studies, National Survey on Drug Use and Health.

**Table H.48 2004 NSDUH Slippage Rates: VIRGINIA**

Domain		<i>n</i>	Initial Total (I) <sup>1</sup>	Final Total (F) <sup>2</sup>	Census Total (C)	(I-C)/C%	(F-C)/C%
<b>Total</b>		902	6,027,395	6,027,395	6,027,395	-0.00	0.00
<i>Quarter</i>	<b>Quarter 1</b>	245	1,497,740	1,497,740	1,497,740	-0.00	0.00
	<b>Quarter 2</b>	238	1,503,255	1,503,255	1,503,255	0.00	0.00
	<b>Quarter 3</b>	248	1,509,731	1,509,731	1,509,731	-0.00	0.00
	<b>Quarter 4</b>	171	1,516,669	1,516,669	1,516,669	0.00	0.00
<i>Age Group</i>	<b>12-17</b>	269	626,051	619,572	619,572	1.05	0.00
	<b>18-25</b>	309	762,216	765,684	765,684	-0.45	0.00
	<b>26-34</b>	96	817,838	850,602	850,602	-3.85	0.00
	<b>35-49</b>	157	1,727,752	1,698,000	1,698,000	1.75	0.00
	<b>50-64</b>	49	1,477,718	1,282,533	1,282,533	15.22	0.00
	<b>65+</b>	22	615,820	811,005	811,005	-24.07	0.00
<i>Race</i>	<b>White</b>	612	4,439,600	4,520,124	4,520,124	-1.78	-0.00
	<b>Black</b>	178	1,134,675	1,141,781	1,141,781	-0.62	0.00
	<b>Other</b>	112	453,120	365,490	365,490	23.98	0.00
<i>Hispanicity</i>	<b>Hispanic</b>	89	319,633	314,174	314,174	1.74	0.00
	<b>Non-Hispanic</b>	813	5,707,762	5,713,222	5,713,222	-0.10	0.00
<i>Gender</i>	<b>Male</b>	424	2,873,485	2,873,485	2,873,485	0.00	0.00
	<b>Female</b>	478	3,153,910	3,153,910	3,153,910	-0.00	0.00

MSA = metropolitan statistical area.

<sup>1</sup> Weight1\*...\*Weight12 (before person poststratification).<sup>2</sup> Weight1\*...\*Weight13 (after person poststratification).

Source: SAMHSA, Office of Applied Studies, National Survey on Drug Use and Health.

**Table H.49 2004 NSDUH Slippage Rates: WASHINGTON**

Domain		<i>n</i>	Initial Total (I) <sup>1</sup>	Final Total (F) <sup>2</sup>	Census Total (C)	(I-C)/C %	(F-C)/C %
<b>Total</b>		886	5,134,850	5,134,850	5,134,850	0.00	0.00
<i>Quarter</i>	<b>Quarter 1</b>	296	1,275,877	1,275,877	1,275,877	0.00	0.00
	<b>Quarter 2</b>	203	1,281,004	1,281,004	1,281,004	0.00	0.00
	<b>Quarter 3</b>	202	1,286,388	1,286,388	1,286,388	0.00	0.00
	<b>Quarter 4</b>	185	1,291,581	1,291,581	1,291,581	0.00	0.00
<i>Age Group</i>	<b>12-17</b>	301	527,781	527,781	527,781	0.00	0.00
	<b>18-25</b>	309	685,994	685,109	685,109	0.13	0.00
	<b>26-34</b>	78	740,262	748,084	748,084	-1.05	0.00
	<b>35-49</b>	132	1,424,137	1,421,326	1,421,326	0.20	0.00
	<b>50-64</b>	40	1,086,073	1,071,140	1,071,141	1.39	-0.00
	<b>65+</b>	26	670,604	681,409	681,409	-1.59	0.00
<i>Race</i>	<b>White</b>	694	4,320,647	4,423,648	4,423,648	-2.33	0.00
	<b>Black</b>	49	150,732	160,961	160,962	-6.36	-0.00
	<b>Other</b>	143	663,471	550,241	550,241	20.58	0.00
<i>Hispanicity</i>	<b>Hispanic</b>	69	393,152	378,179	378,179	3.96	0.00
	<b>Non-Hispanic</b>	817	4,741,698	4,756,671	4,756,671	-0.31	0.00
<i>Gender</i>	<b>Male</b>	380	2,520,392	2,520,392	2,520,392	0.00	-0.00
	<b>Female</b>	506	2,614,458	2,614,458	2,614,458	0.00	0.00

MSA = metropolitan statistical area.

<sup>1</sup> Weight1\*...\*Weight12 (before person poststratification).

<sup>2</sup> Weight1\*...\*Weight13 (after person poststratification).

Source: SAMHSA, Office of Applied Studies, National Survey on Drug Use and Health.

**Table H.50 2004 NSDUH Slippage Rates: WEST VIRGINIA**

Domain		<i>n</i>	Initial Total (I) <sup>1</sup>	Final Total (F) <sup>2</sup>	Census Total (C)	(I-C)/C%	(F-C)/C%
<b>Total</b>		909	1,543,726	1,543,726	1,543,726	0.00	0.00
<i>Quarter</i>	<b>Quarter 1</b>	250	385,464	385,464	385,464	-0.00	0.00
	<b>Quarter 2</b>	215	385,851	385,851	385,851	0.00	0.00
	<b>Quarter 3</b>	236	386,165	386,165	386,165	0.00	0.00
	<b>Quarter 4</b>	208	386,247	386,246	386,247	0.00	-0.00
<i>Age Group</i>	<b>12-17</b>	286	138,005	137,455	137,455	0.40	0.00
	<b>18-25</b>	316	192,872	194,513	194,513	-0.84	0.00
	<b>26-34</b>	81	197,097	198,161	198,161	-0.54	0.00
	<b>35-49</b>	135	390,059	390,935	390,935	-0.22	0.00
	<b>50-64</b>	52	362,036	355,242	355,242	1.91	0.00
	<b>65+</b>	39	263,657	267,419	267,420	-1.41	-0.00
<i>Race</i>	<b>White</b>	869	1,432,185	1,476,129	1,476,130	-2.98	-0.00
	<b>Black</b>	13	42,826	44,971	44,971	-4.77	0.00
	<b>Other</b>	27	68,715	22,626	22,626	203.70	0.00
<i>Hispanicity</i>	<b>Hispanic</b>	8	3,049	11,773	11,773	-74.10	0.00
	<b>Non-Hispanic</b>	901	1,540,677	1,531,953	1,531,953	0.57	0.00
<i>Gender</i>	<b>Male</b>	426	747,492	747,492	747,492	0.00	0.00
	<b>Female</b>	483	796,234	796,234	796,234	0.00	0.00

MSA = metropolitan statistical area.

<sup>1</sup> Weight1\*...\*Weight12 (before person poststratification).

<sup>2</sup> Weight1\*...\*Weight13 (after person poststratification).

Source: SAMHSA, Office of Applied Studies, National Survey on Drug Use and Health.

**Table H.51 2004 NSDUH Slippage Rates: WISCONSIN**

Domain		<i>n</i>	Initial Total (I) <sup>1</sup>	Final Total (F) <sup>2</sup>	Census Total (C)	(I-C)/C %	(F-C)/C %
<b>Total</b>		917	4,597,266	4,597,266	4,597,266	0.00	0.00
<i>Quarter</i>	<b>Quarter 1</b>	249	1,145,415	1,145,415	1,145,415	0.00	0.00
	<b>Quarter 2</b>	224	1,148,032	1,148,032	1,148,032	0.00	0.00
	<b>Quarter 3</b>	244	1,150,719	1,150,719	1,150,719	0.00	0.00
	<b>Quarter 4</b>	200	1,153,100	1,153,100	1,153,100	0.00	0.00
<i>Age Group</i>	<b>12-17</b>	339	475,896	474,936	474,936	0.20	-0.00
	<b>18-25</b>	270	632,066	638,512	638,512	-1.01	0.00
	<b>26-34</b>	92	617,515	608,054	608,054	1.56	0.00
	<b>35-49</b>	128	1,260,555	1,264,530	1,264,530	-0.31	0.00
	<b>50-64</b>	60	1,121,305	933,019	933,019	20.18	0.00
	<b>65+</b>	28	489,930	678,215	678,216	-27.76	-0.00
<i>Race</i>	<b>White</b>	784	4,070,703	4,202,496	4,202,496	-3.14	0.00
	<b>Black</b>	63	245,780	237,498	237,498	3.49	-0.00
	<b>Other</b>	70	280,783	157,272	157,272	78.53	0.00
<i>Hispanicity</i>	<b>Hispanic</b>	67	195,344	174,366	174,366	12.03	0.00
	<b>Non-Hispanic</b>	850	4,401,922	4,422,900	4,422,900	-0.47	-0.00
<i>Gender</i>	<b>Male</b>	443	2,254,093	2,254,093	2,254,093	0.00	0.00
	<b>Female</b>	474	2,343,173	2,343,173	2,343,173	0.00	0.00

MSA = metropolitan statistical area.

<sup>1</sup> Weight1\*...\*Weight12 (before person poststratification).<sup>2</sup> Weight1\*...\*Weight13 (after person poststratification).

Source: SAMHSA, Office of Applied Studies, National Survey on Drug Use and Health.

**Table H.52 2004 NSDUH Slippage Rates: WYOMING**

Domain		<i>n</i>	Initial Total (I) <sup>1</sup>	Final Total (F) <sup>2</sup>	Census Total (C)	(I-C)/C%	(F-C)/C%
<b>Total</b>		857	423,382	423,382	423,382	0.00	0.00
<i>Quarter</i>	<b>Quarter 1</b>	235	105,342	105,342	105,342	0.00	0.00
	<b>Quarter 2</b>	234	105,693	105,693	105,693	0.00	0.00
	<b>Quarter 3</b>	216	106,028	106,028	106,028	0.00	0.00
	<b>Quarter 4</b>	172	106,319	106,319	106,319	0.00	-0.00
<i>Age Group</i>	<b>12-17</b>	267	43,237	42,970	42,970	0.62	0.00
	<b>18-25</b>	281	61,699	61,713	61,714	-0.02	-0.00
	<b>26-34</b>	86	52,541	52,793	52,793	-0.48	0.00
	<b>35-49</b>	125	110,661	110,661	110,661	0.00	0.00
	<b>50-64</b>	61	95,148	96,808	96,808	-1.71	0.00
	<b>65+</b>	37	60,097	58,437	58,437	2.84	0.00
<i>Race</i>	<b>White</b>	799	399,943	403,776	403,776	-0.95	0.00
	<b>Black</b>	3	1,449	2,961	2,961	-51.08	-0.00
	<b>Other</b>	55	21,990	16,645	16,645	32.11	0.00
<i>Hispanicity</i>	<b>Hispanic</b>	62	25,063	25,790	25,790	-2.82	-0.00
	<b>Non-Hispanic</b>	795	398,320	397,592	397,592	0.18	0.00
<i>Gender</i>	<b>Male</b>	423	210,637	210,637	210,637	0.00	0.00
	<b>Female</b>	434	212,745	212,745	212,745	0.00	0.00

MSA = metropolitan statistical area.

<sup>1</sup> Weight1\*...\*Weight12 (before person poststratification).<sup>2</sup> Weight1\*...\*Weight13 (after person poststratification).

Source: SAMHSA, Office of Applied Studies, National Survey on Drug Use and Health.

## **Appendix I: Evaluation of Calibration Weights: Weight Summary Statistics**



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**Table I.1 2004 NSDUH Dwelling Unit–Level Weight Summary Statistics: United States, District of Columbia, and the 50 States**

Domain	n	Before res.du.nr (Weight1*...*Weight6) <sup>1</sup>						After res.du.nr & Before res.du.ps (Weight1*...*Weight7) <sup>1</sup>						After res.du.ps (Weight1*...*Weight8) <sup>1</sup>					
		Min	Q1 <sup>2</sup>	Med	Q3 <sup>2</sup>	Max	UWE <sup>3</sup>	Min	Q1 <sup>2</sup>	Med	Q3 <sup>2</sup>	Max	UWE <sup>3</sup>	Min	Q1 <sup>2</sup>	Med	Q3 <sup>2</sup>	Max	UWE <sup>3</sup>
United States	130,130	32	468	622	966	4,091	1.36	66	499	684	1,048	3,904	1.37	22	487	743	1,134	9,086	1.44
Alaska	1,399	100	105	151	154	205	1.04	103	113	163	174	217	1.05	48	121	165	201	606	1.12
Alabama	1,477	707	844	949	1,076	1,136	1.01	707	934	1,075	1,151	1,395	1.02	172	991	1,201	1,380	5,629	1.10
Arkansas	1,833	452	483	491	506	543	1.00	486	508	519	543	653	1.00	102	521	582	637	2,405	1.08
Arizona	1,750	271	808	848	1,080	1,512	1.04	382	866	909	1,149	1,495	1.04	190	967	1,096	1,300	5,924	1.14
California	6,192	84	1,328	1,548	1,651	4,091	1.01	695	1,531	1,712	1,896	2,442	1.02	547	1,672	1,934	2,211	7,095	1.06
Colorado	1,712	632	718	805	885	956	1.01	695	772	855	948	1,246	1.01	150	858	1,051	1,248	4,305	1.13
Connecticut	2,013	464	482	525	592	720	1.02	478	529	578	649	860	1.03	99	534	610	748	3,542	1.16
District of Columbia	2,242	54	75	81	94	300	1.03	66	89	98	112	146	1.02	23	91	111	135	387	1.09
Delaware	1,794	118	126	167	194	236	1.04	118	143	190	209	428	1.04	31	147	185	211	783	1.07
Florida	7,581	174	590	700	721	1,849	1.03	289	697	782	871	1,609	1.03	184	776	869	994	3,571	1.05
Georgia	1,597	1,381	1,443	1,690	1,759	2,190	1.02	1,431	1,728	1,844	2,006	2,548	1.02	338	1,739	2,022	2,320	4,755	1.06
Hawaii	1,575	157	170	246	266	290	1.04	164	194	275	287	318	1.04	44	199	252	315	663	1.11
Iowa	1,641	487	507	651	672	1,071	1.02	496	589	688	706	994	1.02	109	636	734	786	2,665	1.06
Idaho	1,607	201	224	253	289	343	1.02	215	243	274	316	364	1.03	78	287	325	353	1,265	1.06
Illinois	6,342	114	529	581	627	695	1.01	271	621	687	738	950	1.01	139	648	737	815	2,919	1.04
Indiana	1,742	997	1,041	1,076	1,148	1,190	1.00	997	1,091	1,151	1,205	1,309	1.00	281	1,207	1,338	1,512	4,023	1.05
Kansas	1,841	454	481	497	519	714	1.02	474	510	527	558	846	1.03	99	511	568	660	1,860	1.09
Kentucky	1,949	634	670	697	805	1,269	1.01	651	713	751	855	1,272	1.01	131	774	818	887	3,266	1.04
Louisiana	1,614	755	827	895	985	1,146	1.01	781	881	934	1,043	2,263	1.02	190	955	1,070	1,192	4,722	1.06
Massachusetts	1,686	969	998	1,117	1,224	1,847	1.03	986	1,170	1,272	1,391	3,116	1.03	206	1,218	1,395	1,668	7,018	1.10
Maryland	1,617	987	1,025	1,045	1,076	3,126	1.02	1,006	1,144	1,184	1,251	2,088	1.02	260	1,052	1,242	1,422	2,905	1.07
Maine	2,025	148	203	223	237	506	1.01	157	216	243	254	445	1.01	41	249	278	302	1,037	1.07
Michigan	7,155	291	378	474	482	1,190	1.01	309	453	518	541	936	1.02	88	496	556	603	2,045	1.04
Minnesota	1,578	913	989	1,062	1,096	1,384	1.01	935	1,049	1,157	1,207	1,535	1.01	267	1,088	1,232	1,399	4,011	1.07
Missouri	1,764	883	1,035	1,058	1,180	1,380	1.01	883	1,101	1,144	1,262	2,015	1.01	245	1,147	1,287	1,431	3,965	1.05

<sup>1</sup> Weight1-Weight6 are design-based weight components; nr = nonresponse adjustment, ps = poststratification.

<sup>2</sup> Q1 and Q3 refer to the first and third quartile of the weight distribution.

<sup>3</sup> Unequal weighting effect defined as  $1 + [(n-1)/n] * CV^2$ , where CV = coefficient of variation of weights.

(continued)

**Table I.1 2004 NSDUH Dwelling Unit–Level Weight Summary Statistics: United States, District of Columbia, and the 50 States (continued)**

Domain	n	Before res.du.nr (Weight1*...*Weight6) <sup>1</sup>						After res.du.nr & Before res.du.ps (Weight1*...*Weight7) <sup>1</sup>						After res.du.ps (Weight1*...*Weight8) <sup>1</sup>					
		Min	Q1 <sup>2</sup>	Med	Q3 <sup>2</sup>	Max	UWE <sup>3</sup>	Min	Q1 <sup>2</sup>	Med	Q3 <sup>2</sup>	Max	UWE <sup>3</sup>	Min	Q1 <sup>2</sup>	Med	Q3 <sup>2</sup>	Max	UWE <sup>3</sup>
Mississippi	1,482	251	521	601	646	889	1.03	268	550	633	683	968	1.03	129	605	715	863	3,667	1.12
Montana	1,874	139	153	172	182	203	1.01	149	162	183	196	222	1.01	32	181	208	226	776	1.05
North Carolina	1,635	1,192	1,503	1,635	1,756	2,042	1.01	1,294	1,610	1,735	1,856	2,675	1.01	415	1,711	1,953	2,228	6,175	1.07
North Dakota	2,020	91	116	124	128	228	1.01	115	123	128	134	177	1.01	24	122	134	150	566	1.05
Nebraska	1,629	248	320	333	354	1,139	1.07	255	336	356	384	1,119	1.07	66	358	409	468	1,510	1.11
New Hampshire	1,765	194	211	226	232	274	1.01	196	232	244	253	311	1.01	41	247	271	312	1,014	1.06
New Jersey	2,033	708	1,040	1,072	1,518	3,080	1.07	708	1,185	1,245	1,870	3,699	1.09	525	1,138	1,430	1,942	9,086	1.15
New Mexico	1,719	293	321	342	370	418	1.01	307	335	358	394	471	1.01	72	378	429	479	1,754	1.08
Nevada	1,552	167	308	400	495	1,490	1.32	189	327	438	525	1,626	1.33	117	377	484	611	2,666	1.32
New York	7,372	59	703	771	806	1,182	1.01	611	821	913	1,015	1,616	1.03	382	870	977	1,120	5,439	1.07
Ohio	7,026	446	541	555	570	1,075	1.00	511	573	587	615	767	1.00	162	602	641	696	1,195	1.02
Oklahoma	1,769	356	556	575	702	781	1.02	372	592	634	752	866	1.02	113	665	783	924	3,333	1.12
Oregon	1,825	550	586	660	698	760	1.01	556	625	704	739	828	1.01	195	702	763	840	1,861	1.03
Pennsylvania	7,448	448	511	545	568	910	1.01	470	554	602	656	1,675	1.02	264	594	651	711	2,267	1.03
Rhode Island	1,588	182	194	198	211	279	1.02	199	213	222	259	414	1.02	40	222	251	310	1,361	1.17
South Carolina	1,844	641	677	705	850	932	1.02	661	711	756	902	1,035	1.02	142	760	866	1,022	3,071	1.08
South Dakota	1,594	145	151	172	192	208	1.01	146	162	179	201	224	1.01	31	171	198	217	972	1.09
Tennessee	1,933	650	969	1,002	1,224	3,797	1.03	650	1,026	1,085	1,280	2,110	1.02	237	1,085	1,202	1,382	5,113	1.07
Texas	6,254	914	984	1,036	1,215	1,562	1.02	928	1,030	1,111	1,290	1,725	1.03	271	1,081	1,210	1,461	6,466	1.07
Utah	1,389	339	359	449	551	686	1.05	349	392	476	580	738	1.05	99	428	545	669	1,902	1.10
Virginia	1,587	771	1,304	1,339	1,602	3,969	1.04	841	1,436	1,521	1,837	3,904	1.04	291	1,524	1,747	2,029	7,007	1.09
Vermont	1,820	89	106	125	129	229	1.01	101	112	134	140	188	1.02	26	120	136	157	609	1.06
Washington	1,677	95	970	1,279	1,328	1,634	1.03	380	1,034	1,340	1,458	1,736	1.03	333	1,188	1,497	1,652	4,836	1.07
Wisconsin	1,805	441	965	1,006	1,055	1,140	1.00	924	1,020	1,089	1,133	1,660	1.01	223	1,062	1,203	1,362	3,649	1.05
West Virginia	2,049	286	296	306	334	383	1.01	287	315	325	355	413	1.01	63	334	356	392	1,385	1.04
Wyoming	1,715	32	103	107	109	113	1.00	94	108	113	117	124	1.00	22	113	119	130	572	1.08

<sup>1</sup> Weight1-Weight6 are design-based weight components; nr = nonresponse adjustment, ps = poststratification.

<sup>2</sup> Q1 and Q3 refer to the first and third quartile of the weight distribution.

<sup>3</sup> Unequal weighting effect defined as  $1+[(n-1)/n]*CV^2$ , where CV = coefficient of variation of weights.

**Table I.2 2004 NSDUH Selected Person-Level Weight Summary Statistics: United States, District of Columbia, and the 50 States**

Domain	n	Before sel.per.ps (Weight1*...*Weight10) <sup>1</sup>						After sel.per.ps (Weight1*...*Weight11) <sup>1</sup>					
		Min	Q1 <sup>2</sup>	Med	Q3 <sup>2</sup>	Max	UWE <sup>3</sup>	Min	Q1 <sup>2</sup>	Med	Q3 <sup>2</sup>	Max	UWE <sup>3</sup>
United States	81,973	24	730	1,352	3,567	63,714	2.80	6	713	1,346	3,537	68,037	2.86
Alaska	1,078	53	158	236	656	4,839	2.45	36	147	242	627	3,853	2.24
Alabama	1,055	174	1,165	1,684	5,256	31,448	2.12	51	1,167	1,742	5,068	19,738	2.03
Arkansas	1,062	104	661	819	2,797	18,886	2.15	74	631	862	3,021	15,195	2.32
Arizona	1,119	210	1,245	2,079	5,563	42,253	2.21	76	1,212	1,964	5,807	40,977	2.14
California	4,631	633	2,058	2,811	9,062	63,714	2.08	405	2,097	2,979	8,829	47,116	2.06
Colorado	1,135	157	963	1,402	4,757	26,388	2.40	31	905	1,383	4,871	33,805	2.48
Connecticut	1,098	102	769	1,085	3,652	28,438	2.33	33	728	1,123	4,107	28,196	2.40
District of Columbia	1,041	44	114	181	679	2,557	2.20	14	112	192	607	5,124	2.73
Delaware	1,144	32	182	252	828	3,652	2.22	6	182	257	815	4,500	2.34
Florida	4,526	235	938	1,321	4,916	23,511	2.05	47	932	1,325	4,772	35,782	2.12
Georgia	1,054	567	2,149	2,962	10,221	37,290	1.99	473	2,106	2,925	10,309	47,173	2.13
Hawaii	1,088	49	257	400	1,226	5,840	2.19	46	247	416	1,221	7,382	2.58
Iowa	1,039	142	733	1,092	3,778	11,771	2.08	57	685	1,096	3,356	21,799	2.21
Idaho	1,051	84	359	503	1,559	9,941	1.98	76	367	568	1,489	7,022	1.99
Illinois	4,444	172	787	1,034	3,568	30,914	2.00	52	785	1,073	3,489	16,017	1.96
Indiana	1,085	344	1,526	2,045	6,917	31,671	2.12	89	1,436	2,197	7,188	32,925	2.07
Kansas	993	101	706	1,077	2,917	16,517	1.97	20	677	1,127	2,954	15,438	2.20
Kentucky	1,144	166	953	1,258	5,166	19,800	1.96	57	982	1,375	4,801	15,369	1.96
Louisiana	1,082	240	1,237	1,575	5,042	24,989	1.99	138	1,174	1,662	4,635	24,406	2.04
Massachusetts	1,087	243	1,323	1,952	7,472	35,074	2.27	156	1,339	2,176	6,710	40,398	2.48
Maryland	1,039	262	1,286	1,854	6,515	25,402	2.06	82	1,296	1,863	5,793	51,346	3.02
Maine	1,064	42	316	377	1,477	6,462	2.35	9	312	418	1,361	8,158	2.78
Michigan	4,490	128	605	753	2,622	13,028	2.12	39	610	790	2,648	15,340	2.17
Minnesota	1,066	283	1,316	1,834	5,942	35,943	2.21	172	1,252	1,840	5,707	28,294	2.13
Missouri	1,104	323	1,441	1,877	6,638	26,109	2.06	133	1,409	2,017	6,006	29,737	2.20

<sup>1</sup> Weight1\*...\*Weight10 and Weight1\*...\*Weight11 used demographic variables from screener data; ps = poststratification.

<sup>2</sup> Q1 and Q3 refer to the first and third quartile of the weight distribution.

<sup>3</sup> Unequal weighting effect defined as  $1 + [(n-1)/n] * CV^2$ , where CV = coefficient of variation of weights.

(continued)

**Table I.2 2004 NSDUH Selected Person-Level Weight Summary Statistics: United States, District of Columbia, and the 50 States (continued)**

Domain	n	Before sel.per.ps (Weight1*...*Weight10) <sup>1</sup>						After sel.per.ps (Weight1*...*Weight11) <sup>1</sup>					
		Min	Q1 <sup>2</sup>	Med	Q3 <sup>2</sup>	Max	UWE <sup>3</sup>	Min	Q1 <sup>2</sup>	Med	Q3 <sup>2</sup>	Max	UWE <sup>3</sup>
Mississippi	1,053	135	691	962	3,054	25,070	2.28	81	640	1,031	2,797	17,920	2.42
Montana	1,080	48	220	314	993	4,166	2.05	10	236	333	928	5,527	2.38
North Carolina	1,029	495	2,000	2,882	10,406	30,640	1.99	110	1,965	2,878	9,940	40,118	2.27
North Dakota	1,071	28	159	214	754	3,071	2.13	6	155	225	692	5,474	2.21
Nebraska	1,072	69	449	627	1,885	7,451	2.10	21	431	669	1,571	11,356	2.43
New Hampshire	1,114	43	310	450	1,561	8,689	2.03	40	323	463	1,588	3,861	1.80
New Jersey	1,153	604	1,768	2,877	8,186	57,460	2.39	487	1,733	3,110	8,039	59,044	2.34
New Mexico	1,072	80	492	711	1,946	13,914	2.09	16	481	742	1,871	13,206	2.26
Nevada	1,053	163	488	856	2,106	22,123	2.65	35	478	842	2,366	17,017	2.53
New York	4,585	412	1,057	1,423	5,286	38,934	2.14	194	1,064	1,481	5,182	23,740	2.11
Ohio	4,404	189	687	870	3,354	12,845	2.03	85	689	944	3,429	14,270	2.01
Oklahoma	1,054	146	832	1,213	3,848	20,413	2.19	32	783	1,242	4,105	19,176	2.30
Oregon	1,108	291	845	1,068	4,239	16,877	2.01	254	818	1,154	4,033	14,988	2.20
Pennsylvania	4,360	298	752	951	3,607	25,407	2.07	239	755	1,005	3,708	14,227	2.00
Rhode Island	1,126	41	235	376	1,207	8,691	2.21	9	234	372	1,074	12,493	2.45
South Carolina	1,042	168	1,064	1,585	4,345	19,210	1.99	104	1,042	1,651	4,360	22,288	2.21
South Dakota	1,034	32	209	257	965	7,810	2.38	19	205	276	902	3,433	2.08
Tennessee	1,023	265	1,485	2,059	7,377	48,800	2.06	164	1,340	2,302	7,084	37,674	2.15
Texas	4,334	300	1,410	2,018	6,032	33,720	1.95	172	1,400	2,019	5,842	30,457	1.97
Utah	1,040	180	684	1,041	2,572	11,813	1.78	72	675	1,024	2,387	10,382	1.93
Virginia	1,080	301	1,755	2,408	8,335	43,166	2.35	61	1,817	2,572	7,204	48,057	2.43
Vermont	1,087	28	148	214	731	2,838	2.23	8	149	212	696	3,577	2.28
Washington	1,086	362	1,320	1,903	7,819	26,847	2.17	171	1,295	2,039	7,253	68,037	2.45
Wisconsin	1,118	314	1,237	1,931	6,115	29,817	2.06	94	1,252	1,897	5,957	22,078	2.09
West Virginia	1,058	70	418	541	2,172	10,390	2.17	127	432	596	2,059	11,455	2.21
Wyoming	1,018	24	135	189	648	2,975	1.91	8	133	211	586	2,384	1.95

<sup>1</sup> Weight1\*...\*Weight10 and Weight1\*...\*Weight11 used demographic variables from screener data; ps = poststratification.

<sup>2</sup> Q1 and Q3 refer to the first and third quartile of the weight distribution.

<sup>3</sup> Unequal weighting effect defined as  $1+[(n-1)/n]*CV^2$ , where CV = coefficient of variation of weights.

**Table I.3 2004 NSDUH Respondent Person-Level Weight Summary Statistics: United States, District of Columbia, and the 50 States**

Domain	n	Before res.per.nr (Weight1*...*Weight11) <sup>1</sup>						After res.per.nr (Weight1*...*Weight12) <sup>1</sup>						n	Before res.per.ps (Weight1*...*Weight12) <sup>2</sup>						Final Weight After res.per.ps (Weight1*...*Weight13) <sup>2</sup>					
		Min	Q1 <sup>3</sup>	Med	Q3 <sup>3</sup>	Max	UWE <sup>4</sup>	Min	Q1 <sup>3</sup>	Med	Q3 <sup>3</sup>	Max	UWE <sup>4</sup>		Min	Q1 <sup>3</sup>	Med	Q3 <sup>3</sup>	Max	UWE <sup>4</sup>	Min	Q1 <sup>3</sup>	Med	Q3 <sup>3</sup>	Max	UWE <sup>4</sup>
United States	67,760	6	689	1,271	3,133	59,044	2.91	6	787	1,488	3,912	147,62	3.35	67,760	6	787	1,488	3,912	147,62	3.35	1	753	1,477	3,885	150,33	3.54
Alaska	894	36	146	230	586	3,540	2.28	37	174	276	737	5,058	2.37	894	37	174	276	737	5,058	2.37	11	128	251	663	6,813	3.05
Alabama	880	51	1,115	1,641	4,445	19,738	2.07	52	1,225	1,938	5,478	35,313	2.62	880	52	1,225	1,938	5,478	35,313	2.62	11	1,243	1,900	5,464	35,409	2.63
Arkansas	900	74	629	843	2,863	15,195	2.34	76	725	960	3,361	21,372	2.64	900	76	725	960	3,361	21,372	2.64	25	709	980	3,211	21,696	2.72
Arizona	903	76	1,196	1,893	5,560	27,589	2.09	76	1,411	2,288	6,932	37,787	2.30	903	76	1,411	2,288	6,932	37,787	2.30	17	1,419	2,408	6,395	38,063	2.35
California	3,725	405	2,057	2,801	8,005	41,937	2.07	405	2,330	3,311	10,085	147,62	2.59	3,725	405	2,330	3,311	10,085	147,62	2.59	86	2,302	3,591	9,997	115,27	2.77
Colorado	934	31	880	1,334	3,977	33,805	2.60	31	971	1,510	4,880	34,287	2.77	934	31	971	1,510	4,880	34,287	2.77	6	1,003	1,568	4,661	57,043	2.90
Connecticut	897	33	715	1,041	3,354	28,196	2.54	33	849	1,273	4,668	31,244	2.75	897	33	849	1,273	4,668	31,244	2.75	33	839	1,272	3,840	38,745	2.94
District of Columbia	903	14	109	189	560	5,124	2.83	14	121	211	649	4,824	2.90	903	14	121	211	649	4,824	2.90	3	117	212	641	6,806	3.17
Delaware	932	6	178	253	734	4,500	2.36	6	207	312	943	6,116	2.57	932	6	207	312	943	6,116	2.57	2	202	315	924	7,642	2.68
Florida	3,662	47	905	1,255	4,403	35,782	2.20	47	1,024	1,499	5,835	31,939	2.47	3,662	47	1,024	1,499	5,835	31,939	2.47	9	1,056	1,548	5,854	45,409	2.51
Georgia	890	473	2,078	2,856	9,600	37,478	2.16	477	2,256	3,338	11,819	53,452	2.30	890	477	2,256	3,338	11,819	53,452	2.30	144	2,333	3,326	11,817	74,671	2.49
Hawaii	903	46	236	401	1,056	7,382	2.73	46	273	466	1,324	12,725	3.02	903	46	273	466	1,324	12,725	3.02	12	260	493	1,223	19,192	3.42
Iowa	890	57	678	1,056	3,216	12,900	2.21	57	740	1,169	3,885	18,437	2.42	890	57	740	1,169	3,885	18,437	2.42	11	778	1,185	3,725	21,437	2.46
Idaho	902	76	361	536	1,362	5,954	2.02	77	413	628	1,664	10,028	2.19	902	77	413	628	1,664	10,028	2.19	16	412	632	1,658	9,394	2.23
Illinois	3,575	52	771	1,008	3,317	16,017	2.02	53	892	1,219	4,357	29,486	2.24	3,575	53	892	1,219	4,357	29,486	2.24	12	890	1,251	4,321	50,875	2.40
Indiana	891	89	1,407	2,150	6,597	32,925	2.11	89	1,696	2,510	8,605	42,726	2.28	891	89	1,696	2,510	8,605	42,726	2.28	50	1,678	2,549	8,286	50,306	2.32
Kansas	828	20	649	1,046	2,779	15,438	2.27	20	750	1,243	3,406	23,534	2.49	828	20	750	1,243	3,406	23,534	2.49	5	727	1,212	3,448	25,765	2.72
Kentucky	933	57	976	1,314	4,323	15,369	2.00	121	1,110	1,511	5,525	26,431	2.33	933	121	1,110	1,511	5,525	26,431	2.33	40	1,110	1,510	5,469	40,292	2.49
Louisiana	933	174	1,165	1,581	4,181	24,406	2.11	176	1,276	1,754	4,989	27,421	2.29	933	176	1,276	1,754	4,989	27,421	2.29	59	1,290	1,777	5,087	25,272	2.25
Massachusetts	877	156	1,332	2,043	6,157	40,398	2.59	190	1,485	2,457	8,266	53,933	2.70	877	190	1,485	2,457	8,266	53,933	2.70	64	1,531	2,626	8,144	68,042	2.74
Maryland	901	82	1,279	1,811	5,384	48,966	2.86	82	1,407	2,033	6,345	116,66	4.38	901	82	1,407	2,033	6,345	116,66	4.38	30	1,449	2,134	5,594	150,33	4.57
Maine	896	9	308	413	1,309	8,158	2.83	11	362	480	1,556	9,676	2.96	896	11	362	480	1,556	9,676	2.96	5	361	479	1,580	14,958	3.07
Michigan	3,670	39	601	751	2,428	15,340	2.22	42	687	881	3,211	20,212	2.48	3,670	42	687	881	3,211	20,212	2.48	9	698	903	3,181	20,330	2.50
Minnesota	907	172	1,246	1,827	5,691	28,294	2.15	172	1,462	2,033	6,855	39,870	2.20	907	172	1,462	2,033	6,855	39,870	2.20	82	1,476	2,106	6,643	33,716	2.26
Missouri	897	133	1,376	1,920	5,683	29,737	2.27	169	1,678	2,420	7,169	45,160	2.41	897	169	1,678	2,420	7,169	45,160	2.41	47	1,639	2,387	7,182	38,651	2.44

<sup>1</sup> Weight1\*...\*Weight11 and Weight1\*...\*Weight12 used demographic variables from screener data; nr = nonresponse adjustment.

<sup>2</sup> Weight1\*...\*Weight12 and Weight1\*...\*Weight13 used demographic variables from questionnaire data; ps = poststratification.

<sup>3</sup> Q1 and Q3 refer to the first and third quartile of the weight distribution.

<sup>4</sup> Unequal weighting effect defined as  $1 + [(n-1)/n] * CV^2$ , where CV = coefficient of variation of weights.

(continued)

**Table I.3 2004 NSDUH Respondent Person-Level Weight Summary Statistics: United States, District of Columbia, and the 50 States**  
(continued)

Domain	n	Before res.per.nr (Weight1*...*Weight11) <sup>1</sup>						After res.per.nr (Weight1*...*Weight12) <sup>1</sup>						n	Before res.per.ps (Weight1*...*Weight12) <sup>2</sup>						Final Weight After res.per.ps (Weight1*...*Weight13) <sup>2</sup>					
		Min	Q1 <sup>3</sup>	Med	Q3 <sup>3</sup>	Max	UWE <sup>4</sup>	Min	Q1 <sup>3</sup>	Med	Q3 <sup>3</sup>	Max	UWE <sup>4</sup>		Min	Q1 <sup>3</sup>	Med	Q3 <sup>3</sup>	Max	UWE <sup>4</sup>	Min	Q1 <sup>3</sup>	Med	Q3 <sup>3</sup>	Max	UWE <sup>4</sup>
Mississippi	914	81	625	978	2,349	17,920	2.47	119	681	1,085	2,700	26,799	2.90	914	119	681	1,085	2,700	26,799	2.90	52	682	1,065	2,649	27,210	2.95
Montana	907	10	228	321	876	5,527	2.40	10	260	369	1,057	8,459	2.69	907	10	260	369	1,057	8,459	2.69	5	260	370	1,052	7,381	2.65
North Carolina	869	110	1,935	2,765	9,363	38,627	2.33	110	2,089	3,117	11,564	54,716	2.54	869	110	2,089	3,117	11,564	54,716	2.54	39	2,151	3,313	11,264	90,540	2.79
North Dakota	911	6	151	215	676	2,892	2.19	6	164	256	809	3,516	2.34	911	6	164	256	809	3,516	2.34	1	162	249	814	3,883	2.42
Nebraska	897	21	422	661	1,485	11,356	2.44	28	493	792	1,755	13,202	2.65	897	28	493	792	1,755	13,202	2.65	20	475	796	1,757	14,292	2.74
New Hampshire	904	40	318	433	1,521	3,861	1.85	60	361	533	1,913	8,225	2.02	904	60	361	533	1,913	8,225	2.02	12	363	541	1,915	8,641	2.06
New Jersey	886	487	1,685	2,916	7,559	59,044	2.38	495	2,025	3,558	9,890	86,992	2.77	886	495	2,025	3,558	9,890	86,992	2.77	74	1,932	3,627	9,336	92,457	3.13
New Mexico	922	16	476	714	1,773	13,206	2.31	16	519	801	2,201	23,306	2.74	922	16	519	801	2,201	23,306	2.74	4	471	831	2,053	25,374	2.91
Nevada	888	35	470	777	2,034	17,017	2.64	35	520	934	2,575	23,074	2.86	888	35	520	934	2,575	23,074	2.86	7	531	881	2,374	23,899	2.97
New York	3,638	194	1,043	1,416	4,885	23,740	2.14	194	1,240	1,766	6,343	58,494	2.45	3,638	194	1,240	1,766	6,343	58,494	2.45	19	1,189	1,790	6,260	67,402	2.66
Ohio	3,613	85	676	917	3,272	14,270	2.04	102	777	1,085	4,105	19,402	2.26	3,613	102	777	1,085	4,105	19,402	2.26	27	783	1,090	4,091	28,689	2.31
Oklahoma	867	32	765	1,211	3,276	19,176	2.34	33	843	1,391	3,869	29,677	2.73	867	33	843	1,391	3,869	29,677	2.73	7	810	1,382	3,887	28,687	2.78
Oregon	910	254	794	1,104	3,668	14,645	2.27	272	945	1,319	4,701	24,857	2.59	910	272	945	1,319	4,701	24,857	2.59	79	915	1,317	4,724	32,207	2.72
Pennsylvania	3,590	239	748	977	3,208	14,227	2.04	239	849	1,150	3,924	23,535	2.30	3,590	239	849	1,150	3,924	23,535	2.30	48	847	1,180	4,018	26,913	2.32
Rhode Island	911	9	227	357	911	4,896	2.40	9	261	399	1,398	10,837	2.70	911	9	261	399	1,398	10,837	2.70	2	281	417	1,310	8,487	2.69
South Carolina	885	104	1,030	1,587	4,222	22,288	2.23	104	1,147	1,739	5,071	31,506	2.37	885	104	1,147	1,739	5,071	31,506	2.37	115	1,141	1,783	5,106	45,526	2.51
South Dakota	893	36	202	269	863	3,433	2.13	36	221	292	1,076	4,935	2.26	893	36	221	292	1,076	4,935	2.26	8	207	291	1,073	10,815	2.54
Tennessee	896	222	1,325	2,215	6,956	37,674	2.16	222	1,485	2,570	8,234	47,694	2.24	896	222	1,485	2,570	8,234	47,694	2.24	49	1,497	2,589	8,036	46,059	2.30
Texas	3,631	172	1,373	1,917	5,539	30,457	2.01	173	1,559	2,245	6,956	36,055	2.20	3,631	173	1,559	2,245	6,956	36,055	2.20	37	1,590	2,277	6,924	34,612	2.26
Utah	910	72	665	988	2,078	10,382	1.97	72	705	1,124	2,391	11,977	2.12	910	72	705	1,124	2,391	11,977	2.12	15	709	1,131	2,356	17,263	2.32
Virginia	902	61	1,792	2,472	6,799	48,057	2.49	61	2,114	2,940	8,764	55,841	2.56	902	61	2,114	2,940	8,764	55,841	2.56	12	2,030	2,884	8,771	91,628	2.81
Vermont	924	8	146	203	661	3,577	2.31	8	163	233	811	4,281	2.51	924	8	163	233	811	4,281	2.51	9	167	242	815	4,106	2.48
Washington	886	171	1,275	1,979	6,328	39,212	2.38	171	1,419	2,282	7,579	68,459	2.81	886	171	1,419	2,282	7,579	68,459	2.81	56	1,406	2,305	7,323	94,552	3.02
Wisconsin	917	94	1,237	1,835	5,361	22,078	2.11	135	1,395	2,222	6,749	38,402	2.36	917	135	1,395	2,222	6,749	38,402	2.36	28	1,390	2,231	7,021	44,079	2.49
West Virginia	909	127	427	563	1,981	7,890	2.19	127	465	624	2,436	15,086	2.61	909	127	465	624	2,436	15,086	2.61	115	444	613	2,457	15,412	2.69
Wyoming	857	8	133	208	563	2,318	1.96	8	150	239	713	3,029	2.06	857	8	150	239	713	3,029	2.06	2	150	235	733	5,861	2.19

<sup>1</sup> Weight1\*...\*Weight11 and Weight1\*...\*Weight12 used demographic variables from screener data; nr = nonresponse adjustment.

<sup>2</sup> Weight1\*...\*Weight12 and Weight1\*...\*Weight13 used demographic variables from questionnaire data; ps = poststratification.

<sup>3</sup> Q1 and Q3 refer to the first and third quartile of the weight distribution.

<sup>4</sup> Unequal weighting effect defined as  $1 + [(n-1)/n] * CV^2$ , where CV = coefficient of variation of weights.

