Estimates of Direct Purchase from the ACS and Medicaid Misreporting: Is there a link?

Authors

Michel Boudreaux
Kathleen Call
Joanna Turner
Brett Fried
State Health Access Data Assistance Center (SHADAC)

Summary

Are the relatively high estimates of direct purchase coverage in the American Community Survey (ACS) caused by people misreporting their Medicaid coverage? We examine this question using a unique version of the ACS that has been linked to Medicaid enrollment data. We find that a relatively small number of people with direct purchase in the ACS are enrolled in Medicaid on their interview date. We conclude that misclassification of Medicaid coverage is not the main driver of high direct purchase estimates in the ACS.

Introduction

A cornerstone of the Affordable Care Act (ACA) is the reorganization of the individual group market. The ACA institutes guaranteed issue, community rating, and subsidies in order to increase access to coverage in the individual market.

Survey data play an important role in evaluating the effect of the ACA on individual market coverage. However, estimates of the size of the individual market, often referred to as "direct purchase coverage," derived from surveys typically exceed counts from administrative records (Abraham et al., 2013). Estimates from the American Community Survey (ACS) are particularly high (Mach and O'Hara, 2011; Abraham et al., 2013). Previous authors have suggested that the excess number of cases identified as having direct purchase coverage in the ACS is partially driven by the large number of direct purchase reports that are accompanied by reports of other plan types (Mach and O'Hara, 2011). Mach and O'Hara suggest that the potential false-positive reports could be caused by confusion among people that only have employer-sponsored insurance or by respondents that are referring to single service plans.

Previous work on the Current Population Survey (CPS) suggested that the over-counting of direct purchase could be tied to the Medicaid undercount. Cantor and colleagues (2006) suggest that Medicaid and CHIP beneficiaries enrolled in managed care plans may perceive their coverage as directly purchased from an insurance company because of the extent of their interaction with the managed care company and their familiarity with its name. However, other authors conducting a record-check study of the CPS found that managed care participants tend to be better, not worse, reporters of their Medicaid coverage compared to participants enrolled in fee-for-service plans (Plotzke et al., 2010). Validation studies also indicate that Medicaid recipients enrolled in managed care are more accurate reporters of their coverage than those in fee-for-service Medicaid (Call et al., 2008/2009).

The purpose of this brief is to present preliminary analysis of the contribution of Medicaid misreporting in the ACS to estimates of direct purchase coverage.

Methods

Data comes from the 2009 ACS which we linked to the enrollment records from the Medicaid Statistical Information System (MSIS). These data are available under contract with the Census Bureau at the Minnesota Census Research Data Center. A description of our linking methodology and weighting approach is described in detail in a previous report (Boudreaux et al., 2013). We include only non-elderly people in the civilian non-institutional population. We focus on the non-elderly because the ACA's individual market provisions are targeted on that segment of the market.

We primarily rely on two measures to investigate the contribution of Medicaid misreporting to levels of direct purchase. First, we report the percent of the non-elderly that report direct purchase coverage that are found to be enrolled in Medicaid or expansion CHIP (Medicaid Plus) according to the MSIS. Second, we report the size of the population reporting direct purchase before and after logically editing the data such that anyone identified on MSIS as enrolled in Medicaid Plus is not coded with direct purchase coverage in the ACS. While it is impossible to be certain that Medicaid enrollees are not also enrolled in an individual market plan, we agree with Mach and O'Hara (2011) that the likelihood is very small that a person having low enough income to qualify for Medicaid would choose to (and be able to given eligibility rules) supplement their Medicaid coverage with direct purchase coverage. We examine these measures by age, poverty and state.

Finally, we examine whether the state-level percent of those reporting direct purchase that are enrolled in Medicaid per MSIS varies as a function of the proportion of Medicaid enrollees participating in managed care plans. This is an indirect test of the hypothesis that managed care participants misclassify themselves into direct purchase.

Results

The universe in Table 1 is comprised of ACS records that report direct purchase coverage in any combination with other coverage types. Overall, the

TABLE 1. ANY DIRECT PURCHASE BY AGE & POVERTY, 2009 ACS-MSIS LINKED FILE

	Count	% Linked	SE	Corrected Count
Age*				
0-18	6,399,022	10.9	0.18	5,702,811
19-64	18,601,214	3.1	0.05	18,026,243
Total Non-Elderly	25,000,236	5.1	0.06	23,729,054
Income (% FPL)*				
0-138	3,981,709	16.0	0.27	3,343,854
139-249	4,454,547	6.9	0.16	4,145,345
250-399	5,548,737	3.2	0.09	5,371,474
400+	10,338,846	1.1	0.04	10,222,470

Source: 2009 ACS-MSIS Linked File, Non-Elderly Civilian Non-Institutional Population.
Notes: The % Linked column refers to the percent of cases reporting direct purchase coverage that are enrolled in Medicaid or expansion CHIP on the date of interview based on MSIS data. The corrected count is obtained by logically editing direct purchase responses to 'No' if the case is found as enrolled on date of interview.
* p<0.001. The Wald test suggests that % Linked is dependent on the row variable.

TABLE 2. ANY DIRECT PURCHASE BY STATE, NON-ELDERLY, 2009 ACS-MSIS LINKED FILE

State*	Count	% Linked	SE	Corrected Count
Alabama	400,575	4.0	0.36	384,474
Alaska	41,071	1.8	0.54	40,316
Arizona	502,790	4.1	0.52	481,999
Arkansas	221,755	4.4	0.54	212,009
California	3,464,643	4.6	0.16	3,303,639
Colorado	516,877	1.5	0.20	509,301
Connecticut	289,221	4.9	0.52	274,937
Delaware	52,658	4.9	1.35	50,077
DC	76,796	10.5	1.88	68,761
Florida	1,495,186	4.2	0.24	1,432,137
Georgia	781,420	4.4	0.40	747,086
Hawaii	117,654	6.7	0.97	109,760
Idaho	168,750	2.5	0.38	164,477
Illinois	938,657	4.8	0.30	893,337
Indiana	456,634	3.5	0.37	440,707
Iowa	310,940	3.7	0.36	299,385
Kansas	247,871	3.2	0.41	240,043
Kentucky	311,476	5.5	0.61	294,460
Louisiana	370,546	6.5	0.53	346,527
Maine	94,002	5.0	0.80	89,256
Maryland	479,541	6.6	0.46	448,042
Massachusetts	562,094	5.8	0.43	529,289
Michigan	714,933	3.4	0.28	690,930
Minnesota	496,699	5.4	0.44	469,655
Mississippi	230,818	5.5	0.66	218,108
Missouri	473,889	4.2	0.36	453,943
Montana	105,874	1.4	0.35	104,430
Nebraska	186,150	2.1	0.39	182,327
Nevada	243,443	3.3	0.67	235,456
New Hampshire	86,384	2.6	0.49	84,116
New Jersey	620,405	4.5	0.40	592,238
New Mexico	146,558	5.3	0.83	138,829
New York	1,635,927	12.2	0.49	1,436,392
North Carolina	812,251	3.5	0.25	783,613
North Dakota	78,731	2.8	0.54	76,544
Ohio	757,849	5.8	0.44	713,583
Oklahoma	277,427	5.9	0.47	261,098
Oregon	349,725	2.1	0.32	342,455
Pennsylvania	1,025,954	9.9	0.51	924,374
Rhode Island	88,999	15.7	2.20	75,001
South Carolina	368,979	4.5	0.47	352,551
South Dakota	101,688	4.1	0.79	97,538
Tennessee	510,369	7.2	0.45	473,607
Texas	1,659,303	2.8	0.15	1,612,811
Utah	276,168	2.2	0.38	270,159
Vermont	44,830	6.3	1.14	42,019
Virginia	684,194	3.4	0.31	661,201
Washington	560,965	3.2	0.32	542,754
West Virginia	114,241	5.3	0.97	108,175
Wisconsin	391,060	5.0	0.41	371,409
Wyoming	55,267	2.8	0.99	53,720

Source: 2009 ACS-MSIS Linked File, Non-Elderly Civilian Non-Institutional Population.
Notes: The % Linked column refers to the percent of cases reporting direct purchase coverage that are enrolled in Medicaid or expansion CHIP on the date of interview based on MSIS data. The corrected count is obtained by logically editing direct purchase responses to 'No' if the case is found as enrolled on date of interview.
* p<0.001. The Wald test suggests that % Linked is dependent on the row variable.

TABLE 3. LINKAGE RATE AMONG DIRECT PURCHASE CASES AND PERCENT IN MANAGED CARE, BY STATE

| State*	% Managed Care	% Linked
Alabama	60.5	4.0
Alaska	0.0	1.8
Arizona	90.4	4.1
Arkansas	78.2	4.4
California	55.7	4.6
Colorado	94.9	1.5
Connecticut	63.3	4.9
Delaware	78.3	4.9
DC	63.7	10.5
Florida	83.3	4.2
Georgia	83.3	4.4
Hawaii	98.7	6.7
Idaho	80.7	2.5
Illinois	58.1	4.8
Indiana	72.4	3.5
Iowa	81.7	3.7
Kansas	97.5	3.2
Kentucky	89.1	5.5
Louisiana	62.9	6.5
Maine	65.0	5.0
Maryland	77.2	6.6
Massachusetts	53.8	5.8
Michigan	89.7	3.4
Minnesota	63.6	5.4
Mississippi	75.9	5.5
Missouri	97.2	4.2
Montana	64.2	1.4
Nebraska	86.3	2.1
Nevada	86.1	3.3
New Hampshire	0.0	2.6
New Jersey	72.8	4.5
New Mexico	73.3	5.3
New York	69.0	12.2
North Carolina	84.1	3.5
North Dakota	62.4	2.8
Ohio	74.9	5.8
Oklahoma	84.5	5.9
Oregon	96.9	2.1
Pennsylvania	82.3	9.9
Rhode Island	68.5	15.7
South Carolina	100.0	4.5
South Dakota	76.8	4.1
Tennessee	100.0	7.2
Texas	66.1	2.8
Utah	84.1	2.2
Vermont	54.9	6.3
Virginia	59.8	3.4
Washington	90.0	3.2
West Virginia	47.6	5.3
Wisconsin	61.3	5.0
Wyoming	0.0	2.8

Source: 2009 ACS-MSIS Linked File, Non-Elderly Civilian Non-Institutional Population and Centers for Medicare and Medicaid Services (CMS). Notes: % Linked is the linkage rate among cases reporting direct purchase coverage (in any combination). % Managed care pertains to data as of December 2010 obtained from CMS available at http://www.cms.gov/Research-Statistics-Data-and-Systems/Computer-Data-and-Systems/MedicaidDataSourcesGenInfo/Downloads/2010December31f.pdf. Rates describe the percent of all Medicaid beneficiaries that are enrolled in managed care.

ACS estimates that 25 million non-elderly people have direct purchase coverage. This far exceeds the administrative count of 6.7 million reported in Abraham et al. (2013). Among the full non-elderly population, 5.1% of direct purchase reporters are found to be enrolled in Medicaid or expansion CHIP based on MSIS data. The linkage rate is higher for children than non-elderly adults (10.9%, $p<0.001$) and higher for people at lower-levels of poverty. The final column presents the size of the direct purchase population after logically editing the data such that no MSIS-identified Medicaid enrollee is coded to direct purchase in the ACS. Overall, 23.7 million people are estimated to have "corrected" direct purchase. This table suggests that while there is some misclassification from Medicaid enrollees, Medicaid misreporting is not the driving factor in the misreporting of direct purchase.

Table 2 reports the same measure across the states. Results from the Wald test suggest that the linkage rate (i.e., the percent of those reporting direct purchase in the ACS who are enrolled in Medicaid according to MSIS) varies by state, ranging from 15.7% of those reporting direct purchase coverage in Rhode Island to 1.4% in Montana.

Figure 1 plots the state level linkage rate (y-axis) as a function of the percent of Medicaid participants enrolled in managed care on the x-axis (managed care penetration rates obtained from the Centers

FIGURE 1. STATE LINKAGE RATE AS A FUNCTION OF PERCENT MEDICAID PARTICIPANTS IN MANAGED CARE
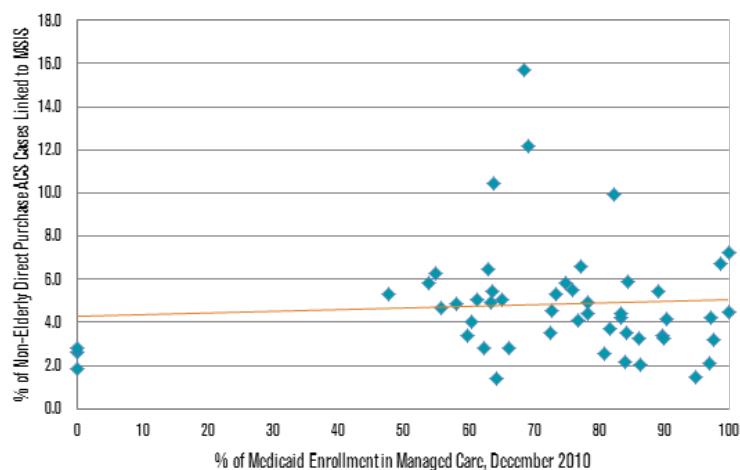
Source: 2009 ACS-MSIS Linked File, Non-Elderly Civilian Non-Institutional Population and Centers for Medicare and Medicaid Services (CMS). Managed care penetration as of December 2010 obtained from CMS available at http://www.cms.gov/Research-Statistics-Data-and-Systems/Computer-Data-and-Systems/MedicaidDataSourcesGenInfo/Downloads/2010December31f.pdf.

for Medicare and Medicaid Services (CMS)). The graph demonstrates a very slight positive trend line that could easily be driven by the handful of outliers. Table 3 presents the tabular data behind the Figure 1 graphic.

Table 4 is similar to Table 1, except the universe is the population that reports only direct purchase and no other coverage type. This measure of direct purchase that includes only those reporting direct purchase is often suggested as a simple way to reduce the error in the ACS direct purchase estimate (Mach and O'Hara, 2011; Abraham et al., 2013). Overall, the size of this population is 16.3 million, considerably closer to the 6.7 million in the administrative count, but still over twice as large. Among the 16.3 million identified as having direct purchase alone, 3.0% are found to be linked to the MSIS. The gradient by age and poverty is the same in Table 4 as Table 1. After logically editing the data, 15.8 million people are estimated to have direct purchase alone.

Table 5 presents the same statistics as Table 4 for direct purchase alone, but at the state level. Again the Wald test rejected the null hypothesis of independence suggesting that the linkage rate among the population with direct purchase varies by state.

Conclusion

This preliminary analysis of the connection between survey error in direct purchase and Medicaid suggests that while there is a plausible connection, it is small and does not substantially contribute to the

TABLE 4. DIRECT PURCHASE ALONE BY AGE & POVERTY, 2009 ACS-MSIS LINKED FILE

	Count	% Linked	SE	Corrected Count
Age*				
0-18	4,297,001	6.7	0.19	4,008,956
19-64	12,003,093	1.7	0.05	11,799,200
Total Non-Elderly	16,300,093	3.0	0.07	15,808,156
Income (% FPL)*				
0-138	2,703,083	8.0	0.27	2,487,191
139-249	2,964,403	4.2	0.17	2,839,737
250-399	3,582,945	2.3	0.11	3,499,960
400+	6,588,961	0.8	0.05	6,537,239

Source: 2009 ACS-MSIS Linked File, Non-Elderly Civilian Non-Institutional Population.
Notes: The % Linked column refers to the percent of cases reporting direct purchase coverage that are enrolled in Medicaid or expansion CHIP on the date of interview based on MSIS data. The corrected count is obtained by logically editing direct purchase responses to 'No' if the case is found as enrolled on date of interview.
* p<0.001. The Wald test suggests that % Linked is dependent on the row variable.

TABLE 5. DIRECT PURCHASE ALONE BY STATE, NON-ELDERLY, 2009 ACS-MSIS LINKED FILE

State*	Count	% Linked	SE	Corrected Count
Alabama	237,542	2.1	0.45	232,537
Alaska	21,920	NA	NA	21,920
Arizona	362,673	3.1	0.65	351,513
Arkansas	141,597	2.6	0.51	137,900
California	2,526,355	2.7	0.17	2,457,672
Colorado	397,340	0.6	0.13	395,065
Connecticut	184,987	4.2	0.65	177,275
Delaware	28,674	2.3	1.05	28,000
DC	38,386	6.5	2.99	35,884
Florida	1,080,334	2.6	0.27	1,051,924
Georgia	486,363	2.9	0.41	472,089
Hawaii	60,370	5.6	1.12	56,980
Idaho	124,950	1.7	0.40	122,855
Illinois	634,266	3.2	0.31	614,137
Indiana	291,426	2.4	0.43	284,312
Iowa	210,248	1.9	0.26	206,219
Kansas	172,014	1.9	0.40	168,733
Kentucky	197,850	4.5	0.80	188,928
Louisiana	232,070	3.6	0.53	223,723
Maine	58,163	2.2	0.65	56,867
Maryland	282,231	5.3	0.51	267,373
Massachusetts	330,089	3.0	0.40	320,252
Michigan	448,426	1.5	0.23	441,507
Minnesota	344,484	3.6	0.43	332,039
Mississippi	137,607	3.0	0.62	133,413
Missouri	318,938	2.5	0.33	310,807
Montana	73,422	0.9	0.40	72,765
Nebraska	133,570	0.9	0.24	132,367
Nevada	121,827	2.3	0.86	119,003
New Hampshire	61,322	1.4	0.48	60,444
New Jersey	374,359	2.5	0.36	364,853
New Mexico	90,138	3.7	0.89	86,838
New York	861,225	7.3	0.50	797,958
North Carolina	548,891	2.0	0.29	537,721
North Dakota	57,397	1.3	0.50	56,645
Ohio	467,981	4.0	0.47	449,276
Oklahoma	178,492	3.7	0.50	171,944
Oregon	247,313	1.0	0.30	244,792
Pennsylvania	616,127	6.1	0.53	578,392
Rhode Island	57,930	15.1	2.75	49,187
South Carolina	222,372	1.9	0.33	218,154
South Dakota	71,224	2.2	0.67	69,655
Tennessee	338,555	4.3	0.43	324,152
Texas	1,070,516	1.5	0.14	1,053,955
Utah	188,476	0.9	0.25	186,797
Vermont	31,527	3.5	1.04	30,417
Virginia	407,135	2.2	0.39	397,996
Washington	387,971	1.8	0.29	380,883
West Virginia	49,532	2.3	0.84	48,399
Wisconsin	255,462	3.0	0.44	247,771
Wyoming	38,027	0.4	0.34	37,867

Source: 2009 ACS-MSIS Linked File, Non-Elderly Civilian Non-Institutional Population.
Notes: The % Linked column refers to the percent of cases reporting direct purchase coverage that are enrolled in Medicaid or expansion CHIP on the date of interview based on MSIS data. The corrected count is obtained by logically editing direct purchase responses to 'No' if the case is found as enrolled on date of interview.
* p<0.001. The Wald test suggests that % Linked is dependent on the row variable.

high levels of direct purchase in the ACS. While it is informative to rule out Medicaid misreporting as a source for bias in estimates of direct purchase coverage, the exact mechanism that leads the ACS to over-estimate direct purchase, relative to administrative counts, remains allusive. Previous work has found that a substantial number (roughly 10 million) of those reporting direct purchase do so in combination with other coverage types. These apparent multiple covered cases could be people that interpret the direct purchase item as referring to a single service plan. The 2009 National Health Interview Survey suggests that there are 5.9 million non-elderly people that have single service plans. Nearly all single service plan enrollees are also covered by employer sponsored insurance (5.8 million). This suggests that if all ESI enrollees with a single service plan reported that coverage as directly purchased comprehensive insurance, it would only explain about half of the multiple coverage cases. Furthermore, even after removing all the double counted cases, the ACS still estimates twice as many individual market enrollees compared to administrative data. Further work is needed to understand the sources of bias in the ACS estimate of direct purchase coverage. This will be an increasingly important problem to solve as the ACS starts to be used for tracking the impact of the Affordable Care Act.

About SHADAC

The State Health Access Data Assistance Center is an independent health policy research center located at the University of Minnesota School of Public Health. SHADAC is a resource for helping states collect and use data for health policy, with a particular focus on monitoring rates of health insurance coverage and understanding factors associated with uninsurance. For more information, please contact us at **shadac@umn.edu**, or call 612-624-4802.

Suggested Citation

Boudreaux, M., Call, K.T., Turner, J., Fried, B. 2014. "Estimates of Direct Purchase from the ACS and Medicaid Misreporting: Is there a link?" SHADAC Brief #38. Minneapolis, MN: State Health Access Data Assistance Center.

REFERENCES

Abraham, J.M., Karaka-Mandic, P., & Boudreaux, M. (2013). Sizing up the individual market for health insurance: A comparison of survey and administrative data sources. Medical Care Research and Review, 70(4), 418-433.

Boudreaux, M., Call, K.T., Turner, J., Fried, B., & O'Hara, B. (2013). Accuracy of Medicaid reporting in the ACS: Preliminary results from linked data. State Health Access Data Center and U.S. Census Bureau.

Call, K.T., Davidson, G., Davern, M.E., Brown, E.R., Kincheloe, J., Nelson, J.G. Winter 2008/2009. Accuracy of self-reported health insurance coverage among Medicaid enrollees. Inquiry, 45(4), 438-456.

Cantor, J.C., Monheit, A.C., Brownlee, S., & Schneider, C. (2006). The adequacy of household survey data for evaluating the nongroup health insurance market. Health Services Research, 42(4), 1739-1757.

Mach, A., & O'Hara, B. (2011). Do people really have multiple health insurance plans? Estimates of nongroup health insurance in the American Community Survey. (SEHSD Working Paper Number 2011-28).

Plotzke, M.R., Klerman, J. A., & Davern, M. (2010). How does Medicaid-managed care impact reporting of Medicaid status? Health Services Research, 45(5p1), 1310-1323.

Bridging the gap between research and policy @ **www.shadac.org**

shadac
STATE HEALTH ACCESS DATA ASSISTANCE CENTER

05082014