4. VARIANCE COMPONENTS AND PRECISION ESTIMATES

4.1 Overview

An analysis of the variance components was used to assess the efficiency of the current and alternative PSU designs. Since sampling variances can be decomposed into components corresponding to sampling stages, components of variance can suggest more optimal choices for the sample design at each stage. Based on the MCBS sample design, variance estimates can be decomposed into three major components:

- Between-PSU variance that corresponds to the first stage of sampling of PSUs;
- Between-ZIP-cluster variance that corresponds to the second stage of sampling of ZIP clusters within PSUs; and
- Within-ZIP-cluster variance that corresponds to the third stage of sampling of beneficiaries within ZIP clusters.

Variance components for both the current sample design and the alternative designs are presented in this section. Replication methods were used to compute variance components for the current design. We used an "ultimate cluster" method to compute the variance for a sample design with a measure of size based on Medicare beneficiaries.

4.2 Analysis Variables

Variance estimates were computed for all 16,249 beneficiaries who responded to MCBS Round 19 interview for the variables shown in Table 4-1. The selected variables represent a variety of characteristics reported in MCBS and are available from the 1997 Access to Care Public Use File.

Table 4-1. Variables selected for variance estimation

Income	Difficulty shopping
Education	Total inpatient charges
Marital status	Total outpatient charges
Medicaid participation	Total physician/supplier charges
HMO type	Total home health charges
General health	Total inpatient reimbursements
Health limited activity	Total outpatient reimbursements
Difficulty walking	Total physician/supplier reimbursements
Difficulty bathing	Total home health reimbursements
Hypertension	

4.3 Computation Methods

Variance Estimation for the Current MCBS Design

The modified Balanced Repeated Replication (BRR) technique, Fay's Method, was used to compute the sampling errors for the MCBS estimates. The variance estimates calculated using Fay's method account for clustering, stratification, unequal probabilities of selection, and ratio adjustments. Fay's estimate of variance is given by

$$\hat{V}_1 = \frac{1}{(1-k)^2}\left[\frac{1}{T}\sum_{r=1}^{T}(\hat{x}_r - \hat{x})^2\right] \qquad (1)$$

where T is the total number of replicates, the subscript r designates that the estimate $\hat{x}_r$ is based on the r-th replicate, x is the estimate from the full sample, and 100(1-k)% is referred to as the Fay's perturbation factor. Judkins (1990) evaluated several perturbation factors for ratios, regression coefficients, and medians in a Monte Carlo simulation study. His results showed that a perturbation factor in the range of 50-70 percent performed relatively well in terms of bias and stability of the variance estimates when compared with the standard BRR and the jackknife methods. For the MCBS, a perturbation factor of 70 percent was used in constructing replicate weights.

A total of 100 strata were formed for variance estimation purposes. Thirty-seven of these variance strata were created from the first-stage noncertainty strata. The noncertainty PSUs, composed of MSAs and clusters of nonmetropolitan counties, were originally selected in pairs for MCBS with two from each stratum. The first PSU in the stratum formed the first variance unit; the second PSU formed the second variance unit. The remaining 63 variance strata were formed by combining secondary sampling units (ZIP codes) in certainty PSUs. Each resulting variance stratum either contained two or three variance units.

Replicate weights were constructed by applying perturbation factors to the full-sample Round 19 cross-sectional weights for all responding sample persons in the Round 19 cross-sectional file. A total of 100 replicate weights were created for each respondent.

A set of 100 replicate weights was also developed to estimate within-PSU variance. We estimated within-PSU variance by reassigning variance strata and units. By definition, within-PSU variance equals total variance in certainty PSUs. For noncertainty PSUs, variance strata were created at the ZIP cluster level. ZIP clusters were sorted by the order in which they had been selected. Variance strata were formed by pairing consecutive ZIP clusters. Replicate weights were computed by perturbing the final Round 19 cross-sectional weight. To estimate between-PSU variance, we subtracted within-PSU variance from total variance.

To estimate within-ZIP cluster variance, another set of 100 replicate weights was created at the person level. For noncertainty ZIP clusters, beneficiaries were sorted by the order in which they were selected. Variance strata were formed by pairing beneficiaries. Between-ZIP cluster variance was obtained by subtracting within-ZIP cluster variance from within-PSU variance.

Variance Estimation for Alternative Measure of Size

The formula we used to estimate standard errors for a new measure of size is given by the following:

$$\hat{V}_2 = \frac{1}{\hat{N}^2}\frac{1}{n}\sum_{i=1}^{n}\frac{z_i}{p_i}\left(\frac{\hat{Y}_i}{z_i} - \frac{\hat{N}_i\hat{\bar{Y}}}{z_i}\right)^2, \qquad (2)$$

where

$\hat{N}$ = estimated total Medicare beneficiaries,

n = noncertainty PSU sample size,

z_i = relative measure of size for *i*-th PSU based on HCFA MOS,

$\hat{Y}_i$ = estimated population mean for characteristic *y* for *i*-th PSU,

$\hat{N}_i$ = estimated Medicare beneficiaries for *i*-th PSU,

$\hat{\bar{Y}}$ = estimated population mean for characteristic *y*, and

p_i = selection probability for the *i*-th noncertainty PSU under the original MCBS design.

The expected value of equation (2) is approximately the variance of a ratio estimate for the population mean of the characteristic *y*.

4.4 Analysis of Variance Components and Intraclass Correlations

Overview

The increase in variance due to clustering of the sample is measured by the design effect, or *deff*. For a single stage sample of equal-sized clusters, where simple random sampling is used to select the clusters, the design effect is given by

$$deff = 1 + (b - 1)r, \tag{3}$$

where r is the intraclass correlation coefficient measuring the homogeneity of clusters with respect to the variable being analyzed, and b is the cluster size. One way to compute the intraclass correlation coefficient is to break down the contribution of each stage of sampling to the overall variance of a given survey estimate.

We attempted two procedures for carrying out these computations. The results are discussed in this section.

Direct Calculation of Variance Components

Variance estimates were computed for both the current design and the alternative designs. Variances can be decomposed into the following components:

- Total variance = between-PSU variance + within-PSU variance
- Within-PSU variance = between-ZIP cluster variance + within-ZIP cluster variance.

Using the direct method of computation, the total and within-PSU variances were computed, with the between-PSU component being obtained by subtraction.

Variance components for the current design for variables listed in Table 4-1 are shown by panel in Appendix A. Relative variance estimates computed as the ratio of the variance of the estimate to the square of the estimate for selected characteristics are shown in Table 4-2.

Using the method of direct computation, estimates of between-PSU variance are subject to instability and can be negative. In these cases, the between-PSU component was set to zero. In other cases, the between-PSU component seemed unreasonably large. As can be seen in Table 4-2, the resulting values for r range from 0.0 percent to more than 70 percent, when actual intraclass correlations should be in the range of 5 percent.

Because these estimates were not considered satisfactory, we used an indirect method of deriving intraclass correlations from a generalization of the formula shown in equation (3).

Table 4-2. Relative variance estimates for selected items for the current design

Variable	Estimate	Design effects	*r*	Total	Within-PSU	Between-PSU	Within-ZIP cluster	Between-ZIP cluster
Poor health status	8.4%	0.95	0.0%	0.0074%	0.0074%	0.0000%	0.0068%	0.0006%
Hypertension	52.6%	1.43	17.8%	0.0045%	0.0037%	0.0008%	0.0036%	0.0001%
Difficulty bathing	11.2%	0.79	0.0%	0.0053%	0.0053%	0.0000%	0.0053%	0.0000%
Difficulty walking	22.4%	1.49	22.1%	0.0077%	0.0060%	0.0017%	0.0057%	0.0004%
Health limited activity most of the time	8.8%	1.27	7.8%	0.0077%	0.0072%	0.0006%	0.0058%	0.0014%
Medicaid	13.8%	1.46	7.8%	0.0077%	0.0071%	0.0006%	0.0047%	0.0025%
Risk HMO	13.8%	1.45	3.9%	0.0077%	0.0074%	0.0003%	0.0056%	0.0018%
High school graduate	33.5%	1.77	71.4%	0.0077%	0.0022%	0.0055%	0.0022%	0.0000%
Black	8.7%	0.58	0.0%	0.0132%	0.0132%	0.0000%	0.0043%	0.0089%
Married	51.8%	0.86	0.0%	0.0041%	0.0041%	0.0000%	0.0039%	0.0002%
Income ≤ 25,000	80.0%	1.59	0.0%	0.0033%	0.0033%	0.0000%	0.0020%	0.0013%
Inpatient charges	1.37E+11		0.0%	4.0E+08	4.0E+08	0.0000%	2.04E+08	196,000,000
Home health charges	1.93E+10		4.6%	4.1E+07	3.9E+07	1.9E+06	3.90+E07	367,610
Outpatient reimbursement	1.51E+10		0.0%	1.6E+07	1.6E+07	0.0000%	1.60E+07	0
Inpatient reimbursement	6.53E+10		0.0%	7.0E+07	7.0E+07	0.0000%	6.80E+07	280,000

Indirect Calculation of Intraclass Correlation

For multistage sample design where cluster sizes vary as in the MCBS, the design effect formula given in (3) can be generalized to

$$deff = m \frac{\sum_{i=1}^{I} w_i^2 m_i}{\left(\sum_{i=1}^{I} w_i m_i \right)^2} \left(1 + \left(\overline{b}' - 1\right) r\right) \qquad (4)$$

where

r = intraclass correlation between sample persons within the first stage sampling units;

$\overline{b}'$ = average cluster size, adjusted for the increased variance resulting from varying cluster sizes;

$$= \overline{b}\left(1 + cv(b_i)\right) = \frac{\sum_i b_i^2}{\sum_i b_i};$$

$\overline{b}$ = average cluster size;

$cv(b_i)$ = coefficient of variation of cluster sizes, b_i;

w_i = sampling weight for the i-th weighting class;

m_i = count of sampled persons in the i-th weighting class; and

m = $\sum_{i=1}^{I} m_i$.

We computed r in equation (4) using data from the 1997 Access to Care File. That is, by computing standard errors we derived design effects. Then, using the design effects, we computed estimates for S. The average cluster size, $\overline{b}$ is 149 sample persons, and the coefficient of variation of cluster size, $cv(b_i)$ is 0.29. The values of r for a number of selected variables are shown in Table 4-3.

Table 4-3. Estimated intraclass correlation coefficients based on 1997 access to care data

Variables	Design effect	r
Poor health status	2.13	0.005
Hypertension	1.52	0.002
Difficulty bathing	2.53	0.007
Difficulty walking	3.80	0.013
Health limited activity most of the time	1.87	0.004
Medicaid	3.09	0.010
Risk HMO	5.45	0.021
High school graduate	2.87	0.009
Married	1.76	0.003
Income ≤ 25,000	2.52	0.007

The design effects shown in this table agree reasonably closely with those published by Judkins and Lo (1993).

4.5 Effects of Variation in Cluster Size

For a given variable, r depends on the size and the nature of the PSUs and the method of subsampling within the PSUs. Thus, r is essentially independent of the size of the subsamples taken. This makes r portable across similar designs with different cluster size.

Using the values of r shown in Table 4-3 and formula (4), we evaluated the design effects for varying cluster sizes by computing values of $cv(b_i)$ for the 1997 Access to Care file, the 1991 panel, and the 1994-1999 panels. For each panel, the values of $\overline{b}$ and $cv(b_i)$ are shown in the table. We estimated the gain in precision with a design using Medicare beneficiaries as the MOS by assuming that cluster sizes would be approximately constant under such a design; that is, we took $cv(b_i) = 0$ for the "new design." These results are shown in Table 4-4.

Table 4-4. Design effects and potential improvement for the MCBS by panel

Average sample size (noncertainty PSUs) CV of sample sizes	1997 Access to Care file 149 0.29			1991 Panel 132 0.25			1994 Panel 55 0.28			1995 Panel 56 0.30		
	Design effect	Deff w/ new design	% variance decrease	Design effect	Deff w/ new design	% variance decrease	Design effect	Deff w/ new design	% variance decrease	Design effect	Deff w/ new design	% variance decrease
Poor health status	2.13	1.89	11.20%	1.97	1.794	9.20%	1.41	1.370	5.83%	1.42	1.376	6.30%
Hypertension	1.52	1.42	6.63%	1.44	1.378	5.28%	1.19	1.199	2.90%	1.19	1.201	3.15%
Difficulty bathing	2.53	2.20	13.03%	2.31	2.073	10.84%	1.56	1.485	7.34%	1.58	1.493	7.91%
Difficulty walking	3.80	3.18	16.22%	3.40	2.942	13.80%	2.02	1.843	10.65%	2.05	1.858	11.43%
Health limited activity most of the time	1.87	1.69	9.65%	1.75	1.621	7.85%	1.32	1.299	4.73%	1.33	1.303	5.12%
Medicaid	3.09	2.63	14.74%	2.79	2.452	12.41%	1.76	1.641	8.99%	1.78	1.652	9.67%
Risk HMO	5.45	4.46	18.15%	4.82	4.072	15.65%	2.62	2.309	13.25%	2.67	2.332	14.16%
High school graduate	2.87	2.47	14.16%	2.61	2.306	11.87%	1.68	1.581	8.40%	1.70	1.591	9.04%
Married	1.76	1.60	8.82%	1.65	1.543	7.13%	1.28	1.267	4.18%	1.29	1.270	4.53%
Income <= 25 K	2.52	2.20	12.99%	2.31	2.067	10.81%	1.55	1.483	7.31%	1.57	1.490	7.88%
Median			13.01%			10.82%			7.32%			7.90%

Average sample size (noncertainty PSUs) CV of sample sizes	1996 Panel 64 0.43			1997 Panel 60 0.29			1998 Panel 63 0.35			1999 Panel 56 0.28		
	Design effect	Deff w/ new design	% variance decrease	Design effect	Deff w/ new design	% variance decrease	Design effect	Deff w/ new design	% variance decrease	Design effect	Deff w/ new design	% variance decrease
Poor health status	1.53	1.420	9.65%	1.45	1.398	6.42%	1.49	1.414	7.91%	1.41	1.376	5.83%
Hypertension	1.25	1.219	4.99%	1.21	1.210	3.24%	1.23	1.217	4.05%	1.19	1.201	2.91%
Difficulty bathing	1.73	1.554	11.91%	1.61	1.523	8.02%	1.67	1.546	9.82%	1.56	1.493	7.33%
Difficulty walking	2.33	1.972	16.61%	2.12	1.915	11.48%	2.23	1.957	13.85%	2.03	1.858	10.61%
Health limited activity most of the time	1.41	1.336	7.93%	1.35	1.320	5.23%	1.38	1.332	6.48%	1.32	1.303	4.73%
Medicaid	1.99	1.736	14.30%	1.83	1.694	9.76%	1.92	1.726	11.86%	1.77	1.652	8.97%
Risk HMO	3.11	2.515	20.03%	2.78	2.423	14.12%	2.96	2.492	16.84%	2.64	2.332	13.17%
High school graduate	1.89	1.666	13.46%	1.75	1.628	9.14%	1.82	1.657	11.14%	1.69	1.591	8.38%
Married	1.36	1.299	7.07%	1.30	1.285	4.64%	1.33	1.295	5.76%	1.28	1.270	4.18%
Income <= 25 K	1.72	1.551	11.87%	1.61	1.521	7.99%	1.67	1.543	9.78%	1.56	1.490	7.30%
Median			11.89%			8.01%			9.80%			7.31%

In Table 4-4, the gain in precision resulting from a design with Medicare beneficiaries ranges from about 8 percent to about 14 percent. This indicates that sample sizes could be decreased by this amount while maintaining the same precision levels.

4.6 Comparison of Variance Contribution with Beneficiary MOS

Table 4-5 compares the total variance contribution from noncertainty PSUs obtained using the current sample design and the MOS based on Medicare beneficiary counts. For the latter MOS, this calculation is based on formula (2), which gives an estimated variance based on an alternative measure of size. This estimate reflects a different between-PSU component, while keeping the same within-PSU component. For this former MOS, the total variance was estimated using replicate methods on the noncertainty PSUs.

In the great majority of cases, the MOS based on Medicare beneficiaries appears to yield a slightly larger variance, based on this comparison. First, it should be noted that these variance calculations are, by necessity, based on different methods. Second, it should be noted that the difference between the two estimates is quite small, suggesting that the between-PSU variance component is not significantly different for a MOS based on Medicare beneficiary counts. Since there is a very high correlation between beneficiary counts and population counts, this result is to be expected.

4.7 Evaluation of Design Effects over Time

As a final assessment of precision, we evaluated design effects over time in the MCBS. The results are based on MCBS estimates and are summarized in Table 4-6. With the exception of the estimate for beneficiaries with "8 years or less schooling", it appears that there is a small but consistent increase in design effects over time due to the aging panel structure. For example, the median design effect increases overall (by about 10%), as well as within each age category (by about 5% to about 85%). These increased design effects could be ascribed to variability in sampling weights due to nonresponse adjustments.

Table 4-5. Relative total variance for noncertainty PSUs in MCBS

	Current Design					New Design		
Variable	Estimate (percent)	Design effect	Total standard error (percent)	Total variance	Relative variance	Estimate	Total variance	Relative variance
<u>Income</u>								
below 25K	72.103	2.928	0.755	0.570	0.00011	67.700	0.811	0.00018
25K +	27.897	2.928	0.755	0.570	0.00073			
<u>Education</u>								
< high school	38.765	8.224	1.370	1.878	0.00125	36.723	2.247	0.00167
HS graduate	34.102	3.738	0.899	0.808	0.00069	33.058	1.096	0.00100
some college	14.516	3.100	0.608	0.370	0.00176	14.050	0.508	0.00257
college graduate	7.062	3.834	0.492	0.242	0.00485	8.206	0.261	0.00387
post graduate	5.555	1.670	0.290	0.084	0.00273	3.991	0.109	0.00684
<u>Marital status</u>								
Married	52.605	1.900	0.657	0.431	0.00016	52.708	0.565	0.00020
Widowed	32.110	1.988	0.628	0.395	0.00038	32.168	0.482	0.00047
Divorced	7.419	1.545	0.311	0.097	0.00176	7.299	0.142	0.00266
Separated	1.285	1.629	0.137	0.019	0.01140	1.248	0.025	0.01609
Never married	6.580	1.472	0.287	0.082	0.00190	6.517	0.103	0.00243
<u>Medicaid</u>								
Yes	13.898	4.014	0.661	0.437	0.00226	13.481	0.701	0.00386
No	86.102	4.014	0.661	0.437	0.00006			
<u>HMO type</u>								
Risk HMO	7.593	13.021	0.912	0.831	0.01442	7.704	1.640	0.02764
non-Risk HMO	92.407	13.021	0.912	0.831	0.00010			
<u>General health</u>								
Excellent	15.686	2.783	0.604	0.365	0.00148	14.797	0.381	0.00174
Very good	26.688	2.317	0.670	0.449	0.00063	25.396	0.577	0.00089
Good	30.100	2.429	0.711	0.506	0.00056	28.425	0.473	0.00059
Fair	18.454	3.056	0.675	0.456	0.00134	17.086	0.376	0.00129
Poor	9.072	2.495	0.451	0.204	0.00248			
<u>Health limited activity</u>								
None	64.279	6.908	1.253	1.571	0.00038	60.809	1.561	0.00042
Sometimes	20.064	3.580	0.754	0.569	0.00141	18.919	0.554	0.00155
Most of the time	9.140	2.340	0.439	0.192	0.00230	8.467	0.207	0.00289
All the time	6.516	3.159	0.437	0.191	0.00449	6.001	0.158	0.00439
<u>Difficulty walking</u>								
Yes	23.038	5.267	0.961	0.924	0.00174	21.583	0.822	0.00177
No	75.555	5.179	0.973	0.947	0.00017	71.341	0.870	0.00017
<u>Difficulty shopping</u>								
Yes	10.394	3.088	0.534	0.285	0.00264			
No	82.640	3.129	0.667	0.444	0.00007			
<u>Difficulty bathing</u>								
Yes	11.882	3.312	0.586	0.343	0.00243	11.208	0.354	0.00282
No	87.561	3.038	0.572	0.327	0.00004	82.525	0.458	0.00007
<u>Hypertension</u>								
Yes	52.440	1.598	0.628	0.394	0.00014	49.278	0.513	0.00021
No	47.560	1.598	0.628	0.394	0.00017			

Table 4-6. MCBS design effects, 1992-1996

	Total					**<65**					**65-74**					**75-84**					**85+**				
	1992	1993	1994	1995	1996	1992	1993	1994	1995	1996	1992	1993	1994	1995	1996	1992	1993	1994	1995	1996	1992	1993	1994	1995	1996
Marital Status																									
Married	2.76	3.08	2.99	4.36	3.58	1.62	1.82	2.45	3.84	4.68	4.26	5.28	5.58	5.31	4.20	3.30	3.02	2.08	3.66	3.33	1.80	1.97	2.29	2.77	2.64
Widowed	4.11	3.69	3.79	4.30	3.41	2.18	3.56	3.60	3.23	3.68	5.18	6.59	6.36	6.52	5.64	3.60	3.14	2.29	3.22	3.48	2.04	1.98	2.07	2.48	2.57
Divorced/separated	3.65	3.80	4.75	5.57	3.84	1.85	2.69	2.76	3.24	3.42	3.61	4.91	5.98	6.83	5.46	2.92	3.08	4.10	4.67	3.30	1.87	1.79	1.80	2.04	1.43
Never married	3.49	4.66	4.37	4.63	3.78	1.46	2.01	2.54	4.13	3.73	4.09	5.29	5.56	4.83	5.09	3.91	4.34	3.72	4.11	3.87	1.79	1.85	1.41	2.34	1.95
Schooling																									
0 - 8 years	10.30	8.43	7.60	13.26	5.66	1.74	3.87	3.19	4.14	2.95	6.90	6.83	6.32	7.19	7.11	7.37	6.01	4.58	4.12	4.63	2.98	2.94	2.63	2.14	2.77
9 - 11 years	4.46	4.80	5.16	6.06	5.25	2.37	2.48	4.36	5.63	3.68	4.80	4.45	4.73	6.92	7.18	3.29	2.87	3.19	5.36	3.42	2.08	2.73	1.83	2.76	2.38
12 years	6.05	6.56	6.53	6.91	5.16	2.90	4.10	4.00	4.09	5.05	5.10	5.69	6.13	5.01	7.01	3.45	3.35	2.95	3.36	4.81	3.13	4.04	3.24	3.07	2.46
13 - 15 years	4.54	6.47	6.29	5.28	4.75	2.35	3.85	3.66	3.46	5.85	5.02	6.46	5.76	6.90	5.82	3.62	3.67	4.48	4.13	5.19	2.32	1.99	2.09	2.65	3.29
16 or more years	6.93	5.79	6.33	6.27	6.65	2.32	3.57	3.08	2.84	4.08	6.26	5.77	6.91	6.25	6.16	5.04	4.66	3.77	5.36	4.81	2.21	2.64	2.74	2.55	2.00
Income																									
Less than $2,500	4.80	5.08	3.75	3.38	4.71	2.17	2.94	3.05	3.27	4.47	6.12	5.43	3.83	4.55	5.97	2.52	3.25	4.31	2.65	3.69	1.93	1.97	2.16	2.56	2.42
$2,500 - $4,999	4.91	3.41	3.59	5.64	3.75	1.87	3.67	2.66	2.42	3.48	4.59	5.82	6.02	5.01	5.37	5.08	2.62	2.27	3.83	2.67	1.38	1.89	1.97	2.66	2.73
$5,000 - $7,499	4.00	3.34	4.28	4.58	4.59	2.25	2.01	2.64	3.28	3.17	3.87	5.17	5.15	6.25	5.89	2.70	4.53	2.85	3.28	3.23	2.33	1.96	2.14	2.02	1.77
$7,500 - $9,999	3.91	4.09	3.53	3.80	4.28	2.05	2.38	2.50	2.05	3.42	4.64	5.65	6.04	5.60	4.97	3.66	3.53	2.90	3.10	3.28	2.57	2.59	2.19	2.11	2.53
$10,000 - $14,999	4.14	4.40	4.75	5.89	5.85	2.32	3.20	3.66	3.58	3.77	4.21	3.76	5.38	5.34	5.93	4.10	3.77	3.69	4.45	4.17	1.68	2.41	1.96	2.93	2.16
$15,000 - $19,999	3.09	5.11	3.95	4.37	6.57	1.91	2.79	3.10	4.13	4.39	3.27	5.23	4.15	4.52	6.38	3.27	2.72	2.89	3.00	5.42	1.71	1.80	1.88	2.18	2.12
$20,000 - $24,999	3.48	4.75	4.15	5.91	4.97	1.33	2.81	4.46	3.94	3.13	3.72	4.72	4.67	7.10	4.25	4.22	3.44	3.74	3.40	4.87	1.99	2.09	2.14	2.37	2.36
$25,000 - $29,999	4.69	4.83	6.60	5.60	4.51	1.59	3.75	3.02	3.26	2.99	4.48	5.76	6.06	7.86	5.94	4.33	2.30	3.40	3.80	3.18	2.42	2.37	1.87	1.88	2.80
$30,000 or more	5.83	7.27	7.45	7.11	5.05	1.87	2.74	3.57	3.59	4.47	4.68	6.62	7.61	6.45	4.68	5.47	4.29	3.94	5.11	4.76	2.16	2.99	2.27	2.40	2.60
Functional Limitation																									
None	5.63	5.42	5.72	5.62	4.30	2.13	3.13	3.24	2.58	3.63	4.57	4.90	7.37	6.42	4.25	4.75	3.65	3.69	4.67	4.45	2.52	3.27	2.26	2.02	1.65
IADL only[2]	3.64	4.46	4.02	4.41	4.59	2.34	2.68	3.53	2.65	3.64	3.70	4.58	4.77	5.90	5.72	3.63	2.26	3.39	3.29	3.69	1.65	2.30	2.18	1.92	1.56
One to two ADLs[3]	3.61	4.41	4.56	3.35	4.27	1.95	3.90	3.50	2.86	3.66	4.07	5.78	6.20	5.25	4.23	3.57	3.34	2.80	3.62	3.51	1.72	1.95	2.22	2.07	3.04
Three to five ADLs	4.06	3.25	1.66	3.40	4.50	1.97	3.01	2.89	3.06	3.98	3.70	4.69	0.83	4.35	5.88	4.80	3.71	5.76	3.46	3.83	2.10	2.42	7.18	1.91	2.46
Condition																									
Hypertension	4.37	4.62	4.82	4.80	5.66	1.91	2.46	2.14	2.63	4.22	4.40	5.52	5.98	4.42	5.68	3.00	3.13	2.85	3.88	4.10	2.18	2.64	2.17	1.87	2.21
Median	4.14	4.66	4.56	5.28	4.59	1.97	2.94	3.10	3.27	3.68	4.48	5.43	5.98	5.90	5.72	3.63	3.35	3.40	3.80	3.83	2.08	2.30	2.16	2.34	2.42