Measuring Health Insurance in the U.S.

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Abstract

The US health system has come under intense scrutiny in recent years, prompted in part by the steadily increasing uninsured rate. As policymakers struggle with questions about the effectiveness and efficiencies of the current system, accurate measurement of health insurance coverage has come into focus as an important component of reform proposals. While there has been a considerable amount of research examining and comparing the various methods used to estimate coverage, there is one aspect that has been largely overlooked: qualitative testing of the survey questions used to generate the official measure of coverage. These questions are asked within the Current Population Survey (CPS), and major policy and funding decisions are based on its estimates of insurance coverage. This paper presents findings from cognitive testing of the CPS, assesses those findings within the context of related empirical research, and suggests a research agenda for a redesigned set of questions on insurance.

Keywords: uninsured, health insurance, data quality

1 Introduction[1],[2]

The health insurance system in the United States has become increasingly costly and problematic over the past few decades. National health expenditures per capita have increased almost 6-fold since 1980 -- from $1,106 to $6,280 in 2004 (Smith et al, 2006) -- and access to care has become more difficult. In 1987 12.9% of the population was uninsured, according to the Current Population Survey (the federal government's official measure). Since then there has been a steady increase in the uninsured rate[3], which now stands at 15.7%, or almost 46 million people without insurance (DeNavas-Walt et al, 2005). In response to these disturbing trends, researchers, policy makers, legislators and advocates have proposed a range of reforms, such as tax-incentive-based Health Savings Accounts created in 1993, the State Children's Health Insurance Program (SCHIP) passed by Congress in 1997, the "nearly universal" health care bill which passed the Massachusetts legislature in April of this year, and ongoing efforts at sweeping change such as single payer universal health care (sometimes called "Medicare for All"). Given the magnitude of the problem, the enormous and growing expense of health care and insurance, and shrinking public health resources, it is critical that researchers produce sound figures on the insured, uninsured and the characteristics of each group to enable the development and implementation of efficient, effective and viable reforms.

While the research community has been very active in its pursuit of this goal, there is ample evidence of measurement error associated with surveys of health insurance and many questions remain as to the nature of that error. This paper addresses one very basic aspect of research that has thus far been overlooked: qualitative testing of the questions used to measure health insurance coverage in the CPS. The focus is on the CPS because it is used to produce the official measure of health insurance for the United States and as such, major policy and funding decisions rely on these estimates (Davern et al, 2003). Furthermore, perhaps because it is the official measure, many other national and state surveys use a questionnaire design very similar to that of the CPS.

The reason for a qualitative approach is that the empirical findings suggest that health insurance may not be as simple a concept to measure as it first appears. For some, no doubt, it is fairly straightforward and changes little over time. For others, however, it is complex and often in flux. Any changes in life circumstances – switching employers, moving up or down the income scale, changes in health status – could affect access to and eligibility for various health insurance plans and programs. Furthermore, the frequent changes in public programs (e.g.: the shift toward commercial managed care contracts to service Medicare and Medicaid enrollees, and the introduction of SCHIP and Medicare Part D) could well affect an individual's perception of their coverage. These types of complications suggest that some respondents' reporting of their own health insurance situation may be quite susceptible to the way the questions are asked. The purpose of the qualitative research is to identify and map the types of reporting problems respondents experience with the questions themselves. While this method does not lend itself to quantification of these problems, a careful "accounting" of the kinds of misunderstandings and difficulties respondents have with the questions could be informative to interpret the existing studies on measurement error and to

[1] This report is released to inform interested parties of ongoing research and to encourage discussion. The views expressed on methodological issues are those of the author and not necessarily those of the U.S. Census Bureau.

[2] Many thanks to Paul Beatty and Marsha Woo of the National Center for Health Statistics for their contributions to the cognitive testing and report. Sincere thanks also to Rob Stewart of the Office of the Assistant Secretary for Planning and Evaluation, US Department of Health and Human Services, for ongoing financial and technical support of research on health insurance measurement.

[3] Between 1987 and 1999 the rate increased or stayed the same. In 1999 the rate dropped from 16.3% to 15.5%, then a year later the US Census Bureau modified its methodology which caused a one percentage point drop in the uninsured for that year. This essentially "reset" the time series at 14.5% and since then the rate has again steadily increased or stayed the same.

inform future research that sets out to improve on the questionnaire design and/or measure the magnitude of the identified reporting errors.

2 Methods

In the fall of 2004 cognitive testing was conducted on a series of questions on health insurance coverage adapted from the 2004 Current Population Survey (see Figure 1). Interviewing was conducted September through November, 2004, by researchers at both the U.S. Census Bureau's Center for Survey Methods Research and at the National Center for Health Statistics' Office for Research and Methodology. Altogether 27 interviews were conducted with respondents recruited through a newspaper ad in the Washington Post, social service agencies and word-of-mouth. Each interview lasted somewhere between 45 minutes and 1 ½ hours, and respondents were paid $40 for their participation. Respondents varied in terms of demographic characteristics. There were 15 women and 12 men; 12 were white, 14 were black and 1 was Asian (none were Hispanic); age ranged from 25 to 74; education ranged from 8th grade to a professional degree; and household income ranged from below the poverty line to $70K/year or more.

In terms of interviewing technique, a retrospective think-aloud approach was used (Willis, 2005). There were three main stages to this: orienting the respondent to the task, administering the questionnaire in a fairly standard way, and then administering the retrospective cognitive probes. This strategy was chosen in an attempt to mimic a production setting as much as possible. In particular we felt it was important to allow the respondent to flow through the entire series of questions on health insurance because we suspected that context effects may play a role. Therefore rather than interrupting with probes in the midst of the series, we waited until the respondent completed the questionnaire and administered retrospective probes. Furthermore, we attempted to partially simulate the context of the actual CPS interview (without adding too much length to the interview) so we included questions on the household roster and demographics, and a selected set of questions on work history and program participation prior to the target questions on health insurance.

Figure1: Health insurance questions adapted from the CPS and cognitively tested in fall, 2004

1. These next questions are about health insurance coverage during the past 12 months. The questions apply to ALL persons of ALL ages. At any time during the past 12 months, (were you/was anyone in this household) covered by a health insurance plan provided through (their/your) current or former employer or union? [Yes/No]
   (MILITARY HEALTH INSURANCE WILL BE COVERED LATER IN ANOTHER QUESTION.)
   1a. Who in this household were policyholders? [PROBE: Anyone else?]
   1a1. In addition to (you/name), who else in this household was covered by (name's/your) plan? [PROBE: Anyone else?]
2. At any time during the past 12 months, (were you/was anyone in this household) covered by a health insurance plan that (you/they) PURCHASED DIRECTLY FROM AN INSURANCE COMPANY, that is, not related to current or past employment? [Yes/No]
   2a. Who in this household were policyholders? [PROBE: Anyone else?]
   2a1. In addition to (you/name), who else in this household was covered by (name's/your) plan? [PROBE: Anyone else?]
3. At any time during the past 12 months, (were you/was anyone in this household) covered by the health plan of someone who does not live in this household? [Yes/No]
   3a. Who was that? [PROBE: Anyone else?]
4. At any time during the past 12 months, (were you/was anyone in this household) covered by Medicare? [Yes/No]
   READ IF NECESSARY: Medicare is the health insurance for persons 65 years old and over or persons with disabilities.
   4a. Who was that? [PROBE: Anyone else?]
5. At any time during the past 12 months, (were you/was anyone in this household) covered by Medicaid/(fill state name)? [Yes/No]
   READ IF NECESSARY: Medicaid/ (fill state name) is the government assistance program that pays for health care.
   5a. Who was that? [PROBE: Anyone else?]
6. In (state), the (fill state name) program (also) helps families get health insurance for CHILDREN. (Just to be sure,) Were any of the children in this household covered by that program? [Yes/No]
   READ IF NECESSARY: (fill state CHIP program name) is the name of (state)'s CHIP program. It is the same as the Children's Health Insurance Program, which helps pay for children's health care.
   6a. Who was that? [PROBE: Anyone else?]
7. At any time during the past 12 months, (were you/was anyone in this household) covered by TRICARE, CHAMPUS, CHAMPVA, VA, military health care, or Indian Health Service? [Yes/No]
   NOTE: "CHAMPVA" IS THE CIVILIAN HEALTH AND MEDICAL PROGRAM OF THE DEPARTMENT OF VETERAN'S AFFAIRS.
   7a. Who was that? [PROBE: Anyone else?]
8. Other than the plans I have already talked about, at any time during the past 12 months, was anyone in this household covered by a health insurance plan such as the (fill state name) plan or any other type of plan? [Yes/No]
   8a. Who was that? [PROBE: Anyone else?]

3 Results

The testing uncovered a range of reporting problems. First the main themes that cut across all items are discussed, then highlights of issues surrounding private and public coverage are presented.

3.1 Questionnaire Structure

Given that the CPS is an interviewer-administered survey (versus a mail survey), the structure of the series on health insurance is not immediately apparent to the respondent. That is, respondents get no indication up-front that there will be a series of eight different questions, one on each plan type, and that they are to report their plan at the appropriate question. Rather, each question is asked, one after the other, leaving the respondent to judge which question is most appropriate for reporting their particular type of coverage, without the advantage of knowing all the options to come (or indeed that there are more options coming). Many respondents had a tendency to report all plan types for all household members within the first few questions – whether those questions were the most appropriate for the type of coverage or not. We observed several instances of this kind of "pre-reporting" resulting in misreporting of plan type. For example, one respondent reported that he was covered by a job-based plan and when asked who was the policyholder he said he was. He then reported that his mother was also a policyholder. Only later in the interview was it revealed that he was referring to his mother's Medicare "policy" – and that she was not the policyholder of a job-based plan that covered him. Another respondent, a retiree, reported his job-based plan at the first question in the series, and at the second question (on directly-purchased plans) asked "how would you consider Medicare?"

While this kind of uncertainty can easily be addressed in a lab setting, a production interview setting is highly unpredictable. First, respondents may or may not offer clues that they have doubts about what type of plan should be reported at which question. In the example above, the respondent could simply have reported his mother as a policyholder and never offered later that her plan was actually Medicare. It is also unknown whether the interviewer would have the knowledge and skill to pick up on respondents' expressions of uncertainty. Finally, if a respondent did "pre-report" a plan early in the series, and then "re-reported" the plan at a later, more appropriate question, the interviewer may or may not notice this double-report, and may or may not have the skill to negotiate the CATI instrument in order to make the necessary corrections.

Another consequence of respondents volunteering information early in the series was that some felt they'd already provided all the relevant information about all household members and were annoyed with later questions because they perceived them as redundant. Some respondents said they stop paying attention once they feel the questions are no longer relevant. This type of inattention could lead to underreporting of plans that happen to be asked about later in the series. In contrast, the misreporting of plan type discussed above would not contribute to an overestimate of the uninsured, but it could well contribute to inaccurate estimates of coverage by type. Specifically, respondents may overreport coverage in the earlier questions and underreport in the later questions. Given that questions on private coverage are sequenced earlier in the series, the likely direction of this misreporting would be that private coverage is over-reported and public coverage is under-reported.

3.2 12-Month Reference Period

The CPS employs a 12-month reference period, asking respondents if they were covered "at any point" during the past calendar year. Other studies, however, ask respondents if they are currently covered, generating a point-in-time measure of the uninsured. Prior research suggests that measurement error is associated with this 12-month reference period. Point-in-time and calendar year estimates should, by definition, result in different estimates because respondents who are asked if they have coverage at a *particular* point in time (i.e. the day of the interview) are less likely to report coverage than those who are asked if they had coverage *at any point* during an entire calendar year, simply because the latter group of respondents are given a much longer time period in which they could have been covered. Two studies that compared calendar-year and point-in-time surveys, however, found no significant difference in the estimates; the expected gap did not exist (Rosenbach and Lewis, 1998; Pascale, 2001a).

In order to learn more about respondents' attentiveness to the 12-month reference period, we asked them what time period they had in mind – specifically, what months – when answering the questions about their health insurance coverage. Note that for the current research it was necessary to adapt the CPS reference period slightly. Specifically, the CPS is administered in March and the reference period covers the previous calendar year (January through December). So respondents are essentially asked about coverage during a 12-month period, not counting the most recent three months. Because the current research was carried out in the fall, we could not mimic the proper calendar year so we asked about the previous 12 months immediately preceding the interview date. This difference in design could mean that our testing missed certain aspects of respondents' recall and reporting behavior in relation to the 3-month gap, but our observations regarding the 12-month span of time are likely to be applicable to the CPS design.

There were three main patterns of response to questions about the 12-month time period. Some respondents reported thinking of the past 12 months and exhibited careful attentiveness toward the time frame. One had been insured by job-based coverage for 7 years but lost it 11 months prior to the interview. Nevertheless, he did report this one month of coverage since the question asked "at any time during the past 12 months." Another respondent was 65 and had had job-based coverage for years,

and just 5 months ago also began receiving Medicare, and reported both plans. Other respondents, however, seemed to pay no attention to the reference period and said they were simply thinking of "what they have now". The third type of respondent said they thought of neither the 12 month period stated in the question nor their current situation per se, but rather, the circumstances that defined the current spell of the insurance. One respondent said she was thinking of "the time that I myself was eligible, and only because of my pregnancy." Another thought of the past 3 years because she started her current job 3 years ago, and the health insurance situation has not changed in those 3 years.

While these findings suggest respondents are not necessarily attending to the reference period specified in the question, the consequences for underreporting among those currently insured are fairly benign. That is, respondents who have coverage at the time of the interview generally do not fail to report that coverage and since the reference period encompasses the date of the interview it is inconsequential whether the respondent is thinking of today, the past month, past 12 months, or past 12 years. However, if those currently *uninsured* employ these same patterns of response, there could well be consequences for underreporting among those who think in terms of only their current situation or spell of uninsurance if those respondents had been covered at some earlier point in the reference period. For example, those who simply think in terms of current status (versus the 12-month reference period or spells) may well fail to report coverage they may have had even a month or two prior to the interview since they are focused on only their current situation. Similarly, for those who think in terms of spells, if a respondent lost her job (and coverage) 11 months prior to the interview she would have this 11-month time period in mind, and may fail to report her job-based coverage from the earliest month of the reference period.

In our sample we only encountered one respondent who was currently uninsured but had had insurance earlier in the year, and he did report that coverage. However, we encountered another respondent who was currently covered by Medicaid, but up until 2 months prior to the interview she'd been covered by a state-sponsored program. She reported her Medicaid but failed to report the state-sponsored coverage. If she'd been without the Medicaid coverage at the time of the interview and failed to report the state-sponsored coverage, she would have been misclassified as uninsured. It is precisely this type of scenario that is suspected to be a source of health insurance underreporting, but we have as yet to observe these types of respondents in the lab setting, This may be due to the cognitive interview context, which brings extra scrutiny and perhaps focus to the recall and reporting task and may prompt respondents to be more attentive than they would be in a production interview setting.

3.3 Household Composition

The CPS asks questions at the "household" level – that is "…was anyone in the household covered by [plan type x]." A "yes" to this general question is followed by a simple "Who was covered?" A household roster is displayed and the interviewer checks off anyone mentioned by the respondent. Thus, individual household members' names are not read by the interviewer. Other surveys, however, ask questions at the person level: "…were you covered by [plan type x]?" and "…was Tom covered by [plan type x]?" and so on (note that this is approach is less efficient and leads to a much longer interview in large households). Prior research suggests that when household members' names are, by design, read by the interviewer, reporting of health insurance goes up (Blumberg et al, 2004; Hess et al, 2001). However, Pascale (2000) also found that among "large" households (those with at least four members) Medicaid coverage rates were almost double in the household-version versus the person-level questionnaire design (11.5% vs. 6.2%). And Blumberg (2004 et al) found that longer administration times were related to higher rates of uninsurance, and suggests that "respondent fatigue may contribute to higher uninsurance rates." To better understand whether respondents were thinking of all members when asked household-level questions about health insurance coverage, we asked them specifically who comes to mind when answering those questions.

Indeed we did find that respondents had difficulty with the household-level approach, particularly in relatively large or complex or non-traditional households. One respondent thought the questions were asking only about adults, not children. Another lived with her mother, father, and three teenage nephews. In general this respondent had difficulty remembering that the whole series was asking about everyone in the household, not just herself, and at one particular question she forgot to report her nephew's coverage because she "wasn't thinking of him." Another respondent living with his parents, his son and his brother neglected to report his brother's coverage even though he'd mentioned his brother in previous questions. A third respondent forgot to include her mother in one question, and her nephew in another, even though they were both covered. Household size did appear to be a factor in these cases; it was only in households with four or more people that respondents forgot about certain members.

Other respondents had difficult reporting for other household members because they had only a vague understanding of the person's coverage and did not know the particular plan type. One lived with his partner and her 21-year-old son, said he had only a general idea of their coverage but did not feel confident reporting a specific plan type for them. Another said he was not sure whether his mother was covered by his father's military health insurance and did not know the name of that military coverage. And finally one respondent, who lives with several non-related housemates, could not provide details on his housemates' health insurance situation.

Overall, the reporting problems we observed seem to stem from a combination of the sheer number of household members for whom a respondent is asked to report, and the respondent's familiarity with the details of those peoples' coverage. Somewhat surprisingly, neither of these problems was necessarily associated with the "closeness" of the relationship between the respondent and the household member for whom he or she was reporting. We observed respondents who forgot about distant relatives and others who forgot about their mother and brother. In terms of lack of knowledge, we found (predictably) that respondents did not know details of housemates' coverage, but also found respondents who had difficulty reporting for their mother and live-in partner. Perhaps this is not surprising, given that health insurance eligibility tends to revolve around the nuclear family – that is, husband, wife and children under 21. Therefore, a respondent may be in a fairly good position to report on their spouse's and children's insurance, because they all share the same coverage, but other combinations of reporter-reportee are perhaps more prone to error. Adult children reporting for their parents and siblings, for example, are not likely to share the same coverage and hence may not be very familiar with the plan type. Indeed, few errors or issues were observed for respondents who were policyholders reporting on their own policies and individuals covered under that policy.

Given these observations, the CPS series of questions may simply be too complex and detailed to tap into the sometimes-limited knowledge a respondent may have about other household members. For example, a respondent may know with confidence that his brother is covered, and may even have a general idea that it is private coverage. If this respondent lived in a large household, with a wife, children, and parents, consider all the cognitive processing involved in just this first question: "These next questions are about health insurance coverage during the past 12 months. The questions apply to ALL persons of ALL ages. At any time during the past 12 months, was anyone in this household covered by a health insurance plan provided through their current or former employer or union?" It's quite possible that the respondent would forget about his brother entirely, or have some doubts about whether the private coverage "belongs" here. Similar problems may occur for respondents who know a household member is covered by some type of public plan but when asked the detailed Medicare, Medicaid and SCHIP questions they have doubts about which question is most appropriate. Ultimately they may fail to report the coverage at all, or perhaps double-report, or simply guess which question most closely matches their perception of the person's coverage.

3.4 Item-Specific Reporting Errors

In addition to these cross-cutting reporting errors, there were a number of issues associated with particular items. The implications of these errors were broad, potentially leading to underreporting and overreporting of insurance status, and mischaracterization of plan type. Below is a summary of these errors.

3.4.1 Private Coverage

There were several miscellaneous problems with the first three questions on private coverage. At the job-based item, some respondents overlooked the term "former employer" and failed to report retiree coverage, and some were uncertain where to report coverage obtained through a family member who is now deceased (this occurred at both the job-based question and the item on coverage through someone outside the household). There was also general confusion in cases where the categories of coverage in the questions were not mutually exclusive, such as job-based and military coverage, and job-based and coverage from someone living outside the household. On the over-reporting side, some respondents included out-of-scope plans such as worker's compensation, vision and dental plans. And at the question on directly-purchased coverage, some respondents asked if they should include other forms of insurance, such as auto or life insurance.

3.4.2 Public Coverage

There were three main problems observed regarding Medicare and Medicaid. The first, touched on in the discussion above on questionnaire structure, was that some respondents with public coverage were "over anxious" to report that coverage at earlier questions in the series, perhaps because they didn't know that later, more appropriate questions were coming. For example, one respondent reported his Medicaid plan at the question on directly-purchased coverage because he was thinking of insurance he "got on his own," that is, not through an employer. A second problem was that some respondents did not consider public programs to be "insurance." One respondent (on Medicare) commented that since she does not pay into a plan (via a premium) she doesn't consider herself to be covered by health insurance; she feels she has a health care *plan*, not *insurance*. A similar finding was reported in a prior report by Roman et al (2002). Regarding military coverage, two respondents were not certain whether VA benefits "counted" as insurance. The third general problem we observed was confusion between Medicaid and Medicare, which manifest when respondents were reporting for themselves and for other household members as well. In one case the respondent was confused between the two programs, even after definitions were read, and she thought she had Medicare until she looked at her card and saw that it was Medicaid. Another respondent, who was in his 40s but disabled, first reported that he was on both Medicare and Medicaid but later, after hearing the standard program definitions, determined that he had Medicare. When reporting for other household members (his niece and nephew) he said they have "one of the two – I don't know" and later said that since he was on Medicare, they must have "the other kind" (Medicaid). This respondent also failed to report his 75-year-old mother at the Medicare item, even after the definition was read.

Later, at the Medicaid question, he reported that his mother had Medicaid. When probed he said "You know, you get it because she's old. She's retired now." This type of confusion was also observed in previous research as well (Loomis, 2000).

4 Summary

We observed respondents demonstrating a number of different reporting errors which could have serious consequences for overreporting, underreporting and misreporting of health insurance. Overreports could result from respondents reporting out-of-scope plans. Underreporting could come from a number of different sources:

- Recall error may cause respondents to forget about coverage they or another household member had at some point earlier in the reference period;
- Respondents may simply forget to report coverage for certain household members;
- Perceived redundancy of the questions may cause respondent fatigue, resulting in inattentiveness to questions later in the series and hence underreporting if any of those plans was relevant to household members;
- Respondents may not consider certain types of coverage (such as Medicare, Medicaid and VA plans) to be "insurance."

Misreporting could also arise from a number of different sources, mainly from respondents who volunteer more information than is asked for early in the series and then report coverage at inappropriate items. These errors may not be caught or corrected by the interviewer. Finally, several types of response error were observed that could result in either underreporting or misreporting:

- The complex and detailed questions in the CPS may not tap in to respondents' perceptions of health insurance coverage, particularly when the respondent has only limited knowledge of other household members' plans. This combination of very specific questions and respondents' very general knowledge could result in either the respondent taking a good guess at which question is most appropriate to the coverage, or not reporting the coverage at all.
- The non-mutually-exclusive questions on coverage could confuse respondents, who may end up guessing at which question is most appropriate to the plan type, double-reporting the coverage or not reporting it at all.
- Respondents confuse Medicaid and Medicare and could misreport or double-report the coverage.

In sum, we observed a wide range of potential sources of reporting error. There is only limited empirical evidence, however, on how these response errors would manifest in a production setting. There does seem to be some support for the notion that interview designs which incorporate individual names of household members (versus "anyone in the household") result in more reporting (Hess et al, 2001) but that longer interviews in larger households could also result in underreporting (Blumberg et al, 2004; Pascale, 2000).

As for respondents who do not consider public coverage to be "insurance," there is a large literature on Medicaid underreporting. For example, researchers comparing the CPS survey estimates to administrative records reported by the Centers for Medicare and Medicaid Services show the magnitude of underreporting to range from 13-25% (Czajka and Lewis, 1999). Some speculate that part of the reason for this underreporting is the increasing penetration of Medicaid managed care, which contracts with private insurance carriers to service Medicaid enrollees. Researchers speculate that this shift could cause Medicaid recipients to mistakenly believe they have private coverage and report it as such in a survey. Evidence for this is rather mixed. Authors of earlier cognitive testing of public coverage questions on the CPS concluded: "We found no evidence that Medicaid recipients who receive services through private health insurance providers were reporting their Medicaid assistance at the questions about private health insurance coverage." (Loomis, 2000). And a later split-ballot study that manipulated the order of the CPS questions (private first, then public; and vice versa) found that when questions on private coverage came first, there was actually more reporting of public coverage than when questions on public coverage were sequenced before those on private coverage (Pascale, 2001b). However, a recent study of the relationship between Medicaid underreporting and penetration of Medicaid managed care found that "each percentage point increase in the penetration of managed care was associated with an [Medicaid] underestimate in the CPS of 0.4 percentage points" (Chattopadhyay and Bindman, 2006). The mixed results on this topic could be a reflection of the unknowns regarding how the problems that turned up in cognitive testing manifest in field surveys.

Finally, regarding the 12-month reference period, at the moment research is being conducted which links CPS data to state Medicaid records to determine whether respondents known to be covered by Medicaid at some point during the calendar year fail to report that coverage due to recall error. Results from that research are not yet available; however, findings from similar studies on underreporting of safety-net benefits suggest that recall error is a contributing factor to underreporting, at least in surveys that employ a 12-month reference period. Resnick et al (2004) conducted a study linking administrative records to survey data on food stamps receipt and found that "the lowest misreporting rate is for households receiving food stamps in the survey month: 21.2%." For households who last received food stamps more than four months prior to the survey interview the aggregate misreporting rate was 74.4%. A similar study on welfare (TANF) receipt found strong evidence that respondents "report program participation based on the situation at the time of the interview" not necessarily based on the 12-month time period specified in the questionnaire (Lynch, 2006). Both of

these studies suggest that current status overrides attentiveness to the 12-month reference period for some respondents. Marquis and Moore (1990), however, found no such memory decay in reporting of welfare benefits in a survey with a 4-month reference period. Results from cognitive testing on another topic – school crime – also found that respondents did not attend to the reference period (in this case 6 months) but that they referenced the entire past school year when thinking about instances of victimization in school (Jocuns and Demaio, 2006).

Taken as a whole, these studies suggest that asking about current status, versus some longer period of time, for certain topic areas is beneficial, but that the real challenge is to determine – for any given topic area – the time frame that most closely maps on to respondents' way of thinking about that topic and to match the reference period specified in the questions accordingly.

5 Conclusions And Future Research

Findings here suggest that the CPS approach could benefit by testing of a fundamental restructuring. Perhaps the feature with the greatest consequence for underreporting is the household-level approach. Though this has benefits in terms of respondent burden, a failure to name each household member individually does seem to risk that some members are forgotten about, particularly in larger or complex households. On the other hand, administering the entire series for each household member individually also risks respondent fatigue and associated underreporting. One promising avenue to explore would be a hybrid approach, whereby the household member is asked to report for him/herself, and if/when any plans are reported a question is asked to determine if anyone else in the household also has that plan type. Upon completion of the series for the first person, the series would repeat for the second person but would capitalize on any previously-gathered information about that second person. For example, if a husband reported himself and his wife on his job-based plan, the series for his wife could start by verifying that job-based plan and asking if she had any other plans. This hybrid approach would allow for each household member to be asked about by name but would avoid the entire series being repeated in its entirely for each member (unless, of course, each member had their own unique plan, not shared with any other member).

Given that many of the individual items seemed to contain phrases or concepts that confused respondents, another fundamental change would be to abandon the general approach of asking a series of complex, detailed questions on particular types of coverage, but rather begin with a global question on whether the respondent has coverage or not. Respondents who have only a limited knowledge of the coverage may have an easier time starting off with a more basic question such as this, and may be able to provide some level of detail if that detail is asked about in a "tiered" fashion. For example, for respondents who do report some kind of coverage, a followup question could first determine the general source of coverage (through some type of employment, direct purchase, the government or some other source). Subsequent questions could then tease out the necessary detail (e.g.: for government plans, whether they were Medicare, Medicaid, etc.). For respondents who know a certain household member is covered but who have no idea by what type of plan, this approach would at least enable accurate capture of insurance status (i.e.: covered).

As noted above, however, many respondents do not consider certain types of coverage to be "insurance." The global question on status, then, could ask about coverage using a range of descriptors, including "plans", "coverage" and "insurance". Furthermore, for respondents who say "no" to this global question, followup questions that specifically mention plans commonly underreported, such as Medicare, Medicaid, VA and possibly other less-traditional types of coverage, could be asked in order to avoid underreporting.

Finally, regarding recall error, record check studies like those mentioned above could be very promising to help understand the circumstances under which respondents fail to report particular spells of coverage. These types of studies could be particularly useful if they addressed both public and private coverage, duration of coverage, and the relationship between the respondent and the person for whom he or she is reporting coverage.

Given the importance of the CPS as a measure of not only the official rate of the uninsured but of trends in insurance over time, any modifications to the methodology must be fully understood and justified. This report has attempted to set out a map of the types of reporting errors encountered by respondents, and the potential for misreporting of not only status of coverage, but type of coverage. Next steps are to explore modifications to the questionnaire design that would address these error sources, and to conduct quantitative field tests to examine the effects on the estimates. The field tests should include validation components, such as linkages to records on coverage, in order to not only understand differences in survey designs, but to understand which design results in more accurate estimates.

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