CHIP Reporting in the CPS

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Objective: To assess the quality of the Current Population Survey's (CPS) Child Health Insurance Program (CHIP) data.

Data Sources: Linked 2000–2004 Medicaid Statistical Information System (MSIS) and the 2001–2004 CPS.

Data Collection Methods: Centers for Medicare & Medicaid Services provided the Census Bureau with its MSIS file. The Census Bureau linked the MSIS to the CPS data within its secure data analysis facilities.

Study Design: We compared responses to the CPS health insurance items with Medicaid and CHIP status according to the MSIS.

Principal Findings: CHIP reporting in the CPS is unreliable. Only 10–30 percent of those with CHIP (but not Medicaid) report this type of coverage in the CPS. Many with CHIP report Medicaid coverage, so the reporting error for a Medicaid–CHIP composite is smaller, but still substantial.

Conclusions: The quality of the CPS CHIP information renders it effectively unusable for health policy analysis. Analysts should consider using a Medicaid–CHIP composite for CPS-based analyses.

Introduction

With the 2009 reauthorization, the State Child Health Insurance Program (CHIP) is poised for a major expansion. However, available data on CHIP participation are limited (Plotzke, Klerman, & Davern, 2011). This paper considers the quality of individual-level survey data in the Annual Social and Economic Supplement to the Current Population Survey (CPS). Specifically, we link individual-level CPS data to corresponding individual-level administrative data from the Centers for Medicare & Medicaid Services' (CMS) Medicaid Statistical Information System (MSIS). Earlier studies have shown that CPS Medicaid reporting has a substantial number of errors associated with it (Davern, Baugh, Call, Cox, & Klerman, 2009; Klerman, Davern, Call, Lynch, & Ringel, 2009). In this paper, we examine CHIP reporting in the CPS and we show that CPS CHIP reporting is far less accurate than Medicaid reporting, calling into question the value of the CHIP responses in the CPS for researching the CHIP program.

Beyond their direct implications for analyses of the CHIP program, these results are important for two related issues. First, the net finding of earlier research is that the CPS has a large Medicaid undercount; i.e., people who have Medicaid do not report having Medicaid. This would be consistent with the difficulty of the CPS's implied recall task (Klerman et al., 2009) or stigma in reporting Medicaid. Given this net finding, it is surprising that the CPS also has a large number of "false positives;" i.e., people who report Medicaid, but are not recorded as having Medicaid in the MSIS (Davern, Klerman, Ziegenfuss, 2007; Klerman et al., 2009). The recall task would not suggest this response error.

Previous research has suggested that this misreporting could be the result of interviewees confusing Medicaid with CHIP. In what we will term "Call's conjecture," Call, Davidson, Davern, and Nyman (2008) and Davern et al. (2008) have shown that in state-specific surveys they examined, reporting of participation in a specific type of health insurance program is more fallible than reporting of any health insurance, given the person has insurance coverage. They argue that this is because people know that they are insured, but are confused or do not want to admit to the exact source of the insurance. Similarly, Lo Sasso and Buchmueller (2004) combine Medicaid and CHIP when analyzing the CPS, and the State Health Access Data Assistance Center (SHADAC) counsels this as a general strategy (SHADAC, 2008).[10] Our results strongly support that counsel. We evaluate whether this advice and Call's conjecture are supported with an analysis of a unique set of linked CPS and MSIS data giving us information on CHIP and Medicaid reporting errors in the CPS.

Call's conjecture also has important implications for adjusting for the CPS Medicaid undercount. Given the availability of linked data like that analyzed here, a direct approach would be to overwrite the survey responses with administrative data responses (Davern et al., 2007). To the extent that Call's conjecture is correct, doing so for people who report Medicaid, but are not recorded as having Medicaid in the linked administrative data, might spuriously

raise the implied count of the uninsured. The estimates in this paper provide some insight as to the magnitude of that spurious increase and, therefore, how to adjust for it.

Overview of the Children's Health Insurance Program

First established in 1997, the Children's Health Insurance Program (CHIP; note, we refer to the program overall without an "S" prefix) intends to "provide funds to States to enable them to initiate and expand assistance to uninsured, low-income children in an effective and efficient manner that is coordinated with other sources of health benefits coverage for children" (Balanced Budget Act, 1997). The 2009 renewal of CHIP substantially expanded funding for the program, from $6 billion in federal fiscal year (FFY) 2008 to $10 billion in FFY 2009. This increased funding is expected to increase enrollment in the program by half, to over 11 million (Centers for Medicare & Medicaid Services, 2009; Georgetown University Health Policy Institute, Center for Children and Families, 2009). For a broader discussion of CHIP, child health insurance and related issues, see Dubay and Kenney (2000, 2003), Kenney and Chang (2004), Kenney and Yee (2007), and Hudson and Selden (2007).

CHIP targets children living in families whose income is too high for them to be eligible for traditional Medicaid, but who do not have access to or cannot afford private health insurance (Nichols & Plotzke, 2008). CHIP is jointly financed by the federal government and the states. Like traditional Medicaid, each state runs its own CHIP. However, states have substantially more flexibility in designing their CHIP than they do with their traditional Medicaid program, and CHIP has a higher federal matching rate. State CHIPs differ on key elements such as eligibility thresholds, what income is counted towards eligibility, benefits provided, and the level of cost sharing (Congressional Budget Office, 2007; Rosenbach et al., 2003).

Crucially, for our analysis, states have two broad options for how to expend CHIP funds. Medicaid expansion CHIP (hereafter M-CHIP) simply expands the state's Medicaid program to enroll children from families with income above the Medicaid eligibility threshold. Doing so allows states to build upon their existing Medicaid program and take advantage of the related infrastructure that was already in place. Alternatively, a Stand Alone CHIP (hereafter, S-CHIP) creates an entirely new insurance plan, unrelated to Medicaid.[1] Doing so gives states more flexibility in the design of their health insurance program. Rosenbach et al., 2003, mention that states with stand-alone programs could enact enrollment caps to reduce costs. Cost sharing is also more prevalent in stand-alone versus Medicaid expansion programs. Some states have both an M-CHIP and an S-CHIP program (Centers for Medicare & Medicaid Services, 2009).

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[1]We use "CHIP" without an "S" prefix to refer to the entire program; both S-CHIP and M-CHIP refer to specific types of CHIP programs.

Methods

Linked CPS-MSIS Data

Our analysis exploits uniquely matched data, but suffers from the quirks in what information is reported and the quality of that reporting. This section describes the data and the quirks. Specifically, this section considers (a) the CPS survey data; (b) the MSIS administrative data; (c) the linked analysis file; and (d) the implications of this data structure for analysis of CPS CHIP reporting.

The CPS Survey Data

The CPS is a national survey of about 78,000 households, conducted annually. Most interviews occur in March, with additional health insurance interviews in February and April. We note that the additional interviews in February and April were added to the CPS in all states in non-March months with Congress's explicit stated goal of "improving state estimates of coverage" to monitor the CHIP program; Davern, Beebe, Blewett, & Call, 2003. The CPS's primary purpose is to collect information on annual earnings, employment, and poverty. In order to give a richer characterization of household well-being, since 1980 the CPS has also collected information on health insurance coverage. Consistent with the CPS's focus on earnings in the previous calendar year, the CPS health insurance questions ask about coverage by a variety of types of health insurance in the previous calendar year.

Through the 2006 CPS, families with children were only asked about CHIP participation if the child was not reported to participate in Medicaid. In the 2007 questionnaire, all families with children were asked about CHIP participation regardless of their reported Medicaid status. This change resulted in an overall increase in the number of children reporting CHIP enrollment, from 3.4 million in 2006 to 8.2 million in 2007. This will not have a noticeable effect on tables produced by the Census Bureau, because they already aggregated Medicaid and CHIP coverage into a simple "yes" or "no" and they do not double-count the enrollment. However, this will affect micro-data users interested in CHIP coverage. Since children who were covered by both CHIP and Medicaid would properly report Medicaid, simple tabulations of CHIP responses will underestimate total CHIP participation. As we discuss below, this is only part of the reason for the CPS CHIP undercount. The CPS skip pattern (i.e., the CPS only asking about CHIP coverage if no Medicaid was reported) also affects which types of reporting errors we can explore. Finally, this skip pattern simplifies the analysis.

The MSIS Administrative Data

Since FFY 1999, states have been required to submit individual-level Medicaid enrollment and utilization information to CMS through the MSIS. Each MSIS record includes information on the individual's Medicaid monthly enrollment status (any Medicaid status, and which

subprogram), limited demographics (age, gender, race—of varying quality), and some information on utilization of health care.

Requirements for reporting CHIP enrollees are more complicated. For the purposes of MSIS, M-CHIP is a part of Medicaid. Therefore, just as states are required to report Medicaid enrollees to MSIS, they are also required to report M-CHIP enrollees. S-CHIP, however, is not a part of Medicaid. States are, therefore, not required to report S-CHIP enrollees to MSIS. As a result, some do report S-CHIP enrollees, but most do not. Below, we return to the implications of this incomplete reporting for our analysis.

In as much as a state is reporting to MSIS based on its administrative data system, the administrative data we have can be viewed as defining "true status;" i.e., the MSIS reflects who the program treats as enrolled (e.g., if a provider inquires as to whether or not he would be reimbursed for a procedure). Thus, for our purposes, children who have had continuous enrollment are treated in our study as enrolled based on presumptive eligibility or continuous eligibility. If the operative question was, does the family of this child know whether the child is enrolled, then we might want to drop such presumptive and continuous eligibility cases. We acknowledge that knowledge of enrollment is another interesting issue, but not the one we consider in this paper.

The administrative data are almost certainly imperfect. There is some retrospective eligibility, such that a survey respondent might not have known that he/she was enrolled as of the survey. In addition, some administrative data records are missing SSNs. For those corresponding survey records our methods will incorrectly infer a false positive (Davern et al., 2009). Finally, as we discuss below, for some states and some years the data seem to be incomplete. Thus, the administrative data are clearly not perfect. It nevertheless seems useful to compute survey response error rates relative to the information in the administrative data. That is what we do below.

The Linked Data

To understand Medicaid underreporting more broadly, and its implications for estimates of uninsurance, the SNACC effort[2] has matched administrative data on monthly Medicaid coverage directly to CPS individual-level data on health insurance (from the Annual Social and Economic Supplement) for survey years 2001–2004 (corresponding to calendar years 2000–2003). The CPS Annual Social and Economic supplement is fielded annually and is not a longitudinal dataset, so MSIS data could simply be matched with the CPS and appended together. The U.S. Census Bureau (2007, 2008) and Davern et al. (2009) describe the SNACC

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[2]SNACC is an acronym for organizations participating in the data matching: SHADAC-NCHS/National Center for Health Statistics, DHHS-ASPE/Department of Health & Human Services Assistant Secretary for Planning and Evaluation, Census/ U.S. Census Bureau, and CMS/Centers for Medicare & Medicaid Services.

project more broadly, as well as the data file used in this analysis. The U.S. Census Bureau (2009) discusses the results of the linkages to the 2003 and 2004 CPS.

In brief, CMS provided the Census Bureau with extracts of its MSIS file containing state monthly individual-level data on Medicaid coverage. In its secure data facility and with appropriate protections of privacy, confidentiality, and data security, the Census Bureau matched all individual-level data from the MSIS file to the corresponding CPS records. Census then reweighted the resulting file to account for the missing information on the 20% of CPS records that could not be matched to MSIS (Davern et al., 2009).

Here, we analyze those reweighted data for survey years 2001–2004 (corresponding to insurance coverage in 2000–2003). The CHIP program is not that large and we will see that the coverage of MSIS data requires us to drop many states. As a result, even after pooling four years of data, our sample sizes are small.

Implications for Analysis

Plotzke, Klerman, and Davern (2011) considered the quality of the MSIS data. Exhibit 1 summarizes their conclusions.

Exhibit 1. Classification of States

Group	M-CHIP	S-CHIP	In MSIS	Agrees?	States
A	*Yes*	*No*	*Yes*	*Yes*	*Alaska, District of Columbia, Hawaii, Louisiana, Missouri, Nebraska, New Mexico, Ohio, Oklahoma, South Carolina*
B	Yes	No	—	No	Tennessee, Wisconsin
C	*No*	*Yes*	*Yes*	*Yes*	*Georgia, Montana, North Carolina, Oregon, Utah, Vermont, Washington,*
D	No	Yes	Yes	No	Colorado,
E	No	Yes	No	—	Arizona, Kansas, Nevada, Pennsylvania, West Virginia, Wyoming
F	*Yes*	*Yes*	*Yes*	*Yes*	*Idaho, Illinois, Indiana, Kentucky, Massachusetts, Maryland, Maine, North Dakota, New Hampshire, South Dakota, Virginia*
G	Yes	Yes	Yes	No	Minnesota, New Jersey
H	Yes	Yes	No	—	Alabama, Connecticut, Delaware, Michigan, Mississippi, New York, Rhode Island,
I	Yes	Yes	No	—	Arkansas, California, Florida, Iowa, Texas

NOTES. "In MSIS" refers to S-CHIP data (all M-CHIP data is in MSIS). "Agrees" refers to SEDS/MSIS agreement given that data is reported to MSIS (i.e., M-CHIP if only data on M-CHIP are reported; M-CHIP and S-CHIP if data on both programs are reported). For the criteria for "agreement," see Plotzke, Klerman, and Davern (2011). Rows in italics are usable in the analysis for this paper; i.e., data on all programs are reported and the data "agree." Dashes in the "In MSIS" column indicate at least one state was not in the MSIS data. Dashes in the "Agrees?" columns indicate agreement was not able to be assessed due to missing data.
SOURCE: Comparisons made using the 2000–2005 Statistical Enrollment Data System (SEDS) and the 2000–2005 Medicaid Statistical Information System (MSIS).

Plotzke, Klerman, and Davern's analysis has crucial implications for using the SNACC file to understand the quality of CPS CHIP reporting. First, since the CPS does not distinguish between

M-CHIP and S-CHIP, our analysis is only feasible for states that report all of their CHIP participants to MSIS. Recall that all M-CHIP data are reported to MSIS, but only some S-CHIP data are reported to MSIS. We must therefore drop all states with unreported S-CHIP programs, even when the M-CHIP program is reported.

Second, CHIP reporting to MSIS must be complete for our analysis to be accurate. Plotzke, Klerman, and Davern's analysis suggests that several states that report all of their CHIP program data to MSIS have MSIS counts that are widely divergent from the aggregate counts they report to CMS's Statistical Enrollment Data System (SEDS). It is not clear which data system is "correct," but so as not to overly impugn the quality of the CPS data, we drop all states with such a divergence.

As a result, the analysis below only uses the states in Group A (M-CHIP only, completely reported), Group C (S-CHIP only, completely reported), and Group F (M-CHIP and S-CHIP, both completely reported) in Exhibit 1. This is unfortunate because it forces us to drop many of the larger states (e.g., California) and, thereby, substantially cuts the size of our analysis sample. (See Exhibit 2 for approximate sample sizes. Figures are rounded per Census Bureau disclosure rules.)

Exhibit 2. Sample Sizes

Group	A	C	F
Total	53,980	22,940	51,940
Reporting CHIP in CPS	1,440	680	1,320
M-CHIP Only in MSIS	1,280		720
S-CHIP Only in MSIS		840	480
M-CHIP and S-CHIP in MSIS			100
Medicaid and M-CHIP in MSIS	820		740
Medicaid and S-CHIP in MSIS		1,280	220
Medicaid, M-CHIP, and S-CHIP in MSIS			40

NOTE. Figures are rounded per Census Bureau disclosure rules. Tabulations from SNACC analysis files.
SOURCE: Data Linked from the 2000–2004 Medicaid Statistical Information System (MSIS) and the 2001–2004 Current Population Survey (CPS).

Results

Simple Tabulations

Exhibit 3 presents this paper's main results. We limit the sample to children 0 to 18 years old, according to the CPS's age question. We stratify the analysis by state "Group" (as defined in Exhibit 1). Thus, Exhibit 3 presents results for Group A, M-CHIP only; for Group C, S-CHIP only; and for Group F, M-CHIP & S-CHIP.

Exhibit 3. Comparison of MSIS and CPS Insurance Enrollment Status

	Weighted Counts (In Millions)					Column Percentages					Row Percentages				
Group A: M-CHIP Only															
M	6.76	0.56	1.92	1.26	10.5	80	64	7	31	25	64	5	18	12	100%
M-C	0.5	0.1	0.22	0.16	1	6	11	1	4	2	51	10	22	16	100%
M + M-C	0.6	0.08	0.16	0.1	0.96	7	9	1	2	2	64	9	17	11	100%
None	0.56	0.14	26.66	2.56	29.95	7	16	92	63	71	2	0	89	9	100%
Total	8.42	0.88	28.96	4.08	42.43	100%	100%	100%	100%	100%	20	2	68	10	100%
Group C: S-CHIP Only															
M	2.4	0.12	0.62	0.48	3.62	83	35	6	28	23	66	3	17	13	100%
S-C	0.16	0.14	0.08	0.08	0.44	6	41	1	5	3	35	30	17	17	100%
M + S-C	0.14	0.04	0.06	0.04	0.3	5	12	1	2	2	50	14	21	14	100%
None	0.2	0.04	9.74	1.14	11.15	7	12	93	66	72	2	0	88	10	100%
Total	2.9	0.34	10.5	1.74	15.51	100%	100%	100%	100%	100%	19	2	68	11	100%
Group F: M-CHIP and S-CHIP															
M	3.1	0.4	1.22	0.88	5.6	82	71	6	33	20	55	7	22	16	100%
M-C	0.08	0.02	0.08	0.02	0.2	2	4	0	1	1	40	10	40	10	100%
S-C	0.04	0.02	0.08	0.02	0.16	1	4	0	1	1	25	13	50	13	100%
M-C + S-C	0.02	0	0	0	0.04	1	0	0	0	0	100	0	0	0	100%
M + M-C	0.2	0.02	0.08	0.06	0.36	5	4	0	2	1	56	6	22	17	100%
M + S-C	0.06	0.02	0.02	0	0.1	2	4	0	0	0	60	20	20	0	100%
M + M-C + S-C	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
None	0.26	0.08	19.11	1.66	21.1	7	14	93	63	77	1	0	91	8	100%
Total	3.76	0.56	20.59	2.64	27.56	100%	100%	100%	100%	100%	14	2	75	10	100%

NOTES: Tabulations from SNACC analysis files. Rows give MSIS status. Columns give CPS status.

Row Labels: M/Medicaid Only; M-C/Medicaid-Expansion CHIP; S-C/Stand-Alone CHIP; M + M-C/Medicaid plus Medicaid-Expansion CHIP; M + S-C/Medicaid and Stand-Alone CHIP; M-C + S-C/Medicaid-Expansion CHIP plus Stand-Alone CHIP; M + M-C + S-C/Medicaid plus Medicaid-Expansion CHIP plus Stand-Alone CHIP; None/No coverage in MSIS.

Column Labels: M/Medicaid; C/CHIP; O/Other Insurance; U/Uninsured; T/Total.

The rows in Exhibit 3 give the enrollment status in the MSIS administrative data. The columns give the status in the CPS survey data. The columns present three panels: (1) the weighted counts (rounded to tens of thousands); (2) the column percentages—i.e., the distribution of "true status" in the administrative data given a survey response; and (3) the row percentages—i.e., the distribution of survey responses given true status in the administrative data.

SOURCE: Data Linked from the 2000–2004 Medicaid Statistical Information System (MSIS) and the 2001–2004 Current Population Survey (CPS).

Within each panel, the coding is hierarchical. The first column gives Medicaid. This column includes Medicaid in combination with anything else, including CHIP (recall that CPS skip patterns make it hard to distinguish Medicaid from Medicaid and CHIP) and other public or private health insurance. The second column includes CHIP in combination with anything else (non-Medicaid public or private insurance), except Medicaid. The third column gives Other Health Insurance Only (i.e., neither Medicaid nor CHIP). The fourth column gives the uninsured; i.e., no health insurance at all for all of last year. Finally, while some have argued that the CPS should be interpreted as a point in time survey, this analysis follows the analysis of Klerman et al. (2009), which suggests that CPS respondents are better viewed as responding about coverage in the previous year (and that, as much as the CPS, "looks like a point in time survey" due to other response errors). Given that the question refers to a 12-month period, coverage from multiple sources would not be unlikely.

Most of the patterns are similar across the three groups. We begin with a discussion of Group A from Exhibit 3, starting at the far right panel. The contribution of this analysis is the match of the CPS survey data to the MSIS administrative data. The far right panel can be viewed usefully as a behavioral relation. That is, given the health insurance status in the administrative data, that panel describes the corresponding response in the survey. The upper left cell is roughly consistent with other analyses using the SNACC data that find that less than two-thirds of those whom the administrative data implies have Medicaid actually report Medicaid in the survey (Davern et al., 2007, 2009).

Now consider the second entry in the first row. It implies that about 5% of those with Medicaid (but not CHIP) respond that they have CHIP. This is consistent with Call's conjecture that people know they are insured, but are confused about the exact source of their insurance. It is also consistent with the literature discussed earlier to combine Medicaid and CHIP when analyzing health insurance coverage (SHADAC, 2008). Finally, also consistent with earlier SNACC analyses, about a sixth of those with Medicaid report other private insurance, but not Medicaid, and another sixth report being uninsured. This last group causes the Medicaid undercount to lead to an "uninsured overcount."

Now consider those whom the MSIS administrative data record as having CHIP, but not Medicaid (in this exhibit, M-CHIP). They "should" report CHIP in the CPS. Only 10% of them do. This is more than the 5% of those who have Medicaid only who report CHIP, but not by much. Around half (51%) report Medicaid. This is understandable for several reasons. First, they are in a version of Medicaid and the program is supposed to be "Medicaid-like." Second, in many states the Medicaid and CHIP program share either a very similar sounding name or the exact same name, making the question indistinguishable on the survey to the respondent. Third, the Medicaid survey item comes first in the CPS interview. And finally, through 2006 (in the data we use), if the person responded yes to having Medicaid, they were not even asked the CHIP questions (although it was possible for people to give a CHIP response to the "other type of health insurance" question later in the survey).

Finally, a little under a quarter (22%) report only other health insurance and a sixth (16%) report being uninsured. Since CHIP eligibility is deliberately set above the Medicaid income limit, it seems plausible that CHIP children would be more likely than Medicaid children to also have private insurance during the year. To the extent that this conjecture is true, the higher rates of reported private insurance for CHIP children would be consistent with an argument that receipt of CHIP for part of the year was not memorable enough to be recalled correctly when the family also had private health insurance coverage for part of the year (Klerman et al., 2009).

Those with Medicaid and CHIP (the third row) are intermediate between Medicaid only and CHIP only, but closer to Medicaid only. Thus, 64% of respondents with Medicaid and CHIP report being covered by Medicaid (vs. 64% for Medicaid only and 51% for CHIP only) and 9% of them report being covered by CHIP (vs. 5% for Medicaid only and 10% for CHIP only).

Now consider the middle panel. It tabulates these data from an imputational perspective—i.e., given a report in the survey, what is recorded in the administrative data for the child? The first column is consistent with earlier SNACC analyses. Most of those reporting Medicaid actually have Medicaid; 80% have Medicaid alone and another 7% have Medicaid plus M-CHIP. As in earlier SNACC responses, however, there are a large number of false positives (13%)—people who report Medicaid, but do not have Medicaid. Partially consistent with Call's conjecture, about half of them [46% = 6%/(6% + 7%)] have M-CHIP. Thus, CHIP explains some (about half), but not all, of the Medicaid false positives.

Most of those who report CHIP also have Medicaid, though the 64% is slightly lower than the percentage among those who have Medicaid (80%). Only 11% of them are responding as per the CPS instructions; i.e., they have CHIP, but not Medicaid. Another 9% have CHIP and Medicaid and therefore should have responded that they have Medicaid. Finally, the administrative data imply that 16% of them have neither Medicaid nor CHIP. At least considering only Medicaid and CHIP, this group is apparently inconsistent with Call's conjecture (though they might; however, have some other form of health insurance) and the SHADAC guidance. Almost no one who reports having other health insurance or being uninsured in the CPS actually is recorded as having CHIP alone in the MSIS (1% and 4%, respectively) or CHIP with Medicaid (1% and 2%), though a moderate fraction have Medicaid alone (7% of those reporting other insurance and 31% of the uninsured; this last group induces the overcount of the uninsured).

The analysis for Group C, S-CHIP states, is broadly similar to the above analysis for Group A, M-CHIP states, with some important and understandable differences. M-CHIP simply enrolls children in Medicaid; S-CHIP enrolls children in a separate program. We would therefore expect S-CHIP to be more distinguishable from Medicaid. Consistent with this line of reasoning, nearly a third of those with S-CHIP report this type of coverage (see the far right panel). This is much higher than the 10% for M-CHIP, but still dreadful reporting. Consistent with Call's conjecture, the total aggregating Medicaid and CHIP is nearly unchanged; in fact, it

is slightly lower (65% for S-CHIP vs. 61% for M-CHIP). Similarly, the fraction of children who report CHIP in the survey who actually have CHIP is much higher (the middle panel: for CHIP alone, 41% vs. 11%; for CHIP with Medicaid, 12% vs. 9%). Again, CHIP explains about half of the Medicaid false positives [46% = 6%/(6% + 7%)].

Finally, Group F, M-CHIP & S-CHIP, is intermediate between Group A and Group C. For Group A, the fraction with M-CHIP only reporting CHIP was 10%; for Group F it is also 10%. For Group C, the fraction with S-CHIP only reporting CHIP was 30%; for Group F it is 13%. Among those reporting CHIP only, in Group F 13% have CHIP only (vs. 10% for Group A and 30% for Group C).

Discussion

The analysis of this paper has confirmed the fears of health policy analysts. As has been shown elsewhere, Medicaid reporting in the CPS is error prone. Using CPS data matched to MSIS administrative data for the limited set of states with apparently high quality CHIP data, this paper demonstrates that CHIP reporting in the CPS is far worse. In fact, this analysis suggests that CHIP-specific enrollment estimates made from the CPS data should not be used for research purposes. The reporting errors are simply too large and too variable from state to state (this seems to be in part due to the different CHIP program configurations, M-CHIP only, S-CHIP only, or a combined program).

This does not necessarily mean that the CPS cannot be used for some evaluations and research into public program enrollment. As others have argued in the past, the reporting of being in a public program (whether it is Medicaid or CHIP) is substantially better than the reporting of CHIP alone. In fact, reporting of the Medicaid plus CHIP aggregate is slightly better than reporting of Medicaid alone. Nevertheless, an analysis must consider that more than 40% of the people enrolled in CHIP or Medicaid do not report either. The vast majority of them do report some other type of coverage, but many (up to 17% of the people enrolled) report that they are uninsured. However, in the CPS there are still many people who have Medicaid or CHIP, who nevertheless report that they are uninsured. For a variety of reasons, it appears that the CPS has more reporting error than point in time surveys (Call et al., 2008; U.S. Census Bureau, 2009).

For some purposes (e.g., overall coverage levels, public program crowd-out), the approach of combining Medicaid and CHIP responses into a public program variable (currently the Census Bureau does this with the "MCAID" recode they use for reporting) is a workable solution (Dubay & Kenney, 2000; Lo Sasso & Buchmueller, 2004). That solution eliminates any Medicaid–CHIP confusion. Of course, the overall underreporting of public program coverage remains (Davern et al., 2008, 2009). An imputational model based on the linked data used here appears to be an attractive approach to adjusting for this remaining under-reporting. For CHIP-specific analyses, no workable solution appears to exist.

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