



UNITED STATES DEPARTMENT OF COMMERCE
Bureau of the Census
Washington, DC 20233-0001

February 28, 2001

DSSD CENSUS 2000 PROCEDURES AND OPERATIONS MEMORANDUM SERIES B-7*

MEMORANDUM FOR Howard Hogan
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Subject: Accuracy and Coverage Evaluation: Missing Data Results

The attached document was prepared, per your request, to assist the Executive Steering Committee on A.C.E. Policy in assessing the data with and without statistical correction.

This report focuses on the extent and effects of missing data in the P and E Samples of the Accuracy and Coverage Evaluation (A.C.E.). Results are provided for the three components:

- noninterviews in the P Sample,
- missing items (demographic characteristics) in the P and E Samples, and
- people who have unresolved status--resident or match status in the P Sample, and enumeration status in the E Sample.

February 28, 2001

Accuracy and Coverage Evaluation: Missing Data Results

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Accuracy and Coverage Evaluation 2000: Missing Data Results

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Executive Summary

In the 2000 Accuracy and Coverage Evaluation (A.C.E.), what was the extent and potential effect of the following components of missing data? All figures are weighted unless specified otherwise.

The levels of missing data in the 2000 A.C.E. are low. Further, the occurrence of unresolved status is not unduly clustered in the post-strata. Thus, the missing data procedures should have only a minor effect on the estimation. The levels are comparable to those in the 1990 PES. In 2000, the rate of unresolved matches is a bit lower; and of unresolved enumerations, slightly higher.

- *Noninterviews in the P Sample.* A.C.E. interview rates were very high. Among occupied housing units, the rates were 97.1 percent for Census Day and 98.8 percent for A.C.E. Interview Day--compared to 98.4 percent (unweighted) in the 1990 Post Enumeration Survey (PES). Due to the high response, most of the noninterview adjustment factors applied were very close to 1. This helps to keep down the variance of the survey weights.
- *Missing demographic characteristics in the P Sample.* As we had expected, characteristic imputation rates in the P Sample were very low, ranging from 1.4 percent to 2.4 percent. Due to the low rates, the distributions of these characteristics after imputation were nearly identical to those before imputation. Compared to the 1990 PES, the rates are slightly higher for age and sex, and slightly lower for tenure and race. For the E Sample, missing characteristics--whose rates were also low--were imputed during Census processing.
- *Unresolved resident status in the P Sample.* The proportion of people with unresolved resident status was very low, 2.2 percent. Thus, it appears that missing this item has only a minor effect on the estimation process. The missing data procedures assigned an average resident probability of 82.6 percent to people with unresolved resident status, which was, as designed, lower than the average rate among people with resolved status (98.2 percent).
- *Unresolved match status in the P Sample.* Only 1.2 percent of the sample had unresolved match status, compared to 1.8 percent in the 1990 PES. We assigned an average match rate of 84.3 percent to people with unresolved match status. The low rate of unresolved match status implies only a very small effect on the estimation.
- *Unresolved enumeration status in the E Sample.* About 2.6 percent of the E Sample had unresolved enumeration status; it was 2.3 percent in the 1990 PES. The average rate of correct enumeration assigned to people with unresolved status was 76.2 percent.

Methodology

The Accuracy and Coverage Evaluation (A.C.E.) uses dual system estimation (DSE) to determine population estimates. The Census Bureau took five basic operational steps:

- Obtained a roster of the A.C.E. sample blocks independently of the Census.
- Interviewed the people in these blocks.
- Asked who lived there at the time of the interview, and who lived there on Census Day.
- Gathered information to identify people who had moved in or out of the residence since Census Day.
- Matched the independent roster (P Sample) to the list of census enumerations.

We then continued with six estimation steps:

- Used the results of the matching to estimate the number of people missed in the census.
- Estimated from the E Sample the proportion of census enumerations that were indeed correct enumerations.
- Calculated population estimates separately within estimation domains called post-strata.
- Determined a coverage correction factor within each post-stratum to be applied to all people enumerated in the census within that post-stratum.
- Calculated corrected counts for geographic areas by summing the corrected counts of people in that area.
- Applied an appropriate rounding method to produce integer counts of people at all levels.

For each component of the dual system estimator, certain required data were not collected on some people or housing units in the A.C.E. To address this problem we applied missing data procedures. This document summarizes the procedures used in the 2000 A.C.E.; DSSD Memorandum #Q-25 specifies how to program the procedures. See DSSD Memorandum #Q-3 for an overview of the changes in these procedures during the 1990s—including the 1990 Post Enumeration Survey, the Census tests of 1995 and 1996, and the Census 2000 Dress Rehearsal (conducted in 1998).

Three Types of Missing Data

Before calculating dual system estimates, we must account for missing information from the interviews of P-Sample people and from the matching operations. Note that the term “missing data” applies after all follow-up attempts are complete. We encounter three types of missing data in the A.C.E., and use three procedures to correct for them.

1. *Household-level noninterviews in the P Sample.* In a majority of these, the household could not be contacted or the interview was refused. In general, the noninterview adjustment spreads the weights of household noninterviews among households that were interviewed in the same block cluster and type of basic address (defined below).
2. *Missing demographic characteristics used to assign people to a post-stratum.* This situation occurs when a person is missing age, sex, tenure, race, or Hispanic origin. We impute tenure using a hot-deck procedure. Other characteristics, such as age, are imputed based on available demographic distributions. Still others use a combination of the two techniques.
3. *Unresolved status.* For some respondents in the P Sample, there is not enough information available to determine the match status (whether or not the person matches to someone enumerated in the census in the same block cluster or the extended search area) or the resident status (whether or not the person was living in the block cluster or the associated extended search area on Census Day). Determining resident status is important for P-Sample people because Census Day residents are used to estimate the number of matches in the P Sample.

Similarly, for people in the E Sample, there may not be enough information to determine whether the person was correctly enumerated. Such cases where status cannot be determined are said to be “unresolved.” Generally for cases with missing status a probability is assigned based on information available about the specific case and about cases with similar characteristics.

Note: E-Sample people without sufficient information (a name and at least two other characteristics) for matching are not unresolved, but are treated like erroneous enumerations, that is, they are assigned a probability of enumeration of 0. In the P Sample, if the entire housing unit contains people without sufficient information for matching, the housing unit is treated as a noninterview; otherwise, each such person has unresolved resident and match status.

In the coverage measurement survey conducted following the 1980 census, the level of missing data and how to address it were considered to be a serious problem. Its effect was just one factor leading to questions about the reliability of the statistical estimates and a decision not to release adjusted census counts (Prewitt 2000).

Therefore, when preparing for the 1990 Post Enumeration Survey (PES), the Census Bureau tried to reduce the extent of missing data and its potential for introducing bias into the estimates of coverage. This effort produced a series of new procedures, such as the Nonresponse Conversion Operation, which helped produce a high interview rate. Through these enhancements, the Bureau was successful in keeping down the levels of missing data and in correcting for it. See, for example, Belin et al. (1993). More information on the missing data procedures of the PES are found in the next section.

Through the census tests of the mid-1990's and the Census 2000 Dress Rehearsal in 1998, the Census Bureau continued to develop, test, and evaluate different approaches for limiting the amount of missing data, and for addressing it in the estimation process. Various field operations evolved in an attempt to maximize the response of the household and on individual items of the questionnaire. Changes to the estimation procedure for missing data were tested. One important result was a recommendation for the 2000 A.C.E. to use a new procedure to address the issue of unresolved status--described briefly in the next section, and extensively in DSSD Memo #Q-25.

How Were Missing Data Treated in the 1990 PES?

In the 1990 Census, the Post Enumeration Survey (PES) measured the undercoverage in the census counts and provided adjusted counts for various demographic groups and levels of geography. In many ways, the PES resembled the A.C.E. The PES also suffered from missing data in terms of the three components just described (with the exception that P-Sample people were not left with unresolved resident status, as discussed below).

For the first two types of missing data, the Census Bureau applied statistical procedures similar to those used in the A.C.E. The main differences between the missing data procedures for the 1990 PES and 2000 A.C.E. lie with the people who have an unresolved status. For both surveys, each person in the P Sample has a probability of matching to a person in the E Sample. This probability is said to be 1 if the person matches, and 0 if the person does not match. People whose match status is "unresolved"--still unknown or unclear after all follow-up operations--must be assigned a match probability between 0 and 1 to compute the appropriate component of the DSE. Analogous situations describe resident status for P-Sample people (in the 2000 A.C.E. *only*) and enumeration status for E-Sample people (in the PES and the A.C.E.). In the 1990 PES, because we used a different mover procedure, resident status played a different role. Resident status determined whether the person was processed as a mover or non-mover, or was excluded from the P Sample. However, there was not a separate imputation for resident status.

In the 1990 PES, under Mover Procedure B, we estimated

- the number of movers by counting in-movers in the PES block clusters, and
- the match rate among movers by trying to match the P-Sample in-movers to their census records (typically, in other block clusters not in the sample).

In the 2000 A.C.E., under Mover Procedure C, we estimate

- the number of movers (again) by counting in-movers in the A.C.E. block clusters, but
- the *match rate* among movers as that among the *out-movers* from the A.C.E. block clusters.

Because of the difference between mover procedures, the 2000 A.C.E. has to determine census-day resident status for P Sample people to determine who is eligible for inclusion in the DSE.

The procedure for assigning probabilities to unresolved cases (for match status in the P Sample or enumeration status in the E Sample) was also different in 1990. In the PES a hierarchical logistic regression model was used to estimate the missing probabilities for unresolved cases. A very large number of demographic and geographic characteristics were used as input into the model. In contrast, under the 2000 A.C.E. procedure, all resolved and unresolved cases are separated into groups called imputation cells according to a different set of operational and demographic characteristics. Within any cell, the weighted proportion of matches (or residents, or correct enumerations) among the resolved cases is assigned as the probability of a match to all unresolved cases in that cell.

After the 1990 Census and PES, three evaluations were conducted to assess the effect of the missing data procedures on the PES estimates, P1, P2 and P3. The findings are documented in the 1990 Coverage Studies and Evaluation Memorandum Series, #A-9, #B-4 and #C-2, respectively. For these evaluations, a stratified systematic subsample of 920 PES sample block clusters was selected. Following is a description of the three evaluations.

Evaluation P1: Analysis of reasonable alternatives

Evaluation P1 focused on P-Sample match status and E-Sample enumeration status. Match and correct enumeration probabilities were imputed under several alternatives. Undercount rates for each method were computed to determine the sensitivity of the estimates to the imputation method. Results from this evaluation showed that undercount estimates were robust under reasonable imputation methods.

Evaluation P2: Distribution of missing data rates

One objective of PES evaluation was to determine the level and distribution of missing data by demographic and geographic groups, and to compare the distributions with the distribution of census undercount. Evaluation P2 examined the percent of noninterviews and proxy interviews, item imputation rates, and undercount (or overcount) estimates. Results from this evaluation showed that the rate of imputation for characteristics in the PES E Sample was higher than that in the P Sample for all characteristics. The evaluation also showed that imputation rates in the P and

E Samples were correlated with the estimated Census undercount. The correlation was stronger for the E Sample.

Evaluation P3: Evaluation of imputation methodology for unresolved match status cases

In Evaluation P3, cases with critical missing data (noninterview, missing match status, or missing enumeration status) were re-interviewed to assess the adequacy of the missing data models for PES production. P3 compared the total number of matches and correct enumerations from re-interviewed cases with the resulting estimated numbers of matches and correct enumerations, respectively, from the corresponding PES unresolved people. The results showed a correlation between imputed match probabilities from the PES and match codes from the evaluation re-interviews. However, higher correct enumeration probabilities were not correlated with correct enumerations in the evaluation follow-up cases. For this reason, the imputation model worked better for P-Sample cases than for E-Sample cases.

Analysis

Results from Census 2000 evaluations of missing data operations, conducted by the Planning, Research, and Evaluations Division of the Census Bureau, will not be finished in time to include in this document. Therefore, in this document descriptions of the missing data results in the 2000 A.C.E. and comparisons to analogous results from the 1990 Post Enumeration Survey focus on interview rates (Tables 1 - 2), rates and patterns of missing characteristics (Tables 3 - 4), and observations for unresolved cases. For the last item, we present rates of unresolved people with respect to resident, match, and enumeration status (Tables 5 - 7) and the probabilities assigned to unresolved people within imputation cells (Tables 8 - 10). Additional tables (Tables 11 - 12 and in the Appendix) provide further details. Where direct comparisons between 2000 and 1990 are possible, we have placed the 1990 table after the Census 2000 table in this document.

Note that the purpose of this analysis is to point out important features of the missing data procedures. No formal tests of statistical hypotheses have been performed.

How Are the Weights Determined?

In the tables that follow, some numbers are unweighted, while others are weighted. For weighted frequencies and rates, we determine the weights as described below. Some of the tables are listed more than once because we include unweighted and weighted numbers in the same table.

Unweighted Tables: Tables 1a, 1b, 1c, 1d, 1e, 2, 3a, 3d, 5a, 6a, 6c, 7a, 7c, 11, 12; A-2, A-3a, A-4a, A-5a, A-6a, A-7a, A-8a, A-12 through A-14.

Weighted Tables with Housing Units: To produce weighted counts of interviews, noninterviews, etc., we use as housing-unit weights the initial P-Sample weights reflecting (1) the probability of selection at all stages of sampling (including the subsegmenting and sampling within large blocks) except for TES sampling, and (2) any potential trimming of the weights. Tables 1a, 1b, 1c, 1d; A-1a, A-1b.

Weighted Tables with P-Sample People: To produce measures involving P-Sample people, we use two different sets of weights as follows:

- (a) For tables that measure missing rates for the characteristics age, sex, tenure, race, and Hispanic origin (listed below), we use the final P-Sample weights reflecting (1) the probability of selection at all stages of sampling including TES sampling, (2) the noninterview adjustment (a housing-unit factor applied to the people in the housing unit), and (3) any potential trimming of the weights. Tables 3b, 3e, 4a, 4b; A-3b, A-4b, A-5b, A-6b, A-7b, A-8b.

We also use these weights for the tables which summarize results by post-strata groupings. Tables A-15 through A-20.

- (b) For tables that summarize results related to missing resident or match status (except for Tables 3e and A-15 through A-20), the weights incorporate (1) and (3) in (a). That is, we use the same weights as in (a) except that the noninterview adjustment factor is not applied because it is not used to compute the probabilities assigned to unresolved cases within an imputation cell. For these tables, the weighted rates in the tables should be consistent with the weighted numbers of resolved cases. Tables 5b, 6b, 8, 9; A-9, A-10.

Weighted Tables with E-Sample People. To produce measures involving E-Sample people, we use the final E-Sample weights reflecting (1) the probability of selection at all stages of sampling including TES sampling, and (2) any potential trimming of the weights. Note that there is no noninterview adjustment factor for the E Sample. Tables 3b, 4a, 4b, 7b, 10; A-11, A-15 through A-20.

Noninterview Adjustment

Noninterview adjustment is performed only on the P Sample. A.C.E. interviewers ask questions to determine who currently lives in the household and who lived in the household on Census Day. Two rosters are created for each household--one for Census Day and another for Interview Day. Because of the use of Mover Procedure C estimation, there are two noninterview adjustments--one based on housing-unit status as of Census Day (i.e., the Census Day roster), and the other based on housing-unit status as of the day of the A.C.E. interview (i.e., the A.C.E. Interview Day roster).

Each of the two noninterview adjustments generally spreads the weights of noninterviewed units over interviewed units in the same noninterview adjustment cell, defined as the block cluster crossed with the type of basic address. For purposes of this adjustment, the type of basic address is grouped by single-family units, units with multiple residences--such as apartments and condominiums--and all others.

The Census Day housing-unit status for P-Sample units is used to compute the Census Day noninterview adjustment, which is then applied (at the appropriate level) to the person weights of non-movers and out-movers. Similarly, A.C.E. Interview Day housing-unit status is used to compute the A.C.E. Interview Day noninterview adjustment, which is then applied to the person weights of in-movers. More information can be found in DSSD Census 2000 Procedures and Operations Memorandum Series #Q-25.

Results for Noninterview Adjustment

Tables 1a, 1b, 1c, 1d, 1e, 2, Chart 1; A-1a, A-1b.

Tables 1a through 1d summarize components of A.C.E. interview rates for Census 2000 and allow comparison between Census Day and A.C.E. Interview Day. For comparison, Table 1e shows the interview status for interview day in the 1990 PES. These tables show the total number of housing units in the P Sample, the number of P-Sample housing units in each of the four interview status categories (Interviews, Noninterviews, Vacants, and Deletes) and the Interview Rate. Definitions of the four interview status categories and the interview rate are as follows:

Interview: A unit is an interview (for the given reference date) if there is at least one person (who initially had a name and at least two demographic characteristics) who possibly or definitely was a resident of the housing unit on the given reference date.

Noninterview: An occupied housing unit (as of the given reference date) that is not an interview is a noninterview.

Vacant: A housing unit is vacant if no one is living in it at the time of enumeration, unless the occupants are only temporarily absent. Units temporarily occupied at the time of enumeration entirely by individuals who have a usual residence elsewhere are classified as

vacant. New units not yet occupied are classified as vacant if construction has reached a point where all exterior windows and doors are installed and final usable floors are in place. Excluded from the housing-unit inventory are (i) vacant units open to the elements, (ii) units with a posted condemnation sign, and (iii) units that are used entirely for nonresidential purposes. Transient quarters, such as hotels, are housing units only if occupied. (Thus, there are no vacant housing units at hotels and the like.)

Delete: This category is for an address that no longer qualifies as a living quarters.

Definition of interview rate: The unweighted (weighted) interview rate is the unweighted (weighted) number of interviews divided by the unweighted (weighted) sum of interviews and noninterviews. See Tables A-1a and A-1b in the Appendix for weighted A.C.E. interview status for Census Day and A.C.E. Interview Day respectively for each state.

Table 1a shows the unweighted and weighted A.C.E. household interview status for Census Day for the United States. In the A.C.E., we attempted to interview residents at 300,913 addresses located in sampled block clusters. According to the survey, approximately 112.5 million housing units existed in the U.S. on Census Day (U.S. Total minus 'Deletes' in Table 1a below).

During A.C.E. operations, interviews were obtained at 85.7 percent (weighted) of the *addresses* for Census Day, which was 97.1 percent of *occupied households* on Census Day. A.C.E. interview rates were extremely high for both Census Day and A.C.E. Interview Day (see Table 1c also). For unweighted data, the percentage of interviews was slightly smaller while the percentage of vacant and deleted units was slightly larger. This implies that survey weights tended to be lower for vacant and deleted housing units. For other statistics, unweighted and weighted data were similar.

Table 1a. Status of A.C.E. Household Interviews for Census Day (2000)

	Unweighted		Weighted	
	Number	Percent	Number	Percent
U.S. Total (Housing Units)	300,913	100.0%	115,650,208	100.0%
Interviews ¹	254,175	84.5%	99,166,516	85.7%
Noninterviews	7,794	2.6%	2,909,466	2.5%
Vacants	28,472	9.5%	10,398,118	9.0%
Deletes	10,472	3.5%	3,176,108	2.7%
Interview rate ²	0.97	N/A	0.97	N/A

¹ The A.C.E. household is an interview (for Census Day or A.C.E. Interview Day) if there is at least one person (with name and at least two demographic characteristics) who possibly or definitely was a resident of the housing unit on Census Day or A.C.E. Interview Day

² The unweighted (weighted) interview rate is the unweighted (weighted) number of interviews divided by the unweighted (weighted) sum of interviews and noninterviews

Table 1b shows detailed information regarding A.C.E. household interview status for Census Day by final outcome codes. (See memorandum #Q-16 for information on final outcome codes.) Among housing units with complete interviews, 93 percent were completed by household members while about 7 percent were held with proxies. Noninterviews were distributed approximately evenly across the three types of noninterview categories.

Table 1b. Final Outcome Codes for P-Sample Housing Units on Census Day (2000)

Final Outcome code	Housing units (unweighted)	Housing units (weighted)	Percent (weighted)
Total	300,913	115,650,208	100.0%
Interviews	254,175	99,166,516	85.7%
Complete interview with a household member (1)	233,327	91,323,049	79.0%
Complete interview with a proxy respondent (2)	18,335	6,876,428	5.9%
Partial interview (3)	2,513	967,039	0.8%
Noninterviews	7,794	2,909,466	2.5%
No Census Day residents - household converted to noninterview (4)	2,709	948,550	0.8%
Field noninterview (6)	2,667	1,002,590	0.9%
All people have insufficient information for matching and follow-up (9)	2,418	958,326	0.8%
Vacants	28,472	10,398,118	9.0%
No Census Day residents - vacant (10)	4,561	1,700,431	1.5%
Vacant on Census Day (11)	23,911	8,697,687	7.5%
Deletes - Not a housing unit on Census Day (12)	10,472	3,176,108	2.7%

According to the A.C.E., as shown in Table 1c, approximately 114.4 million housing units existed in the U.S. on A.C.E. Interview Day. This estimate is larger for A.C.E. Interview Day than for Census Day because on the latter there were approximately 2½ times the number of deleted housing units. (Compare with Table 1a.) Of the 10,472 Census Day ‘Deletes’, 6,422 housing units were coded as ‘Vacant’ on A.C.E. Interview Day.

During A.C.E. operations, interviews for A.C.E. Interview Day were completed at 88.8 percent (weighted) of the addresses, that is, at 98.8 percent of occupied households. The latter is about 2 percent higher than for Census Day. This is not surprising as interviewers more often speak with the current housing-unit residents for A.C.E. Interview Day; therefore, we expect a better chance of obtaining an interview.

Similar to Census Day, for A.C.E. Interview Day the percentage of interviews was slightly smaller and the percentage of vacant and deleted units was larger for unweighted data. For other statistics, unweighted and weighted data were similar.

Table 1c. Status of A.C.E. Household Interviews³ for A.C.E. Interview Day (2000)

	Unweighted		Weighted	
	Number	Percent	Number	Percent
U.S. Total (Housing Units)	300,913	100.0%	115,650,208	100.0%
Interviews	264,103	87.8%	102,651,540	88.8%
Noninterviews	3,052	1.0%	1,196,445	1.0%
Vacants	29,662	9.9%	10,527,420	9.1%
Deletes	4,096	1.4%	1,274,803	1.1%
Interview rate ⁴	0.99	N/A	0.99	N/A

³ The A.C.E. household is an interview (for Census Day or A.C.E. Interview Day) if there is at least one person (with name and at least two demographic characteristics) who possibly or definitely was a resident of the housing unit on Census Day or A.C.E. Interview Day.

⁴ The unweighted (weighted) interview rate is the unweighted (weighted) number of interviews divided by the unweighted (weighted) sum of interviews and noninterviews

Table 1d shows detailed information regarding A.C.E. household interview status for A.C.E. Interview Day by final outcome codes. (See memorandum #Q-16 for details on final outcome codes.) Among complete interviewed housing units, about 95.5 percent (weighted) of interviews were completed by household members while about 4.5 percent were completed by proxies. Again, we expected to complete more interviews with household members for A.C.E. Interview Day because these interviews refer to the current housing-unit residents while interviews regarding Census Day more often refer to people who have moved.

For A.C.E. Interview Day noninterviews, the percent of people with insufficient information for matching is similar to Census Day. However, this category makes up a much higher percentage of the noninterviews for A.C.E. Interview Day.

Table 1d. Final Outcome Codes for P-Sample Housing Units on A.C.E. Interview Day (2000)

Outcome code	Housing units (unweighted)	Housing units (weighted)	Percent (weighted)
Total	300,913	115,650,208	100.0%
Interviews	264,103	102,651,540	88.8%
Complete interview with a household member (1)	249,854	97,280,209	84.1%
Complete interview with a proxy respondent (2)	12,317	4,624,302	4.0%
Partial interview (3)	1,932	747,029	0.6%
Noninterviews	3,052	1,196,445	1.0%
Field noninterview	373	135,272	
Refusal (5)	196	66,066	0.1%
Unable to contact knowledgeable respondent (7)	176	68,933	0.1%
Language problems (8)	1	273	0.0%
All people have insufficient information for matching and follow-up (9)	2,196	880,308	0.8%
No A.C.E. Interview Day residents - household converted to noninterview (10)	483	180,865	0.2%
Vacants - Vacant on A.C.E. Interview Day (11)	29,662	10,527,420	9.1%
Deletes - Not a housing unit on A.C.E. Interview Day (12)	4,096	1,274,803	1.1%

Table 1e. Status of PES Household Interviews for the Day of the PES Interview (1990)⁵

1990 PES	Unweighted	
	Number	Percent
U.S. Total (Housing Units)	171,390	100.0%
Interviews	141,667	82.7%
Noninterviews	2,246	1.3%
Vacants & Deletes	27,477	16.0%
Interview rate ⁶	98.4%	N/A

Table 2 shows the distribution of noninterview adjustment factors for Census Day and A.C.E. Interview Day. This table allows us to quickly observe a potential for nonresponse bias in the A.C.E. data. The histogram below Table 2 summarizes the same information in graphical format.

Due to the high response in the A.C.E., most noninterview adjustment factors are close to 1.0. Of the 254,175 interviewed housing units on Census Day, 52.3 percent had a noninterview adjustment factor of 1.0, indicating that all housing units in the initial noninterview cell (usually, block cluster by type of basic address⁷) were interviewed. Almost 80 percent of the housing units had a noninterview adjustment factor less than 1.05, and about 92 percent had a factor less than 1.1.

Only two housing units had a noninterview adjustment factor of 3.0, and none had one greater than 3.0. This cutoff is of interest because the criterion for handling noninterviews in the initial cell was that we interviewed at least one housing unit for every two non-interviewed units. This corresponds to a noninterview adjustment factor of 3.0. For the two housing units with factors equal to 3.0, each housing unit was in a cell where this housing unit was interviewed and two others were not (that is, these cases were resolved within the noninterview cell).

For A.C.E. Interview Day, 73.6 percent of the 264,103 interviewed housing units had a noninterview adjustment factor of 1. More than 93 percent of the housing units had a noninterview adjustment factor less than 1.05. Because of the higher response rate for A.C.E. Interview Day, fewer housing units had noninterview adjustment factors greater than 1.1 for A.C.E. Interview Day (1.8 percent) compared with 7.6 percent for Census Day.

⁵ These data come from 1990 PES Evaluation Project P2 Distribution of Missing Data Rates, Table 1 in the Appendix

⁶ The unweighted interview rate is the unweighted number of interviews divided by the unweighted sum of interviews and noninterviews.

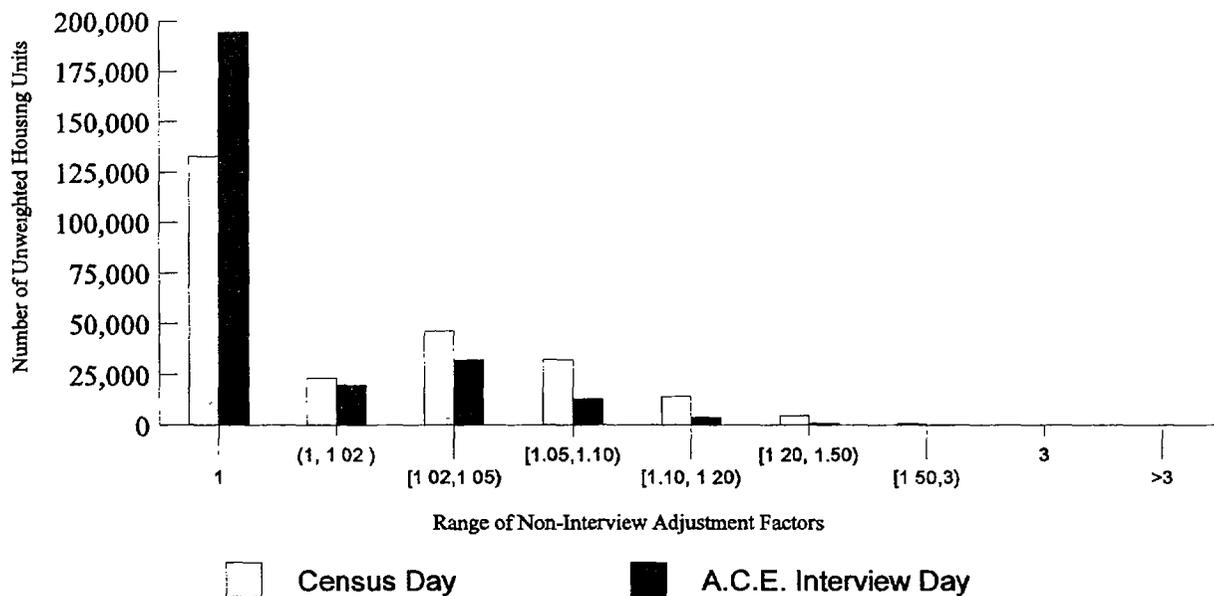
⁷ Type of Basic Address is either single family home, apartment, or other for purposes of the A.C.E. noninterview adjustment

Table 2. Distribution of Noninterview Adjustment Factors for Census Day and A.C.E. Interview Day

	Number of housing units with corresponding noninterview adjustment factor (unweighted)									Number of interviewed housing units
	1	(1, 1.02)	[1.02, 1.05)	[1.05, 1.10)	[1.10, 1.20)	[1.20, 1.50)	[1.50, 3)	3	>3	
Census Day	132,828	23,173	46,328	32,382	14,089	4,582	791	2	0	254,175
Percent	52.3%	9.1%	18.2%	12.7%	5.5%	1.8%	0.3%	0.0%	0.0%	100.0%
A.C.E. Interview Day	194,430	19,776	32,179	12,965	3,713	908	132	0	0	264,103
Percent	73.6%	7.5%	12.2%	4.9%	1.4%	0.3%	0.0%	0.0%	0.0%	100.0%

The histogram shows that there are far more housing units with a noninterview adjustment factor of 1 for A.C.E. Interview Day and fewer housing with the higher adjustment factors. However, the histogram also shows much similarity between the distribution of noninterview adjustment factors for A.C.E. Interview Day and Census Day.

Chart 1. Histogram Showing the Distribution of Noninterview Adjustment Factors for Census Day and A.C.E. Interview Day



Characteristic Imputation

At times, people in the P and E Samples are missing one or more of the following characteristics on the A.C.E. questionnaire or the census: age, sex, tenure, race, or Hispanic origin. When missing, each of these items must be imputed so that the person can be assigned to a post-stratum for dual system estimation. Characteristic imputation is generally not carried out for other missing variables (with the exception of the unresolved status items discussed later) as they are not needed to determine post-stratification. The imputation methods for the P Sample and the E Sample differ, as each has different sources of data available to use for imputation.

P-Sample characteristic imputation methods for Census 2000 are nearly identical to that for the Dress Rehearsal. Imputation for a specific missing characteristic in the P Sample is not affected by the imputation for other missing characteristics. That is, the algorithms are applied independently. Before imputation begins, age and sex distributions are calculated nationally using the P-Sample data. Missing age or sex is then drawn from the appropriate conditional distribution.

Tenure, race, and Hispanic origin are imputed essentially using a hot-deck procedure, where the data are sorted by cluster, then map spot number, then unit identifier, and then relationship within the household. This essentially produces a geographic sort of the data file. Mover status for P-Sample people is not considered when imputing characteristics. Details are found in DSSD Census 2000 Procedures and Operations Memorandum Series #Q-25.

For a missing characteristic in the E Sample of the 2000 A.C.E., we used the actual value of the item imputed in the census. That is, we matched the E-Sample person record to its counterpart on the edited file for the entire 2000 Census, and extracted the missing characteristic. Thus, the E-Sample imputation rates derive from the census enumeration, which was done mostly by mailout/mailback. For the E Sample of the 1990 PES, values for missing characteristics were imputed separately from the census imputation. Therefore, the E-Sample rates of imputation for the 2000 A.C.E. and for the 1990 PES reflect different modes of data collection.

Results for Characteristic Imputation

Tables 3a through 3e, 4a, 4b; A-2 through A-8b

Tables 3a and 3b respectively show unweighted and weighted item imputation rates for the five characteristics for which we impute in the P Sample. The rates are broken down by proxy status and mover status. The last row of these tables shows the same rates for the E Sample. We also show the percentage of people with one or more imputed characteristics in the last column of the table. These tables allow comparisons of item missing data rates between the E and P Samples. Table 3c shows data from the 1990 Census.

Due to a processing error, some data reported by respondents from a small subset of the P Sample were not properly stored. This affected the variables tenure, sex, and Hispanic origin. These data

were not lost. We recovered the data for people whose resident status code indicated they were in-movers or “removed from the P Sample.” Because of the timing, we did not recover the data for 10,046 non-movers, 356 out-movers, and 709 people with unresolved mover status. For these people, their tenure, sex, and Hispanic origin is “missing” on the P-Sample input files, even though they reported the data; we imputed the three characteristics as if the data were never reported.

The consequence is that the imputation rates for tenure, sex, and Hispanic origin in the 2000 P Sample are greater than one would determine from the interviews. That is, these rates reflect two components: 1) the actual level of respondents’ failure to report the information, and 2) the contribution of the processing error. Therefore, data users should use caution when comparing missing data rates from these variables to rates from 1990, to rates from other variables in 2000, or between mover statuses for the same variables.

The total number of P-Sample people in the characteristic imputation tables is 706,245. This excludes 15,489 people eligible for the Targeted Extended Search (TES) operation whose TES weight was 0 because they were not selected for the TES sample.

Characteristic imputation rates were very low for all five characteristics. The unweighted percentages in Table 3a show that 5.5 percent of the P-Sample people had one or more imputed characteristics. Among responses from a household member (non-proxy), only 4.5 percent had one or more imputed characteristics compared to 22.3 percent of the proxy respondents. Among the responses obtained through a proxy, which compose 5.9 percent of the P Sample, the percentage of imputations was disproportionately higher for race and Hispanic origin than for sex and tenure. For mover status, out-movers predictably had a much higher percentage of imputed characteristics (17.7 percent had one or more imputed characteristics) than non-movers and in-movers.

The total number of E-Sample people in the characteristic imputation tables is 704,602. This excludes 8,298 TES people with a TES weight of 0.

For the E Sample, 11.2 percent of people had at least one imputed characteristic, compared to 5.5 percent for the P Sample. This was expected because most E-Sample data are collected by mail while we collected most P-Sample data by personal interview with a CAPI instrument. The CAPI instrument ensures that questions are not skipped; this reduces the level of item missing data. Sex was imputed least (0.3 percent) among E-Sample people while the other characteristics were imputed at rates between 3.1 and 3.8 percent.

Table 3a. A.C.E. Characteristic Imputation Percent Rates for the P Sample by Proxy and Mover Status and for the E Sample (2000, Unweighted)

	Total people	Percentage of people with imputed characteristic					Percentage of people with 1 or more imputed characteristics
		Age	Sex	Tenure	Race	Hispanic origin	
P Sample							
Total ⁸	706,245	2.5%	1.7%	1.9%	1.4%	2.4%	5.5%
Proxy status							
Non-proxy	664,691	2.1%	1.6%	1.7%	1.0%	1.8%	4.5%
Proxy	41,554	8.1%	4.2%	5.1%	9.1%	11.2%	22.3%
Mover status							
Non-mover	643,660	2.3%	1.7%	2.0%	1.2%	2.2%	5.1%
In-mover	37,240	2.3%	0.4%	0.3%	1.3%	0.8%	3.7%
Out-mover	25,345	6.1%	3.3%	2.3%	8.6%	9.3%	17.7%
E Sample							
Total ⁹	704,602	3.1%	0.3%	3.8%	3.5%	3.6%	11.2%

Note: For the E-Sample characteristic imputation rates shown in Table 3a, we did not classify certain types of census data edits as imputations. Therefore, these E-Sample imputation rates are lower than census imputation rates shown in DSSD CENSUS 2000 PROCEDURES AND OPERATIONS MEMORANDUM SERIES B-2*, B-3*, AND B-8*. When the same definition of 'imputation' is used, E-Sample and census imputation rates are extremely similar due to the E-Sample's large sample size.

Note however that when defining the cells for imputation cell estimation, as in Tables 10 and A-14, we classified these census data edits as imputations. (See DSSD Memo #Q-25 for more details.)

⁸ This total excludes 15,489 P-Sample TES people with TES weight = 0, they were not selected for the TES sample

⁹ This total excludes 8,298 E-Sample TES people with TES weight = 0, they were not selected for the TES sample

In Table 3b, weighted percentages are generally about the same as the unweighted percentages in Table 3a. The greatest difference occurs with the variable Race for out-movers where the weighted percentage is 0.6 percent less than the unweighted percentage.

Table 3b. A.C.E. Characteristic Imputation Percent Rates for the P Sample by Proxy and Mover Status and for the E Sample (2000, Weighted)

	Total people	Percentage of people with imputed characteristic					Percentage of people with 1 or more imputed characteristics
		Age	Sex	Tenure	Race	Hispanic origin	
P Sample							
Total	281,708,154	2.4%	1.7%	1.9%	1.4%	2.3%	5.4%
Proxy status							
Non-proxy	265,781,888	2.1%	1.5%	1.7%	1.0%	1.8%	4.4%
Proxy	15,926,266	7.9%	4.2%	5.2%	8.7%	11.0%	21.9%
Mover status							
Non-mover	258,455,070	2.3%	1.7%	1.9%	1.2%	2.1%	5.0%
In-mover	13,571,043	2.3%	0.4%	0.4%	1.3%	0.8%	3.7%
Out-mover	9,682,041	6.0%	3.4%	2.4%	8.0%	9.0%	17.4%
E Sample¹⁰							
Total	264,578,862	2.9%	0.2%	3.6%	3.2%	3.4%	10.4%

¹⁰ See the note below Table 3a for a discussion regarding the lack of comparability between E-Sample imputation rates and Census imputation rates

In the 1990 PES, tenure and race were imputed at 2.3 and 2.5 percent respectively as compared to 1.9 and 1.4 percent in 2000. Age and sex imputations were lower in 1990, 0.7 and 0.5 percent, compared with 2.4 and 1.7 percent in 2000.

For people in the E Sample, race was imputed for 11.8 percent in 1990, but only 3.2 percent in 2000.

Table 3c. PES Characteristic Imputation Percent Rates for the P Sample and for the E Sample (1990, Weighted)¹¹

1990 PES	Total people	Percentage of people with imputed characteristic			
		Age	Sex	Tenure	Race
P Sample					
Total	240,651,222	0.7%	0.5%	2.3%	2.5%
E Sample¹²					
Total	244,200,930	2.4%	1.0%	2.5%	11.8%

¹¹ These data come from 1990 PES Evaluation Project P2 Distribution of Missing Data Rates, Table 3.3, p. 11.

¹² In the 1990 PES, characteristic imputation for the E Sample was done separately from the census imputation, therefore, the E-Sample imputation rates for 2000 A C E and for the 1990 PES are not directly comparable.

Table 3d shows unweighted imputation rates for the same five characteristics by final resident status and final match status.

Of the 625,863 confirmed residents, Table 3d shows that 4.8 percent had one or more imputed characteristics; the imputation rate varied little across the characteristics. Imputation rates for confirmed nonresidents ranged from 3.3 percent for race to 7.0 percent for Hispanic origin, roughly three times higher than rates for confirmed residents. As expected, unresolved residents had much higher imputation rates for all characteristics than confirmed residents and nonresidents. Incomplete data can be a primary reason that a person may have unresolved resident status. The least imputed characteristic among unresolved residents was tenure at 9.1 percent while the most imputed was age at 22.5 percent.

The Match Set Total consists of the confirmed and unresolved residents from the resident data. Removing the confirmed nonresidents reduced imputation rates only slightly because of their small number. Within the match set, 5.5 percent of the people had at least one imputed characteristic. The rates for the individual characteristics ranged from 1.4 percent for race to 2.4 percent for both age and Hispanic origin. Imputation rates for nonmatches were generally about 1½ times the rates for matches. The imputation rates for unresolved matches were much higher, ranging from 12.8 percent for tenure to 37.5 percent for age; 48.6 percent of them had at least one imputation. Again, this is not surprising because incomplete data can be a primary reason that a person had unresolved match status.

Table 3d. A.C.E. Characteristic Imputation Percent Rates for the P Sample by Final Resident Status and Final Match Status (Unweighted)

Final status	Total people	Percentage of people with imputed characteristic					Percentage of people with 1 or more imputed characteristics
		Age	Sex	Tenure	Race	Hispanic origin	
Resident Set Total¹³	653,338	2.5%	1.8%	2.1%	1.5%	2.5%	5.7%
Confirmed Resident	625,863	1.9%	1.5%	1.8%	1.1%	2.0%	4.8%
Confirmed Nonresident	12,393	5.9%	5.5%	5.1%	3.3%	7.0%	14.3%
Unresolved Resident	15,082	22.5%	12.4%	9.1%	15.0%	17.0%	34.9%
Match Set Total¹⁴	640,945	2.4%	1.8%	2.0%	1.4%	2.4%	5.5%
Match	578,695	1.9%	1.4%	1.8%	1.1%	2.0%	4.6%
Nonmatch	54,424	3.2%	2.2%	2.8%	2.4%	3.7%	8.4%
Unresolved Match	7,826	37.5%	20.8%	12.8%	20.0%	22.5%	48.6%

¹³ Among others, this total excludes 15,489 P-Sample TES people with TES weight = 0, they were not selected for the TES sample

¹⁴ Among others, this total excludes 15,127 P-Sample TES people with TES weight = 0, they were not selected for the TES sample

Table 3e shows that the weighted characteristic imputation rates by the resident and match sets were very similar to the unweighted rates.

Table 3e. A.C.E. Characteristic Imputation Percent Rates for the P Sample by Final Resident Status and Final Match Status (Weighted)

Final status	Total people	Percentage of people with imputed characteristic					Percentage of people with 1 or more imputed characteristics
		Age	Sex	Tenure	Race	Hispanic origin	
Resident Set Total	257,479,497	2.5%	1.8%	2.0%	1.4%	2.4%	5.6%
Confirmed Resident	247,353,379	1.9%	1.5%	1.8%	1.1%	2.0%	4.7%
Confirmed Nonresident	4,452,044	6.1%	5.5%	5.2%	3.1%	6.7%	14.1%
Unresolved Resident	5,674,074	23.3%	13.0%	9.6%	15.4%	17.6%	35.8%
Match Set Total	253,027,452	2.4%	1.7%	2.0%	1.4%	2.4%	5.4%
Match	229,196,468	1.9%	1.4%	1.7%	1.0%	2.0%	4.6%
Nonmatch	20,780,055	3.2%	2.2%	2.9%	2.3%	3.6%	8.3%
Unresolved Match	3,050,930	37.7%	21.1%	13.4%	20.2%	22.8%	48.7%

See Table A-2 in the Appendix for unweighted P-Sample characteristic imputation rates by state and Tables A-3a through A-8b for unweighted and weighted P-Sample characteristic imputation rates by additional subgroups.

Tables 4a and 4b show three weighted distributions for each variable used for post-stratification for which we imputed data in the P Sample:

- 1) the distribution of the characteristic *before* imputation;
- 2) the distribution of the imputations for the characteristic; and
- 3) the distribution of the characteristic *after* imputation

We also show these distributions for the E Sample. For the 'Before imputation' column, we calculated each percent as the percent of people in the specific category among those reporting the characteristic. For example, of people who reported race, 73.5 percent reported 'White only'.

It should be noted that, although the variables race and Hispanic origin are used to place people in specific post-strata for dual system estimation, the way people are combined into post-strata differs from the simple listing of races and Hispanic origin as seen in Table 4a. For definitions of the post-strata, see DSSD Memorandum #Q-37.

Table 4a shows that although only 1.4 percent (3,920,504 / 281,708,154) of P-Sample people (weighted) failed to report their race, over 8 percent reported 'Other race only'. This was the third largest race group, only slightly behind 'Black only'. Approximately 12.4 percent of A.C.E. respondents reported they were of Hispanic origin.

The 'After imputation' distributions for the individual races and Hispanic origin remained about the same as before imputation. This is primarily due to the low imputation rates and does not imply that distributions for imputed and non-imputed people were similar. In fact, 14.4 percent of P-Sample people and 28.5 percent of E-Sample people with missing Race were imputed as 'Other race only.' However, due to the low imputation rates the distributions after imputation show only a slightly higher percentage of people with 'Other race only.' Interestingly, many more people in the P Sample reported 'Other race only' (8.3 percent) than in the E Sample (4.5 percent). The disproportionate number of E-Sample imputations of 'Other race only' help bring the 'After imputation' percentages of P-Sample and E-Sample people in the 'Other race only' category a little closer together.

Table 4a. Distribution of Characteristics Before and After Item Imputation (Race and Hispanic Origin)

Response	P Sample (weighted)			E Sample (weighted)		
	Before imputation ¹⁵	Distribution of imputes ¹⁶	After imputation	Before imputation	Distribution of imputes	After imputation
Race	277,787,650	3,920,504	281,708,154	256,161,486	8,417,376	264,578,862
White only	73.5%	67.5%	73.4%	76.9%	57.2%	76.2%
Black only	11.0%	10.2%	11.0%	11.8%	6.6%	11.6%
AIAN ¹⁷ only	0.6%	0.7%	0.6%	0.8%	0.8%	0.8%
Asian only	3.5%	3.4%	3.5%	3.7%	2.9%	3.7%
NHPI ¹⁸ only	0.1%	0.3%	0.1%	0.1%	0.3%	0.1%
Other race only	8.3%	14.4%	8.4%	4.5%	28.5%	5.3%
2 or more races	3.0%	3.5%	3.0%	2.3%	3.7%	2.3%
Hispanic origin	275,231,958	6,476,196	281,708,154	255,576,251	9,002,611	264,578,862
Hispanic	12.4%	11.9%	12.4%	12.5%	9.0%	12.4%
Non-Hispanic	87.6%	88.1%	87.6%	87.5%	91.0%	87.6%

¹⁵ The weighted percent for each 'Before imputation' category is the weighted number of people in the category divided by the total weighted number of people *excluding* the weighted number of people with item missing data for that characteristic

¹⁶ This column shows the number of people for whom we imputed data for the characteristic and the percent of these people we imputed into each category (e.g. Of the 3,920,504 respondents (weighted) who failed to report their race, we imputed 67.5 percent of these people as 'White only')

¹⁷ American Indian or Alaskan Native

¹⁸ Native Hawaiian or Pacific Islander

The distributions for age, gender, and tenure were mostly similar between the P and E Samples prior to imputation, and these distributions were mostly unaffected by the imputation. More people were imputed in the Age category '50 +' in the E Sample. For people with missing gender, 53.9 percent were imputed as Male in the E Sample compared with only 47.2 percent in the P Sample. Also, a higher percentage of people were imputed as living in homes that were 'Owned' in the P Sample.

Table 4b. Distribution of Characteristics Before and After Item Imputation (Age, Sex, and Tenure)

Response	P Sample (weighted)			E Sample (weighted)		
	Before imputation ¹⁹	Distribution of imputes ²⁰	After imputation	Before imputation	Distribution of imputes	After imputation
Age	274,853,139	6,855,015	281,708,154	257,001,904	7,576,958	264,578,862
0 - 17	26.1%	21.7%	26.0%	25.9%	19.7%	25.7%
18 - 29	16.7%	18.9%	16.7%	15.5%	19.0%	15.6%
30 - 49	30.7%	33.0%	30.8%	31.0%	30.9%	31.0%
50 +	26.5%	26.4%	26.5%	27.6%	30.5%	27.6%
Sex	277,009,225	4,698,929	281,708,154	263,960,588	618,274	264,578,862
Male	48.4%	47.2%	48.3%	48.8%	53.9%	48.8%
Female	51.6%	52.8%	51.7%	51.2%	46.1%	51.2%
Tenure	276,405,780	5,302,374	281,708,154	255,175,638	9,403,224	264,578,862
Owner	68.4%	70.3%	68.4%	69.9%	65.1%	69.7%
Non-owner	31.6%	29.7%	31.6%	30.1%	34.9%	30.3%

¹⁹ The weighted percent for each 'Before imputation' category is the weighted number of people in the category divided by the total weighted number of people *excluding* the weighted number of people with item missing data for that characteristic

²⁰ This column shows the number of people for whom we imputed data for the characteristic and the percent of these people we imputed into each category (e.g. Of the 6,855,015 respondents (weighted) who failed to report their age, we imputed 21.7 percent of these people as '0-17')

Imputation of Status (Resident, Match, Correct Enumeration)

After all follow-up activities are completed, there remains a small fraction of A.C.E. sample people for whom we still do not have enough information to compute the components of the dual system estimator. Their status is said to be “unresolved.” We use imputation cell estimation to assign probabilities for P-Sample people with unresolved match or Census-Day resident status, and for E-Sample people with unresolved enumeration status.

All P- and E-Sample people--resolved and unresolved--are separated into groups called imputation cells based on operational and demographic characteristics. We use different variables to define cells for P- and E-Sample people, and, among P-Sample people, to define cells for resolving match and resident status. Within each imputation cell the weighted proportion of matches (or residents or correct enumerations) among the cases with resolved status is calculated, and that value is imputed for all unresolved people in the cell.

Note: Some people are removed from the P Sample, including in-movers and people who are considered to be fictitious, duplicates, geocoding errors, or not residents of the housing unit on Census Day. These people are not included in the following tables related to resident or match status.

Tables A-15 through A-20 in the Appendix display additional data for resident, match, and enumeration status by various groupings of post-strata. Results from these tables are not covered in the following analyses.

Results for Resident Status: Number of People Unresolved

Tables 5a and 5b respectively show the unweighted and weighted final resident status in the 2000 A.C.E. for P-Sample people in the U.S., by mover status, and by region. These tables also show the resident rates for resolved cases. See Table 8 for the actual resident probabilities assigned to unresolved people. The final P-Sample resident status is broken into

- (confirmed) resident
- (confirmed) nonresident
- unresolved resident status

Resident: The matched or nonmatched P-Sample person is a resident of the housing unit on Census Day.

Nonresident: People who are found to be fictitious, duplicates, geocoding errors, or who should not have been included as a resident of the housing unit on Census Day are considered to be nonresidents. They are removed from the P Sample.

Unresolved Resident Status: A matched or nonmatched P-Sample person has unresolved resident status if the follow-up interview did not successfully determine the person's residence on Census Day. The resident status of the possible match is unresolved if the follow-up interview was not successful. The resident status is also imputed when the P-Sample person had insufficient information for matching.

For Tables 5a, 5b, 8, A-9, and A-15 through A-20, the weighted resident rate is determined by dividing the weighted number of confirmed residents by the weighted number of resolved cases--all confirmed residents and nonresidents. When calculating this rate, we only include people with mover status of non-mover and out-mover.

(By definition, non-movers and out-movers should both be Census Day residents; however, we create the mover-status variable prior to field follow-up work. This work may reveal that a non-mover or out-mover was not actually a Census Day resident. For example, a person may report he or she lived in the housing unit since March 20. Preliminary operations would label this person a non-mover; however, follow-up operations may confirm this person moved into the housing unit on April 20. Therefore, this person becomes a confirmed nonresident for Census Day.)

Tables 5a and 5b show that about 2.3 percent (unweighted; 2.2 percent weighted) of all P-Sample people had unresolved resident status. Among people with resolved resident status, 98 percent were confirmed residents. There was little variation in resident status by geographical region.

For mover status, non-movers were much more likely than out-movers to be residents. Non-movers had a 98 percent resident rate among resolved people compared with a 91 percent resident rate for out-movers. Also, only 1.7 percent of non-movers had unresolved resident status while 17.4 percent of out-movers had unresolved resident status.

As seen in Tables 5a and 5b, there was one in-mover who was given the status of confirmed nonresident. The A.C.E. interviewing instrument assigns two different codes pertaining to mover status. These codes have different purposes in the processing. One person was labeled as a non-mover--under one code--at the beginning of the A.C.E. interview, but later in the interview was discovered to be living in a group quarters on Census Day and labeled an in-mover under the second code. Because he or she was actually an in-mover, the missing data system correctly set the resident status to nonresident. (As mentioned above, in-movers are generally not included in the procedure to address unresolved status.) Although edits typically ensure consistency between the two mover codes, this situation was not covered in the edits.

Table 5a. Final Resident Status for the P Sample in the A.C.E. by Mover Status and by Region (Unweighted)

P Sample	Total people	Final resident status						Resident rate for resolved cases
		Confirmed resident		Confirmed nonresident		Unresolved resident status		
U S Total ²¹	653,338	625,863	95 8%	12,393	1 9%	15,082	2 3%	0 98
Mover status								
Non-mover	627,992	606,816	96 6%	10,502	1 7%	10,674	1 7%	0 98
In-mover	1	0	0 0%	1	100 0%	0	0 0%	0 00
Out-mover	25,345	19,047	75 2%	1,890	7 5%	4,408	17 4%	0 91
Region								
Northeast	122,226	117,369	96 0%	2,566	2 1%	2,291	1 9%	0 98
Midwest	145,410	140,819	96 8%	2,053	1 4%	2,538	1 7%	0 99
South	209,197	199,111	95 2%	4,502	2 2%	5,584	2 7%	0 98
West	176,505	168,564	95 5%	3,272	1 9%	4,669	2 6%	0 98

Weighted and unweighted resident rates and percentages of residents and nonresidents were extremely similar.

Table 5b. Final Resident Status for the P Sample in the A.C.E. by Mover Status and by Region (Weighted)

P Sample	Total people	Final resident status						Resident rate for resolved cases
		Confirmed resident		Confirmed nonresident		Unresolved resident status		
U S Total	257,479,497	247,353,379	96 1%	4,452,044	1 7%	5,674,074	2 2%	0 98
Mover status								
Non-mover	247,868,634	240,077,899	96 9%	3,773,365	1 5%	4,017,370	1 6%	0 98
In-mover	275	0	0 0%	275	100 0%	0	0 0%	0 00
Out-mover	9,610,587	7,275,480	75 7%	678,404	7 1%	1,656,704	17 2%	0 91
Region								
Northeast	49,064,972	47,260,156	96 3%	949,002	1 9%	855,814	1 7%	0 98
Midwest	58,913,626	57,170,167	97 0%	774,946	1 3%	968,514	1 6%	0 99
South	90,777,640	86,658,784	95 5%	1,845,380	2 0%	2,273,476	2 5%	0 98
West	58,723,259	56,264,272	95 8%	882,716	1 5%	1,576,270	2 7%	0 98

See Table A-9 in the Appendix for weighted frequencies and rates for P-Sample final resident status by state.

²¹ This total excludes 15,489 P-Sample TES people with TES weight = 0, they were not selected for the TES sample

Results for Match Status: Number of People Unresolved

As with resident status, the match status of a P-Sample person may be unresolved despite the attempts of field follow-up. Tables 6a and 6b, respectively, show the unweighted and weighted final match status in the 2000 A.C.E. for P-Sample people in the U.S., by mover status, and by region. These tables also show match rates for resolved cases. The final P-Sample match status is broken into

- match
- nonmatch
- unresolved match status

Match: The P-Sample person was found in the census enumerations of the search area; that is, in the cluster or in the surrounding block in either a housing unit or in group quarters.

Nonmatch: The P-Sample person was not found in the search area. If the nonmatch was sent to follow-up, the person was confirmed to be a resident of the cluster on Census Day. If the nonmatch was not sent for a follow-up interview, a household member identified the person as a resident of the housing unit during the original ACE interview.

Unresolved match status: The match status is unresolved for possible matches with unsuccessful follow-up interviews and for P-Sample people with insufficient information for matching and follow-up.

For Tables 6a through 6d, 9, A-10, and A-15 through A-20, the weighted match rate is determined by dividing the weighted number of matches by the weighted number of resolved cases--the sum of matches and nonmatches. To calculate the probability of a match, we only consider Census Day confirmed residents and people with unresolved resident status. That is, we exclude confirmed nonresidents while calculating match probabilities.

For comparison, Tables 6c and 6d contain data from the 1990 PES.

Table 6a shows that 1.2 percent of P-Sample people had unresolved match status. This value is a bit smaller than 1.9 percent, the comparable rate from the 1990 PES. (See Table 6c.) We see little variation by geographic region but the match rate is slightly higher in the Midwest. The rate of matches was higher for non-movers (91.1 percent) than out-movers (67.8 percent). Nearly all non-movers had resolved match status (99.1 percent) while only 89.5 percent of out-movers were resolved. Resolved non-movers were matched to the census enumerations at 92 percent compared with only 76 percent for resolved out-movers.

Table 6a. Final Match Status for the P Sample in the A.C.E. by Mover Status and by Region (2000, Unweighted)

P Sample	Total people	Final match status						Match rate for resolved cases
		Match		Nonmatch		Unresolved match		
U S Total ²²	640,945	578,695	90.3%	54,424	8.5%	7,826	1.2%	0.91
Mover status								
Non-mover	617,490	562,783	91.1%	49,345	8.0%	5,362	0.9%	0.92
Out-mover	23,455	15,912	67.8%	5,079	21.7%	2,464	10.5%	0.76
Region								
Northeast	119,660	107,832	90.1%	10,450	8.7%	1,378	1.2%	0.91
Midwest	143,357	133,073	92.8%	8,937	6.2%	1,347	0.9%	0.94
South	204,695	182,833	89.3%	19,151	9.4%	2,711	1.3%	0.91
West	173,233	154,957	89.5%	15,886	9.2%	2,390	1.4%	0.91

Tables 6a and 6b show that the unweighted and weighted data have very similar match rates. Once again, we see that the weighted rate of unresolved matches is slightly smaller in the A.C.E. (1.2 percent) compared to the PES (1.8 percent). See Table 6d.

Table 6b. Final Match Status for the P Sample in the A.C.E. by Mover Status and by Region (2000, Weighted)

P Sample	Total people	Final match status						Match rate for resolved cases
		Match		Nonmatch		Unresolved match		
U S Total	253,027,452	229,196,468	90.6%	20,780,055	8.2%	3,050,930	1.2%	0.92
Mover status								
Non-mover	244,095,269	223,123,506	91.4%	18,844,222	7.7%	2,127,541	0.9%	0.92
Out-mover	8,932,183	6,072,962	68.0%	1,935,832	21.7%	923,389	10.3%	0.76
Region								
Northeast	48,115,970	43,605,704	90.6%	3,988,908	8.3%	521,358	1.1%	0.92
Midwest	58,138,680	54,069,501	93.0%	3,543,936	6.1%	525,243	0.9%	0.94
South	88,932,259	79,596,127	89.5%	8,183,539	9.2%	1,152,593	1.3%	0.91
West	57,840,542	51,925,135	89.8%	5,063,671	8.8%	851,737	1.5%	0.91

See Table A-10 in the Appendix for weighted frequencies and rates for P-Sample Final Match Status by State.

²² This total excludes 15,127 P-Sample TES people with TES weight = 0; they were not selected for the TES sample.

Table 6c. Final Match Status for the P Sample in the PES by Mover Status and by Region (1990, Unweighted)²³

1990 PES P Sample	Total people	Final match status						Match rate for resolved cases
		Match		Nonmatch		Unresolved match		
U S Total	377,005	338,880	89.9%	30,993	8.2%	7,132	1.9%	0.92
Mover status ²⁴								
Non-mover	349,858	319,448	91.3%	25,108	7.2%	5,302	1.5%	0.93
In-mover	27,147	19,432	71.6%	5,885	21.7%	1,830	6.7%	0.77
Region								
Northeast	78,015	68,998	88.4%	7,425	9.5%	1,592	2.0%	0.90
Midwest	81,598	74,990	91.9%	5,539	6.8%	1,069	1.3%	0.93
South	129,183	116,557	90.2%	10,360	8.0%	2,266	1.8%	0.92
West	88,209	78,335	88.8%	7,669	8.7%	2,205	2.5%	0.91

Table 6d. Final Match Status for the P Sample in the PES by Mover Status and by Region (1990, Weighted)²⁵

1990 PES P Sample	Total people	Final match status						Match rate for resolved cases
		Match		Nonmatch		Unresolved match		
U S Total	241,172,796	220,071,083	91.3%	16,843,292	7.0%	4,258,421	1.8%	0.93
Mover status ²⁶								
Non-mover	223,557,568	206,917,059	92.6%	13,442,059	6.0%	3,198,449	1.4%	0.94
In-mover	17,615,228	13,154,024	74.7%	3,401,232	19.3%	1,059,972	6.0%	0.79
Region								
Northeast	49,486,470	44,970,063	90.9%	3,759,804	7.6%	756,603	1.5%	0.92
Midwest	56,714,437	53,129,653	93.7%	2,916,950	5.1%	667,834	1.2%	0.95
South	82,331,793	74,349,777	90.3%	6,361,161	7.7%	1,620,854	2.0%	0.92
West	52,640,097	47,621,591	90.5%	3,805,376	7.2%	1,213,130	2.3%	0.93

²³ The numbers in this table were derived from a 1990 PES research file

²⁴ Out-movers were not included in the 1990 PES because Procedure B was used.

²⁵ The numbers in this table were derived from a 1990 PES research file

²⁶ Out-movers were not included in the 1990 PES because Procedure B was used

Results for Enumeration Status: Number of People Unresolved

Tables 7a and 7b, respectively, show the unweighted and weighted final enumeration status in the 2000 A.C.E. for the E Sample in the U.S. and by region. These tables consist of the Total People (number of people in the E Sample), the Final Enumeration Status, and the Correct Enumeration Rate for Resolved Cases. The final E-Sample enumeration status is broken into

- correct enumeration
- erroneous enumeration
- unresolved enumeration status

Correct Enumeration: E-Sample people are correctly enumerated when they are matched to the P Sample, or when they have been followed up and shown to have been correctly enumerated in this cluster.

Erroneous Enumeration: E-Sample people are erroneously enumerated when they have another residence where they should be counted on Census Day, are fictitious, are duplicated, lived in a housing unit that was a geocoding error, or have insufficient information for matching and follow-up.

Unresolved Enumeration Status: E-Sample people have unresolved enumeration status when the follow-up interview was unsuccessful. The E-Sample person may have been followed up to obtain information about the E-Sample nonmatch, possible match, matched person with unresolved resident status, or geographic work to obtain the location of the housing unit.

For Tables 7a through 7d, 10, and A-11, and A-15 through A-20, the weighted enumeration rate is determined by dividing the weighted number of correctly enumerated people by the weighted number of resolved cases (the sum of correctly enumerated and erroneously enumerated people).

For comparison, Tables 7c and 7d contain data from the 1990 PES.

Table 7a shows that 3.0 percent of E-Sample people had unresolved enumeration status. This is slightly larger than the analogous rate in the PES, 2.4 percent (Table 7c). Among those with resolved enumeration status, 95 percent were correct enumerations. This value varies very little among the four regions of the country.

Table 7a. Final Enumeration Status for the E Sample in the A.C.E. by Region (2000, Unweighted)

E Sample	Total people	Final enumeration status						Correct enumeration rate for resolved cases
		Correct enumeration		Erroneous enumeration		Unresolved enumeration		
U.S. Total ²⁷	704,602	652,390	92.6%	31,064	4.4%	21,148	3.0%	0.95
Region								
Northeast	132,673	122,968	92.7%	6,841	5.2%	2,864	2.2%	0.95
Midwest	152,315	143,660	94.3%	5,303	3.5%	3,352	2.2%	0.96
South	231,503	212,514	91.8%	10,720	4.6%	8,269	3.6%	0.95
West	188,111	173,248	92.1%	8,200	4.4%	6,663	3.5%	0.95

Although weighted and unweighted data differ only slightly, the weighted data generally show higher proportions of correct enumerations and lower proportions of erroneous enumerations and unresolved status. Therefore, people with larger weights tended to be more likely to be correctly enumerated. There was also a smaller weighted percentage of people with unresolved enumeration status, 2.6 percent weighted compared with 3.0 percent unweighted. This weighted percent, 2.6 percent, is still slightly higher than that computed in the 1990 PES, 2.3 percent.

Table 7b. Final Enumeration Status for the E Sample in the A.C.E. by Region (2000, Weighted)

E Sample	Total people	Final enumeration status						Correct enumeration rate for resolved cases
		Correct enumeration		Erroneous enumeration		Unresolved enumeration		
U.S. Total	264,578,862	246,999,032	93.4%	10,688,934	4.0%	6,890,897	2.6%	0.96
Region								
Northeast	50,436,513	47,192,325	93.6%	2,293,348	4.5%	950,840	1.9%	0.95
Midwest	60,196,168	56,985,634	94.7%	1,954,872	3.2%	1,255,661	2.1%	0.97
South	94,296,537	87,529,893	92.8%	4,034,026	4.3%	2,732,618	2.9%	0.96
West	59,649,645	55,291,181	92.7%	2,406,687	4.0%	1,951,778	3.3%	0.96

See Table A-11 in the Appendix for weighted frequencies and rates for E-Sample Final Enumeration Status by State.

²⁷ This total excludes 8,298 E-Sample TES people with TES weight = 0, they were not selected for the TES sample

Table 7c. Final Enumeration Status for the E Sample in the PES by Region (1990, Unweighted)²⁸

1990 PES E Sample	Total people	Final enumeration status						Correct enumeration rate for resolved cases
		Correct enumeration		Erroneous enumeration		Unresolved enumeration		
U S total	392,587	361,302	92.0%	21,995	5.6%	9,290	2.4%	0.94
Region								
Northeast	81,945	73,844	90.1%	6,121	7.5%	1,980	2.4%	0.92
Midwest	84,967	78,808	92.8%	4,300	5.1%	1,859	2.2%	0.95
South	135,227	124,703	92.2%	7,153	5.3%	3,371	2.5%	0.95
West	90,448	83,947	92.8%	4,421	4.9%	2,080	2.3%	0.95

Table 7d. Final Enumeration Status for the E Sample in the PES by Region (1990, Weighted)²⁹

1990 PES E Sample	Total people	Final enumeration status						Correct enumeration rate for resolved cases
		Correct enumeration		Erroneous enumeration		Unresolved enumeration		
U S total	245,031,721	227,185,729	92.7%	12,205,522	5.0%	5,640,471	2.3%	0.95
Region								
Northeast	49,757,763	45,662,382	91.8%	3,096,777	6.2%	998,604	2.0%	0.94
Midwest	57,549,506	54,168,810	94.1%	2,218,411	3.9%	1,162,285	2.0%	0.96
South	83,698,827	77,045,003	92.1%	4,322,175	5.2%	2,331,649	2.8%	0.95
West	54,025,627	50,309,534	93.1%	2,568,159	4.8%	1,147,933	2.1%	0.95

²⁸ The numbers in this table were derived from a 1990 PES research file

²⁹ The numbers in this table were derived from a 1990 PES research file.

Results for Resident Status: Probabilities Assigned to Unresolved People

Table 8 shows the imputation cells used for P-Sample cases with unresolved resident status, as indicated in DSSD Memo #Q-25. We created these cells with combinations of operational and demographic variables, such as match status (defined in the table), tenure, race and ethnicity.

Group 3, partial household nonmatches needing follow-up, is divided into two parts: V3a includes those in group 3 who are 18-29 years of age and are children of the reference person; V3b includes all other people in group 3. The probability imputed for unresolved people in Before Follow-up Group 7 (insufficient information for matching) is the weighted average over groups 1 – 5 and 8.

Each cell contains the following five values:

- 1) total people (weighted)
- 2) number of confirmed residents (weighted)
- 3) number of confirmed nonresidents (weighted)
- 4) number of people with unresolved resident status (weighted)
- 5) weighted resident rate for resolved cases

Some important observations follow, based on the results in Table 8 and other output data.

- The weighted resident rate over all confirmed people in the P Sample was 98.2 percent.
- The average weighted rate assigned to people with *unresolved* status was 82.6 percent.
- With respect to their resident rate, the before follow-up groups discriminated well among people with resolved resident status.
- Resident rates were significantly lower for potentially fictitious people and people said to be living elsewhere on Census Day (Follow-Up Group 8), 13.9 percent.
- For most of the imputation cells, neither the race/ethnicity variable nor the tenure (owner/non-owner) variable discriminated very well. An exception was for the Group V3a, where the probabilities assigned ranged from 76 percent to 93 percent in the four cells.
- The variable V3a proved to be a good discriminator of resident status regardless of race/ethnicity status or tenure. This variable tried to isolate people, many of whom were college students or military personnel who should have been enumerated in a college dorm or other group quarters. Only 84 percent of these people were residents of the housing unit on Census Day, compared with 96 percent of people in other partially-matched households.
- All imputation cells were of adequate size to accurately estimate the resident probabilities used for imputation. The smallest cell (V3a, non-owner, non-Hispanic white only) had 118 resolved people. See Table A-12 in the Appendix for unweighted frequencies.

Table 8. Imputation Cells Used for P-Sample Resident Status (Weighted)

Follow-up match status group	Final resident status (weighted)	Owner		Non-owner		Total
		Non-Hispanic White only	Others	Non-Hispanic White only	Others	
1 = Matches needing follow-up	Total people	1,066,783	275,841	474,578	327,786	2,144,988
	Confirmed residents	954,103	255,772	351,327	249,731	1,810,933
	Confirmed nonresidents	17,834	3,716	2,405	2,193	26,148
	Unresolved resident status	94,846	16,353	120,845	75,863	307,907
	Resident rate for resolved cases	0.98	0.99	0.99	0.99	0.99
2 = Possible matches	Total people	548,089	406,432	323,301	579,803	1,857,625
	Confirmed residents	503,726	374,013	290,322	513,214	1,681,275
	Confirmed nonresidents	14,092	12,234	10,303	14,520	51,149
	Unresolved resident status	30,271	20,184	22,676	52,070	125,201
	Resident rate for resolved cases	0.97	0.97	0.97	0.97	0.97
3 = Partial household nonmatches needing follow-up V3a - Age 18-29 and Child of reference person	Total people	268,508	144,560	54,002	106,711	573,781
	Confirmed residents	191,115	125,796	42,168	89,720	448,798
	Confirmed nonresidents	61,862	13,824	5,588	6,977	88,250
	Unresolved resident status	15,531	4,940	6,247	10,015	36,733
	Resident rate for resolved cases	0.76	0.90	0.88	0.93	0.84
3 = Partial household nonmatches needing follow-up V3b - Others	Total people	1,608,515	1,229,905	761,823	1,532,235	5,132,478
	Confirmed residents	1,433,998	1,133,145	614,907	1,345,939	4,527,989
	Confirmed nonresidents	66,420	34,181	26,222	42,476	169,299
	Unresolved resident status	108,097	62,579	120,693	143,821	435,191
	Resident rate for resolved cases	0.96	0.97	0.96	0.97	0.96
4 = Whole household nonmatches needing follow-up, not conflicting households	Total people	1,193,507	319,154	866,955	754,555	3,134,170
	Confirmed residents	995,407	277,479	637,280	562,795	2,472,962
	Confirmed nonresidents	86,886	16,648	62,468	52,734	218,736
	Unresolved resident status	111,213	25,027	167,207	139,026	442,472
	Resident rate for resolved cases	0.92	0.94	0.91	0.91	0.92
5 = Nonmatches from conflicting households	Total people	557,394	426,811	578,019	919,900	2,482,124
	Confirmed residents	393,842	331,395	429,145	698,409	1,852,791
	Confirmed nonresidents	38,948	26,150	24,825	33,383	123,306
	Unresolved resident status	124,605	69,266	124,049	188,108	506,028
	Resident rate for resolved cases	0.91	0.93	0.95	0.95	0.94
6 = Resolved before follow-up	Total people	131,529,056	37,306,611	35,224,222	32,301,327	236,361,216
	Confirmed residents	130,608,330	36,923,966	34,854,927	31,889,265	234,276,488
	Confirmed nonresidents	910,784	375,966	359,223	391,344	2,037,317
	Unresolved resident status	9,942	6,680	10,072	20,717	47,411
	Resident rate for resolved cases	0.99	0.99	0.99	0.99	0.99
7 = Insufficient information for matching	Total people	1,162,840	460,854	686,196	625,186	2,935,076
	Confirmed residents	1,074	491	0	0	1,565
	Confirmed nonresidents	200	0	2,519	0	2,719
	Unresolved resident status	1,161,566	460,363	683,677	625,186	2,930,792
	Resident rate for resolved cases	0.81	0.87	0.84	0.87	0.84
8 = Potentially fictitious or people said to be living elsewhere on Census Day	Total people	1,096,721	436,653	591,119	733,545	2,858,038
	Confirmed residents	104,111	39,750	68,233	68,485	280,579
	Confirmed nonresidents	767,180	283,468	317,283	367,190	1,735,121
	Unresolved resident status	225,431	113,435	205,603	297,870	842,339
	Resident rate for resolved cases	0.12	0.12	0.18	0.16	0.14
Total	Total people	139,031,413	41,006,821	39,560,215	37,881,048	257,479,497
	Confirmed residents	135,185,706	39,461,807	37,288,309	35,417,557	247,353,379
	Confirmed nonresidents	1,964,205	766,187	810,837	910,816	4,452,044
	Unresolved resident status	1,881,502	778,826	1,461,070	1,552,675	5,674,074
	Resident rate for resolved cases	0.99	0.98	0.98	0.97	0.98

See the Appendix for unweighted frequencies (Table A-12. Imputation Cells Used for Resident Status).

Results for Match Status: Probabilities Assigned to the Unresolved People

Table 9 shows the imputation cells used for P-Sample cases with unresolved match status as indicated in DSSD Memo #Q-25. We created these cells with combinations of mover status, housing-unit address match code, and the number of variables that were imputed.

Each cell contains the following five values:

- 1) total people (weighted)
- 2) number of matched people (weighted)
- 3) number of nonmatched people (weighted)
- 4) number of people with unresolved match status (weighted)
- 5) weighted match rate for resolved cases

The following conclusions are made based on Table 9 and other output data.

- The average weighted match rate among all people with resolved status was 91.7 percent.
- The average weighted match rate assigned to people with *unresolved* status was 84.3 percent.
- The match rates vary greatly by imputation cell.
- Non-movers (92 percent) have much higher match rates than out-movers (76 percent).
- The housing-unit address match code worked well for resolving matches. In a housing unit that failed to match, a person's chance of a match was much lower (68 vs. 94 or 89 percent).
- People who supplied incomplete data, indicated by having one or more imputed variable, tended to have lower match rates than those who provided complete data.
- All imputation cells for match status contained at least several thousand people with resolved match status, thus allowing accurate estimates of the match probabilities used for imputation. See Table A-13 in the Appendix for unweighted frequencies.
- Based on the output file for P-Sample people, of the 7,826 people (unweighted) with unresolved match status, 7,506 (95.9 percent) did not have sufficient information for matching (a valid name and at least two characteristics from a specified set), so were never sent to matching or follow-up. Of the remaining 320 people, 187 came back from the matching or follow-up operations without sufficient information for matching. Thus, little information was available on most unresolved people.

Table 9. Imputation Cells Used for P-Sample Match Status (Weighted)

Mover status	Final match status (weighted)	Housing-unit address match code				Total
		Housing unit was a match (code 1) ³⁰		Housing unit was a nonmatch or the household is conflicting (code 2 or 4)		
		No imputes	1 or more imputes	No imputes	1 or more imputes	
Non-mover	Total people	212,844,647	11,078,431	19,061,019	1,111,173	244,095,269
	Matched	200,421,491	9,092,884	13,060,089	549,042	223,123,506
	Nonmatched	11,562,492	998,717	5,863,101	419,912	18,844,222
	Unresolved match	860,663	986,831	137,829	142,219	2,127,541
	Match rate for resolved cases	0.95	0.90	0.69	0.57	0.92
Out-mover	Total people	6,416,631	1,263,115	1,252,438		8,932,183
	Matched	4,746,267	756,997	569,698		6,072,962
	Nonmatched	1,200,572	200,506	534,755		1,935,832
	Unresolved match	469,792	305,612	147,985		923,389
	Match rate for resolved cases	0.80	0.79	0.52		0.76
Total	Total people	219,261,277	12,341,546	21,424,629		253,027,452
	Matched	205,167,758	9,849,881	14,178,829		229,196,468
	Nonmatched	12,763,064	1,199,222	6,817,768		20,780,055
	Unresolved match	1,330,455	1,292,443	428,032		3,050,930
	Match rate for resolved cases	0.94	0.89	0.68		0.92

³⁰ The P-Sample Address Codes used for creating these cells are (from DSSD Memo #Q-25)

- 1 = Housing Unit Matched during Housing Unit Matching
- 2 = Housing Unit Did Not Match during Housing Unit Matching
- 4 = Conflicting Households

Address code values of 2-3 are considered to be "Housing Units not matched during Housing Unit matching" for the purposes of match code group assignment.

Results for Enumeration Status: Probabilities Assigned to Unresolved People

Table 10 shows the imputation cells used for E-Sample people with unresolved enumeration status, as indicated in DSSD Memo #Q-25, and later modified in the revision. These cells are based on match status (defined in the table), the number of variables that were imputed, race, and ethnicity. Group 3 is divided into two parts, as described before Table 8.

Each cell contains the following five values:

- 1) total people (weighted)
- 2) number of people correctly enumerated (weighted)
- 3) number of people erroneously enumerated (weighted)
- 4) number of people with unresolved enumeration status (weighted)
- 5) weighted correct enumeration rate for resolved cases (weighted)

We make the following observations based on Table 10 and other output data.

- The average weighted rate of correct enumerations among all resolved people was 95.5 percent.
- The average weighted rate assigned to *unresolved* people was 76.2 percent.
- For people resolved before follow-up, almost all (99 percent) were correct enumerations.
- Among resolved people, about 6 percent of those determined to be potentially fictitious during follow-up (Follow-Up Group 11) were correct enumerations.
- Among resolved people, about 23 percent of those said to be living elsewhere on Census Day (Follow-Up Group 12) were correct enumerations.
- Within partially matched households, the variable V3a discriminated well for enumeration status. Of people aged 18 to 29 living with their parents, only 88 percent were correct enumerations, compared to 97 percent for all others.
- Other than groups V3a, 11 and 12, the follow-up groups did not discriminate as well as they did when assigning resident probabilities.
- The other two variables used to form imputation cells--the number of variables imputed and race/ethnicity--discriminated only minimally with respect to enumeration probabilities.
- All imputation cells contained a sufficient number of people with resolved enumeration status, thus allowing accurate estimates of the enumeration probabilities used for imputation. See Table A-14 in the Appendix for unweighted frequencies.

Table 10. Imputation Cells Used for E-Sample Enumeration Status (Weighted)

Follow-up group	Final enumeration status	No imputes		1 or more imputes	Total
1 = Matches needing follow-up	Total people	1,737,638		302,752	2,040,390
	Correct enumeration	1,467,910		237,683	1,705,593
	Erroneous enumeration	35,121		5,637	40,758
	Unresolved enumeration	234,607		59,432	294,039
	Correct enum rate for resolved cases	0.98		0.98	0.98
2 = Possible matches	Total people	1,204,233		505,884	1,710,117
	Correct enumeration	1,092,888		457,838	1,550,726
	Erroneous enumeration	36,263		14,898	51,161
	Unresolved enumeration	75,083		33,147	108,230
	Correct enum rate for resolved cases	0.97		0.97	0.97
3 = Partial household nonmatches V3a - Age 18-29 and Child of Reference Person	Total people	898,638		145,705	1,044,343
	Correct enumeration	725,012		117,959	842,970
	Erroneous enumeration	107,176		11,894	119,071
	Unresolved enumeration	66,450		15,852	82,302
	Correct enum rate for resolved cases	0.87		0.91	0.88
3 = Partial household nonmatches V3b - Others	Total people	5,954,242		1,336,054	7,290,295
	Correct enumeration	5,248,294		1,149,350	6,397,644
	Erroneous enumeration	138,322		48,098	186,420
	Unresolved enumeration	567,626		138,605	706,231
	Correct enum rate for resolved cases	0.97		0.96	0.97
4 = Whole household nonmatches where the housing unit matched, not conflicting households	Total people	Non-Hispanic White	Others	1,563,432	9,553,631
	Correct enumeration	5,174,133	2,816,066	1,256,996	7,717,158
	Erroneous enumeration	4,230,898	2,229,265	55,462	268,669
	Unresolved enumeration	152,741	60,466	250,975	1,567,804
	Correct enum rate for resolved cases	0.97	0.97	0.96	0.97
5 = Nonmatches from conflicting households, for housing units not in regular nonresponse follow-up	Total people	912,138		200,054	1,112,191
	Correct enumeration	730,314		155,315	885,629
	Erroneous enumeration	18,405		5,631	24,036
	Unresolved enumeration	163,418		39,108	202,526
	Correct enum rate for resolved cases	0.98		0.97	0.97
6 = Nonmatches from conflicting households, housing units in regular nonresponse follow-up	Total people	841,318		259,888	1,101,206
	Correct enumeration	585,138		175,327	760,465
	Erroneous enumeration	55,275		14,014	69,289
	Unresolved enumeration	200,906		70,547	271,453
	Correct enum rate for resolved cases	0.91		0.93	0.92
7 = Whole household nonmatches, where the housing unit did not match in housing unit matching	Total people	Non-Hispanic White	Others	1,129,229	8,104,620
	Correct enumeration	4,932,503	2,042,887	952,272	6,998,457
	Erroneous enumeration	4,332,845	1,713,340	50,230	331,689
	Unresolved enumeration	184,679	96,780	126,728	774,474
	Correct enum rate for resolved cases	0.96	0.95	0.95	0.95

(continued on the next page)

Table 10. (Cont.) Imputation Cells Used for E-Sample Enumeration Status (Weighted)

Follow-up group	Final enumeration status	No imputes		1 or more imputes	Total
		Non-Hispanic White	Others		
8 = Resolved before follow-up	Total people	142,798,309	47,919,570	23,769,194	214,487,072
	Correct enumeration	142,078,256	47,397,936	23,262,689	212,738,881
	Erroneous enumeration	692,617	502,747	492,335	1,687,698
	Unresolved enumeration	27,435	18,887	14,170	60,492
	Correct enum. rate for resolved cases	1 00	0 99	0 98	0 99
9 = Insufficient information for matching	Total people	1,442,884		3,317,320	4,760,204
	Correct enumeration	4,542		4,029	8,571
	Erroneous enumeration	1,436,980		3,312,434	4,749,414
	Unresolved enumeration	1,362		857	2,219
	Correct enum. rate for resolved cases	0 00		0 00	0 00
10 = TES people *	Total people	7,533,567		957,446	8,491,013
	Correct enumeration	6,047,941		703,156	6,751,097
	Erroneous enumeration	472,275		116,090	588,365
	Unresolved enumeration	1,013,351		138,200	1,151,551
	Correct enum. rate for resolved cases	0.93		0 86	0.92
11 = Potentially fictitious people	Total people	871,606		215,606	1,087,212
	Correct enumeration	23,276		9,534	32,810
	Erroneous enumeration	377,991		98,501	476,492
	Unresolved enumeration	470,338		107,572	577,910
	Correct enum. rate for resolved cases	0 06		0 09	0 06
12 = People who were said to be living elsewhere on Census Day	Total people	3,070,983		725,585	3,796,568
	Correct enumeration	501,046		107,984	609,031
	Erroneous enumeration	1,689,200		406,671	2,095,872
	Unresolved enumeration	880,737		210,929	1,091,666
	Correct enum. rate for resolved cases	0 23		0 21	0 23
TOTAL	Total people	230,150,714		34,428,149	264,578,862
	Correct enumeration	218,408,901		28,590,131	246,999,032
	Erroneous enumeration	6,057,038		4,631,896	10,688,934
	Unresolved enumeration	5,684,775		1,206,122	6,890,897
	Correct enum. rate for resolved cases	0 97		0 86	0 96

* Follow-Up Groups 11 and 12 contain some TES people; all other TES people are placed in Follow-Up Group 10.

Table 11 shows the P-Sample people according to their match status before and after follow-up. The results allow us to see how a person's match status is affected by follow-up procedures. Follow-up rarely changed a match to a nonmatch (0.3 percent) or to unresolved match status (0.1 percent); or a nonmatch to a match (3.3 percent) or to unresolved status (0.5 percent). Possible matches were resolved 97.3 percent of the time--usually to a match. For people resolved before follow-up, 96.4 percent were matches.

Table 11. P-Sample Before Follow-Up Match Status by Final Match Status (Unweighted)

Before follow-up match status (unweighted)	Final match status (unweighted)			Total
	Match	Nonmatch	Unresolved match	
Total people	578,695	54,424	7,826	640,945
Sent to follow-up				
Match	5,442 (99.7%)	15 (0.3%)	4 (0.1%)	5,461
Possible match	4,236 (86.3%)	540 (11.0%)	131 (2.7%)	4,907
Nonmatch	1,118 (3.3%)	32,557 (96.2%)	162 (0.5%)	33,837
Not sent to follow-up				
Resolved before follow-up	567,896 (96.4%)	21,303 (3.6%)	23 (0.0%)	589,222
Insufficient information	3 (0.0%)	9 (0.1%)	7,506 (99.8%)	7,518

Table 12 shows P-Sample people according to final resident status by final match status. Almost all people who were matched to the census were residents of the sample block as of Census Day, though 1,051 had unresolved resident status. The majority of nonmatched people were also confirmed residents, but a much higher percentage of these people had unresolved resident status. By procedure, all people with unresolved match status had unresolved resident status. Note that confirmed nonresidents are excluded from this tabulation.

Table 12. Final Match Status by Final Resident Status (Unweighted)

Final resident status (unweighted)	Final match status (unweighted)				Total
	Match	Nonmatch	Unresolved match		
			Insufficient information for matching	Other	
Total people	578,695	54,424	7,693	133	640,945
Confirmed resident	577,644	48,219	0	0	625,863
Confirmed nonresident	0	0	0	0	0
Unresolved resident	1,051	6,205	7,693	133	15,082

Conclusion

Missing data rates were low and had little effect on the quality of data from the Accuracy and Coverage Evaluation Survey (A.C.E.). As expected, interview rates were extremely high, item missing data rates were low, and only a small percentage of respondents had unresolved resident, match, or enumeration status. The level of missing data in the 2000 A.C.E. is similar to missing data rates from the 1990 PES.

Preparing for the 2000 A.C.E., we developed procedures to limit missing data, and with it, the variability and potential for bias in the resulting coverage estimates. Because of the low levels of missing data and the methods we applied,

- almost all noninterview adjustment factors applied to interviewed housing units were very close to 1,
- the distributions of imputed characteristics are nearly identical before and after imputation, and
- the imputation cells used to assign probabilities to people with unresolved status generally discriminated well in the directions indicated by the research.

The A.C.E. data show these procedures were a success.

References

- Belin, T., G. Diffendal, S. Mack, D. Rubin, J. Schafer, and A. Zaslavsky (1993). "Hierarchical Logistic Regression Models for Imputation of Unresolved Enumeration Status in Undercount Estimation," *Journal of the American Statistical Association*, 88, pp. 1149-1166.
- Childers, D. (2000). "The Design of the Census 2000 Accuracy and Coverage Evaluation," DSSD Census 2000 Procedures and Operations Memorandum Series, Chapter S-DT-1.
- Memorandum from David Bateman to John H. Thompson, "Final Report for PES Evaluation Project P1: Analysis of Reasonable Alternatives," July 9, 1991, 1990 Coverage Studies and Evaluation Memorandum Series #A-9.
- Memorandum from David V. Bateman to John H. Thompson, "Final Report for 1990 PES Evaluation Project P2: Distribution of Missing Data Rates," July 10, 1991, 1990 Coverage Studies and Evaluation Memorandum Series #B-4.
- Memorandum from David V. Bateman to John H. Thompson, "Final Report for 1990 PES Evaluation Project P3: Evaluation of Imputation Methodology for Unresolved Match Status Cases," July 10, 1991, 1990 Coverage Studies and Evaluation Memorandum Series #C-2.
- Memorandum from Donna Kostanich to Howard Hogan, "Accuracy and Coverage Evaluation Survey: Overview of Missing Data for P & E Samples," DSSD Census 2000 Procedures and Operations Memorandum Series #Q-3.
- Memorandum from Donna Kostanich to Maureen Lynch, "Accuracy and Coverage Evaluation Survey: Specifications for Creating A.C.E. Final Outcome Codes and A.C.E. Interview Status Codes," DSSD Census 2000 Procedures and Operations Memorandum Series #Q-16.
- Memorandum from Pat Cantwell for Documentation, "Accuracy and Coverage Evaluation Survey: Specifications for the Missing Data Procedures," DSSD Census 2000 Procedures and Operations Memorandum Series #Q-25.
- Memorandum from Donna Kostanich to Dennis Stoudt, "Accuracy and Coverage Evaluation Survey: Computer Specifications for Person Dual System Estimation (U.S.) - Re-issue of Q-29," DSSD Census 2000 Procedures and Operations Memorandum Series #Q-37.
- Prewitt, K. (2000). "Accuracy and Coverage Evaluation: Statement on the Feasibility of Using Statistical Methods to Improve the Accuracy of Census 2000," released by the Director of the U.S. Bureau of the Census, June, 2000.

Appendix

Table A-1a. Status of A C E. Household Interviews for Census Day by State (Weighted)

States	Total (wgt)	Interviews (%)		Noninterviews (%)		Vacants (%)		Deletes (%)		Weighted interview rate
U S. Total	115,650,208	99,166,516	85.7%	2,909,466	2.5%	10,398,118	9.0%	3,176,108	2.7%	97.1%
Alabama	1,967,703	1,646,885	83.7%	48,854	2.5%	171,419	8.7%	100,545	5.1%	97.1%
Alaska	186,971	138,754	74.2%	4,686	2.5%	30,822	16.5%	12,709	6.8%	96.7%
Arizona	2,291,735	1,833,927	80.0%	56,748	2.5%	338,913	14.8%	62,147	2.7%	97.0%
Arkansas	1,204,014	1,034,004	85.9%	20,562	1.7%	106,604	8.9%	42,843	3.6%	98.1%
California	12,255,066	11,095,396	90.5%	289,143	2.4%	653,703	5.3%	216,825	1.8%	97.5%
Colorado	1,633,980	1,437,194	88.0%	27,291	1.7%	142,647	8.7%	26,848	1.6%	98.1%
Connecticut	1,262,197	1,157,154	91.7%	8,489	0.7%	91,440	7.2%	5,114	0.4%	99.3%
Delaware	282,962	239,474	84.6%	6,398	2.3%	30,910	10.9%	6,180	2.2%	97.4%
D C	295,972	236,195	79.8%	22,235	7.5%	22,476	7.6%	15,067	5.1%	91.4%
Florida	7,350,668	5,980,392	81.4%	254,207	3.5%	991,414	13.5%	124,654	1.7%	95.9%
Georgia	3,178,003	2,718,951	85.6%	88,498	2.8%	219,191	6.9%	151,364	4.8%	96.8%
Hawaii	446,780	354,215	79.3%	19,182	4.3%	42,876	9.6%	30,506	6.8%	94.9%
Idaho	475,978	397,566	83.5%	8,147	1.7%	58,313	12.3%	11,952	2.5%	98.0%
Illinois	4,752,616	4,291,467	90.3%	110,755	2.3%	239,679	5.0%	110,715	2.3%	97.5%
Indiana	2,565,559	2,219,768	86.5%	68,854	2.7%	223,921	8.7%	53,016	2.1%	97.0%
Iowa	1,286,159	1,136,137	88.3%	19,546	1.5%	101,279	7.9%	29,197	2.3%	98.3%
Kansas	1,054,277	945,244	89.7%	16,460	1.6%	70,495	6.7%	22,079	2.1%	98.3%
Kentucky	1,738,637	1,456,396	83.8%	65,962	3.8%	144,544	8.3%	71,735	4.1%	95.7%
Louisiana	1,690,093	1,400,879	82.9%	50,845	3.0%	156,614	9.3%	81,754	4.8%	96.5%
Maine	606,684	461,414	76.1%	3,938	0.6%	131,241	21.6%	10,091	1.7%	99.2%
Maryland	2,240,463	1,940,530	86.6%	85,939	3.8%	150,083	6.7%	63,911	2.9%	95.8%
Massachusetts	2,637,732	2,391,855	90.7%	23,614	0.9%	201,139	7.6%	21,126	0.8%	99.0%
Michigan	3,945,568	3,393,296	86.0%	72,391	1.8%	371,316	9.4%	108,565	2.8%	97.9%
Minnesota	1,976,410	1,770,380	89.6%	29,086	1.5%	136,041	6.9%	40,902	2.1%	98.4%
Mississippi	1,067,393	907,026	85.0%	23,664	2.2%	74,770	7.0%	61,933	5.8%	97.5%
Missouri	2,678,909	2,223,852	83.0%	72,476	2.7%	236,093	8.8%	146,489	5.5%	96.8%
Montana	463,607	391,035	84.3%	5,991	1.3%	53,571	11.6%	13,009	2.8%	98.5%
Nebraska	684,874	582,127	85.0%	10,588	1.5%	60,983	8.9%	31,176	4.6%	98.2%
Nevada	895,050	754,042	84.2%	29,099	3.3%	103,976	11.6%	7,934	0.9%	96.3%
New Hampshire	558,641	454,046	81.3%	4,105	0.7%	97,250	17.4%	3,240	0.6%	99.1%
New Jersey	3,377,908	3,021,714	89.5%	83,119	2.5%	227,318	6.7%	45,755	1.4%	97.3%
New Mexico	708,714	576,115	81.3%	9,927	1.4%	79,788	11.3%	42,885	6.1%	98.3%
New York	7,573,292	6,582,776	86.9%	228,038	3.0%	591,096	7.8%	171,383	2.3%	96.7%
North Carolina	3,857,166	3,167,509	82.1%	169,950	4.4%	350,660	9.1%	169,047	4.4%	94.9%
North Dakota	294,040	236,165	80.3%	2,060	0.7%	39,947	13.6%	15,869	5.4%	99.1%
Ohio	4,785,461	4,207,357	87.9%	92,787	1.9%	377,803	7.9%	107,514	2.2%	97.8%
Oklahoma	1,461,163	1,246,847	85.3%	22,776	1.6%	165,677	11.3%	25,863	1.8%	98.2%
Oregon	1,411,681	1,219,226	86.4%	39,699	2.8%	128,853	9.1%	23,903	1.7%	96.8%
Pennsylvania	5,130,010	4,503,576	87.8%	124,120	2.4%	371,999	7.3%	130,315	2.5%	97.3%
Rhode Island	408,426	357,921	87.6%	6,164	1.5%	40,580	9.9%	3,761	0.9%	98.3%
South Carolina	2,274,389	1,387,957	61.0%	58,089	2.6%	728,183	32.0%	100,160	4.4%	96.0%
South Dakota	300,952	267,629	88.9%	4,258	1.4%	22,293	7.4%	6,772	2.3%	98.4%
Tennessee	2,489,607	2,151,369	86.4%	76,847	3.1%	178,876	7.2%	82,515	3.3%	96.6%
Texas	8,115,619	6,828,842	84.1%	229,343	2.8%	778,406	9.6%	279,028	3.4%	96.8%
Utah	885,164	763,698	86.3%	10,947	1.2%	77,194	8.7%	33,325	3.8%	98.6%
Vermont	307,822	236,222	76.7%	3,980	1.3%	63,985	20.8%	3,636	1.2%	98.3%
Virginia	2,714,879	2,325,608	85.7%	85,661	3.2%	202,336	7.5%	101,274	3.7%	96.4%
Washington	2,496,269	2,182,706	87.4%	47,614	1.9%	220,016	8.8%	45,933	1.8%	97.9%
West Virginia	917,901	785,971	85.6%	25,967	2.8%	71,426	7.8%	34,537	3.8%	96.8%
Wisconsin	2,274,773	1,972,901	86.7%	36,663	1.6%	206,062	9.1%	59,147	2.6%	98.2%
Wyoming	190,271	154,807	81.4%	3,705	1.9%	21,897	11.5%	9,862	5.2%	97.7%

Appendix

Table A-1b. Status of A.C.E. Household Interviews for A C.E Interview Day by State (Weighted)

States	Total (wgt)	Interviews (%)		Noninterviews (%)		Vacants (%)		Deletes (%)		Weighted interview rate
U S. Total	115,650,208	102,651,540	88.8%	1,196,445	1.0%	10,527,420	9.1%	1,274,803	1.1%	98.8%
Alabama	1,967,703	1,694,517	86.1%	11,406	0.6%	232,767	11.8%	29,013	1.5%	99.3%
Alaska	186,971	143,043	76.5%	895	0.5%	37,160	19.9%	5,873	3.1%	99.4%
Arizona	2,291,735	1,869,411	81.6%	13,671	0.6%	385,653	16.8%	22,999	1.0%	99.3%
Arkansas	1,204,014	1,069,862	88.9%	7,484	0.6%	118,856	9.9%	7,811	0.6%	99.3%
California	12,255,066	11,379,223	92.9%	153,106	1.2%	609,273	5.0%	113,465	0.9%	98.7%
Colorado	1,633,980	1,488,763	91.1%	13,344	0.8%	122,195	7.5%	9,678	0.6%	99.1%
Connecticut	1,262,197	1,199,896	95.1%	1,892	0.1%	56,655	4.5%	3,755	0.3%	99.8%
Delaware	282,962	252,833	89.4%	2,552	0.9%	24,784	8.8%	2,793	1.0%	99.0%
D C	295,972	247,692	83.7%	10,780	3.6%	26,099	8.8%	11,401	3.9%	95.8%
Florida	7,350,668	6,094,918	82.9%	82,682	1.1%	1,126,714	15.3%	46,354	0.6%	98.7%
Georgia	3,178,003	2,791,378	87.8%	36,121	1.1%	279,975	8.8%	70,529	2.2%	98.7%
Hawaii	446,780	372,895	83.5%	9,582	2.1%	59,924	13.4%	4,378	1.0%	97.5%
Idaho	475,978	422,998	88.9%	3,982	0.8%	43,047	9.0%	5,950	1.3%	99.1%
Illinois	4,752,616	4,402,924	92.6%	40,533	0.9%	267,879	5.6%	41,280	0.9%	99.1%
Indiana	2,565,559	2,290,458	89.3%	41,374	1.6%	210,972	8.2%	22,755	0.9%	98.2%
Iowa	1,286,159	1,162,674	90.4%	7,568	0.6%	103,315	8.0%	12,601	1.0%	99.4%
Kansas	1,054,277	963,141	91.4%	5,644	0.5%	76,709	7.3%	8,784	0.8%	99.4%
Kentucky	1,738,637	1,510,994	86.9%	37,658	2.2%	166,921	9.6%	23,064	1.3%	97.6%
Louisiana	1,690,093	1,452,408	85.9%	21,506	1.3%	191,286	11.3%	24,893	1.5%	98.5%
Maine	606,684	521,718	86.0%	687	0.1%	73,641	12.1%	10,638	1.8%	99.9%
Maryland	2,240,463	2,036,475	90.9%	35,423	1.6%	138,642	6.2%	29,924	1.3%	98.3%
Massachusetts	2,637,732	2,504,532	95.0%	6,166	0.2%	109,557	4.2%	17,477	0.7%	99.8%
Michigan	3,945,568	3,527,851	89.4%	23,750	0.6%	366,087	9.3%	27,879	0.7%	99.3%
Minnesota	1,976,410	1,850,993	93.7%	12,032	0.6%	105,452	5.3%	7,934	0.4%	99.4%
Mississippi	1,067,393	939,729	88.0%	2,989	0.3%	109,714	10.3%	14,961	1.4%	99.7%
Missouri	2,678,909	2,343,334	87.5%	22,868	0.9%	236,402	8.8%	76,306	2.8%	99.0%
Montana	463,607	405,656	87.5%	1,583	0.3%	51,878	11.2%	4,490	1.0%	99.6%
Nebraska	684,874	603,694	88.1%	3,030	0.4%	72,629	10.6%	5,520	0.8%	99.5%
Nevada	895,050	783,578	87.5%	8,168	0.9%	97,592	10.9%	5,712	0.6%	99.0%
New Hampshire	558,641	517,553	92.6%	168	0.0%	37,272	6.7%	3,648	0.7%	100.0%
New Jersey	3,377,908	3,120,687	92.4%	39,856	1.2%	194,749	5.8%	22,616	0.7%	98.7%
New Mexico	708,714	591,085	83.4%	6,266	0.9%	98,990	14.0%	12,374	1.7%	99.0%
New York	7,573,292	6,909,384	91.2%	104,209	1.4%	439,294	5.8%	120,405	1.6%	98.5%
North Carolina	3,857,166	3,303,816	85.7%	83,350	2.2%	382,545	9.9%	87,455	2.3%	97.5%
North Dakota	294,040	249,732	84.9%	942	0.3%	40,577	13.8%	2,790	0.9%	99.6%
Ohio	4,785,461	4,313,393	90.1%	33,954	0.7%	389,238	8.1%	48,876	1.0%	99.2%
Oklahoma	1,461,163	1,279,111	87.5%	11,831	0.8%	162,105	11.1%	8,115	0.6%	99.1%
Oregon	1,411,681	1,267,838	89.8%	10,913	0.8%	123,254	8.7%	9,676	0.7%	99.1%
Pennsylvania	5,130,010	4,621,966	90.1%	48,038	0.9%	421,224	8.2%	38,781	0.8%	99.0%
Rhode Island	408,426	373,575	91.5%	1,537	0.4%	31,023	7.6%	2,290	0.6%	99.6%
South Carolina	2,274,389	1,465,779	64.4%	23,602	1.0%	767,164	33.7%	17,844	0.8%	98.4%
South Dakota	300,952	274,060	91.1%	1,747	0.6%	22,664	7.5%	2,481	0.8%	99.4%
Tennessee	2,489,607	2,213,099	88.9%	36,878	1.5%	208,102	8.4%	31,529	1.3%	98.4%
Texas	8,115,619	7,121,952	87.8%	88,716	1.1%	791,470	9.8%	113,481	1.4%	98.8%
Utah	885,164	768,209	86.8%	5,622	0.6%	99,919	11.3%	11,414	1.3%	99.3%
Vermont	307,822	266,093	86.4%	45	0.0%	38,988	12.7%	2,697	0.9%	100.0%
Virginia	2,714,879	2,411,015	88.8%	35,453	1.3%	246,874	9.1%	21,537	0.8%	98.6%
Washington	2,496,269	2,243,701	89.9%	19,551	0.8%	212,055	8.5%	20,963	0.8%	99.1%
West Virginia	917,901	808,267	88.1%	2,625	0.3%	98,617	10.7%	8,392	0.9%	99.7%
Wisconsin	2,274,773	2,041,193	89.7%	21,728	1.0%	195,723	8.6%	16,129	0.7%	98.9%
Wyoming	190,271	162,446	85.4%	939	0.5%	23,793	12.5%	3,093	1.6%	99.4%

Table A-2. P-Sample Characteristic Imputation Percent Rates by State (Unweighted)

States	Total people (unweighted)	Percentage of people with imputed characteristic (unweighted)					Percentage of people with 1 or more imputed characteristics
		Age	Sex	Tenure	Race	Hispanic origin	
U.S. Total	706,245	2.5%	1.7%	1.9%	1.4%	2.4%	5.5%
Alabama	9,396	2.7%	1.1%	1.4%	0.6%	1.2%	4.4%
Alaska	3,964	3.1%	2.7%	3.0%	2.8%	4.5%	8.8%
Arizona	18,120	1.9%	1.5%	1.8%	1.2%	2.2%	4.6%
Arkansas	6,066	1.7%	2.2%	2.3%	0.8%	2.5%	4.6%
California	92,412	3.0%	1.7%	1.9%	2.0%	2.6%	6.5%
Colorado	9,658	2.0%	1.8%	1.8%	1.3%	2.5%	4.8%
Connecticut	7,753	1.1%	1.0%	1.3%	1.3%	1.5%	3.3%
Delaware	3,984	2.7%	4.0%	3.9%	1.1%	4.4%	7.3%
D C	4,186	5.4%	2.6%	3.2%	3.7%	4.4%	11.3%
Florida	32,018	3.3%	1.6%	1.9%	1.3%	2.4%	6.2%
Georgia	17,799	3.3%	1.3%	1.8%	1.1%	1.7%	5.7%
Hawaii	8,327	3.8%	2.6%	2.3%	1.1%	3.1%	7.0%
Idaho	5,020	2.1%	1.7%	1.4%	1.2%	2.2%	4.7%
Illinois	30,348	2.6%	1.7%	1.7%	1.1%	1.8%	5.1%
Indiana	13,216	3.1%	1.7%	2.3%	1.9%	2.6%	6.1%
Iowa	6,599	1.3%	1.7%	1.9%	1.1%	2.0%	4.0%
Kansas	6,354	1.3%	2.3%	2.5%	0.9%	2.7%	4.5%
Kentucky	8,381	2.7%	1.9%	2.2%	1.1%	2.5%	5.3%
Louisiana	10,195	2.1%	0.9%	1.8%	0.7%	1.2%	4.2%
Maine	3,974	0.4%	1.6%	2.0%	0.4%	1.7%	2.6%
Maryland	12,835	3.1%	3.8%	3.8%	2.2%	4.5%	8.5%
Massachusetts	15,666	0.5%	1.4%	1.4%	1.3%	1.9%	3.4%
Michigan	23,411	2.0%	1.0%	1.3%	0.8%	1.3%	4.0%
Minnesota	12,543	1.8%	1.7%	1.8%	0.9%	2.2%	4.3%
Mississippi	6,601	1.8%	1.6%	2.0%	0.4%	1.8%	4.0%
Missouri	11,137	2.2%	2.6%	2.8%	1.1%	2.9%	5.8%
Montana	6,119	1.8%	2.1%	2.1%	1.2%	2.8%	4.9%
Nebraska	4,094	2.2%	1.4%	2.1%	1.1%	1.7%	4.7%
Nevada	5,004	3.4%	2.2%	2.2%	1.5%	2.8%	6.5%
New Hampshire	4,246	0.5%	1.2%	1.6%	0.9%	1.7%	2.8%
New Jersey	20,219	3.3%	1.5%	1.8%	1.4%	1.8%	5.9%
New Mexico	8,343	2.4%	2.0%	2.2%	1.4%	3.1%	6.4%
New York	45,029	2.8%	1.9%	2.1%	1.7%	2.3%	6.3%
North Carolina	16,787	2.8%	1.7%	1.7%	1.1%	2.1%	5.5%
North Dakota	4,507	1.7%	0.8%	0.8%	0.4%	1.2%	2.8%
Ohio	26,517	2.2%	1.0%	1.3%	1.1%	1.4%	4.2%
Oklahoma	8,330	1.8%	3.2%	3.3%	1.5%	3.6%	6.1%
Oregon	7,917	2.1%	2.0%	2.0%	2.0%	3.4%	5.9%
Pennsylvania	27,692	2.4%	2.0%	2.1%	1.7%	3.1%	5.8%
Rhode Island	4,062	0.7%	1.5%	1.7%	1.0%	2.3%	3.6%
South Carolina	7,774	2.3%	2.6%	2.8%	1.8%	3.7%	6.4%
South Dakota	5,173	1.6%	1.5%	1.2%	0.6%	1.8%	3.4%
Tennessee	12,635	3.4%	1.5%	2.0%	1.3%	2.3%	6.2%
Texas	49,464	2.3%	1.4%	1.7%	1.8%	2.2%	5.5%
Utah	7,306	1.7%	1.4%	1.4%	0.6%	1.8%	3.9%
Vermont	4,112	0.3%	0.8%	1.2%	0.6%	2.0%	3.0%
Virginia	15,546	2.5%	2.0%	2.2%	2.6%	3.8%	6.9%
Washington	14,499	2.8%	1.9%	2.0%	1.2%	2.3%	5.5%
West Virginia	4,077	1.4%	1.2%	1.4%	0.9%	1.6%	3.4%
Wisconsin	12,690	2.0%	1.3%	1.5%	1.4%	2.1%	4.5%
Wyoming	4,140	2.5%	0.8%	1.9%	1.5%	1.9%	5.5%

Table A-3a. Characteristic Imputation Percent Rates for the P Sample by Age (Unweighted)

Age	Total people	Percentage of people with imputed characteristic					Percentage of people with 1 or more imputed characteristics
		Age	Sex	Tenure	Race	Hispanic origin	
Total ³¹	706,245	2.5%	1.7%	1.9%	1.4%	2.4%	5.5%
0-17	185,331	0.0%	1.6%	1.7%	0.9%	1.9%	2.9%
18-29	118,869	0.0%	1.4%	1.6%	1.8%	2.6%	3.8%
30-49	209,191	0.0%	1.4%	1.8%	1.0%	2.1%	3.1%
50 +	175,391	0.0%	1.4%	1.9%	0.8%	1.9%	2.9%
Missing age	17,463	100.0%	11.6%	8.6%	15.9%	13.2%	100.0%

Table A-3b. Characteristic Imputation Percent Rates for the P Sample by Age (Weighted)

Age	Total people	Percentage of people with imputed characteristic					Percentage of people with 1 or more imputed characteristics
		Age	Sex	Tenure	Race	Hispanic origin	
Total	281,708,154	2.4%	1.7%	1.9%	1.4%	2.3%	5.4%
0-17	71,863,739	0.0%	1.5%	1.7%	0.8%	1.8%	2.8%
18-29	45,866,952	0.0%	1.4%	1.5%	1.7%	2.6%	3.7%
30-49	84,398,855	0.0%	1.4%	1.7%	1.0%	2.0%	3.0%
50 +	72,723,594	0.0%	1.4%	1.8%	0.8%	1.9%	2.8%
Missing age	6,855,015	100.0%	11.6%	8.8%	16.1%	13.4%	100.0%

³¹ This total excludes 15,489 P-Sample TES people with TES weight = 0; they were not selected for the TES sample

Table A-4a. Characteristic Imputation Percent Rates for the P Sample by Sex (Unweighted)

Sex	Total people	Percentage of people with imputed characteristic					Percentage of people with 1 or more imputed characteristics
		Age	Sex	Tenure	Race	Hispanic origin	
Total ³²	706,245	2.5%	1.7%	1.9%	1.4%	2.4%	5.5%
Male	336,071	2.2%	0.0%	0.6%	1.4%	1.0%	3.9%
Female	358,072	2.3%	0.0%	0.6%	1.3%	0.9%	3.9%
Missing sex	12,102	16.8%	100.0%	76.2%	6.4%	84.4%	100.0%

Table A-4b. Characteristic Imputation Percent Rates for the P Sample by Sex (Weighted)

Sex	Total People	Percentage of People With Imputed Characteristic					Percentage of People with 1 or More Imputed Characteristics
		Age	Sex	Tenure	Race	Hispanic Origin	
Total	281,708,154	2.4%	1.7%	1.9%	1.4%	2.3%	5.4%
Male	133,935,650	2.1%	0.0%	0.6%	1.4%	1.0%	3.8%
Female	143,073,575	2.2%	0.0%	0.6%	1.3%	0.9%	3.8%
Missing Sex	4,698,929	16.9%	100.0%	76.0%	6.5%	83.9%	100.0%

³² This total excludes 15,489 P-Sample TES people with TES weight = 0, they were not selected for the TES sample

Table A-5a. Characteristic Imputation Percent Rates for the P Sample by Tenure (Unweighted)

Tenure	Total people	Percentage of people with imputed characteristic					Percentage of people with 1 or more imputed characteristics
		Age	Sex	Tenure	Race	Hispanic origin	
Total ³³	706,245	2.5%	1.7%	1.9%	1.4%	2.4%	5.5%
Owner	451,913	2.3%	0.4%	0.0%	0.9%	0.7%	3.2%
Non-owner	240,750	2.3%	0.5%	0.0%	2.1%	1.6%	4.5%
Missing tenure	13,582	11.0%	67.9%	100.0%	6.4%	72.8%	100.0%

Table A-5b. Characteristic Imputation Percent Rates for the P Sample by Tenure (Weighted)

Tenure	Total people	Percentage of people with imputed characteristic					Percentage of people with 1 or more imputed characteristics
		Age	Sex	Tenure	Race	Hispanic origin	
Total	281,708,154	2.4%	1.7%	1.9%	1.4%	2.3%	5.4%
Owner	188,982,993	2.3%	0.4%	0.0%	1.0%	0.7%	3.2%
Non-owner	87,422,786	2.2%	0.5%	0.0%	2.0%	1.6%	4.5%
Missing tenure	5,302,374	11.3%	67.4%	100.0%	6.6%	72.7%	100.0%

³³ This total excludes 15,489 P-Sample TES people with TES weight = 0, they were not selected for the TES sample.

Table A-6a. Characteristic Imputation Percent Rates for the P Sample by Race (Unweighted)

Race	Total people	Percentage of people with imputed characteristic					Percentage of people with 1 or more imputed characteristics
		Age	Sex	Tenure	Race	Hispanic origin	
Total ³⁴	706,245	2.5%	1.7%	1.9%	1.4%	2.4%	5.5%
Single race	672,881	2.1%	1.6%	1.8%	0.0%	1.6%	4.2%
White	469,699	1.9%	1.5%	1.7%	0.0%	1.5%	3.8%
Black	88,299	2.9%	1.9%	2.3%	0.0%	1.8%	5.3%
AIAN ³⁵	18,005	2.1%	2.4%	2.3%	0.0%	2.4%	4.8%
Asian	27,507	3.2%	2.0%	2.2%	0.0%	1.9%	5.5%
NHPI ³⁶	1,508	2.5%	1.7%	1.3%	0.0%	1.5%	4.4%
Other	67,863	2.3%	1.8%	1.8%	0.0%	1.8%	4.4%
2 or more races	23,238	1.1%	1.7%	1.8%	0.0%	1.8%	3.1%
Missing race	10,126	27.5%	7.7%	8.5%	100.0%	50.8%	100.0%

³⁴ This total excludes 15,489 P-Sample TES people with TES weight = 0, they were not selected for the TES sample

³⁵ American Indian or Alaskan Native

³⁶ Native Hawaiian or Pacific Islander

Table A-6b. Characteristic Imputation Percent Rates for the P Sample by Race (Weighted)

Race	Total people	Percentage of people with imputed characteristic					Percentage of people with 1 or more imputed characteristics
		Age	Sex	Tenure	Race	Hispanic origin	
Total	281,708,154	2.4%	1.7%	1.9%	1.4%	2.3%	5.4%
Single race	269,534,332	2.1%	1.6%	1.8%	0.0%	1.6%	4.1%
White	204,090,356	1.9%	1.5%	1.7%	0.0%	1.5%	3.8%
Black	30,600,342	2.8%	1.8%	2.1%	0.0%	1.8%	5.1%
AIAN	1,679,540	1.7%	2.1%	2.2%	0.0%	2.3%	4.4%
Asian	9,599,012	3.1%	1.9%	2.1%	0.0%	1.9%	5.3%
NHPI	400,278	2.8%	2.8%	2.2%	0.0%	2.4%	5.4%
Other	23,164,805	2.2%	1.8%	1.9%	0.0%	1.8%	4.4%
2 or more races	8,253,318	1.0%	1.6%	1.7%	0.0%	1.8%	3.0%
Missing race	3,920,504	28.2%	7.8%	9.0%	100.0%	51.5%	100.0%

Table A-7a. Characteristic Imputation Percent Rates for the P Sample by Hispanic Origin (Unweighted)

Hispanic origin	Total people	Percentage of people with imputed characteristic					Percentage of people with 1 or more imputed characteristics
		Age	Sex	Tenure	Race	Hispanic origin	
Total ³⁷	706,245	2.5%	1.7%	1.9%	1.4%	2.4%	5.5%
Hispanic	97,263	2.3%	0.3%	0.4%	1.8%	0.0%	4.3%
Non-Hispanic	592,358	2.2%	0.3%	0.6%	0.5%	0.0%	3.1%
Missing Hispanic origin	16,624	13.9%	61.4%	59.5%	30.9%	100.0%	100.0%

Table A-7b. Characteristic Imputation Percent Rates for the P Sample by Hispanic Origin (Weighted)

Hispanic origin	Total people	Percentage of people with imputed characteristic					Percentage of people with 1 or more imputed characteristics
		Age	Sex	Tenure	Race	Hispanic origin	
Total	281,708,154	2.4%	1.7%	1.9%	1.4%	2.3%	5.4%
Hispanic	34,137,140	2.3%	0.3%	0.4%	1.8%	0.0%	4.3%
Non-Hispanic	241,094,818	2.1%	0.3%	0.5%	0.5%	0.0%	3.0%
Missing Hispanic origin	6,476,196	14.1%	60.9%	59.5%	31.2%	100.0%	100.0%

³⁷ Among others, this total excludes 15,489 P-Sample TES people with TES weight = 0, they were not selected for the TES sample

Table A-8a. Characteristic Imputation Percent Rates for the P Sample by Mover Status by Proxy Response Status (Unweighted)

Mover status	Total people	Percentage of people with imputed characteristic					Percentage of people with 1 or more imputed characteristics
		Age	Sex	Tenure	Race	Hispanic origin	
Total ³⁸	706,245	2.5%	1.7%	1.9%	1.4%	2.4%	5.5%
Non-mover	643,660	2.3%	1.7%	2.0%	1.2%	2.2%	5.1%
Non-proxy	622,473	2.1%	1.6%	1.8%	1.0%	1.9%	4.5%
Proxy	21,187	10.1%	5.6%	7.9%	7.2%	11.1%	24.2%
In-mover	37,240	2.3%	0.4%	0.3%	1.3%	0.8%	3.7%
Non-proxy	35,479	1.8%	0.3%	0.3%	0.8%	0.4%	2.7%
Proxy	1,761	11.9%	2.4%	1.4%	11.8%	8.8%	23.9%
Out-mover	25,345	6.1%	3.3%	2.3%	8.6%	9.3%	17.7%
Non-proxy	6,739	7.9%	4.8%	2.1%	2.2%	2.9%	11.4%
Proxy	18,606	5.4%	2.7%	2.3%	10.9%	11.7%	20.0%

³⁸ Among others, this total excludes 15,489 P-Sample TES people with TES weight = 0, they were not selected for the TES sample

Table A-8b. Characteristic Imputation Percent Rates for the P Sample by Mover Status by Proxy Response Status (Weighted)

Mover status	Total people	Percentage of people with imputed characteristic					Percentage of people with 1 or more imputed characteristics
		Age	Sex	Tenure	Race	Hispanic origin	
Total	281,708,154	2.4%	1.7%	1.9%	1.4%	2.3%	5.4%
Non-mover	258,455,070	2.3%	1.7%	1.9%	1.2%	2.1%	5.0%
Non-proxy	250,273,996	2.1%	1.5%	1.8%	1.0%	1.8%	4.4%
Proxy	8,181,074	9.8%	5.5%	7.9%	7.1%	11.0%	23.7%
In-mover	13,571,043	2.3%	0.4%	0.4%	1.3%	0.8%	3.7%
Non-proxy	12,921,996	1.8%	0.3%	0.3%	0.8%	0.4%	2.7%
Proxy	649,046	11.8%	2.2%	1.5%	11.5%	8.5%	23.7%
Out-mover	9,682,040	6.0%	3.4%	2.4%	8.0%	9.0%	17.4%
Non-proxy	2,585,896	7.9%	4.7%	2.1%	2.1%	2.7%	11.3%
Proxy	7,096,145	5.3%	2.9%	2.5%	10.2%	11.2%	19.6%

Table A-9. Final Resident Status for the P Sample by State (Weighted)

	Total people (weighted)	Final resident status (weighted)						Resident rate for resolved cases (weighted)
		Confirmed resident		Confirmed nonresident		Unresolved resident		
U.S. Total	257,479,497	247,353,379	96.1%	4,452,044	1.7%	5,674,074	2.2%	0.98
Alabama	4,038,296	3,886,216	96.2%	83,281	2.1%	68,799	1.7%	0.98
Alaska	373,213	354,880	95.1%	5,802	1.6%	12,531	3.4%	0.98
Arizona	4,861,329	4,627,298	95.2%	95,369	2.0%	138,662	2.9%	0.98
Arkansas	2,649,871	2,566,042	96.8%	39,585	1.5%	44,244	1.7%	0.98
California	31,797,654	30,468,004	95.8%	437,937	1.4%	891,713	2.8%	0.99
Colorado	3,654,696	3,524,355	96.4%	45,640	1.2%	84,701	2.3%	0.99
Connecticut	2,920,282	2,868,960	98.2%	36,666	1.3%	14,656	0.5%	0.99
Delaware	630,489	605,459	96.0%	9,572	1.5%	15,457	2.5%	0.98
D C	555,933	506,745	91.2%	18,774	3.4%	30,414	5.5%	0.96
Florida	14,986,173	14,129,033	94.3%	395,162	2.6%	461,978	3.1%	0.97
Georgia	7,220,588	6,906,579	95.7%	123,025	1.7%	190,985	2.6%	0.98
Hawaii	984,569	937,568	95.2%	25,415	2.6%	21,586	2.2%	0.97
Idaho	1,079,681	1,032,526	95.6%	20,490	1.9%	26,665	2.5%	0.98
Illinois	11,438,098	11,023,727	96.4%	185,071	1.6%	229,300	2.0%	0.98
Indiana	5,473,865	5,287,467	96.6%	63,429	1.2%	122,969	2.2%	0.99
Iowa	2,730,772	2,661,979	97.5%	39,380	1.4%	29,413	1.1%	0.99
Kansas	2,383,827	2,315,070	97.1%	32,173	1.3%	36,584	1.5%	0.99
Kentucky	3,574,619	3,423,213	95.8%	55,657	1.6%	95,749	2.7%	0.98
Louisiana	3,668,174	3,532,809	96.3%	66,362	1.8%	69,003	1.9%	0.98
Maine	1,125,788	1,091,531	97.0%	30,880	2.7%	3,377	0.3%	0.97
Maryland	5,170,602	4,866,201	94.1%	97,495	1.9%	206,905	4.0%	0.98
Massachusetts	6,058,787	5,903,536	97.4%	112,573	1.9%	42,678	0.7%	0.98
Michigan	8,775,233	8,558,997	97.5%	101,662	1.2%	114,574	1.3%	0.99
Minnesota	4,535,178	4,400,326	97.0%	79,424	1.8%	55,428	1.2%	0.98
Mississippi	2,411,140	2,295,909	95.2%	89,001	3.7%	26,230	1.1%	0.96
Missouri	5,304,754	5,152,588	96.8%	74,876	1.4%	97,290	1.8%	0.99
Montana	936,335	911,842	97.4%	11,023	1.2%	13,470	1.4%	0.99
Nebraska	1,376,575	1,345,861	97.8%	14,788	1.1%	15,927	1.2%	0.99
Nevada	1,995,234	1,845,251	92.5%	43,840	2.2%	106,143	5.3%	0.98
New Hampshire	1,140,883	1,118,169	98.0%	13,854	1.2%	8,860	0.8%	0.99
New Jersey	7,911,037	7,611,067	96.2%	109,736	1.4%	190,235	2.4%	0.99
New Mexico	1,467,941	1,418,273	96.6%	17,355	1.2%	32,314	2.2%	0.99
New York	17,197,044	16,389,874	95.3%	411,731	2.4%	395,439	2.3%	0.98
North Carolina	7,955,955	7,603,605	95.6%	160,655	2.0%	191,695	2.4%	0.98
North Dakota	549,972	540,137	98.2%	5,107	0.9%	4,728	0.9%	0.99
Ohio	10,656,692	10,348,600	97.1%	118,645	1.1%	189,447	1.8%	0.99
Oklahoma	3,098,855	2,982,487	96.2%	43,274	1.4%	73,094	2.4%	0.99
Oregon	3,005,570	2,888,253	96.1%	44,470	1.5%	72,846	2.4%	0.98
Pennsylvania	11,259,465	10,864,925	96.5%	204,695	1.8%	189,845	1.7%	0.98
Rhode Island	875,962	855,981	97.7%	14,785	1.7%	5,196	0.6%	0.98
South Carolina	3,510,459	3,361,934	95.8%	60,070	1.7%	88,455	2.5%	0.98
South Dakota	649,651	630,985	97.1%	7,432	1.1%	11,234	1.7%	0.99
Tennessee	5,169,290	4,947,211	95.7%	90,616	1.8%	131,463	2.5%	0.98
Texas	18,274,150	17,526,259	95.9%	331,939	1.8%	415,952	2.3%	0.98
Utah	2,490,128	2,400,043	96.4%	47,192	1.9%	42,892	1.7%	0.98
Vermont	575,725	556,113	96.6%	14,084	2.4%	5,528	1.0%	0.98
Virginia	5,866,590	5,572,382	95.0%	149,295	2.5%	144,913	2.5%	0.97
Washington	5,661,883	5,457,461	96.4%	79,802	1.4%	124,620	2.2%	0.99
West Virginia	1,996,458	1,946,700	97.5%	31,617	1.6%	18,141	0.9%	0.98
Wisconsin	5,039,009	4,924,430	97.7%	52,960	1.1%	61,620	1.2%	0.99
Wyoming	415,026	398,516	96.0%	8,381	2.0%	8,129	2.0%	0.98

Table A-10. Final Match Status for the P Sample by State (Weighted)

	Total people (weighted)	Final match status (weighted)						Match rate for resolved cases (weighted)
		Match		Nonmatch		Unresolved match		
U.S. Total	253,027,452	229,196,468	90.6%	20,780,055	8.2%	3,050,930	1.2%	0.92
Alabama	3,955,015	3,537,010	89.4%	391,294	9.9%	26,710	0.7%	0.90
Alaska	367,411	330,288	89.9%	32,882	8.9%	4,240	1.2%	0.91
Arizona	4,765,960	4,213,642	88.4%	487,482	10.2%	64,836	1.4%	0.90
Arkansas	2,610,286	2,355,770	90.2%	233,151	8.9%	21,365	0.8%	0.91
California	31,359,717	28,224,436	90.0%	2,633,730	8.4%	501,551	1.6%	0.91
Colorado	3,609,056	3,268,860	90.6%	286,766	7.9%	53,429	1.5%	0.92
Connecticut	2,883,616	2,680,647	93.0%	195,177	6.8%	7,792	0.3%	0.93
Delaware	620,916	547,173	88.1%	70,203	11.3%	3,540	0.6%	0.89
D C	537,159	457,076	85.1%	68,051	12.7%	12,031	2.2%	0.87
Florida	14,591,010	13,011,564	89.2%	1,290,904	8.8%	288,543	2.0%	0.91
Georgia	7,097,563	6,231,147	87.8%	764,650	10.8%	101,766	1.4%	0.89
Hawaii	959,154	830,775	86.6%	118,960	12.4%	9,419	1.0%	0.87
Idaho	1,059,191	976,151	92.2%	65,403	6.2%	17,637	1.7%	0.94
Illinois	11,253,026	10,194,573	90.6%	939,944	8.4%	118,509	1.1%	0.92
Indiana	5,410,436	4,942,133	91.3%	411,503	7.6%	56,800	1.0%	0.92
Iowa	2,691,392	2,568,424	95.4%	104,497	3.9%	18,471	0.7%	0.96
Kansas	2,351,654	2,177,556	92.6%	151,454	6.4%	22,644	1.0%	0.93
Kentucky	3,518,962	3,235,071	91.9%	232,821	6.6%	51,070	1.5%	0.93
Louisiana	3,601,812	3,248,497	90.2%	313,862	8.7%	39,453	1.1%	0.91
Maine	1,094,908	1,021,305	93.3%	73,328	6.7%	275	0.0%	0.93
Maryland	5,073,107	4,443,192	87.6%	545,426	10.8%	84,489	1.7%	0.89
Massachusetts	5,946,214	5,521,026	92.8%	402,670	6.8%	22,519	0.4%	0.93
Michigan	8,673,571	8,115,837	93.6%	481,795	5.6%	75,939	0.9%	0.94
Minnesota	4,455,754	4,250,108	95.4%	187,268	4.2%	18,378	0.4%	0.96
Mississippi	2,322,139	2,028,689	87.4%	285,761	12.3%	7,688	0.3%	0.88
Missouri	5,229,878	4,895,860	93.6%	292,096	5.6%	41,921	0.8%	0.94
Montana	925,312	857,227	92.6%	60,285	6.5%	7,800	0.8%	0.93
Nebraska	1,361,787	1,288,772	94.6%	64,895	4.8%	8,120	0.6%	0.95
Nevada	1,951,394	1,736,073	89.0%	179,910	9.2%	35,412	1.8%	0.91
New Hampshire	1,127,029	1,029,411	91.3%	93,031	8.3%	4,587	0.4%	0.92
New Jersey	7,801,302	7,084,355	90.8%	599,001	7.7%	117,946	1.5%	0.92
New Mexico	1,450,586	1,299,565	89.6%	136,218	9.4%	14,804	1.0%	0.91
New York	16,785,313	14,780,296	88.1%	1,751,269	10.4%	253,748	1.5%	0.89
North Carolina	7,795,300	6,973,921	89.5%	729,103	9.4%	92,276	1.2%	0.91
North Dakota	544,865	523,447	96.1%	18,912	3.5%	2,506	0.5%	0.97
Ohio	10,538,047	9,796,792	93.0%	619,225	5.9%	122,030	1.2%	0.94
Oklahoma	3,055,581	2,819,136	92.3%	187,135	6.1%	49,311	1.6%	0.94
Oregon	2,961,099	2,637,944	89.1%	288,295	9.7%	34,861	1.2%	0.90
Pennsylvania	11,054,770	10,213,301	92.4%	733,560	6.6%	107,909	1.0%	0.93
Rhode Island	861,177	765,583	88.9%	92,587	10.8%	3,008	0.3%	0.89
South Carolina	3,450,389	2,968,557	86.0%	442,092	12.8%	39,740	1.2%	0.87
South Dakota	642,220	603,626	94.0%	33,119	5.2%	5,474	0.9%	0.95
Tennessee	5,078,674	4,613,724	90.8%	391,049	7.7%	73,900	1.5%	0.92
Texas	17,942,211	16,012,180	89.2%	1,744,120	9.7%	185,911	1.0%	0.90
Utah	2,442,935	2,197,309	89.9%	226,405	9.3%	19,222	0.8%	0.91
Vermont	561,641	509,781	90.8%	48,286	8.6%	3,574	0.6%	0.91
Virginia	5,717,295	5,288,382	92.5%	364,282	6.4%	64,630	1.1%	0.94
Washington	5,582,081	4,997,672	89.5%	500,499	9.0%	83,910	1.5%	0.91
West Virginia	1,964,841	1,825,038	92.9%	129,633	6.6%	10,170	0.5%	0.93
Wisconsin	4,986,050	4,712,373	94.5%	239,227	4.8%	34,450	0.7%	0.95
Wyoming	406,645	355,192	87.3%	46,836	11.5%	4,617	1.1%	0.88

Table A-11. Final Enumeration Status for the E Sample by State (Weighted)

	Total people (weighted)	Final enumeration status (weighted)						Correct enum Rate for resolved cases (weighted)
		Correct enumeration		Erroneous enumeration		Unresolved enumeration		
U.S. Total	264,578,862	246,999,032	93.4%	10,688,934	4.0%	6,890,897	2.6%	0.96
Alabama	4,258,211	4,009,094	94.1%	179,585	4.2%	69,532	1.6%	0.96
Alaska	382,578	356,700	93.2%	14,267	3.7%	11,611	3.0%	0.96
Arizona	5,090,007	4,581,734	90.0%	339,931	6.7%	168,341	3.3%	0.93
Arkansas	2,591,939	2,433,716	93.9%	94,298	3.6%	63,924	2.5%	0.96
California	32,158,742	29,825,866	92.7%	1,208,371	3.8%	1,124,505	3.5%	0.96
Colorado	3,689,009	3,471,027	94.1%	118,478	3.2%	99,503	2.7%	0.97
Connecticut	2,989,774	2,849,003	95.3%	104,694	3.5%	36,077	1.2%	0.96
Delaware	636,662	586,615	92.1%	30,533	4.8%	19,514	3.1%	0.95
D.C.	562,847	504,303	89.6%	28,512	5.1%	30,032	5.3%	0.95
Florida	14,715,602	13,562,521	92.2%	716,910	4.9%	436,171	3.0%	0.95
Georgia	7,623,210	7,042,946	92.4%	377,023	4.9%	203,241	2.7%	0.95
Hawaii	993,147	925,972	93.2%	38,266	3.9%	28,909	2.9%	0.96
Idaho	1,117,323	1,051,061	94.1%	43,949	3.9%	22,313	2.0%	0.96
Illinois	11,515,516	10,750,796	93.4%	472,362	4.1%	292,359	2.5%	0.96
Indiana	5,714,937	5,366,228	93.9%	200,329	3.5%	148,380	2.6%	0.96
Iowa	2,802,782	2,682,280	95.7%	95,586	3.4%	24,916	0.9%	0.97
Kansas	2,424,527	2,285,717	94.3%	89,002	3.7%	49,808	2.1%	0.96
Kentucky	3,654,780	3,437,054	94.0%	113,623	3.1%	104,103	2.8%	0.97
Louisiana	3,951,126	3,686,256	93.3%	163,114	4.1%	101,756	2.6%	0.96
Maine	1,110,407	1,061,540	95.6%	44,241	4.0%	4,625	0.4%	0.96
Maryland	5,384,402	4,948,560	91.9%	215,088	4.0%	220,754	4.1%	0.96
Massachusetts	6,247,480	5,917,796	94.7%	252,931	4.0%	76,752	1.2%	0.96
Michigan	9,082,780	8,603,918	94.7%	330,221	3.6%	148,642	1.6%	0.96
Minnesota	4,621,421	4,428,473	95.8%	113,057	2.4%	79,890	1.7%	0.98
Mississippi	2,453,502	2,271,493	92.6%	131,728	5.4%	50,281	2.0%	0.95
Missouri	5,345,516	5,053,762	94.5%	146,023	2.7%	145,731	2.7%	0.97
Montana	949,710	914,102	96.3%	23,386	2.5%	12,223	1.3%	0.98
Nebraska	1,437,312	1,381,158	96.1%	37,803	2.6%	18,352	1.3%	0.97
Nevada	2,204,523	1,958,243	88.8%	64,894	2.9%	181,386	8.2%	0.97
New Hampshire	1,106,722	1,065,230	96.3%	33,718	3.0%	7,773	0.7%	0.97
New Jersey	7,997,870	7,504,540	93.8%	304,193	3.8%	189,137	2.4%	0.96
New Mexico	1,508,981	1,403,802	93.0%	69,251	4.6%	35,927	2.4%	0.95
New York	17,946,031	16,540,865	92.2%	975,792	5.4%	429,374	2.4%	0.94
North Carolina	8,412,101	7,795,725	92.7%	362,399	4.3%	253,977	3.0%	0.96
North Dakota	556,884	537,257	96.5%	13,093	2.4%	6,534	1.2%	0.98
Ohio	10,828,897	10,273,519	94.9%	305,431	2.8%	249,947	2.3%	0.97
Oklahoma	3,175,816	2,978,989	93.8%	120,379	3.8%	76,447	2.4%	0.96
Oregon	3,075,717	2,829,033	92.0%	156,545	5.1%	90,138	2.9%	0.95
Pennsylvania	11,559,486	10,885,826	94.2%	479,300	4.1%	194,361	1.7%	0.96
Rhode Island	895,256	815,152	91.1%	70,420	7.9%	9,684	1.1%	0.92
South Carolina	3,672,555	3,355,710	91.4%	188,743	5.1%	128,103	3.5%	0.95
South Dakota	666,385	639,573	96.0%	17,493	2.6%	9,319	1.4%	0.97
Tennessee	5,734,236	5,316,070	92.7%	186,764	3.3%	231,402	4.0%	0.97
Texas	19,212,890	17,827,269	92.8%	876,432	4.6%	509,190	2.7%	0.95
Utah	2,461,317	2,326,436	94.5%	85,723	3.5%	49,158	2.0%	0.96
Vermont	583,488	552,373	94.7%	28,060	4.8%	3,055	0.5%	0.95
Virginia	6,273,495	5,874,276	93.6%	187,082	3.0%	212,137	3.4%	0.97
Washington	5,599,328	5,254,691	93.8%	228,389	4.1%	116,248	2.1%	0.96
West Virginia	1,983,162	1,899,295	95.8%	61,812	3.1%	22,055	1.1%	0.97
Wisconsin	5,199,212	4,982,954	95.8%	134,473	2.6%	81,785	1.6%	0.97
Wyoming	419,263	392,513	93.6%	15,236	3.6%	11,514	2.7%	0.96

Table A-12. Imputation Cells Used for P-Sample Resident Status (Unweighted)

Before follow-up match code group	Final resident status (unweighted)	Owner		Non-owner		Total
		Non-Hispanic White only	Others	Non-Hispanic White only	Others	
1 = Matches needing follow-up	Total people	2,349	742	1,269	986	5,346
	Confirmed residents	2,092	694	962	763	4,511
	Confirmed nonresidents	53	5	6	4	68
	Unresolved resident status	204	43	301	219	767
2 = Possible matches	Total people	1,211	1,177	823	1,842	5,053
	Confirmed residents	1,125	1,077	725	1,634	4,561
	Confirmed nonresidents	28	41	28	49	146
	Unresolved resident status	58	59	70	159	346
3 = Partial household nonmatches needing follow-up V3a - Age 18-29 and Child of Reference Person	Total people	593	466	134	377	1,570
	Confirmed residents	426	405	105	324	1,260
	Confirmed nonresidents	134	43	13	24	214
	Unresolved resident status	33	18	16	29	96
3 = Partial household nonmatches needing follow-up V3b - Others	Total people	3,727	3,973	1,918	5,011	14,629
	Confirmed residents	3,326	3,668	1,533	4,415	12,942
	Confirmed nonresidents	155	109	74	139	477
	Unresolved resident status	246	196	311	457	1,210
4 = Whole household nonmatches needing follow-up, not conflicting households	Total people	3,195	1,178	2,284	2,568	9,225
	Confirmed residents	2,718	1,031	1,705	1,956	7,410
	Confirmed nonresidents	195	62	137	168	562
	Unresolved resident status	282	85	442	444	1,253
5 = Nonmatches from conflicting households	Total people	1,288	1,358	1,459	2,995	7,100
	Confirmed residents	919	1,045	1,071	2,266	5,301
	Confirmed nonresidents	89	92	68	95	344
	Unresolved resident status	280	221	320	634	1,455
6 = Resolved before follow-up	Total people	295,556	110,410	86,833	102,514	595,313
	Confirmed residents	293,280	108,921	85,846	101,054	589,101
	Confirmed nonresidents	2,254	1,470	958	1,409	6,091
	Unresolved resident status	22	19	29	51	121
7 = Insufficient information for matching	Total people	2,619	1,270	1,733	1,902	7,524
	Confirmed residents	7	1	0	0	8
	Confirmed nonresidents	3	0	3	0	6
	Unresolved resident status	2,609	1,269	1,730	1,902	7,510
8 = Potentially fictitious or People said to be living elsewhere on Census Day	Total people	2,562	1,333	1,486	2,197	7,578
	Confirmed residents	268	116	154	231	769
	Confirmed nonresidents	1,803	845	789	1,048	4,485
	Unresolved resident status	491	372	543	918	2,324
Total	Total people	313,100	121,907	97,939	120,392	653,338
	Confirmed residents	304,161	116,958	92,101	112,643	625,863
	Confirmed nonresidents	4,714	2,667	2,076	2,936	12,393
	Unresolved resident status	4,225	2,282	3,762	4,813	15,082

Table A-13. Imputation Cells Used for P-Sample Match Status (Unweighted)

Mover status	Final match status (unweighted)	Housing-unit address match code				Total
		Housing unit was a match (code 1) ³⁹		Housing unit was a nonmatch or the household is conflicting (code 2 or 4)		
		No imputes	1 or more imputes	No imputes	1 or more imputes	
Non-mover	Total people	534,127	28,041	52,178	3,144	617,490
	Matched	501,516	22,982	36,672	1,613	562,783
	Nonmatched	30,489	2,641	15,105	1,110	49,345
	Unresolved match	2,122	2,418	401	421	5,362
Out-mover	Total people	16,546	3,226		3,683	23,455
	Matched	12,241	1,914		1,757	15,912
	Nonmatched	3,102	513		1,464	5,079
	Unresolved match	1,203	799		462	2,464
Total	Total people	550,673	31,267		59,005	640,945
	Matched	513,757	24,896		40,042	578,695
	Nonmatched	33,591	3,154		17,679	54,424
	Unresolved match	3,325	3,217		1,284	7,826

³⁹ The P-Sample Address Codes used for creating these cells are (from DSSD Memo #Q-25)

- 1 = Housing Unit Matched during Housing Unit Matching
- 2 = Housing Unit Did Not Match during Housing Unit Matching
- 4 = Conflicting Households

Address code values of 2-3 are considered to be "Housing Units not matched during Housing Unit matching" for the purposes of match code group assignment

Table A-14. Imputation Cells Used for E-Sample Enumeration Status (Unweighted)

Before follow-up group	Final enumeration status	No imputes		1 or more imputes	Total
1 = Matches needing follow-up	Total people	4,285		759	5,044
	Correct enumeration	3,621		608	4,229
	Erroneous enumeration	93		11	104
	Unresolved enumeration	571		140	711
2 = Possible matches	Total people	3,315		1,433	4,748
	Correct enumeration	3,005		1,299	4,304
	Erroneous enumeration	96		43	139
	Unresolved enumeration	214		91	305
3 = Partial household nonmatches V3a - age 18-29 and child of Reference person	Total people	2,366		411	2,777
	Correct enumeration	1,917		343	2,260
	Erroneous enumeration	272		30	302
	Unresolved enumeration	177		38	215
3 = Partial household nonmatches V3b - others	Total people	16,301		3,852	20,153
	Correct enumeration	14,330		3,333	17,663
	Erroneous enumeration	380		134	514
	Unresolved enumeration	1,591		385	1,976
4 = Whole household nonmatches where the housing unit matched, not conflicting households	Total people	Non-Hispanic White	Others		
	Correct enumeration	17,805	12,378	5,863	36,046
	Erroneous enumeration	15,229	10,371	4,856	30,456
	Unresolved enumeration	397	203	177	777
5 = Nonmatches from conflicting households, for housing units not in regular nonresponse follow-up	Total people	2,498		598	3,096
	Correct enumeration	2,020		474	2,494
	Erroneous enumeration	49		21	70
	Unresolved enumeration	429		103	532
6 = Nonmatches from conflicting households, housing units in regular nonresponse follow-up	Total people	2,399		796	3,195
	Correct enumeration	1,677		554	2,231
	Erroneous enumeration	150		35	185
	Unresolved enumeration	572		207	779
7 = Whole household nonmatches, where the housing unit did not match in housing unit matching	Total people	Non-Hispanic White	Others		
	Correct enumeration	19,654	9,284	4,667	33,605
	Erroneous enumeration	16,865	7,818	3,877	28,560
	Unresolved enumeration	625	342	197	1,164
		2,164	1,124	593	3,881

Table A-14. (Cont.) Imputation Cells Used for E-Sample Enumeration Status (Unweighted)

Before follow-up group	Final enumeration status	No imputes		1 or more imputes	Total
		Non-Hispanic White	Others		
8 = Resolved before follow-up	Total people	329,841	150,369	65,129	545,339
	Correct enumeration	327,815	148,386	63,477	539,678
	Erroneous enumeration	1,938	1,930	1,614	5,482
	Unresolved enumeration	88	53	38	179
9 = Insufficient information for matching	Total people	4,007		9,348	13,355
	Correct enumeration	14		17	31
	Erroneous enumeration	3,981		9,328	13,309
	Unresolved enumeration	12		3	15
10 = TES people	Total people	20,306		3,047	23,353
	Correct enumeration	16,317		2,257	18,574
	Erroneous enumeration	1,511		368	1,879
	Unresolved enumeration	2,478		422	2,900
11 = Potentially fictitious people	Total people	2,469		669	3,138
	Correct enumeration	68		26	94
	Erroneous enumeration	1,063		291	1,354
	Unresolved enumeration	1,338		352	1,690
12 = People who were said to be living elsewhere on Census Day	Total people	8,573		2,180	10,753
	Correct enumeration	1,482		334	1,816
	Erroneous enumeration	4,605		1,180	5,785
	Unresolved enumeration	2,486		666	3,152
TOTAL	Total people	605,850		98,752	704,602
	Correct enumeration	570,935		81,455	652,390
	Erroneous enumeration	17,635		13,429	31,064
	Unresolved enumeration	17,280		3,868	21,148

NOTE: Tables A-15 through A-20 show weighted data.

Table A-15. Imputation of Resident, Match, and Enumeration Status (By Race/Ethnicity Domain)

Aggregated (collapsed) post-strata		Total people (weighted)	Final status (weighted)						Proportion of resident, match, and correct enumeration for resolved cases (weighted)
			Confirmed resident Match Correct enumeration		Nonresident Nonmatch Erroneous enumeration	Unresolved status			
Domain 1 American Indian or Alaska Native (on reservation)	Resident	410,656	395,860	96.4%	8,237	2.0%	6,560	1.6%	0.98
	Match	402,420	344,160	85.5%	56,530	14.0%	1,729	0.4%	0.86
	Enumeration	417,802	392,020	93.8%	14,549	3.5%	11,232	2.7%	0.96
Domain 2 American Indian or Alaska Native (off reservation)	Resident	1,255,848	1,206,831	96.1%	16,265	1.3%	32,753	2.6%	0.99
	Match	1,239,584	1,076,910	86.9%	148,132	12.0%	14,542	1.2%	0.88
	Enumeration	1,373,684	1,261,008	91.8%	68,148	5.0%	44,528	3.2%	0.95
Domain 3 (Hispanic)	Resident	32,323,546	31,047,895	96.1%	354,333	1.1%	921,317	2.9%	0.99
	Match	31,969,213	27,593,987	86.3%	3,927,241	12.3%	447,985	1.4%	0.88
	Enumeration	32,634,850	29,917,741	91.7%	1,406,236	4.3%	1,310,873	4.0%	0.96
Domain 4 (Non-Hispanic Black)	Resident	29,997,580	28,620,033	95.4%	342,739	1.1%	1,034,808	3.4%	0.99
	Match	29,654,841	25,312,348	85.4%	3,868,160	13.0%	474,333	1.6%	0.87
	Enumeration	31,175,445	28,100,714	90.1%	1,894,250	6.1%	1,180,481	3.8%	0.94
Domain 5 (Native Hawaiian or Pacific Islander)	Resident	550,493	534,396	97.1%	5,956	1.1%	10,141	1.8%	0.99
	Match	544,538	458,496	84.2%	83,394	15.3%	2,649	0.5%	0.85
	Enumeration	484,211	440,874	91.1%	28,558	5.9%	14,779	3.1%	0.94
Domain 6 (Non-Hispanic Asian)	Resident	8,979,806	8,631,509	96.1%	96,331	1.1%	251,966	2.8%	0.99
	Match	8,883,475	7,911,236	89.1%	820,832	9.2%	151,407	1.7%	0.91
	Enumeration	9,674,197	8,891,157	91.9%	444,217	4.6%	338,824	3.5%	0.95
Domain 7 (Non-Hispanic White or "Some other race")	Resident	188,725,334	183,592,455	97.3%	1,546,153	0.8%	3,586,726	1.9%	0.99
	Match	187,179,181	172,533,930	92.2%	12,638,245	6.8%	2,007,007	1.1%	0.93
	Enumeration	188,818,674	177,995,518	94.3%	6,832,977	3.6%	3,990,179	2.1%	0.96

Table A-16. Imputation of Resident, Match, and Enumeration Status (By Tenure Post-Stratum)

Aggregated (collapsed) post-strata		Total people (weighted)	Final status (weighted)						Proportion of resident, match, and correct enumeration for resolved cases (weighted)
			Confirmed resident Match Correct enumeration		Nonresident Nonmatch Erroneous enumeration		Unresolved status		
Owner	Resident	182,730,727	178,504,067	97.7%	1,509,768	0.8%	2,716,891	1.5%	0.99
	Match	181,220,958	168,435,745	92.9%	11,087,523	6.1%	1,697,691	0.9%	0.94
	Enumeration	184,446,774	175,984,451	95.4%	6,048,342	3.3%	2,413,981	1.3%	0.97
Non-owner	Resident	79,512,537	75,524,913	95.0%	860,244	1.1%	3,127,380	3.9%	0.99
	Match	78,652,293	66,795,322	84.9%	10,455,011	13.3%	1,401,960	1.8%	0.86
	Enumeration	80,132,089	71,014,582	88.6%	4,640,591	5.8%	4,476,916	5.6%	0.94

Table A-17. Imputation of Resident, Match, and Enumeration Status (By Age/Sex Post-Stratum)

Aggregated (collapsed) post-strata		Total people (weighted)	Final status (weighted)						Proportion of resident, match, and correct enumeration for resolved cases (weighted)
			Confirmed resident Match Correct enumeration		Nonresident Nonmatch Erroneous enumeration		Unresolved status		
0 - 17 (male and female)	Resident	68,714,205	66,328,341	96 5%	572,767	0 8%	1,813,097	2 6%	0 99
	Match	68,141,438	60,901,084	89 4%	5,984,401	8 8%	1,255,953	1 8%	0 91
	Enumeration	68,120,781	64,133,570	94 1%	2,353,842	3 5%	1,633,368	2 4%	0 96
18 - 29 (male)	Resident	19,974,608	18,782,322	94 0%	477,210	2 4%	715,076	3 6%	0 98
	Match	19,497,398	16,570,306	85 0%	2,666,408	13 7%	260,684	1 3%	0 86
	Enumeration	20,620,680	18,357,753	89 0%	1,169,187	5 7%	1,093,741	5 3%	0 94
18 - 29 (female)	Resident	20,380,635	19,347,642	94 9%	390,528	1 9%	642,466	3 2%	0 98
	Match	19,990,108	17,450,134	87 3%	2,293,174	11 5%	246,800	1 2%	0 88
	Enumeration	20,632,531	18,580,519	90 1%	1,061,911	5 1%	990,102	4 8%	0 95
30 - 49 (male)	Resident	39,715,356	38,547,097	97 1%	265,433	0 7%	902,825	2 3%	0 99
	Match	39,449,923	35,614,356	90 3%	3,456,840	8 8%	378,727	1 0%	0 91
	Enumeration	40,368,648	37,622,642	93 2%	1,603,974	4 0%	1,142,032	2 8%	0 96
30 - 49 (female)	Resident	42,334,316	41,317,773	97 6%	204,634	0 5%	811,909	1 9%	1 00
	Match	42,129,682	38,759,196	92 0%	2,949,241	7 0%	421,245	1 0%	0 93
	Enumeration	41,685,792	39,353,417	94 4%	1,434,888	3 4%	897,487	2 2%	0 96
50+ (male)	Resident	32,096,605	31,427,372	97 9%	211,939	0 7%	457,293	1 4%	0 99
	Match	31,884,666	29,639,012	93 0%	2,005,685	6 3%	239,969	0 8%	0 94
	Enumeration	33,364,893	31,374,748	94 0%	1,417,548	4 2%	572,597	1 7%	0 96
50+ (female)	Resident	39,027,539	38,278,431	98 1%	247,502	0 6%	501,606	1 3%	0 99
	Match	38,780,037	36,296,978	93 6%	2,186,785	5 6%	296,274	0 8%	0 94
	Enumeration	39,785,538	37,576,383	94 4%	1,647,584	4 1%	561,570	1 4%	0 96

Table A-18. Imputation of Resident, Match, and Enumeration Status (By MSA Post-Stratum)

Aggregated (collapsed) post-strata		Total people (weighted)	Final status (weighted)						Proportion of resident, match, and correct enumeration for resolved cases (weighted)
			Confirmed resident Match Correct enumeration		Nonresident Nonmatch Erroneous Enumeration		Unresolved status		
Large	Resident	83,437,401	80,590,121	96.6%	729,312	0.9%	2,117,969	2.5%	0.99
	Match	82,708,090	74,090,471	89.6%	7,490,681	9.1%	1,126,938	1.4%	0.91
	Enumeration	83,399,043	77,329,695	92.7%	3,730,604	4.5%	2,338,744	2.8%	0.95
Medium	Resident	89,968,981	87,025,631	96.7%	820,146	0.9%	2,123,204	2.4%	0.99
	Match	89,148,835	81,186,800	91.1%	6,823,501	7.7%	1,138,534	1.3%	0.92
	Enumeration	91,149,502	85,132,062	93.4%	3,449,854	3.8%	2,567,586	2.8%	0.96
Small	Resident	38,927,177	37,845,477	97.2%	342,802	0.9%	738,898	1.9%	0.99
	Match	38,584,375	35,383,831	91.7%	2,807,567	7.3%	392,976	1.0%	0.93
	Enumeration	39,769,034	37,210,091	93.6%	1,516,829	3.8%	1,042,114	2.6%	0.96
Non-MSA	Resident	49,909,705	48,567,751	97.3%	477,753	1.0%	864,201	1.7%	0.99
	Match	49,431,951	44,569,964	90.2%	4,420,785	8.9%	441,203	0.9%	0.91
	Enumeration	50,261,284	47,327,184	94.2%	1,991,647	4.0%	942,453	1.9%	0.96

Table A-19. Imputation of Resident, Match, and Enumeration Status (By Return Rate Post-Stratum)

Aggregated (collapsed) post-strata		Total people (weighted)	Final status (weighted)						Proportion of resident, match, and correct enumeration for resolved cases (weighted)
			Confirmed resident Match Correct enumeration		Nonresident Nonmatch Erroneous enumeration		Unresolved status		
Low return rate	Resident	61,655,028	59,453,558	96.4%	622,032	1.0%	1,579,437	2.6%	0.99
	Match	61,032,996	53,381,763	87.5%	6,868,400	11.3%	782,833	1.3%	0.89
	Enumeration	62,138,601	56,896,341	91.6%	3,233,672	5.2%	2,008,588	3.2%	0.95
High return rate	Resident	189,391,432	183,806,826	97.1%	1,621,193	0.9%	3,963,413	2.1%	0.99
	Match	187,770,239	172,058,502	91.6%	13,565,246	7.2%	2,146,491	1.1%	0.93
	Enumeration	190,490,369	179,117,632	94.0%	6,899,791	3.6%	4,472,946	2.3%	0.96
Not specified (domains 1,2,5,6)	Resident	11,196,804	10,768,596	96.2%	126,787	1.1%	301,421	2.7%	0.99
	Match	11,070,016	9,790,802	88.4%	1,108,888	10.0%	170,327	1.5%	0.90
	Enumeration	11,949,893	10,985,059	91.9%	555,471	4.6%	409,363	3.4%	0.95

Table A-20. Imputation of Resident, Match, and Enumeration Status (By Post-Stratum Aggregated Across Age and Sex)

Aggregated (collapsed) post-strata		Total people (weighted)	Final status (weighted)						Proportion of resident, match, and correct enumeration for resolved cases (weighted)
			Confirmed resident Match		Nonresident Nonmatch		Unresolved status		
			Correct enumeration		Erroneous enumeration				
1	Resident	11,889,423	11,671,318	98 2%	95,477	0 8%	122,628	1 0%	0 99
	Match	11,793,946	11,160,531	94 6%	543,367	4 6%	90,047	0 8%	0 95
	Enumeration	11,655,322	11,275,003	96.7%	286,321	2 5%	93,999	0 8%	0 98
2	Resident	6,868,683	6,754,001	98 3%	45,777	0 7%	68,906	1 0%	0.99
	Match	6,822,907	6,532,492	95 7%	245,262	3 6%	45,153	0 7%	0 96
	Enumeration	6,857,140	6,623,050	96 6%	163,849	2 4%	70,241	1 0%	0 98
3	Resident	5,264,796	5,126,782	97 4%	37,715	0 7%	100,299	1 9%	0 99
	Match	5,227,081	4,924,634	94 2%	245,613	4 7%	56,834	1 1%	0 95
	Enumeration	5,312,622	5,084,039	95 7%	161,070	3.0%	67,513	1 3%	0 97
4	Resident	6,148,335	5,973,338	97 2%	43,104	0 7%	131,893	2 1%	0 99
	Match	6,105,231	5,733,397	93 9%	292,835	4.8%	78,999	1 3%	0 95
	Enumeration	6,065,094	5,756,167	94 9%	216,938	3 6%	91,990	1 5%	0.96
5	Resident	2,760,253	2,660,537	96 4%	41,609	1 5%	58,108	2 1%	0 98
	Match	2,718,644	2,484,253	91 4%	192,224	7.1%	42,167	1 6%	0.93
	Enumeration	2,787,493	2,568,349	92 1%	159,541	5 7%	59,603	2 1%	0 94
6	Resident	548,996	529,289	96.4%	4,326	0 8%	15,381	2 8%	0 99
	Match	544,670	506,252	92 9%	31,345	5 8%	7,073	1 3%	0 94
	Enumeration	532,003	504,307	94 8%	18,589	3 5%	9,108	1 7%	0 96
7	Resident	1,192,239	1,148,096	96 3%	8,970	0 8%	35,173	3 0%	0 99
	Match	1,183,269	1,072,382	90 6%	93,944	7 9%	16,944	1 4%	0 92
	Enumeration	1,207,309	1,145,402	94 9%	40,113	3 3%	21,794	1 8%	0 97
8	Resident	874,701	850,076	97 2%	6,663	0 8%	17,961	2 1%	0 99
	Match	868,037	790,128	91.0%	68,178	7 9%	9,732	1 1%	0.92
	Enumeration	872,650	804,433	92 2%	35,728	4 1%	32,490	3 7%	0 96
9	Resident	5,204,845	5,122,967	98 4%	34,729	0 7%	47,149	0 9%	0 99
	Match	5,170,116	4,938,221	95 5%	193,723	3 7%	38,172	0 7%	0 96
	Enumeration	5,355,980	5,184,667	96 8%	124,706	2.3%	46,608	0 9%	0 98
10	Resident	11,991,396	11,804,229	98 4%	61,478	0 5%	125,689	1.0%	0 99
	Match	11,929,918	11,501,477	96 4%	352,852	3 0%	75,589	0 6%	0 97
	Enumeration	12,088,676	11,763,929	97 3%	228,733	1 9%	96,014	0 8%	0 98
11	Resident	12,515,639	12,142,137	97 0%	127,075	1 0%	246,427	2 0%	0 99
	Match	12,388,564	11,571,555	93 4%	645,984	5 2%	171,025	1 4%	0 95
	Enumeration	12,640,045	12,087,251	95 6%	392,675	3 1%	160,119	1 3%	0 97
12	Resident	8,801,383	8,604,748	97 8%	61,984	0 7%	134,651	1 5%	0 99
	Match	8,739,399	8,281,668	94 8%	377,443	4 3%	80,288	0 9%	0 96
	Enumeration	8,947,245	8,568,279	95 8%	247,821	2 8%	131,145	1 5%	0 97
13	Resident	510,315	504,301	98 8%	2,827	0 6%	3,187	0.6%	0 99
	Match	507,488	491,578	96 9%	13,140	2.6%	2,771	0 5%	0 97
	Enumeration	534,485	512,166	95 8%	20,225	3 8%	2,094	0 4%	0 96

Appendix

Table A-20. (Cont.) Imputation of Resident, Match, and Enumeration Status (By Post-Stratum Aggregated Across Age and Sex)

Aggregated (collapsed) post-strata		Total people (weighted)	Final status (weighted)						Proportion of resident, match, and correct enumeration for resolved cases (weighted)
			Confirmed resident Match		Nonresident Nonmatch		Unresolved status		
			Correct enumeration	Erroneous enumeration	Correct enumeration	Erroneous enumeration	Correct enumeration	Erroneous enumeration	
14	Resident	1,012,534	987,098	97 5%	10,230	1 0%	15,206	1 5%	0 99
	Match	1,002,304	938,689	93 7%	53,584	5 3%	10,031	1 0%	0 95
	Enumeration	947,194	900,772	95 1%	34,337	3 6%	12,085	1 3%	0 96
15	Resident	3,109,254	3,017,271	97 0%	27,672	0 9%	64,311	2 1%	0 99
	Match	3,081,582	2,831,294	91 9%	215,702	7 0%	34,586	1 1%	0 93
	Enumeration	3,089,271	2,912,191	94 3%	120,396	3 9%	56,684	1 8%	0 96
16	Resident	2,042,886	1,994,837	97 6%	11,650	0 6%	36,399	1 8%	0 99
	Match	2,031,236	1,827,457	90 0%	181,389	8 9%	22,389	1 1%	0 91
	Enumeration	2,028,773	1,896,937	93 5%	90,626	4 5%	41,211	2 0%	0 95
17	Resident	2,530,092	2,497,247	98 7%	16,091	0 6%	16,755	0 7%	0 99
	Match	2,514,001	2,401,091	95 5%	104,567	4 2%	8,343	0 3%	0 96
	Enumeration	2,555,920	2,457,330	96 1%	82,141	3 2%	16,449	0 6%	0 97
18	Resident	11,257,292	11,121,427	98 8%	58,881	0 5%	76,985	0 7%	0 99
	Match	11,198,411	10,699,115	95 5%	448,597	4 0%	50,699	0 5%	0 96
	Enumeration	11,471,670	11,048,221	96 3%	291,760	2 5%	131,689	1 1%	0 97
19	Resident	8,277,635	8,058,738	97 4%	70,087	0 8%	148,811	1 8%	0 99
	Match	8,207,548	7,722,950	94 1%	379,380	4 6%	105,219	1 3%	0 95
	Enumeration	8,178,413	7,850,879	96 0%	231,498	2 8%	96,036	1 2%	0 97
20	Resident	3,363,008	3,291,193	97 9%	25,834	0 8%	45,980	1 4%	0 99
	Match	3,337,174	3,163,403	94 8%	145,686	4 4%	28,084	0 8%	0 96
	Enumeration	3,377,486	3,258,104	96 5%	80,583	2 4%	38,800	1 1%	0 98
21	Resident	602,694	588,730	97 7%	9,914	1 6%	4,050	0 7%	0 98
	Match	592,781	550,063	92 8%	38,667	6 5%	4,050	0 7%	0 93
	Enumeration	592,431	573,312	96 8%	13,734	2 3%	5,385	0 9%	0 98
22	Resident	1,095,748	1,080,591	98 6%	2,675	0 2%	12,483	1 1%	1 00
	Match	1,093,074	987,004	90 3%	98,844	9 0%	7,225	0 7%	0 91
	Enumeration	1,031,182	960,236	93 1%	41,960	4 1%	28,985	2 8%	0 96
23	Resident	3,429,086	3,335,755	97 3%	44,956	1 3%	48,375	1 4%	0 99
	Match	3,384,130	3,086,345	91 2%	269,776	8 0%	28,008	0 8%	0 92
	Enumeration	3,458,725	3,256,641	94 2%	139,429	4 0%	62,656	1 8%	0 96
24	Resident	1,362,064	1,328,919	97 6%	14,388	1 1%	18,757	1 4%	0 99
	Match	1,347,677	1,219,833	90 5%	116,990	8 7%	10,854	0 8%	0 91
	Enumeration	1,344,479	1,275,513	94 9%	51,587	3 8%	17,379	1 3%	0 96
25	Resident	3,801,764	3,741,497	98 4%	38,896	1 0%	21,371	0 6%	0 99
	Match	3,762,868	3,498,373	93 0%	252,156	6 7%	12,340	0 3%	0 93
	Enumeration	3,752,953	3,638,697	97 0%	102,259	2 7%	11,997	0 3%	0 97
26	Resident	6,108,637	6,007,093	98 3%	42,172	0 7%	59,372	1 0%	0 99
	Match	6,066,466	5,793,525	95 5%	232,446	3 8%	40,495	0 7%	0 96
	Enumeration	6,136,987	5,933,129	96 7%	148,968	2 4%	54,890	0 9%	0 98

Appendix

Table A-20. (Cont.) Imputation of Resident, Match, and Enumeration Status (By Post-Stratum Aggregated Across Age and Sex)

Aggregated (collapsed) post-strata		Total people (weighted)	Final status (weighted)					Proportion of resident, match, and correct enumeration for resolved cases (weighted)	
			Confirmed resident Match Correct enumeration	Nonresident Nonmatch Erroneous enumeration	Unresolved status				
27	Resident	4,643,607	4,557,299	98 1%	29,815	0 6%	56,494	1 2%	0 99
	Match	4,613,792	4,254,205	92 2%	328,624	7 1%	30,963	0 7%	0 93
	Enumeration	4,641,034	4,463,371	96 2%	149,029	3 2%	28,634	0 6%	0 97
28	Resident	2,060,146	1,997,599	97 0%	25,446	1 2%	37,101	1 8%	0 99
	Match	2,034,700	1,827,360	89 8%	186,262	9 2%	21,078	1 0%	0 91
	Enumeration	2,076,407	1,945,158	93 7%	92,483	4 5%	38,766	1 9%	0 95
29	Resident	1,565,737	1,545,314	98 7%	12,401	0 8%	8,023	0 5%	0 99
	Match	1,553,337	1,428,394	92 0%	123,267	7 9%	1,676	0 1%	0 92
	Enumeration	1,502,503	1,436,771	95 6%	58,503	3 9%	7,228	0 5%	0 96
30	Resident	1,021,938	1,007,217	98 6%	4,625	0 5%	10,095	1 0%	1 00
	Match	1,017,312	941,561	92 6%	70,471	6 9%	5,281	0 5%	0 93
	Enumeration	1,050,999	1,004,958	95 6%	34,951	3 3%	11,090	1 1%	0 97
31	Resident	11,409,786	11,169,692	97 9%	87,582	0 8%	152,511	1 3%	0 99
	Match	11,322,203	10,295,488	90 9%	939,864	8 3%	86,852	0 8%	0 92
	Enumeration	11,453,319	10,850,863	94 7%	452,776	4 0%	149,680	1 3%	0 96
32	Resident	1,975,369	1,922,967	97 3%	17,818	0 9%	34,584	1 8%	0 99
	Match	1,957,551	1,718,926	87 8%	219,608	11 2%	19,017	1 0%	0 89
	Enumeration	1,945,955	1,808,017	92 9%	101,191	5 2%	36,746	1 9%	0 95
33	Resident	8,459,810	8,078,696	95 5%	68,820	0 8%	312,298	3 7%	0 99
	Match	8,390,994	7,353,172	87 6%	881,818	10 5%	156,004	1 9%	0 89
	Enumeration	8,170,237	7,303,753	89 4%	440,831	5 4%	425,653	5 2%	0 94
34	Resident	3,388,009	3,208,091	94 7%	28,720	0 8%	151,198	4 5%	0 99
	Match	3,359,290	2,809,070	83 6%	478,333	14 2%	71,887	2 1%	0 85
	Enumeration	3,306,522	2,909,538	88 0%	230,399	7 0%	166,585	5 0%	0 93
35	Resident	10,485,513	9,985,924	95 2%	111,902	1 1%	387,687	3 7%	0 99
	Match	10,373,611	9,166,524	88 4%	1,022,334	9 9%	184,753	1 8%	0 90
	Enumeration	10,564,367	9,398,982	89 0%	609,860	5 8%	555,524	5 3%	0 94
36	Resident	3,072,969	2,869,553	93 4%	33,541	1 1%	169,875	5 5%	0 99
	Match	3,039,428	2,532,921	83 3%	430,640	14 2%	75,868	2 5%	0 85
	Enumeration	2,891,978	2,459,606	85 0%	177,662	6 1%	254,710	8 8%	0 93
37	Resident	8,770,799	8,430,232	96 1%	70,661	0 8%	269,906	3 1%	0 99
	Match	8,700,139	7,692,330	88 4%	888,245	10 2%	119,564	1 4%	0 90
	Enumeration	9,046,882	8,181,537	90 4%	421,155	4 7%	444,190	4 9%	0 95
38	Resident	2,154,514	2,028,099	94 1%	31,061	1 4%	95,354	4 4%	0 98
	Match	2,123,453	1,772,170	83 5%	306,641	14 4%	44,642	2 1%	0 85
	Enumeration	2,215,422	1,952,576	88 1%	137,128	6 2%	125,719	5 7%	0 93
39	Resident	4,679,576	4,493,745	96 0%	45,877	1 0%	139,954	3 0%	0 99
	Match	4,633,699	4,034,752	87 1%	526,669	11 4%	72,278	1 6%	0 88
	Enumeration	4,566,030	4,168,942	91 3%	235,498	5 2%	161,590	3 5%	0 95

Appendix

Table A-20. (Cont.) Imputation of Resident, Match, and Enumeration Status (By Post-Stratum Aggregated Across Age and Sex)

Aggregated (collapsed) post-strata		Total people (weighted)	Final status (weighted)						Proportion of resident, match, and correct enumeration for resolved cases (weighted)
			Confirmed resident		Nonresident		Unresolved status		
			Match Correct enumeration	95 2%	Nonmatch Erroneous enumeration	1 3%			
40	Resident	2,473,856	2,355,814	95 2%	32,704	1 3%	85,338	3 4%	0 99
	Match	2,441,152	1,999,351	81 9%	401,775	16 5%	40,026	1 6%	0 83
	Enumeration	2,565,469	2,272,442	88 6%	165,924	6 5%	127,103	5 0%	0 93
41	Resident	8,040,200	7,758,782	96 5%	76,766	1 0%	204,652	2 5%	0 99
	Match	7,963,434	7,140,122	89 7%	700,221	8 8%	123,091	1 5%	0 91
	Enumeration	8,275,844	7,796,387	94 2%	351,172	4 2%	128,286	1 6%	0 96
42	Resident	2,334,954	2,240,228	95 9%	28,295	1 2%	66,430	2 8%	0 99
	Match	2,306,659	1,967,650	85 3%	300,163	13 0%	38,846	1 7%	0 87
	Enumeration	2,562,383	2,288,939	89 3%	206,042	8.0%	67,402	2 6%	0 92
43	Resident	3,393,527	3,299,757	97 2%	38,988	1 1%	54,782	1 6%	0.99
	Match	3,354,539	3,018,113	90 0%	308,291	9 2%	28,135	0 8%	0.91
	Enumeration	3,542,325	3,293,123	93 0%	195,461	5 5%	53,742	1 5%	0 94
44	Resident	1,408,013	1,374,760	97 6%	16,656	1 2%	16,597	1 2%	0 99
	Match	1,391,357	1,225,818	88.1%	158,488	11 4%	7,052	0 5%	0.89
	Enumeration	1,440,432	1,341,112	93 1%	74,133	5 1%	25,188	1 7%	0.95
45	Resident	7,648,228	7,201,826	94 2%	80,020	1 0%	366,382	4 8%	0 99
	Match	7,568,208	6,217,537	82 2%	1,206,706	15 9%	143,965	1 9%	0 84
	Enumeration	7,872,899	6,892,469	87 5%	530,288	6 7%	450,142	5 7%	0.93
46	Resident	3,605,119	3,396,284	94 2%	35,096	1 0%	173,739	4 8%	0.99
	Match	3,570,022	2,797,443	78 4%	696,833	19 5%	75,746	2 1%	0 80
	Enumeration	3,788,006	3,254,604	85 9%	302,901	8 0%	230,501	6.1%	0 91
47	Resident	3,057,673	2,860,901	93 6%	62,898	2 1%	133,874	4 4%	0.98
	Match	2,994,775	2,515,185	84 0%	430,345	14 4%	49,245	1 6%	0.85
	Enumeration	3,197,226	2,795,900	87 4%	201,546	6.3%	199,779	6 2%	0.93
48	Resident	509,866	487,494	95 6%	4,020	0 8%	18,352	3 6%	0 99
	Match	505,846	430,480	85 1%	67,112	13 3%	8,254	1 6%	0 87
	Enumeration	496,330	438,180	88 3%	32,709	6.6%	25,440	5 1%	0.93
49	Resident	9,252,284	9,005,440	97 3%	74,847	0 8%	171,997	1 9%	0.99
	Match	9,177,437	8,346,631	90 9%	720,338	7 8%	110,469	1 2%	0 92
	Enumeration	9,204,192	8,824,457	95 9%	249,019	2 7%	130,716	1 4%	0 97
50	Resident	2,215,250	2,160,020	97 5%	25,094	1 1%	30,136	1 4%	0 99
	Match	2,190,156	1,913,776	87 4%	257,702	11 8%	18,678	0 9%	0 88
	Enumeration	2,460,642	2,235,659	90 9%	124,723	5 1%	100,259	4 1%	0 95
51	Resident	2,615,171	2,551,415	97 6%	32,260	1 2%	31,496	1 2%	0 99
	Match	2,582,911	2,324,483	90 0%	241,510	9 4%	16,917	0.7%	0 91
	Enumeration	2,726,956	2,608,507	95 7%	84,346	3 1%	34,104	1 3%	0 97
52	Resident	1,339,969	1,298,731	96 9%	20,134	1 5%	21,105	1 6%	0 98
	Match	1,319,835	1,156,914	87 7%	149,909	11 4%	13,012	1 0%	0 89
	Enumeration	1,353,454	1,271,481	93 9%	55,156	4 1%	26,817	2 0%	0 96

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Table A-20. (Cont.) Imputation of Resident, Match, and Enumeration Status (By Post-Stratum Aggregated Across Age and Sex)

Aggregated (collapsed) post-strata		Total people (weighted)	Final status (weighted)						Proportion of resident, match, and correct enumeration for resolved cases (weighted)
			Confirmed resident Match Correct enumeration		Nonresident Nonmatch Erroneous enumeration		Unresolved status		
53	Resident	9,861,135	9,398,279	95.3%	113,890	1.2%	348,966	3.5%	0.99
	Match	9,747,245	8,307,342	85.2%	1,272,366	13.1%	167,538	1.7%	0.87
	Enumeration	9,748,477	8,759,404	89.9%	441,344	4.5%	547,728	5.6%	0.95
54	Resident	3,948,731	3,726,156	94.4%	47,663	1.2%	174,912	4.4%	0.99
	Match	3,901,067	3,102,603	79.5%	736,348	18.9%	62,117	1.6%	0.81
	Enumeration	3,994,527	3,457,785	86.6%	271,954	6.8%	264,788	6.6%	0.93
55	Resident	2,400,829	2,270,216	94.6%	29,703	1.2%	100,909	4.2%	0.99
	Match	2,371,125	1,938,315	81.7%	391,605	16.5%	41,204	1.7%	0.83
	Enumeration	2,461,938	2,156,898	87.6%	138,439	5.6%	166,602	6.8%	0.94
56	Resident	690,177	637,638	92.4%	10,741	1.6%	41,797	6.1%	0.98
	Match	679,436	503,923	74.2%	157,463	23.2%	18,049	2.7%	0.76
	Enumeration	684,664	603,550	88.2%	41,254	6.0%	39,860	5.8%	0.94
57	Resident	280,923	275,345	98.0%	2,838	1.0%	2,739	1.0%	0.99
	Match	278,084	241,064	86.7%	35,613	12.8%	1,407	0.5%	0.87
	Enumeration	238,027	221,041	92.9%	13,491	5.7%	3,495	1.5%	0.94
58	Resident	269,571	259,051	96.1%	3,117	1.2%	7,402	2.7%	0.99
	Match	266,453	217,431	81.6%	47,781	17.9%	1,241	0.5%	0.82
	Enumeration	246,183	219,833	89.3%	15,067	6.1%	11,284	4.6%	0.94
59	Resident	5,600,310	5,415,213	96.7%	58,023	1.0%	127,075	2.3%	0.99
	Match	5,542,287	5,047,731	91.1%	404,055	7.3%	90,502	1.6%	0.93
	Enumeration	6,068,555	5,740,825	94.6%	230,595	3.8%	97,134	1.6%	0.96
60	Resident	3,379,496	3,216,296	95.2%	38,308	1.1%	124,892	3.7%	0.99
	Match	3,341,188	2,863,505	85.7%	416,778	12.5%	60,905	1.8%	0.87
	Enumeration	3,605,643	3,150,332	87.4%	213,622	5.9%	241,689	6.7%	0.94
61	Resident	273,046	262,262	96.1%	6,425	2.4%	4,359	1.6%	0.98
	Match	266,621	226,311	84.9%	39,248	14.7%	1,062	0.4%	0.85
	Enumeration	285,039	268,522	94.2%	10,613	3.7%	5,904	2.1%	0.96
62	Resident	137,610	133,597	97.1%	1,812	1.3%	2,201	1.6%	0.99
	Match	135,799	117,850	86.8%	17,282	12.7%	667	0.5%	0.87
	Enumeration	132,763	123,498	93.0%	3,936	3.0%	5,328	4.0%	0.97
63	Resident	736,796	719,812	97.7%	6,575	0.9%	10,410	1.4%	0.99
	Match	730,221	653,491	89.5%	70,195	9.6%	6,535	0.9%	0.90
	Enumeration	797,157	746,256	93.6%	39,071	4.9%	11,829	1.5%	0.95
64	Resident	519,053	487,019	93.8%	9,690	1.9%	22,344	4.3%	0.98
	Match	509,363	423,419	83.1%	77,937	15.3%	8,006	1.6%	0.84
	Enumeration	576,527	514,752	89.3%	29,076	5.0%	32,699	5.7%	0.95