

HOUSEHOLD NONRESPONSE: WHAT WE HAVE LEARNED AND A FRAMEWORK FOR FURTHER WORK

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I. Nonresponse As an Interagency Issue

Nonresponse affects the quality, cost, and timeliness of all Federal household surveys. Households may not respond to surveys for many reasons, including:

- < they may refuse to respond;
- < they may not be at home when the interviewer calls or arrives; or
- < they may be away temporarily (for example, on vacation).

Survey costs can increase if more households must be contacted to collect the same number of completed cases, or if multiple visits must be made to the same households to complete the interview. Survey quality can decrease if the number of completed cases falls, especially if respondents differ from nonrespondents. Both timeliness and quality can be affected if more, and more complex, adjustments must be made in post-collection processing (such as adjusting survey weights) and the adjustments do not fully compensate for the differences between respondents and nonrespondents. Because of these potential effects, survey managers expend considerable effort designing their data collection instruments, altering their collection mode, and refining their field methods trying to maintain, as well as improve, response rates.

This paper focuses on nonresponse in six large, continuing household surveys: the Current Population Survey (CPS), the Consumer Expenditure (CE) Diary and Quarterly Surveys (CED and CEQ), the National Health Interview Survey (NHIS), the National Crime Victimization Survey (NCVS), and the Survey of Income and Program Participation (SIPP). Analyzing nonresponse in these surveys requires interagency coordination. Although the Census Bureau collects the data for all of them, five are sponsored by other agencies, including the Bureau of Labor Statistics, the National Center for Health Statistics, and the Bureau of Justice Statistics.

These surveys provide data for key national social and economic statistics. They underpin the Consumer Price Index, the national unemployment rate, a national social indicator for the rate of victimization for selected crimes of violence and crimes of theft, the official measure of poverty, and eventually, the proposed new measure of poverty. Some of these six surveys also provide critical information on the characteristics of victims and the consequences of victimization, the amount and distribution of illness and health services received, and the extent of participation in government income and social programs. Data users and policy makers should be concerned about nonresponse because it may directly affect the quality of the data.

Measuring nonresponse rates across surveys and over time is an interagency task. The most recent study of nonresponse rates in Federal surveys was conducted by a subcommittee of the Federal Committee on Statistical Methodology, itself an interagency group. Its review of nonresponse in 26

federally sponsored demographic surveys between 1981 and 1991 concluded that their response rates did not seem to decline (Johnson *et al.* and Shettle *et al.*). Although the study was comprehensive, it was a one-time assessment of levels and trends in nonresponse. There now is nearly a decade of new information to review. In addition, there is the widely held view that, over a 20-year period, "response rates are declining, and have been doing so for some time" (Groves and Couper 1998). Finally, while nonresponse rates remained relatively low in some Federal surveys in the 1990s, it was recognized that many survey managers and sponsors were putting increasing effort and resources into attempts to reduce nonresponse.

To address current nonresponse issues in these six surveys, the Bureau of Census and several of its survey sponsors¹ formed the Interagency Household Survey Nonresponse Group (IHSNG) in the Spring of 1997. This paper reports on the IHSNG's initial project.

A. Recent Trends in Nonresponse Rates, 1990-1997

During the 1990s, annual nonresponse rates rose markedly (between 40 and 80 percent) in five large, continuing household surveys conducted by the Census Bureau. Chart A shows the annual nonresponse² rates for the CPS, the CE Diary and Quarterly Surveys, the NHIS, and the NCVS. The surveys are described in Appendix A, and the underlying data are in Table 3. The percentage changes in rates between 1990 and 1997 for each survey are shown in the legends to the right of the charts. All of the surveys were affected by the federal government shutdowns in 1995 and 1996, and the January 1996 blizzard. While the nonresponse rates for many surveys seem to be declining in the last year or two, the 1997 rates generally remain higher than in the early 1990s. Refusal rates followed the same broad patterns.

C For the monthly CPS, nonresponse rates increased slightly (0.5 percent) between January 1990 and December 1993. Following major design and mode changes that were fully implemented in January 1994, nonresponse rates jumped immediately from 5 percent to 6.5 percent. The rates continued to rise, then leveled off in calendar year 1997 at an average monthly rate that is about 2 percentage points higher than the rate for calendar year 1993.

¹ Other participating agencies include the Bureau of Labor Statistics, the Bureau of Justice Statistics, and the National Center for Health Statistics.

² The Census Bureau measures survey nonresponse for each interviewing cycle. Nonresponse categories include refusals, no one at home, temporarily absent, and other, for eligible units. (Ineligible units include, for example, vacant addresses.) Nonresponse rates are the number of nonresponding units divided by the number of eligible units.

- < For the CE Diary and Quarterly Surveys, as with most surveys of consumption, nonresponse rates have always been higher than in the other three surveys. During the 1990s, that difference widened. Nonresponse rates that had been around 14% since the 1980s began rising in 1994. By 1997, the nonresponse rates were 19% for CE Quarterly Survey and 23% for the CE Diary Survey.

Chart A
Nonresponse rates by Survey, 1990-1997

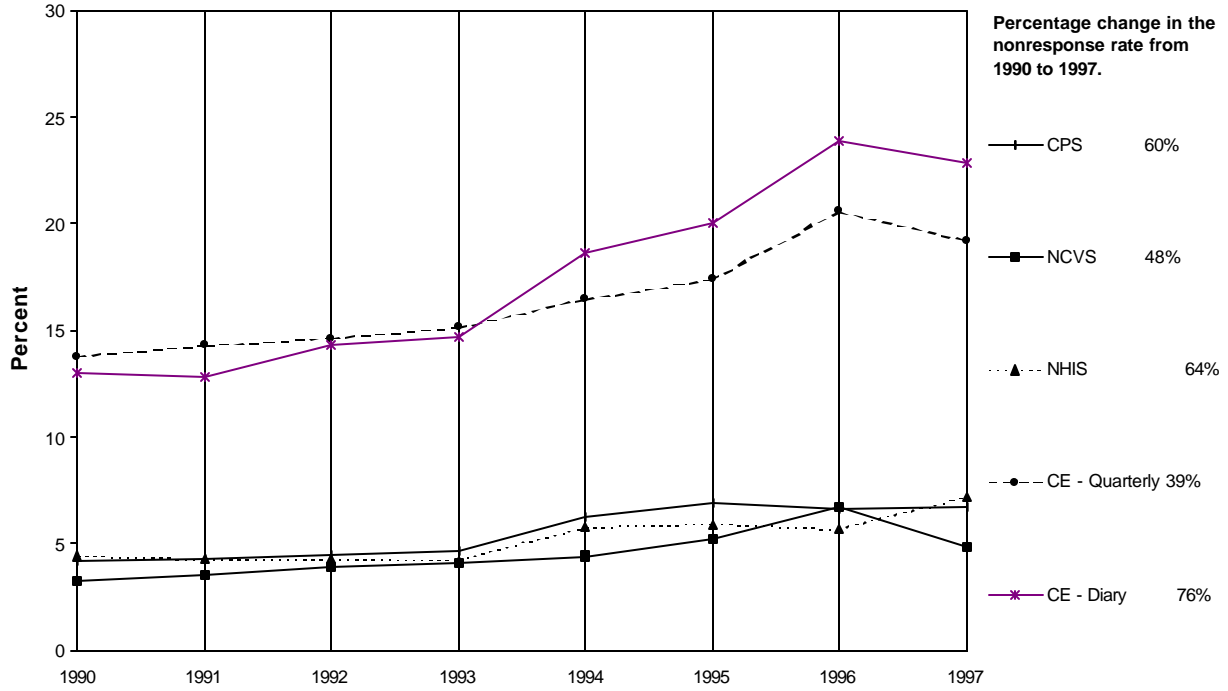
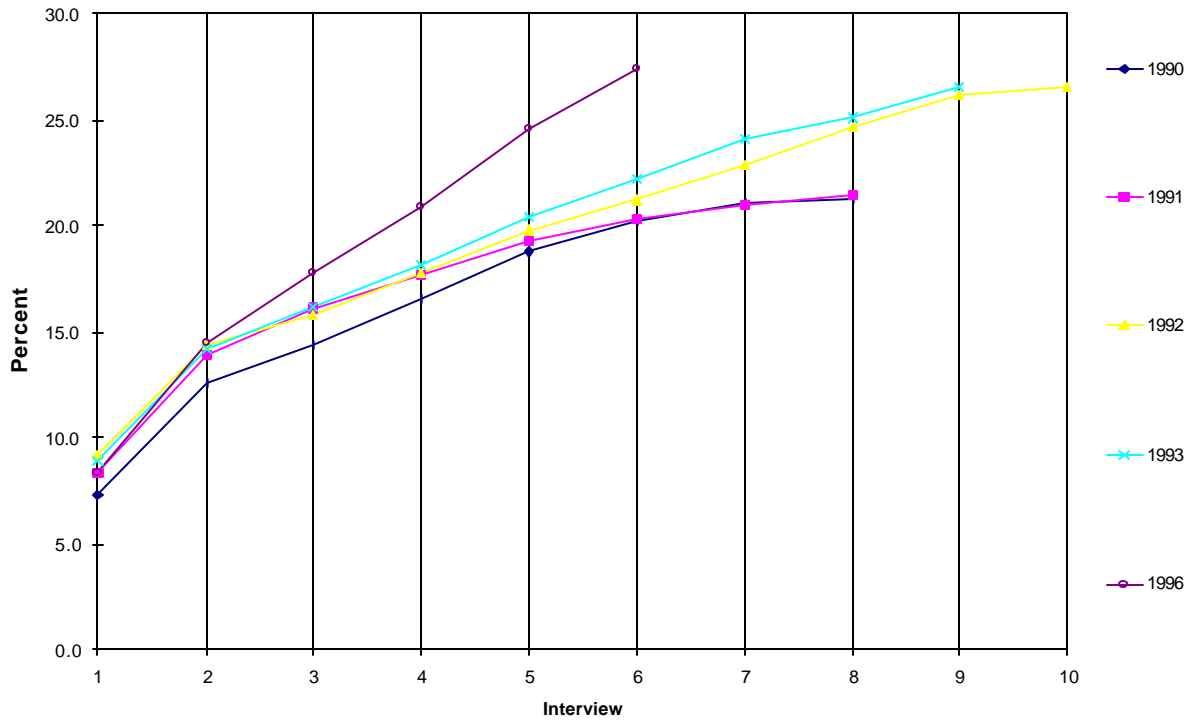


Chart B
SIPP nonresponse rates by panel, 1990 - 1997



- < For the NHIS, the annual nonresponse rate during 1990 - 1997 was 5.3 percent. This was a noticeable increase from 1970-1989, when the average was 3.7 percent.
- < For the NCVS, annual nonresponse rates increased from about 3 percent to 5 percent between 1990 and 1997.

Chart B shows nonresponse rates over the same period for another large, continuing survey conducted by the Census Bureau, the Survey of Income and Program Participation (SIPP). Rates are shown separately for its 1990 through 1993 panels and for its 1996 panel (no panels were introduced in 1994, 1995, or 1997). Nonresponse rates for the initial interview (or wave) of each panel rose from 1990 through 1993. Nonresponse rates for all SIPP panels typically rise quickly with successive interviews.

B. Making Appropriate Comparisons

An interagency effort is required to define sets of nonresponse rates that can be compared across surveys. The nonresponse rates presented in Charts A and B are generally the ones the Census Bureau reports to the survey sponsor. But the surveys themselves differ in a number of basic design characteristics that are widely hypothesized to affect nonresponse rates. The design characteristics are described in Table 1. Design differences, and differences in intended uses of the surveys, mean that these nonresponse rates measure different concepts in each survey. Comparing nonresponse rates among these surveys tells us little about the separate effect of each difference in design.

Consider the effect of differences in three of these design characteristics: the number of interviews, the number of months a household is in the survey, and whether the survey follows a household that moves. The surveys vary widely in the number of times a household is eligible for interviews. Households in the NHIS are eligible only once. It is in the field continuously, with each assigned household eligible for interview only once. All the other surveys have a longitudinal component, and that component differs among them. Households are eligible twice if they are in the CE Diary Survey, but as many as twelve times if they are in the SIPP.

The surveys also differ in the number of months a household is in the survey, and whether the survey follows households that move. For example, for the CPS, the nonresponse rate includes responses from addresses that have been interviewed between one and eight times, over a period of 16 months. If the original household moves, the CPS interviews the new residents, and does not follow the original household members. By contrast, the nonresponse rate for SIPP includes responses from households that have been interviewed between one and twelve times, over a period of as many as four years. If the original household moves, SIPP attempts to follow the original household.

Table 1

Differences in Design Characteristics of Selected Household Surveys

Design Characteristic	CED	CEQ	CPS	NCVS	NHIS	SIPP
Number of Interviews	2	5	8	7	1	12
Months in survey	0.5	13	16	36	---	48
Mover Follow-Up	No	No	No	No	---	Yes
Survey Mode	PAPI	PAPI	CAPI/CATI	PAPI/CATI	CAPI	CAPI
Respondent Rules for Basic Survey						
Any Household Member or Self Response	Any	Any	Any	Self	Any	Self
Age Limit on Respondent	16+	16+	15+	12+	18+	15+
Response for Entire Household or Each Member	Entire	Entire	Each	Each	Each	Each
Self Response Required	No	No	No	Yes	Yes for Adult Section	Yes
Proxies Accepted	No	No	No	No	No	Yes
PAPI CAPI CATI	Paper and pencil (personal) interview Computer-assisted personal interview Computer-assisted telephone interview					

II. Interagency Analysis of Nonresponse in Six Large, Continuing Federal Surveys

Nonresponse is a multi-faceted concept and many of the factors hypothesized to affect it interact with one another. This complexity makes nonresponse a difficult issue for any single agency to address in isolation. IHSNG, as an interagency group, can draw on more resources, and can attempt a broader and more systematic review than any one survey or agency could manage on its own. By working together, IHSNG hoped to identify knowledge that carries across these six surveys, identify gaps that remain, develop methods to rank those gaps, and propose combined research strategies to fill them. We also expected to benefit from routine and focused opportunities to share insights about key aspects of our survey processes.

As a first step, we reviewed group members' research and the broader research literature on nonresponse (including, for example, Groves and Couper 1998). We realized that we did not have a unified framework for thinking about nonresponse issues in a cross-survey, interagency context. Drawing on the existing literature, we developed a new framework and used it to assess what we know about nonresponse in these six surveys. What we found surprised us. Potential causes of nonresponse sometimes seemed to have opposite effects in different surveys. Separating the effect of each potential cause was difficult because there often were several simultaneous changes. The difficulties we encountered in making these assessments led us to the recommendations in the next section.

A. A New Interagency Approach to Improving Nonresponse

IHSNG initially took a case study approach, drawing together hypotheses and evidence about nonresponse in these six large, continuing household surveys. The surveys share enough similarities to benefit from a combined, interagency review. After looking at each survey individually, IHSNG sought consistent trends or reasons for nonresponse across surveys. The evidence generally came from the Census Bureau's real time operations, rather than from controlled experiments designed to test hypotheses about nonresponse. Each of the six surveys had done some research in an effort to explain its nonresponse rate, and several had changed practices and methodology to try to affect their response rates. The review, however, validated Groves and Couper's (1998) concerns that case studies commonly have too many survey components changing simultaneously to provide conclusive tests of hypotheses. We also realized that we did not have a unified framework for forming and testing hypotheses in our applied survey work. Without a unified and consistent framework, we can not be sure whether the research and practices tackled just the easy causes or the core causes. Nor can we readily assess their success or failure, or generalize their applicability across surveys.

B. A Framework for Thinking About Nonresponse

The IHSNG subgroup developed its own framework for thinking about possible sources of nonresponse in these six surveys. This framework divides the components of nonresponse into four major areas:

- < survey design,
- < survey operations,
- < interviewer characteristics,
- < and social, economic, and political environment.

We show in Table 2 the specific issues within each broad area that the group believed might affect nonresponse rates, and our hypotheses about the direction of the effect. This initial report focuses on only two areas -- survey design and survey operations. Detailed differences in survey designs were highlighted in Table 1. These areas are directly under the control of the survey sponsors and the Bureau of the Census. Focusing on these areas allowed us to draw on the research that

agencies had already undertaken and presented to the IHSNG group. The remaining two areas -- interviewer characteristics and the social, economic, and political environment -- clearly also are important in explaining nonresponse (see, for example, Harris-Kojetin and Tucker). These areas are shaded in Table 2. Changes in these areas may lead to

Table 2
IHSNG Framework for Analyzing Nonresponse in Household Surveys

Source	Description	Expected Effect on Nonresponse Rates	Surveys with Changes, 1990 - 1997	
Survey Design				
Subject Matter	The subject matter for the survey	Higher for subject matter the respondents or interviewers view as sensitive or personal	NHIS	
Mode	How survey is conducted: mail, face-to-face, telephone, or combination . Also, whether CAPI is used	Higher for CAPI	CPS, NCVS, NHIS, SIPP	
Questionnaire Complexity	The sequence of questions	Possibly higher if designs are more complex. Possibly lower if complex designs allow for better questionnaire flow and skip patterns.	CED, CPS, NCVS, NHIS, SIPP	
Respondent rules	How respondents are selected within the household	Higher for stricter rules		
Interview Length	How long the interview takes	Higher the longer the survey. Perceived length may depend on topic	NCVS, NHIS, SIPP	
Respondent Incentives	Whether respondents are provided “rewards” for participation in the survey	Lower if respondent incentives offered.	SIPP	
Over sampling	Use of higher sampling rates for selected groups	Higher when selected groups thought to have higher nonresponse rates are over sampled.	NHIS, SIPP	
Interview Period	The length of time a survey is in the field	Lower the longer the interview period		
Panel Design	Loss of respondents over the life of the panel	Higher because of the greater burden on respondents involved in multiple interviews.	CED, CEQ, SIPP	
Survey Operations				
Management Expectations	Sponsor	Sponsors’ expectations regarding acceptable/desired response rates	Higher if sponsors lower their expectations.	CPS, NCVS, NHIS, SIPP
	Census Bureau HQ	Census Bureau expectations regarding acceptable/desired response rates	Higher if the Census Bureau lowers its expectations.	CPS, NHIS, SIPP
Incentive Structure for Interviewers	How interviewers are rated and rewarded	Higher if the rating and reward structure does not reflect the effort they direct toward improving nonresponse rates.	All	

Source	Description	Expected Effect on Nonresponse Rates	Surveys with Changes, 1990 - 1997
Interviewer Workload	Number and length of cases assigned to an interviewer	Higher if the workload is higher.	All
Staffing Ratios	Number of FRs per SFR working a survey.		
	Number of FRs per Field program supervisor working a survey	Higher if an increase in the staffing ratios allows for less mentoring/nurturing of FRs.	All
Training	The amount and content of interviewer training	Higher if emphasis on CAPI/CATI reduces emphasis on survey content. Also, budget cuts reduced amount and frequency of interviewer training.	All
Budget	Cost per case	Higher if constraints on cost per case reduce follow up, training, and other activities that reduce nonresponse.	CPS, NCVS, SIPP
Regional Variations	Differences in regional office management style, supervisors, and interactions with interviewers	Regional variations in nonresponse rates if there are inconsistencies in how surveys are managed at the regional level. Regional variations may also occur if there are regional differences in the mix of households with different nonresponse probabilities.	All
Interviewer Characteristics			
Labor Pool Socio-Demographics	The characteristics of persons who conduct interviews	Higher because interviewers in the past had more education.	
Interviewer Experience (Tenure)	How long an interviewer has worked on a survey	Lower for interviewers with more interviewing experience.	
Interviewer Attitudes	Expectations of getting a complete interview.	Higher if complete interview not expected.	
	Feelings about follow up of nonrespondents. Expectations about privacy and confidentiality of responses.	Higher if they don't believe they should pursue a nonrespondent. Higher if doubts about privacy and confidentiality of surveys.	
Environment			
Social-Demographic-Economic	The US population is increasingly diverse. Because all adults in many household work, they are unavailable for interviews.	Higher because it is more difficult to predict how a question will be perceived by a diverse group, and people are getting harder to find.	

Source	Description	Expected Effect on Nonresponse Rates	Surveys with Changes, 1990 - 1997
Political	Increase skepticism about the government	Higher because citizens are less willing to participate in government-sponsored surveys.	

changes in survey design and survey operations. The full IHSNG group will keep them on its agenda for future consideration.

The final column of Table 2 shows how many elements of survey design and survey operations changed for each survey. The number of changes to a survey ranged from 7 to 13, and the specific items that changed, particularly in survey design, often varied widely. During this period, many of the surveys reported changes in the mode used to collect data, in the questionnaires, or the sample design. Most surveys also reported changes in the personal and job-related characteristics of the potential pool of field interviewing staff during the 1990s, consistent with a strong labor market and a low unemployment rate. The perceived increase in telemarketing and polling also was offered as another reason households might be less willing to participate in federal surveys.

C. Assessing Nonresponse

Using the framework we developed, we assessed and summarized what we know about causes of nonresponse in these six surveys between 1990 and 1997. We found that potential causes of nonresponse sometimes seemed to have opposite effects in different surveys. Because there were often several simultaneous changes in a survey, separating the effect of each potential cause was difficult.

1. Subject Matter

The six surveys collect information on a diverse set of subject matters, as their titles suggest. (Appendix A provides detailed descriptions of each survey.) Our framework suggests that nonresponse rates will be higher in surveys with sensitive subject matters. But two surveys whose subject matters might be regarded as sensitive find that people seem interested in talking about them -- health for the NHIS and crime in the NCVS. NCVS hypothesized that respondents participate in the NCVS because they think that making known what they have experienced may reduce the crime rate. Similarly, NHIS believes that the subject matter helps keep its nonresponse rate low -- people like to talk about their health.

Assessing the separate effect of changing subject matter is difficult because there typically are many other simultaneous changes. However, while the NCVS did not change subject matter, its nonresponse rate nevertheless increased by 48 percent between 1990 and 1997.

2. Mode and Questionnaire Complexity

The framework in Table 2 suggests that changing the mode used to collect a survey, particularly changing to computer-assisted personal interviews, may increase nonresponse. Four of the six surveys changed their collection mode during the 1990s -- going from paper and pencil interviews (PAPI) to computer assisted personal interviews (CAPI) and/or computer assisted telephone interviews (CATI). A recent study by the Census Bureau's Demographic Surveys Division (1998) reviewed the effects of automating twelve of its surveys, including the

four in this study. It found that nonresponse rates tend to increase when a survey is automated. However, because surveys typically make several major changes simultaneously when they automate, it also found that singling out the effect of changing mode on nonresponse rates is difficult. The SIPP survey staff find no evidence that changing to CAPI reduced its response rates in the initial interviews of each panel. The nonresponse rate in the initial interview of the 1996 panel that first used CAPI was 8.4 percent. That rate was well below the rates of 9.3 and 8.9 percent for 1992 and 1993, and equal to the rate in 1991.

Changing to computer-assisted personal interviews is closely related to other changes in the survey, including increasing the complexity of the questionnaire. The effect of increasing complexity on nonresponse rates is more difficult to predict. Surveys may find that changing to computer-assisted personal interviews increases nonresponse if the questionnaire design becomes very complex for typical respondents. But computer-assisted personal interviews may reduce nonresponse if the increased complexity allows the interview to flow better or to have better skip patterns.

Five of the six surveys (the CEQ is the exception) changed questionnaire design and flow between 1990 and 1997. For four of these surveys, these changes coincided with survey automation or with other major changes (such as sample redesign). The changes sometimes are associated with increasing nonresponse rates. For example, major changes introduced in the CPS in January 1994 included converting to CAPI, a major redesign of the survey, and a new questionnaire. CPS nonresponse rates increased substantially between December 1993 and January 1994. Staff hypothesize that some of the increase may be attributable to the increases in the length of time an interview now typically takes (Rothgeb, 1994). Some of the increase may also be attributable to a change in where the survey typically is conducted. The CPS in the past conducted many interviews literally on door steps. Conducting doorstep interviews is more difficult with CAPI instruments. Couper (1996) found a moderate increase in refusal rates when the number of doorstep interviews decreased in a CPS test.

On the other hand, at least some of SIPP's experiences with questionnaire design and flow seem not to have lowered its response rates. When SIPP switched from PAPI to CAPI, it also redesigned questions and changed the order of some questions. But the nonresponse rate in the initial interview of the 1996 panel was lower than in previous panels.

The CE surveys introduced some changes to their questionnaires, although they had not yet converted to CAPI. The CE surveys are both complex and time-consuming for respondents. Therefore, their nonresponse rates historically are higher than in most surveys conducted by the Census Bureau. Another issue in expenditure surveys is under reporting. Some changes in the surveys were made to increase the likelihood of obtaining more complete reports. The CE Quarterly Survey introduced routine changes in the wording and the items included, but no major design or flow changes. The CE Diary instrument had design changes as a result of research and field tests conducted in 1985 and 1991 (Tucker 1992 and 1993; Silberstein, 1993). The design became more structured, and the changes increased reporting. However, the changes also made the diary more bulky – the number of pages for each diary day went from two to seven. The instrument is longer and respondents find it

harder to locate the proper place to enter their expenses. This factor may have had an effect on nonresponse especially for the second diary

week. The 1994-1997 noninterview rates for week 2 were, on average, 3 percentage points greater than the rates for week 1. However, a direct relationship cannot be assessed since the instrument changes occurred three years earlier than the rise in nonresponse.

3. Interview Length

One long-held belief is that nonresponse rates increase as the length of time each interview takes to complete increases. The survey methodology literature, however, finds little relationship between the length of the interview and the response rate (Bogen 1996). We found that the evidence also is mixed for the two surveys (NHIS and SIPP) whose interview length changed significantly during the 1990s.

When the NHIS added more special topical supplements than usual in 1994 and 1995, the interview lengthened by 45 - 65 minutes, and its nonresponse rates also increased sharply. These NHIS supplements were complex to administer, and so large that they had to be split between two booklets in addition to the core questionnaire booklet. There were fewer supplements in 1996, and none in 1997. The NHIS nonresponse rate increased from 4.2 percent in 1993 to 7.2 percent in 1997. But during the same period, the NHIS also introduced a new sample and changed the mode it uses to collect data.

SIPP's experience differed from NHIS. When the SIPP adult interview lengthened in the 1996 panel, there was no evidence that the nonresponse rate increased. However, SIPP made several simultaneous changes, including raising its expectations about the nonresponse rates that could be achieved. This makes it difficult to separate out the effect of interview length.

4. Respondent Incentives

Respondents typically receive no compensation or other concrete reward for participating in a survey. Giving respondents incentives for participating may increase their response rates. SIPP experimented with respondent incentives during the 1990s. The Census Bureau recognized in 1995 that nonresponse could rise to an unacceptable level by the end of the 1996 panel. There was also evidence that low income households left SIPP at a higher rate than other income types (Sae-Ung and Winters, 1998). A plausible means of maintaining higher response rates in general and in particular for low income households was to offer incentives to SIPP sample households. An experiment to offer a token of appreciation to a subsample of SIPP sample cases at initial contact of the 1996 panel was approved by OMB. Results show that the \$20 incentive significantly reduces the overall initial contact nonresponse rates and nonresponse rates in the high poverty stratum. There is some evidence that the beneficial effects of the incentives continues into later waves of the 1996 panel. The design of the SIPP experiment and more detailed results are given in James (1997) and Mack *et al.* (1998). This result is consistent with findings in incentive literature (Willimack, 1995; Berlin, 1992; Butler, 1991; and Ferber, 1974).

5. Oversampling

Both NHIS and SIPP changed their oversampling strategy during the 1990s. In the 1985-1994 NHIS sample design, Black persons were oversampled. In 1995, a new sample design was introduced in NHIS which included oversampling households in areas with higher proportions of Blacks and/or Hispanic members. In addition, some households were designated as "screener households" and were interviewed only when they contained Black and/or Hispanic persons. Project managers expected this new 1990-based sample to have a neutral effect on unweighted response rates. The 1995 rate of 5.9 percent was about the same as the 1994 rate of 5.8 percent.

SIPP found that it had higher nonresponse rates in key population subgroups, such as persons in families with incomes below the poverty level. In response to analysts' concerns that these higher nonresponse rates for key subgroups diminished the usefulness of the SIPP data to meet its goals, the Census Bureau made an effort to oversample the low income population. SIPP survey designers decided to make use of the 1990 decennial census information available on the sampling frame to assign the universe of addresses into two strata, one with a higher proportion of poverty households. Bureau statisticians selected a sample disproportionately higher in the high poverty stratum. Respondents in some areas received incentives (Huggins and King, 1997). Because oversampling and incentives were introduced simultaneously in SIPP, it is difficult to isolate the effects of oversampling. In areas where sample cases did not receive incentives, the high and low poverty strata had nonresponse rates that were about the same (9.28% vs 8.98%). However, in areas that received the \$20 incentive, the high poverty stratum had *lower* nonresponse rates at first contact than the low poverty strata (5.94% vs 8.15%), and these differences were statistically significant (James, 1997).

6. Panel Design

The nonresponse rate in panel surveys may be related to the number of times the same household is interviewed. This relationship (panel attrition) may occur for several reasons. Panel surveys place a greater burden on respondents than do one-time surveys. Households who initially participate may decide not to respond to some of the subsequent interviews. Households who initially refuse to participate are unlikely to change their mind when asked to participate in subsequent interviews. Surveys also differ in the emphasis they place in subsequent waves on attempting to contact these households. SIPP is required to interview households rather than addresses, but is not always successful in finding new addresses for households who move. For all five of the surveys with a panel component, there was some increase in panel attrition between 1990 and 1997.

Procedures for following households that move affect panel attrition in SIPP. SIPP's panel attrition increased between the 1990 and the 1991-1993 panels. A detailed analysis of the increase in nonresponse in the subsequent waves of these panels showed that it was due to reduced success in locating a household that moved, and not to an increase in nonresponse among households who had not moved (King, 1995). This led to several changes in field procedures for handling households that moved in the 1996 panel (Waite, et al., 1997). As a result, panel attrition due to difficulties in following households that move is lower in the 1996 panel than in the 1991-1993 panels. However, panel attrition among households that did not move is higher in the 1996 panel.

The CE Surveys and the CPS do not follow households that move. The surveys have to make an additional effort to persuade new households that move into vacated addresses to participate. These new households, on the other hand, are only eligible for the number interviews remaining for the original household. The initial nonresponse rate for these new households is about the same as the initial nonresponse rate for the households they replaced. The overall increase, however, is lower than average because the new households are not eligible for as many interviews as households that are in the survey for all interview waves in the panel. This is one reason the trends taper off at interview 4 and decrease slightly in interview 5 in the CEQ.

Participation rates provide another perspective on panel attrition. Participation rates³ require following the same units throughout the length of the panel survey. In both the CEQ and CPS most of the respondents at the first interview participate in the following interviews (complete participation), although recently some decline has been noticed in this pattern for the CEQ. Complete participation rates for the five CEQ waves were 85% in the sample ending in 1988 and 82% in the sample ending in 1995. The complete participation rate for the eight waves of CPS was 82% for samples that ended in 1995 (Harris-Kojetin and Tucker, 1997). Because more recent data on participation rates are not available, we do not know whether participation has fallen further.

7. Sponsor and Headquarters Expectations

The expectations that survey sponsors and the Census Bureau's headquarters management have are thought to directly affect the nonresponse rates the surveys actually achieve. Their expectations are thought to be communicated to field interviewers, whose performance reflects those expectations. Between 1990 and 1997, four of the six surveys reported changes in management expectations.

Survey organizations typically find that adopting CAI (computer-assisted interviewing) is associated with a temporary increase in nonresponse rates (DSD 1998). The Census Bureau's decision to adopt CAI in several of its surveys could therefore be viewed as a decision also to expect a temporary rise in nonresponse. Many of these surveys did find an increase in nonresponse rates when they adopted CAI. However, the many changes that typically accompany the adoption of CAI make it difficult to find a separate effect of changing management expectations.

For the initial conversion to CAPI, SIPP interviewers received a nonresponse rate goal of 8 percent. Census headquarters management and the sponsors of SIPP strongly emphasized the desired response rate in the first contact (Longini, 1996). This increased emphasis resulted from growing concern over the increasing levels of nonresponse at initial contact since 1990 (King, 1995). Field representatives achieved the set goal with a great deal of hard work. However, attrition increased in

³Complete participation rates are computed for units eligible at the first interview and still eligible at the last panel wave. The rates represent the percentage of eligible units that are still respondents at the final interview and completed all the panel interviews.

subsequent waves, reaching levels higher than before. Some speculate that the demand for a high response rate in the first contact brought in more reluctant participants than before and that these reluctant respondents left the survey shortly after the first contact.

8. Incentive Structure for Interviewers

The interviewer's job is multi-faceted. If some aspects of their jobs are better compensated than others, interviewers may well focus on them, at the expense of others. All of the surveys reported a change in the incentive structure for interviewers between 1990 and 1997, although there is some disagreement over whether these changes reflect the effects of the change in interviewing environment or themselves have contributed to the increase in nonresponse rates. For example, up until recently, SIPP interviewers were evaluated on their household nonresponse rate and production time. Locating households that moved was given lower priority than keeping refusal rates low. For the 1996 panel, nonresponse rates for households who moved were included in the interviewer's rating to reinforce the fact that locating these households is as important as keeping a reluctant sample household participating. This change may be contributing to the different patterns of nonresponse cases we see in the 1996 panel (Waite *et al.*, 1997). Rewarding interviewers for finding a household that moved or bringing a nonresponding household back into sample has been proposed but there are no plans to implement this proposal at this time.

The Census Bureau recently introduced a pilot goalsharing project for CPS. Interviewers receive a bonus payout when regional cost and nonresponse rates decline. While preliminary goalsharing data show a decrease in nonresponse rates during the 3-month pilot, the results of this project should be closely reviewed over time, and as the project is extended to other surveys.

9. Interviewer Workload

Higher workloads for interviewers might lead to higher nonresponse rates. Interviewers may feel they can not spend the time required to secure participation by a reluctant household, but must go on to the next household or the next survey. All of the surveys reported an increase in interviewer workloads during the 1990s. For instance, the 1994 and 1995 NHIS data collection included fielding immunization and disability supplements. These supplements were complex to administer, and so large that they had to be split between two booklets in addition to the core questionnaire booklet. The interviewers' caseloads were not reduced, even though these supplements added another 45 to 65 minutes to the interviewing time for each household. One hypothesis is that the increased workload may have contributed to the increase in NHIS nonresponse rates in 1994 and 1995. However, when there was a shorter NHIS questionnaire in 1996, the expected decrease in nonresponse rates to the earlier level did not occur.

10. Training

As interviewers have more training and gain familiarity with CAPI, nonresponse rates would be expected to fall. However, none of the surveys that adopted CAI have yet observed a return to pre-CAI nonresponse rates.

11. Budget

Surveys all have limited resources. Many other aspects of the survey compete for scarce staff and financial resources, and sponsors and managers may set different priorities in different surveys, or at different times. Changes in the project budget, or in the portion of it allocated to reducing nonresponse rates, clearly may affect nonresponse rates. For example, some survey sponsors have at times decided to accept the initial nonresponse obtained, rather than incurring the expense of additional follow up.

III. A Framework for the Future

The full IHSNG group initially reviewed the nonresponse literature and the Census Bureau's recent experiences with six large and continuing surveys. We found that nonresponse is indeed a current problem for these surveys. The subgroup formed to synthesize that work and prepare this report found that the surveys often had contradictory experiences, making it difficult to draw conclusions even when the analysis was limited to two major sources of nonresponse for this relatively similar set of surveys. These difficulties led us to a series of recommendations. We need to develop a new framework for analyzing critical aspects of nonresponse that our standard tools and framework do not address.

- < Define consistent sets of core nonresponse concepts and statistics. We need to determine the minimum common core sets of nonresponse statistics that we can now calculate for each survey, and across surveys, and begin producing them routinely. Each set of rates should be clearly defined, to ensure that we always make nonresponse rate comparisons using comparable, and appropriate, statistics. As planned information systems come on line, we need to determine the new nonresponse statistics they will allow us to calculate, and add those to our routine reports. As new systems are developed, we need to be sure that they will continue to produce the nonresponse rates we need, and to try to add to our capabilities.
- < Develop an expanded set of consistent and appropriate concepts and statistics. The minimum set of nonresponse statistics should include the annual and initial-contact rates for the sample as a whole. The expanded set should also include nonresponse statistics appropriate to the goals of each survey. Examples of such statistics include nonresponse rates for key population subgroups, for key data items, and for geographic areas, such as region, primary sampling unit, or state. The set could also include related statistics, such as attrition and cooperation rates.
- < Create a single database. We need to develop one consistent and integrated database on nonresponse rates. This database could be part of a larger, consistent and integrated

management information system. Survey managers need better tools to gain information about nonresponse and to manage it in their surveys. Some of their current tools simply need to be improved, while others need to be modified substantially. But new tools also are required. Such a system could be built incrementally. When existing survey reporting systems are modified, modifications could be chosen that make the separate survey systems more similar to each other, or to a common standard.

- < Continue an interagency approach. The IHSNG interagency approach works, and should be continued. The interagency, cross-survey approach provided new, and occasionally provocative, insights. Although some members of IHSNG initially were skeptical about the need to spend resources reviewing nonresponse issues, and about the group's ability to tackle them, we believe it succeeded. Our experiences developing this report suggest that an on-going interagency group can foster the development of cost-effective strategies for creating and sharing knowledge about key nonresponse issues.

The full IHSNG group should continue, functioning as a steering committee that meets at least quarterly. The full IHSNG group should form multiple, sequential subgroups charged with identifying, developing, and implementing the new tools and frameworks for tackling nonresponse that this initial report begins to outline.

Critical to the interagency group's success is commitment by the participating agencies. Agencies must decide that the time needed for group members to participate in the IHSNG steering committees and task forces, to follow through on this set of recommendations, and to develop new recommendations, is part of the group members' jobs.

A. Consistent Definitions of Nonresponse

Comparisons of nonresponse rates in different surveys, such as in the first part of this study, often present a single measure, regardless of differences in the design or purpose of the surveys. But nonresponse rates can be calculated in a variety of ways that depend on the design and uses of the survey. It may be more appropriate to report not just one, but a set, of carefully defined nonresponse rates.

This is not a new conclusion. A similar conclusion appeared in a 1994 paper reporting on an earlier interagency review of nonresponse in federal household surveys (Johnson, Botman, and Basiotis). That paper pointed to similar statements in a 1982 study. Most recently, the American Association for Public Opinion Research (AAPOR) issued a report, *Standard Definitions: Final Dispositions of Case Codes and Outcome Rates for RDD Telephone Surveys and In-Person Household Surveys* (1998), which observed that in current practice, "the same names are used to describe fundamentally different rates and different names are sometimes applied to the same rates." The report recommends specific ways of calculating and presenting response rates from household and

telephone surveys. Groves and Couper (1998) also provide detailed descriptions of concepts and definitions of nonresponse rates.

In compiling the nonresponse rates we presented earlier in this paper, we encountered some of the same concerns raised in the preceding paragraph. As we showed in Table 1, the nonresponse rates presented in Chart A compare surveys with different designs and intended uses. Those differences determine first, the nonresponse measures appropriate to understanding each survey, and second, the measures that can be compared across all six surveys.

Design differences mean that the nonresponse rates in Charts A and B measure different concepts in each survey. For example, for the CPS, the rate includes responses from addresses that have been interviewed between one and eight times, over a period of 16 months. If the

original household moves, the CPS interviews the new residents, and does not follow the original household members. By contrast, the rate for SIPP includes responses from households that have been interviewed between one and twelve times, over a period of as many as four years. If the original household moves, SIPP attempts to follow the original household. Comparing these nonresponse rates tells us little about the separate effect of potential sources of nonresponse, such as the calendar time a household is in a survey, the number of interviews, or the survey's procedures for following households that move. Some surveys, such as the NCVS and NHIS, ultimately calculate person-based statistics. For such surveys, we need to add *person-level* nonresponse rates to have the information we need to evaluate a key dimension of survey quality.

We focus on one additional nonresponse measure below to illustrate how choice of measure can affect cross-survey comparisons. Of course, we could have chosen many other measures, and cross-survey comparisons based on any one of them might lead us to distinctly different conclusions about nonresponse and its causes. Because this analysis is preliminary, and draws on just one of many alternative definitions, we do not make recommendations for changing survey practices in this initial report. Instead, we focus on ways to use information we already have to generate selected additional nonresponse rates. These rates can provide some of the insights we would need to recommend changes in survey practices.

- < We recommend that the full IHSNG group consider charging a subgroup with identifying sets of nonresponse rates appropriate to each survey, and sets of nonresponse rates appropriate in making comparisons across surveys, that should be routinely produced. We also recommend that the full IHSNG group consider charging a subsequent subgroup with evaluating the new measures as they are produced.

B. Initial-Contact Household Nonresponse Rates

The additional nonresponse measure we examine in this report is the household-level initial-contact nonresponse rate. It is measured the first time the household is contacted for a particular survey. Because the initial-contact nonresponse rate is not affected by many of the differences in the panel characteristics of these surveys, comparing them may give a clearer picture of the joint effects of mode, questionnaire length and design, and field management. The initial-contact rates and the annual nonresponse rates in Chart A are shown in Table 3. The SIPP initial-contact rates and nonresponse rates for subsequent interviews in each panel, presented in Chart B, are shown in Table 4. The initial-contact nonresponse rates, like the annual nonresponse rates, increased through the years for all six surveys.

Table 3

Annual and Initial Contact Nonresponse Rates in Selected Household Surveys, 1990 - 1997

A: Nonresponse Rates

	CE Diary ¹		CE Quarterly Survey ¹		CPS		NCVS ²		NHIS ³	SIPP ⁴
	Annual	Initial Contact	Annual	Initial Contact	Annual	Initial Contact	Annual	Initial Contact	Annual= Initial Contact	Initial Contact
1990	13.0	13.2	13.8	12.0	4.2	5.7	3.3	4.3	4.4	7.3
1991	12.8	12.6	14.3	13.5	4.3	5.8	3.5	4.8	4.3	8.4
1992	14.3	14.4	14.6	12.8	4.5	6.1	3.9	5.1	4.3	9.3
1993	14.7	14.7	15.1	13.0	4.7	6.5	4.1	5.0	4.2	8.9
1994	18.6	16.6	16.5	15.7	6.2	8.3	4.4	5.5	5.8	---
1995	20.0	18.0	17.4	17.1	6.9	8.9	5.2	6.7	5.9	---
1996	23.9	23.3	20.6	18.5	6.6	8.1	6.7	5.9	5.7	8.4
1997	22.9	21.9	19.2	16.4	6.7	8.7	4.9	5.7	7.2	---
B: Refusal Rates										
1990	8.5	8.4	12.0	9.5	2.4	2.2	1.7	*	2.8	5.2
1991	8.5	8.3	12.7	10.9	2.6	2.4	1.9	*	2.7	6.8
1992	9.1	9.0	13.0	10.8	2.7	2.5	2.2	1.8	3.0	7.5
1993	9.8	9.7	13.6	11.0	2.8	2.5	2.5	2.1	3.0	7.2
1994	12.0	11.8	15.1	13.4	3.5	3.3	2.7	2.3	4.2	---
1995	12.5	12.3	15.3	13.5	3.9	3.2	3.1	2.8	4.3	---
1996	14.5	14.3	17.9	15.0	4.1	3.6	2.8	2.4	4.0	6.6
1997	13.7	13.5	16.7	12.8	4.1	3.8	3.0	2.7	4.7	---

Notes:

¹ CE Diary and CE Quarterly Survey rates exclude the government shutdown months - November/December 1995 and January 1996. All CE rates were calculated by BLS.

² Initial contact refusal rates for NCVS are not available before 1992.

³ Households in the NHIS are only sampled once, so the annual and initial contact rates are the same. All NHIS rates were calculated by NCHS.

⁴ SIPP did not initiate panels in 1994, 1995, or 1997.

Table 4

**SIPP Nonresponse Rates by Interview Number (Wave)
1990-1997**

	Interview Number									
	1	2	3	4	5	6	7	8	9	10
1990	7.3	12.6	14.4	16.5	18.8	20.2	21.1	21.3		
1991	8.4	13.9	16.1	17.7	19.3	20.3	21.0	21.4		
1992	9.2	14.4	15.8	17.8	19.8	21.2	22.9	24.7	26.2	26.6
1993	8.9	14.2	16.2	18.2	20.4	22.2	24.1	25.1	26.5	
1994	-----									
1995	-----									
1996	8.4	14.5	17.8	20.9	24.6	27.4				
1997	-----									

The annual and initial-contact nonresponse rates clearly measure different things. However, the relationship between them is different for different surveys. (The exception is for the NHIS, because households are only contacted once, and the two rates are the same.)

- < For SIPP, the initial contact nonresponse rate is always less than the rate for subsequent interviews. Because SIPP is sometimes regarded as a survey with nonresponse problems, comparing its initial contact rate with those of other surveys helps focus attention on potential sources of that problem. Although its nonresponse rates at initial contact are higher than most of those for NHIS and NCVS, they are close to the CPS rates, and below the rates for the CE Quarterly and Diary Surveys. It is SIPP's nonresponse rates for subsequent interviews that are higher than for other surveys, not the nonresponse rates for its initial interviews.
- < For the CE Diary and Quarterly Surveys, the initial contact nonresponse rates are less than the annual nonresponse rates.
- < For CPS and NCVS, the initial contact nonresponse rates are greater than the annual nonresponse rates. This is not the relationship that might be expected in panel surveys where the annual rates include households that have been in the survey samples as many as eight times over a 16-month period (CPS) or seven times over a 36-month period (NCVS).

It is not clear why the relationships between the annual and the initial-contact nonresponse rates differ among surveys. There may be important differences among the surveys in their designs and

procedures, in addition to the differences listed in Table 1. The surveys differ, for example, in whether they re-contact households that were not interviewed in the initial period, whether all interviews are conducted in person, and the amount of time interviewers have to try to get a response in each round of interviewing. In addition, the number of eligible households may vary as addresses move in and out of scope. This means that the denominator of the nonresponse rate also varies over time.

Comparing the annual and initial-contact nonresponse rates raises many important questions. Fully exploring these comparisons is beyond the scope of this initial report, but should be addressed as part of the recommended task of defining appropriate and consistent nonresponse rates. The differences we found emphasize how important it is to understand whether the surveys whose nonresponse rates we are comparing really are comparable surveys, how hard it is to draw conclusions from case studies, and how much information could be gained from improved experimental designs.

C. Beyond Aggregate Household Nonresponse Rates

Because users of all six surveys are concerned about aggregate statistics derived from the entire sample, they also are concerned about the nonresponse rate for the entire sample. But users of most surveys also are concerned about critical statistics that apply to a subset of the sample, or to a subset of the data. Nonresponse rates for the entire sample do not provide the information users need to evaluate the bias, or the potential for bias, in such critical statistics.

The critical statistics include estimates for key subgroups of the population, for people who move, for persons rather than households, and for specific data items. Initial-contact nonresponse rates provide distinct and new insights about some likely sources of nonresponse. But, as the preceding section made clear, they address only a few of the potential sources of nonresponse in our survey designs and practices. Neither annual nor initial contact nonresponse rates, measured at the household level, provide information about these additional nonresponse concerns. To address them, several additional sets of nonresponse rates could be produced and compared more routinely. This section discusses a few illustrative examples. We recommend that the full IHSNG group consider charging a short-term subgroup with developing a specific proposal.

1. Nonresponse for Key Subgroups

For many surveys, the statistics of interest include comparisons between population subgroups, as well as national averages. For example, the CPS is often used to estimate differences in the income and employment status of sex and race groups. If nonresponse rates differ among these subgroups, the estimate of the differences in, say, mean income between men and women, may be biased. Groves and Couper 1998 provide detailed analyses of the way differential nonresponse may bias many statistics of interest.

For some surveys, there is a substantial body of research on differential nonresponse. CPS and SIPP have looked at detailed categories of nonresponse. In response to its initial findings, for example,

SIPP altered its sample design to oversample key population subgroups (defined by income and age). However, cross-survey comparisons of such nonresponse rates are not routine.

2. Nonresponse for Households who Move

SIPP is the only one of these six surveys that is required to follow households that move. Such follow up is critical to one of its key missions, tracking income, employment, and program participation over time. However, its cumulative nonresponse in interviews two through ten, shown in Table 4, rises to between 20 and 30 percent. SIPP has devoted substantial research into its follow up procedures and other possible causes for its high nonresponse rates for subsequent interviews. Presenting separate interview-specific rates for nonresponse due to its inability to locate households who move helps identify which of several possible causes of nonresponse is most likely, and would most benefit from research, review, or revised methods.

3. Nonresponse for Persons

Many key statistics produced from these six surveys are measured at the level of the individual, not the household unit. The quality of these statistics depends on the nonresponse rate for persons as well as on the nonresponse rate for households. For example, nonresponse at the person level is gradually becoming a concern for NCVS, although nonresponse at the household level is not. The person-level nonresponse rate has grown from under 4% in 1990 to 10% in 1997. Reasons for this increase are not clear. There have been no known changes in procedures or training of the interviewers that would account for this increase.

There are several hypotheses about this increase. One hypothesis is that there is a tradeoff between the household and person nonresponse rates. Interviewers may accept person nonresponse in order to keep a household participating in the survey. If so, placing more stress on obtaining person-level responses may turn out to increase household nonresponse rates. Another hypothesis is the NCVS' strict rules on selecting respondents. The NCVS requires each person in the household over the age of 12 to be interviewed. It does not collect a general "household" response, as in the CPS, nor are any proxy responses accepted (although they are in most surveys). Finally, the increase in the person-level nonresponse rate may reflect the way interviewers are evaluated. Household-level nonresponse rates are part of the evaluation criteria for interviewers, but person-level nonresponse rates are not.

4. Item nonresponse

Item nonresponse affects critical statistics produced by several surveys. For example, nonresponse on labor force questions in the CPS can affect the quality of the unemployment rate, and nonresponse on income items in the March supplement can affect estimates of the proportion of the population with incomes below the poverty level. Nonresponse on these questions was enough of a concern that reducing item

nonresponse was one measure of quality in a new goalsharing pilot project the Census Bureau is conducting in one regional office. Item nonresponse may also be of concern for the other surveys. The NHIS, for example, is used as a sampling frame for some other surveys, and missing information on such items as names, addresses, and Social Security numbers may cause problems for the surveys linked to the NHIS. But item nonresponse rates are not currently part of the set of nonresponse measures that are routinely compared across surveys. Nor are they generally part of the evaluation criteria for interviewers.

D. Readily available and consistent information

One of the easiest ways to increase our knowledge about nonresponse in our surveys is to have information on nonresponse readily available. Several of the surveys in this study have a consistent and integrated database, updated at each data collection. They routinely produce reports on their individual nonresponse rates (often in much greater variety and detail than presented in this report) and other survey quality and process measures. Such systems help them make information on nonresponse rates readily available to their national and regional office managers, and their sponsors. However, the structure and location of these databases differ, possibly reflecting circumstances specific to each survey. Also the systems generally are not available to persons working on other surveys. Other surveys use less formal systems for collecting and calculating their nonresponse rates. The systems are not always set up to calculate readily a variety of nonresponse rates. For example, in preparing this report, we found that these different systems made it hard for us to calculate all the nonresponse rates quickly, to verify readily how they had been calculated, and to verify our transcriptions.

While it may not be possible to move immediately to a single, consolidated, uniform database, opportunities continually arise to modify our current systems. For example, a new management information system for the Census Bureau's field activities is scheduled to become available in 1999. The current systems each survey now uses may well have to be modified to take advantage of the new information it will provide, or the forms in which it will provide it. Such opportunities lead to us to two more recommendations for the full IHSNG group to consider:

- < When existing survey reporting systems are modified, choose modifications that make the separate survey systems more similar to each other, or to a common standard.
- < One immediate task the continuing IHSNG group, or a dedicated task force reporting to it, should consider is determining the minimum common core sets of nonresponse statistics that the new system will allow us to calculate for each survey, and across surveys.

E. An On-going Agenda for Interagency Research and Cooperation

The experiences of the IHSNG subgroup preparing this report illustrate the benefits of interagency research and cooperation. Group members had each conducted research on nonresponse in their surveys. But there typically are few routine opportunities to meet with people representing all the facets of the survey process to focus on one topic -- nonresponse -- or to compare experiences across surveys. The interagency IHSNG group provides such an on-going, focused, experience. The resulting interagency

review led us to realize that we cannot yet reach firm conclusions about the sources of nonresponse, or about clear steps to address it. First, we need more consistent, and in some cases, different, information about specific kinds of nonresponse. To provide that information, we recommend:

- < Continue the Interagency Household Survey Nonresponse Group. Charts A and B show that nonresponse is an issue for all six participating surveys. Group members all benefitted from the opportunity for focused, continuing conversations with a broad group of survey professionals representing all parts of the survey process, in the sponsoring and producing agencies.

The full group might function as a steering group that meets quarterly. Together with management of the producing and sponsoring agencies, it would set a long-run agenda and charge subgroups or task forces with specific responsibilities. The agenda, and the responsibilities of these subgroups or task forces, could draw on the recommendations made throughout this report. The subgroup's experience shows that short-run task forces charged with specific responsibilities are an effective and efficient way to summarize and share knowledge, and to develop proposals for specific next steps.

The task forces will be more effective if participating agencies recognize membership in the steering committee and task forces as important -- if perhaps short-run -- components of group members's jobs. Otherwise, the group runs the risk of members' time being spread too thin, making it difficult to maintain focus or momentum.

- < Coordinate with the Interagency Establishment Survey Nonresponse Group. Both groups are established and have prepared initial reports. Both groups will benefit from identifying common issues, sharing what they learn, and, if appropriate, undertaking joint tasks.

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Appendix A: Survey Descriptions

CE	CPS	NHIS	NCVS	SIPP
Purpose				
<p>To provide a current and continuous series of data on consumer expenditures and other related characteristics for use in determining the need to revise the Consumer Price Index and for use in family expenditure studies and other analyses.</p>	<p>To provide estimates of employment, unemployment, and other characteristics of the general labor force. In addition to the labor force data, the CPS collects annual data on work experience, income, and migration from the March Supplement, and on school enrollment from the October Supplement. Other supplements, are conducted biennially or intermittently.</p>	<p>To provide information on a continuing basis about the amount and distribution of illness, its effects in terms of disability and chronic impairments, and the kind of health services people receive. One or more sets of supplemental questions are added each year to gather information on additional major current health issues.</p>	<p>To provide information on crime victimization from a general population sample. Data are gathered on types and incidence of crime; monetary losses and physical injuries due to crime; characteristics of the victims; and, where appropriate, characteristics of the perpetrator.</p>	<p>To collect source and amount of income, labor force information, program participation and eligibility data, and general demographic characteristics to measure the effectiveness of existing federal, state, and local programs; to estimate future costs and coverage for government programs, such as food stamps; and to provide improved statistics on the distribution of income in the country.</p>
Type of Respondent				
<p>A household respondent, who must be a knowledgeable household member 16 years old or over, provides information for the entire household.</p>	<p>A household respondent, who must be a knowledgeable household member 15 years old or over, provides information for each household member. Some supplemental inquiries require response by a designated sample person.</p>	<p>A knowledgeable household member 18 years old or over provides the demographic information for each household member and provides additional family information. For each family, a sample adult (18 years or over) is selected and this person must answer additional questions about him/herself. A sample child (less than 18 years of age) is also selected for each family and a knowledgeable adult family members answers questions about the sample child.</p>	<p>Self-response by each household member 12 years of age or over.</p>	<p>All household members 15 years old and over are interviewed by self-response, if possible; proxy response is permitted when household members are not available for interviewing.</p>

CE	CPS	NHIS	NCVS	SIPP
Survey Design and Sample Size				

CE	CPS	NHIS	NCVS	SIPP
<p>There are two components: the Quarterly Interview Survey (CEQ) and the Diary Survey (CED).</p> <p>For CEQ, field representatives visit each address five times, once per quarter over 13 consecutive months. The CEQ obtains data on large expenditures and those which occur on a fairly regular basis. The first interview has a 1-month recall period, and the data are used only for bounding the subsequent interviews. The other four interviews have a 3-month recall period.</p> <p>For the CED respondents keep two 1-week diaries for recording small everyday type of purchases (food, meals, personal care products and services, housekeeping supplies, etc.), as well as small expenditure items that the sample household members purchase occasionally.</p> <p>The CEQ has an annual sample of about 42,000 designated addresses, and the CED has an annual sample of about 9,300 designated addresses located in 105 PSUs selected from the 1990 census and new construction universes.</p>	<p>The current CPS sample is comprised of independent samples for the 50 states and the District of Columbia. based on the 1990 decennial census and the new construction universes. The total sample size is approximately 59,500 assigned households per month located in 754 PSUs.</p> <p>Each month's sample is composed of eight panels that rotate on a schedule of 4 months in, 8 months out, 4 months in, so that only 25 percent of the households differ between consecutive months.</p> <p>The March CPS sample is supplemented with households containing people of Hispanic origin from the prior November panel. This is done to provide more reliable data for this subgroup in the March Supplement.</p>	<p>The NHIS sample is redesigned after each decennial Census. The latest sample design (1995-2004) was based on the 1990 census and consists of 42,000 interviewed household containing about 106, 000 persons. Segments with higher proportions of Black and Hispanic populations were selected with higher probabilities. NHIS screens for Black and Hispanic persons in all of the area segments. A subsample of the addresses in each area segment is retained in the survey only if they contain a Black and/or Hispanic person. Sample households are usually interviewed only one time for the NHIS.</p> <p>In January 1997, a new NHIS questionnaire was implemented and the mode was changed from paper and pencil to computer assisted personal interviewing (CAPI).</p>	<p>The NCVS has a national sample of approximately 56,000 designated addresses located in 750 PSUs throughout the United States. This sample is divided into six parts, each of which is interviewed by telephone or personal visit in a given month and again at 6-month intervals. Sample units are interviewed a total of seven times over a 3-year period before rotating out of the sample. The current sample is based on the 1990 decennial census and new construction universes.</p>	<p>The SIPP survey design is a continuous series of national panels, with sample size ranging from approximately 14,000 to 36,700 interviewed households. The duration of each panel ranges from 2 ½ years to 4 years. The SIPP sample is a multistage stratified sample of the U.S. civilian noninstitutionalized population. For the 1984-1993 panels, a new panel of households was introduced each year in February. A new 4-year 1996 panel was introduced in April 1996.</p> <p>The SIPP content is built around a "core" of labor force, program participation, and income questions designed to measure the economic situation of persons in the United States. The survey uses a 4-month recall period, with approximately the same number of interviews being conducted in each month of the 4-month period for each wave. Interviews are conducted by personal visit and by decentralized telephone.</p> <p>The survey has been designed to allow the addition of questions on topics not covered in the core section. These questions are labeled "topical modules" and are assigned to particular interviewing waves of the survey. Topics covered by the modules include personal history, child care, wealth, program eligibility, child support, disability, school enrollment, and taxes.</p>