

## Medicaid and Medicare Reporting in Surveys: An Experiment on Order Effects and Program Definitions<sup>1</sup>

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### Abstract

In the mid-1960s two federal public health programs were created – Medicaid (covering low income families) and Medicare (covering the elderly and those with certain disabilities). Though these programs serve two different populations (notwithstanding those eligible for both Medicaid and Medicare), there is some evidence that the public -- even those enrolled in the programs -- is confused about the distinction between them. If this confusion systematically manifests in surveys that attempt to measure health insurance coverage, then estimates of Medicare and Medicaid enrollment could be affected in non-trivial ways.

The current research explored differences in government health plan reporting based on two factors: the sequencing of the Medicare and Medicaid items within the questionnaire, and definitions of the programs embedded within the questions. The experimental 2x2 design consisted of four different versions of the questionnaire, each modeled on the Current Population Survey design. Half of the sample was asked the more standard sequence (Medicare first), and half was asked about Medicaid first, followed by Medicare. Each of these two groups was split in half again; half the sample received Medicare and Medicaid questions with program definitions embedded within the question, and half the sample received questions with the definitions displayed on the screen as interviewer notes, to be read at the discretion of the interviewer. The data source for the analysis is the Census Bureau's Questionnaire Design Experimental Research Survey (QDERS), conducted in the summer of 2003.

Results showed that including the definition of the program within the question increased reporting of Medicare for the overall sample, and that main effect was especially pronounced for the disabled. There was no corresponding main effect of the definition on Medicaid reporting. With regard to order effects, there were no main effects on either Medicare or Medicaid reporting.

### 1. INTRODUCTION

Medicare and Medicaid are both federal programs launched in the 1960s. Medicare was designed primarily for those 65 years old and older, while Medicaid was designed for low income families and some disabled. For some time researchers and policymakers have been interested in studying Medicaid and Medicare participants for a number of reasons, among them: to assess whether the programs are reaching their target populations; to monitor the quality and frequency of care that participants receive; and to assess the changing needs of the target populations and make appropriate adjustments to the programs. To address these questions researchers often turn to surveys, rather than administrative records, mainly for two reasons. First, Medicaid records are not yet available as a centralized, relatively current standardized dataset. Rather, records are collected at the state level and the format, timeliness, and other details vary quite a bit across states. Second, records contain only limited information about the participants and generally do not include information that would allow researchers to examine key questions such as the associations between program participation and frequency of use of the health system, quality of care, health status, employment status, and so on. Surveys, on the other hand, collect that type of information. The challenge, then, is obtaining accurate indicators of health care coverage in surveys.

In spite of the need for accurate indicators of program participation in surveys, there are known and suspected problems with reporting of these programs. First, there is a fairly developed literature on Medicaid underreporting in surveys. That is, when compared to administrative records, survey estimates of coverage are lower than what the records indicate. One assessment estimates that the undercount ranges from 13 to 25% (Czajka and Lewis, 1999); another study estimates the undercount ranges from about 14 to 21% (Blumberg and Cynamon, 1999). There is also some qualitative research that enrollees confuse Medicaid and Medicare (Loomis, 2000). In cognitive testing primarily focused

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<sup>2</sup> This report is released to inform interested parties of ongoing research and to encourage discussion of work in progress. The views expressed are those of the author and not necessarily those of the U. S. Census Bureau.

on Medicaid reporting researchers found this confusion sometimes manifested at the question on Medicare, sometimes at the Medicaid question, or sometimes at both. Following are some quotes from that study.

In response to the Medicare question:

- “I don’t know...I’m thinking Medicare may be the card that [my granddaughter] gets every month. I don’t know if that’s considered Medicare or Medicaid. If it’s Medicare, yes, she gets a medical card every month.” Later, at the Medicaid question: “If Medicaid pertains to the card that [my granddaughter] gets, yes.”
- “That’s my medical card, right? I get those two confused, Medicare and Medicaid”

And in response to the Medicaid question some quotes were:

- “Medical card, right? I’m confused with Medicaid and Medicare. But we have medical cards. But Medicaid and Medicare is, I don’t know which, I know one is like 65 and above and the other is below that, but I don’t know which is which.” Later at the Medicare question: “See, now I get mixed up between Medicare and Medicaid. Ok, Medicare is the same thing as the medical card, right? Is that what you said?”
- “Does your family have medical insurance...” Later, at the Medicare question answered ‘yes’ again and paraphrased as: “They want to know are you...are you getting medical coverage...Are you getting medical assistance” [Interviewer probed about Medicaid vs. Medicare] “It’s the same thing. It’s like you are asking the same question twice.”

Another issue in terms of practical, real-world challenges is that the names used to describe these programs, particularly Medicaid, are in flux and vary by state. Many states re-name the Medicaid program (e.g.: “MassHealth” in Massachusetts, “DC Healthy Families” in Washington, D.C.), and these names may or may not be stable over time. An additional complicating factor is that many states now contract with commercial HMO vendors to cover Medicaid and Medicare enrollees, and these commercial contractors may rename the programs to reflect their own ‘brand.’ Indeed, a pretest in Massachusetts that incorporated these HMO names into the survey questions found that 4 of 15 respondents said ‘no’ to the Medicaid/MassHealth question but did report their coverage when the HMO name was used (Roman et al, 2002).

A final complicating factor is the fairly recent introduction of “SCHIP,” or the State Children’s Health Insurance Program. Federal legislation was passed in 1997 that created a new program aimed at children in low income families whose income was too high to qualify for Medicaid. Some states created a distinct

SCHIP program, but some states simply expanded eligibility for Medicaid to include SCHIP recipients. So in some states the only distinction between the two programs is income level of the recipient. In these states, it is not at all clear that respondents would know whether their income level resulted in an SCHIP or a Medicaid qualification, since the program name is the same.

Given these issues, some of the survey reporting problems could stem from the questionnaire design. The Current Population Survey (CPS), which is used to produce official estimates of health insurance, and many other surveys modeled on the CPS, all use a similar design to measure health insurance – a battery of eight questions, each asking about a distinct type of health plan. Each main question is asked at the household-level to determine if anyone in the household is covered by plan type X. If yes, a followup question determines who in the household has that coverage. The specific plan types asked about are job-based, directly-purchased, coverage from someone outside the household, Medicare, Medicaid, SCHIP, military and a catch-all “other” category.

Considering the results of other studies – particularly the finding that some respondents confuse Medicare and Medicaid – the goal of the current research was to explore whether reporting would be affected by two factors: (1) embedding brief definitions of the programs within the question text and (2) manipulating the order in which these programs were asked about. Because the program names are so similar, the assumption was that providing brief definitions of the programs as part of the question text – that is, mentioning that Medicare covers the elderly and Medicaid covers low income – would help promote accurate reporting. With regard to order effects, previous research in large part guided the current study. In the Loomis report cited earlier, researchers concluded: “Given the confusion among respondents between Medicare and Medicaid, we think that the order of the health insurance questions could affect estimates of these types of insurance...it seems quite possible for Medicaid recipients to simply respond ‘yes’ to the first question that sounds familiar to them. Currently the Medicare question appears before the Medicaid question, so it may be that Medicaid recipients are reporting their assistance at the Medicare question. And, as we saw in the cognitive interviews, it is also possible to report Medicaid receipt at both the Medicaid and Medicare questions.” The current research, then, included an experiment to manipulate the order of the Medicare and Medicaid questions within the general CPS-style questionnaire.

## 2. RESEARCH DESIGN & METHODS

These research questions were explored using a 2x2 split-ballot experimental design consisting of four different versions of the questionnaire, each modeled on the Current Population Survey design. With regard to definitions, half of the sample was asked the Medicare and Medicaid questions as in the CPS – that is, the definitions were displayed as ‘Read If Necessary’ notes, to be read at the interviewers’ discretion. The other half of the sample was asked questions that contained these definitions as part of the question text (see Figure 1). Note that the actual text in both treatments was identical; the difference was simply that the definition was optional in one case, and embedded as part of the question in the other case. With regard to Medicaid, as mentioned above, many states rename the program. In those states, the question displays that state-specific name (“local name” in Figure 1) along with the term “Medicaid.” Other surveys, such as the Medical Expenditure Panel Survey (MEPS) and the National Survey of America’s Families (NSAF), go to more extensive lengths than the CPS to describe Medicare and Medicaid programs, and the distinction between them, in the introduction of the question. However, no empirical or qualitative studies were found that examined the impact of those statements, so there was little to guide the current study.

**Figure 1: Definition Manipulation**

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| <b>NO DEFINITIONS</b>  |
| <b>MEDICARE:</b><br>At any time during the past 12 months, were you covered by Medicare?<br><b>READ IF NECESSARY:</b> Medicare is the health insurance for persons 65 years old and over or persons with disabilities. |
| <b>MEDICAID:</b><br>At any time during the past 12 months, were you covered by Medicaid/local name?<br><b>READ IF NECESSARY:</b> Medicaid/local name is the government assistance program that pays for health care.   |
| <b>DEFINITIONS</b>   |
| <b>MEDICARE:</b><br>Medicare is the health insurance for persons 65 years old and over or persons with disabilities. At any time during the past 12 months, were you covered by Medicare?                              |
| <b>MEDICAID:</b><br>Medicaid/local name is the government assistance program that pays for health care. At any time during the past 12 months, were you covered by Medicaid/local name?                                |

For the order effects treatment, each of these

two groups was split in half again. Half the sample received the questions in the standard CPS order (Medicare then Medicaid) and half received these questions in the reverse order, with one slight complication. As mentioned earlier, with the introduction of SCHIP, there is now some overlap between the SCHIP and Medicaid programs. Because these programs are so intertwined, they were treated as a unit with regard to the sequencing experiment. See Figure 2 for a display of the order manipulation.

**Figure 2: Order Manipulation**

| <b>MEDICARE FIRST</b> | <b>MEDICAID FIRST</b> |
|-----------------------|-----------------------|
| 1. Job-based          | 1. Job-based          |
| 2. Directly-purchased | 2. Directly-purchased |
| 3. Someone outside hh | 3. Someone outside hh |
| <b>4. Medicare</b>    | <b>4. Medicaid</b>    |
| <b>5. Medicaid</b>    | <b>5. SCHIP</b>       |
| <b>6. SCHIP</b>       | <b>6. Medicare</b>    |
| 7. Military           | 7. Military           |
| 8. Other              | 8. Other              |

These experiments were administered in the Census Bureau's Questionnaire Design Experimental Research Survey (QDERS) conducted in June through August of 2003. QDERS is a research vehicle developed by Census Bureau staff for the sole purpose of experimentally testing survey methods for general research purposes (vs. survey-specific applications). The 15-minute telephone survey included questions on three main topic areas: demographics, health insurance, and trash and recycling. A single household respondent was asked to report for himself/herself and up to eight other household members. The survey was administered by telephone from the Census Bureau's Tucson, Arizona, telephone interviewing facility, using RDD sampling procedures (covering the continental United States), and a CATI instrument. The interview staff consisted of 34 experienced telephone interviewers, split randomly into four groups. Interviews were conducted over a 7-week period. For the first 11-day session, each group of interviewers was trained on and administered only one of the four instruments. At the two-week mark interviewers quit work on the version they had been assigned to, and were trained on a new questionnaire version. Interviewing then resumed for another 11-day session. This cycle was repeated until all four questionnaire versions had been worked on for an 11-day field period. For each phase of interviewing a new, independent sample was released. In all, interviewers completed interviews in 1,919 households, resulting in data for 4,805 people. The 1,919 interviews represent a response rate of 40-54%. The lower figure includes in the denominator cases of unknown eligibility (never-contacted cases whose status as working residential telephone numbers is uncertain);

the higher figure excludes cases of unknown eligibility. The numerator includes both completed and partial interviews.<sup>3</sup> Response, nonresponse, and refusal rate differences between the two instrument treatments were trivial and non-significant. The interviews resulted in data on roughly 1,200 people per treatment (see Figure 3).

**Figure 3: Treatment Groups**

|                       | Medicare 1 <sup>ST</sup> | Medicaid 1 <sup>ST</sup> |
|-----------------------|--------------------------|--------------------------|
| <b>No Definitions</b> | 1,246 people             | 1,237 people             |
| <b>Definitions</b>    | 1,142 people             | 1,180 people             |

**4. RESULTS**

In spite of attempts to keep all treatment groups balanced – by using 4 independent samples and by rotating all four interviewer groups across all four questionnaire versions – the samples were not evenly balanced on two key demographic characteristics: household income and age. Specifically, both groups where the program definitions were read to respondents included significantly more people 65 years old or older, by about 3 percentage points. And the treatments where Medicaid was asked first included significantly more people in households below the poverty threshold – 8 percentage points more among the ‘no definition’ group and 3 percentage points more among the ‘definition’ group. In order to account for these demographic differences, all the models discussed control for age (dichotomized as 65+ or under 65) and income (dichotomized, based on an approximation of

the poverty threshold).

Also, to consolidate the data for statistical power, interaction effects between the treatments were examined and tested and none were significant. Treatment groups were then collapsed. That is, the two groups where Medicare was asked first were grouped together, regardless of definition, and the two groups that used definitions were grouped together, regardless of which program was asked about first, and so on.

**A. Definition Effects on Medicare**

Logistic regression models were run including age, disability, income, both treatment effects (order and definition) and interaction terms between demographics and treatment variables. After controlling for all these correlates with Medicare eligibility and dropping nonsignificant interaction terms, there was a marginally significant main effect for treatment ( $p = .1007$ ) and a significant effect for the interaction between treatment and disability ( $p = .0873$ ). When education was added to the model as a control, the main effect increased in significance ( $p = .0647$ ) as did the interaction term ( $p = .0711$ ). See Table 1.

This indicates that reading the definition increases Medicare reporting across the board, for all subgroups, and that the definition effect is especially pronounced for the disabled. Indeed, in terms of magnitude, the difference in Medicare reporting with and without the definition was much higher among the disabled (11 percentage points) than among the non-disabled (only 3.1 percentage points). Interestingly, the other target group mentioned in the definition of Medicare – those 65 years old and older – did not react to the definition very differently from the group under 65. For both groups, Medicare reporting went up slightly when the definition was read, but the magnitude of the difference between the two groups (over and under 65) was only 0.4 percentage point. Finally, given the confusion between Medicaid and Medicare, and the fact that many disabled people could be covered by Medicaid (but not Medicare), using the definition in this manner could also be picking up disabled people on Medicaid (however, the interaction between order effect and treatment effect was not significant).

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<sup>3</sup> These response rates were calculated based on the American Association for Public Opinion Research (AAPOR) guidelines. The lower response rate (40%) corresponds to AAPOR's "RR2" and the higher rate (54%) corresponds to AAPOR's "RR6." (AAPOR, 2004).

**Table 1: Levels of Medicare Reporting by Subgroup, No Definitions vs. Definitions**

| Subgroup             | Definitions    |      | No Definitions |      | Difference       |
|----------------------|----------------|------|----------------|------|------------------|
|                      | n <sup>1</sup> | %    | n <sup>1</sup> | %    | Percentage point |
| <b>65+</b>           | 290            | 92.4 | 233            | 91.0 | 1.4              |
| <b>&lt; 65</b>       | 58             | 2.9  | 41             | 1.9  | 1.0              |
| <b>Disabled*</b>     | 147            | 56.3 | 107            | 45.3 | 11.0             |
| <b>Non-disabled*</b> | 198            | 13.5 | 162            | 10.4 | 3.1              |
| <b>Poor HH</b>       | 156            | 25.5 | 113            | 17.5 | 8.0              |
| <b>Non-poor HH</b>   | 176            | 10.7 | 149            | 8.7  | 2.0              |

For overall model  $p < .10$

\* for interaction between disability and definition treatment  $p < .10$

<sup>1</sup>Cells do not add to equal numbers across groups due to differential missing data among groups

**B. Definition Effects on Medicaid**

Similar logistic regression models were run to examine the effect of the definition on Medicaid reporting and included the same demographics – income, age and disability -- but in this case the model also included presence of a child under 18 in the household, since that is correlated with eligibility for Medicaid. In this case there was no significant main effect for definition, and controlling for education had no effect. However, there were significant interaction effects between definition and disability ( $p = .0068$ ) and presence of a child ( $p = .0015$ ). The difference in Medicaid reporting with and without the definition was again higher among the disabled (- 4 percentage points) than among the non-disabled (only 0.5 percentage points) and in this case the effect was in opposite directions for the two groups (see Table 2). The definition also had differential effects in households with and without at least one child. In households with

at least one child, when definitions were used Medicaid reporting went down by 1.6 percentage point, but in households without children, Medicaid reporting increased by 2 percentage points.

These findings are not consistent with the definition effect on Medicare reporting, and are somewhat difficult to explain. However, a closer look at the nature of the definitions for Medicare and Medicaid may be useful. For Medicare, the definition states the target groups for program eligibility quite explicitly: “Medicare is the health insurance for persons 65 years old and over or persons with disabilities.” Whereas for Medicaid, the definition is vague and does not explicitly state any particular target groups for the program: “Medicaid is the government assistance program that pays for health care.” Perhaps the effects of the definitions differ because the definitions are not equivalent in terms of describing the types of people each program was designed to cover.

**Table 2: Levels of Medicaid Reporting by Subgroup, No Definitions vs. Definitions**

| Subgroup               | Definitions    |      | No Definitions |      | Difference       |
|------------------------|----------------|------|----------------|------|------------------|
|                        | n <sup>1</sup> | %    | n <sup>1</sup> | %    | Percentage point |
| <b>Disabled***</b>     | 55             | 21.1 | 59             | 25.0 | -3.9             |
| <b>Non-disabled***</b> | 51             | 3.5  | 47             | 3.0  | 0.5              |
| <b>Poor HH</b>         | 153            | 25.0 | 165            | 25.5 | -0.5             |
| <b>Non-poor HH</b>     | 48             | 2.9  | 50             | 2.9  | 0.0              |
| <b>1+ Child***</b>     | 126            | 10.6 | 162            | 12.2 | -1.6             |
| <b>No Children***</b>  | 79             | 7.0  | 58             | 5.0  | 2.0              |

\*\*\* for interaction between disability and definition treatment, and between child/no children and treatment,  $p < .01$

<sup>1</sup>Cells do not add to equal numbers across groups due to differential missing data among groups

**C. Order Effects on Medicare**

The same logistic regression model that was used to examine *definition* effects on Medicare reporting -- with income, age, disability, treatment effects and interaction terms -- was also used to examine *order* effects on Medicare reporting. There was no main treatment effect for order, but there was a significant interaction between income and order ( $p = .0433$ ). When Medicare was asked first, Medicare reporting went up in poor households – by just over 6 percentage points. But in non-poor households the effect was flat, and in fact the observed difference was in the opposite direction – reporting went down, rather than up, when Medicare was asked first.

Interestingly, among poor households there is significantly more reporting of *both* Medicare and Medicaid when Medicare is asked first: 6.3% of people in poor households report both programs when

Medicare is asked first, while only 3.8% report both when Medicaid is asked first ( $p = 0.0361$ ). This is quite consistent with what Loomis discovered in cognitive testing, where some respondents said they got the two programs confused and reported both Medicare and Medicaid. In the current research, a similar scenario may be playing out. Respondents who get the two programs confused may mistakenly say ‘yes’ to Medicare because it sounds vaguely familiar, and then when the true Medicaid question is asked they say ‘yes’ again since they recognize the program name as being more precisely what they are actually covered by – particularly if the state-specific name is one they recognize. In contrast, when Medicaid is asked first, they may correctly report their Medicaid and then when the Medicare question is asked they do not also say ‘yes’ to Medicare since they feel more confident they’ve reported their program correctly.

**Table 3: Levels of Medicare Reporting by Subgroup, Medicare vs. Medicaid First**

| Subgroup             | Medicare 1 <sup>st</sup> |      | Medicaid 1 <sup>st</sup> |      | Difference       |
|----------------------|--------------------------|------|--------------------------|------|------------------|
|                      | n <sup>1</sup>           | %    | n <sup>1</sup>           | %    | Percentage point |
| <b>65+</b>           | 254                      | 92.0 | 269                      | 91.5 | -0.5             |
| <b>&lt; 65</b>       | 50                       | 2.4  | 49                       | 2.4  | 0.0              |
| <b>Disabled</b>      | 130                      | 52.9 | 124                      | 49.4 | -3.5             |
| <b>Non-disabled</b>  | 167                      | 11.0 | 193                      | 12.7 | 1.7              |
| <b>Poor HH**</b>     | 141                      | 24.8 | 128                      | 18.6 | -6.2             |
| <b>Non-poor HH**</b> | 160                      | 9.2  | 165                      | 10.3 | 1.1              |

\*\* for interaction between income and order treatment  $p < .05$

<sup>1</sup>Cells do not add to equal numbers across groups due to differential missing data among groups

**D. Order Effects on Medicaid**

Again the same model used to look at *definition* effects on Medicaid reporting was used to examine *order* effects on Medicaid reporting. The model included income, age, disability, presence of a child under 18 in the household, both treatment effects and interactions. Education was also added as a control but had no substantive effect on the results. As with Medicare reporting, there was no main effect for order. However, there was a significant interaction effect between order and disability ( $p = .0467$ ). When Medicare was asked first, Medicaid reporting went up among the disabled – by almost 3 percentage points – but reporting went down among the non-disabled, by almost 2 percentage points (see Table 4). This finding is difficult to explain, though there may be a connection

with the order effect found for Medicare above: in both poor households and among the disabled there is significantly more reporting of *both* Medicare and Medicaid when Medicare is asked first. For the disabled, 13% report dual coverage when Medicare is asked first, versus only 8% when Medicaid is asked first ( $p = 0.0664$ ). In poor households it appears that the increased reporting of Medicare was a result of confusion between the two programs and subsequent false positive reports Medicare. Among the disabled, however, if that same confusion between programs is at work, it is unclear why respondents would say ‘no’ to Medicaid when it is asked first, but ‘yes’ to Medicaid when it is asked after Medicare.

**Table 4: Levels of Medicaid Reporting by Subgroup, Medicare vs. Medicaid First**

| Subgroup       | Medicare 1 <sup>st</sup> |      | Medicaid 1 <sup>st</sup> |      | Difference       |
|----------------|--------------------------|------|--------------------------|------|------------------|
|                | n <sup>1</sup>           | %    | n <sup>1</sup>           | %    | Percentage point |
| Disabled**     | 60                       | 24.4 | 54                       | 21.5 | 2.9              |
| Non-disabled** | 35                       | 2.3  | 63                       | 4.2  | -1.9             |
| Poor HH        | 146                      | 25.7 | 172                      | 24.9 | 0.8              |
| Non-poor HH    | 49                       | 2.8  | 49                       | 3.1  | -0.3             |
| 1+ Child       | 138                      | 10.9 | 150                      | 11.9 | -1.0             |
| No Children    | 63                       | 5.6  | 74                       | 6.4  | -0.8             |

\*\* for interaction between disability and order treatment  $p < .05$

<sup>1</sup>Cells do not add to equal numbers across groups due to differential missing data among groups

**5. DISCUSSION AND CONCLUSIONS**

Including the definition of the program within the question increased reporting of Medicare for the overall sample, and that main effect was especially pronounced for the disabled. There was no corresponding main effect of the definition on Medicaid reporting. Given the difference in the quality and specificity of the definitions, however, this result is not implausible. The Medicare definition is more specific about the categories of people covered by the program – people 65+ and people with disabilities – whereas the Medicaid definition is rather vague and doesn’t state what categories of people are covered – just that it’s a “government assistance program that helps pay for health care.” There is also a chance that the increased Medicare reporting among the disabled is false positives. Again, if we consider the actual question text and how it sounds when asked over the telephone, it’s

possible that some respondents hear the first sentence (“Medicare is the health insurance for persons 65 years old and over or persons with disabilities.”) and don’t really attend to the second sentence (“At any time during the past 12 months, were you covered by Medicare?”) and end up answering ‘yes’ thinking that the question is actually asking if they are disabled, and/or if they need coverage due to their disability.

It’s difficult to evaluate the implications of these results for data quality. We have no evidence from the literature on whether Medicare is under- or over-reported, and there appears to be no cognitive research on the effectiveness of the wording of definitions used in the CPS or other surveys such as the MEPS and NSAF.

With regard to order effects, there were no main effects on either Medicare or Medicaid reporting.

There were, however, interaction effects. When Medicare is asked first, people in poor households tend to report more Medicare, and disabled people tend to report more Medicaid. Among people living in poor households, there is some reason to suspect that the increased Medicare reporting is actually false positives driven by a confusion over the distinction between Medicare and Medicaid. It's unclear what the source of the additional Medicaid reporting could be among the disabled. In either case, implications of the order effect are rather benign for the Medicaid undercount, given that the CPS and most other surveys that use a similar design ask about Medicare prior to Medicaid. The main implication for data quality with regard to order, then, could be limited to a Medicare overcount.

There are several avenues for future research. One is to go beyond the basic main effects discussed here and explore various theories that would explain the observed interaction effects. Second, conduct cognitive interviewing on alternative wording of definitions that may more clearly describe the Medicare and Medicaid programs. Third, pursue the feasibility of conducting a record check study to evaluate the validity of the Medicare and Medicaid survey estimates. This research is in the exploratory phases, pending availability of centralized Medicaid records that match the time frame of the QDERS survey. Fourth, a sample of the QDERS interviews were tape recorded and behavior coding was conducted. Research plans include an analysis of these data, examining respondent-interviewer interactions across the four questionnaire versions. Finally, theoretical research on context effects may help elucidate these findings. Though much of the literature on context effects is limited to attitudinal and opinion questions (Tourangeau et al, 2000), some of the concepts from this literature could apply to the cognitive processes involved in so-called factual questions as well, especially for concepts about which the respondent has some confusion or uncertainty.

## REFERENCES

- The American Association for Public Opinion Research. 2004. *Standard Definitions: Final Dispositions of Case Codes and Outcome Rates for Surveys*. 3rd edition. Lenexa, Kansas: AAPOR
- Blumberg, Stephen J., and Marcie L. Cynamon. 1999. "Misreporting Medicaid Enrollment: Results of Three Studies Linking Telephone Surveys to State Administrative Records." Proceedings of the Seventh Conference on Health Survey Research Methods, Williamsburg, VA. 189-195
- Czajka, John L., and Kimball Lewis. 1999. "Using National Survey Data to Analyze Children's Health Insurance Coverage: An Assessment of Issues." Report submitted to the Department of Health and Human Services, Washington, DC
- Loomis, Laura. 2000 "Report on Cognitive Interview Research Results for Questions on Welfare Reform Benefits and Government Health Insurance for the March 2001 Income Supplement to the CPS." Unpublished report, Center for Survey Methods Research, Statistical Research Division U.S. Census Bureau
- Roman, Anthony M., Alison Hauser and Amy Lischko. 2002. "Measurement of the Uninsured Population: The Massachusetts Experience." Paper presented at the annual meeting of the American Association for Public Opinion Research, May 15-19, 2002, St. Pete Beach, Fla.
- Tourangeau, Roger, Lance J. Rips and Kenneth Rasinski. 2000. *The Psychology of Survey Response* Cambridge University Press