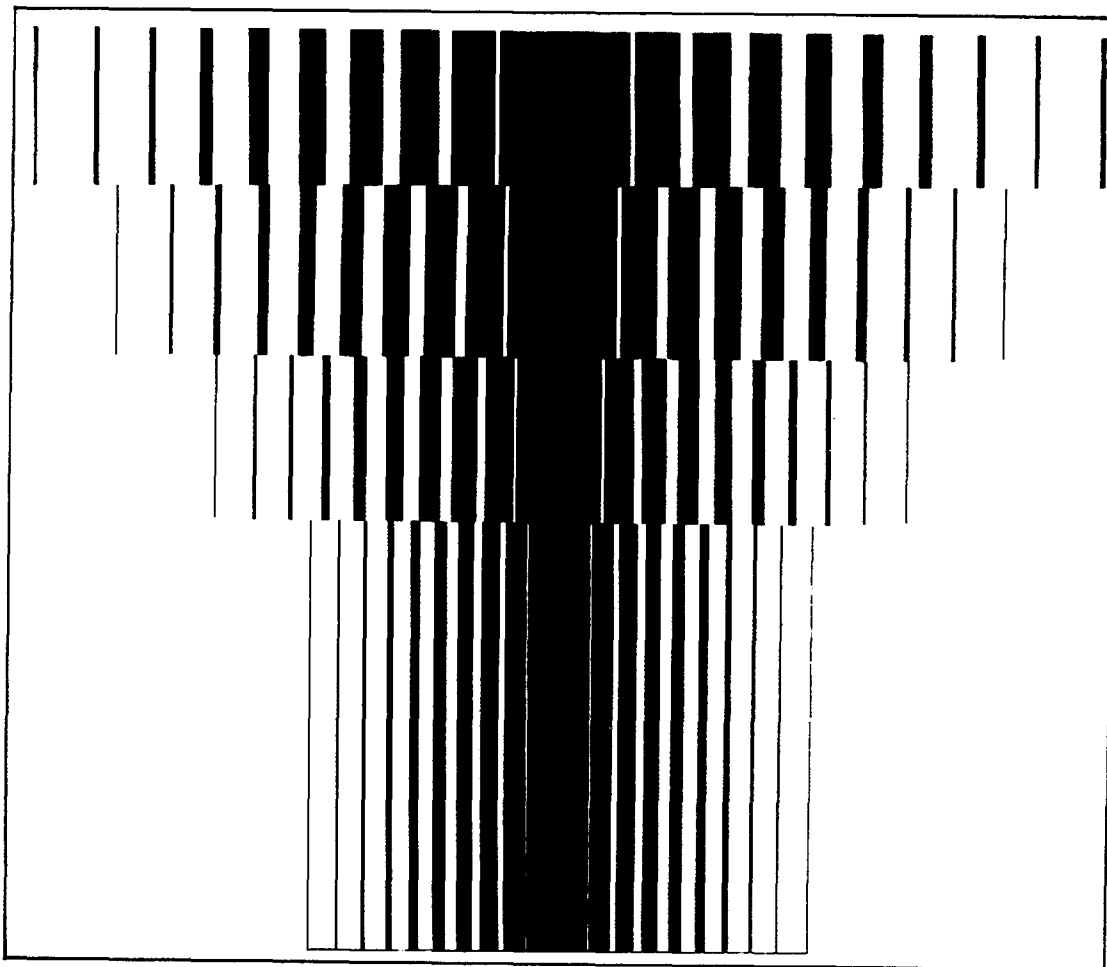


Evaluation of Item Nonresponse in the National Medical Care Utilization and Expenditure Survey

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National Medical Care Utilization and Expenditure Survey

The National Medical Care Utilization and Expenditure Survey (NMCUES) is a unique source of detailed national estimates on the utilization of and expenditures for various types of medical care. NMCUES is designed to be directly responsive to the continuing need for statistical information on health care expenditures associated with health services utilization for the entire U.S. population.

NMCUES will produce comparable estimates over time for evaluation of the impact of legislation and programs on health status, costs, utilization, and illness-related behavior in the medical care delivery system. In addition to national estimates for the civilian noninstitutionalized population, it will also provide separate estimates for the Medicaid-eligible populations in four States.

The first cycle of NMCUES, which covers calendar year 1980, was designed and conducted as a collaborative effort between the National Center for Health Statistics, Public Health Service, and the Office of Research and Demonstrations, Health Care Financing Administration. Data were obtained from three survey components. The first was a national household survey and the second was a survey of Medicaid enrollees in four States (California, Michigan, Texas, and New York). Both of these components involved five interviews over a period of 15 months to obtain information on medical care

utilization and expenditures and other health-related information. The third component was an administrative records survey that verified the eligibility status of respondents for the Medicare and Medicaid programs and supplemented the household data with claims data for the Medicare and Medicaid populations.

Data collection was accomplished by Research Triangle Institute, Research Triangle Park, N.C., and its subcontractors, the National Opinion Research Center of the University of Chicago, Ill., and SysteMetrics, Inc., Berkeley, Calif., under Contract No. 233-79-2032.

Co-Project Officers for the Survey were Robert R. Fuchsberg of the National Center for Health Statistics (NCHS) and Allen Dobson of the Health Care Financing Administration (HCFA). Robert A. Wright of NCHS and Larry Corder of HCFA also had major responsibilities. Daniel G. Horvitz of Research Triangle Institute was the Project Director primarily responsible for data collection, along with Associate Project Directors Esther Fleishman of the National Opinion Research Center, Robert H. Thornton of Research Triangle Institute, and James S. Lubalin of SysteMetrics, Inc. Barbara Moser of Research Triangle Institute was the Project Director primarily responsible for data processing.

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Symbols

- Data available for fewer than 75 cases
 - ... Category not applicable
 - Quantity zero
 - 0.0 Quantity more than zero but less than 0.05
 - * 10–20-percent nonresponse
 - ** 21–40-percent nonresponse
 - *** 41–100-percent nonresponse
-

Evaluation of Item Nonresponse in the National Medical Care Utilization and Expenditure Survey

By Steven J. Ingels, National Opinion Research Center

Executive Summary

The National Medical Care Utilization and Expenditure Survey (NMCUES) was undertaken to obtain accurate person-level data on the use and charges of health care services from the U.S. civilian noninstitutionalized population during 1980. The survey had three components—the national household component, the State Medicaid component, and the administrative records component—and utilized several different survey instruments, including a core questionnaire, a summary of responses, and various supplements.

The focus of this evaluation is the core questionnaire, and the analysis is restricted to the national household component of the survey. More specifically, this evaluation is an intensive examination of three data files constructed from household survey responses to several sections of the core questionnaire: the Hospital Stay file, the Medical Visit file, and the Flat Fee file. These three files are included in the 12-month NMCUES data base, an intermediate stage in the construction of the NMCUES Public Use Data Tape, and were chosen for evaluation partly because they are rich in charge and source-of-payment variables, two questionnaire items associated with high (10 percent or more) nonresponse.

The strategy of the evaluation is to identify patterns of item nonresponse, to determine the causes of item nonresponse, and to recommend ways that such nonresponse could be reduced. Five patterns of nonresponse are identified: I. *nonresponse as high “don’t know’s,”* in which a “don’t know” response category has been provided, and over 10 percent of the responses are “don’t know’s”; II. *blanks (98’s) as surrogates for “don’t know,”* in which a “don’t know” response category has not been provided, and the hypothesis is that high levels of blanks are proxies for “don’t know”; III. *nonresponse as legitimate internal skips,* in which a high proportion

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of item nonresponse appears to be due to conventions for coding and to editing legitimate internal skips within a question (for example, no legitimate nonresponse code is available for legitimate skips); IV. *nonresponse as an artifact of question disaggregation,* in which item nonresponse is manufactured by breaking a question or subquestion into multiple variables; and V. *nonresponse as legitimate lack of data,* in which, though high nonresponse is legitimate, a question simply fails to elicit any appreciable amount of valid response (for example, it fails to apply to more than a minuscule proportion of the respondent population).

It is important to realize that item nonresponse in the NMCUES files cannot be taken at face value. That is, some item nonresponse is spurious, as in patterns III and IV, where the appearance of nonresponse reflects editing conventions or vagaries of the data file construction process. In the other patterns of nonresponse, however, item nonresponse is genuine, whether it is to be assigned to problems in questionnaire format or wording, or to a genuine lack of knowledge on the part of respondents.

This evaluation shows that even where item nonresponse is largely spurious, it may yet have pernicious effects. For example, if illegitimate blanks and legitimate skips are combined, it may be impossible to identify the missing data for some values, and this may affect adversely such processes as imputation. In particular, the critical charge variables needlessly lose precision, in that some instances where a value should have been imputed will be missed.

This evaluation suggests several strategies for reducing certain categories of nonresponse in future surveys. Despite the overall high quality of the NMCUES core questionnaire, there are certain format problems; for example, in some cases subquestions seem to be packed too tightly and to involve skip patterns of undue complexity. Source-of-payment and condition variables should also be reformatted, so that the point at which a series ceases to be applicable to a respondent may be clearly marked. Because fourth condition items and third source-of-payment items elicit virtually no data, it is questionable whether they should continue to be response options.

In addition, many coding and data cleaning procedures could be improved, particularly through the more precise and consistent use of coding conventions. A

universal definition should be provided for each data file, to facilitate person-level analysis of the event files.

In the case of genuine item nonresponse—a problem for hospital-stay charge variables, for all groups of respondents, and, in particular, for Medicare or Medicaid recipients—maximization of data can be achieved best through the supplemental consultation of medical providers and linkage to administrative records.

Introduction

The Survey

The National Medical Care Utilization and Expenditure Survey (NMCUES) was undertaken in order to obtain accurate information on the use of and charges for health care services in the United States.

The survey had three main components: the national household component, the State Medicaid component, and the administrative (Medicare-Medicaid) records component. For purposes of this questionnaire evaluation, the NMCUES survey component utilized is the National Household Survey, which is further limited to those respondents (17,123) classified as “key persons” (that is, the residents of sample dwelling units enumerated during round 1 and followed during subsequent rounds).

The initial interviewing of households occurred in early 1980, followed by three or four additional interviews, scheduled at intervals of approximately 3 months, throughout 1980 and early 1981. Information about medical care utilization and charges for all reporting unit members was obtained during each interview.

Survey instruments included a control card, to track respondents and reporting units; a core questionnaire, administered during each interview; a summary, to update information reported in previous interviews; and supplements to the core questionnaire that were administered during the first, third, and fifth interviews. This evaluation is concerned with the core questionnaire. For further details about the survey methodology, see Bonham (1983).

The Data Base

There were several stages in data-base construction, which culminated in the Public Use Data Tape. The data base utilized for purposes of this analysis is the 12-Month Files. These files were the basis for the NMCUES National Household Survey Analytic Files and the subsequent Public Use Data Tape, after additional reformatting, editing, recoding, and imputing. A user of the Public Use Data Tape would find substantial differences between those files and the 12-month data base selected for this analysis. The 12-Month Files were chosen for this analysis precisely because they permit

examination of patterns of nonresponse that may have been obscured by the substantial cleaning and imputation done when preparing the Public Use Data Tape.

The NMCUES data are organized into both person files and event files. The event files aggregate data for all five rounds. The 12-month data base consists of 10 files, 3 of which—Medical Visit, Hospital Stay, and Flat Fee—are the special focus of this report.

Purposes and Strategy of the Evaluation

Included in this report are findings of an analysis of item nonresponse in the NMCUES core questionnaire. These findings concern the identification and selection of high nonresponse items, identification of the logically distinct types of nonresponse, assessment of the magnitude and scope of true nonresponse, and comparison of nonresponse patterns both within files and across files.

Findings concerning the characteristics of the nonresponse population are also reported, when germane to the issue of item nonresponse. Finally, specific recommendations aimed at the improvement of the questionnaire and the coding, cleaning, and management of the data collected are made.

Focus and Organization of the Evaluation

In addition to the focus of the questionnaire evaluation on the three files (Medical Visit, Hospital Stay, and Flat Fee), special emphasis is on two kinds of variables—charge and source of payment. This special emphasis reflects priorities of the National Center for Health Statistics (NCHS). Several generalizations may be made about the consequences of a primary focus on these areas. As will be seen later, charge and source-of-payment variables prove to be almost always problematic on the basis of a criterion of a minimum of 10-percent nonresponse. Moreover, these are also the variables that, though plagued by spurious nonresponse (that is, nonresponse that is simply an artifact of editing conventions or the vagaries of data-base construction), display most of the genuine nonresponse in the questionnaire. Not only, then, is the charge for any given medical service

a centrally important datum, but it is also perhaps the most frequent source of genuine nonresponse.

The charge and source-of-payment variables are well represented in the Medical Visit, Hospital Stay, and Flat Fee files. A systematic review of all 12-Month Files demonstrated that all standard patterns of nonresponse were represented in these three files, and that concentration on these three files could offer the sharpest possible focus, yet in no way impair the capacity to generalize about item nonresponse, its causes, and its remedies with regard to the NMCUES core questionnaire as a whole.

The first section of this report is an overview of the three files that were intensively reviewed in the course of the questionnaire evaluation.

The second section depicts the five distinct types of item nonresponse that typically appeared in the NMCUES 12-Month Files. This examination of nonresponse types permits a distinction between genuine and spurious nonresponse and an examination of how each operates in the NMCUES data base. This distinction is important because nonresponse as it appears in the data frequencies cannot be taken at face value, and an understanding of its true extent and magnitude requires that the types of nonresponse be thoroughly understood. In addition, knowledge of the types of nonresponse is necessary for an understanding of the causes of nonresponse, and in turn for the task of recommending ways that item nonresponse might be overcome.

In the next section, the nonresponse typology is used to analyze a typical charge question and source-of-payment question. This analysis tests the adequacy of the entire analytic framework and permits testing of the hypotheses about nonresponse that are posited by the nonresponse typology.

The scope of nonresponse is then examined by taking the problematic variables from the three event files (Hospital Stay, Medical Visit, and Flat Fee) and classifying these variables in terms of the type, magnitude, and extent of nonresponse attached to each of them. This section also includes comparisons of like variables between or across files.

The following section analyzes the demographic characteristics of the persons with a high "don't know" frequency, possibly pinpointing identifiable and "targetable" groups for special data collection and supplementation efforts.

Finally, the insights reported earlier concerning the causes of item nonresponse and the characteristics of the nonresponse population are applied to the task of making specific recommendations for improvement of the NMCUES questionnaire and the data-base construction process.

Definitions of terms used in this report are given in Appendix I. Variables are classified by type of nonresponse in Appendix II. Relevant selections from the NMCUES questionnaire are reproduced in Appendix III.

Medical Visit, Hospital Stay, and Flat Fee Files

This section is a description of the three files that were the sources of data for the questionnaire evaluation. The number and kinds of events contained in the Medical Visit, Hospital Stay, and Flat Fee files will be detailed.

Medical Visit File

The Medical Visit file is an event-level file in which a NMCUES respondent may have zero, one, or more records. The Medical Visit file data were collected in three sections of the core questionnaire: Medical Provider Visit, Emergency Room Visit, and Hospital Outpatient Department Visit. Information collected in these three sections covered the following seven items: place of visit, type of medical personnel seen, medical services received, medical procedures performed, medical condition, charges, and sources of payment.

Because the Medical Visit file is a composite of three sets of data (or subfiles) from separate questionnaire sections, it had to be decided whether to analyze the files combined or separately. Typically, any given variable in the Medical Visit file either was represented only in one of the three subfiles or was represented in two or more but with precisely the same content. This design—variables being either unique to a subfile or wholly analogous in content across subfiles—was evidence in support of making the Medical Visit file the unit of analysis, rather than treating each subfile separately. However, one exception was made: In some cases, variables that appeared in more than one file were alike in content but different in format. In such cases, a separate and comparative analysis of subfiles was conducted to test whether some formats were more effective than others.

The 12-Month File showed 88,981 events for the Medical Visit file when restricted to household questionnaire records (17,123 persons). The file was checked for duplicate records. Where duplicate records appeared, the first was selected, reducing the number to 87,142 events.

Hospital Stay File

Like the Medical Visit file, the Hospital Stay file is an event-level file. It contains data about each hospitalization—specifically, reason for the hospital stay, opera-

tions and procedures performed, length of stay, charge, and source of payment. The file includes both hospital visits not requiring an overnight stay and overnight stays. In addition, the file contains admission and discharge dates, and data on charges from physicians who provided care during the hospital stay but billed separately from the hospital. A file number was calculated for this evaluation by purging duplicate visits and restricting the file to key persons in the household survey who were represented in the Hospital file. This yielded 3,132 events.

Flat Fee File

A flat fee refers to a single charge for medical services, supplies, or series of visits. This charge pertains only to one person. There were 10 types of health care specified in the flat fee section of the core questionnaire for which a flat fee may have been paid (dental care, hospital stay, eye examination, surgical care, prescribed medicine, counseling, and so on). It was anticipated that the majority of the identified flat fees would be applicable to one of the 10 categories; for the remaining inapplicable flat fees, an “other” category was provided.

Reference was made to flat fees in the charge questions of the various sections (for example, Hospital Stay, Medical Provider Visit, Dental Visit) of the core questionnaire. If the respondent reported that the charge was a flat fee, the interviewer completed the flat fee section and assigned a flat fee letter (an alpha code was sequentially assigned to each flat fee reported within a reporting unit) to both the flat fee page and the sections in the questionnaire that applied to the flat fee charge.

In the flat fee section of the questionnaire, respondents were asked to provide more detailed information, ranging from the nature of the services (for example, orthodontia, surgical care, counseling) to who actually paid (outside source or family). A four-part question about medical charges and payment was included to determine both the total charge and the sources of payment.

In order to calculate a base event number for the Flat Fee file, duplicate records were purged and analysis was restricted to events tied to persons who were both key persons in the household file ($N = 17,123$) and in the Flat Fee file. The resulting base number that resulted from this process was 3,521.

Item Nonresponse in NMCUES

Several issues pertaining to item nonresponse in the NMCUES data are addressed in this section. First is an explanation of how the high nonresponse items were identified and selected. The starting point in this analysis was to define the nonresponse problem by designating as problematic all variables that had 10-percent or higher nonresponse when all 99 codes (legitimate skips) were excluded. Also included in this section is a statement of the formulas that were employed in calculating the response rate. Next, five patterns or types of nonresponse in NMCUES are identified and illustrated. Finally, the related matter of skip-pattern problems is addressed.

By classifying NMCUES nonresponse into five basic patterns, generalizations can be drawn about the causes of item nonresponse in the 12-Month Files. This classification system will later be used as a framework for recommendations specific to those causes of nonresponse. It is also a useful device for distinguishing genuine nonresponse (which comes from respondents not knowing or not revealing the information that the question seeks) from spurious nonresponse (which is an artifact of the conventions employed in editing and presenting the data).

This approach will make clear, then, how the conventions for presentation of the NMCUES data for the 12-Month Files and for the NMCUES codebook (Research Triangle Institute, 1982) account for a substantial amount of apparent item nonresponse. It will also reveal how these same conventions complicate the task of understanding the nature and extent of nonresponse. That complexity will be apparent particularly when the analysis moves from questions as they appear in the questionnaire, to these same questions as they appear in the codebook, and finally, to their appearance as response frequencies in the data files. The transition from questionnaire to codebook to data files is seldom a simple one. For example, a single question in the questionnaire might appear as several separate variables in the codebook and data file. It is also true, however, that a single variable in the codebook and data files might reflect separate (though identical or similar in content and format) questions from distinct sections of the questionnaire, the responses having been aggregated. Furthermore, it sometimes happens that frequencies appear in the data file for a response code that is not listed for that variable in the codebook. The implications of such data base construction conventions for the analysis of NMCUES item nonresponse will be made clearer in this, and the following, sections.

Codes for Nonresponse

The figure presents the nonresponse codes (or "consistency codes," as they are called in the NMCUES documentation) used in NMCUES.

Figure
Nonresponse codes used in the National Medical Care Utilization and Expenditure Survey: 1980

Code	Numeric conversion	Description
NK	91	<i>Never know.</i> Respondent doesn't know now and never will; therefore, no attempt will be made to update the data later.
IL	92	<i>Illegible.</i> This code is used only for those questions in which the response could not be determined by the key operator and the task leader.
NA	93	<i>Not applicable.</i>
DK	94	<i>Don't know.</i> This code indicates a written response by the interviewer indicating that the respondent did not know the answer.
BD	95	<i>Out-of-range response.</i> This code is used when the response or transcription exceeds the specified field width or allowable value range (for example, a month should not appear as "13").
MR	96	<i>Multiple response.</i> This is used if the respondent gave several answers to a question when the directions called for only one, and the multiple response could not be resolved.
RE	97	<i>Refusal.</i> The respondent refused to answer an item either by written statement or in the interview.
BL	98	<i>Blank, illegitimate blank, or nonresponse.</i> This code represents nonresponse in all cases other than those identified as legitimate nonresponse (see below).
LS	99	<i>Legitimate nonresponse.</i> This code is used when the respondent should not have answered the question and did not; that is, he or she was routed around an item. The data entry operator <i>NEVER ENTERS</i> this value.

SOURCE: Allen, D., and Moser, B.: *Keying and Verification Manual for HH Interview Questionnaire and Supplement # 1*. NMCUES report by Research Triangle Institute. Revised Apr. 11, 1980.

It should be noted that not all nonresponse codes point to genuine nonresponse problems. For example, code 99 indicates legitimate nonresponse, such as a question the interviewer should have skipped and did. It also should be noted that response frequencies utilizing these codes give a necessary but ultimately superficial picture of nonresponse. Analyses later in this report demonstrate that nonresponse as coded cannot always be taken at face value.

Calculation of Response Rate

For purposes of determining rates of item nonresponse, questions containing subquestions were broken down into their constituent parts, and all questions and subquestions were given equal consideration. Thus (and in accordance with the conventions of the NMCUES codebook) a single question that posed three subquestions was treated as three (or more) variables. For example, the single question, "Do you expect any source to reimburse or pay you back? (Yes/No)" produced seven variables for the calculation of nonresponse because of its subquestions: "Who will reimburse or pay you back? ENTER BELOW," "Anyone else?" (with three sources possible), and "How much will (EACH SOURCE) pay?" (with three amounts possible).

Given this definition of relevant variables, response was calculated for each, successively utilizing two formulas. In the first instance, a response rate was calculated using formula 1A, which is

$$\text{Response rate} = \frac{\text{number of valid responses}}{\text{number of applicable respondents}}$$

for any file in which a person was the unit of analysis. For those files where an event rather than a person was the unit of analysis, formula 1B was used, which is

$$\text{Response rate} = \frac{\text{number of valid responses}}{\text{number of applicable events.}}$$

Any variable with a response rate of 90 percent or lower (that is, a 10-percent or higher rate of nonresponse) was automatically defined as problematic or appropriate for examination for this evaluation and subjected to a second response-nonresponse calculation based on the following formulas which incorporate legitimate nonresponses or skips into the numerator. Formula 2A,

$$\text{Response rate} = \frac{\text{number of valid responses} + \text{number of legitimate skips}}{\text{number of applicable respondents,}}$$

was employed where the variable used the person as the unit of analysis. Where event was the analytical unit, formula 2B was utilized:

$$\text{Response rate} = \frac{\text{number of valid responses} + \text{number of legitimate skips}}{\text{number of applicable events.}}$$

Thus response was recalculated after the 99 or Legitimate-nonresponse code had been incorporated into the numerator. The same procedure was used on the 93 or not-applicable code; however, it was so rarely used, it was analytically inconsequential, and only those variables that were problematic (again using a cutoff criterion of 10 percent) on the basis of calculations employing formulas 2A and 2B were used in the nonresponse analysis.

Patterns of Nonresponse

A major preliminary to any serious analysis of nonresponse is sorting the nonresponse type, so that cases of genuine nonresponse can be identified and addressed. This sorting process is also the precondition of setting forth recommendations designed to minimize or remove the causes of item nonresponse in the NMCUES questionnaire. Examination of the problematic variables (that is, those with a nonresponse rate of 10 percent or higher, after exclusion of legitimate skips) revealed five logically distinct, though sometimes overlapping, types of nonresponse:

- (I) *Nonresponse as high "don't know's,"* where a "don't know" response category has been provided, and over 10 percent of the responses are "don't know's";
- (II) *Blanks (98's) as surrogates for "don't know,"* where a "don't know" response category has not been provided formally but "don't know's" are anticipated, and 98's (illegitimate blank) are over 10 percent of the total expected response;
- (III) *Nonresponse as legitimate internal skips,* where a high proportion of 98's appear because of conventions for coding and editing legitimate internal skips within a question (for example, no legitimate skip code available for the variable);
- (IV) *Nonresponse as an artifact of question disaggregation,* where illegitimate blanks (98's) are, in effect, manufactured by breaking a question or subquestion into multiple variables;
- (V) *Nonresponse as legitimate lack of data,* where, though high nonresponse is legitimate, a question fails to elicit any appreciable amount of valid response.

These five nonresponse patterns aid in the sorting of genuine and spurious nonresponse. Nonresponse is genuine in nonresponse types I and II. But in nonresponse types III, IV, and V the appearance of high nonresponse is simply an artifact of coding or editing conventions.

(I) *Nonresponse as high "don't know's"*—Probably the simplest nonresponse pattern is that of high respon-

dent use of the “don’t know” option. In this pattern, the question provides “don’t know” as a response category, and this is chosen in 10 percent or more cases. This pattern implicates a variety of question types, but it is especially characteristic of the charge variables, any of which could serve as an example of this type of nonresponse. Question 18 from the Hospital Stay file will serve here:

18. How much was the total charge for (DOCTOR) including any amounts that may be paid by health insurance, Medicare, Medicaid, or other sources?

18 \$ _____ (19)
 Included with other charges 01 (FF___ (22))
 Don't know 94 (19)

The response frequencies from this question can be used to gauge the level of “don’t know” nonresponse. Note that the “don’t know” category appears in two places in the following frequencies, under “total charge” and “reason for no total charge”—variables AS18 and AS18-1, respectively. (These designations are variable names as they appear in the NMCUES codebook (Research Triangle Institute, 1982). They appear (usually parenthetically) throughout the report for two reasons. First, they are provided as a courtesy to the reader who wishes to refer to the documentation from the study—specifically the referenced codebook and the data files, both of which use these designations. Second, they are often the most accurate and efficient way to refer to the items under discussion. References to question numbers, for example, would not be adequate because a single question may comprise several variables (see previous discussion) and because some questions appear in more than one section of the questionnaire and have different numbers in each. These variables are presented in Appendix II.) Although the codebook gives no guidance on this point, both “don’t know’s” have the same referent: The respondent does not know the total charge.

AS18 and AS18-1 Response Frequencies

Question and code	Number
Total charge (AS18)	
All responses	2,048
Valid amounts	999
93's (not applicable)	4
94's (don't know)	108
95's (out of range)	2
98's (illegitimate blank)	935
99's (legitimate nonresponse or skip)	-
Reason for no total charge (AS18-1)	
All responses	2,048
Valid amounts	179
93's (not applicable)	-
94's (don't know)	641
95's (out of range)	-
97's (refusal)	1
98's (illegitimate blank)	238
99's (legitimate nonresponse or skip)	989

The two “don’t know’s” have, however, a different genesis: The number reported for total charge (AS18) appears to represent those 94’s written by interviewers into the margin of the questionnaire and later coded into “don’t know,” and the 94’s for “reason for no total charge” (AS18-1) represent those responses that invoked the “don’t know” response (final response category, question 18) given in the questionnaire.

Adding together the “don’t know’s” of AS18 and AS18-1 and determining their proportion relative to the total expected response in the file (108 + 641/2,048) reveals that 36.6 is the percent of “don’t know” responses. In all cases where this procedure produces a 10-percent or higher level of “don’t know’s,” the next step in the analysis is to investigate the cause of nonresponse. This investigation is accomplished by a systematic consideration of the clarity of the question, the format and logic of the questionnaire, and, if these are not problematic, the characteristics of the nonresponse population.

(II) *Illegitimate blanks (98's) as surrogates for "don't know"*—There are a few instances—for example, in the case of charge questions such as “amount family paid” (HS11, MVFFP-2)—where the printed question in the questionnaire does not offer a “don’t know” response category. Because charge information is something that respondents often do not know, a fairly high level of “don’t know” response for such questions was anticipated. Therefore, the interviewers’ question-by-question specifications (NORC, 1979) indicate that a “don’t know” could be written in the margin of the questionnaire when such a category is not provided. Even with these write-in “don’t know’s,” a substantial (that is, over 10-percent) pool of illegitimate blanks remains, and these are hypothesized to be proxies for “don’t know.” It may be surmised, then, that the illegitimate blanks (98’s) would greatly diminish if an explicit “don’t know” response category was provided. A charge variable from the Medical Visit file (MVFFP-2) will serve as an example of the second type of nonresponse:

10. How much of the (CHARGE) charge for the visit *did* or *will* you (or your family) pay?

Partial \$ _____ %
 Total charge 01
 None 00 (C/BOX)

Because this is a disaggregated question, the frequencies cannot be taken at their face value. One effect of splitting the question into multiple variables is that the number of 98’s is artificially inflated (a detailed look at nonresponse as a function of question disaggregation appears later); therefore, the 98’s due to disaggregation must be subtracted from the total 98’s and from the total expected response. Table A shows the distinction between genuine and spurious (artifact of disaggregation) 98’s.

Thus, of the 58,880 illegitimate blanks (98’s) in evidence, 51,562 are artifacts of disaggregation; and

Table A

Responses to select medical provider visit questions in the 12-month Medical Provider Visit file: "How much, all or none?" by "How much did you pay?"

Response (with code) to question "How much did you pay?"	Percent distribution	Number	Response (with code) to question "How much, all or none?"					
			Family paid		Don't know (94)	Refusal (97)	Illegitimate blank (98)	Legitimate skip (99)
			None (00)	All (01)				
Total	100.0	...	17.1	42.2	0.0	0.0	11.6	29.1
			Percent distribution					
			Number of responses					
All responses	...	87,142	14,904	36,747	14	1	10,126	25,350
0	0.0	1	-	-	-	-	1	-
Nonzero amount	9.1	7,885	22	46	-	1	-	7,816
Never knew (91)	0.0	2	-	-	-	-	2	-
Don't know (94)	3.3	2,835	15	4	1	-	2,815	-
Out of range (95)	0.0	3	1	1	-	-	1	-
Refusal (97)	0.0	2	-	-	-	-	2	-
Illegitimate blank (98)	67.6	58,880	14,866	36,696	13	-	7,305	-
Legitimate skip (99)	20.1	17,534	-	-	-	-	-	17,534

7,305 (10.5 percent of the total file after the legitimate skip (99's)—respondents legitimately filtered out of the question—have been subtracted) are unexplained. When the 2,815 "don't know's" from the question "How much did you pay?" (MVFFP-2) are added to the 7,305 true illegitimate blanks, nonresponse for the question runs at 14.5 percent. In any event, it seems most plausible to suppose that the 7,305 true 98's are largely to be explained as surrogates for "don't know."

However, this example is a case where the "don't know" option, though underused, and not a response category within the questionnaire, was at least mentioned in the question-by-question specifications to interviewers. In other cases, there was no such mention in the interviewer instructions. As an example, after subtraction of the legitimate nonresponse (that is, those who answered "no" to the filter in FF6, which asked whether there were any visits covered by the charge before January 1, 1980, and are thus classified as 99's) for the question "How many visits did (person) have to the (doctor/dentist/medical provider) before January 1, 1980?" (FF6A in the Flat Fee file), response distribution is

Response	Number	Percent distribution
All responses	1,245	100.0
Valid responses	477	38.3
Don't know	64	5.1
Out of range	2	0.0
Blank	702	56.4

Although certainty is not possible in this matter, it seems plausible to make several suppositions here. The actual rate of "don't know's" (5 percent) is very low, suggesting that not all interviewers may have taken time to write in uninstructed and unprovided "don't know" responses. Given the large number of unexplained illegitimate

blanks, it would seem logical to hypothesize that, in many cases, these are surrogates for "don't know."

Ultimately, something along the lines of a split-ballot experiment to test the effects of providing an explicit "don't know" response category for the type II nonresponse variables is needed.

It should be noted that there are items in the Flat Fee file that run counter to the expectations of this hypothesis. This observation is especially true for a question about total charges for flat fees (FF2 in the Flat Fee file), in which a "don't know" category is provided:

2. What was the total amount of the charges, including any amount that may be paid by health insurance, Medicare, Medicaid, or other sources? | 2 | \$ _____
| | | Don't Know 94

While 98 and "don't know" (94) nonresponse codes are slightly under the 10-percent cutoff point for categorization of the variable as problematic, the proportion of blanks to "don't know's" is surprising. There are 3,187 source amounts, 24 "don't know's" (0.8 percent), and 310 98's (8.8 percent). It is indeed unexpected that there should be so few "don't know's" and so many illegitimate blanks for an item that included an explicit "don't know" response category.

(III) *Nonresponse as legitimate internal skips*—The NMCUES machine-edit specifications reserved the code 99 for legitimate skips but applied it primarily to skips between questions. Yet, in many instances there are legitimate skips within a question, particularly where the question comprises subquestions. This means that the code 98 has been used in two radically different ways: (a) The item was left blank; that is, the respondent was obliged to supply information, and did not do so; or (b) the item was properly skipped (for example, the respondent did not have a second source of payment or a third condition). When this pattern is operative,

there is an inflation of the level of nonresponse and a fusing of legitimate with illegitimate nonresponse. This pattern pervades the source-of-payment series and also the condition variables. A simple but typical example is the Surgical Operations question:

6. Were any operations performed on (PERSON) during this stay in the [hospital/nursing home]?
- Yes 01(A)
No 02(7)
- A. What was the name of the operation?
IF NAME OF OPERATION IS NOT KNOWN, DESCRIBE WHAT WAS DONE.
Were there any other operations during this stay?
- Name: _____ | | |
Name: _____ | | |
Name: _____ | | |

The number of responses for this question series is small (1,208) because many respondents skipped it appropriately. Those in the series reveal the following pattern:

Operation and Response	Number
First operation (HS6A-A)	
Valid responses	1,125
Illegitimate blanks (98's)	56
Second operation (HS6A-1A)	
Valid responses	160
Illegitimate blanks (98's)	1,021
Third operation (HS6A-2A)	
Valid responses	25
Illegitimate blanks (98's)	1,156

What is presumably happening is that each successive operation applies to a smaller portion of the respondent population. It may be that only 160 of the 1,125 persons with a first operation also had a second operation, and that the 965 98's reported for "second operation" are justified. These 98's should be recoded ultimately to appear as 99's or some alternative legitimate skip code. What appears to be a pattern of nonresponse, coded as illegitimate blank, is in fact largely legitimate internal skip.

Although the account in the previous paragraph is largely the case, it is not wholly or unqualifiedly so, and entering the qualification is instructive as to why the use of 98's in the sense just described is especially pernicious: Not all of these 98's are 99's. In the variable "first operation," for example, approximately 5 percent of the response was in the form of true illegitimate blanks—98's that should be 98's. If this pattern persisted, illegitimate blanks would accrue at the rate of 5 percent of the valid response for second and for third operations, and the cumulative total of illegitimate blanks for the third operation might be estimated at 65, with the number of 98's that represent a legitimate skip equal to 1,091.

In other words, though 98's as legitimate skips within a linked series form the dominant pattern, they are mixed with a certain number of true 98's. These true 98's in some cases might be very roughly estimated, but there is no sure way of separating the legitimate from the illegitimate 98-coded nonresponse.

Because it would make no practical difference if all these 98's were recoded to 99, the implications for a condition or operations series are small. However, in the case of a variable subject to imputation for missing data, such as source-of-payment variables, it is desirable to have an effective means to distinguish proper skips from truly missing data.

(IV) *Nonresponse as an artifact of question disaggregation*—Several of the examples of nonresponse that have been presented have been disaggregated questions, but the discussion has yet to focus on the effects of disaggregation in itself. Questions that appear as a single entity in the questionnaire but are made up of multiple response categories, subquestions, or both, typically are disaggregated in the codebook. This procedure sometimes leads to a spurious increase in the illegitimate blank (98) category of nonresponse—when blanks are recorded for one part of the question, and the response is recorded in the other. A common example of nonresponse as an artifact of question disaggregation is provided by responses to question 11 in the Hospital Stay file:

11. How much of the (CHARGE) charge for the stay did or will you (or your family) pay?
- Partial \$ _____ %
Total Charge 01
None 00 (C BOX)

A crosstabulation of "amount family paid" (HS11) with "family paid all or none" (HS11-1) shows the spurious nonresponse generated by disaggregation (Table B). Question 11 may be answered with a partial amount, "family paid none," or "family paid total." When the question is split into HS11 and HS11-1, 98's (illegitimate blanks) are used to mark the valid responses for "family paid none" in HS11, and for "family paid total" in HS11-1. Again, some of the 98's are true 98's: Note that 406 responses appear as 98's for both HS11 and HS11-1. The fact that many times 98's are simply artifacts of question disaggregation is more support for the notion that 98's in the response frequencies cannot be taken at face value. As always, however, it cannot be forgotten that entangled with the artificial 98's are genuine ones.

(V) *Nonresponse as legitimate lack of data*—There were some questions in NMCUES that applied to virtually no one in the respondent population. In such instances, the question failed to elicit data, and legitimate nonresponse approached or reached 100 percent. Such questions typically appeared as the last or next-to-last elements in a series, such as third source of payment,

Table B

Responses to select hospital stay questions in the 12-month Hospital Stay file: "Family paid all or none" by "Amount family paid"

Response (with code) to question of "Amount family paid"	Total	Response (with code) to question "Family paid all or none?"				
		Family paid none (00)	Family paid total (01)	Don't know (94)	Illegitimate blank (98)	Legitimate skip (99)
All responses	3,132	1,204	178	2	799	949
Valid amount	590	2	1	-	-	587
Don't know (94)	394	1	-	1	392	-
Refusal (97)	1	-	-	-	1	-
Illegitimate blank (98)	1,785	¹ 1,201	¹ 177	1	² 406	-
Legitimate skip (99)	362	-	-	-	-	362

¹Spurious nonresponse, an artifact of disaggregation.
²Genuine nonresponse, as a surrogate for "don't know."

or third or fourth medical condition. This pattern may be illustrated by a series in the Flat Fee file (FF4B):

FF4: How much will (SOURCE) reimburse or pay you back?

Source	Number
First source (FFB)	
Valid response	289
Don't know	229
Second source (FFB-1)	
Valid response	24
Don't know	42
Third source (FFB-2)	
Valid response	-
Don't know	1
Total charge paid	01
Partial or none paid	02 (C BOX)

By the final source of payment, no valid responses were recorded, although one valid response could have been expected. The problem then is deciding whether questions that are not used are worth retaining. However, before turning to this issue, it is worth investigating a little more deeply the problem of unused final data categories in source-of-payment and in condition variables.

The series-linked variables (for example, first, second, and third source of payment) are subject to two problems. First, there is no way for the interviewer to indicate the terminus of the series when the alternatives cease to be applicable to a given respondent; hence, blanks are left (indicated by the illegitimate nonresponse code, 98) for what often are legitimate skips. Second, the last variable in such a series is usually unused or nearly empty of data; that is, it applies to a small proportion of the respondent population and consequently elicits virtually no information. The scope of the problem is outlined in the following discussion, which presents the adjusted proportions of data obtained from use of final data categories for series-linked variables, such as source of payment. The response rate calculation is based on formula 2B:

$$\text{Response rate} = \frac{\text{number of valid responses} + \frac{\text{number of legitimate skips (99's)}}{\text{number of applicable events}}}{\text{number of applicable events}}$$

Source-of-payment variables appear in all three of the files used in this evaluation (Medical Visit, Hospital Stay, and Flat Fee) and have a common structure across files. They are preceded by a "yes" or "no" filter question. Those who answer "yes" to the filter are routed to the first source of payment, and asked to name first the source, then the amount. They continue to a second source of payment, and then a third. Two distinct source-of-payment questions follow this structure. The first question is "Who will reimburse or pay you back?"; the followup question is "Who else paid or will pay any part of this charge?" Response frequencies for the final category for each of the two types of source-of-payment question are as follows.

The first type—"Who will reimburse or pay you back?"—appears in four sections: hospital stay; physician charge in the course of, but billed separately from, hospital stay; medical provider visit; and flat fee. The percent of valid responses for the third source of payment are as follows:

Variable for the third source of payment: "Who will reimburse or pay you back?"	Percent of file with valid responses (excluding 99's)
Hospital stay (HS12B-2)	0.50
Physician charge (AS20B-2)	-
Medical provider (MVSA-3)	0.04
Flat fee (FF4B-2)	-

For all four instances of source-of-payment variables of this form, the number of valid response data collected amounts to less than 1 percent of the total file number, after all 99's have been deducted from the calculation.

For the second type of source-of-payment question—"Who else paid or will pay any part of the charge?"—the valid responses for the third source of payment are outlined as follows:

<i>Variable for the third source of payment: "Who else paid or will pay any part of the charge?"</i>	<i>Percent of file with valid responses (excluding 99's)</i>
Hospital stay (HS13B-2)	0.54
Physician charge (AS21B-2)	0.06
Medical provider (MVSC-3)	0.10
Flat fee (FF5)	0.14

Again, all third source-of-payment response categories contain less than 1 percent valid responses, measured against the file number with legitimate skips (99's) excluded. In each of the two instances, the most data was collected for hospital stay, but even this is minuscule.

In addition to source-of-payment variables, certain other variables are series-linked, specifically, the condition variables in the Hospital Stay and Medical Visit files, and the operations variable in the Hospital Stay file. The structure of these variables differs somewhat from file to file. In the Hospital Stay section of the core questionnaire, respondents were asked to name the conditions (a maximum of four) for which they were hospitalized. Then, births were specially noted, and there was a filter for "normal delivery" ("yes" or "no"); those answering "no" were asked to specify up to four abnormal conditions. This question was followed by a second filter, "Was the baby normal at birth?," with those answering negatively being routed to the same four condition blanks.

A "yes" or "no" filter question begins the condition series in the Medical Visit file: "Was this for any specific condition?" Those who answered "yes" to the filter were then asked about the conditions treated during the visit (a maximum of four conditions). However, these same four condition blanks are potentially affected by an immediately subsequent additional filter question, "Did provider discover any condition?" An affirmative answer to this question led back to the condition blanks. Thus, the box with four condition blanks contains the sum of conditions that prompted a visit plus conditions discovered in the course of a medical visit. As with the source-of-payment variables, 99 is not an available response category, and the interviewer has no way to indicate the end of the series for a particular respondent. Again, 98's mark blanks that usually are legitimate skips of the latter parts of a series. The valid responses collected by the final elements of these series are indicated as follows:

<i>Variable</i>	<i>Percent of file with valid responses (excluding 99's)</i>
<i>File name, fourth condition variable, and third operation variable</i>	
Hospital stay—conditions (HS5-3A)	0.06
Hospital stay—newborn, abnormal conditions (HS5C-3A)	—
Medical provider—conditions (MVF-CN4)	0.42
<i>Third-operation variable: "What was the name of the operation?"</i>	
Hospital stay—name of operations (HS6A-2A)	2.00

Thus, the proportion of valid responses, as a percent of the total file number, with 99's excluded, never exceeds one-half of 1 percent for a fourth condition variable. For the "name of operations" variable, where the series ends with the third response option, the proportion of valid response rises to 2.0 percent.

Although there is some variation in the form such questions can take and in the amount of data they elicit, in all cases both third sources of payment and fourth medical conditions elicit an extremely small number of valid responses—less than 1 percent of the adjusted file number in the Medical Visit, Hospital Stay, and Flat Fee files. Because an enormously high level of nonresponse would appear to be quite justified, given that third sources of payment and fourth conditions are rare within the respondent population, a serious reconsideration of the inclusion of third sources of payment and fourth medical conditions may be in order for future NMCUES.

Skip-Pattern Problems

Of the legitimate skips coded as illegitimate blanks, one nonresponse pattern was identified as the spurious one. However, it should be remembered that not all skips are legitimate, and that illegitimate skips are often a source of high item nonresponse. Although it is not apparent that ambiguous or highly complex skip formats intrinsically constitute a pervasive pattern of high nonresponse (over 10 percent) in the NMCUES data, there is evidence that they may be a problem to some degree in the more complex and highly ramified questions. An example is question 5 in the Medical Visit section of the core questionnaire (see Appendix III). Included in this question is an instruction, "Code all that apply." It consists of 15 separate variables, and each time something applies, it can implicate from 2 to 8 of the variables. The question is designed efficiently and separated into a sensible series of subquestions. Nevertheless, it is still questionable as to whether a format of such compression and complexity works well in practice.

There is an indication from inconsistencies in the data that some interviewers find it difficult to follow the indicated pattern of skips. As an example, the number of valid responses for the first condition (69,768) actually exceeded the sum (68,068) of its three filters (MVFDIAG, 57,216; MVFSPEC Yes, 10,143; and MVFDISC Yes, 709). Crosstabulations show skip-pattern inconsistencies, though usually of a magnitude of less than 5 percent of the expected number of events for the variable. Occasionally, however, a discrepancy is more substantial. For example, those who answered "yes" to "general checkup" (MVF-GEN) were routed to "checkup for specific condition, yes or no" (MVFSPEC) (see question 5, Medical Visit; reproduced in Appendix III). Of the 9,877 responses to the former, 1,156 (or 11.7 percent) appeared as blanks for the latter.

Questions of this general type might profit by simplifying the skip-pattern format.

Another sort of format that may contribute to illegitimate skips is found in the Hospital Outpatient Department Visit section of the questionnaire, which was incorporated into the Medical Visit file for the 12-month NMCUES data base. Difficulties in obtaining a visit-by-visit count of events have prevented quantification of the extent of this problem, but its nature may readily be described.

The Hospital Outpatient Department Visit section of the questionnaire departed from the format of the Medical Visit section of the questionnaire, where each medical visit was self-contained. In the Outpatient section, questions regarding a series of visits (A-E) were

spread over a page and a quarter of the questionnaire, and this format appeared three times before the end of the question series had been reached. Because a respondent could have reached the end of the relevant questions for visit A fairly early in the series, the entire subsequent pages could have been left empty. When filling in visit B, particularly if a respondent was returning to the section after having been routed out (as for the Flat Fee question), it would be easy for interviewers to lose their place and accidentally fill in visit B information on the empty visit A column. It is not clear how often such errors occurred; however, alternative formats that minimize or eliminate this kind of error should be considered.

Analysis of Charge and Source-of-Payment Variables

This section presents an analysis of one typical charge question series and one typical source-of-payment series, and the structures and relationships to item nonresponse of each. These variables illustrate the four most common of the five nonresponse types: I (nonresponse as high “don’t know’s”), III (nonresponse as legitimate internal skips), IV (nonresponse as an artifact of question disaggregation), and V (nonresponse as legitimate lack of data).

The variables selected for analysis are typical of charge and source-of-payment variables, the type of questions most likely to be plagued with genuine nonresponse. The need to disentangle genuine from spurious nonresponse will become apparent. This section will also present a clearer picture of the relationship of the identified nonresponse problems to the question format and the structure of the data presentation.

Analysis of a Charge Variable

A series of questions on hospital charges (HS-10) appears in the hospital stay section of the questionnaire as a single complex question. It is an excellent example of the eliciting of a large number of possible skip patterns from an array of response categories, with some questions containing subquestions. Respondents who reported a dollar amount for the charge, and those who responded with “don’t know,” were routed to question 11. Those who indicated “no charge” were routed to question 10, subquestion A (that is, HS10-A).

IF STILL IN HOSPITAL, GO TO NEXT HOSPITAL STAY OR NEXT SECTION

10. How much was the total [hospital/nursing home] charge for this stay, including any amounts that may be paid by health insurance, Medicare, Medicaid or other source? (Include any charges for [X-rays/laboratory tests/diagnostic procedures], but do not include separate charges for doctors or surgeons.
- \$ _____ (11)
 No Charge 02 (A)
 Included with other charges 03 (FF_(14)____)
 FOR NEWBORNS ONLY: Included in mother's bill (Person # _____) 04 (15)
 Don't know 94 (11)
- A. Why was there no charge for this hospital stay?
- Welfare/Medicaid Paid 01 (14)
 Included with other charges 02 (FF)
 Free from provider 03 (13)
 Other source(s) will pay 04 (13A)
 FOR NEWBORNS ONLY: Included in mother's bill (Person # _____) 06 (15)

The codes are

HS10	Total charge (in dollars)
HS10-1	Reason for no total charge
02	No charge
03	Included with other charges
04	For newborns only: included in mother's bill
94	Don't know
HS10A	Reason for no charge
01	Welfare or Medicaid paid
02	Included with other charges
03	Free from provider
04	Other sources will pay
06	For newborns only: included in mother's bill

As can be seen from the frequencies (Table C), and from the excerpt from the codebook, question 10 is a disaggregated question; that is, it is disaggregated into two variables: HS10—“How much was the total hospital charge?” = dollar amount; and HS10-1—“Reason for no total charge” = “No charge,” “Included with other charges,” “Included in mother’s bill,” “Don’t know.” Each of these is independent and sums to the total file

Table C

Number of responses and percent distribution as reported in the 12-month Hospital Stay file to questions “What was the total charge for hospital stay?” and “Why was there no charge?”

Responses (with codes) to “total charge” and to “no charge” questions	Number	Percent distribution
Total charge (question HS10)		
All responses ¹	3,132	100.0
Valid response	1,218	38.9
Adjusted total nonresponse ²	1,912	61.0
Legitimate nonresponse (99)	-	-
Illegible (92)	-	-
Don't know (94)	56	1.8
Out of range (95)	-	-
Multiple response (96)	-	-
Refusal (97)	-	-
Illegitimate blank (98)	1,856	59.3
Not applicable (93)	2	0.0
No total charge (question HS10-1)		
All responses ¹	3,132	100.0
Valid response	537	17.1
Adjusted total nonresponse ²	1,433	72.7
Legitimate nonresponse (99)	1,162	37.1
Don't know (94)	1,094	34.9
Illegitimate blank (98)	339	10.8

¹Excludes adjusted total nonresponse.
²Excludes legitimate nonresponse (93, 99).

event number (3,132). In turn, a third element appears in the series (HS10A), a subquestion to which respondents are routed who chose “no charge” (response category 02 of HS10–1). It may be expected, then, that HS10 and HS10A may be reaggreated for purposes of picturing the overall nonresponse pattern for question 10. Determination of the level and pattern of nonresponse is in fact contingent on such reaggreatation for two reasons. First, some of the “illegitimate nonresponse” (coded 98) is merely an artifact of the disaggregation process. (To sum to the total number in the file, each of the two disaggregates must count, under some nonresponse code, the responses or coded nonresponses belonging to the other disaggregate.) Secondly, the principal nonresponse category (“don’t know”) in HS10–1 has as its proper referent the variable HS10.

The frequencies, however, display puzzling inconsistencies, thus resisting such reaggreatation. The response categories for question 10 (“How much was the total hospital charge?”) are structured to accept only one response, not multiple responses. Thus, all who answer with a “charge” amount (HS10) are precluded from answering “no charge” (02), “included with other charges” (03), “in mother’s bill” (04), or “don’t know” (94) (HS10–1). When the question is broken into two, then, the 1,218 recorded charges in HS10 should appear as 1,218 legitimate skips in HS10–1. For the second half only of this type of disaggregated question, the machine-edit instructions for NMCUES provided a code of 99 (legitimate skip). (For the first half, 98 is used as the disaggregation marker code.) However, note that there are 1,162 legitimate skips in HS10–1, not 1,218. Instead of the expected match, where valid responses in HS10 precisely equal 99’s in HS10–1, there is a discrepancy of 56. Because of such inconsistencies in the data, it is not possible to know just what is happening in the question unless the constituent variables are crosstabulated.

When reaggreatation of Hospital Stay question 10 is attempted, another puzzling feature appears. The code for “don’t know” (94) appears only once in the question as a response category. Yet the “don’t know” category appears twice in the question 10 data, separately, and

with strikingly different response frequencies, for each disaggregate (HS10 and HS10–1). In the codebook, the “don’t know” response category is offered as a choice for respondents only once, assigned to HS10–1. The codebook presentation of categories seems to support the interpretation that 1,094 “don’t know reason for no total charge” responses were given for HS10–1, utilizing the response category in the questionnaire; and 56 “don’t know’s” were given for HS10, presumably written into the margins of the questionnaire by interviewers. However, it is unlikely that charge figures (HS10) elicit such a low level of “don’t know’s,” and that “reason for no total charge” (HS10–1) responses elicit such a high level.

The real answer to this puzzle is that there is only one type of “don’t know” response, namely, “don’t know total charge.” The small number of 94’s (don’t know) in HS10 support this, as do the large number of “don’t know’s” in HS10–1, which really belong in HS10. The true level of nonresponse for the “total charge” item (HS10) is the sum of the “don’t know’s” from HS10 and HS10–1. Thus, the nonresponse levels indicated by the disaggregates HS10 and HS10–1 are wholly misleading. The “don’t know” rate for HS10 is not 1.8 percent, but 36.7 percent.

In summary, understanding nonresponse requires reaggreatating the disaggregated questions. The disaggregations can be confusing and even misleading, and that confusion is magnified by inconsistencies in the data that can best be resolved or understood through crosstabulation of the disaggregates. Table D presents a crosstabulation of HS10 (total charge for hospital stay) with HS10–1 (reason for no charge).

The results of this crosstabulation show that although most valid HS10 total charge responses became 99’s in HS10–1, a handful have a second substantive answer (one 03, one 04, four 94’s), and 50 appeared as 98’s (illegitimate blank). In other words, the legitimate responses of HS10 fail to match with the legitimate skip responses of HS10–1, primarily because some of the data appears appropriately as 99’s, whereas another portion of the data appears, inappropriately, under the “illegitimate blank” code 98.

Table D
Responses to select hospital stay questions in the 12-month Hospital Stay file: “What was the total charge for hospital stay?”
by “Why was there no charge?”

Response (with code) to question “Why was there no charge?”	Response (with code) to question “What was the total charge for hospital stay?”				
	All responses	Valid response	Not applicable (93)	Don’t know (94)	Illegitimate blank (98)
All responses	3,132	1,218	2	56	1,856
No charge (02)	308	-	-	-	308
Included with other (03)	130	1	-	-	129
In mother’s bill (04)	99	1	-	-	98
Don’t know (94)	1,094	4	-	-	1,090
Illegitimate blank (98)	339	50	2	56	231
Legitimate skip (99)	1,162	1,162	-	-	-

On the other hand, the use of the “don’t know” (94) category appears to be largely internally consistent. All 56 cases of HS10 “don’t know’s” appear as 98’s for HS10–1. Of the 1,094 cases of “don’t know” for HS10–1, all but 4—apparently the 4 valid responses—appear as 98’s in HS10.

These findings can be related to the typology of nonresponse. HS10 and HS10–1 exemplify two of the nonresponse patterns. First, there is an inflation of putatively illegitimate nonresponse (98’s), which is a simple artifact of question disaggregation (nonresponse type IV). This nonresponse disappears when the question is reaggregated. In addition, there is a very high level of “don’t know” (94) nonresponse (nonresponse type D), and this nonresponse is genuine and in need of further investigation.

The final part of the HS10 question series—the subquestion HS10A—sought a reason for no charge from those who indicated in HS10–1 that they had no hospital-stay charge. “No charge” response to question 10 (response category 02) routes respondents to HS10A. Thus, the 308 “no charge” responses, and only those responses, for HS10–1 should be found in the legitimate response categories 01 through 06 in HS10A. None of the 02 cases from HS10–1 should appear as a 99 in HS10A, whereas all of the responses to 03 and 04 should appear. The frequencies for HS10A show an apparently high level of nonresponse:

Response	Number
All responses	3,132
Legitimate response	320
Don’t know (94)	5
Blank (98)	443
Legitimate nonresponse (99)	2,364

In addition, it appears that there is more legitimate response than is licensed by the filter variable (that is, in Table D the 308 “no charge” responses in HS10–1–02, and only those responses, were routed to a legitimate response category of HS10A).

The crosstabulation of HS10–1 with HS10A provides an explanation for the large number of legitimate responses. A very small number of respondents had not given the “no charge” (02) answer to HS10–1 yet did give a reason for no charge in HS10A (2 “other source(s) will pay” 04’s, 10 “don’t know’s,” 13 blanks). This inconsistency in the data, therefore, is attributable to interviewer error. As for the high level of nonresponse, 330 of the HS10A 98’s are simply carryovers from HS10–1; that is, if HS10–1 had been left blank, HS10A would have been left blank as well. Of the remaining 98’s, 100 gave a valid response to 03 or 04 in HS10–1 and therefore should have been coded as legitimate skips (99) in HS10A. As in the preceding example of HS10 crosstabulated with HS10–1, many, but by no means all, of the legitimate skips are marked with a 99, the balance with a 98. Of those who did in fact answer “no charge” in HS10–1 and were thus routed to HS10A,

none answered “don’t know,” and only 12 (4 percent) are blank (98). Thus what appears, from the response frequencies, to be a high nonresponse item, is actually a case where a high percent of those who could be expected to answer did so. The nonresponse is largely spurious, and this variable also displays some amount of inconsistency in the data.

Analysis of a Source-of-Payment Variable

This section examines a problematic source-of-payment variable taken from the Hospital Stay file. The HS12 series represents one complex question (12) in the questionnaire:

12. Do you expect any source to reimburse or pay you back?

Yes . . . 01 (A)
No . . . 02 (C BOX)

A	B
Who will reimburse or pay you back? ENTER BELOW. Anyone else?	How much will (EACH SOURCE) reimburse or pay you back?
SOURCE	AMOUNT
	\$ %
	\$ %
	\$ %

C BOX	CODE ONE:
	TOTAL CHARGE PAID IN Q. 11 01(14)
	PARTIAL OR NONE PAID IN Q. 11 02(13)

The codes are

- HS–12 Expect reimbursement
 - 01 = Yes
 - 02 = No
- HS12A First source code
- HS12B First source amount in dollars
- HS12B–P First source percent indicator
- HS12A–1 Second source code
- HS12B–1 Second source amount in dollars
- HS12B1P Second source percent indicator
- HS12A–2 Third source code
- HS12B–2 Third source amount in dollars
- HS12B–2P Third source percent indicator

In HS12, respondents were asked whether they expected reimbursement (“yes” or “no”); those who answered “yes” were routed through a maximum of three sources: a first—HS12A, a second—HS12A–1, and a third—HS12A–2. For each source, a source amount was requested, expressed in dollars or percent; the amount then could have been split into two variables, dollars and percent.

In structure, question 12 has two defining features: It is a disaggregated source-of-payment question; and it contains series-linked subquestions (for example, first source, second source, and third source, where having

a third source implies having had a second and first, and having a second source implies having had a first).

The earlier analysis of disaggregated questions demonstrated that their parts must be reagggregated by cross-tabulation to allow the identification of the true pattern and magnitude of nonresponse. This procedure was followed for the HS12 series. In addition, a consistency check was performed on the series-linked variables, to ascertain whether data had followed the logically prescribed path. First, the source-of-payment series was related to its filter, HS12, which asked whether reimbursement was expected. Subsequently the consistency of the series was checked both horizontally (first source code versus first source amount versus first source percent) and vertically (first source versus second source versus third source).

How do the responses in the source-of-payment series relate to their filter, HS12 ("Expect reimbursement, yes or no")? Among other things, crosstabulation of HS12 with HS12B ("How much will each source pay you back?") show what happened to the 196 "expect reimbursement, yes" responses. These are distributed over valid amounts (84 responses), "don't know" (103 responses), and blank or 98 (9 responses). Thus, HS12B exhibits a high level of genuine nonresponse: Over half of the "expect reimbursement" responses match "don't know" when asked to specify an amount. Crosstabulation also shows what happened in HS12B to the 1,164 "expect reimbursement, no" responses of HS12. Only one appears with an amount in HS12B; the balance appear, appropriately, as legitimate skips (99's), where they are added to the legitimate skips (1,572) that appeared for HS12.

Having shown the relationship of the first source-of-payment responses to their preceding filter, the next area for examination is the consistency of the source-of-payment series itself, both horizontally and vertically. When HS12B (first source amount) was crosstabulated with HS12B-P (first source percent indicator in dollars or percent), the patterns were largely consistent, with the exception of the disaggregation effect of the HS12B "don't know's." These "don't know's" are marked in HS12B-P by 98's. However, comparison of first source code with first source amount is both more informative and more alarming from the perspective of an analysis of nonresponse.

Crosstabulation of HS12A (first source-of-payment code) with HS12B (first source amount) leads to a largely consistent result but an enormous disparity in the number of "don't know's" (Table E). For the 193 valid first source codes reported in HS12A, there are 84 valid amounts given, 102 "don't know's," and 7 blanks. Over half of the cases for which there is a first source, then, show "don't know" for first source amount.

This pattern is repeated for second and third sources and also occurs in the other source-of-payment variables. For the second source of payment (HS12A-1 versus HS12B-1), 50 respondents identified a source of payment and 1 gave a "don't know"; of these 51 responses, 21 show a second source amount in HS12B-1, 28 are "don't know's," and 2 are blank. This pattern holds when the third source is considered. The third source code (HS12A-2) crosstabulated with the third source amount (HS12B-2) yields nine responses to the third source amount: three appear with valid amounts, five appear as "don't know's," and one is a blank (98). It seems, then, that respondents are much more likely to know the source of payment than to know the source-of-payment amount. As would be expected, the amount variable is plagued by high "don't know's" (over 50 percent in this case).

To understand the complexities involved in nonresponse, it is also illuminating to follow the responses through the three parts of the source-of-payment series, from first source amount to third. Again, in the filter (HS12), the 196 respondents who indicated that reimbursement was expected became the relevant response population for HS12A and HS12B. Following the HS12B series (see Table F) from first source (HS12B) to second source (HS12B-1) to third source (HS12B-2), reveals a pattern of increasing illegitimate blanks and decreasing data. The response frequencies show only 84 valid responses (with 103 "don't know's") for the first source amount, dropping to 21 valid responses for the second source amount (28 "don't know's"), then to 3 valid responses (with 5 "don't know's") for the third source amount. While the 94's represent genuine nonresponse, the increasing levels of illegitimate nonresponse (98's) appear to be an artifact of the machine-edit convention for this series, which, as with other linked series, did not assign 99 or another legitimate nonresponse or skip code. The lack of provision of a legitimate internal skip

Table E
Responses to select hospital stay questions in the 12-month Hospital Stay file: "First source amount" by "first source"

Response (with code) to question of first source	Response (with code) to question of first source amount			
	All responses	Amount	Don't know (94)	Illegitimate blank (98)
All responses	636	84	103	449
Source of payment	193	84	102	7
Out of range (95)	1	-	-	1
Illegitimate blank (98)	442	-	1	441

Table F

Number of responses and percent distribution as reported in the 12-month Hospital Stay file to questions of first, second, and third source-of-payment amounts

Responses, (with codes) to first, second, and third source-of-payment questions	Number	Percent distribution
First source-of-payment amount (question HS12B)		
All responses ¹	3,132	100.0
Valid response	84	2.7
Adjusted total nonresponse ²	552	86.8
Not applicable (93)	-	-
Legitimate nonresponse (99)	2,496	79.7
Illegible (92)	-	-
Don't know (94)	103	3.3
Out of range (95)	-	-
Multiple response (96)	-	-
Refusal (97)	-	-
Illegitimate blank (98)	449	14.3
Second source-of-payment amount (question HS12B-1)		
All responses ¹	3,132	100.0
Valid response	21	0.7
Adjusted total nonresponse ²	615	96.7
Not applicable (93)	-	-
Legitimate nonresponse (99)	2,496	79.7
Illegible (92)	-	-
Don't know (94)	28	0.9
Out of range (95)	-	-
Multiple response (96)	-	-
Refusal (97)	-	-
Illegitimate blank (98)	587	18.7
Third source-of-payment amount (question HS12B-2)		
All responses ¹	3,132	100.0
Valid response	3	0.1
Adjusted total nonresponse ²	632	99.4
Not applicable (93)	-	-
Legitimate nonresponse (99)	2,496	79.7
Illegible (92)	-	-
Don't know (94)	5	0.2
Out of range (95)	-	-
Multiple response (96)	-	-
Refusal (97)	-	-
Illegitimate blank (98)	628	20.0

¹Excludes adjusted total nonresponse.

²Excludes legitimate nonresponse (99).

code for the series implies that all who expect reimbursement must have three repayment sources. Yet the more realistic expectation would be that with each successive source of payment and source-of-payment amount, the proportion of the respondent population that would have such a source would decrease drastically. Thus the 98's in the HS12B series provide an example of type III nonresponse, nonresponse as legitimate internal skips, as well as high genuine "don't know" nonresponse (type I). But they also provide, in the virtually empty third source-of-payment amount category, an example of type V nonresponse, in which nonresponse is the result of a legitimate lack of data.

The same pattern would have been obtained from examination of the source-of-payment code variable or the percent indicator. For example, the crosstabulation of the first (HS12A), second (HS12A-1), and third source-of-payment codes (HS12A-2) reveals a largely consistent result. All second source-of-payment responses also show a first source; all but one (a 98) of the third source instances show a second source. The nonresponse patterns for this series are the same two seen in the discussion of HS12B: a high number of 98's increasing with each successive source-of-payment category that are representative of legitimate internal skips (type III nonresponse) and a virtually empty final data category (type V).

Reviewing nonresponse in the light of this information reveals that the source-of-payment (HS12) series presents four of the five patterns of nonresponse:

1. In such cases as first, second, and third source amount (HS12B, HS12B-1, and HS12B-2) there is high genuine "don't know" nonresponse (type I). In the latter two, the high proportion of "don't know's" is obscured by the avalanche of 98's that arise from using that code for what amounts to a legitimate internal skip (nonresponse type III; see item 3 below).
2. Variables such as the percent indicator for first source amount (HS12B-P) are disaggregated questions. Some of these 98's are actually 94's in the other disaggregate of question 12, first source amount (HS12B). This kind of code 98 nonresponse (type IV) is an artifact of the mode in which the data are presented. In this instance, 98 is a surrogate for another kind of nonresponse ("don't know"), just as was the case for the disaggregated total charge question (HS10).
3. Type III nonresponse occurs in the case of the series-linked variables, such as first, second, and third source codes (HS12-A, HS12-A-1, and HS12-A-2, respectively) and first, second, and third source amounts (HS12-B, HS12-B-1, and HS12-B-2, respectively) in which 98's are used for legitimate skips internal to a question. As this type of nonresponse is essentially spurious rather than real, there is no need to investigate the characteristics of the nonresponse population. It is extremely important to note, however, that even though this kind of nonresponse is ultimately spurious, it is still capable of imposing a pernicious lack of clarity on the data. Because the source-of-payment and condition questions do not allow the interviewer to indicate when the series ceases to apply to a given respondent, there is no way to know precisely to what extent data are truly missing. If a respondent has three sources of payment but can name only one, 98's are generated for the second and third sources. If a respondent has only one source of payment and properly names it, 98's are again generated for the second and third sources. Inability to distinguish

between these two cases is tantamount to inability to distinguish between cases for which source-of-payment data are missing and those for which they are not.

It is true that two kinds of checks are possible in such cases, and that these might in some measure differentiate illegitimate blanks and legitimate skips. An example of a consistency check relating the parts of the series would originate from the assumption that a respondent who had a second source would necessarily have had a first source, and therefore failure to name a first-source would make the first-source blank properly illegitimate (98). Assuming that such series skips are not interviewer error, this would allow for a count of one kind of true 98. A true illegitimate blank, however, is more likely to appear at the end of a series, rather than within a series, so that such a check is likely to identify the lesser amount of the true missing data. As an additional check, the instance where a source-of-payment code is indicated, but the corresponding amount is blank, would constitute a true 98. Apart from such internal inconsistencies that implicate only a small proportion of the data, however, there is

no way to distinguish with certainty which of the 98 codes should in fact be legitimate skips. On the basis of the evidence presented, it nevertheless can be presumed that most of the alleged 98's are in fact legitimate skips. However, certainty in the individual case, as well as an overall indicator of the extent and nature of nonresponse, is needed if the variable is to be subject to imputation procedures.

4. Finally, in such multiple source-of-payment series as second and third source (HS12A-1 and HS12A-2, respectively) and second and third source amount (HS12B-1 and HS12B-2, respectively), there is almost complete legitimate nonresponse (type V). The third source-of-payment code (HS12A-2), for example, is virtually empty of data, with a valid response representing less than one-tenth of 1 percent of the file universe. The problem here (apart from the machine-edit convention of using 98's for legitimate internal skips in linked series) is not illegitimacy of nonresponse, but a question that asks for information about something (a third source of payment) that applies to almost none of the respondents.

Scope of Nonresponse

This section attempts to convey some sense of the extent and magnitude of the item nonresponse problem in the three critical event files (Medical Visit, Hospital Stay, Flat Fee) that are used in this analysis. Presented here are the proportion of variables that are problematic and a classification of these problematic variables by the type or types of nonresponse that affect them. Also included is a comparison of levels of nonresponse for parallel charge and payment variables across files.

Again, the formula for computing response and non-response (formula 2B) excludes all legitimate skip consistency codes (99) from nonresponse:

$$\text{Response rate} = \frac{\text{number of valid responses} + \text{number of legitimate skips}}{\text{number of applicable events}}$$

This formula gives the truest picture of the overall response rate, but a further distinction, that between genuine and spurious nonresponse, must be included to distinguish between cases in which nonresponse is a genuine problem of missing information and cases in which nonresponse is an artifact of the conventions for coding, editing, or presenting the data. For some purposes, then, an additional equation, formula 3, is used for determining the rate of response and attendant nonresponse. Formula 3 is:

$$\text{Response rate} = \frac{\text{number of valid responses} + \text{number of legitimate skips} + \text{number of spurious nonresponse}}{\text{number of applicable events}}$$

Overall Level of Nonresponse

The following series of questions and variables from the Hospital Stay, Medical Visit, and Flat Fee files are classified as problematic on the basis of the 10-percent criterion (after legitimate skips, code 99, have been excluded).

Hospital Stay file

HS5 series (variables HS5-1A, HS5-2A, HS5-3A; HS5C-1A, HS5C-2A, HS5C-3A)

HS6 series (variables HS6A-1A and HS6A-2A)

HS10 series (variables HS10, HS10-1)

HS11 series (variables HS11, HS11-1)

HS12 series (variables HS12, HS12A-1 and HS12B-1, HS12A-2 and HS12B-2)

HS13 series (variables HS13, HS13A-1 and HS13B-1, HS13A-2 and HS13B-2)

AS18 series (variables AS18-1)

AS19 series (variables AS19-1)

AS20 series (variables AS20A-1, AS20B-1, AS20A-2, AS20B-2)

AS21 series (variables AS21A-1, AS21B-1, AS21A-2, AS21B-2)

Medical Visit File

MVF-DIAG

MVF-GEN

MVF-EYE

MVF-IMM

MVF-FP

MVF-OTHR

MVF-TC series (variables MVF-TC, MVF-NTC, MVF-NC)

MVF-CN series (variables MVF-CN2, MVF-CN3, MVF-CN4)

MVF-SOP series (variables MVF-SOP2, MVF-SOP3)

MVF-SA series (variables MVF-SA2, MVF-SA3)

MVF-SC series (variables MVF-SC1, MVF-SC2, MVF-SC3)

MVF-AP series (variables MVF-AP1, MVF-AP2, MVF-AP3)

Flat Fee file

FF3 series

FF4 series (variables FF4B, FF4B-1, FF4B-2)

FF5 series (variables FF5A, FF5B-1, FF5B-2)

FF6 series (variables FF6, FF6A, FF6B)

Perhaps the simplest way to quantify nonresponse is to look at the proportion of variables for each file that are problematic according to the 10-percent criterion. Given that restriction, over half the variables in the three files are problematic. However, this is a misleading way to state the extent of the nonresponse problem because, as has been shown, the 98 code cannot be taken at face value, and a great deal of this nonresponse is spurious.

A more realistic look at the extent of nonresponse might be gained by classifying the problematic variables under the five nonresponse types. This approach offers the advantage of differentiating between genuine and spurious nonresponse, and, because different magnitudes of nonresponse are assignable to different nonresponse patterns, it allows generalizations about the level of nonresponse within a given category of problematic variables. Appendix II assigns the problematic variables to the five types of nonresponse. The magnitude of nonresponse is indicated on a scale of comparatively low (10–20 percent) to moderate (21–40 percent) to high (41–100 percent). Some variables are attributed to more than one category because they are affected by more than one kind of nonresponse. Several generalizations can be drawn from the appendix; a summary is presented in Table G.

Of the 113 variables considered, 17 (15 percent) fall into the genuine nonresponse categories (types I and II), and 96 (85 percent) fall into the spurious nonresponse categories. Generally, the high magnitude nonresponse belongs to the cases where the illegitimate blank (98) code is used to mark legitimate nonresponse data (types III, IV, and V). The variables for which there is a high level of genuine nonresponse are charge or payment items. In some cases, the level of genuine nonresponse can be disturbingly high (as in HS10 and HS10–1, where the “don’t know” rate on the critical hospital charge item exceeds 36 percent). Still, the greater part, both in extent and magnitude, of the face-value nonresponse in these data files is spurious, a function of editing and data presentation conventions rather than of true item nonresponse.

Nonresponse Across Files

Nonresponse to problematic charge items can be compared from file to file. For example, in deciphering whether the level of genuine nonresponse was the same or different on parallel items in the Medical Visit and Hospital Stay files, several key items were selected based on type I (high “don’t know”) nonresponse. All of the items were alike in content, wording, and format, except that in one case, the item dealt with a hospital visit, and in another, with a medical visit. The first point of comparison is the total charge item (HS10, HS10–1, MVF–TC); the second, the amount-family-paid item (HS11, MVFFP–2); the third is “expect reimbursement, first source amount” (HS12B, MVF–SA1); and the last is “Will anyone else pay?” first source amount (HS13B; MVF–AP1). Percents of the “don’t know” nonresponse are as follows:

Amount	Hospital stay	Medical visit
	Percent	
Total charge	37	15
Amount family paid	14	12
First source reimbursement amount	29	20
First source anyone-else-pay amount	27	15

Thus, while charge and source-of-payment questions are consistently a problem, it would seem that they may be more of a problem for certain kinds of events than for others. Specifically, the level of genuine nonresponse is higher in the Hospital Stay file than in the Medical Visit file when questions rigidly parallel in content and format are compared. This result is not unexpected because patients are less likely to see their bills or pay directly for their hospital stays than for their medical visits. Greater efforts, perhaps greater recourse to provider medical records, may be required to improve charge data in such especially high nonresponse categories as hospital stay.

Table G

Cumulative nonresponse for charge questions in the 12-month Medical Provider Visit, Flat Fee, and Hospital Stay files, by magnitude and type of nonresponse

Type of nonresponse ¹	Magnitude			
	Total	10–20 percent	21–40 percent	41–100 percent
Total	113	11	7	95
I. Nonresponse as high “don’t know’s”	13	8	5	-
II. Blanks (98’s) as surrogates for “don’t know”	4	3	1	-
III. Nonresponse as legitimate internal skips	58	-	-	58
IV. Nonresponse as an artifact of question disaggregation	12	-	1	11
V. Nonresponse as legitimate lack of data	26	-	-	26

¹Includes data from the Medical Visit, Hospital Stay, and Flat Fee files combined.

Demographic Characteristics of the Item Nonresponse Population

Such genuine high nonresponse as has been identified throughout this report usually occurred with charge and source-of-payment amount questions, where “don’t know” rates of over 10 percent are the rule. Because these questions do not appear to be plagued by lack of clarity in question wording or problems in formatting, it may be assumed that respondents are not as familiar with medical charges as with other medical care and utilization items. The question then arises as to whether those who make up the “don’t know” population for the charge and payment variables have any common characteristics. If so, particular populations could be targeted for special efforts designed to obtain better charge information about them, perhaps from medical care providers.

In order to identify common characteristics, the “don’t know” response in the high “don’t know” variables was crosstabulated with such variables as sex, race, region, round (1–5), income of reporting unit, age of respondent, education of respondent, Medicare-Medicaid status, and report status (all self-reported, partially self-reported, or proxy). These crosstabulations produced information about the percent of each given group that answered “don’t know.” For example, on typical charge variables, if 10 percent of those with 12 years or more of education answered “don’t know,” compared with 30 percent of those with 0–7 years of schooling, this would mark a revealing difference between groups. (A few problematic question variables with a high proportion of nonresponse but a low absolute number of events were excluded from the analysis.)

The problematic charge and payment variables were a problem for all groups, whether young or old, rich or poor, educated or uneducated. Nonetheless, systematic differences between groups were observed on several of the demographic variables, including respondent age, respondent education, income of reporting unit, and Medicare-Medicaid status. In the case of other distinctions (sex, race, region, report status, and round), only small or inconsistent differences were observed across groups of “don’t know” respondents. The direction and magnitude of the systematic differences for the age, education, income, and Medicare-Medicaid status variables are summarized in Tables H, J, K, and L, respectively. All events coded 93 (not applicable) and 99 (legitimate nonresponse) have been excluded from the analysis.

Table H

Percent of “don’t know” responses reported to select charge and source amount questions in the 12-month Hospital Stay, Flat Fee, and Medical Provider Visit files, by three age groups

Charge and source amount questions with codebook names	Age		
	18–35 years	36–59 years	60 years or over
Hospital stay			
Total charge (HS10–1)	59	52	65
Amount family paid (HS11)	10	13	21
First source amount (HS13B)	19	24	3
Second source amount (HS13B–1)	4	9	31
Doctor in hospital			
Total physician charge (AS18)	50	62	68
Amount family paid (AS19)	12	18	25
First source amount (AS21B)	20	31	44
Flat fee			
How much paid; first source (FF5B)	16	17	20
Medical visit			
No total charge (MVF–NTC)	26	32	37
First source amount (MVF–SA1)	12	18	34
First source amount (MVF–AP1)	9	13	26

Respondent Age

There is a marked tendency for the oldest age group to incur the highest percent of “don’t know’s” in the selected charge and payment variables. Table H depicts this phenomenon.

With the exception of “no total charge” (MVF–NTC), the charge variables share in the pattern of the 60-years-and-over age group having a higher percent, sometimes substantially higher, of their responses falling in the “don’t know” category. The same pattern holds if participant age is employed as the age variable rather than respondent age. (“Participants” are all persons in a reporting unit who were assigned a Participant Identification (PID) number; “respondents” are persons who reported for themselves and other participants.)

Respondent Education

Years of education were divided into three categories (Table J): 0–7 years, 8–12 years, and 12 years or more.

The tendency in this case is for the least educated group to show a higher percent of “don’t know” responses. The exception is the “no total charge” category.

Income of Reporting Unit

Four income categories were used in this analysis: lowest (less than \$10,000), low-middle (\$10,000–\$19,999), high-middle (\$20,000–\$34,999), and highest (\$35,000 or more). Although it is difficult to generalize about the other groups, the lowest income group consistently had the highest reporting of “don’t know’s,” with the exception of the HS10–1 (“reason for no total charge”) variable, under which both the highest and the lowest income groups showed proportionally higher use of “don’t know” (the reporting of the highest income group, as a matter of fact, was slightly higher than that of the lowest group—Table K). However, these “don’t know’s” should have been assigned to HS10 (“total charge for hospital stay”); thus, the exception is on that variable.

Table J

Percent of “don’t know” responses reported to select charge and source amount questions in the 12-month Hospital Stay, Flat Fee, and Medical Provider Visit files, by years of education of respondent

Charge and source amount questions with codebook names	Years of education		
	0–7	8–12	12 or more
Hospital stay			
	Percent		
Total charge (HS10–1)	65	57	57
Amount family paid (HS11)	19	15	10
First source amount (HS13B)	37	27	27
Second source amount (HS13B–1)	21	13	11
Doctor in hospital			
Total physician charge (AS18–1)	74	58	51
Amount family paid (AS19)	26	18	15
First source amount (AS21B)	44	32	25
Flat fee			
How much paid; first source (FF5B)	23	16	19
Medical visit			
No total charge (MVF–NTC)	30	33	26
First source amount (MVF–SA1)	31	20	20
First source amount (MVF–AP1)	20	15	12

Medicare-Medicaid Status

A Medicare-Medicaid variable was used to determine whether the responses with respect to knowledge of charges and payments of those who received Medicare or Medicaid benefits were different from those of the respondents who did not receive benefits. Those with Medicare or Medicaid coverage consistently showed a higher tendency toward “don’t know” response. “No total charge” (MVF–NTC) again appears as an exception (Table L). Interestingly, the percent of “don’t know” responses in the category “amount family paid” (HS11) is the same for those with and without Medicare-Medicaid coverage.

Table K

Percent of “don’t know” responses reported to select charge and source amount questions in the 12-month Hospital Stay, Flat Fee, and Medical Provider Visit files, by income category of reporting unit

Charge and source amount questions with codebook names	Income category			
	Lowest	Low-middle	High-middle	Highest
Hospital stay				
	Percent			
Total charge (HS10–1)	57	53	55	62
Amount family paid (HS11)	17	14	11	12
First source amount (HS13B)	32	26	22	21
Second source amount (HS13B–1)	20	11	8	10
Doctor in hospital				
Total physician charge (AS18–1)	68	56	54	61
Amount family paid (AS19)	20	20	14	16
First source amount (AS21B)	37	31	27	26
Flat fee				
How much paid, first source (FF5B)	19	17	16	14
Medical visit				
No total charge (MVF–NTC)	34	29	30	28
First source amount (MVF–SA1)	22	20	16	21
First source amount (MVF–AP1)	20	14	13	8

Table L

Percent of “don’t know” responses reported to select charge questions in the 12-month Hospital Stay, Flat Fee, and Medical Provider Visit files, by Medicare-Medicaid coverage

Charge and source amount questions with codebook names	Medicare-Medicaid coverage	
	Yes	No
Hospital stay		
Percent		
Total charge (HS10-1)	71	61
Amount family paid (HS11)	60	60
First source amount (HS13B)	41	25
Second source amount (HS13B-1)	31	6
Doctor in hospital		
Amount family paid (AS19)	23	21
First source amount (AS21B)	43	33
Flat fee		
How much paid, first source (FF5B)	43	16
Medical visit		
No total charge (MVF-NTC)	33	38
First source amount (MVF-SA1)	32	26
First source amount (MVF-AP1)	20	15

Summary

In summary, although knowledge of charge and payment information is problematic for all groups, the data indicate that it is more of a problem for some groups than for others. In particular, four overlapping groups—the elderly, the least educated, those with lowest incomes, and those receiving Medicare and Medicaid—are disproportionately more likely to give “don’t know” responses to charge questions. For these overlapping populations (which, for most practical purposes, may be primarily thought of as the Medicare-Medicaid group), charge information is likely to be lacking and may need to be sought from medical provider or other administrative records.

Recommendations

In this discussion, recommendations are made addressing the specific issues raised by each of the five types of item nonresponse identified in the NMCUES 12-month data files. This discussion will be followed by a number of more general recommendations.¹

Two of the five types of item nonresponse are in regard to a misleading presentation of data in the data file, in which nonresponse is only apparent. Two other types have to do with genuine nonresponse, either “don’t know” rates of 10 percent or higher, or response categories virtually empty of data. The final type involves genuine but legitimate nonresponse, categories empty of data that misleadingly appear coded as illegitimate nonresponses (98’s). The issues and recommendations concerning spurious nonresponse will be addressed first, followed by a discussion of genuine nonresponse.

The two types of spurious nonresponse are nonresponse as legitimate internal skips (type III), when the illegitimate nonresponse code (98) was used to mark legitimate internal skips within a linked series; and nonresponse as an artifact of question disaggregation (type IV), when the illegitimate nonresponse code was used as a marker for what was, in fact, legitimate response appearing in the disaggregated part of the question.

As noted, in linked-series variables such as source of payment and condition, no legitimate internal skip code had been assigned. Nevertheless, the most realistic assumption would be that each successive source of payment or condition would have been applicable to less and less of the respondent population. Given that third and fourth sources of payment, condition, and so on, were virtually devoid of valid response, and given that crosstabulations showed a high degree of logical consistency between the successive parts of linked-series variables, it would seem that the overwhelming number of illegitimate blanks recorded in such series would constitute legitimate internal skips. The problem with this kind of nonresponse is that it is misleading; it dramatically inflates the number of illegitimate blanks (98), and it fuses the large number of legitimate skips with

a small number of illegitimate blanks, so that they are indistinguishable. In other words, in the example of source-of-payment information, there is no way to distinguish between a respondent who had only one source of payment and therefore had no second or third source information to provide, and a different respondent who had three sources of payment but could name only one and was, in effect, answering “don’t know” to the second and third.

If a respondent lacked a second, third, or fourth condition or source of payment, the interviewer had no option other than to leave the question blank. A solution to the type III nonresponse situation would be to provide a response category that would permit the interviewer to record the place where a series would cease to be applicable to the respondent. This could be done by breaking down the highly compact linked series into discrete subquestions and by incorporating into the subquestion series a place to mark closure of the series. This recommendation will be elaborated on later in this section.

Another example of misleading presentation of the data may be seen in the “disaggregated” questions, such as the total charge variables. In these instances, a complex question is broken into two parts; the sum of the parts totals the file number. Thus, a valid response in one part of the question calls for a nonresponse code in the other part. Typically, one response was coded 99 and the other 98.

Though such variables often were plagued with high genuine nonresponse, they also represented a distinct, and spurious, nonresponse type, nonresponse as an artifact of question disaggregation (type IV). Thus, as seen in such cases as Hospital Stay file question 10 (disaggregated into HS10 and HS10-1), some 98’s (illegitimate blanks) were simply markers for a valid response in the other part of the disaggregate.

Three basic problems of ambiguity and lack of clarity resulted from disaggregated questions.

1. When a 98 was used as a marker for a legitimate response in the other disaggregate of a question, this variety of 98 and the true illegitimate blank 98 were classified as being the same. While crosstabulation successfully distinguishes between the two cases, it should not be necessary to go to such lengths to achieve clarity of data.

¹These recommendations are directed toward a future NMCUES. However, it might be prudent to reexamine the current Public Use version of the 1980 NMCUES data (see *Public Use Data Tape Documentation: NMCUES, 1980*) in light of the 12-month file findings, to determine to what extent difficulties identified for the intermediate stage of the data base construction process have implications for the final stage.

2. Because of inconsistencies in the data, the two halves of a disaggregate could not readily be reaggregated. For example, in HS10 ("total charge") and HS10-1 ("reason for no total charge"), the valid responses in HS10 should have been marked by a 99 in HS10-1, but the set of relevant numbers failed to match.
3. The nonresponse categories were often presented in an ambiguous and arbitrary way. In the case of HS10 ("total charge") and HS10-1 ("reason for no total charge"), the codebook assigned the "don't know" category for question 10 to HS10-1 ("reason for no total charge") and not to HS10 ("total charge"). While there is one "don't know" response category provided for in the question, the frequencies give two "don't know's," one for HS10 (barely utilized) and one for HS10-1 (heavily utilized). Although only one "don't know" response category appears in the question, two conceptually distinct sorts of "don't know" are possible: (a) The respondent does not know the total charge, or (b) the respondent does not know why there was no total charge. The "don't know" frequency assigned to HS10-1 is presumably translated as "lack of a reason for no total charge," whereas the frequency that appears for HS10 presumably would have been written in by the interviewer as "don't know total charge." The results of crosstabulations are wholly consistent with this interpretation, but the frequencies run counter to intuition: More people would be expected to lack information about the amount of their hospital-stay charge than would lack information as to why there was no charge. In fact, the "don't know" frequencies appearing under both HS10-1 and HS10 refer to HS10 ("total charge"). Again, a general lack of clarity in the meaning of the data, not entirely a function of question disaggregation, but certainly compounded by it, is the result.

There are several ways in which the presentation of data in disaggregated questions could be made clearer. In the case of the first example just presented, more consistent use of codes 98 and 99 would largely solve the problem. In the second case, better data cleaning would clearly be an appropriate solution. In the third case, adding the two "don't know" frequencies together (for they are alike in kind and differ only in genesis, the smaller number having been written into the questionnaire margin beside the "total charge" blank) and providing a clearer account in the codebook would suffice. With respect to the formatting of the questionnaire, if the "don't know" in a "total charge" question really is intended to refer to "total charge" and only to "total charge," then the "don't know" category should be put in physical proximity with the "total charge" category to which it refers. Thus, instead of letting "don't know" trail as the final element, a less ambiguous arrangement would be as follows:

\$ _____	(11)
Don't know total charge	94 (11)
No charge	02 (A)
Included with other charges	03 (FF [14])
FOR NEWBORNS ONLY: Included in mother's bill (Person # _____)	04 (15)

Another possible approach to the problems of question disaggregation might be to break down the highly compressed questions of the NMCUES questionnaire. In the case of the "total charge" questions, for example, the fact that in 2 percent of cases interviewers wrote in "don't know" rather than using the available "don't know" response category suggests that there may have been some confusion on the part of the interviewers as to the reference of the "don't know" response category; it is also possible that there may have been some misuse of it (for example, if there was no total charge but the reason was not known, that response could have ended up in the "don't know" response category). Thus, there might be an argument for separating in one box the "total charge" amount and its "don't know" category, and in another the alternative response options of "reason for no total charge."

In some cases, disaggregation of the questions themselves also might be appropriate for condition and source-of-payment variables. For example, instead of the box used in the questionnaire (which does not allow a way to differentiate between a respondent who had only one source of payment and another who had three but was able to name only one), sources could be disaggregated. Thus, instead of the present structure,

Do you expect any source to reimburse or pay you back?	
Yes	(A)
No	(C)
A	B
SOURCE	AMOUNT
_____	_____
_____	_____
_____	_____
} ,	

the following series could be utilized:

Do you expect any source to reimburse or pay you back?	
Yes	(A)
No	(C)
A	B
SOURCE	AMOUNT
_____	_____
Did you have a second source of payment?	
Yes	(A-1)
No	(C)
A-1	B-1
SOURCE	AMOUNT
_____	_____

This format could be extended to a third source, if a third source category is deemed desirable.

The remaining types of nonresponse are all genuine. One type, which involves genuine but legitimate nonresponse and occurs in close conjunction with such cases of nonresponse as 98 codes for legitimate internal skips, is that of categories empty of data (type V). Multiple condition and source-of-payment series, in their final and sometimes next-to-final categories, were often virtually empty of data. Specifically, in the Medical Visit, Hospital Stay, and Flat Fee files, the quantity of valid response data elicited is less than 1 percent of the file number for all fourth conditions and for all third sources of payment. In such cases, it should be reassessed carefully whether this small amount of data is worth collecting. If not, the format of the questionnaire might be altered so that third sources of payment and fourth conditions would be dropped.

The other two patterns of genuine nonresponse involve "don't know's," explicit on the one hand (type I) and hidden on the other (type II). For some variables there is simply a high (10 percent or more) rate of "don't know" response. For other variables, there is reason to assume that many respondents would lack requested information, but no "don't know" category has been provided. This assumption, concomitant with a high ratio of 98's, is supportive of the hypothesis that a proportion of illegitimate blanks are surrogates for "don't know."

In general, there appears to be a substantial, though not unreasonable or unexpected, amount of charge and payment nonresponse. Because this nonresponse is expected and shows no evidence of resulting from question wording or questionnaire format, the strategy of this analysis for dealing with genuine nonresponse has been to examine the character of the nonresponse population to see whether some groups were disproportionately represented. Certain groups (the elderly, the less educated, the poor, and those covered by Medicare and Medicaid) do tend to have higher rates of genuine nonresponse. Therefore, it may be worthwhile to consult medical provider records to supplement respondent information for these groups. (Also, high response was harder to achieve for certain kinds of events than for others; for example, it was more difficult to achieve high response for hospital stays than for medical visits. It also might be profitable to pursue charge data for certain kinds of events from medical provider sources.)

Although special measures to elicit additional medical utilization data for high nonresponse groups would seem the most sensible approach to the problem of high levels of "don't know" response, the NMCUES data present the additional obstacle that sometimes "don't know's" are masked and appear under other nonresponse codes such as illegitimate blanks. This problem raises the question of what could be done to enforce more consistent use of the "don't know" category. Earlier, three distinct relationships applicable to any given question with regard to the "don't know" response category were identified:

1. "Don't know" category provided.
2. No "don't know" category provided, but interviewers instructed to write in "don't know."
3. No "don't know" category provided; no write-in option instructed.

There is no likelihood that additional legitimate data would have been collected had a "don't know" response category been consistently provided; however, nonresponse, insofar as this is of interest for its own sake, would have been more precisely interpretable. The possible negative aspect of providing a "don't know" category would be that, because it is the "easiest" option for both interviewer and respondent, such a category might encourage nonresponse, especially for questions that are particularly sensitive or demanding. It would therefore be appropriate to conduct an experiment in which some respondents and not others are provided with a "don't know" option. The variables that would be used would be those for which there is no "don't know" response category and for which there had been high use of 98's.

As a pendant to the five types of nonresponse identified in this analysis, possible problems of illegitimate skips in highly compressed questions were examined. It is recommended that questions such as Medical Visit question 5, which has 15 constituent variables, multiple complex skips, and an instruction to "Code all that apply," be reformatted into several discrete questions. It also is recommended that such "open" formats for recording multiple visits as those that appear in the Hospital Outpatient Department Visit section (core questionnaire pages OPD-26 through OPD-31) be reformatted to reflect the "self-contained" and comparatively error-proof visit-recording structure that characterizes the precisely parallel questions in the Medical Provider Visit section (section MV of the questionnaire).

In addition to recommendations specific to the five kinds of item nonresponse and illegitimate skip problems found in the NMCUES 12-month data files, a number of general recommendations may be made, primarily about the data-cleaning and quality-control processes.

One such recommendation concerns the need for a universal definition for each file. This is especially important if the event-level files are to be used for person-level analyses. Thus, the universal definition for the file should state specifically how many persons are in the file as well as how many events.

Another recommendation concerns the need to have an effective quality-control plan from the earliest stages of the project to provide feedback that will improve the final form of the data collection and reduction effort. Evaluation and quality control are, of course, ongoing processes that have a vital role in each round; however, their utility may be maximized by putting special emphasis on round 1. An extremely careful field edit to identify problem interviewers and a very close machine edit to identify problems in the questionnaire will be

vital to the goal of achieving the highest quality NMCUES data.

The recommendations discussed in this section of the report may be summarized as the following:

1. Divide complex questions into subquestions in the questionnaire itself, not just in the codebook. Use this process to reduce complexity and ambiguity; for example, where there is one “don’t know” response category, included with multiple response categories to which it might refer, include the “don’t know” with the germane alternative.
2. Reformat into multiple discrete questions each extremely tightly packed question with complex skip patterns. Avoid formats that maximize the likelihood of illegitimate interviewer skips.
3. Use nonresponse codes more consistently (especially codes 98 and 99) in data-reduction tasks.
4. Avoid assigning data with an identical question reference to separate variables. Combine such frequencies in one place.
5. Drop categories that elicit 99-percent or higher legitimate nonresponse.
6. Supply a universal definition for each data file. Such a definition should be designed to facilitate person-level analysis in the event files by providing a person number in addition to an event number.
7. Conduct a split-ballot experiment to test the effects of providing an explicit “don’t know” response category for the type II (illegitimate blanks as surrogates for “don’t know”) nonresponse variables, where there were high 98’s but no “don’t know” response option.
8. Emphasize evaluation and quality control in round 1.

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Appendix I

Definitions of Terms Used in This Report

Age—The age of the person as of January 1, 1980. Babies born during the survey period were included in the category “under 5 years.”

Condition—Any entry on the questionnaire that describes a departure from a state of physical or mental well-being. It is any illness, injury, complaint, impairment, or problem perceived by the respondent as inhibiting usual activities or requiring medical treatment. Pregnancy, vasectomy, and tubal ligation were not considered to be conditions; however, related medical care was recorded as if they were conditions. Neoplasms were classified without regard to site. Conditions, except impairments, are classified by type according to the Ninth Revision of the International Classification of Diseases (World Health Organization, 1977) as modified by the National Health Interview Survey Medical Coding Manual (NCHS, 1979); these modifications make the code more suitable for a household interview survey. Impairments are chronic or permanent defects, usually static in nature, that result from disease, injury, or congenital malformation. They represent decrease or loss of ability to perform various functions, particularly those of the musculoskeletal system and the sense organs. Impairments are classified by using a supplementary code specified in the coding manual. In the supplementary code, impairments are grouped according to type of functional impairment and etiology.

Control card—A computer-generated instrument providing administrative control of the samples, information to help the interviewer to locate and identify sample persons, procedures for determining reporting unit composition, and places to record information required across rounds of interviewing.

Core questionnaire—The basic interview instrument used during each interview to obtain data about health, health care, charges for health care, sources of payment, and health insurance coverage.

Disaggregation, disaggregated question—A single question in the core questionnaire is often related to several discrete items in the response frequencies. These items are labeled separately, and their response frequencies sum to 100 percent. In such instances, the question as it appeared in the questionnaire is said to have been disaggregated in the response frequencies.

Education of individual (respondent)—The years of school completed for people 17 years of age and over. Only years completed in regular schools, where persons are given a formal education, were included. A “regular” school is one that advances a person toward an elementary or high school diploma or a college, university, or professional school degree. Thus, education in vocational, trade, or business schools outside the regular school system was not counted in determining the highest grade of school completed.

Emergency room visit—The emergency room visit section of the NMCUES questionnaire contained questions about the conditions requiring treatment and the reason that the person visited the emergency room rather than some other source of care. General questions on procedures, the charge, and source of payment were included in this section. An emergency room visit and a hospital stay were recorded if a person was admitted to the hospital as a result of the visit.

Event file—Most NMCUES files were organized with events (for example hospital stays, medical visits, and hospital outpatient department visits) as the unit of analysis. In an event file, any given respondent might have zero, one, or more records (events), depending on that person’s response to the provider probe questions.

Family—A group of people living together and related to each other by blood, marriage, adoption, or foster care status. An unmarried student 17–22 years of age living away from home was also considered part of the family, even though his or her residence was in a different location during the school year.

Filter—A question asked to determine which subsequent question or questions, if any, should be asked.

Flat fee—A single lump sum charge for a variety of services or supplies or a series of visits. The single charge was paid in one lump sum or by installments, but in a way that could not be related to individual events of health care. A flat fee was associated with only one person. If a hospitalization was involved, the total flat fee was assigned to the hospitalization, and a zero charge was assigned to all visits. Otherwise, the flat fee was equally distributed among all the associated visits.

High nonresponse—For purposes of this report, item nonresponse was termed “high” if it was 10 percent or more of the expected number of responses. To deter-

NOTE: For the purposes of this report, the definitions included in this appendix may differ from the definitions presented in other NMCUES series reports.

mine the expected number of responses for a given item, the number of legitimate skips of that item was subtracted from the total number of events in the file.

Hospital admission—This is the formal acceptance by a hospital of a patient who is provided room, board, and regular nursing care in a unit of the hospital. A patient admitted to the hospital and discharged on the same day is considered to have had a hospital admission. Also included is a hospital stay resulting from an emergency department visit.

Hospital stay—The Hospital inpatient section of the NMCUES questionnaire collected information about each admission to a hospital, including admissions that did not require an overnight stay, such as in-and-out surgery. Hospital stays resulting from an emergency room visit are also included.

Hospital outpatient department—A hospital-based ambulatory care facility organized to provide non-emergency medical services. Persons receiving services do not receive inpatient nursing care. Examples of outpatient departments or clinics are pediatric, obstetrics and gynecology, eye, and psychiatric.

Hospital outpatient department visit—A face-to-face encounter between an ambulatory patient and a medical person. The patient comes to a hospital-based ambulatory care facility to receive services and departs on the same day. If more than one department or clinic is visited on a single trip, each department or clinic visited is counted as a separate visit.

Household—Occupants of group quarters or of a housing unit that was included in the sample constitute a household. A household can comprise one person, a family of related people, a number of unrelated people, or a combination of related and unrelated people.

Housing unit—A group of rooms or a single room occupied or intended for occupancy as separate living quarters is a housing unit if the occupants do not live and eat with any other persons in the structure, and if there was either direct access from the outside or through a common hall, or there were complete kitchen facilities for the use of the occupants only.

Illegitimate blanks (illegitimate nonresponses)—The NMCUES consistency code 98 that was reserved for all instances in which an item that should have been answered was left blank.

Income—Although income data were collected in both rounds 1 and 5, the income figures in this report reflect the income reported during the round 1 data collection. In round 1, respondents were asked to categorize the income level of their families or themselves during the preceding 12 months. Thus, the annual income figures collected for each reporting unit primarily reflect income received in 1979, with minor overlap into early 1980.

Key person—A key person was (1) an occupant of a national household sample housing unit or group quarters at the time of the first interview; (2) a person related to and living with a State Medicaid household

case member at the time of the first interview; (3) an unmarried student 17–22 years of age living away from home and related to a person in one of the first two groups; (4) a related person who had lived with a person in the first two groups between January 1, 1980, and the round 1 interview, but was deceased or had been institutionalized; (5) a baby born to a key person during 1980; or (6) a person who was living outside the United States, was in the Armed Forces, or was in an institution at the time of the round 1 interview but who had joined a related key person.

Medical provider—Any medical person who provided medical (nondental) services. Bonham (1983) notes: “As used in this survey, the term ‘medical provider’ referred to all persons engaged in the prevention, diagnosis, and treatment of physical or mental health problems whether or not they had medical degrees. This definition included persons such as chiropractors, speech therapists, faith healers, psychologists, and nurses, as well as medical and osteopathic doctors.” In the Medical Provider Visit section of the NMCUES questionnaire, provision was made for recording eight specific kinds of medical persons, in addition to “Other (SPECIFY)”: medical doctor, chiropractor, podiatrist, optometrist, psychologist, social worker, nurse, and physical therapist.

Medical visit—An ambulatory visit to a medical provider (e.g., doctor, nurse, physical therapist, laboratory technician). The number of visits is based on responses to the medical provider, emergency room, and hospital outpatient department visit sections of the core questionnaire.

National household component—The component of NMCUES that consisted of multiple household interviews with an area-probability sample of people in the civilian noninstitutionalized population of the United States in 1980.

Nonkey person—A person related to a key person who joined him or her after the round 1 interview but was part of the civilian noninstitutionalized population of the United States at the date of the first interview is considered nonkey.

Person file—In the person round-specific file of the 12-month data base and in the person file of the Public Use files, the person is the unit of analysis. There is one record per participant in the NMCUES person files.

PID #—Participant identification number, a unique number assigned to a person for the duration of the survey.

Proxy respondent—As used in this survey, a proxy respondent was a person who provided information for people in the reporting unit but who was not a member of the reporting unit. A proxy respondent was used only when no member of the reporting unit could supply the information because of physical or mental incapacity.

Public Use Data Tapes—The Public Use data base consists of six files, constituting the final, cleaned, reformatted, and imputed version of the NMCUES data. The

six files are the Person file, the Medical Visit file, the Hospital Stay file, the Dental Visit file, the Condition file, and the Prescribed Medicine and Other Medical Expense file.

Reporting unit—The basic unit for reporting data in the household components of NMCUES. A reporting unit consisted of all related people residing in the same housing unit or group quarters. One person could give information for all members of the reporting unit.

Round—The administrative term used to designate all interviews that occurred within a given period of time, and that used the same instruments and procedures.

Skip—Where appropriate, skip instructions are written into the NMCUES questionnaire for the interviewer's use, to determine, on the basis of the question just asked, what question to ask next. In the case of a legitimate skip, the interviewer skips items that are not relevant or do not apply. If the interviewer skips an item that the respondent should have answered, then this constitutes an illegitimate skip.

Source-of-payment variables—NMCUES attempted to ascertain the source of payment for the total charge

for medical services and supplies. An initial question dealt with the family as the source of payment, with the family defined as those persons in the reporting unit. The next two questions were about payments by sources other than the family. In addition to the family, three separate sources could be recorded.

Total charge—For each service provided and supply obtained information was asked about the total charge. The total charge included the charges for every procedure performed during the visit or the charges for all supplies of the same type. The total charge was the amount billed, not necessarily the actual amount paid or accepted as payment by the provider of the care.

12-month data base files—The NMCUES data went through several stages of data processing before a final version was produced as the Public Use Data Tape. The 12-month files are an intermediate stage, containing 10 data files, both event-level files and person-level files for each round. The 12-month files were cleaned minimally and were not subject to imputation of missing data.

Appendix II. Nonresponse Variables

In this section, problematic variables and their corresponding codebook variable names from the Medical Visit, Hospital Stay, and Flat Fee files are classified by type of nonresponse. Because more than one type of nonresponse may be present in a variable, some variables appear more than once. The level of nonresponse also is indicated for each variable, in accordance with the scheme of classification.

- * 10–20-percent nonresponse
- ** 21–40-percent nonresponse
- *** 41–100-percent nonresponse

Type I: Nonresponse as High “Don’t Know’s”

For some variables, there is a high level of “don’t know” (consistency code 94) response. A “high level” is defined as 10 percent or more of the expected valid response (that is, the total file N minus the legitimate skips (99’s)). High “don’t know” variables are listed, by file, as follows. (Note that all the high “don’t know” variables are charge questions.)

Medical Visit

- MVF–NTC “Reason for no total charge”; but 94’s refer to MVF–TC, “total charge”*
- MVF–SA1 First source-of-payment amount*
- MVF–AP1 First source-of-payment amount*

Hospital Inpatient Stay

- HS10–1 “Reason for no total charge”; but 94’s refer to HS10, “total charge”***
 - HS11 Amount family paid*
 - HS12B First source-of-payment amount*
 - HS13B First source-of-payment amount**
 - HS13B–1 Second source-of-payment amount*
 - AS18–1 “Reason for no total charge”; contains 94’s for AS–18, “total charge [physician]”***
 - AS19 How much of the charge for the doctor did or will you or your family pay?*
 - AS20B How much will each source reimburse or pay you back?***
 - AS21B How much did or will [first source] pay?***
- Flat fee
- FF–5B How much did or will [first source] pay?*

Type II: Blanks (98’s) as Surrogates for “Don’t Know”

In some instances, there was no provision for a “don’t know” response category, yet a high number of unexplained 98’s was recorded. In these cases, it is hypothesized that many of the 98’s are in fact proxies for “don’t know.”

Medical Visit

- MVFFP–2 Amount family paid* (Some 98’s were artifacts of disaggregation; however, 12 percent remained after these were subtracted.)

Hospital Inpatient Stay

- HS11 Amount Family Paid* (Some 98’s were artifacts of disaggregation; however, 14 percent remained after these were subtracted.)

Flat Fee

- FF6A How many visits did [person] have to the [doctor, dentist, or other] before January 1, 1980?***
- FF6B Was hospital stay prior to January 1, 1980, covered?*

Type III: Nonresponse as Legitimate Internal Skips

In this type of nonresponse, legitimate skips in a question series, as when an additional medical condition or source of payment ceases to apply to the respondent, have been misleadingly assigned the illegitimate blank code, 98. Variables that are characterized by this kind of nonresponse are listed, by file, as follows:

Medical Visit

Condition variables:

- MVF–CN2 Condition 2***
- MVF–CN3 Condition 3***
- MVF–CN4 Condition 4***

Charge and source-of-payment variables:

- MVF–SOP2 Second source code***
- MVF–SA2 Second source amount***

MVF-SP2 Second source percent indicator***
 MVF-SOP3 Third source code***
 MVF-SA3 Third source amount***
 MVF-SP3 Third source percent indicator***
 MVF-SC1 First source code***
 MVF-AP1 First source amount***
 MVF-SP1 First source percent indicator***
 MVF-SC2 Second source code***
 MVF-AP2 Second source amount***
 MVF-SP2 Second source percent indicator***
 MVF-SC3 Third source code***
 MVF-AP3 Third source amount***
 MVF-SP3 Third source percent indicator***

Hospital Inpatient Stay

Condition variables:

HS5-1A Second condition***
 HS5-2A Third condition***
 HS5-3A Fourth condition***
 HS5C-1A Second abnormal condition***
 HS5C-2A Third abnormal condition***
 HS5C-3A Fourth abnormal condition***
 HS6A-1A Second operation***
 HS6A-2A Third operation***

Charge and source-of-payment variables:

HS12A-1 Second source code***
 HS12B-1 Second source amount***
 HS12B-1P Second source percent indicator***
 HS12A-2 Third source code***
 HS12B-2 Third source amount***
 HS12B-2P Third source percent indicator***
 HS13A-1 Second source code***
 HS13B-1 Second source amount***
 HS13B1P Second source percent indicator***
 HS13A-2 Third source code***
 HS13B-2 Third source amount***
 HS13B2P Third source percent indicator***
 AS20A-1 Second source code***
 AS20B-1 Second source amount***
 AS20B-1P Second source percent indicator***
 AS20A-2 Third source code***
 AS20B-2 Third source amount***
 AS20B2P Third source percent indicator***
 AS21A-1 Second source code***
 AS21B-1 Second source amount***

AS21B-1P Second source percent indicator***
 AS21A-2 Third source code***
 AS21B-2 Third source amount***
 AS21B2P Third source percent indicator***

Flat Fee

Charge and source-of-payment variables:

FF-4B1 and FF-4B1P Second source amount and percent indicator***
 FF-4B2 and FF-4B2P Third source amount and percent indicator***
 FF-5B1 and FF-5B1P Second source amount and percent indicator***
 FF-5B2 and FF-5B2P Third source amount and percent indicator***

Type IV: Nonresponse as an Artifact of Question Disaggregation

In this type of nonresponse, an illegitimate blank code (98) was used as the marker in one part of a disaggregated question for a legitimate response in the other part. The “nonresponse” disappears when the question is reaggregated and assumes its original form.

Medical Visit

Charge and source-of-payment variables:

MVF-TC Total charge***
 MVFFP-2 Partial charge amount, family pays***

Other variables:

MVFDIAG Diagnosis or treatment**
 MVF-GEN General checkup***
 MVF-EYE Eye examination***
 MVF-IMM Immunization***
 MVF-FP Family planning***
 MVF-OTHR Other (specify)***

Hospital Inpatient Stay

HS10 Total charge***
 HS11 Charge, how much family pays***
 AS18 Total charge, physician***
 Flat Fee
 FF3 Partial charge***

Type V: Nonresponse as Legitimate Lack of Data

For some response categories, a very small amount of data was collected. For example, the third source-of-payment and fourth condition variables listed below contain (with one exception—HS6A-2A) a level of valid

response of less than 1 percent of the expected number (that is, the total file number, after 99's—legitimate skips—have been deducted from the calculation).

Medical Visit

Condition variables:

MVF-CN4 Fourth condition***

Charge and source-of-payment variables:

MVFSOP Third source code***

MVF-SA3 Third source amount***

MVF-SP3 Third source percent indicator***

MVF-SC3 Third source code***

MVF-AP3 Third source amount***

MVF-SP3 Third source percent indicator**

Hospital Inpatient Stay

Charge and source-of-payment variables:

HS12A-2 Third source code***

HS12B-2 Hospital charge amount, third source***

HS12B2P Third source percent indicator***

HS13A-2 Third source code***

HS13B-2 Hospital charge amount, third source***

HS13B2P Third source percent indicator***

AS20A-2 Third source code***

AS20B-2 Physician's charge amount, third source***

AS20B2P Third source percent indicator***

AS20A-2 Third source code***

AS20B-2 Physician's charge amount, third source***

AS20B2P Third source percent indicator***

AS21A-2 Third source code***

AS21B-2 Physician's charge amount, third source***

AS21B2P Third source percent indicator***

Condition variables:

HS5-3A Fourth entry condition***

HS5C-3A Fourth abnormal condition***

HS6A-2A Third operation***

Flat Fee

Source-of-payment variables:

FF-4B-2 and FF-4B2P Third source amount and third source percent indicator***

FF-5B-2 and FF-5B2P Third source amount and third source percent indicator***

HOSPITAL OUTPATIENT DEPARTMENT VISIT

5. Why did (PERSON) visit the (CLINIC NAME) on (DATE)? CODE ALL THAT APPLY

A. Was this for any specific condition?

B. What was the condition? Any other condition?

C. Did (PROVIDER) discover any condition?

D. What was it? Any other condition? RECORD IN B ABOVE

6. Were any X-rays taken during this visit to (NAME OF CLINIC) on (DATE)?

7. Were any laboratory tests taken such as a blood test, urinalysis, culture, or other kind of test done?

8. Was an EKG, EEG, (a pap smear) or any other diagnostic procedure done?

9. How much was the total charge for this visit on (DATE), including any amounts that may be paid by health insurance, Medicare, Medicaid or other sources? (Include any separate charges for [X-rays/laboratory tests/diagnostic procedures].)

A. Why was there [no/such a small] charge for this visit?

VISIT A	
PERSON _____	# _____
5	Diag. or Treat. 01(B) General Checkup 02(A) Eye Exam (glasses). 03(6) Immunization. 04(6) Family Planning 05(6) Other (SPECIFY) 06(A)
A	Yes 01(B) No. 02(C)
B	Condition _____ Cond. # _____
&	CC (6)
D	CC (6)
	CC (6)
	CC (6)
C	Yes 01(D) No. 02(6)
	Yes No
6	01 02
7	01 02
8	01 02
9	\$ _____ (10) \$3.00 or less 01(A) No charge 02(A) Included with other charges 03(FF (RV)) Don't know. 94(10)
A	Welfare/Medicaid paid . . . 01(RV) Included with other charges 02(FF (RV)) Free from provider. 03(12) Other source(s) will pay. . . 04(12A) Standard HMO/PHP/Health Center charge 05(RV) Other 07(10)

Appendix III: Selections From the Questionnaire

VISIT B		VISIT C		VISIT D		VISIT E		
PERSON	#	PERSON	#	PERSON	#	PERSON	#	
Diag. or Treat.	01(B)	Diag. or Treat.	01(B)	5	Diag. or Treat.	01(B)	Diag. or Treat.	01(B)
General Checkup	02(A)	General Checkup	02(A)		General Checkup	02(A)	General Checkup	02(A)
Eye Exam (glasses)	03(6)	Eye Exam (glasses)	03(6)		Eye Exam (glasses)	03(6)	Eye Exam (glasses)	03(6)
Immunization.	04(6)	Immunization.	04(6)		Immunization.	04(6)	Immunization.	04(6)
Family Planning	05(6)	Family Planning	05(6)		Family Planning	05(6)	Family Planning	05(6)
Other (SPECIFY)	06(A)	Other (SPECIFY)	06(A)		Other (SPECIFY)	06(A)	Other (SPECIFY)	06(A)
Yes	01(B)	Yes	01(B)	A	Yes	01(B)	Yes	01(B)
No.	02(C)	No.	02(C)		No.	02(C)	No.	02(C)
Condition	Cond. #	Condition	Cond. #	B & D	Condition	Cond. #	Condition	Cond. #
	CC (6)		CC (6)			CC (6)		CC (6)
	CC (6)		CC (6)			CC (6)		CC (6)
	CC (6)		CC (6)			CC (6)		CC (6)
	CC (6)		CC (6)			CC (6)		CC (6)
Yes	01(D)	Yes	01(D)	C	Yes	01(D)	Yes	01(D)
No.	02(6)	No.	02(6)		No.	02(6)	No.	02(6)
<u>Yes</u> <u>No</u>		<u>Yes</u> <u>No</u>		6	<u>Yes</u> <u>No</u>		<u>Yes</u> <u>No</u>	
01 02		01 02			01 02		01 02	
01 02		01 02		7	01 02		01 02	
01 02		01 02		8	01 02		01 02	
\$ _____ (10)		\$ _____ (10)		9	\$ _____ (10)		\$ _____ (10)	
\$3.00 or less . . . . .	.01(A)	\$3.00 or less . . . . .	.01(A)		\$3.00 or less . . . . .	.01(A)	\$3.00 or less . . . . .	.01(A)
No charge . . . . .	.02(A)	No charge . . . . .	.02(A)		No charge . . . . .	.02(A)	No charge . . . . .	.02(A)
Included with other charges . . . . .	.03(FF (RV))	Included with other charges . . . . .	.03(FF (RV))		Included with other charges . . . . .	.03(FF (RV))	Included with other charges . . . . .	.03(FF (RV))
Don't know. . . . .	.94(10)	Don't know. . . . .	.94(10)		Don't know. . . . .	.94(10)	Don't know. . . . .	.94(10)
Welfare/Medicaid paid .01(RV)		Welfare/Medicaid paid .01(RV)		A	Welfare/Medicaid paid .01(RV)		Welfare/Medicaid paid .01(RV)	
Included with other charges . . . . .	.02(FF (RV))	Included with other charges . . . . .	.02(FF (RV))		Included with other charges . . . . .	.02(FF (RV))	Included with other charges . . . . .	.02(FF (RV))
Free from provider. . . . .	.03(12)	Free from provider. . . . .	.03(12)		Free from provider. . . . .	.03(12)	Free from provider. . . . .	.03(12)
Other source(s) will pay . . . . .	.04(12A)	Other source(s) will pay . . . . .	.04(12A)		Other source(s) will pay . . . . .	.04(12A)	Other source(s) will pay . . . . .	.04(12A)
Standard HMO/PHP/Health Center charge . . . . .	.05(RV)	Standard HMO/PHP/Health Center charge . . . . .	.05(RV)		Standard HMO/PHP/Health Center charge . . . . .	.05(RV)	Standard HMO/PHP/Health Center charge . . . . .	.05(RV)
Other . . . . .	.07(10)	Other . . . . .	.07(10)		Other . . . . .	.07(10)	Other . . . . .	.07(10)

HOSPITAL OUTPATIENT DEPARTMENT VISIT

		VISIT A																	
	10. How much of the (CHARGE) charge for the visit <u>did</u> or <u>will</u> you (or your family) pay?	10	PERSON _____ # _____ Partial \$ _____ % Total charge.01 None.00 (C BOX)																
	11. Do you expect any source to reimburse or pay you back? A. Who will reimburse or pay you back? ENTER UNDER "SOURCE". Anyone else? B. How much will (EACH SOURCE) reimburse or pay you back?	11	Yes01 (A) No.02 (C BOX) <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:5%; text-align: center;">A</td> <td style="width:70%;">SOURCE</td> <td style="width:10%;">AMOUNT</td> <td style="width:15%;"></td> </tr> <tr> <td style="text-align: center;">&</td> <td></td> <td style="text-align: center;">\$</td> <td style="text-align: center;">%</td> </tr> <tr> <td style="text-align: center;">B</td> <td></td> <td style="text-align: center;">\$</td> <td style="text-align: center;">%</td> </tr> <tr> <td></td> <td></td> <td style="text-align: center;">\$</td> <td style="text-align: center;">%</td> </tr> </table>	A	SOURCE	AMOUNT		&		\$	%	B		\$	%			\$	%
A	SOURCE	AMOUNT																	
&		\$	%																
B		\$	%																
		\$	%																
C BOX	CODE ONE: TOTAL CHARGE PAID IN Q. 10 PARTIAL OR NONE PAID IN Q. 10	C BOX	Total Charge Paid01 (RV) Partial or None Paid. . .02 (12)																
	12. <u>Did</u> or <u>will</u> anyone else pay for this visit? A. Who else paid or will pay any part of the charge? ENTER UNDER "SOURCE". Anyone else? B. How much <u>did</u> or <u>will</u> (EACH SOURCE) pay?	12	Yes01 (A) No.02 (RV) <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:5%; text-align: center;">A</td> <td style="width:70%;">SOURCE</td> <td style="width:10%;">AMOUNT</td> <td style="width:15%;"></td> </tr> <tr> <td style="text-align: center;">&</td> <td></td> <td style="text-align: center;">\$</td> <td style="text-align: center;">%</td> </tr> <tr> <td style="text-align: center;">B</td> <td></td> <td style="text-align: center;">\$</td> <td style="text-align: center;">%</td> </tr> <tr> <td></td> <td></td> <td style="text-align: center;">\$</td> <td style="text-align: center;">%</td> </tr> </table>	A	SOURCE	AMOUNT		&		\$	%	B		\$	%			\$	%
A	SOURCE	AMOUNT																	
&		\$	%																
B		\$	%																
		\$	%																
RV	IF PERSON HAD 2 OR FEWER ADDITIONAL VISITS TO A HOSPITAL CLINIC/DEPARTMENT, GO TO S BOX. IF PERSON HAD 3 OR MORE ADDITIONAL VISITS TO A HOSPITAL CLINIC/DEPARTMENT, CHECK Q's. 6, 7 & 8. CODE IN COLUMN. "YES" WAS ANSWERED IN Q. 6 OR 7 OR 8 "NO: WAS ANSWERED TO ALL QUESTIONS	RV	Yes01 (S BOX) No.02 (13)																
	13. You mentioned that (PERSON) had (NUMBER) visits to a hospital clinic/department. We have already talked about (NUMBER) of those visits. How many of the remaining (REMAINING NUMBER) were also to [HOSPITAL CLINIC/OUTPATIENT DEPARTMENT]?	13	<input type="text"/> Visits (14) None.00 (S BOX)																
	14. Of those (ANSWER TO Q. 13) visits, how many were also for (CONDITION(S))?	14	<input type="text"/> Visits (15) None.00 (S BOX)																

VISIT B		VISIT C		VISIT D		VISIT E																																	
PERSON _____ # _____		PERSON _____ # _____		PERSON _____ # _____		PERSON _____ # _____																																	
Partial \$ _____ %		Partial \$ _____ %		Partial \$ _____ %		Partial \$ _____ %																																	
Total charge. 01		Total charge. 01		Total charge. 01		Total charge. 01																																	
None. 00(C BOX)		None. 00(C BOX)		None. 00(C BOX)		None. 00(C BOX)																																	
Yes 01(A)		Yes 01(A)		Yes 01(A)		Yes 01(A)																																	
No. 02(C BOX)		No. 02(C BOX)		No. 02(C BOX)		No. 02(C BOX)																																	
<table border="1"> <tr><th>SOURCE</th><th>AMOUNT</th></tr> <tr><td> </td><td>\$ %</td></tr> <tr><td> </td><td>\$ %</td></tr> <tr><td> </td><td>\$ %</td></tr> </table>	SOURCE	AMOUNT		\$ %		\$ %		\$ %		<table border="1"> <tr><th>SOURCE</th><th>AMOUNT</th></tr> <tr><td> </td><td>\$ %</td></tr> <tr><td> </td><td>\$ %</td></tr> <tr><td> </td><td>\$ %</td></tr> </table>	SOURCE	AMOUNT		\$ %		\$ %		\$ %		<table border="1"> <tr><th>SOURCE</th><th>AMOUNT</th></tr> <tr><td> </td><td>\$ %</td></tr> <tr><td> </td><td>\$ %</td></tr> <tr><td> </td><td>\$ %</td></tr> </table>	SOURCE	AMOUNT		\$ %		\$ %		\$ %		<table border="1"> <tr><th>SOURCE</th><th>AMOUNT</th></tr> <tr><td> </td><td>\$ %</td></tr> <tr><td> </td><td>\$ %</td></tr> <tr><td> </td><td>\$ %</td></tr> </table>	SOURCE	AMOUNT		\$ %		\$ %		\$ %	
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Total Charge Paid . . . 01(RV)		Total Charge Paid . . . 01(RV)		Total Charge Paid . . . 01(RV)		Total Charge Paid . . . 01(RV)																																	
Partial or None Paid. . 02(12)		Partial or None Paid. . 02(12)		Partial or None Paid. . 02(12)		Partial or None Paid. . 02(12)																																	
Yes 01(A)		Yes 01(A)		Yes 01(A)		Yes 01(A)																																	
No. 02(RV)		No. 02(RV)		No. 02(RV)		No. 02(RV)																																	
<table border="1"> <tr><th>SOURCE</th><th>AMOUNT</th></tr> <tr><td> </td><td>\$ %</td></tr> <tr><td> </td><td>\$ %</td></tr> <tr><td> </td><td>\$ %</td></tr> </table>	SOURCE	AMOUNT		\$ %		\$ %		\$ %		<table border="1"> <tr><th>SOURCE</th><th>AMOUNT</th></tr> <tr><td> </td><td>\$ %</td></tr> <tr><td> </td><td>\$ %</td></tr> <tr><td> </td><td>\$ %</td></tr> </table>	SOURCE	AMOUNT		\$ %		\$ %		\$ %		<table border="1"> <tr><th>SOURCE</th><th>AMOUNT</th></tr> <tr><td> </td><td>\$ %</td></tr> <tr><td> </td><td>\$ %</td></tr> <tr><td> </td><td>\$ %</td></tr> </table>	SOURCE	AMOUNT		\$ %		\$ %		\$ %		<table border="1"> <tr><th>SOURCE</th><th>AMOUNT</th></tr> <tr><td> </td><td>\$ %</td></tr> <tr><td> </td><td>\$ %</td></tr> <tr><td> </td><td>\$ %</td></tr> </table>	SOURCE	AMOUNT		\$ %		\$ %		\$ %	
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Yes 01(S BOX)		Yes 01(S BOX)		Yes 01(S BOX)		Yes 01(S BOX)																																	
No. 02(13)		No. 02(13)		No. 02(13)		No. 02(13)																																	
<input type="checkbox"/> Visits (14)		<input type="checkbox"/> Visits (14)		<input type="checkbox"/> Visits (14)		<input type="checkbox"/> Visits (14)																																	
None. 00(S BOX)		None. 00(S BOX)		None. 00(S BOX)		None. 00(S BOX)																																	
<input type="checkbox"/> Visits (15)		<input type="checkbox"/> Visits (15)		<input type="checkbox"/> Visits (15)		<input type="checkbox"/> Visits (15)																																	
None. 00(S BOX)		None. 00(S BOX)		None. 00(S BOX)		None. 00(S BOX)																																	

HOSPITAL OUTPATIENT DEPARTMENT VISIT

VISIT A

PERSON _____ # _____

15. Of those (ANSWER TO Q.14) visits, how many cost the identical amount as the visit we just talked about?

15 Visits (16)
 Visits included in same FF_(17)
 None 00(S BOX)

16. Of those (ANSWER TO Q. 15) visits, how many were paid for in the same way as the visit you just told me about?

16 Visits (17)
 None 00(S BOX)

17. How many of the (ANSWER TO PREVIOUS QUESTION) visits did not include any X-rays, lab tests or diagnostic procedures?

17 Visits(18)
 None 00(S BOX)

18. Not counting the visit on (DATE) you just told me about, what were the dates of the other (ANSWER TO Q. 17) visits?

18 1) _____ / _____ 6) _____ / _____
 Month / Date Month / Date
 2) _____ / _____ 7) _____ / _____
 Month / Date Month / Date
 3) _____ / _____ 8) _____ / _____
 Month / Date Month / Date
 4) _____ / _____ 9) _____ / _____
 Month / Date Month / Date
 5) _____ / _____ 10) _____ / _____
 Month / Date Month / Date

S BOX	CODE ONE:
	HHS Sample 01(NV)
	SMHS Sample. 02(19)

19. What is the complete address of the hospital clinic or outpatient department?

19 Street: _____
 City: _____
 State: _____ Zip: _____

IF MEDICAL DOCTOR SEEN (SEE Q.4), ASK Q's. 20 & 21.

20. What is the name of the doctor (PERSON) saw?

20 Name: _____
 Don't know 94(NV)

21. Does (DOCTOR) have an office outside the hospital?

21 Yes. 01(A)
 No 02(NV)
 Don't know 94(NV)

A. What is the complete address of the doctor's office?

A Place: _____

 Street: _____
 City: _____
 State: _____ Zip: _____

HOSPITAL STAY (INPATIENT)

Person Name: _____ # _____ Hospital Stay # _____

You told me that (PERSON) was a patient in a [hospital/nursing home] (NUMBER) times since (REF. DATE).

1. When did (PERSON) enter the [hospital/nursing home] (the [first/next] time)?

_____/_____/_____
Month / Date / Year

A. When did (PERSON) leave the [hospital/nursing home] (that time)?

_____/_____/_____
Month / Date / Year

Still there 01(3)

IF COMPLETE DATES GIVEN IN QUESTIONS 1 & 1A SKIP TO QUESTION 3

2. How many nights was (PERSON) in the [hospital/nursing home]?

_____ nights
None. 00(4)

3. Were these days in the [hospital/nursing home] included in the number of days (PERSON) spent in bed that you told me about earlier in the interview?

Yes 01
No 02(ADD THESE DAYS TO Q. 1A IN DISABILITY DAYS SECTION AND REASK ALL QUESTIONS IN DISABILITY SECTION)

4. What is name and address of this [hospital/nursing home]?

Name: _____
Street: _____
City: _____
State: _____ Zip: _____

5. For what condition did (PERSON) enter the [hospital/nursing home]? Was there any other condition?

CONDITION	COND. #
_____	CC (6)
_____	CC (6)
_____	CC (6)
_____	CC (6)

Delivery 01(A)
Newborn baby 02(B)
Other 03(6)

A. FOR DELIVERY, ASK: Was this a normal delivery?

Yes 01(6)
No 02(C)

B. FOR NEWBORN, ASK: Was the baby normal at birth?

Yes 01(6)
No 02(C)

C. What was the matter?

CONDITION	COND. #
_____	CC
_____	CC
_____	CC
_____	CC

6. Were any operations performed on (PERSON) during this stay in the [hospital/nursing home]?

Yes 01(A)
No 02(7)

A. What was the name of the operation?
IF NAME OF OPERATION IS NOT KNOWN, DESCRIBE WHAT WAS DONE.
Were there any other operations during this stay?

Name: _____

Name: _____

Name: _____

HOSPITAL STAY (INPATIENT)

- | | | |
|--|------------|-----------|
| | <u>Yes</u> | <u>No</u> |
| 7. Were any X-rays taken during this [hospital/nursing home] stay? | 01 | 02 |
| 8. Were any laboratory tests such as a blood test, urinalysis, culture or other kind of test done? | 01 | 02 |
| 9. Was an EKG, EEG, (a pap smear) or any other diagnostic procedure done? | 01 | 02 |

IF STILL IN HOSPITAL, GO TO NEXT HOSPITAL STAY OR NEXT SECTION.

10. How much was the total [hospital/nursing home] charge for this stay, including any amounts that may be paid by health insurance, Medicare, Medicaid or other source? (Include any charges for [X-rays/laboratory tests/diagnostic procedures], but) do not include separate charges for doctors or surgeons.

\$ _____ (11)
 No Charge.02(A)
 Included with other charges. .03(FF____(14))
 FOR NEWBORNS ONLY: Included
 in mother's bill
 (Person #____).04(15)
 Don't know94(11)

- A. Why was there no charge for this hospital stay?

Welfare/Medicaid paid.01(14)
 Included with other charges. .02(FF____(14))
 Free from provider03(13)
 Other source(s) will pay . . .04(13A)
 FOR NEWBORNS ONLY: Included
 in mother's bill
 (Person #____).06(15)

11. How much of the (CHARGE) charge for the stay did or will you (or your family) pay?

Partial \$ _____ %
 Total Charge01
 None00(C BOX)

12. Do you expect any source to reimburse or pay you back?

Yes01(A)
 No. :02(C BOX)

<u>A</u>	<u>B</u>
Who will reimburse or pay you back? ENTER BELOW. Anyone else?	How much will (EACH SOURCE) reimburse or pay you back?

SOURCE	AMOUNT
	\$ _____ %
	\$ _____ %
	\$ _____ %

C
 BOX CODE ONE:
 TOTAL CHARGE PAID IN Q. 11. 01(14)
 PARTIAL OR NONE PAID IN Q. 11 02(13)

13. Did or will anyone else pay for this hospital stay?

Yes01(A)
 No.02(14)

<u>A</u>	<u>B</u>
Who else paid or will pay any part of the charge for this stay? ENTER BELOW. Anyone else?	How much <u>did</u> or <u>will</u> (EACH SOURCE) pay?

SOURCE	AMOUNT
	\$ _____ %
	\$ _____ %
	\$ _____ %

CODE ONE:
 "YES" WAS ANSWERED IN Q. 7, 8, OR 9 . . .01(14)
 "NO" WAS ANSWERED IN Q. 7, 8, AND 9 . . .02(15)

14. How much were the charges for the [X-rays/laboratory tests/diagnostic procedures] ?

\$ _____ (15)
 Don't know or no separate charge.94(15)

HOSPITAL STAY (INPATIENT)

15. Were there any doctors or surgeons who treated (PERSON) and from whom there was a separate charge?

Yes 01(A)
 No. 02(B)

A. What are the names of all the doctors or surgeons who treated (PERSON) and from whom there was a separate bill? ENTER EACH NAME IN SEPARATE DR. COLUMN. IF MORE THAN ONE DOCTOR IS INCLUDED IN A SINGLE CHARGE, LIST ON SEPARATE LINES IN ONE DOCTOR COLUMN.

B. Were there any other doctors who treated (PERSON) such as anesthesiologists, pathologists, radiologists, or psychiatrists from whom there was a separate charge?

Yes 01(C)
 No. 02(16)

C. Who was that? ENTER NAME OR TYPE OF DOCTOR IN NEXT AVAILABLE DR. COLUMN(S).

DOCTOR A

Name or Type

15
A
&
C

16. CODE ONE:

DOCTOR(S) REPORTED IN Q. 15 01(17-22 FOR EACH DOCTOR)
 NO DOCTOR(S) REPORTED IN Q. 15. 02(NEXT STAY OR NEXT SECTION)

CODE OR ASK:

17. What type of doctor is (NAME OR TYPE)?

- 17
- General Practitioner . 01
 - Anesthesiologist . . . 02
 - Cardiologist 03
 - Internist. 04
 - OB/GYN 05
 - Ophthalmologist. . . . 06
 - Orthopedist. 07
 - Pathologist. 08
 - Pediatrician 09
 - Psychiatrist 10
 - Radiologist. 11
 - Other (SPECIFY). . . . 12

18. How much was the total charge for (DOCTOR) including any amounts that may be paid by health insurance, Medicare, Medicaid, or other sources?

18 \$ _____ (19)
 Included with other charges 01(FF (22))
 Don't know 94(19)

19. How much of the (CHARGE) for the doctor did or will you (or your family) pay?

19 Partial \$ _____ %
 Total charge 01
 None 02(C BOX)

DOCTOR B Name or type	DOCTOR C Name or type		DOCTOR D Name or type	DOCTOR E Name or type
<p>General Practitioner . 01 Anesthesiologist . . . 02 Cardiologist 03 Internist. 04 OB/GYN 05 Ophthalmologist. . . . 06 Orthopedist. 07 Pathologist. 08 Pediatrician 09 Psychiatrist 10 Radiologist. 11 Other (SPECIFY). . . . 12</p> <p style="text-align: right;">□ □</p>	<p>General Practitioner . 01 Anesthesiologist . . . 02 Cardiologist 03 Internist. 04 OB/GYN 05 Ophthalmologist. . . . 06 Orthopedist. 07 Pathologist. 08 Pediatrician 09 Psychiatrist 10 Radiologist. 11 Other (SPECIFY). . . . 12</p> <p style="text-align: right;">□ □</p>	15 A & C	<p>General Practitioner . 01 Anesthesiologist . . . 02 Cardiologist 03 Internist. 04 OB/GYN 05 Ophthalmologist. . . . 06 Orthopedist. 07 Pathologist. 08 Pediatrician 09 Psychiatrist 10 Radiologist. 11 Other (SPECIFY). . . . 12</p> <p style="text-align: right;">□ □</p>	<p>General Practitioner . 01 Anesthesiologist . . . 02 Cardiologist 03 Internist. 04 OB/GYN 05 Ophthalmologist. . . . 06 Orthopedist. 07 Pathologist. 08 Pediatrician 09 Psychiatrist 10 Radiologist. 11 Other (SPECIFY). . . . 12</p> <p style="text-align: right;">□ □</p>
<p>\$ _____ (19) Included with other charges. 01 (FF (22)) Don't know 94(19)</p>	<p>\$ _____ (19) Included with other charges. 01 (FF (22)) Don't know 94(19)</p>	17	<p>\$ _____ (19) Included with other charges. 01 (FF (22)) Don't know 94(19)</p>	<p>\$ _____ (19) Included with other charges. 01 (FF (22)) Don't know 94(19)</p>
<p>Partial \$ _____ % Total charge 01 None 02(C BOX)</p>	<p>Partial \$ _____ % Total charge 01 None 02(C BOX)</p>	18	<p>Partial \$ _____ % Total charge 01 None 02(C BOX)</p>	<p>Partial \$ _____ % Total charge 01 None 02(C BOX)</p>
		19		

HOSPITAL STAY (INPATIENT)

20. Do you expect any source to reimburse or pay you back?

- A. Who will reimburse or pay you back? ENTER UNDER "SOURCE". Anyone else?
- B. How much will (EACH SOURCE) reimburse or pay you back? ENTER UNDER AMOUNT.

DOCTOR A

20 Yes. 01(A)
No 02(C BOX)

SOURCE		AMOUNT
A		\$ %
&		\$ %
B		\$ %

C BOX	CODE ONE:
	TOTAL CHARGE PAID IN Q. 19. PARTIAL OR NONE PAID IN Q. 19.

C Total Charge Paid. 01(S BOX)
BOX Partial or None Paid 02(21)

21. Did or will anyone else pay for this doctor's charge?

- A. Who else paid or will pay? ENTER UNDER "SOURCE". Anyone else?
- B. How much did or will (EACH SOURCE) pay?

21 Yes. 01(A)
No 02(S BOX)

SOURCE		AMOUNT
A		\$ %
&		\$ %
B		\$ %

S BOX	HHS SAMPLE 01(NEXT DR.)
	SMHS SAMPLE. 02(D BOX)

D BOX	CODE ONE:
	INDICATE IF DOCTOR'S NAME IS KNOWN. DOCTOR'S NAME NOT KNOWN.

Name known 01(22)
Name not known 02(NEXT DR.)

22. Does (DOCTOR) have an office outside of the hospital?

- A. What is the complete address of (DOCTOR'S) office?

22 Yes. 01(A)
No 02(NEXT DR.)

A Place: _____
Street: _____
City: _____
State: _____ Zip: _____

GO TO NEXT DOCTOR

AFTER ASKING FOR ALL DOCTORS, GO TO NEXT STAY.
IF NO OTHER STAYS, GO TO NEXT SECTION.

DOCTOR B		DOCTOR C		20 A & B	DOCTOR D		DOCTOR E	
Yes 01(A) No. 02(C BOX)		Yes 01(A) No. 02(C BOX)			Yes 01(A) No. 02(C BOX)		Yes 01(A) No. 02(C BOX)	
SOURCE	AMOUNT	SOURCE	AMOUNT	SOURCE	AMOUNT	SOURCE	AMOUNT	
	\$ %		\$ %		\$ %		\$ %	
	\$ %		\$ %		\$ %		\$ %	
	\$ %		\$ %		\$ %		\$ %	
Total Charge Paid . . 01(S BOX) Partial or None Paid. 02(21)		Total Charge Paid . . 01(S BOX) Partial or None Paid. 02(21)		C BOX	Total Charge Paid . . 01(S BOX) Partial or None Paid. 02(21)		Total Charge Paid . . 01(S BOX) Partial or None Paid. 02(21)	
Yes 01(A) No. 02(S BOX)		Yes 01(A) No. 02(S BOX)			Yes 01(A) No. 02(S BOX)		Yes 01(A) No. 02(S BOX)	
SOURCE	AMOUNT	SOURCE	AMOUNT	A & B	SOURCE	AMOUNT	SOURCE	AMOUNT
	\$ %		\$ %			\$ %		\$ %
	\$ %		\$ %		\$ %		\$ %	
	\$ %		\$ %		\$ %		\$ %	
Name known. 01(22) Name not known. . . . 02(NEXT DR.)		Name known. 01(22) Name not known. . . . 02(NEXT DR.)			Name known. 01(22) Name not known. . . . 02(NEXT DR.)		Name known. 01(22) Name not known. . . . 02(NEXT DR.)	
Yes 01(A) No. 02(NEXT DR.)		Yes 01(A) No. 02(NEXT DR.)		22 A	Yes 01(A) No. 02(NEXT DR.)		Yes 01(A) No. 02(NEXT DR.)	
Place: _____		Place: _____			Place: _____		Place: _____	
Street: _____		Street: _____		Street: _____		Street: _____		
City: _____		City: _____		City: _____		City: _____		
State: _____ Zip: _____		State: _____ Zip: _____		State: _____ Zip: _____		State: _____ Zip: _____		

MEDICAL PROVIDER VISIT

Person Name _____ # _____

[Besides the visits we already talked about/You told me that (PERSON) had seen a medical person (NUMBER) times since (REF. DATE).]

1. On what date did (PERSON) [first/next] see a medical person?

_____/_____
MONTH / DATE

2. Where did (PERSON) see the medical person on (DATE), at what type of place -- was it a clinic, hospital, doctor's office, or some other place?

- | | | |
|--|---|----------------------|
| <u>IF CLINIC, ASK:</u> | Doctor's office or group practice. | 01 |
| Was it a hospital outpatient clinic, a company clinic, or some other kind of clinic? | Doctor's clinic. | .02 |
| | Neighborhood/Family Health Center. | 03 |
| | Company clinic | .04 |
| | School clinic. | .05 |
| <u>IF SOME OTHER PLACE, ASK:</u> | Other clinic | .06 |
| Where was this? | Home | .07 |
| | Laboratory | .08 |
| | Hospital outpatient clinic, hospital inpatient, emergency room. | 09 (INSTRUCTION BOX) |
| | Other (SPECIFY) | 10 |

INSTRUCTION BOX	MAKE SURE A HOSPITAL STAY, EMERGENCY ROOM OR HOSPITAL OUTPATIENT VISIT HAS BEEN COMPLETED FOR THIS DATE. INVALIDATE THIS PAGE AND GO TO NEXT VISIT.
-----------------	---

3. A. What is the name of the medical person (PERSON) saw on (DATE)?

Provider's Name

B. What is the name of the medical place (PERSON) went to on (DATE)? In what city and state is it located?

Place Name

_____/_____
City / State

4. Did (PERSON) see a medical doctor on that visit?

- Yes.01(A)
No02(C)
Don't know94(5)

A. Is the doctor a general practitioner or a specialist?

- General practitioner01(5)
Specialist02(B)
Don't know94(5)

B. What is the doctor's specialty?

- | | |
|--------------------------------|-----------------------------|
| Cardiologist.01(5) | Orthopedist.05(5) |
| Internist02(5) | Pediatrician06(5) |
| OB/GYN.03(5) | Psychiatrist07(5) |
| Ophthalmologist04(5) | Other (SPECIFY).08(5) |

C. What type of medical person did (PERSON) see?

- | | |
|----------------------------|-----------------------|
| Chiropractor.01(5) | Social Worker. .05(5) |
| Podiatrist.02(5) | Nurse.06(D) |
| Optometrist03(5) | Phy. Therapist .07(D) |
| Psychologist.04(5) | Other (SPECIFY).08(D) |

D. Does (MEDICAL PERSON) work for or with a doctor?

- Yes.01
No02
Don't know94

MEDICAL PROVIDER VISIT

5. Why did (PERSON) visit (PROVIDER) on (DATE)? CODE ALL THAT APPLY.

Diag. or treatment.01(B) Immunization . .04(6)
 General checkup . .02(A) Family Planning.05(6)
 Eye examination Other (SPECIFY).06(A)
 for glasses , . . .03(6)

A. Was this for any specific condition?

Yes01(B)
 No02(C)

B. For what condition did (PERSON) visit (PROVIDER) on (DATE)?
 Any other condition?

CONDITION	COND.#
CC	(6)
CC	(6)
CC	(6)
CC	(6)

C. Did (PROVIDER) discover any condition?

Yes01(D)
 No02(6)

D. What was it? RECORD IN B ABOVE. Any other condition?

	Yes	No
6. Were any X-rays taken during this visit on (DATE)?	01	02

7. Were any laboratory tests such as a blood test, urinalysis, culture, or any other kind of test done?	01	02
---	----	----

8. Was an EKG, EEG, (a pap smear) or any other diagnostic procedure done?	01	02
---	----	----

9. How much was the total charge for this visit on (DATE), including any amounts that may be paid by health insurance, Medicare, Medicaid, or other sources? (Include any separate bill for [X-rays/laboratory tests/diagnostic procedures].)

\$ _____ (10)
 \$3.00 or less. 01(A)
 No charge. 02(A)
 Included with other charges. . . 03(FF____(RV))
 Don't know 94(10)

A. Why was there [no/such a small] charge for this visit?

Welfare/Medicaid paid. 01(RV)
 Included with other charges. . . 02(FF____(RV))
 Free from provider 03(12)
 Other source(s) will pay 04(12A)
 Standard HMO/PHP/Health Center charge 05(RV)
 Other. 07(10)

10. How much of the (CHARGE) charge for the visit did or will you (or your family) pay?

Partial \$ _____ %
 Total Charge 01
 None 00(C BOX)

11. Do you expect any source to reimburse or pay you back? Yes . . . 01(A)
 No. . . . 02(C BOX)

A. Who will reimburse or pay you back? ENTER BELOW.
 B. How much will (EACH SOURCE) reimburse or pay you back?
 Anyone else?

SOURCE	AMOUNT
	\$ _____ %
	\$ _____ %
	\$ _____ %

MEDICAL PROVIDER VISIT

C BOX	CODE ONE:
	TOTAL CHARGE PAID IN Q. 10. 01(RV) PARTIAL OR NONE PAID IN Q. 10 02(12)

12. Did or will anyone else pay for this visit?

Yes 01(A)
No. 02(RV)

A.		B.	
Who else paid or will pay any part of the charge? ENTER BELOW. Anyone else?		How much did or will (EACH SOURCE) pay?	
SOURCE		AMOUNT	
		\$	%
		\$	%
		\$	%

RV	IF PERSON HAS FEWER THAN 5 ADDITIONAL VISITS TO A MEDICAL PROVIDER, GO TO S BOX.
	IF PERSON HAD 5 OR MORE ADDITIONAL VISITS TO MEDICAL PROVIDER, CHECK Q's. 6, 7 & 8, CODE BELOW. "YES" WAS ANSWERED IN Q. 6, OR 7 OR 8. .01(S BOX) "NO" WAS ANSWERED TO ALL QUESTIONS . . .02(13)

You mentioned that (PERSON) had (NUMBER) medical visits.

13. We have already talked about (NUMBER) of those visits. How many of the remaining (REMAINING NUMBER) were also to (PROVIDER/PLACE)?

_____ visits(14)
None.00(S BOX)

14. Of those (ANSWER TO Q. 13) visits, how many were also for (CONDITIONS)?

_____ visits(15)
None.00(S BOX)

15. Of those (ANSWER TO Q. 14) visits, how many cost the identical amount as the visit you just told me about?

_____ visits(16)
_____ visits included in FF____(17)
None.00(S BOX)

16. Of those (ANSWER TO Q. 15) visits, how many were paid for in the same way as the visit you just told me about?

_____ visits(17)
None.00(S BOX)

17. How many of the (ANSWER TO PREVIOUS QUESTION) visits did not include any X-rays, lab tests, or diagnostic procedures?

_____ visits(18)
None.00(S BOX)

18. Not counting the visit on (DATE) you just told me about, what were the dates of the other (ANSWER TO Q. 17) visits?

- | | | |
|--|---|---|
| 1) _____ / _____ / _____
Month / Date | 6) _____ / _____ / _____
Month / Date | 11) _____ / _____ / _____
Month / Date |
| 2) _____ / _____ / _____
Month / Date | 7) _____ / _____ / _____
Month / Date | 12) _____ / _____ / _____
Month / Date |
| 3) _____ / _____ / _____
Month / Date | 8) _____ / _____ / _____
Month / Date | 13) _____ / _____ / _____
Month / Date |
| 4) _____ / _____ / _____
Month / Date | 9) _____ / _____ / _____
Month / Date | 14) _____ / _____ / _____
Month / Date |
| 5) _____ / _____ / _____
Month / Date | 10) _____ / _____ / _____
Month / Date | 15) _____ / _____ / _____
Month / Date |

S BOX	CODE ONE:
	HHS SAMPLE.01(NV) SMHS SAMPLE02(19)

19. What is the complete address of (PROVIDER/PLACE)?

Place: _____
Street: _____
City: _____
State: _____ Zip: _____

NEXT VISIT

FLAT FEE SECTION

IF A FF HAS PREVIOUSLY BEEN REPORTED FOR RU, ASK Q. 1. OTHERWISE, ENTER "A" IN COLUMN, CODE "FF" SECTION, AND CONTINUE.

1. Is this [visit/hospital stay/service] included in a charge you already told me about, (either in a previous interview or) today?

Yes. Which FF was that? (ENTER FF LETTER AT QUESTION WHERE FF WAS REPORTED. DO NOT RECORD ON THIS FF PAGE.)

No (ENTER FLAT FEE LETTER AND PERSON NAME AND # AND CONTINUE.)

1 Flat Fee Letter: _____
Person _____ # _____

CODE TYPE OF VISITS/SERVICES COVERED BY FLAT FEE. PROBE, IF NECESSARY, TO DETERMINE MOST APPROPRIATE DESCRIPTION.

FF Orthodontia01
Other dental care02
Surgical care03
Physical therapy.04
Prescribed medicines.05
Tests/diag. procedures.06
Pre/post natal care07
Eye exam plus glasses/contacts.08
Physician's charges09
Counseling.10
Other (SPECIFY) _____11

2. What was the total amount of the charges, including any amount that may be paid by health insurance, Medicare, Medicaid, or other sources?

2 \$ _____
Don't know.94

3. How much of the (CHARGE) charge did or will you (or your family) pay?

3 Partial \$ _____ %
Total Charge.01
None.00(C BOX)

4. Do you expect any source to reimburse or pay you back?

A. Who will reimburse or pay you back? ENTER UNDER "SOURCE". Anyone else?

B. How much will (SOURCE) reimburse or pay you back?

4 Yes01(A)
No.02(C BOX)

A	SOURCE	AMOUNT
B		\$ %
		\$ %
		\$ %

C BOX	CODE ONE:
	TOTAL CHARGE PAID IN Q. 3 PARTIAL OR NONE PAID IN Q. 3

C	Total Charge Paid01(6)
BOX	Partial or None Paid.02(5)

Flat Fee Letter: _____ Person _____ # _____	Flat Fee Letter: _____ Person _____ # _____	1	Flat Fee Letter: _____ Person _____ # _____	Flat Fee Letter: _____ Person _____ # _____																																
Orthodontia01 Other dental care02 Surgical care03 Physical therapy.04 Prescribed medicines.05 Tests/diag. procedures.06 Pre/post natal care07 Eye exam plus glasses/contacts.08 Physician's charges09 Counseling.10 Other (SPECIFY) _____ 11	Orthodontia01 Other dental care02 Surgical care03 Physical therapy.04 Prescribed medicines.05 Tests/diag. procedures.06 Pre/post natal care07 Eye exam plus glasses/contacts.08 Physician's charges09 Counseling.10 Other (SPECIFY) _____ 11	FF	Orthodontia01 Other dental care02 Surgical care03 Physical therapy.04 Prescribed medicines.05 Tests/diag. procedures.06 Pre/post natal care07 Eye exam plus glasses/contacts.08 Physician's charges09 Counseling.10 Other (SPECIFY) _____ 11	Orthodontia01 Other dental care02 Surgical care03 Physical therapy.04 Prescribed medicines.05 Tests/diag. procedures.06 Pre/post natal care07 Eye exam plus glasses/contacts.08 Physician's charges09 Counseling.10 Other (SPECIFY) _____ 11																																
\$ _____ Don't know.94	\$ _____ Don't know.94	2	\$ _____ Don't know.94	\$ _____ Don't know.94																																
Partial \$ _____ % Total Charge.01 None.00(C BOX)	Partial \$ _____ % Total Charge.01 None.00(C BOX)	3	Partial \$ _____ % Total Charge.01 None.00(C BOX)	Partial \$ _____ % Total Charge.01 None.00(C BOX)																																
Yes01(A) No.02(C BOX)	Yes01(A) No.02(C BOX)	4	Yes01(A) No.02(C BOX)	Yes01(A) No.02(C BOX)																																
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FF-91

FLAT FEE SECTION

5. Did or will anyone else pay any part of the charge?

A. Who else paid or will pay any part of the charge? ENTER UNDER "SOURCE". Anyone else?

B. How much did or will (EACH SOURCE) pay?

Flat Fee Letter: _____

Person _____ \$ _____

5 Yes 01(A)
No. 02(6)

A		B	
A	SOURCE	AMOUNT	
A & B		\$	%
		\$	%
		\$	%

IF FF FOR PRESCRIBED MEDICINES OR OTHER MEDICAL EXPENSE ITEMS ONLY, SKIP TO FR BOX

6. Did (PERSON) have any visits to the (Doctor/Dentist/MEDICAL PROVIDER) covered by this charge before January 1, 1980.

A. How many visits did (PERSON) have to the (Doctor/Dentist/MEDICAL PROVIDER) before January 1, 1980?

B. Was a hospital stay before January 1, 1980 covered by this flat fee?

6 Yes 01(A)
No. 02(B)

A Visits (B)

B Yes 01
No. 02

FR	RETURN TO THE SECTION OF THE QUESTIONNAIRE WHERE THIS FLAT FEE WAS REPORTED AND ASK NEXT APPROPRIATE QUESTION.
----	--

Flat Fee Letter: _____

Flat Fee Letter: _____

Person _____ # _____

Person _____ # _____

Yes 01(A)
No. 02(6)

Yes 01(A)
No. 02(6)

A	B
SOURCE	AMOUNT
	\$ %
	\$ %
	\$ %

A	B
SOURCE	AMOUNT
	\$ %
	\$ %
	\$ %

Yes 01(A)
No. 02(B)

Yes 01(A)
No. 02(B)

Visits (B)

Visits (B)

Yes 01
No. 02

Yes 01
No. 02

Flat Fee Letter: _____

Flat Fee Letter: _____

Person _____ # _____

Person _____ # _____

Yes 01(A)
No. 02(6)

Yes 01(A)
No. 02(6)

A	B
SOURCE	AMOUNT
	\$ %
	\$ %
	\$ %

A	B
SOURCE	AMOUNT
	\$ %
	\$ %
	\$ %

Yes 01(A)
No. 02(B)

Yes 01(A)
No. 02(B)

Visits (B)

Visits (B)

Yes 01
No. 02

Yes 01
No. 02

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