

NATIONAL HEALTH AND AGING TRENDS STUDY (NHATS)
Development of Round 2 Survey Weights

January 24, 2014

Suggested Citation: Montaquila, Jill, Freedman, Vicki A., Spillman, Brenda, and Kasper, Judith D. 2014. National Health and Aging Trends Study Development of Round 2 Survey Weights. NHATS Technical Paper #6. Baltimore: Johns Hopkins University School of Public Health. Available at www.NHATS.org. We acknowledge the valuable contributions of Graham Kalton of who led the NHATS sample design and provided helpful comments, along with Brad Edwards, on earlier versions of this paper. We also thank David Ferraro and Rui Jiao, who played instrumental roles in the development of the Round 2 weights and produced several tabulations that appear in this paper. This technical paper was prepared with funding from the National Institute on Aging (U01AG032947).

1. Introduction

The NHATS public use data support weighted analysis of Medicare beneficiaries ages 65 and older living in the contiguous United States on September 30, 2010. The survey weights included with the Round 2 public use file account for differential probabilities of selection and adjust for potential bias related to unit nonresponse to the Round 1 and Round 2 interviews.

For Round 2 of NHATS, as for Round 1, two types of sampling weights have been produced: a tracker weight (on the Tracker file with the variable name `w2trfinwgt0`) and an analytic weight (on the Sample Person file with the variable name `w2anfinwgt0`). For variance estimation (see Section 7), NHATS has also included replicate versions of these weights (`w2trfinwgt1-w2trfinwgt56` and `w2anfinwgt1-w2anfinwgt56`).

The methodology that was used to develop these weights and appropriate uses of each of these weights are discussed in the following sections. The next section provides an overview of how cases were classified for purposes of weight development. Sections 3 and 4 detail the creation of the tracker and analytic weights, respectively. Section 5 reports on the effect of weighting adjustments on the precision of NHATS survey estimates. Section 6 provides guidance on the use of the tracker and analytic weights. A final section provides information on the proper calculation of variance estimates to account for the complex design and estimation procedures used in NHATS.

2. Definition of Respondent

In the development of survey weights, an important first step is the classification of cases into groups based on eligibility and response status. For Round 2 of NHATS, Table 1 shows how the disposition codes map into respondent, ineligible, and nonrespondent statuses.

For the Tracker weight, only cases classified as Respondents and Ineligible are assigned a positive weight; for the Analytic weight, only Respondents are assigned a positive weight. Cases for which at least one survey component is available (codes 60, 61, 62, 63 and 64) are considered. Respondents for purposes of the tracker weight. Those who became ineligible for the Round 1 interview after they were selected, either because they died or moved out of the contiguous U.S. by the time of the fieldwork, have positive tracker weights, but their analytic weights are valued zero. Those who became ineligible for the Round 2 interview because they moved out of the contiguous U.S. by the time of the fieldwork also have positive tracker weights but their analytic weights are equal to zero. Because a Last Month of Life (LML) interview was attempted for each SP who died between Rounds 1 and 2, deceased SPs with a LML interview completed by proxy (code 62) were also considered respondents and have both tracker and analytic weights (n=503). For the analytic weight, cases residing in a nursing home (code 61) or with a completed Sample Person (SP) interview (60, 63) were considered respondents (n=6,382). For the SP interview, cases were required to have completed the self-reported disability protocol (through the section on Participation; PA) to be considered complete.

Table 1. Classification of Round 2 NHATS Sample for Weight Development Purposes

Disposition code	n	Classification for Tracker Weight	Classification for Analytic Weight
60 Complete	5,992	Respondent	Respondent
61 Complete, NH facility	326	Respondent	Respondent
62 Complete, SP deceased, proxy interview	503	Deceased respondent ⁺	Respondent ⁺
63 Complete SP, FQ not complete	64	Respondent	Respondent
64 Complete FQ, SP not complete	190	Respondent	Nonrespondent
75 Physically/mentally unable to participate, no proxy	8	Nonrespondent	Nonrespondent
76 Too ill to participate, no proxy	65	Nonrespondent	Nonrespondent
77 Refusal, Sample Person	853	Nonrespondent	Nonrespondent
78 Language barrier	5	Nonrespondent	Nonrespondent
79 Unable to locate	38	Eligibility unknown ⁺⁺	Eligibility unknown ⁺⁺
80 Unavailable during field period	8	Nonrespondent	Nonrespondent
82 Outside of Primary Sampling Unit	3	Nonrespondent	Nonrespondent
83 Ineligible (moved out of contiguous US)	31	Ineligible	Ineligible
85 Refusal, facility	1	Nonrespondent Deceased	Nonrespondent
86 Deceased, no proxy	30	nonrespondent ⁺	Nonrespondent ⁺
87 Refusal, proxy	110	Nonrespondent	Nonrespondent
88 Work stopped	1	Nonrespondent	Nonrespondent
89 Final other/specify*	17	Nonrespondent*	Nonrespondent*
Not attempted in Round 2			
Deceased in Round 1	697	Ineligible	Ineligible
Other Round 1 ineligible	77	Ineligible	Ineligible
Round 1 nonrespondent	3,392	Nonrespondent**	Nonrespondent**
Total and Number Assigned Weight	12,411	9,019	6,885

⁺ The weights of deceased SPs were adjusted separately from those of living SPs.

⁺⁺ Due to the very low proportion of fielded cases in this category (0.46% of fielded cases), as well as the low proportion of Round 1 respondents that were ineligible for Round 2 (0.38%), these cases were treated as living nonrespondents in the computation of Round 2 weights.

*These are cases that had an FQ only in Round 1 (and were coded with dispositions 61 or 64 in Round 1) and were living in the community in Round 2; by design, the SP interview was not attempted with these cases. Thus, these are complete nonrespondents to the Round 2 data collection process.

**These cases were previously adjusted for in the Round 1 nonresponse adjustment to the tracker weight; this Round 1 nonresponse adjusted tracker weight was used as input to the Round 2 weighting process, so these cases are not included in the Round 2 nonresponse adjustment.

SP=Sample Person interview; FQ=Facility Questionnaire

3. Computation of Tracker Weights

The computation of the Round 2 tracker weight began with the Round 1 nonresponse adjusted tracker weight (prior to raking). This Round 1 weight accounted for differential probabilities of selection and included an adjustment for nonresponse to the Round 1 interview but is not raked to the HISKEW file. See Montaquila, Freedman, Spillman, and Kasper (2012) for details on the specific methodology used in computing and adjusting the weights. To produce the Round 2 weight two additional adjustments were made to this Round 1 weight—an adjustment for Round 2 nonresponse and a raking adjustment to estimated population totals from the HISKEW file.

Potential variables for creating non-response cells for Round 2 came from four sources:

- Beneficiary information from the sampling frame (the 20% HISKEW File), including demographic characteristics of the beneficiary (e.g., age as of September 30, 2010, gender) and geographic information (e.g., census division, metro and micropolitan status) based on the beneficiary's address in CMS' Medicare Enrollment Database (EDB) and an indicator of sample release group (see Montaquila, Freedman, Edwards, and Kasper (2012) for details of the sample release process);
- County-level demographic information based on the 5% HISKEW file (e.g., percent of beneficiaries in the county who are Black; percent of beneficiaries in the county who are Hispanic) for the county linked to the beneficiary's address from the EDB;
- Census tract-level information based on the 2006-2010 5-year American Community Survey (e.g. tract-level demographic information), based on linkages to the beneficiary's address from the EDB; and
- Variables from the NHATS Round 1 interview (race/ethnicity, highest education, and Round 1 residential setting).

Appendix Table 1 provides weighted response rates (using the Round 1 nonresponse adjusted tracker weight prior to raking) by categories of the various indicators. We used these variables as input to a classification tree analysis to determine which of these variables were associated with nonresponse. This approach uses a search algorithm to identify variables associated with response propensities. At each step in the process, chi-square tests were performed to determine the most significant predictor of response, given the set of conditions already specified in the particular "branch." We also set a minimum cell size of 50.¹

We fit separate classification trees for deceased SPs, Round 1 nursing home residents, and all others ("non-nursing home"). Nursing home residents were not required to complete an SP Interview and for deceased SPs, the LML interview was attempted with a proxy; therefore, the underlying nonresponse processes differed for these three groups. We included all variables as input for each of the trees.

Appendix Table 1 indicates the variables used in the final non-response cells, with a + for the deceased SP tree, a ^ for the Round 1 nursing home residents tree, and a * for the non-nursing home tree. For deceased SPs, final non-response cells included 5 indicators, resulting in 7 nonresponse cells. For living SPs who were in nursing homes in Round 1 and those living in the community and other residential settings (not nursing homes) in Round 1, final non-response cells included 3 and 15 indicators, respectively. Combinations of these variables created 4 nonresponse cells among the Round 1 nursing home residents and 26 nonresponse cells among the non-nursing home group (See Appendix Figures 1, 2, and 3).

¹ The classification tree analysis is designed to work with categorical predictor variables. Alternatives to this approach are propensity modeling based on logistic regression and Cartesian product cross-classification. The logistic regression approach uses a parametric model to identify predictors of response. When the pool of potential predictors includes continuous variables and categorizing the continuous variables would result in substantial losses of information, logistic regression modeling would be preferred over classification tree analysis. The Cartesian product cross-classification approach involves specifying a set of adjustment cell variables based on prior experience (generally, (1) prior analyses that identified predictors associated with response propensities; and/or (2) predictors associated with response and/or subject matter expertise that informs the choice of variables).

The final step in creating the tracker weight involved raking the nonresponse adjusted weights to control totals developed from the 5% HISKEW (September 30 2010 HISKEW) that was used for sampling. For consistency, the raking adjustment also included the ineligible (primarily deaths), since the frame that served as the source of the control totals also includes beneficiaries who were ineligible for NHATS.

As in Round 1, four dimensions were used in this Round 2 raking adjustment²:

- (1) Age category (65-69, 70-74, 75-79, 80-84, 85-89, 90+) by sex by race from the EDB (Black; non-Black);
- (2) Age category (65-69, 70-74, 75-79, 80-84, 85-89, 90+) by Census region;
- (3) Age category (65-69, 70-74, 75-79, 80-84, 85-89, 90+) by MSA status (from the HISKEW); and
- (4) Age category (65-69, 70-74, 75-79, 80-84, 85-89, 90+) by a binary indicator of whether the SP was enrolled in Medicare prior to age 65.

4. Computation of Analytic Weights

The computation of the analytic weights begins with the final Round 2 tracker weight. A weighting class adjustment was developed for the class of nonrespondents who were eligible for but did not complete the SP interview: those living in residential care in Round 2 who had completed a facility interview but not a Sample Person interview (n=190; designated as code 64). (Round 2 nursing home residents who were nursing home residents in Round 1 (code 61) were not eligible for an SP interview in R2, thus are not part of the analytic weight nonresponse adjustment). The approach was designed to preserve the tracker weight distributions by Round 2 residence type (nursing home, non-nursing home). That is, we allowed the weights of residential care cases with both a completed FQ and a completed SP interview (n=352) to be adjusted to account for similar cases missing the SP Interview.

Because the sample size is much smaller for this nonresponse adjustment, only a subset of variables used in tracker weight classification tree analysis was considered for the analytic weight nonresponse adjustments; additionally, three variables that characterize the Round 2 nursing home status, residential care status, and area of the facility where the SP lives were included (see Appendix Table 2). In order to preserve the tracker weight distribution by Round 2 residence type, the first split was forced to be Round 2 nursing home status. (All subsequent splitting was based on response propensities.) Six variables (designated with * in Appendix Table 2) were retained in the final classification tree, forming 9 cells (see Appendix Figure 4).

As a final step, we applied a raking procedure so that marginal totals based on the analytic weights would match at sampling: 5-year age groups, sex, race, region, micro/metropolitan status, and whether Medicare was received before age 65 (see footnote 2).

5. Design Effects Related to Weighting

Although weighting adjustments are aimed at reducing bias, increased variation in weights generally increases the variances of survey estimates (Kish, 1965). Thus, in the development and implementation

² For purposes of raking, age categories refer to age at sampling.

of the weighting methodology for NHATS, care was taken to balance the bias reductions against the potential increases in variance.

The estimated overall design effect due to variation in the Round 1 nonresponse adjusted tracker weights was 1.28. After applying Round 2 nonresponse adjustments within cells determined by the classification tree results, the estimated overall design effect due to unequal weighting increased to 1.33. We also investigated the need for trimming and found no extreme outlier weights (the ratio of maximum weight to the mean weight is 3.2), so did not pursue trimming. After the raking adjustment, the design effect for the final Round 2 tracker weights was 1.35, and the raking adjustment did not generate any influential outlier weights.

The additional steps involved in creating the analytic weight (nonresponse adjustment and raking) had minimal effect on the estimated overall design effect (1.34 overall; 1.34 for living SPs and 1.32 for deceased SPs) and did not introduce any influential outlier weights.

6. Use of the Tracker vs. Analytic Weight

When using the tracker weight from any round, respondents are weighted up to represent all Medicare beneficiaries ages 65 and older who were alive on September 30, 2010 and residing in the contiguous United States. In contrast, the analytic weight at a given round reproduces only those alive and eligible for NHATS during the prior round fieldwork period (with the exception of a small number of persons from the prior round who are deemed ineligible in the current round because they relocated outside the contiguous U.S.). Thus, the Round 2 analytic weight reproduces those alive and eligible for NHATS during the Round 1 fieldwork period (which began May 2011).

The only other difference between the two sets of weights is the treatment of respondents who are eligible for both an SP and FQ interview. Among this group, cases missing an SP interview (in Round 1 if $r1dresid = 3$ in Round 2 if $r2dresid = 3, 5, \text{ or } 7$) have a positive tracker weight but an analytic weight of zero. The analytic weights of individuals who completed both an SP and FQ interview are adjusted to represent these cases (for details see Montaquila, Freedman, Spillman and Kasper 2012; 2014). For all other respondents the analytic and tracker weights are equal.

Most often analyses will use the analytic weight. The tracker weight is appropriate for making national estimates using the FQ information (e.g. for services available to older adults living in residential care settings) and for investigating the role of mortality on Round 1 disability estimates and successive cross-sections.

Another important consideration is whether to use a Round 1 or Round 2 weight. A useful rule of thumb is to always consider the population to which an estimate is being generalized. To estimate, for example, the proportion of the population in Round 1 who has a particular characteristic in Round 2 (measured in the SP interview) or who was in a particular type of residential care in Round 2 (measured in the FQ interview), a Round 1 weight should be used. The former would use the Round 1 analytic weight and the latter the Round 1 tracker weight. To estimate characteristics of people 66 and older in 2012, or the characteristics of those living in residential care settings in Round 2 as measured in the Round 2 FQ interview, the Round 2 weight should be used. The former would use the Round 2 analytic weight and the latter the Round 2 tracker weight.

7. Variance Estimation

Two broad classes of methods have been developed for computation of standard errors of estimates from complex sample surveys: (1) Taylor series linearization and (2) replication methods. The NHATS data files contain the information necessary for analysts to use either of these approaches to compute standard errors. The “stratum” and “cluster” variables that allow users to compute variance estimates using Taylor series linearization are provided on the NHATS tracker and SP files as the variables w2varstrat and w2varunit, respectively.

As discussed in Montaquila, Freedman, Spillman, and Kasper (2012), for NHATS, the replication approach that was used is the modified balanced repeated replication (BRR) method suggested by Fay (Judkins 1990). When estimating the variance of ratios of rare subsets, one problem that occasionally arises from standard BRR is that one or more replicate estimates will be undefined due to zero denominators. Instead of increasing the weights of one half-sample by 100 percent and decreasing the weights of the other half-sample to zero as in standard BRR, Fay’s method perturbs the weights by $\pm 100(1-K)$ percent where K is referred to as “Fay’s factor.” The perturbation factor for standard BRR is 100 percent, or $K=0$. For NHATS, $K = 0.3$ was used.

Nonresponse adjustment and raking were repeated for each of the replicates. The final tracker replicate weights are provided in the variables w2trfinwgt1-w2trfinwgt56, and the analytic replicate weights are provided in the variables w2anfinwgt1-w2anfinwgt56. Through the creation of person-level replicate weights, Fay’s method approximately reflects the contribution of variance due to nonresponse adjustments, calibration adjustments (e.g., poststratification or raking), and other weight adjustment factors that are dependent on the observed sample.

References

Judkins DR. (1990). Fay's method for variance estimation. *Journal of Official Statistics*, 6(3), 223-239.

Kish L. (1965). *Survey sampling*. New York: John Wiley and Sons.

Montaquila J, Freedman VA, Edwards, B, & Kasper JD. 2012. *National Health and Aging Trends Study Round 1 Sample Design and Selection*. NHATS Technical Paper #1. Baltimore: Johns Hopkins University School of Public Health. Available at www.NHATS.org.

Montaquila, J, Freedman, VA, Spillman, B, & Kasper, JD. 2012. *National Health and Aging Trends Study Development of Round 1 Survey Weights*. NHATS Technical Paper #2. Baltimore: Johns Hopkins University School of Public Health. Available at www.NHATS.org.

Appendix: Variables Used in Nonresponse Adjustment for Round 2 NHATS Weights

Appendix Table 1. Response Rates by Various Frame Indicators: NHATS Round 2

Variable & Values	Weighted Response Rate	Variable & Values	Weighted Response Rate
BENEFICIARY INDICATORS		TRACT-LEVEL INDICATORS (Quartiles)	
Age¹ ** (H_AGECAT)		Household Income³ (C_AGG_HH_INC)	
1: 65-69	84.1%	1: 1 st quartile	86.9%
2: 70-74	84.1%	2: 2 nd quartile	85.4%
3: 75-79	85.0%	3: 3 rd quartile	85.6%
4: 80-84	86.6%	4: 4 th quartile	84.5%
5: 85- 89	88.6%	9: Missing	91.3%
6: 90+	92.3%	Median Household Income³ (C_MED_HH_INC)	
Gender¹ (H_SEX)		1: 1 st quartile	87.2%
1: Male	85.9%	2: 2 nd quartile	85.4%
2: Female	84.9%	3: 3 rd quartile	85.3%
Census Region¹⁺ (S_REGION)		4: 4 th quartile	83.8%
1: Northeast	82.4%	9: Missing	90.4%
2: Midwest	86.5%	Median Household Income 65+³ (C_MED_HH_INC_65)	
3: South	85.2%	1: 1 st quartile	85.4%
4: West	87.2%	2: 2 nd quartile	85.9%
Census Division¹ * ^ (DIVISION)		3: 3 rd quartile	85.8%
1: New England	87.0%	4: 4 th quartile	84.2%
2: Middle Atlantic	80.4%	9: Missing	96.1%
3: East North Central	85.7%	% Households with Adult 65+³ (C_PCT_HH_65)	
4: West North Central	87.5%	1: 1 st quartile	84.1%
5: South Atlantic	85.0%	2: 2 nd quartile	85.1%
6: East South Central	86.0%	3: 3 rd quartile	85.5%
7: West South Central	84.9%	4: 4 th quartile	85.9%
8: Mountain	85.2%	% Households in Poverty³ * (C_PCT_HH_POV)	
9: Pacific	87.5%	1: 1 st quartile	84.8%
Census Metro/Micro Area Designation (2008)¹ * (S_METMICRO)		2: 2 nd quartile	84.6%
1: Metropolitan area	84.8%	3: 3 rd quartile	85.9%
2: Micropolitan area	87.0%	4: 4 th quartile	86.4%
3: Non-metro	88.0%	% Households Reporting Public Assistance³ * (C_PCT_HH_PUBASST)	
Health Maintenance Organization Beneficiary¹ (HMOTYPE)		1: 1 st quartile	84.9%
0: Yes	86.0%	2: 2 nd quartile	84.9%
9: No	85.1%	3: 3 rd quartile	85.4%
		4: 4 th quartile	86.2%
Age First Enrolled in Medicare¹ (MEDIC_BEG)		% Households Reporting Retirement Income³ * (C_PCT_HH_RETIREINC)	
1: Prior to age 65	84.4%	1: 1 st quartile	84.5%
2: At or after age 65	85.4%	2: 2 nd quartile	86.3%
R1 RACE ETHNICITY⁴ ** (RL1DRACEHISP_R)		3: 3 rd quartile	85.2%
1: White, non-Hispanic	85.8%	4: 4 th quartile	85.2%
2: Black, non-Hispanic	84.3%	% Households Reporting Social Security³ * (C_PCT_HH_SOCSEC)	
3: Other, non-Hispanic	82.0%	1: 1 st quartile	82.8%
4: Hispanic	85.3%	2: 2 nd quartile	86.0%
5: DK/RF	72.8%	3: 3 rd quartile	85.6%
R1 HIGHEST EDUCATION⁴ * (EL1HIGSTSCHL_R)		4: 4 th quartile	85.8%
0: Not applicable	94.7%	% Households Reporting SSI³ * (C_PCT_HH_SSS)	
1: DK/RF	71.0%	1: 1 st quartile	82.9%
2: Below high school	83.8%	2: 2 nd quartile	85.6%
3: High school	83.0%	3: 3 rd quartile	87.6%
4: Above High school	86.8%	4: 4 th quartile	85.0%

Variable & Values	Weighted Response Rate	Variable & Values	Weighted Response Rate
COUNTY LEVEL INDICATORS		% Households Owning Their Home³	
% Black 65+ (deciles)² * ^	(PCTBLK)	(C_PCT_OWNSHOME)	
0: 1 st decile	89.0%	1: 1 st quartile	85.7%
1: 2 nd decile	85.7%	2: 2 nd quartile	86.3%
2: 3 rd decile	87.2%	3: 3 rd quartile	86.6%
3: 4 th decile	83.3%	4: 4 th quartile	83.2%
4: 5 th decile	87.2%	% Households 65+ Owning Their Home³ *	
5: 6 th decile	85.4%	(C_PCT_OWNSHOME_65)	
6: 7 th decile	81.9%	1: 1 st quartile	84.8%
7: 8 th decile	84.0%	2: 2 nd quartile	86.3%
8: 9 th decile	84.5%	3: 3 rd quartile	85.5%
9: 10 th decile	82.5%	4: 4 th quartile	84.7%
% Hispanic 65+ (deciles)² * ^ +	(PCTHISP)	% Households 65+ Below Poverty³ *	
0: 1 st decile	87.2%	(C_PCT_POV_65)	
1: 2 nd decile	84.2%	1: 1 st quartile	87.0%
2: 3 rd decile	88.6%	2: 2 nd quartile	84.2%
3: 4 th decile	86.2%	3: 3 rd quartile	85.3%
4: 5 th decile	86.1%	4: 4 th quartile	85.3%
5: 6 th decile	85.1%	Per Capita Income³	
6: 7 th decile	82.8%	(C_PER_CAP_INC)	
7: 8 th decile	81.7%	1: 1 st quartile	86.8%
8: 9 th decile	85.4%	2: 2 nd quartile	85.0%
9: 10 th decile	85.6%	3: 3 rd quartile	85.8%
% Poverty (deciles)²	(PCTPOV)	4: 4 th quartile	84.4%
0: 1 st decile	83.7%	9: Missing	83.6%
1: 2 nd decile	85.8%	OTHER INDICATORS	
2: 3 rd decile	87.1%	R1 Residential Care Status⁴ **	
3: 4 th decile	82.6%	(R1DRESID)	
4: 5 th decile	86.8%	1: Community	84.5%
5: 6 th decile	83.6%	2: Residential Care Resident not nursing home (SP interview complete)	94.1%
6: 7 th decile	87.2%	3: Residential Care Resident not nursing home (FQ only)	94.6%
7: 8 th decile	86.1%	4: Nursing home	94.7%
8: 9 th decile	85.8%		
9: 10 th decile	85.4%		

¹Based on Information on the September 30, 2010 CMS 20% Health Insurance Skeleton Eligibility Write-Off (HISKEW) file.

²Based on county-level information from the CMS 5% HISKEW File linked to the beneficiary's EDB address.

³Based on tract-level information from the 2006-2019 5-year American Community Survey file linked to the beneficiary's EDB address.

⁴Based on responses to items in the Round 1 interview.

*=retained in classification tree analysis for living SP non-nursing home branch

^=retained in classification tree analysis for living SP nursing home branch

+ =retained in classification tree analysis for deceased SP branch

N=8,214 (7,075 respondents and 1,139 non-respondents)

Variable names used in classification trees shown parenthetically.

Appendix Table 2. Sampled Person Interview Response Rates Among Cases with Completed Facility Questionnaires, by Various Indicators: NHATS Round 2

Variable & Values	Weighted Response Rate	Variable & Values	Weighted Response Rate
OVERALL	64.6%	COUNTY LEVEL INDICATORS	
BENEFICIARY INDICATORS		% Black 65+ (deciles)² (PCTBLK)	
Age^{1*} (H_AGECAT)		0: 1 st decile	63.9%
1: 65-69	71.2%	1: 2 nd decile	71.9%
2: 70-74	72.6%	2: 3 rd decile	59.6%
3: 75-79	64.5%	3: 4 th decile	67.0%
4: 80-84	67.5%	4: 5 th decile	62.5%
5: 85- 89	55.2%	5: 6 th decile	66.3%
6: 90+	68.7%	6: 7 th decile	49.8%
R1 RACE ETHNICITY⁴ (RL1DRACEHISP_R)		7: 8 th decile	82.1%
1: White, non-Hispanic	65.1%	8: 9 th decile	50.6%
2: Black, non-Hispanic	75.0%	9: 10 th decile	71.3%
3: Other, non-Hispanic	46.1%	% Hispanic 65+ (deciles)^{2*} (PCTHISP)	
4: Hispanic	48.9%	0: 1 st decile	62.7%
5: DK/RF	35.2%	1: 2 nd decile	67.4%
Gender¹ (H_SEX)		2: 3 rd decile	75.8%
1: Male	68.3%	3: 4 th decile	56.2%
2: Female	63.2%	4: 5 th decile	68.9%
Census Region¹ (S_REGION)		5: 6 th decile	63.8%
1: Northeast	60.2%	6: 7 th decile	56.0%
2: Midwest	63.5%	7: 8 th decile	61.7%
3: South	63.9%	8: 9 th decile	75.3%
4: West	71.4%	9: 10 th decile	54.4%
Census Division^{1*} (DIVISION)		% Poverty (deciles)^{2*} (POVERTY_PCT)	
1: New England	63.3%	0: 1 st decile	53.0%
2: Middle Atlantic	59.3%	1: 2 nd decile	63.2%
3: East North Central	62.0%	2: 3 rd decile	76.1%
4: West North Central	65.1%	3: 4 th decile	60.5%
5: South Atlantic	61.8%	4: 5 th decile	75.2%
6: East South Central	66.0%	5: 6 th decile	66.9%
7: West South Central	67.8%	6: 7 th decile	52.0%
8: Mountain	88.1%	7: 8 th decile	58.1%
9: Pacific	67.7%	8: 9 th decile	64.6%
		9: 10 th decile	80.7%
Census Metro/Micro Area Designation (2008)¹ (S_METMICRO)		OTHER INDICATORS	
1: Metropolitan area	65.1%	R2 Facility Location³ (FQ2DLOCSP)	
2: Micropolitan area	64.5%	1: Independent living	68.6%
3: Non-metro	59.5%	2: Assisted Living	62.7%
		3: Special care/memory care/Alzheimers unit	48.3%
		4: Nursing home	64.9%
Health Maintenance Organization Beneficiary¹ (HMOTYPE)		8: Facility location not reported	26.8%
0: Yes	74.5%	R1 Residential Care Status^{4*} (R1DRESID_R)	
9: No	61.1%	1: Community	81.1%
		2: Residential Care Resident not nursing home	58.5%
Age First Enrolled in Medicare¹ (MEDIC_BEG)		R2 Residential Care Status⁵ (R2DRESID_R)	
1: Prior to age 65	67.2%	2: Residential care in Round 2 or Round 1 residential care without an SP interview	63.4%
2: At or after age 65	64.3%	3: Nursing home in Round 2	71.2%
		R2 Nursing Home Status^{5*} (R2NH)	
		1: Yes	64.7%
		2: No	64.6%

¹Based on Information on the September 30, 2010 CMS 20% Health Insurance Skeleton Eligibility Write-Off (HISKEW) file.

²Based on county-level information from the CMS 5% HISKEW File linked to the beneficiary's EDB address.

³Based on the responses to two items on the type of facility from the FQ, FQ6 (fq2facdescri; including answers from FQ6A) and FQ10 (fq2faaretype).

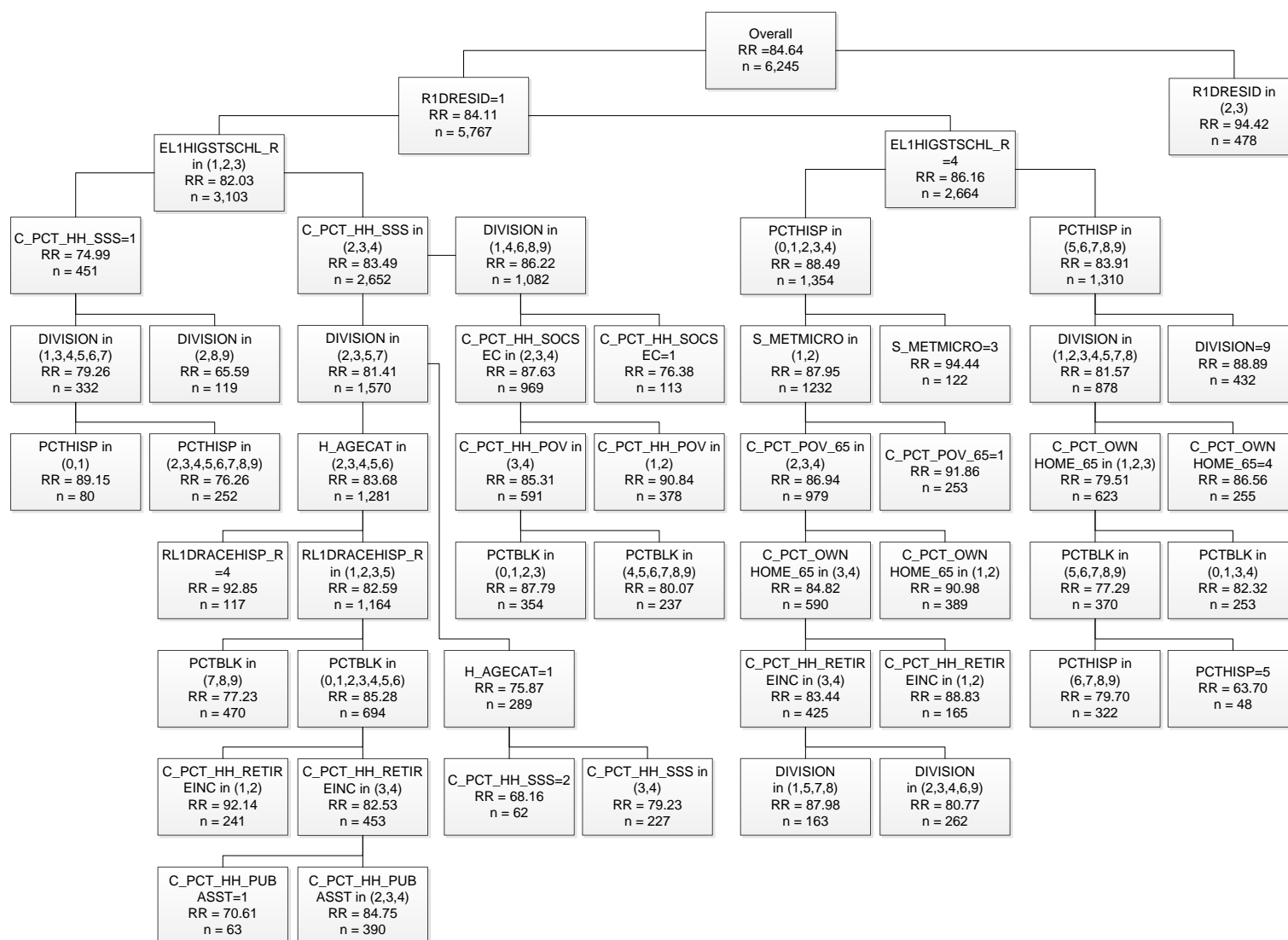
⁴Based on responses to items in the Round 1 interview or interview process.

⁵Based on responses to items in the Round 2 interview or interview process.

*=retained in classification tree analysis for adjustment of missing SP interview.

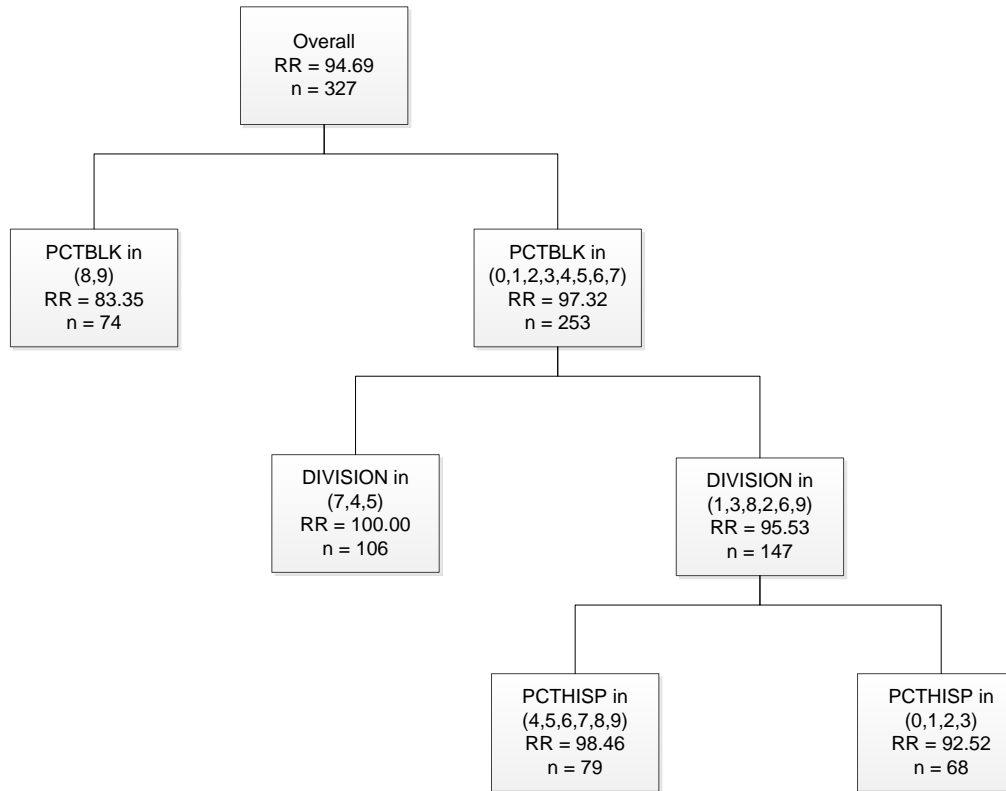
N=542 (352 respondents and 190 nonrespondents); Variable names used in classification trees shown parenthetically.

Figure 1. Tracker weight nonresponse adjustment cells - non nursing home cases in Round 1



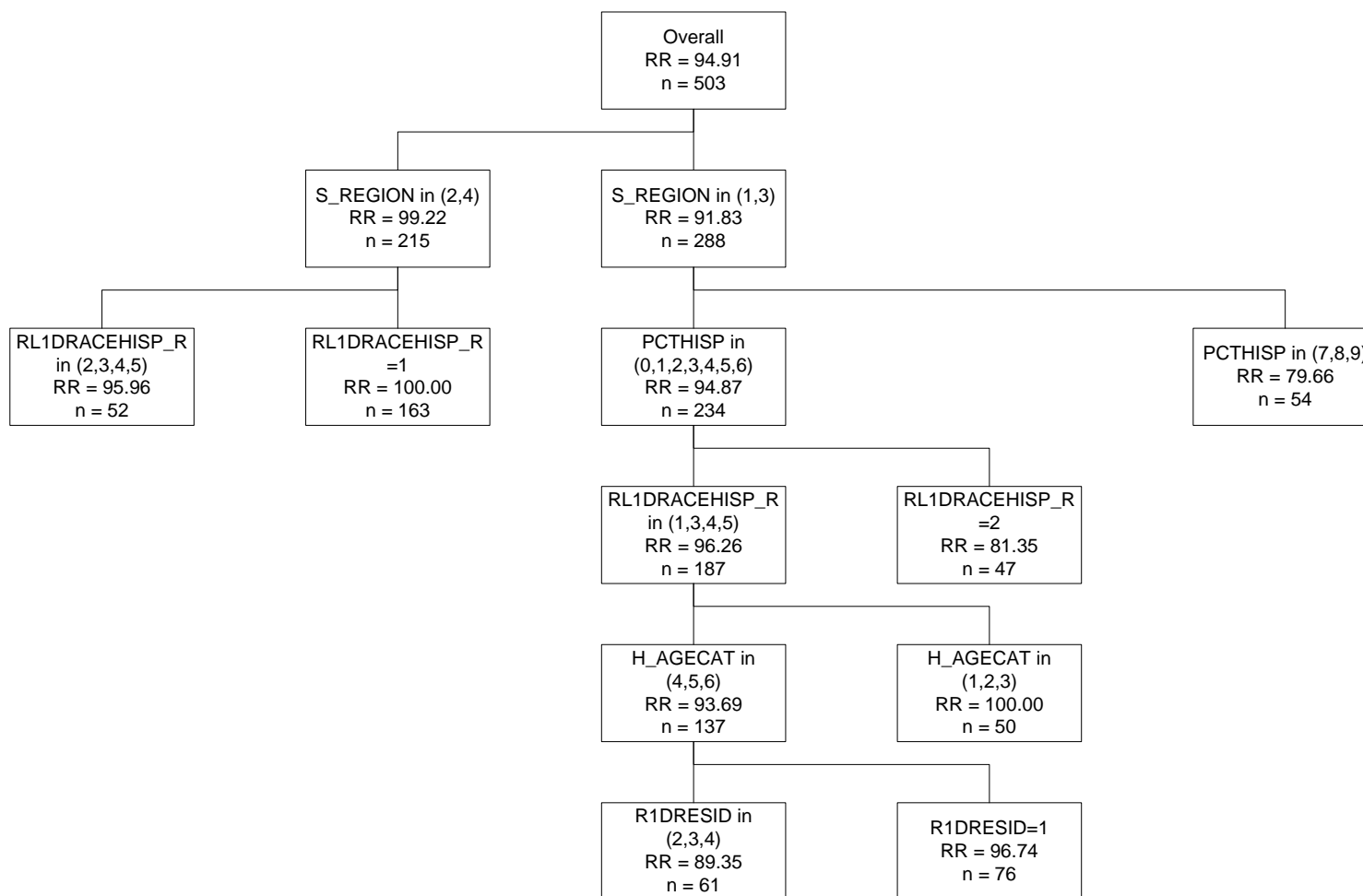
Note: "RR" is the weighted response rate for the particular cell, and "n" is the number of respondents in the cell.

Figure 2. Tracker weight nonresponse adjustment cells - nursing home cases in Round 1



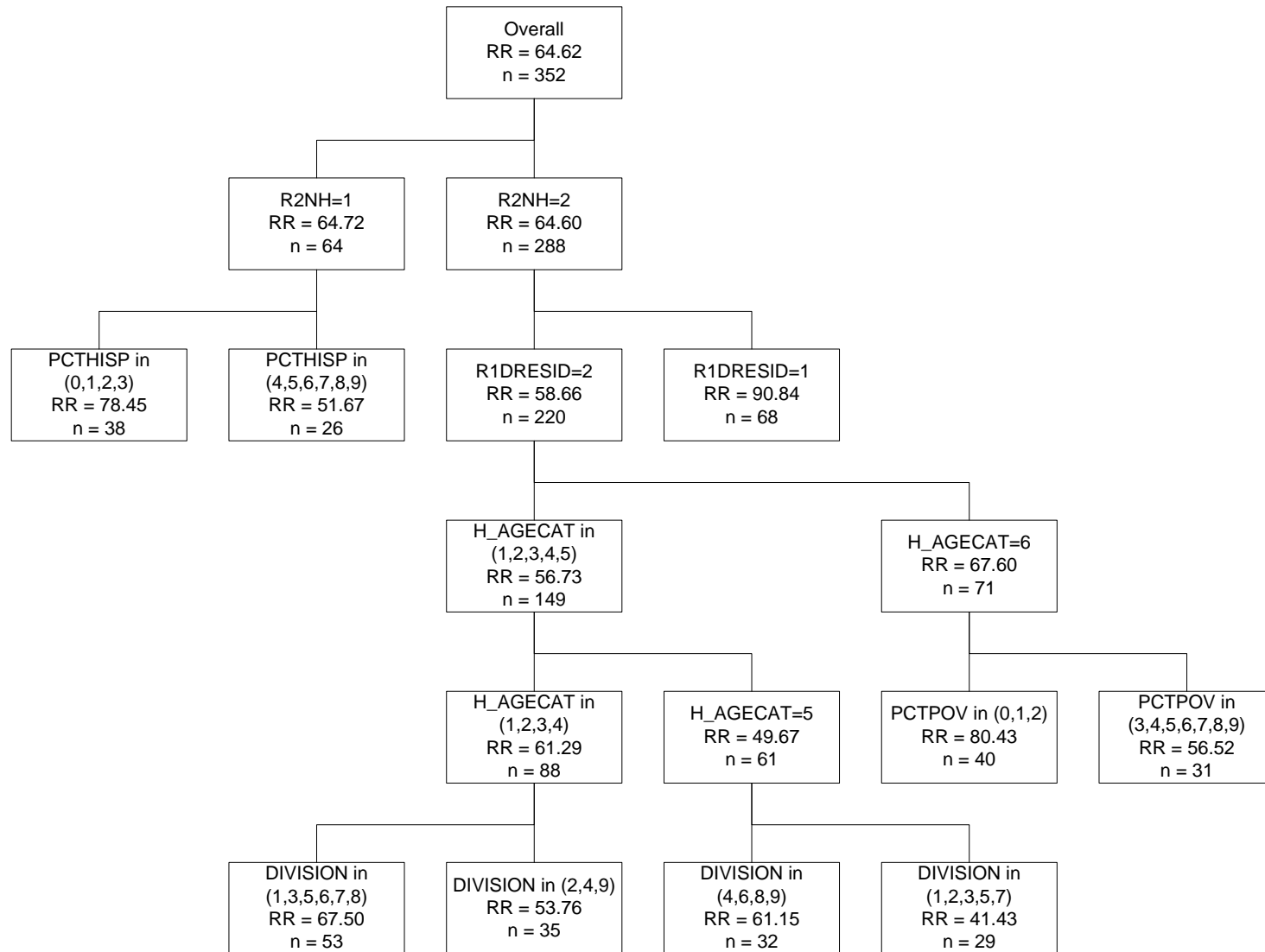
Note: "RR" is the weighted response rate for the particular cell, and "n" is the number of respondents in the cell.

Figure 3. Tracker weight nonresponse adjustment cells – deceased cases at Round 2



Note: “RR” is the weighted response rate for the particular cell, and “n” is the number of respondents in the cell.

Figure 4: Analytic weight nonresponse adjustment cells – Round 2 residential care (not nursing home) and new Round 2 nursing home cases



Note: “RR” is the weighted response rate for the particular cell, and “n” is the number of respondents in the cell.