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**WORKING PAPER TECHNICAL APPENDIX: A LONGITUDINAL MODEL OF
HEALTH INSURANCE, AN UPDATE: EMPLOYER SPONSORED
INSURANCE, MEDICAID AND THE UNINSURED**

Prepared for:

George D. Greenberg, Ph.D.

Office of the Assistant Secretary for Planning and Evaluation
Office of the Secretary
Department of Health and Human Services
Room 405F
Humphrey Building
200 Independence Avenue, S.W.
Washington, D.C. 20201

Submitted by:

Cathi M. Callahan
James W. Mays
Monica Brenner

Actuarial Research Corporation
6928 Little River Turnpike, Suite E
Annandale, VA 22003
(703) 941-7400
www.aresearch.com

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**TECHNICAL APPENDIX:
A LONGITUDINAL MODEL OF HEALTH INSURANCE: AN UPDATE
Employer Sponsored Insurance, Medicaid and the Uninsured**

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1. Introduction

This appendix provides detailed descriptions of the processes and results of the various adjustments to the CPS presented in “Estimating the Number of Individuals in the U.S. Without Health Insurance.” Section 2 describes adjustments to the CPS to make it consistent with the most recent CPS concepts and methods. Section 3 the rationale for drawing on external (program) data with respect to Medicaid coverage, and the methods employed in adjusting the CPS to be consistent with the data as well as the results of those adjustments. Section 4 addresses implications of the adjustments to private health insurance.

1.1 Background and Survey Changes over Time

The CPS questions change from time to time, often to improve the identification of specific insurance classes or overall levels of insurance coverage, but these changes also result in a discontinuity of the data collected. These breaks in the survey often lead to anomalous year-to-year changes for particular characteristics of particular populations.

Changes to the CPS included the following:

- In the late 1980s, estimates of private insurance were refined with respect to what was employer-sponsored, by broadening the universe of who were asked this question beyond just workers and their family members. In addition, questions were also added at the household level to pick up coverage of children that might have been missed (employer-sponsored insurance coverage from outside the household and Medicaid). Due to the dramatic improvement of the estimates available from the March 1988 CPS over that of prior years, we have chosen March 1988 as our starting point in the time series.
- Several major revisions to the CPS occurred in the mid 1990s. Census converted to a computer aided telephone interviewing / computer aided personal interviewing (CATI/CAPI) process, which has been thought to increase detection of insurance coverage. In addition, beginning with the March 1995 CPS, the questionnaire was changed to expand the categories of coverage a person could have. This allowed for a more accurate detection of Medicaid (although it resulted in fewer Medicaid covered persons as the “other government coverage” categories increased), as well as more accurate counts of persons covered by all types of private insurance they were covered under (employer sponsored and individual, covered in own name and as a dependent). Due to these clarifications and additional insurance categories, we have chosen to emphasize March 1995 to the present, even as we go back to March 1988.

- In March 2000, the survey added a verification question to clarify the number of uninsured. Persons who denied being uninsured at this step were then asked what type of coverage they had.
- In March 2001 the survey added a question to pick up coverage under the State Children’s Health Insurance Program (SCHIP), two years after the start of this program.
- March 2002 saw the additional change to weights based on the 2000 Decennial Census. In addition, 2000 Census weights were also released for the March 2000 and March 2001 files.
- While the March 2003 CPS saw some changes to such fields as industry, occupation, and racial classification, the insurance portion of the survey remained the same as in March 2002 and March 2001. The March 2004 CPS survey remained the same as March 2003.

1.2 Specific Survey Limitations

Although the improvements to the CPS over time have been extremely helpful, they have made it more difficult to model trends over time. But even after adjusting for these changes, there are still specific issues with certain insurance coverage estimates from the survey - in particular, the reported Medicaid population is much lower than that implied by program statistics from the Centers for Medicare and Medicaid Services (CMS).

It must be noted that any estimates that do not incorporate a correction for this undercount in Medicaid may overstate estimates of the uninsured population. When comparing the CPS to other surveys such as MEPS or the Census Bureau’s Survey of Income and Program Participation (SIPP) one can see that both of these have higher counts of Medicaid covered persons than the CPS, and lower counts of uninsured in a given year.

2. Adjusting for Survey Changes over Time

While we have listed the changes in the March CPS chronologically in the previous section, we in fact adjust for them looking first at the most current year (March 2004). This section will describe the adjustments that have been made in the order made, as well as show the magnitude of each of them on the relevant populations.

2.1 Adjusting for the 2000 Decennial Census Weights

The first adjustment made to the time series was to allow for a consistent weight basis for the time series.¹ When the March 2002 file was released, the weights were benchmarked to the 2000 Census. Previously, the years from 1990 forward had been benchmarked to the 1990 Census. Census then released sets of 2000 consistent weights for both March 2000 and March 2001. This created an artificially large change in the estimates when going from March 1999 to March 2000 because the numbers of people in key demographic groups appear to suddenly shift as the underlying population is benchmarked to a later decennial Census.

Moving to 2000 weights more accurately reflects the underlying population, but causes some discontinuity in the time series in the first year the new weights are used. To correct for this, we determined the total change in population due to the shift to 2000 consistent weights and then spread the increase smoothly back across 10 years. Specifically, we calculated the percentage increase in the population for CY 2000 and 2001 by race and by age and then averaged the percentage increase across the two years for each cell. This increase was then spread across ten years (the full decade) with CY 2000 having the full increase and CY 1991 having a factor of 1.00 (unchanged). These factors were used to increase the person weights, record by record, on the CPS files from March 1995 through March 1999.

The table below shows the effect of this change in weights for all persons, by non- hierarchical type of insurance. That is, if a person had both employer sponsored insurance (ESI) and Medicaid (MCD), they would appear in both columns. “Total Insured” includes all persons with any type of health insurance coverage, while “Total Uninsured” are all those persons without coverage of any type. Due to the greater number of minorities and Hispanics in the 2000 weights, the adjustment slightly increases the number of uninsured persons in each year.

We can see that the March 2002 through 2004 surveys already reflect the Census 2000 weights and thus there is no adjustment for these years.

¹ The March CPS includes a supplement weight which allows the records to sum to the total non-institutionalized population. Each person is assigned a weight based on person characteristics (such as race, age, etc) such that the records sum to the total population in accordance with the Bureau’s projections of decennial Census population levels.

	Unadjusted CPS					Adjusted for 2000 Decennial Census Weights				
	Total	ESI	MCD	Total Insured	Total Un-insured	Total	ESI	MCD	Total Insured	Total Un-insured
Mar-95	262.105	159.344	29.750	222.196	39.908	262.739	159.552	29.826	222.607	40.132
Mar-96	264.314	161.453	30.129	223.452	40.862	265.228	161.770	30.242	224.057	41.170
Mar-97	266.792	163.221	29.339	224.789	42.003	267.971	163.634	29.478	225.569	42.402
Mar-98	269.094	165.091	27.610	225.646	43.448	270.601	165.632	27.763	226.642	43.960
Mar-99	271.743	168.576	26.383	227.462	44.281	273.701	169.301	26.578	228.750	44.951
Mar-00	274.087	174.093	26.537	234.807	39.280	276.804	175.101	26.803	236.576	40.228
Mar-01	276.540	177.286	25.226	237.857	38.683	279.486	178.524	25.486	239.865	39.621
Mar-02	282.082	176.551	27.680	240.875	41.207	282.082	176.551	27.680	240.875	41.207
Mar-03	285.933	175.296	28.593	242.360	43.574	285.933	175.296	28.593	242.360	43.574
Mar-04	288.280	174.020	30.835	243.320	44.961	288.280	174.020	30.835	243.320	44.961

Adjusted for 2000 Decennial Census Weights, Percent Change					
	Total	ESI	Medicaid	Total Insured	Total Uninsured
Mar-95	0.24%	0.13%	0.25%	0.18%	0.56%
Mar-96	0.35%	0.20%	0.37%	0.27%	0.75%
Mar-97	0.44%	0.25%	0.47%	0.35%	0.95%
Mar-98	0.56%	0.33%	0.55%	0.44%	1.18%
Mar-99	0.72%	0.43%	0.74%	0.57%	1.51%
Mar-00	0.99%	0.58%	1.00%	0.75%	2.41%
Mar-01	1.07%	0.70%	1.03%	0.84%	2.42%
Mar-02	0.00%	0.00%	0.00%	0.00%	0.00%
Mar-03	0.00%	0.00%	0.00%	0.00%	0.00%
Mar-04	0.00%	0.00%	0.00%	0.00%	0.00%

2.2 Adjusting for SCHIP and Verification

2.2.1 SCHIP

In 1998, the State Children’s Health Insurance Program (SCHIP) was implemented, and has since become a growing source of coverage for children. In March 2001, the CPS added a question to measure coverage under SCHIP. Our methodology in imputing the SCHIP question (as if it had been asked in 1999 and 2000) was to look at observable changes in children’s coverage from March 2000 to March 2001 in order to determine what might have changed, and then to also look at the composition of enrollment in the SCHIP program itself (free standing vs. Medicaid add-on), using program data. Thus, the effect was to lower Medicaid counts slightly (under a half million), and trivially affect the uninsured.

For March 1999 (CY 1998), we added 0.7 million new SCHIP recipients, and for March 2000 (CY 1999) we added just under 1.5 million. In the first year (Mar 99), about half came from private insurance and half from Medicaid (reflecting the incidence of Medicaid expansion vs. stand alone SCHIP programs). This shifts slightly in the next year, so that just under twice as many come from private insurance as Medicaid.

It should be noted that the SCHIP adjustment referred to here is not an “undercount” adjustment, but rather an adjustment for a change in the survey. SCHIP coverage was not imputed to levels found in the program itself, but was imputed to levels consistent with the amount found on the March 2001 and 2002 CPS files in order to mimic the effect of having the question present in the survey from the start of the SCHIP program. That is, given that the March 2001 CPS found approximately 80% of the actual SCHIP enrollment from CY 2000 (when compared to CMS enrollment data), we impute approximately 80% of SCHIP for CY 1999 and 1998 onto the March 2000 and March 1999 files. Although the SCHIP shortfall is larger in later years (the March 2004 CPS finds approximately 70% of SCHIP recipients), we wanted to be consistent with the amount found in the years closest to the start of the program.

2.2.2 Verification of Uninsurance

Prior to March 2000, if a person did not indicate health insurance coverage from any of the categories asked in the CPS, that person was then considered to be uninsured. In the March 2000 survey, Census added a question specifically asking those who had not indicated coverage to verify their lack of coverage. If they indicated that they were not uninsured, they were then allowed to list up to six types of coverage. This change to the questionnaire resulted in a decrease in the count of the uninsured of about 8%, an amount which remained fairly consistent over time. This decrease was most evident when looking at comparisons in the following population subgroups: children more than adults, and persons in higher income households as opposed to lower income households. Thus, there was a larger effect on the private insurance estimates than on public.²

Given that the addition of the verification question has increased the number of persons reporting insurance coverage, we have adjusted the CPS in years prior to 2000 in order to mimic the effect of the verification question in those years. That is, each insurance category was adjusted, by age group, to approximately represent what would have been picked up had the verification question been asked in the earlier years. Therefore the uninsured estimates for prior years are reduced by an amount derived from the overall changes seen in March 2000 through March 2004,³ but based on cell by cell adjustments.

From March 2000 forward, the survey already has the verification question included and as of March 2001 the SCHIP question, and so there is no effect for these two years for this adjustment.

² Nelson, Charles T. and Mills, Robert J., “The March CPS Health Insurance Verification Question And Its Effect On Estimates Of The Uninsured,” Housing and Household Economic Statistics Division, U.S. Bureau of the Census, August 2001 (www.census.gov/hhes/hlthins/verif.html).

³ Estimates from the verification question have been very consistent each year.

Table 2: Effects of Adjusting for SCHIP and Verification (All Counts in Millions), by Insurance Status

	Adjusted for 2000 Decennial Census Weights					Adjusted for SCHIP and Verification				
	Total	ESI	Medicaid	Total Insured	Total Uninsured	Total	ESI	Medicaid	Total Insured	Total Uninsured
Mar-95	262.739	159.552	29.826	222.607	40.132	262.739	161.568	30.006	225.989	36.750
Mar-96	265.228	161.770	30.242	224.057	41.170	265.228	163.988	30.439	227.535	37.692
Mar-97	267.971	163.634	29.478	225.569	42.402	267.971	165.795	29.680	229.036	38.935
Mar-98	270.601	165.632	27.763	226.642	43.960	270.601	167.830	27.949	230.146	40.455
Mar-99	273.701	169.301	26.578	228.750	44.951	273.701	171.119	26.537	232.085	41.616
Mar-00	276.804	175.101	26.803	236.576	40.228	276.804	174.455	26.444	236.599	40.204
Mar-01	279.486	178.524	25.486	239.865	39.621	279.486	178.524	25.486	239.865	39.621
Mar-02	282.082	176.551	27.680	240.875	41.207	282.082	176.551	27.680	240.875	41.207
Mar-03	285.933	175.296	28.593	242.360	43.574	285.933	175.296	28.593	242.360	43.574
Mar-04	288.280	174.020	30.835	243.320	44.961	288.280	174.020	30.835	243.320	44.961

Table 2a: Effects of Adjusting for the SCHIP & Verification by Insurance Status

Percent Change from 2000 Decennial Weights

	Total	ESI	Medicaid	Total Insured	Total Uninsured
Mar-95	0.00%	1.26%	0.60%	1.52%	-8.43%
Mar-96	0.00%	1.37%	0.65%	1.55%	-8.45%
Mar-97	0.00%	1.32%	0.69%	1.54%	-8.18%
Mar-98	0.00%	1.33%	0.67%	1.55%	-7.97%
Mar-99	0.00%	1.07%	-0.15%	1.46%	-7.42%
Mar-00	0.00%	-0.37%	-1.34%	0.01%	-0.06%
Mar-01	0.00%	0.00%	0.00%	0.00%	0.00%
Mar-02	0.00%	0.00%	0.00%	0.00%	0.00%
Mar-03	0.00%	0.00%	0.00%	0.00%	0.00%
Mar-04	0.00%	0.00%	0.00%	0.00%	0.00%

Table 3: Effects of Adjusting for Verification and SCHIP, Persons Ages 18 and Under, by Insurance Status (Counts in Millions)

	Adjusted for Decennial Census Weights						Adjusted for SCHIP and Verification					
	Total	ESI	MCD	Total SCHIP	Total Insured	Total Uninsured	Total	ESI	MCD	Total SCHIP	Total Insured	Total Uninsured
Mar-95	73.900	44.819	16.062	-	63.223	10.677	73.900	45.463	16.117	-	64.208	9.692
Mar-96	74.688	45.732	16.457	-	64.048	10.641	74.688	46.525	16.516	-	65.214	9.475
Mar-97	74.791	45.988	15.340	-	63.338	11.453	74.791	46.684	15.405	-	64.413	10.378
Mar-98	75.352	46.848	14.697	-	63.716	11.636	75.352	47.626	14.763	-	64.823	10.528
Mar-99	75.825	47.753	14.239	-	63.877	11.948	75.825	48.082	14.050	0.713	64.827	10.998
Mar-00	76.323	49.244	14.249	-	66.289	10.033	76.323	48.598	13.891	1.477	66.313	10.010
Mar-01	76.391	50.125	13.084	2.348	67.104	9.287	76.391	50.125	13.084	2.348	67.104	9.287
Mar-02	76.559	48.699	14.206	3.028	67.322	9.237	76.559	48.699	14.206	3.028	67.322	9.237
Mar-03	77.276	48.458	14.762	3.455	67.977	9.299	77.276	48.458	14.762	3.455	67.977	9.299
Mar-04	77.607	47.338	16.339	4.100	68.473	9.134	77.607	47.338	16.339	4.100	68.473	9.134

Table 3a: Effects of Adjusting for the SCHIP & Verification by Insurance Status
Ages 18 & Under, Percent Change from Decennial Weights

	Total	ESI	MCD	Total SCHIP	Total Insured	Total Uninsured
Mar-95	0.00%	1.44%	0.34%	na	1.56%	-9.23%
Mar-96	0.00%	1.73%	0.36%	na	1.82%	-10.96%
Mar-97	0.00%	1.51%	0.42%	na	1.70%	-9.39%
Mar-98	0.00%	1.66%	0.45%	na	1.74%	-9.52%
Mar-99	0.00%	0.69%	-1.32%	na	1.49%	-7.95%
Mar-00	0.00%	-1.31%	-2.51%	na	0.04%	-0.24%
Mar-01	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Mar-02	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Mar-03	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Mar-04	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

2.3 ESI Changes

As noted earlier in this paper, there was a substantial change in the March questionnaire starting with the March 1995 CPS. While for the most part the broader questions on insurance allow for a clearer picture of the multiple types of coverage a person may have during the year, they also brought with them some inconsistencies. The main two that we address here are the minimum age for an ESI policy holder (someone who has employer sponsored insurance in their own name), and how to consistently classify coverage when the policy holder lives in a different household than the dependent(s).

2.3.1 Adjust for Age of ESI Policy Holders

Our first ESI adjustment was to enforce a consistent minimum age for ESI policy holders. Census health insurance questions prior to March 1995 did not permit ESI policy holders to be under age 15. The new questions that begin in March 1995 do not have this coding rule in place, and as a result the ages for some policy holders seem unreasonably low. For consistency, we have instituted a rule that states a person must be at least age 18 (unless married) to be considered an ESI policy holder, otherwise they are changed to be a dependent. This adjustment was done for all years, and while it does not affect the level of total ESI coverage, it does show a very small shift from policy holders to dependents.

Table 4: Effect of Minimum ESI Policy Holder Age on Policy Holders and Dependents (in Millions)

	Adjusted for SCHIP and Verification				Adjusted for Age of Policy Holder			
	Total	ESI PH	ESI Dep	Total ESI	Total	ESI PH	ESI Dep	Total ESI
Mar-95	262.739	85.626	88.360	161.568	262.739	84.831	88.841	161.568
Mar-96	265.228	86.870	89.072	163.988	265.228	85.916	89.752	163.988
Mar-97	267.971	87.808	87.507	165.795	267.971	87.037	88.030	165.795
Mar-98	270.601	88.383	88.021	167.830	270.601	87.687	88.557	167.830

Table 4: Effect of Minimum ESI Policy Holder Age on Policy Holders and Dependents (in Millions)

	Adjusted for SCHIP and Verification					Adjusted for Age of Policy Holder			
	Total	ESI PH	ESI Dep	Total ESI		Total	ESI PH	ESI Dep	Total ESI
Mar-99	273.701	90.157	89.605	171.119		273.701	89.731	89.913	171.119
Mar-00	276.804	91.742	90.642	174.455		276.804	91.340	90.917	174.455
Mar-01	279.486	94.188	92.580	178.524		279.486	93.744	92.889	178.524
Mar-02	282.082	93.648	91.219	176.551		282.082	93.199	91.530	176.551
Mar-03	285.933	91.983	90.962	175.296		285.933	91.619	91.223	175.296
Mar-04	288.280	91.477	89.802	174.020		288.280	91.174	90.020	174.020

Table 4a: Effects of Adjusting for Minimum PH Age
Percent Change from SCHIP/Verification Weights

	Total	ESI PH	ESI Dep	Total ESI
Mar-95	0.00%	-0.93%	0.54%	0.00%
Mar-96	0.00%	-1.10%	0.76%	0.00%
Mar-97	0.00%	-0.88%	0.60%	0.00%
Mar-98	0.00%	-0.79%	0.61%	0.00%
Mar-99	0.00%	-0.47%	0.34%	0.00%
Mar-00	0.00%	-0.44%	0.30%	0.00%
Mar-01	0.00%	-0.47%	0.33%	0.00%
Mar-02	0.00%	-0.48%	0.34%	0.00%
Mar-03	0.00%	-0.40%	0.29%	0.00%
Mar-04	0.00%	-0.33%	0.24%	0.00%

2.3.2 Adjust for Coverage from Outside the Household

The goal of our second ESI adjustment was to consistently define whether coverage from outside the household was employer sponsored or non-group in nature. After 1995, Census coding rules placed anyone with coverage from outside the household, who was age 15 or older, into private non-group status. We looked at family characteristics, such as the presence alimony, child support, or multiple persons with outside coverage, in order to determine when group coverage was likely and reassigned these cases as ESI. In doing so, the goal was to keep families together under one ESI policy when there were several persons in a family with outside coverage. The effect was to increase the number of persons with employer-sponsored group coverage.

Table 5: Effect of Consistent Rules for Coverage from Outside the Household (Counts in Millions)

	Adjusted for Age of Policy Holder					Adjusted for Coverage from Outside			
	Total	ESI	OPHI	Total Private		Total	ESI	OPHI	Total Private
Mar-95	262.739	161.568	36.631	187.346		262.739	162.599	35.600	187.346
Mar-96	265.228	163.988	35.134	189.300		265.228	164.957	34.165	189.300
Mar-97	267.971	165.795	33.478	190.887		267.971	166.843	32.430	190.887
Mar-98	270.601	167.830	31.949	192.292		270.601	168.805	30.973	192.292

Table 5: Effect of Consistent Rules for Coverage from Outside the Household (Counts in Millions)

	Adjusted for Age of Policy Holder				Adjusted for Coverage from Outside			
	Total	ESI	OPHI	Total Private	Total	ESI	OPHI	Total Private
Mar-99	273.701	171.119	31.276	194.437	273.701	172.217	30.178	194.437
Mar-00	276.804	174.455	31.805	198.194	276.804	175.534	30.726	198.194
Mar-01	279.486	178.524	30.857	201.787	279.486	179.645	29.736	201.787
Mar-02	282.082	176.551	30.875	199.860	282.082	177.718	29.708	199.860
Mar-03	285.933	175.296	31.172	198.973	285.933	176.382	30.086	198.973
Mar-04	288.280	174.020	31.063	197.869	288.280	175.176	29.908	197.869

Table 5a: Effects of Adjusting for Coverage from Outside Household

Percentage Change from PH Weights

	Total	ESI	OPHI	Total Private
Mar-95	0.00%	0.64%	-2.81%	0.00%
Mar-96	0.00%	0.59%	-2.76%	0.00%
Mar-97	0.00%	0.63%	-3.13%	0.00%
Mar-98	0.00%	0.58%	-3.05%	0.00%
Mar-99	0.00%	0.64%	-3.51%	0.00%
Mar-00	0.00%	0.62%	-3.39%	0.00%
Mar-01	0.00%	0.63%	-3.63%	0.00%
Mar-02	0.00%	0.66%	-3.78%	0.00%
Mar-03	0.00%	0.62%	-3.48%	0.00%
Mar-04	0.00%	0.66%	-3.72%	0.00%

2.4 Bringing the March 1988 through March 1994 Surveys into the Time Series

As mentioned earlier, with the introduction of the new questionnaire in the March 1995 CPS, a clearer and more detailed picture of health insurance coverage could be obtained. However, in order to obtain an consistent picture back through time, it was necessary to adjust the earlier survey data (March 1988 through March 1994) to be consistent with the questions introduced in March 1995.

Bringing the March 1988 through March 1994 survey into the time series involved some new adjustments which included adjusting for consistent definitions of ESI and other private (non group) insurance (OPHI). Specifically, the new questionnaire in March 1995 allowed for coverage in both of these areas at the same time. In addition, those adjustments made for March 1995 forward (adjusting for the 2000 Decennial weights, verification, ESI policy holder age, and coverage from outside the household) also needed to be done for the years prior to 1995.

For these earlier years we were most concerned with the following population groups: total (all non-institutionalized), those with ESI, those with Medicaid, and those without insurance.

Adjustments for these groups were done at the macro (cell based) level and the changes for these years (and for all years through March 2004) are discussed and shown below.

Set 1 presents unadjusted values. Set 2 presents weights adjusted for the 2000 Decennial Census. These do not change numbers prior to CY 1991. Set 3 presents our “partially adjusted” values, which represent the changes discussed earlier in Section 2 of this paper (weights, verification) as well as adjusting for the change in the CPS in March 1995. We use the term “partially adjusted” in order to make clear that these numbers have not yet been adjusted for any undercount in the Medicaid population.

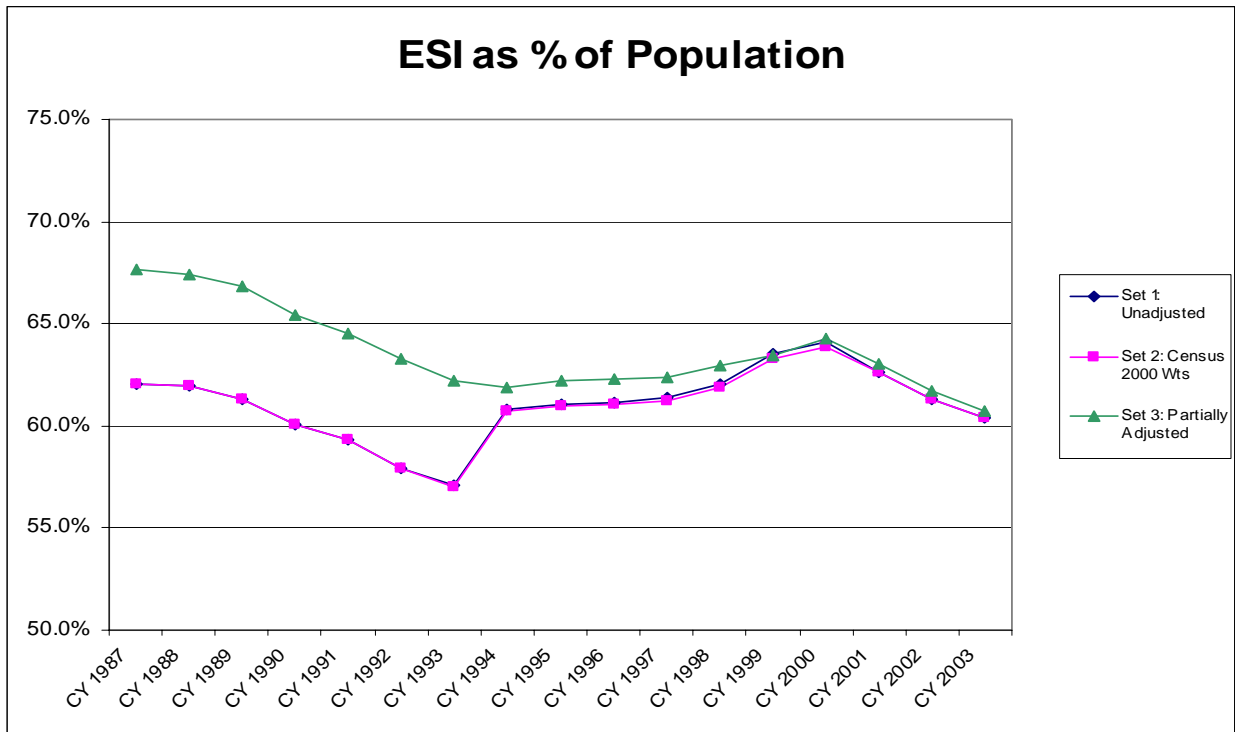
2.4.1 ESI

The main effect of the questions added in March of 1995 was to increase the level of employer sponsored insurance in the population. The unadjusted values, set 1, show the major discontinuity from CY 1993 to CY 1994, reflecting the substantial improvement in insurance measurement in general, but ESI in particular. The unadjusted ESI percentage for 1994 is about 4 percentage points higher than for 1993, which appears to be entirely attributable to improved survey methods. Adjusting for updated weights (set 2) makes small changes, but the additional adjustments (set 3) which incorporate the estimated impact of the post-1994 survey make the ESI curve fairly smooth.

The ESI change is important in its own right, to the extent policy initiatives are predicated on observed trends in ESI coverage. In the graph below, we can see an initial slight decline in net ESI coverage rates from CY 1987 to CY 1994 (looking at our adjusted series), but the level has been mostly stable since 1994 except for a slight increase to CY 2000 and then a decline in the last two years. The changes in the survey which contributed to this adjustment are important even if only the uninsured are being analyzed, since they had substantial impacts on coverage in general, and alter the baseline for comparison purposes. Moreover, there is evidence of an undercount of ESI coverage relative to other national surveys, therefore establishing a consistent baseline will serve useful for future research in that area.

Table 6-1: Employer Sponsored Insurance, CY 1987 to CY 2003							
	In Millions				As % of Population		
	Set 1: Unadjusted	Set 2: Census 2000 Wts	Set 3: Partially Adjusted		Set 1: Unadjusted	Set 2: Census 2000 Wts	Set 3: Partially Adjusted
CY 1987	149.7	149.7	163.3		62.1%	62.1%	67.7%
CY 1988	150.9	150.9	164.4		61.9%	61.9%	67.5%
CY 1989	152.3	152.3	166.0		61.3%	61.3%	66.8%
CY 1990	150.9	150.9	164.5		60.0%	60.0%	65.4%
CY 1991	150.7	150.8	164.1		59.4%	59.3%	64.5%
CY 1992	148.8	149.0	162.8		57.9%	57.9%	63.3%
CY 1993	148.3	148.5	161.9		57.1%	57.1%	62.2%
CY 1994	159.3	159.6	162.6		60.8%	60.7%	61.9%
CY 1995	161.5	161.8	165.0		61.1%	61.0%	62.2%

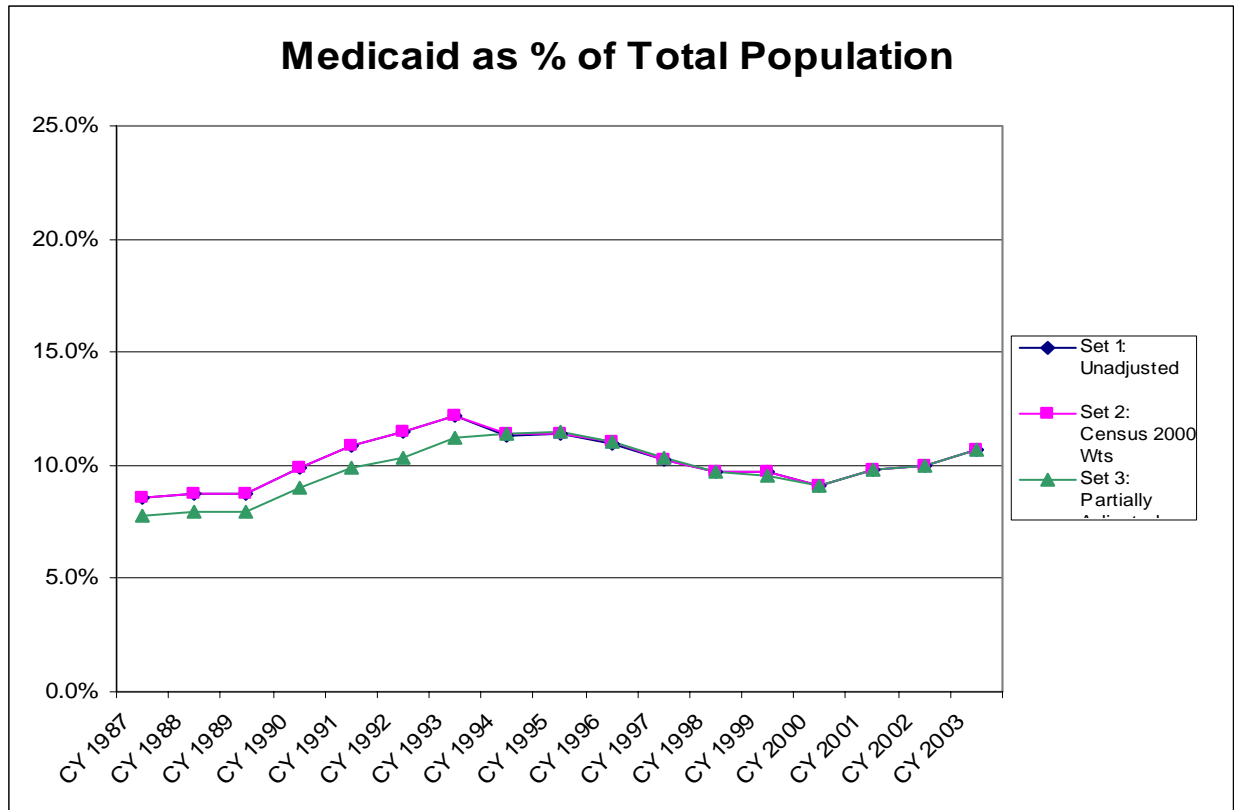
	In Millions			As % of Population		
	Set 1: Unadjusted	Set 2: Census 2000 Wts	Set 3: Partially Adjusted	Set 1: Unadjusted	Set 2: Census 2000 Wts	Set 3: Partially Adjusted
CY 1996	163.2	163.6	166.8	61.2%	61.1%	62.3%
CY 1997	165.1	165.6	168.8	61.4%	61.2%	62.4%
CY 1998	168.6	169.3	172.2	62.0%	61.9%	62.9%
CY 1999	174.1	175.1	175.5	63.5%	63.3%	63.4%
CY 2000	177.3	178.5	179.6	64.1%	63.9%	64.3%
CY 2001	176.6	176.6	177.7	62.6%	62.6%	63.0%
CY 2002	175.3	175.3	176.4	61.3%	61.3%	61.7%
CY 2003	174.0	174.0	175.2	60.4%	60.4%	60.8%



2.4.2 Medicaid

The main impact of our adjustment to the Medicaid population occurs prior to CY 1994 (March 1995 CPS). This is due to the new questions, that began in March 1995, picking up additional types of coverage, and resulting in a lower count of persons covered by Medicaid than the earlier (pre-March 1995) CPS showed. This is seen both in Table 6-2 and its accompanying graph below. The unadjusted numbers (set 1) are also minimally affected by introducing new weights (set 2). The adjustments made for the improved survey methods in 1994 (set 3) make the curve a bit smoother (lowering Medicaid in the early years).

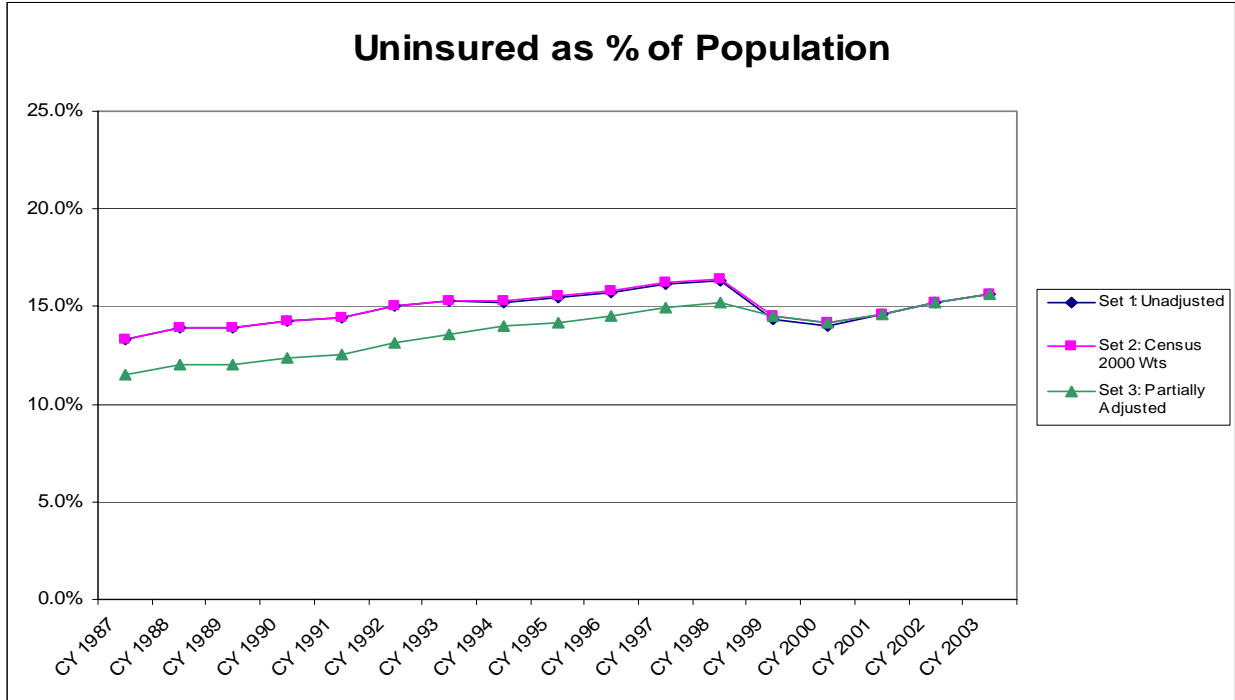
	In Millions			As % of Population		
	Set 1: Unadjusted	Set 2: Census 2000 Wts	Set 3: Partially Adjusted	Set 1: Unadjusted	Set 2: Census 2000 Wts	Set 3: Partially Adjusted
CY 1987	20.8	20.8	18.8	8.6%	8.6%	7.8%
CY 1988	21.3	21.3	19.3	8.7%	8.7%	7.9%
CY 1989	21.8	21.8	19.7	8.8%	8.8%	7.9%
CY 1990	25.0	25.0	22.6	9.9%	9.9%	9.0%
CY 1991	27.7	27.7	25.1	10.9%	10.9%	9.9%
CY 1992	29.4	29.5	26.7	11.5%	11.5%	10.4%
CY 1993	31.7	31.8	29.2	12.2%	12.2%	11.2%
CY 1994	29.8	29.8	30.0	11.4%	11.4%	11.4%
CY 1995	30.1	30.2	30.4	11.4%	11.4%	11.5%
CY 1996	29.3	29.5	29.7	11.0%	11.0%	11.1%
CY 1997	27.6	27.8	27.9	10.3%	10.3%	10.3%
CY 1998	26.4	26.6	26.5	9.7%	9.7%	9.7%
CY 1999	26.5	26.8	26.4	9.7%	9.7%	9.6%
CY 2000	25.2	25.5	25.5	9.1%	9.1%	9.1%
CY 2001	27.7	27.7	27.7	9.8%	9.8%	9.8%
CY 2002	28.6	28.6	28.6	10.0%	10.0%	10.0%
CY 2003	30.8	30.8	30.8	10.7%	10.7%	10.7%



2.4.3 Uninsured

The final table and graph in this section shows that uninsured trend remains mostly flat over the time period, peaking in CY 1998 with a slight decrease afterward but increasing since CY 2000. The pre-1994 levels reflect backcasting the effects of the improved insurance questions. The unadjusted series (set 1) shows a gradual increase, up to 1999 when a major drop appears. Adjusting for new weights only (set 2) makes minimal changes to the pre-1999 story. Adjusting for the major questionnaire improvements in 1999 and later makes the discontinuity much smaller (set 3), but still has the same general trends.

Table 6-3: Uninsured, CY 1987 to CY 2003						
	In Millions			As % of Population		
	Set 1: Unadjusted	Set 2: Census 2000 Wts	Set 3: Partially Adjusted	Set 1: Unadjusted	Set 2: Census 2000 Wts	Set 3: Partially Adjusted
CY 1987	32.1	32.1	27.8	13.3%	13.3%	11.5%
CY 1988	33.8	33.8	29.2	13.9%	13.9%	12.0%
CY 1989	34.5	34.5	29.9	13.9%	13.9%	12.0%
CY 1990	35.8	35.8	31.2	14.3%	14.3%	12.4%
CY 1991	36.6	36.7	32.0	14.4%	14.4%	12.6%
CY 1992	38.6	38.8	33.8	15.0%	15.1%	13.1%
CY 1993	39.7	39.9	35.4	15.3%	15.3%	13.6%
CY 1994	39.9	40.1	36.8	15.2%	15.3%	14.0%
CY 1995	40.9	41.2	37.7	15.5%	15.5%	14.2%
CY 1996	42.0	42.4	38.9	15.7%	15.8%	14.5%
CY 1997	43.4	44.0	40.5	16.1%	16.2%	15.0%
CY 1998	44.3	45.0	41.6	16.3%	16.4%	15.2%
CY 1999	39.3	40.2	40.2	14.3%	14.5%	14.5%
CY 2000	38.7	39.6	39.6	14.0%	14.2%	14.2%
CY 2001	41.2	41.2	41.2	14.6%	14.6%	14.6%
CY 2002	43.6	43.6	43.6	15.2%	15.2%	15.2%
CY 2003	45.0	45.0	45.0	15.6%	15.6%	15.6%



3. Adjusting for Survey Limitations: Medicaid Undercount in Depth

According to the Centers for Medicare and Medicaid Services (CMS), in Fiscal Year 2000 (FY 00) there were 44.3 million persons ever enrolled in the Medicaid program. Of these 44.3 million ever enrolled, 21.9 million were children.⁴ Although the CMS figures include Medicaid expansions through SCHIP, persons in California with family planning waivers, and the institutionalized Medicaid population, they are still substantially higher than the number of persons found on the CPS for either CY 99 or CY 00 (the years that make up FY 00). Projections from CMS through FY 04 continue the enrollment trends, and the gap between the CPS and program statistics. In addition, Census has acknowledged that the Medicaid counts on the CPS are indeed lower than those actually enrolled in the program.⁵

Table 7, below, displays both counts and percents of population for those with Medicaid and those never insured, for the non-institutionalized population for CY 2001 from SIPP, MEPS, and the CPS (March 2002 for CY 2001). The SIPP population is lower than the other two, due to the necessity of excluding records who did not respond or have complete responses during the year. For this reason we have included the % of population figures as well.

	SIPP 01		MEPS 01		CPS 01 (Mar02)	
	Millions	% of Total	Millions	% of Total	Millions	% of Total
Ever Medicaid	42.21	15.5%	37.75	13.3%	27.68	9.8%
Never Insured	20.55	7.6%	31.68	11.1%	41.21	14.6%
Total Population:	272.01	100.0%	284.25	100.0%	282.08	100.0%

Given that the disparities exist both in the Medicaid population (where CPS is much lower) and the never insured population, where CPS is much higher, it seems reasonable that when we adjust for Medicaid, we should also see some resulting adjustment on the uninsured population. Klerman, et al. found that for the state of California, a substantial number of persons linked through SSNs on the Medi-Cal database were reported as uninsured on the CPS.⁶

It has been noted in the research community that the estimates from the CPS more closely resemble “point in time” insured estimates from other surveys. When we examine point in time estimates from SIPP and MEPS for 2001, it does indeed look as if the CPS is closer to these estimates. That said, our specific interest is in trying to make an adjusted CPS which can be used for “ever-insured last year” analyses. Currently, such analysis tends to rely on MEPS and SIPP. Getting the CPS insurance information to be a more reasonable estimate for ever-insured last year would let analysts draw on the CPS demographic information from the previous year,

⁴ Program Information on Medicaid and SCHIP, Section II: Medicaid Populations, Centers for Medicare and Medicaid Services, 2004.

⁵ Mills, Robert J. and Bhandari, Shailesh, “Health Insurance Coverage in the United States: 2002,” Bureau of the Census P60-223, Issued September 2003.

⁶ Klerman, Jacob Alex, Jeanne S. Ringel and Beth Roth, “Under-Reporting of Medicaid and Welfare in the Current Population Survey,” RAND Working Paper WR-169-1, June 2004.

without the timing mismatch implicit in using a point-in-time insurance value from the subsequent March. That is, having income and workforce data for the prior year lining up with insurance coverage would facilitate analysis of insurance purchase decisions as a function of income, which requires insurance and income to be from the same period.

For CY 2001 CMS found between 22.7 and 23.9 million children with Medicaid at some point during the year, plus some disabled children included in the 8.0 million CMS categorizes as “disabled.” For comparison, MEPS found 20.8 million, the SIPP found 20.7 million, and the March 2002 CPS found 14.3 million. Given the large discrepancy in Medicaid counts, as well as the difference in uninsured across surveys, we do not believe that all persons missed were miscategorized and placed into some other insured group. We also do not think that all the persons missed were coded as uninsured.

We have, instead, chosen to start with estimates of Medicaid coverage from CMS. The method that we use to control to these estimates, which is assigning Medicaid coverage to those who fit the CPS profile of persons who already have Medicaid on the CPS (and explained in more detail in the following sections), results in a middle ground – where about half of the new covereds come from the previously uninsured and about half from those with other coverage. This “looking at the CPS Medicaid persons” is done on a cell by cell basis, where the cells are based on age (<21, 21-64, 65+), type of Medicaid, and duration of Medicaid (full vs. part year).

Our method does not address the use of the unadjusted CPS as a reasonable estimate of point-in-time uninsured. However even if we had chosen to use the unadjusted CPS as point in time insured, the unadjusted CPS number found with Medicaid coverage (slightly under 30 million) is still about 10 million short when compared to “person year” estimates from CMS. An adjustment to the number with Medicaid would likely still be required in order to use the CPS for evaluation of Medicaid and other public expansions.

While some studies have addressed the issue of misclassified insurance status, these draw on the fact that they are checking insurance for either the time of the question, or a time period close to the time of the question. Given the CPS asks about “insurance in the last year” but not at the time the question is asked, it makes sense that the recall errors in CPS would be different than those being asked about “insurance now.” It is possible that persons who had insurance at some point during the prior year (and perhaps for only part of the year) and no longer have it at time of survey would not indicate that they had that insurance, thinking instead of their current status. This is shown by Klerman et al., for California Medi-Cal recipients in Figure 3.1 - CPS Reporting of Medi-Cal Given MEDS Pattern of Receipt.⁷ Our adjustments are based on trying to get back to the “ever insured in prior year” concept, as asked by the Current Population Survey.

Therefore, due to the gap between CPS estimates and program statistics, and its potential impact on our estimate of the uninsured population, we find it important to try to adjust for the shortfall in persons with Medicaid coverage as found by the CPS.

⁷ While Figure 3.1 showed that the more months enrolled during the prior year the more likely one was to respond to being enrolled in Medicaid on the CPS, it also showed a clear relationship between coverage in March and coverage only in prior year. Those covered in March more accurately reported having Medicaid in prior year than those who were no longer covered by Medicaid.

The process by which we adjust for this shortfall is as follows: obtain Medicaid enrollment or projections for the appropriate time frame for the appropriate (ever-enrolled) population, convert these Medicaid counts to a population base consistent with the Current Population Survey (non-institutionalized), convert these counts to a time frame consistent with the Current Population Survey (calendar year), separate out persons enrolled through the State Children's Health Insurance Program (SCHIP) as they are counted on their own in the CPS, partition the remaining persons into groups that can be lined up with respondents on the Current Population Survey, determine the difference between our target and what the CPS has within group, and adjust group by group.

3.1 What are the Medicaid Control Totals

Counts of Medicaid covered persons were obtained from CMS. For historical counts, the source of these numbers was the MSIS (formerly called the HCFA-2082 report). Historical data is available in considerable detail, most notably including counts by maintenance assistance status (AFDC/TANF, SSI, etc.) by basis of eligibility (Aged, Blind/Disabled, Adult, Child). Other splits included age group, duration of enrollment, and recipients by services received. For projections, the only available data was counts by basis of eligibility from the FFY 2005 President's Budget. Based on the detailed data from the historical sources we extrapolated using the trends found in the numbers from the President's Budget.

Because the categories of coverage on the CMS web site did not correspond to categories easily obtainable from the CPS, it was necessary to adjust the CMS numbers for this. In addition, the Medicaid counts had to be brought down to the non-institutionalized population only, be projected forward in time, and converted from fiscal to calendar year. Finally, SCHIP children in Medicaid expansion programs were removed from the Medicaid counts, and persons who were dual Medicare / Medicaid recipients were partitioned into their own categories. The steps taken in this process are explained in detail below.

3.1.1 Obtain Available CMS Data from Web Site

The data available on the CMS web site is presented in table format, by state, for federal fiscal year (FFY) 1991 through federal fiscal year (FFY) 2001. Hawaii did not report in FFY 2000 and has not yet reported for FFY 2001. Since CMS used Hawaii's FFY 1999 counts in their FFY 2000 national total counts, we chose to do the same (use FFY 1999 data for Hawaii) for FFY 2001. Some data was also available on the web site for as early as FFY 1990, but there were no published tables of enrollee counts. A listing of the tables used to obtain the number of Medicaid enrollees is as follows:

- Total Ever-Enrolled persons, by Basis of Eligibility (BOE group), in separate tables by Maintenance Assistance Status (MAS) (all years)
- Total Ever-On Medicaid Enrollees, Full Year Enrollees, Part Year Enrollees, and Total Months Enrolled for Part-Year Enrollees (FFY90-FFY95 by MAS-BOE, FFY96-FFY98 state totals only)
- Total Ever-Enrolled persons, by age group (FFY90 through FFY01)

- Recipients by type of service (including institutionalized services) (FFY90-FFY95 and FFY99-FFY01 by MAS-BOE; state totals only for FFY96-FFY98)
- Recipients by type of service and age group (FFY99-FFY01)

There are six Basis of Eligibility (BOE) groups, and five Maintenance Assistance Status designations (MAS). The BOE groups are as follows:

- Children under age 21,
- Adults,
- Age 65 and over,
- Blind,
- Disabled, and
- Other.

In later years (FFY99+), the blind and disabled are lumped into a single category, and there is also a “Foster Care Child” category that is its own MAS as well. The MAS designations prior to FFY99 are as follows:

- Receiving cash assistance
- Not receiving cash assistance
- Medically needy
- Other Pre-1988 Legislation
- Other Post-1987 Legislation

From FFY99, the MAS designations are:

- Receiving Cash
- Medically Needy
- Poverty Related
- Other
- 1115 Demo
- Foster Care (Child BOE only)

There were also some “unknown BOE” present; these were persons not assigned to a BOE. As this number was very small (well under 1% of total) and so they were placed in with Children, which is consistently the largest BOE grouping. For the purpose of this discussion, we will refer to any BOE group within a MAS designation as a “MAS-BOE group.” An example of a MAS-BOE group would be “Medically Needy, Aged.”

3.1.2 Mapping CMS Data to Control Total Categories

Once the counts of Medicaid enrollees were obtained, the next step was to determine a mapping of the CMS categories into a set that would work with our CPS based model. From the CPS we were able to partition by type of Medicaid coverage (AFDC/TANF, SSI, or other), age group (child (defined as 21 years or younger), adult (defined as ages 22 through 64) or aged (defined as ages 65 and up)), and duration of enrollment (part year or full year). This results in an eighteen cell partition which is shown in Table 8, below.

Table 8: CPS Medicaid Partition
AFDC/TANF Child, Full Year
AFDC/TANF Adult, Full Year
AFDC/TANF Aged, Full Year
SSI Child, Full Year
SSI Adult, Full Year
SSI Aged, Full Year
Other Child, Full Year
Other Adult, Full Year
Other Aged, Full Year
AFDC/TANF Child, Part Year
AFDC/TANF Adult, Part Year
AFDC/TANF Aged, Part Year
SSI Child, Part Year
SSI Adult, Part Year
SSI Aged, Part Year
Other Child, Part Year
Other Adult, Part Year
Other Aged, Part Year

Once the CPS partition was determined, it was necessary to map the CMS categories into the eighteen cells. AFDC/TANF Children and AFDC/TANF Adults were determined to be equivalent to cash assistance/receiving cash and child and cash assistance/receiving cash and adult, respectively. SSI Persons were presumed to include all other persons receiving cash assistance (Cash assistance/receiving cash Blind, Disabled, and Aged). It is worth noting that the child / adult / aged splits for SSI were not clearly defined in the CMS data, and so were obtained from Social Security Bulletin data. This is explained in more detail in the next step below. All other MAS categories except Cash Assistance / Receiving Cash, including all BOE groups therein, were presumed to align with the CPS category “Other.”

The mappings, therefore, were as follows:

Table 9: CMS Mappings to CPS Control Total Categories		
Control Total Categories	CMS Web Equivalents	
	MAS Groups	BOE Groups within MAS
AFDC/TANF Child	Cash Assistance (FY90-FY98) Receiving Cash (FY99+)	Child
AFDC/TANF Adult	Cash Assistance (FY90-FY98) Receiving Cash (FY99+)	Adult
AFDC/TANF Aged	<NA>	<NA>
Other Child	FY90-FY98	Child
Other Adult	Not Receiving Cash Assistance	Adult, Blind, Disabled

Table 9: CMS Mappings to CPS Control Total Categories		
Control Total Categories	CMS Web Equivalents	
	MAS Groups	BOE Groups within MAS
Other Aged	Medically Needy	Aged
	Other Pre-1988 Legislation	
	Other Post-1987 Legislation	
	<u>FY99+</u>	
	Medically Needy	
	Poverty Related	
	Other	
	1115 Demo	
	Foster Care	
SSI (Total)	Cash Assistance (FY90-FY98) Receiving Cash (FY99+)	Blind, Disabled, Aged

3.1.3 Obtaining SSI Splits from the Social Security Bulletin

The Social Security Bulletin’s Statistical Supplement, released each year, contains tables with SSI counts by age group for December of that year. From the Statistical Supplement, we obtained counts for 1989 through 1994 and 1997 through 2003. The years 1995 and 1996 were interpolated. The SSI Child/Adult/Aged groupings were defined as follows:

- SSI Child: Age 21 and under
- SSI Adult: Ages 22-64
- SSI Aged: Ages 65 and up

These age partitions are consistent with those used during the CPS portion of the process.

Once the SSI data was obtained, we then calculated the population distribution among these categories. This distribution was then used to partition the SSI totals from the CMS web site by age. Because we only used the distribution to partition CMS data, we did not adjust for the fact that the counts were point in time (December).

3.1.4 Using MSIS Data to Estimate Duration of Enrollment

The data available on the CMS web site is not partitioned by duration of enrollment (full year vs. part year) except in the totals by state. The MAS-BOE groups from the web site, therefore, are only available as “Total Ever-Enrolled.”

In order to deal with this problem, we used data from the Medicaid Statistical Information System (MSIS), some of which ARC had in house. The MSIS data was more finely detailed than that available from the CMS web site tables. While the data in these files did not always match our starting point exactly, it was able to provide information on full year / part year splits for each MAS-BOE group, as well as counts based on institutionalized status (this is described in more detail in Step 5, below).

For FFYs 1990 through 1995, the years for which the MSIS data was available, we calculated the percent of enrollees in each MAS-BOE cell who were enrolled full year. This was used to partition our web-based data. For FFY 1996-1998, when only duration of enrollment was only available by state (no MAS-BOE detail), we used the percent-full-year numbers by MAS-BOE group from FFY 1995 and controlled to the web site totals for each year. For FFY 1999 and later, when no duration data was available to us, we simply used the extrapolated FFY 1998 numbers. (We are planning, at some point in the future, to examine trends over time and project full-year/part-year relationships for FFY 1996 and later more fully). It should be noted that there was no web data on enrollees available for FFY 1990, and so raw MSIS data by MAS-BOE was used instead. Once this was complete, the counts of ever enrolled for the projected years were adjusted by a uniform factor in order to match the total enrollee counts, by full year and part year, as available on the CMS web site.

3.1.5 Using MSIS Data to Estimate the Non-institutionalized

The CPS is a survey of non-institutionalized persons, but the CMS web site contains Medicaid counts of all enrolled persons, with no way to determine whether or not the person was ever institutionalized.

Since the CPS is a survey of persons living in the community, we needed to convert our control totals to non-institutionalized counts. We again turned to the detailed MSIS data to calculate the percent of each control total group that was non-institutionalized. This was performed using MSIS recipient counts by service and MAS-BOE group. First, the numbers of recipients by service were collapsed into control total categories, as shown earlier in Table 9. In the case of SSI, we split the MSIS counts into Under and Over 65. The MAS-BOE group mapping was as follows:

Table 10: CMS Mappings of SSI Categories to CPS Control Total Categories		
<u>Control Total Categories</u>	<u>CMS Web Equivalents</u>	
	<u>MAS Group(s)</u>	<u>BOE Group(s) (within MAS)</u>
SSI Under 65	CA	BL, DS
SSI Aged	CA	AG

Once the MAS-BOE groups of recipients were collapsed, we calculated the number of recipients in the following institutionalized service categories: Skilled Nursing Facility, Mental Hospital Services for the Aged, SNF/ICF Services for the Aged, Inpatient Psychiatric Facility Services for Individuals Age 21 and Under, Services for Mentally Retarded, and All Other ICF Services. Because it is rare that one person would receive services from more than one of these categories during a year, we assumed that the counts of enrollees in each category contained no duplication with other categories.

Thus, the total count of recipients across these service categories has been presumed to be the number of institutionalized recipients. The counts in each of the control total categories were divided by the total number of unduplicated recipients in each in order to get the percent institutionalized by category. It should be noted that this process was done only for nine control total categories: duration of enrollment was not used in this adjustment process.

Once obtained, the percentages were used in order to adjust out institutionalized persons from our control total. In the case of SSI, where we only had splits for under and over age 65, the percentage for the under 65 population was applied both to the child and adult SSI categories.

For FFY 1999 and later, CMS made more detail available on the web site. Counts of recipients by MAS, BOE, and type of service, by state are now available. The institutionalized services listed are limited to three broader categories: Mental Health Facility, ICF/MR, and Nursing Facility Services. However, the sum of these categories is still the total institutionalized in the Medicaid population and is consistent with earlier years.

MSIS data for institutionalized services in FFY 1996 through FFY 1998 was only available as state totals. In those years we interpolated the MAS-BOE detail and calibrated to the total non-institutionalized counts available.

3.1.6 Projecting Control Totals

CMS data on enrollment is available for FFY 1990 (through raw MSIS) and FFY 1991 through FFY 2002 on CMS.gov. In order to cover all available years of the CPS (calendar years 1989 through 2003, in the March 1990 through March 2004 CPS), we need to have counts for FFY 1989 as well as counts for FFY 2002 through FFY 2004.

To estimate FFY 1989, we looked at relationships between FFY 1990 and FFY 1991. Starting with the counts of total enrollment, and ignoring the full-year and part-year cells, we calculated the trend from FFY 1990 to FFY 1991 by type of assistance across age group: Total AFDC/TANF, Total SSI, Total Other. These trends were then applied to the FFY 1990 counts in order to obtain Total AFDC/TANF, Total SSI, and Total Other counts for FFY 1989. Next, we used the FFY 1990 data to calculate the ratio, by assistance type, of each age group to the assistance type total. These ratios were applied to the FFY 1989 totals by type of assistance. Finally, we calculated the percent of enrollees who were full year in each control total cell in FFY 1990 and applied these to the FFY 1989 control total cells in order to obtain an estimate for all 18 control total cells.

For FFY 2002 and up, we controlled to ever-enrolled counts by BOE group from the FFY 2005 President's Budget, provided to ARC by the CMS Office of the Actuary (OAct). In the absence of information on trends in MAS enrollment, the MAS distributions are currently driven by the BOE control totals.

Beginning in FFY 2000, the MSIS Medicaid data contains counts of persons enrolled in the Family Planning Waiver under the 1115 demonstration in California. These persons do not receive standard Medicaid benefits and thus are not part of the target population. These persons

were removed from the data in FFY 2000-2001, and we extrapolated their enrollment and removed them from FFY 2002-2004 as well.

3.1.7 Controlling to CMS Age Group Counts

Once all the data was compiled by MAS-BOE, we compared the BOE totals (Total Child, Total Adult, Total Aged) to the CMS counts by age group for each year. The numbers did not match well. Research indicated that this was for several reasons, which included:

- People whose BOE group changed as they grew older (for example, an Adult or Blind/Disabled person turning 65) retained their original basis of eligibility in their Medicaid records.
- People were classified as Blind or Disabled regardless of age, so that this category (which we mapped into “Adult”) contained a number of people under age 21 and age 65 or older.

To make our control totals consistent with the age groupings in the CPS, we needed to control to the age group counts while maintaining the MAS-BOE relationships as much as possible. We assumed that the AFDC/TANF counts (Child and Adult) were correct, and controlled to the CMS age group counts by adjusting the BOE counts within SSI and Other.

3.1.8 Converting to Calendar Year

Our next step was to convert counts from a federal fiscal year to calendar year basis. For each year, the counts were estimated to be the sum of 75% of that federal fiscal year and 25% of the following fiscal year. For example, CY 99 = (75% of FFY 99 + 25% of FFY 00).

3.1.9 Removing Counts of Children with SCHIP

Using data from the Kaiser Family Foundation and CMS, we obtained counts of participants in the SCHIP program for CY1998 through CY 2003 (corresponding to the March 99 through March 2004 CPS files). These counts were partitioned by those in stand alone SCHIP programs vs. Medicaid expansions. Since our starting control totals included only those children in the Medicaid expansion programs, the count of children with non-cash Medicaid was reduced each year to account for this. The split between those with full year vs. partial year coverage among all non cash children was used to remove the Medicaid expansion children from each group.

The reduction in non cash kids due to this step ranged from 3% in 1998 to just over 6% in 2002. The overall reduction in Medicaid children ranged from 2% to 4%.

3.1.10 Estimating the Count of Persons with Medicare and Medicaid

This next, and final, step was done by age group (child, adult, aged) by type of Medicaid (SSI or non-cash). Our starting estimates of Medicare/Medicaid duals (henceforth called “duals”) were derived by starting with MSIS summary data for FFY 00. We will note at this point that we have decided to include all Medicare persons with any type of Medicaid payments in our count of “duals.” For FFY 00 there were approximately 6.6 million duals, not including those in Pennsylvania. Using information from the Medicaid and Medicare programs, estimating the

number in PA, and converting to a CY basis, we end up with approximately 7 million duals in CY 2000. Converting to a non- institutionalized basis, we end up with just under 5.5 million non- institutionalized duals for CY 2000. These duals are partitioned into the three age groups and cash (SSI) vs. non-cash Medicaid and then projected forward and backwards for the entire time period.

Data from CMS on counts of Medicaid paid buy-ins to the Medicare program (found at <http://www.cms.hhs.gov/researchers/pubs/datacompendium/2002/02pg33.pdf>) were used with MSIS generated counts of fully duals (see the report and appendix at: http://www.cmwf.org/programs/medfutur/dale_rxdualeligibles_ib_627.pdf and http://www.cmwf.org/programs/medfutur/dale_rxdualeligibles_appendix_627.pdf) in order to determine trend factors. While neither set of numbers were of the full dual universe (the CMS numbers excluded those duals who had no premium payment made, and the MSIS numbers used by the Commonwealth Fund authors were only for full benefit duals), the trends seen in both were consistent enough for us to use with our CY 2000 starting point. Cash and non cash were trended separately, using the CY 2000 information and controlled to the overall expected rates. The partition of full vs. part-year Medicaid coverage was made using data from the aged population, with non duals as a residual.

3.1.11 Targets

Table 11, below, presents our starting CMS Medicaid enrollment figures as well as our resulting target figures to which we control the CPS files. As noted previously, the CMS numbers are presented on a federal fiscal year (FFY) basis, while the resulting targets have been converted to a calendar year (CY) basis. In addition, the total counts of ever enrolled have been adjusted down to remove SCHIP and the institutionalized population.

Table 11: Persons Ever Enrolled in Medicaid, in Millions					
CMS Counts of Ever Enrolled, Total Population, by Fiscal Year					
	FY 01	FY 02	FY 03	FY 04	
Aged	4.705	4.852	5.006	5.082	
Disabled	8.029	8.363	8.698	8.894	
Child	22.740	23.921	25.036	25.665	
Adult	12.646	13.910	14.884	15.256	
Total	48.120	51.046	53.625	54.897	
ARC Adjusted Counts, Ever Enrolled, Non-Institutionalized Population, by Calendar Year					
	CY 01	CY 02	CY 03		
Aged	3.726	3.988	4.156		
Child	24.499	26.272	27.326		
Adult	14.378	15.643	16.390		
Total	42.604	45.903	47.872		
<i>Note: disabled have been spread into their appropriate age groups in the ARC adjusted counts</i>					

Table 12, below, presents a partition of the resulting Medicaid targets (from Figure 4 above) for CY 1994 (March 1995 CPS) through CY 2003 (March 2004 CPS). These are the numbers to which we control our Current Population Survey, and so are presented by date of CPS (March 1995 equals calendar year 1994).

Table 12: Medicaid Targets for the March 1995 - March 2004 CPS Files							
		AFDC Full Year	AFDC Part Year	SSI Full Year	SSI Part Year	Non Cash Full Year	Non Cash Part Year
Mar-95	Kids – no mcr	7,623,599	3,955,411	1,019,414	212,862	3,765,121	6,363,279
	Kids – mcr	0	0	15,495	3,095	8,076	5,062
	Adults - no mcr	3,323,274	2,316,334	1,268,292	271,884	1,053,677	2,614,098
	Adults – mcr	0	0	806,884	161,147	441,491	276,735
	Aged - no mcr	0	0	115,417	23,051	97,187	60,919
	Aged – mcr	0	0	1,437,568	287,105	728,990	456,944
Mar-96	Kids – no mcr	7,402,109	3,813,347	1,095,172	230,493	3,987,108	6,632,189
	Kids – mcr	0	0	16,111	3,107	8,399	5,182
	Adults - no mcr	3,166,881	2,107,955	1,512,860	332,595	1,178,113	2,792,584
	Adults – mcr	0	0	838,957	161,775	459,178	283,310
	Aged - no mcr	0	0	119,207	22,987	98,297	60,648
	Aged – mcr	0	0	1,484,783	286,309	737,315	454,918
Mar-97	Kids – no mcr	6,984,554	3,229,278	1,150,093	194,320	4,415,544	6,938,381
	Kids – mcr	0	0	17,544	2,643	9,139	5,128
	Adults - no mcr	2,830,856	1,715,918	1,666,125	297,532	1,336,080	2,984,140
	Adults – mcr	0	0	913,610	137,630	499,626	280,335
	Aged - no mcr	0	0	125,363	18,885	102,337	57,420
	Aged – mcr	0	0	1,561,453	235,224	767,622	430,705
Mar-98	Kids – no mcr	5,707,176	2,535,617	1,159,263	178,655	5,105,073	7,857,507
	Kids – mcr	0	0	18,821	2,588	9,814	5,317
	Adults - no mcr	2,461,360	1,443,595	1,540,463	252,985	1,529,211	3,310,288
	Adults – mcr	0	0	980,104	134,793	536,517	290,675
	Aged - no mcr	0	0	132,589	18,235	98,228	53,218
	Aged – mcr	0	0	1,651,463	227,125	736,801	399,185
Mar-99	Kids – no mcr	5,108,448	2,151,949	1,200,266	163,834	5,368,038	8,055,298
	Kids - mcr	0	0	20,103	2,396	10,476	5,425
	Adults - no mcr	2,190,673	1,229,438	1,712,863	251,143	1,687,849	3,550,784
	Adults - mcr	0	0	1,046,842	124,763	572,692	296,575
	Aged - no mcr	0	0	129,573	15,443	109,985	56,957

Table 12: Medicaid Targets for the March 1995 - March 2004 CPS Files							
		AFDC Full Year	AFDC Part Year	SSI Full Year	SSI Part Year	Non Cash Full Year	Non Cash Part Year
	Aged - mcr	0	0	1,613,894	192,345	824,989	427,229
Mar-00	Kids – no mcr	4,598,595	1,937,172	1,162,263	158,671	5,738,995	8,611,671
	Kids - mcr	0	0	20,929	2,494	10,906	5,648
	Adults - no mcr	1,932,309	1,084,440	2,088,281	303,013	1,706,153	3,609,802
	Adults - mcr	0	0	1,089,857	129,890	596,224	308,761
	Aged - no mcr	0	0	130,995	15,612	114,558	59,325
	Aged - mcr	0	0	1,631,601	194,455	859,292	444,994
Mar-01	Kids – no mcr	4,623,142	1,947,513	1,172,418	160,070	6,113,490	9,173,385
	Kids - mcr	0	0	21,836	2,602	11,379	5,893
	Adults - no mcr	2,000,636	1,122,787	1,998,767	291,625	1,794,704	3,791,129
	Adults - mcr	0	0	1,137,122	135,523	622,081	322,151
	Aged - no mcr	0	0	131,885	15,718	120,245	62,270
	Aged - mcr	0	0	1,642,691	195,777	901,951	467,085
Mar-02	Kids - no mcr	4,799,797	2,021,929	1,265,555	172,759	6,477,870	9,719,543
	Kids - mcr	0	0	21,963	2,618	11,445	5,927
	Adults - no mcr	2,231,251	1,252,211	2,130,932	309,739	2,029,531	4,195,058
	Adults – mcr	0	0	1,143,700	136,307	625,679	324,015
	Aged - no mcr	0	0	134,051	15,976	132,325	68,526
	Aged – mcr	0	0	1,669,665	198,992	992,561	514,008
Mar-03	Kids - no mcr	4,944,689	2,082,965	1,528,091	208,512	6,986,061	10,480,937
	Kids – mcr	0	0	21,521	2,565	11,215	5,808
	Adults - no mcr	2,521,249	1,414,962	2,342,057	338,105	2,263,429	4,578,242
	Adults – mcr	0	0	1,120,696	133,565	613,094	317,498
	Aged - no mcr	0	0	143,456	17,097	141,610	73,334
	Aged – mcr	0	0	1,786,818	212,954	1,062,205	550,074
Mar-04	Kids - no mcr	5,147,796	2,168,525	1,615,888	220,479	7,251,640	10,879,205
	Kids – mcr	0	0	22,003	2,622	11,466	5,938
	Adults - no mcr	2,646,542	1,485,279	2,466,521	355,487	2,391,019	4,811,679
	Adults – mcr	0	0	1,145,834	136,561	626,847	324,619
	Aged - no mcr	0	0	149,501	17,818	147,577	76,424
	Aged – mcr	0	0	1,862,104	221,927	1,106,960	573,251

3.2 Implementing the Medicaid Control Totals

Once we have our control totals, the next step was to use them to correct for the undercount in Medicaid recipients on the CPS files. We begin our process using the partially adjusted CPS

files (as described in section 2 above). Once these adjustments were done, the steps taken to implement the Medicaid control totals included: 1) align the CPS with the control totals, 2) model eligibility for the Medicaid program, 3) adjust for cells containing an overcount, and 4) adjust for the presence of the undercount.

3.2.1 Aligning the CPS Files with Control Total Cells

The first step in adjusting the CPS for the control totals as calculated in the above section is to see how the CPS lines up with the CMS data. As mentioned previously, our Medicaid control total categories were expanded to include those with both Medicare and Medicaid partitioned by the three age groups (21 and under, 22 through 64, and 65 and over). The types of Medicaid (hierarchically) were: SSI, AFDC/TANF, and Other (non-cash). While age is a person attribute on the CPS, SSI and AFDC/TANF coverage are not explicitly so. Therefore, we created yes/no flags on our person level CPS extract to track SSI and AFDC/TANF coverage.

SSI and AFDC/TANF are only coded for persons 15 and up on the CPS. While SSI was determined to be a person level attribute for those 15 and older, we needed to adjust for the under 15 population. This was done by looking at families where the person who was flagged as SSI did not appear to be disabled, but there appeared to be a disabled child in the family. In these situations, the SSI flag was moved from the adult to the disabled child. AFDC/TANF was determined to be a family level attribute. That is, if one person in a census family was determined to have AFDC/TANF coverage, AFDC/TANF was assigned to all persons in that census family. The only exception to this situation was that AFDC/TANF was not permitted for persons on Medicare or over 65. In these cases, the AFDC/TANF flag was changed to SSI before the allocation of SSI or AFDC/TANF was done.

Once the SSI and AFDC/TANF flags were calculated, we needed to add a flag for duration of Medicaid in order to line up the CPS counts of enrollees with our control totals. For March 1995 forward this was a fairly straightforward process, as we used the “months on Medicaid” CPS variable. All Medicaid enrollees were then tabulated by duration (full year (12 months) vs. part year (1-11 months) as well as unknowns) and these totals were compared to the control totals.

For many of the cells that had records with unknown durations of Medicaid coverage, the undercounts (CPS vs. control total counts) were much larger for the part year cells than for the full year ones. Due to this fact, we decided to assign all Medicaid enrollees with unknown duration to be part year enrollees. These persons were then assigned a value that corresponded to the average months covered under Medicaid, if covered part year, and this value varied by whether Medicaid was cash or non-cash related. These average durations were obtained by looking at CMS Medicaid program data.

3.2.2 Modeling Eligibility for the Medicaid Program

Modeling eligibility assists us in determining how to adjust the CPS for a more accurate count of Medicaid covered persons, given the undercount present on the March CPS. The March Current Population Survey (CPS) files contain information needed in order to model eligibility for the federal / state Medicaid program, as well as the State Children’s Health Insurance Program

(SCHIP). Age, sex, income, state of residence and family structure were all used in order to determine if a person (or family) was eligible for Medicaid or SCHIP when compared to the state (or federal floor) guidelines.

There are several types of program eligibility that we modeled. They included the following Medicaid categories: federal poverty guidelines for children, state optional guidelines for children, guidelines for pregnant women, low-income families, and the elderly, as well as guidelines for the State Children's Health Insurance Program. These categories are described in detail in our memo "Modeling Medicaid Eligibility on the March 2002 CPS," 14 July 2003. In each case, income was defined as "countable" income, and a requirement for eligibility included U.S. citizenship or residency in the U.S. prior to 1996. Anyone entering after 1996 is barred from receiving benefits for five years. Modeling "spend-down" was not possible, due to the lack of medical expenditures on the CPS file.

It is important to note, that even though we modeled many types of Medicaid eligibility, we did not use eligibility as a mandatory for imputing Medicaid coverage. Once eligibility was modeled, we looked at how Medicaid coverage on the CPS lined up with our classifications of eligible and not eligible, and found simulated eligibility to be a poor predictor of CPS Medicaid coverage for certain types of Medicaid such as SSI, the aged, and Medicare/Medicaid duals. Thus, eligibility was used as a variable only for AFDC/TANF and non-cash non-dual children and adults. Poverty, instead of eligibility, was used for SSI (all ages) and for all classifications for the aged and dual Medicare / Medicaid persons.

3.2.3 Where CPS higher than CMS - Adjusting for the Overcount

Using our thirty-six cell partition of the control totals (age by Medicare by six way Medicaid split), we identified cells where the CPS counts of Medicaid enrollees are higher than the CMS Medicaid program counts of enrollees. The most common areas of overcounting were with respect to dual Medicare / Medicaid covered. In the event of dual overcounts for children, we removed Medicare coverage when necessary whereas adults were reclassified either by length of time on Medicaid or type of Medicaid (in particular, not allowing AFDC/TANF for duals). For all others (non duals), we moved persons into the most "likely" cell in the event of an overcount (that is, moving from full year to part year or part year to full year within a type of Medicaid).

In general, persons in overcount cells were reassigned based on the probability of that cell having an overcount. That is, if 5% of the kids who were Medicaid, SSI Part Year needed to move out of that cell, a random number was drawn each time a kid in that category was found. If the random number was less than or equal to 0.05, then that record was reassigned to be SSI Full Year. It should be noted that the overcount adjustment never removed Medicaid coverage and in most cases only adjusted the length of time a person was on Medicaid.

3.2.4 Where CPS is lower than CMS - Adjusting for the Undercount

Once the CPS files had been adjusted for cells with overcounts, the files were again retabulated in order to make the larger adjustment: bringing the CPS counts of Medicaid enrollees up to a basis consistent with CMS. After exploring many different dimensions for the adjustment

process, the following characteristics were used within each of the thirty-six control total cells: eligibility / poverty, family type, and insurance / work status. These are defined in Table 13 below:

Table 13: Dimensions by which Undercount is Adjusted		
Dimension	Basis	Partitions
Phase I: Non Medicare Children and Adults < 65		
Poverty/Eligibility	Eligibility calculated by state Poverty is Census variable "POVLL"	Eligible for Medicaid Not Elig., <200% Poverty Not Elig., >=200% Poverty
Family Type	Census Family (calculated)	Single Couple 1 Adult + Kid(s) 2 Adults + Kid(s)
Insurance / Work Status (combination category: 9 choices)	Insurance is Person Based	ESI (PH or Dependent) Other Insurance (public or private) No Insurance
	Work Status is Census Family Based	Full Year (>= 50 weeks) Part Year (1-49 weeks) No Workers in Family
Phase II: Medicare Children and Adults < 65, and All Persons 65+		
Poverty	Poverty is Census variable "POVLL"	<100% Poverty 100% - <200% Poverty >=200% Poverty
Family Type	Census Family (calculated)	Single Couple 1 Adult + Kid(s) 2 Adults + Kid(s)
Insurance / Work Status (combination category: 9 choices)	Insurance is Person Based	ESI (PH or Dependent) Other Insurance (public or private) No Insurance
	Work Status is Census Family Based	Full Year (>= 50 weeks) Part Year (1-49 weeks) No Workers in Family

As shown in Table 13, above, the undercount correction was done in two phases. The first phase was composed of non-Medicare non-SSI children and adults under age 65. The second phase was composed of all Medicaid duals, as well as SSI children, SSI adults, and all aged persons. The main difference between the two phases was the use of Medicaid eligibility in phase I, and the use of poverty alone in phase II.

In order to determine how to adjust for Medicaid coverage, we looked at the prevalence of that coverage by the dimensions above, within each of the control total categories. Thus, for each of the thirty-six categories, there were 108 cells (3 poverty * 4 family types * 9 insurance / work status). This distribution over the 108 cells within category was used to move people without

Medicaid into Medicaid. That is, if AFDC/TANF Full Year Kids needed to be adjusted up by 20%, then that amount was taken from kids without Medicaid coverage proportional to the distribution by the above cells (eligibility/poverty by family type by insurance/work status) for those with Full Year AFDC/TANF coverage (so it would be predominantly eligible children, in families with kids, and likely not full year working families).

Persons to whom Medicaid coverage was imputed were selected based on how well their characteristics matched the characteristics of persons with Medicaid on the CPS. That is, if children on the CPS who were eligible, in single parent families, with no working adult and some other type of insurance were more likely to have Medicaid than children who were otherwise similar except in two parent families, then children from the first category would be more likely to be imputed Medicaid. What this process does is attempt to match the existing profile of persons with Medicaid to those persons imputed Medicaid – that is, find more of the same type of persons who were already found to have Medicaid. This profile holds for age, income or eligibility, insurance and work status.

3.3 A Look at the Change in the Number of Uninsured

Since our imputation of Medicaid coverage is based on the profile found on the CPS file for those persons with Medicaid, we find that only some of our new Medicaid covered persons had previously been uninsured. Overall, this percent was as high as 60% for the March 97 and March 98 files, and down to 50% for the March 2003 file.

Looking purely by age, the following table shows our starting targets for Medicaid, our CPS starting point (post SCHIP and verification adjustments), and our final post-imputation counts. One item also of interest is that the shortfall seems to have dramatically increased in the era of de-linking Medicaid from receipt of cash payments, perhaps pointing to an area where CPS respondents are not aware of coverage they might have access to.

Table 14: Uninsured Impact, in Millions of Persons										
	Mar-95	Mar-96	Mar-97	Mar-98	Mar-99	Mar-00	Mar-01	Mar-02	Mar-03	Mar-04
TARGETS: Medicaid for Non-Institutionalized Population (No SCHIP but All Classes of Medicaid)										
Kids	23.0	23.2	22.9	22.6	22.1	22.2	23.2	24.5	26.3	27.3
Adults	12.5	12.8	12.7	12.5	12.7	12.8	13.2	14.4	15.6	16.4
Aged	3.2	3.3	3.3	3.3	3.4	3.5	3.5	3.7	4.0	4.2
Total	38.7	39.3	38.9	38.4	38.1	38.5	40.0	42.6	45.9	47.9
ARC STARTING POINT (Census 2000 Weights, Verification/SCHIP adjusted)										
Medicaid										
Kids	17.0	17.4	16.3	15.6	14.9	14.7	13.7	15.0	15.5	17.1
Adults	10.4	10.5	10.5	9.7	9.0	8.9	8.7	9.7	10.0	10.7
Aged	2.6	2.6	2.9	2.7	2.6	2.8	3.1	3.0	3.1	3.0
Total	30.0	30.4	29.7	27.9	26.5	26.4	25.5	27.7	28.6	30.8

Table 14: Uninsured Impact, in Millions of Persons											
	Mar-95	Mar-96	Mar-97	Mar-98	Mar-99	Mar-00	Mar-01	Mar-02	Mar-03	Mar-04	
Uninsured											
Kids	11.3	11.2	12.2	12.5	13.0	12.0	11.4	11.5	11.4	11.2	
Adults	25.2	26.3	26.5	27.7	28.5	27.9	27.9	29.5	31.9	33.4	
Aged	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.3	0.3	0.3	
Total	36.8	37.7	38.9	40.5	41.6	40.2	39.6	41.2	43.6	45.0	
ARC ADJUSTED COUNTS											
Medicaid											
Kids	23.1	23.3	23.0	22.6	22.1	22.3	23.3	24.5	26.4	27.3	
Adults	12.6	12.9	12.8	12.5	12.8	12.9	13.4	14.4	15.7	16.5	
Aged	3.2	3.0	3.2	3.2	3.1	3.4	3.4	3.7	4.0	4.1	
Total	38.9	39.2	38.9	38.3	38.0	38.6	40.0	42.6	46.0	48.0	
Uninsured											
Kids	7.5	7.4	8.0	8.1	8.3	7.8	6.5	6.4	5.8	6.0	
Adults	24.2	25.1	25.4	26.2	26.3	25.7	25.3	26.6	28.5	29.7	
Aged	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
Total	31.9	32.7	33.5	34.4	34.8	33.7	31.9	33.2	34.5	35.9	
New Medicaid											
Kids	6.1	5.9	6.7	7.0	7.3	7.6	9.6	9.5	10.8	10.2	
Adults	2.2	2.4	2.3	2.8	3.7	3.9	4.7	4.8	5.7	5.8	
Aged	0.6	0.4	0.3	0.5	0.4	0.7	0.3	0.7	0.9	1.2	
Total	8.9	8.8	9.2	10.3	11.4	12.2	14.5	14.9	17.4	17.2	
Persons Gaining Insurance											
Kids	3.8	3.8	4.3	4.4	4.6	4.2	5.0	5.1	5.6	5.2	
Adults	1.0	1.2	1.1	1.6	2.1	2.2	2.6	2.8	3.4	3.7	
Aged	0.1	0.0	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.1	
Total	4.9	5.0	5.4	6.1	6.8	6.5	7.7	8.0	9.1	9.1	
Uninsured Impact (What % of new Medicaid were uninsured)											
Kids	62.92%	64.18%	64.07%	63.41%	63.89%	55.09%	52.20%	53.60%	51.48%	51.01%	
Adults	46.54%	48.81%	47.01%	56.79%	57.03%	57.02%	56.55%	59.71%	60.80%	64.86%	
Aged	9.50%	6.26%	26.82%	5.34%	3.18%	11.79%	25.21%	13.79%	11.37%	9.69%	
Total	55.07%	57.01%	58.68%	58.63%	59.32%	53.36%	53.05%	53.67%	52.49%	52.87%	

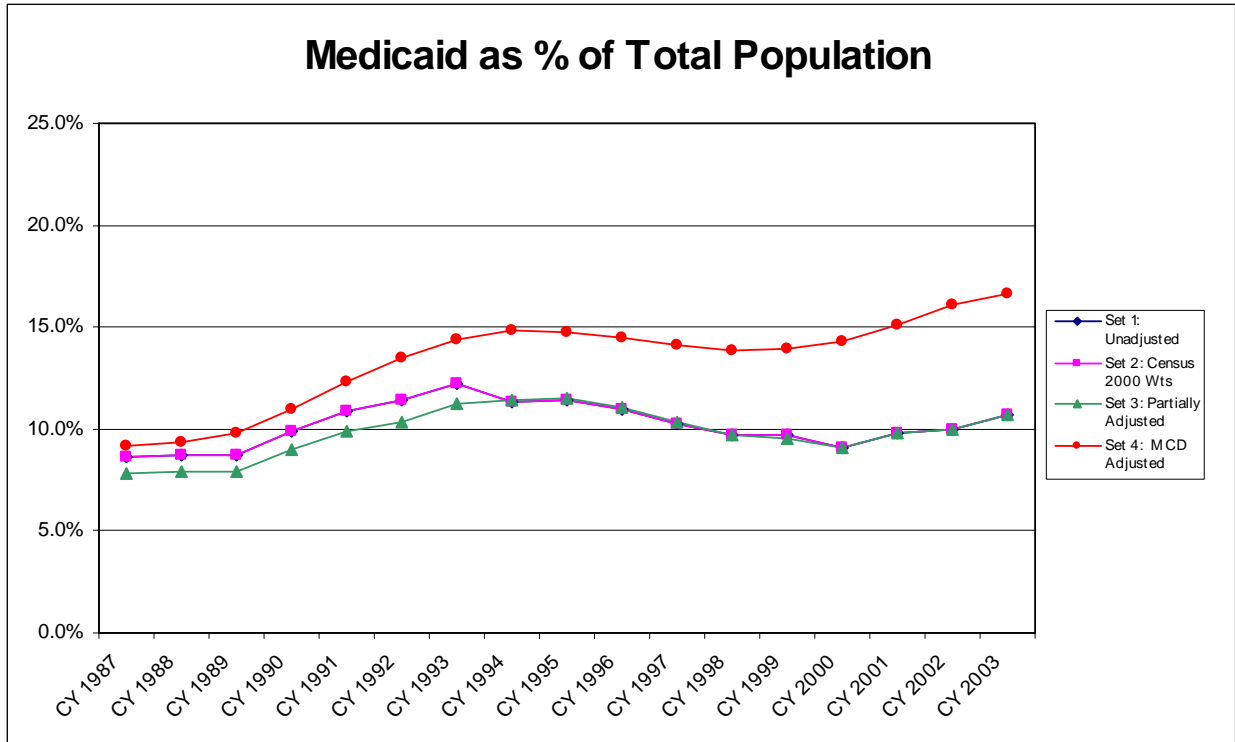
The Medicaid adjustment adds one more set of estimates to our adjusted data. We refer to these estimates, here, as “set 4,” with “set 1” being the unadjusted CPS data, “set 2” being the CPS data adjusted for the 2000 decennial weights, “set 3” being all adjustments described in sections two and three of this paper (prior to the Medicaid undercount). Using these names for the steps of our adjustments, Medicaid and uninsured counts are shown below in Table 15. Prevalence

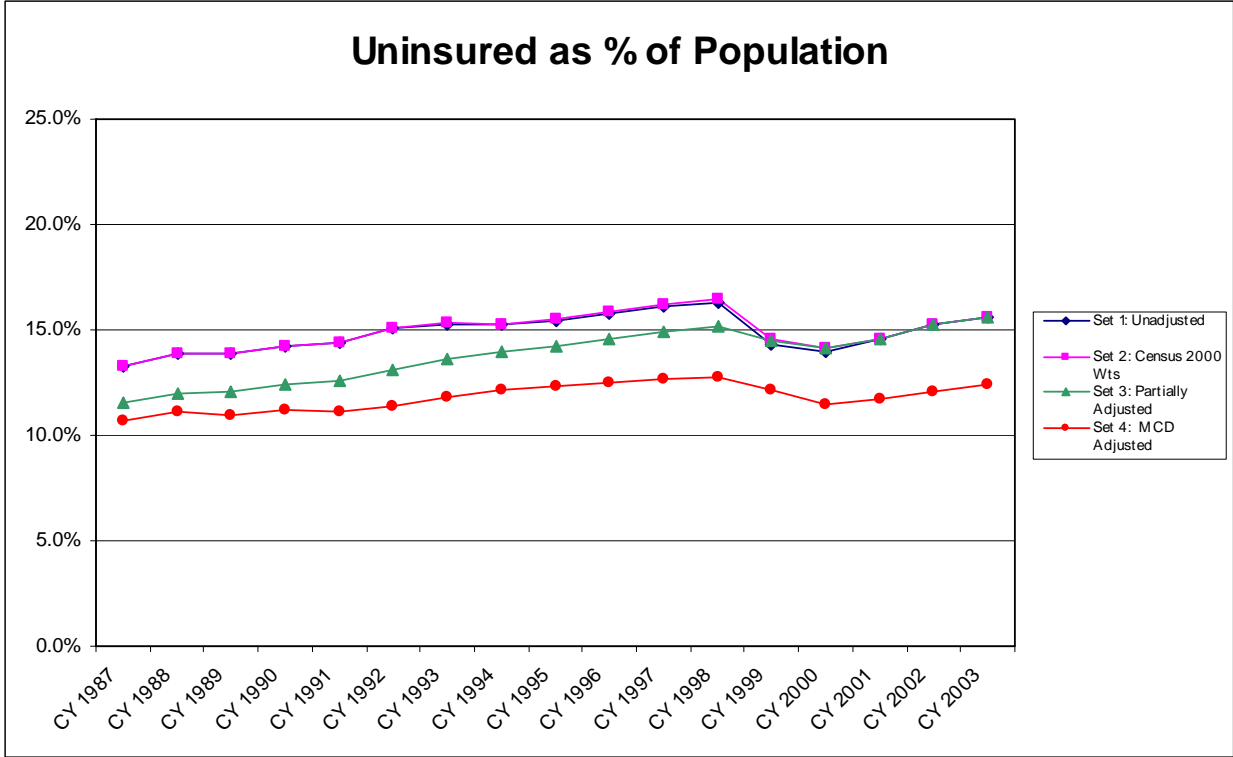
of Medicaid and the uninsured (as a percent of total population) is shown below in Table 15A. Graphs for both of these subpopulations (as a percent of total population) are shown following the tables. Each table, and graph, displays the information for all four sets described above.

Table 15: Medicaid and the Uninsured (Counts in Millions)								
	Medicaid				Uninsured			
	Set 1: Unadjusted	Set 2: Census 2000 Wts	Set 3: Partially Adjusted	Set 4: MCD Adjusted	Set 1: Unadjusted	Set 2: Census 2000 Wts	Set 3: Partially Adjusted	Set 4: MCD Adjusted
CY 1987	20.8	20.8	18.8	22.1	32.1	32.1	27.8	25.9
CY 1988	21.3	21.3	19.3	22.9	33.8	33.8	29.2	27.2
CY 1989	21.8	21.8	19.7	24.4	34.5	34.5	29.9	27.2
CY 1990	25.0	25.0	22.6	27.7	35.8	35.8	31.2	28.3
CY 1991	27.7	27.7	25.1	31.4	36.6	36.7	32.0	28.3
CY 1992	29.4	29.5	26.7	34.7	38.6	38.8	33.8	29.2
CY 1993	31.7	21.8	29.2	37.4	39.7	39.9	35.4	30.7
CY 1994	29.8	29.8	30.0	38.9	39.9	40.1	36.8	31.9
CY 1995	30.1	30.2	30.4	39.2	40.9	41.2	37.7	32.7
CY 1996	29.3	29.5	29.7	38.9	42.0	42.4	38.9	33.5
CY 1997	27.6	27.8	27.9	38.3	43.4	44.0	40.5	34.4
CY 1998	26.4	26.6	26.5	38.0	44.3	45.0	41.6	34.8
CY 1999	26.5	26.8	26.4	38.6	39.3	40.2	40.2	33.7
CY 2000	25.2	25.5	25.5	40/0	38.7	39.6	39.6	31.9
CY 2001	27.7	27.7	27.7	42.6	41.2	41.2	41.2	33.2
CY 2002	28.6	28.6	28.6	46.0	43.6	43.6	43.6	34.5
CY 2003	30.8	30.8	30.8	48.0	45.0	45.0	45.0	35.9

Table 15a: Medicaid and the Uninsured as % of Total Population								
	Medicaid				Uninsured			
	Set 1: Unadjusted	Set 2: Census 2000 Wts	Set 3: Partially Adjusted	Set 4: MCD Adjusted	Set 1: Unadjusted	Set 2: Census 2000 Wts	Set 3: Partially Adjusted	Set 4: MCD Adjusted
CY 1987	8.6%	8.6%	7.8%	9.2%	13.3%	13.3%	11.5%	10.7%
CY 1988	8.7%	8.7%	7.9%	9.4%	13.9%	13.9%	12.0%	11.1%
CY 1989	8.8%	8.8%	7.9%	9.8%	13.9%	13.9%	12.0%	10.9%
CY 1990	9.9%	9.9%	9.0%	11.0%	14.3%	14.3%	12.4%	11.2%
CY 1991	10.9%	10.9%	9.9%	12.3%	14.4%	14.4%	12.6%	11.2%
CY 1992	11.5%	11.5%	10.4%	13.5%	15.0%	15.1%	13.1%	11.3%
CY 1993	12.2%	12.2%	11.2%	14.4%	15.3%	15.3%	13.6%	11.8%
CY 1994	11.4%	11.4%	11.4%	14.8%	15.2%	15.3%	14.0%	12.1%
CY 1995	11.4%	11.4%	11.5%	14.8%	15.5%	15.5%	14.2%	12.3%
CY 1996	11.0%	11.0%	11.1%	14.5%	15.7%	15.8%	14.5%	12.5%
CY 1997	10.3%	10.3%	10.3%	14.2%	16.1%	16.2%	15.0%	12.7%
CY 1998	9.7%	9.7%	9.7%	13.9%	16.3%	16.4%	15.2%	12.7%
CY 1999	9.7%	9.7%	9.6%	13.9%	14.3%	14.5%	14.5%	12.2%
CY 2000	9.1%	9.1%	9.1%	14.3%	14.0%	14.2%	14.2%	11.4%

	Medicaid				Uninsured			
	Set 1: Unadjusted	Set 2: Census 2000 Wts	Set 3: Partially Adjusted	Set 4: MCD Adjusted	Set 1: Unadjusted	Set 2: Census 2000 Wts	Set 3: Partially Adjusted	Set 4: MCD Adjusted
CY 2001	9.8%	9.8%	9.8%	15.1%	14.6%	14.6%	14.6%	11.8%
CY 2002	10.0%	10.0%	10.0%	16.1%	15.2%	15.2%	15.2%	12.0%
CY 2003	10.7%	10.7%	10.7%	16.6%	15.6%	15.6%	15.6%	12.5%





4. Private Insurance in Depth

Private insurance covers most people in the United States. Persons with employer sponsored insurance make up the majority of those with private insurance. In order to look at the changing dynamics of the private market over time, the following section includes a more in depth look at both individual and employer sponsored insurance than the overall statistics presented thus far.

4.1 The Components of Private Insurance

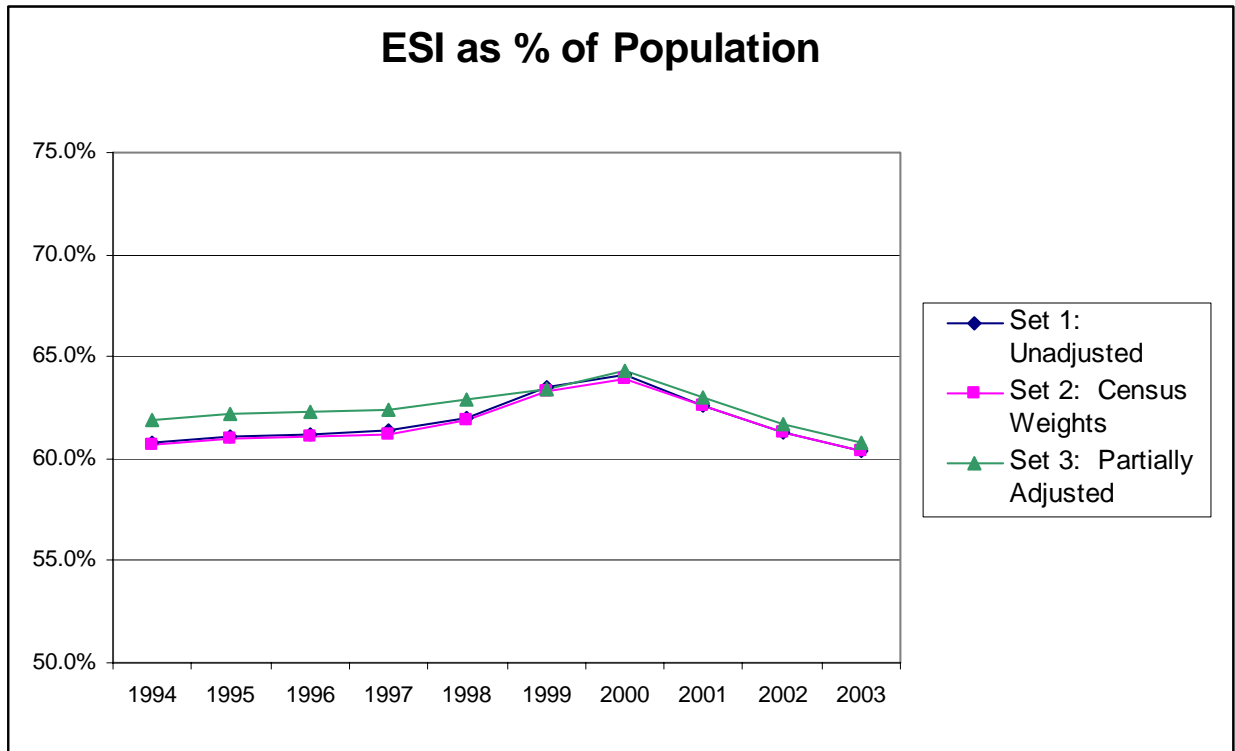
The tables in this section look at unadjusted CPS and two of the three adjustments made. As mentioned earlier in Section 2.4, the unadjusted data will be referred to as “Set 1,” adjustments due to the 2000 Census weights will be referred to as “Set 2,” and the data reflecting adjustments for verification, SCHIP and ESI age and outside coverage will be referred to as “Set 3” (or “partially adjusted”). Our final adjustment, for the Medicaid undercount, will not be addressed in this section, as it does not impact the private insurance estimates shown below.

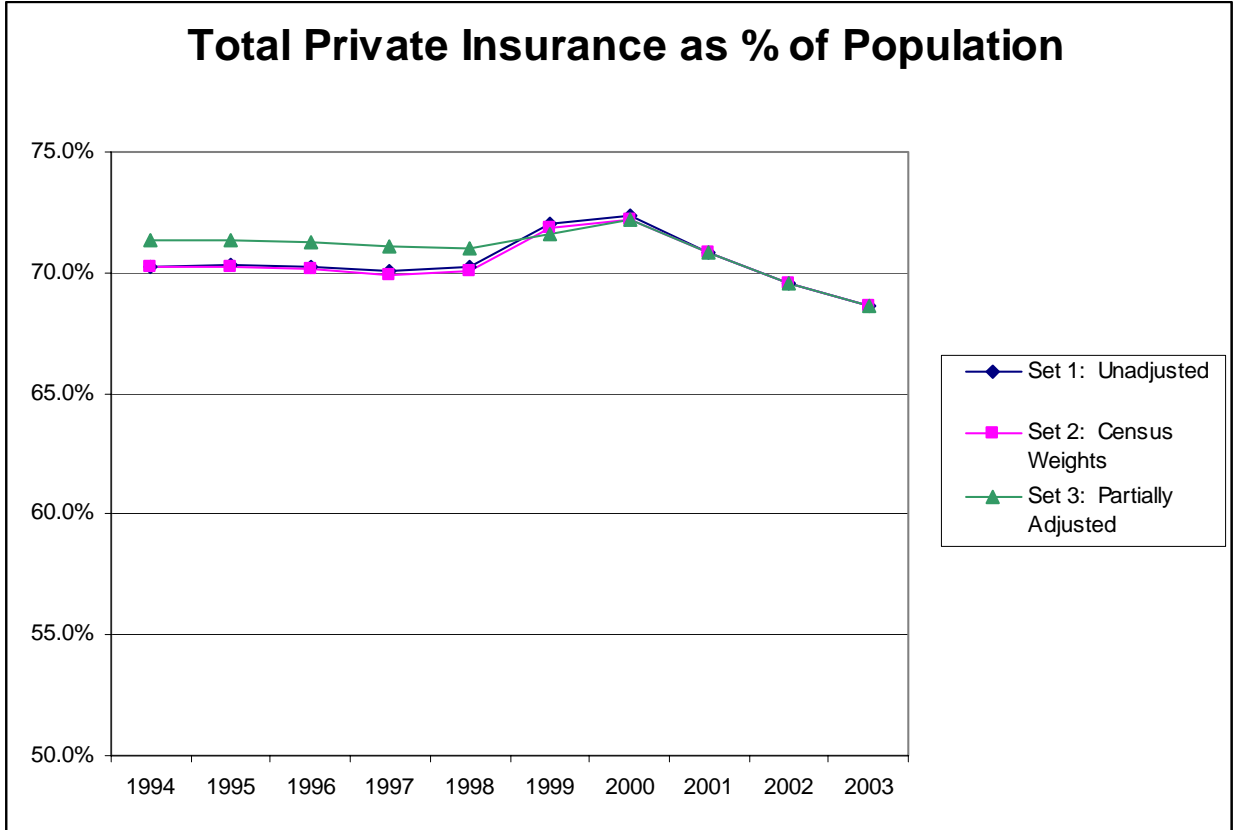
Because the level of detail in these tables is not compatible with our analysis of the years prior to March 1995, they are only presented for our “core” time period of CY 1994 through CY 2003. The three data sets are shown in Tables 16 and 16a, below, as well as in the graphs that follow the tables.

	ESI			Total Private Insurance		
	Set 1: Unadjusted	Set 2: Census 2000 Wts	Set 3: Partially Adjusted	Set 1: Unadjusted	Set 2: Census 2000 Wts	Set 3: Partially Adjusted
CY 1994	159.3	159.6	162.6	184.2	184.5	187.3
CY 1995	161.5	161.8	165.0	185.9	186.3	189.3
CY 1996	163.2	163.6	166.8	187.4	188.0	190.9
CY 1997	165.1	165.6	168.8	188.5	189.2	192.3
CY 1998	168.6	169.3	172.2	190.9	191.8	194.4
CY 1999	174.1	175.1	175.5	197.5	198.8	198.2
CY 2000	177.3	178.5	179.6	200.2	201.8	201.8
CY 2001	176.6	176.6	177.7	199.9	199.9	199.9
CY 2002	175.3	175.3	176.4	199.0	199.0	199.0
CY 2003	174.0	174.0	175.2	197.9	197.9	197.9

	ESI			Total Private Insurance		
	Set 1: Unadjusted	Set 2: Census 2000 Wts	Set 3: Partially Adjusted	Set 1: Unadjusted	Set 2: Census 2000 Wts	Set 3: Partially Adjusted
CY 1994	60.8%	60.7%	61.9%	70.3%	70.2%	71.3%
CY 1995	61.1%	61.0%	62.2%	70.3%	70.2%	71.4%

Table 16a: Tracking ESI and Total Private Insurance, CY 1994 through CY 2003						
	ESI			Total Private Insurance		
	Set 1: Unadjusted	Set 2: Census 2000 Wts	Set 3: Partially Adjusted	Set 1: Unadjusted	Set 2: Census 2000 Wts	Set 3: Partially Adjusted
CY 1996	61.2%	61.1%	62.3%	70.2%	70.1%	71.2%
CY 1997	61.4%	61.2%	62.4%	70.1%	69.9%	71.1%
CY 1998	62.0%	61.9%	62.9%	70.2%	70.1%	71.0%
CY 1999	63.5%	63.3%	63.4%	72.1%	71.8%	71.6%
CY 2000	64.1%	63.9%	64.3%	72.4%	72.2%	72.2%
CY 2001	62.6%	62.6%	63.0%	70.9%	70.9%	70.9%
CY 2002	61.3%	61.3%	61.7%	69.6%	69.6%	69.6%
CY 2003	60.4%	60.4%	60.8%	68.6%	68.6%	68.6%



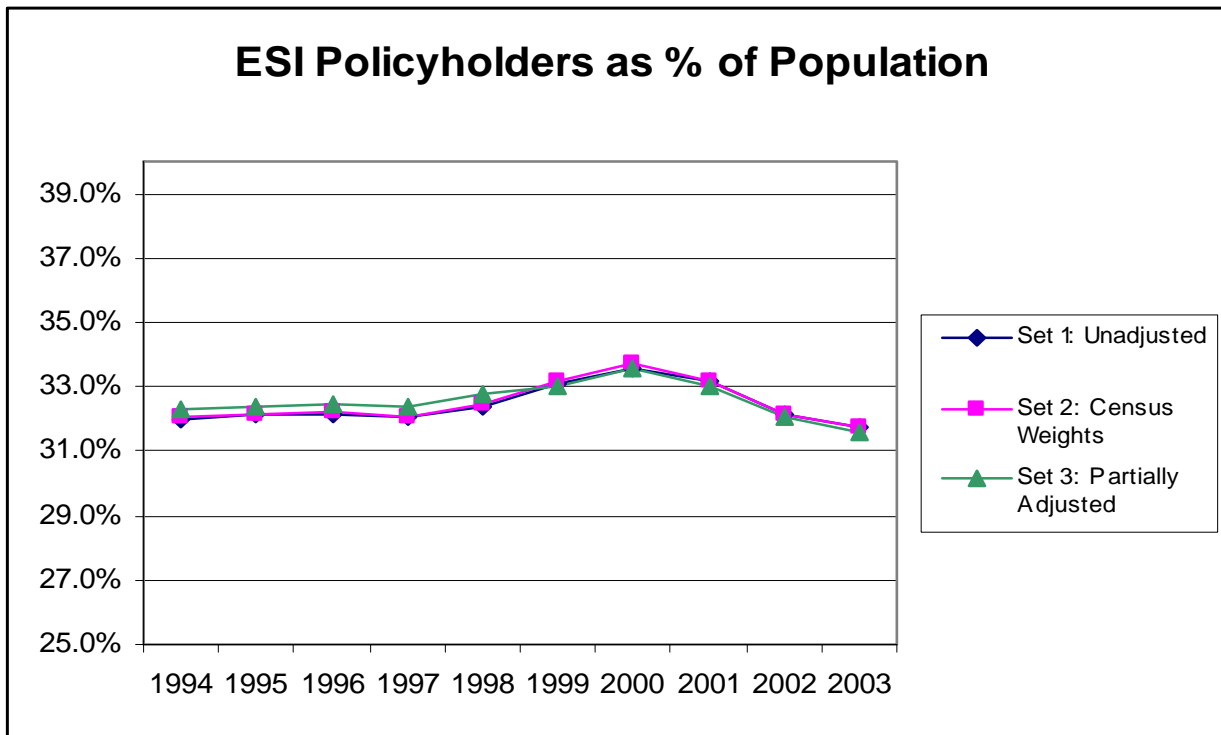


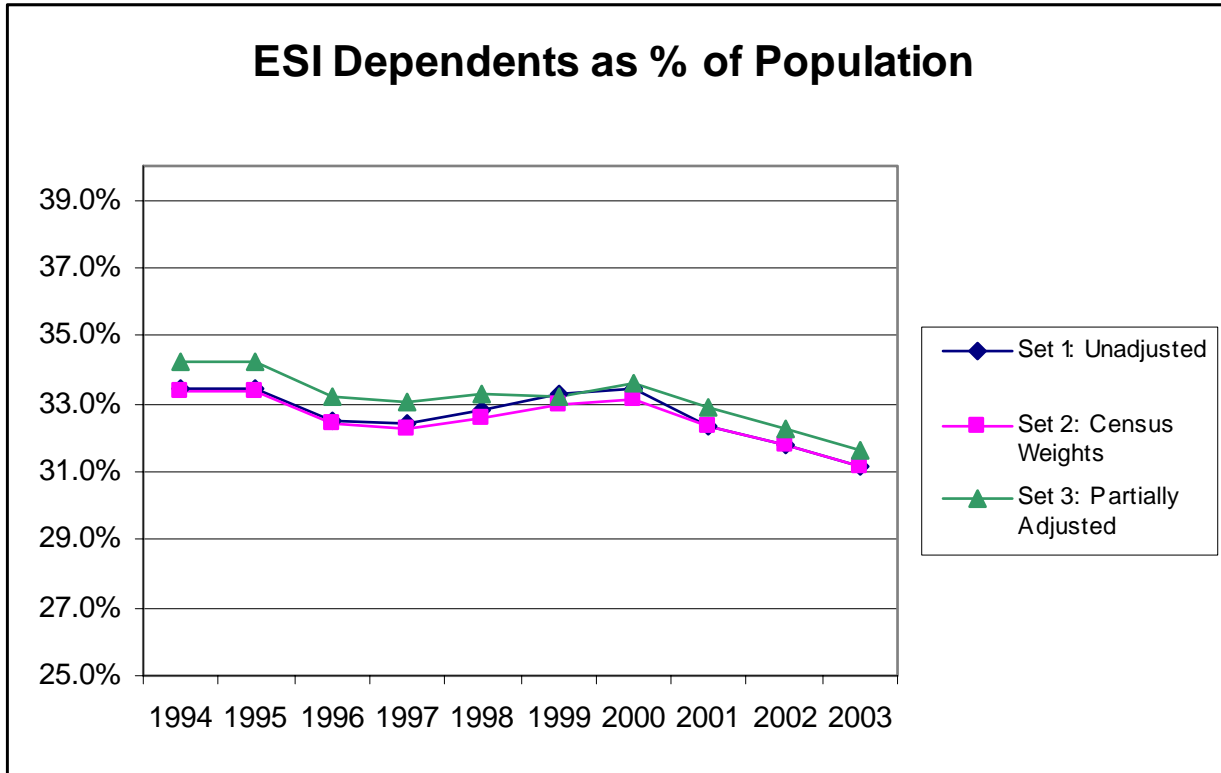
As mentioned above, the changes made within private insurance (employer sponsored and other private) affected counts by policy holder vs. dependent status. Counts of persons by type of insurance, and status, are shown below.

Table 17: Policy Holders and Dependents (in Millions)						
	ESI Policyholders			ESI Dependents		
	Set 1: Unadjusted	Set 2: Census 2000 Wts	Set 3: Partially Adjusted	Set 1: Unadjusted	Set 2: Census 2000 Wts	Set 3: Partially Adjusted
CY 1994	83.9	84.2	84.8	87.7	87.7	89.9
CY 1995	84.9	85.2	85.9	88.4	88.4	90.7
CY 1996	85.8	86.3	87.0	86.8	86.8	89.1
CY 1997	86.2	86.8	87.7	87.3	87.3	89.5
CY 1998	87.9	88.7	89.7	89.2	89.1	91.0
CY 1999	90.7	91.7	91.3	91.3	91.3	92.0
CY 2000	92.9	94.2	93.7	92.5	92.6	94.0
CY 2001	93.6	93.6	93.2	91.2	91.2	92.7
CY 2002	92.0	92.0	91.6	91.0	91.0	92.3
CY 2003	91.5	91.5	91.2	89.8	89.8	91.2

Table 17a: Policy Holders and Dependents as % of Population						
	ESI Policyholders			ESI Dependents		
	Set 1: Unadjusted	Set 2: Census 2000 Wts	Set 3: Partially Adjusted	Set 1: Unadjusted	Set 2: Census 2000 Wts	Set 3: Partially Adjusted
CY 1994	32.0%	32.0%	32.3%	33.5%	33.4%	34.2%
CY 1995	32.1%	32.1%	32.4%	33.4%	33.3%	34.2%
CY 1996	32.2%	32.2%	32.5%	32.5%	32.4%	33.2%
CY 1997	32.1%	32.1%	32.4%	32.4%	32.3%	33.1%
CY 1998	32.4%	32.4%	32.8%	32.8%	32.6%	33.3%
CY 1999	33.1%	33.1%	33.0%	33.3%	33.0%	33.2%
CY 2000	33.6%	33.7%	33.5%	33.5%	33.1%	33.6%
CY 2001	33.2%	33.2%	33.0%	32.3%	32.3%	32.9%
CY 2002	32.2%	32.2%	32.0%	31.8%	31.8%	32.3%
CY 2003	31.7%	31.7%	31.6%	31.2%	31.2%	31.6%

As noted earlier, we can see that the March 2002 through March 2004 surveys already reflect the Census 2000 weights and thus sets 1 and 2 are identical. In addition, there is very little change going to the partially adjusted set in the later years. From March 2000 forward, the survey already has verification questions and as of March 2001, SCHIP. There are thus fewer changes between sets 2 and 3 for these years.





4.2 Trends in ESI Coverage over Time

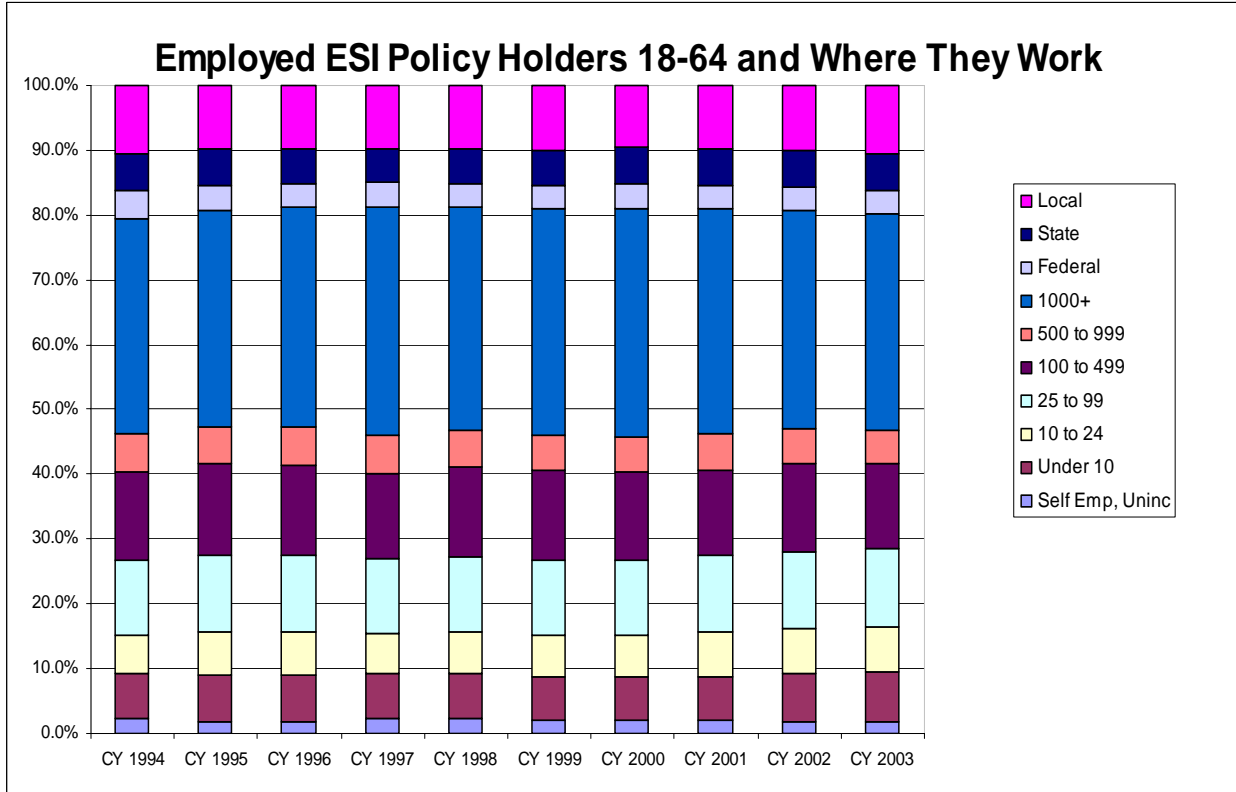
When looking over the time period from CY 1994 through CY 2003, some specific trends emerge. The first of these is the decline in “dual coverage” under ESI. This decline is seen in two different ways. The first is the decline in the percent of ESI families (families with at least one ESI policy holder) that have more than one ESI policy holder. The second is the decline in families where an adult ESI policy holder is also covered as a dependent under another (usually a spouse’s) policy. Table 18, below, looks at both of these trends and how the percent of ESI families with these characteristics has dropped over the last several years.

	Prevalence of Double Coverage in ESI Families	
	Families with More than 1 PH	Families with PH & Dep Both
CY 1994	17.4%	10.7%
CY 1995	17.3%	10.3%
CY 1996	16.1%	8.1%
CY 1997	15.4%	7.2%
CY 1998	14.9%	6.8%
CY 1999	14.1%	6.2%

Table 18: Dual Coverage for ESI			
Prevalence of Double Coverage in ESI Families			
	Families with More than 1 PH		Families with PH & Dep Both
CY 2000	14.4%		6.2%
CY 2001	14.6%		6.3%
CY 2002	13.9%		5.9%
CY 2003	13.7%		5.6%

When we look at coverage rates by sector and size, we do not see much going on in terms of changes over time. Table 19-1, below, looks at the proportion of working ESI policy holders (between ages 18 and 64) by the sector (and size for private sector) of employment. Across the time period, trends are mostly flat.

Table 19-1: Employed ESI Policy Holders, and Where They Work (by Sector, and Size for Private)											
	Self Emp, Uninc	Under 10	10 to 24	25 to 99	100 to 499	500 to 999	1000+	Federal	State	Local	Total
CY 1994	2.4%	6.9%	6.0%	11.4%	13.9%	5.9%	33.1%	4.3%	5.8%	10.4%	100.0%
CY 1995	1.8%	7.2%	6.7%	11.9%	13.9%	5.8%	33.4%	3.9%	5.6%	9.8%	100.0%
CY 1996	1.8%	7.3%	6.5%	11.9%	14.0%	5.8%	33.9%	3.8%	5.2%	9.8%	100.0%
CY 1997	2.3%	7.0%	6.2%	11.7%	13.1%	5.8%	35.2%	3.8%	5.2%	9.8%	100.0%
CY 1998	2.3%	7.0%	6.3%	11.6%	13.9%	5.7%	34.2%	3.8%	5.2%	9.9%	100.0%
CY 1999	2.0%	6.7%	6.4%	11.7%	13.9%	5.5%	34.8%	3.7%	5.4%	9.9%	100.0%
CY 2000	2.0%	6.7%	6.5%	11.6%	13.7%	5.4%	35.3%	3.8%	5.6%	9.5%	100.0%
CY 2001	1.9%	6.9%	6.8%	11.9%	13.1%	5.6%	34.8%	3.5%	5.6%	9.9%	100.0%
CY 2002	1.9%	7.4%	6.8%	11.8%	13.7%	5.4%	33.5%	3.7%	5.5%	10.1%	100.0%
CY 2003	1.9%	7.6%	7.0%	11.8%	13.2%	5.0%	33.4%	3.7%	5.5%	10.7%	100.0%



Coverage proportions are similarly stable. Table 19-2, below, looks at what proportion of workers ages 18 to 64 are covered in own name, by sector (and size for private) of employment.

	Self Emp, Uninc	Under 10	10 to 24	25 to 99	100 to 499	500 to 999	1000+	Federal	State	Local
CY 1994	19.0%	29.1%	39.0%	54.1%	63.8%	68.3%	68.8%	66.5%	75.7%	73.9%
CY 1995	18.2%	28.1%	40.7%	55.5%	64.7%	65.8%	69.0%	66.8%	73.1%	72.8%
CY 1996	18.3%	28.5%	40.7%	55.5%	63.7%	67.1%	68.2%	67.7%	73.5%	72.7%
CY 1997	18.6%	29.9%	40.0%	53.8%	62.9%	67.8%	67.8%	69.0%	73.3%	73.2%
CY 1998	19.9%	30.6%	41.4%	54.8%	63.7%	68.2%	67.0%	70.0%	74.2%	73.1%
CY 1999	18.1%	29.4%	41.9%	54.2%	64.6%	69.1%	67.8%	70.6%	73.3%	72.3%
CY 2000	18.3%	30.5%	41.6%	55.2%	66.0%	68.2%	68.5%	70.0%	75.8%	74.0%
CY 2001	18.4%	29.7%	41.1%	55.9%	64.3%	67.0%	67.9%	70.0%	75.4%	73.6%
CY 2002	16.8%	29.9%	41.0%	53.7%	64.0%	67.9%	67.1%	69.6%	73.9%	72.1%
CY 2003	16.7%	29.6%	40.1%	54.0%	63.3%	64.0%	66.2%	70.0%	74.5%	73.2%

